



Horsley Drive Business Park Stage 2 (SSD 7664) Archaeological Report

Prepared for Western Sydney Parklands Trust
10 October 2016

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Document information

Report to:	Western Sydney Parklands Trust
Prepared by:	James Cole Rebecca Morris Shannon Smith
Biosis project no.:	22726
File name:	22726.HorsleyDriveBusinessPark.AR.DR03.20160907.docx
Citation:	Biosis (2016). Horsley Drive Business Park Stage 2 (SSD 7664) Archaeological Report. Report for Western Sydney Parklands Trust. Authors: J Cole, R Morris, & S Smith, Biosis Pty Ltd, Sydney. Project no. 22726
LGA:	Fairfield

Document control

Version	Internal reviewer	Date issued	Issued by
Draft 01	Nicole Castle	05/09/2016	JC
Draft 02	Nicole Castle	06/09/2016	RAM
Final 01	Amanda Atkinson	7/10/2016	JC

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Acknowledgements

Biosis gratefully acknowledges the contributions of the following people and organisations (listed alphabetically) in preparing this report:

Aboriginal community groups

- Deerubbin Local Aboriginal Land Council (DLALC)

Government departments

- NSW Office of Environment and Heritage (OEH)
- Department of Planning and Environment

Client

- Western Sydney Parklands Trust (WSPT)

Biosis

- Lauren Harley for mapping

Glossary

ACHAR	Aboriginal Cultural Heritage Assessment Report
AGD	Australian Geodetic Datum
AHIMS	Aboriginal Heritage Information Management System
AR	Archaeological Report
BP	Before Present
c.	Circa
CHL	Commonwealth Heritage List
The code	<i>The code of practice for the archaeological investigation of Aboriginal objects in NSW (DECCW 2010)</i>
DA	Development Application
DECCW	Department of Environment, Climate Change and Water (now OEH)
DLALC	Deerubbin Local Aboriginal Land Council
DP	Deposited Plan
DSCA	Dominic Steele Consulting Archaeology
DSEWPC	Department of Planning and Environment
EIS	Environmental Impact Statement
EPA	Environment Planning and Assessment
GPS	Global Positioning System
GSV	Ground Surface Visibility
ICOMOS	International Council on Monuments and Sites
JMCHM	Jo McDonald Cultural Heritage Management
LALC	Local Aboriginal Land Council
LGA	Local Government Area
OEH	NSW Office of Environment and Heritage
PAD	Potential Archaeological Deposit
RAP	Registered Aboriginal Party
REF	Review of Environmental Factors
SEARS	Secretary's Environmental Assessment Requirements
SSD	State Significant Development

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Summary

Biosis Pty Ltd was commissioned by Western Sydney Parklands Trust (WSPT) to undertake an Aboriginal archaeological investigation in advance of the proposed Horsley Drive Business Park Stage 2 development at 5 to 15 Trivett Street, and 130 to 174 Cowpasture Road Wetherill Park, NSW (the study area).

The proposal is being assessed as a State Significant Development (SSD) under the *Environmental Planning and Assessment Regulation 2000*. The SSD application includes a Concept Proposal to the Department of Planning and Environment for development of general industrial, light industrial, warehouse and distribution uses, and a Stage 1 Development Application (DA) to Fairfield City Council including subdivision, bulk earthworks, estate landscaping and infrastructure works including services and road works (the Project).

As a part of the Secretary's Environmental Assessment Requirements (SEARs) for the project, WSPT was required to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for the Project. The purpose of this assessment is to consult with the local Aboriginal community, identify and Aboriginal heritage present within the study area, and formulate appropriate management and mitigation measures, if required, and is presented in the Aboriginal Cultural Heritage Assessment Report (ACHAR). This Archaeological Report (AR) has been prepared in support of the ACHAR.

This archaeological assessment included background research, the formulation of predictive statements, and an archaeological survey. An extensive Aboriginal Heritage Information Management System (AHIMS) search identified no previously recorded Aboriginal sites within the study area.

The archaeological survey, conducted in accordance with *the code of practice for the archaeological investigation of Aboriginal objects in NSW* (DECCW 2010) (the code) did not identify and Aboriginal sites or objects within the study area. The majority of the study area was covered with grass, restricting surface visibility; however large areas had also been cleared. These cleared areas were targeted as a part of the survey. Owing to the widespread disturbance throughout the study area as a result of land use practices including pastoralism, farming, and residential development, and the lack of any reliable water sources in close proximity to it, it is considered that there is a low potential for Potential Archaeological Deposits (PADs) to be present within the study area. These results are consistent with a previous assessment which was undertaken over a number of lots immediately to the south of the study area.

Strategies have been developed based on the archaeological (significance) of cultural heritage relevant to the study area and influenced by:

- Predicted impacts to Aboriginal cultural heritage
- The planning approvals framework
- Current best conservation practise, widely considered to include:
 - Ethos of the Australia International Council on Monuments and Sites (ICOMOS)Burra Charter
 - The code.

Prior to any impacts occurring within the study area, the following is recommended:

Recommendation 1: No further archaeological assessment is required

It is recommended that no further archaeological assessment is required in the study area prior to the proposed development as this assessment has concluded that there is a low likelihood for Aboriginal sites to be present within the study area.

Recommendation 2: Discovery of unanticipated Aboriginal objects

All Aboriginal objects and places are protected under the *NSW National Parks and Wildlife Act 1974*. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the Office of Environment and Heritage (OEH). Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying the OEH and Aboriginal stakeholders.

Recommendation 3: Discovery of unanticipated historical relics

Relics are historical archaeological resources of local or State significance and are protected in NSW under the *Heritage Act 1977*. Relics cannot be disturbed except with a permit or exception/exemption notification. Should unanticipated relics be discovered during the course of the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find. The Heritage Council will require notification if the find is assessed as a relic.

Recommendation 4: Discovery of Aboriginal ancestral remains

Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity you must:

1. Immediately cease all work at that location and not further move or disturb the remains
2. Notify the NSW Police and OEH's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location
3. Not recommence work at that location unless authorised in writing by OEH.

Recommendation 5: Continued consultation with the registered Aboriginal stakeholders

As per the consultation requirements, it is recommended that the proponent provides a copy of this draft report to the Aboriginal stakeholders and considers all comments received. A copy of the final report should also be sent to all Aboriginal stakeholders for their records. The proponent should continue to inform these groups about the management of Aboriginal cultural heritage sites within the study area throughout the life of the project.

1. Introduction

1.1 Project background

Biosis Pty Ltd was commissioned by Western Sydney Parklands Trust (WSPT) to undertake an Aboriginal archaeological investigation in advance of the proposed Horsley Drive Business Park Stage 2 development at 5 to 15 Trivett Street, and 130 to 174 Cowpasture Road Wetherill Park, NSW (Figure 1).

The proposal is being assessed as a State Significant Development (SSD) under the *Environmental Planning and Assessment Regulation 2000*. The SSD application includes a Concept Proposal to the Department of Planning and Environment for development of general industrial, light industrial, warehouse and distribution uses, and a Stage 1 Development Application (DA) to Fairfield City Council including subdivision, bulk earthworks, estate landscaping and infrastructure works including services and road works (the Project).

1.2 Study area

The study area comprises of a 24.8 hectare parcel of land on Cowpasture Road, Wetherill Park immediately north of Horsley Drive Business Park (Figure 2), of which WSPT propose to develop approximately 19.8 hectares (Figure 3). Registered Aboriginal sites are known to exist to the north of the study area, in the vicinity of Prospect Reservoir, although none are located within the study area boundary.

The study area is located at 5 to 15 Trivett Street, and 130 to 174 Cowpasture Road Wetherill Park, NSW, which is located within Fairfield Local Government Area (LGA), Parish of Melville, County of Cumberland. The study area is bounded to its east by Cowpasture Road and Trivett Street, and to its west by the Upper Canal, a part of the Upper Nepean Scheme, constructed between 1880 and 1888, and supplying water to Sydney from 1888 to the present day.

1.3 Planning approvals

As the proposal is being assessed as an SSD under the *Environmental Planning and Assessment Regulation 2000*, this report will form part of an Environmental Impact Statement (EIS) for the study area, and will provide the proponent with information on areas of cultural significance within the study area.

The EIS for the development must meet the form and content requirements in clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*.

The Secretary's Environmental Assessment Requirements (SEARs) relating to Aboriginal heritage for the project state that the proponent must undertake:

An Aboriginal cultural heritage assessment prepared by a suitably qualified archaeologist, (including cultural and archaeological significance), which details potential impacts of the Conceptual Proposal and Stage 1 DA on heritage assets and any proposed management and mitigation measures. The assessment must demonstrate effective consultation with relevant Aboriginal community groups.

The OEH response to submission, included with the SEARs, states that the assessment must be in accordance with the following guidelines:

- *The code of practice for the archaeological investigation of Aboriginal objects in NSW (DECCW 2010) (the code)*

- *Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW 2010)*
- *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW 2011).*

Other relevant legislation and planning instruments that will inform this assessment include:

- *Environmental Planning and Assessment Act 1979 (NSW)*
- *Environmental Protection and Biodiversity Conservation Act 1999*
- *Fairfield Development Control Plan 2013*
- *Fairfield Local Environmental Plan 2013*
- *Infrastructure SEPP 2007*
- *National Parks and Wildlife Act 1974 (NSW)*
- *National Parks and Wildlife Amendment Act 2010 (NSW).*

1.4 Assessment objectives

The following is a summary of the major objectives of the assessment:

- Identify and consult with any registered Aboriginal stakeholders.
- Conduct background research in order to recognise any identifiable trends in site distribution and location.
- To search statutory and non-statutory registers and planning instruments to identify listed Aboriginal cultural heritage sites within the study area.
- To highlight environmental information considered relevant to past Aboriginal occupation of the locality and associated land use and the identification and integrity/preservation of Aboriginal sites.
- To summarise past Aboriginal occupation in the locality of the study area using ethnohistory and the archaeological record.
- To formulate a model to broadly predict the type and character of Aboriginal sites likely to exist throughout the study area, their location, frequency and integrity.
- To conduct an archaeological survey of the study area to locate unrecorded or previously recorded Aboriginal sites and to further assesses the archaeological potential of the study area.
- To assess the significance of any known Aboriginal sites in consultation with the Aboriginal community.
- To identify the impacts of the proposed development on any known or potential Aboriginal sites within the study area.
- To recommend strategies for the management of Aboriginal cultural heritage within the context of the proposed development.

1.5 Investigators and contributors

The roles, previous experience and qualifications of the Biosis project team involved in the preparation of this archaeological report are described below in Table 1.

Table 1 Investigators and contributors.

James Cole	BA (Hons) Archaeology	3 years experience
James Cole is an Archaeologist with three years archaeological experience and as a consultant he has worked on a number of Aboriginal and European heritage excavations across New South Wales, Victoria, and Tasmania. James is skilled in both excavation and field recording and has developed his skills in Aboriginal archaeology, serving as a key team member on a number of projects in Western Sydney, the Illawarra, and the Hunter Region. James has skills in Aboriginal consultation, background research, predictive modelling, archaeological surveys and test excavation. This experience has expanded his skills in archaeological research and report writing, where he has been the primary author of a number of reports.		Project roles • Project management • Aboriginal consultation • Archaeological survey • Preparation of the report • Development of recommendations.
Nicole Castle	BA (Hons) Archaeology / BCom	5 years experience
Nicole Castle is a Consultant Archaeologist with five years archaeological experience and has conducted numerous heritage projects across New South Wales, particularly within the Cumberland Plain in Sydney, central NSW and the Illawarra. Nicole is experienced in desktop assessments, archaeological field surveys, test and open area salvage excavations, archaeological monitoring, and recording and analysis of cultural material. Her skills also include cultural heritage assessment reports, due diligence assessments, AHIP applications, archaeological reports and preparation of AHIMS site cards. Nicole has skills in project management, Aboriginal stakeholder consultation and client liaison.		Project roles • Project management • Aboriginal consultation • Technical review.
Rebecca Morris	BA (Hons)	1 year experience
Rebecca is a heritage research assistant with experience in archaeological field surveys, excavations, and the recording and analysis of cultural material both within Australia and internationally. She also has skills in lithic analysis and project, administrative and client liaison experience. Most recently she has been involved in conducting survey and test excavation in Western Sydney, Goulburn and Bookham.		Project roles • Background review • Archaeological survey • Preparation of the report.

Shannon Smith	BA, Grad Dip Arch	5 years experience
Shannon Smith is a field archaeologist with five years archaeological consulting experience and has conducted over 70 heritage projects across South Australia and Western Australia. She is experienced in all aspects of heritage consulting and has extensive experience in archaeological surveys and excavations, reporting, permit application, grant applications and analysis of cultural material. Shannon specialises in Aboriginal archaeology, with particular research interests in open air-artefacts scatters and shell middens. Shannon has primarily undertaken projects in the Pilbara region of Western Australia and has operated as the heritage consultant within large multidisciplinary teams tasked with managing heritage values. Shannon is a diligent and highly experience heritage consultant with extensive experience in project management. During her career she has worked in collaboration with a number Aboriginal Corporations, Aboriginal stakeholders, development proponents, mining companies and government regulators.		Project roles • Background review • Preparation of the report.
Lauren Harley	Dip GIS	6 years experience
Lauren is a GIS Operator with the Biosis Sydney Resource Group. Lauren has over six years experience in the field of GIS and has worked on a diverse range of projects within both the private and public sectors. Prior to joining Biosis in 2015, Lauren worked within local government as a GIS Officer in the Land and Property Services Branch at Hornsby Council. In this role, Lauren was responsible for maintaining Council's GIS and Property Management Systems. Lauren also provided technical and expert advice for a wide range of land and property information matters and trained staff in the use of GIS and related systems. Major projects undertaken at Council included the development and compilation of metadata for all of Council's GIS datasets and an organisation-wide GIS file audit and introduction of GIS best practice procedures for staff. Since joining Biosis, Lauren's experience with the preparation and production of high quality maps and plans and her proficiency across a wide range of technical skills including georeferencing, data conversion, data extracts, digitising, spatial analysis and data management has been demonstrated.		Project roles • GIS mapping.

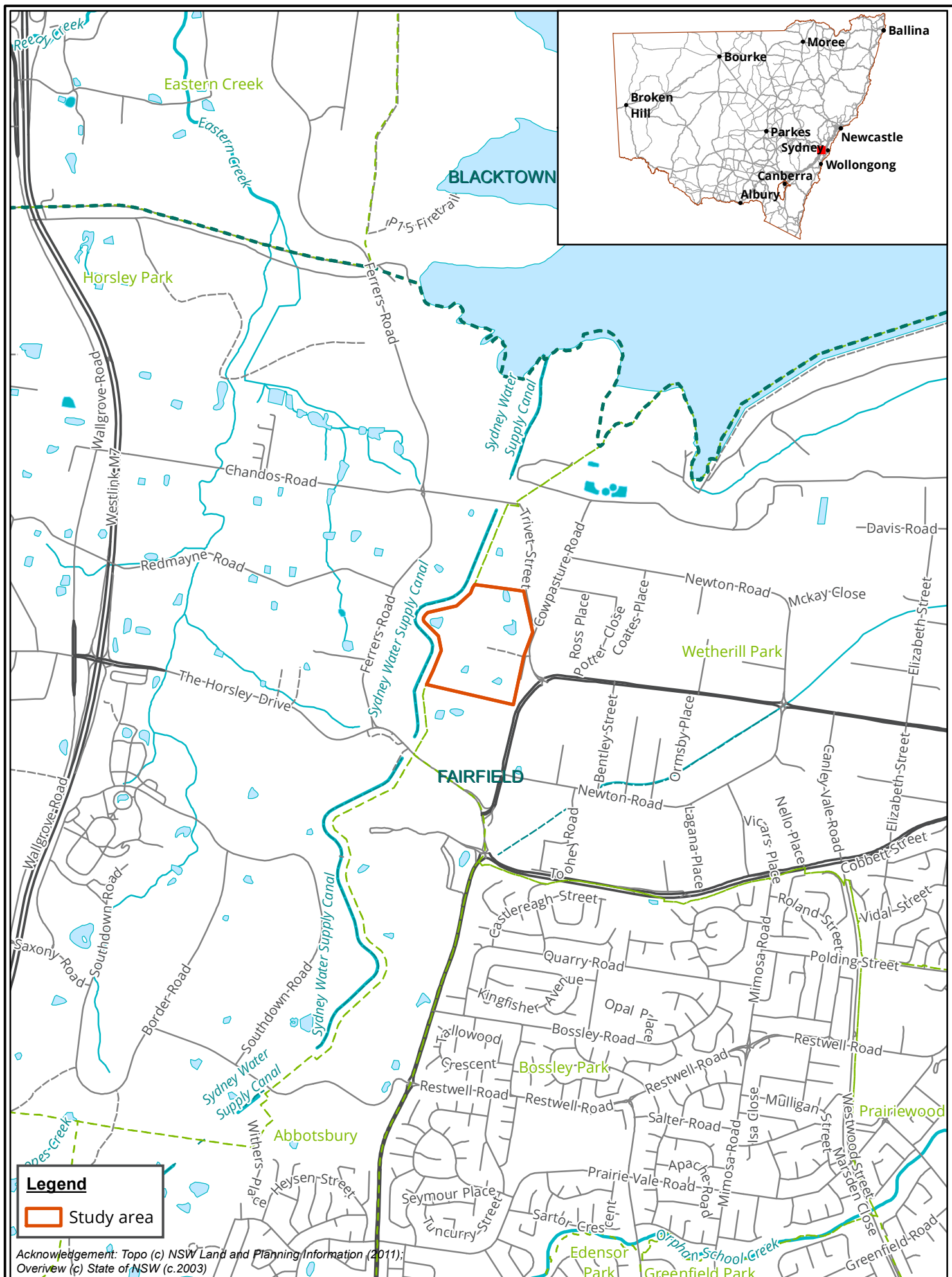
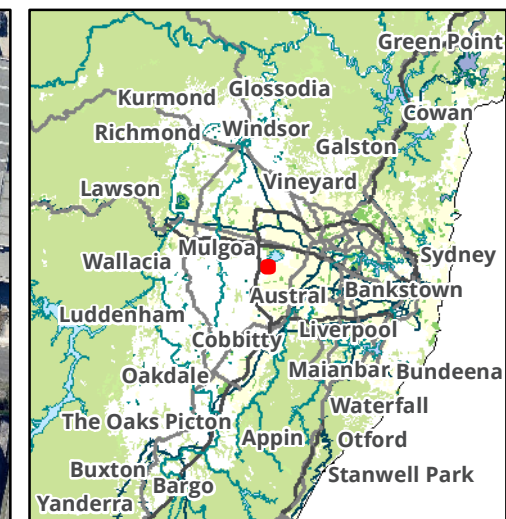


Figure 1: Location of the study area



Legend

Study area

Figure 2: Aerial of the study area

0 30 60 90 120 150
Metres

Scale: 1:3,000 @ A3
Coordinate System: GDA 1994 MGA Zone 56



Ballarat, Brisbane, Canberra, Melbourne,
Newcastle, Sydney, Wangaratta & Wollongong

Matter: [Matter No.]
Date: 05 August 2016,
Checked by: [Cons.], Drawn by: [GIS], Last edited by: [harley]
Location: P:\22700s\22726\Mapping\22726 AR_F2_StudyArea

2. Development proposal

WSPT is planning to develop an approximately 19.8 hectare portion of land across seven lots. These lots together total 24.8 hectares at 5 to 15 Trivett Street, and 130 to 174 Cowpasture Road Wetherill Park, NSW, and the 19.8 hectare planned development is shown in Figure 3. The current ACHA has been developed to assess the entirety of the 24.8 hectare area.

This assessment is being undertaken in advance of the proposed:

- Development of the study area for general industrial, light industrial, warehouse and distribution uses.
- Stage 1 Development Application (DA) including subdivision, bulk earthworks, estate landscaping and infrastructure works including services and road works.

Figure 3 Proposed development (provided by WSPT June 2016).



WSPT



project

HORSLEY DRIVE BUSINESS PARK STAGE 2
COWPASTURE ROAD, WETHERILL PARK, NSW



CONCEPTARCHITECTURE P/L
CONCEPTARCHITECTURE P/L
10/10 WETHERILL PARK, NSW
2150
P 02 9554 1234 F 02 9554 1235

title
**INDICATIVE
LOT BOUNDARY PLAN**

date
28-04-2016
drawing no.
WS-HW-MP-004

scale
1:1500 @ A1

→ A

3. Desktop assessment

A desktop assessment has been undertaken to review existing archaeological studies for the study area and the surrounding western Sydney region. This information has synthesised to develop an Aboriginal site prediction model for the study area and identify known Aboriginal sites and/or places recorded in the study area. This Desktop Assessment has been prepared in accordance with requirements 1 to 4 of the code.

3.1 Landscape context

It is important to consider the local environment of the study area in any heritage assessment. The local environmental characteristics can influence human occupation and associated land use and consequently the distribution and character of cultural material. Environmental characteristics and geomorphological processes can affect the preservation of cultural heritage materials to varying degrees or even destroy them completely. Lastly landscape features can contribute to the cultural significance that places can have for people.

3.1.1 Geology, topography and hydrology

The study area is located within Cumberland Lowlands physiographic region that consists of low lying, gently undulating plains and low hills atop Wianamatta Group shales and sandstones with a dense drainage net of predominantly northward flowing channels (Bannerman and Hazelton 1990, p. 2) (Figure 4). The Wianamatta geological group is Middle Triassic in age (245-235 mya) and it overlays Mittagong Formation and Hawkesbury Sandstone. It is divided into two formations, the Ashfield Shale and the overlying Bringelly Shale. These are separated by Michinbury Sandstone. The Ashfield Shale consists of black to dark grey siltstone and laminite and is located on ridgetops. The upper part of Wianamatta Group is Bringelly Shale that occurs extensively throughout the Cumberland Lowlands. It consists of a shale (claystone and siltstone), carbonaceous claystone, laminate and fine to medium-grained lithic sandstone (Bannerman and Hazelton 1990, p. 3).

The topography of the study area exhibits the low hills common to the Wianamatta Group, with low crests present along the western edge and in the north eastern corner of the study area. The majority of the study area comprises of a gentle slope, running from the Upper Canal to the immediate west of the study area to the east, where the study area borders Cowpasture Road. A small flat is present in the centre of the study area (Figure 5).

Stream order is recognised as a factor which helps the development of predictive modelling in Aboriginal archaeology in NSW. Predictive models which have been developed for the region have a tendency to favour permanent water courses as the locations of campsites as they would have been more likely to provide a stable source of water and by extension other resources which would have been used by Aboriginal groups.

The stream order system used for this assessment was originally developed by Strahler (1952). It functions by adding two streams of equal order at their confluence to form a higher order stream, as shown in Plate 1. As stream order increases, so does the likelihood that the stream would be a perennial source of water.

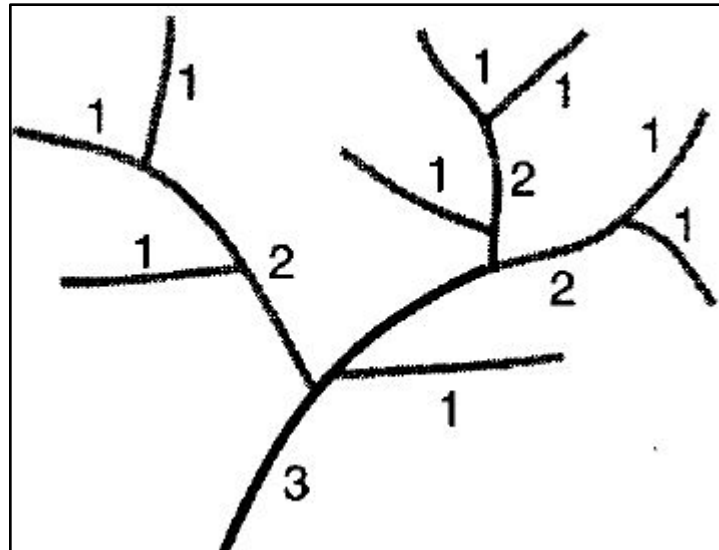


Plate 1 Diagram showing Strahler stream order (Ritter et al, 1995, p. 151)

There are no permanent watercourses within the study area. Approximately 1.3 kilometres east of the study area lies Eastern Creek, one of the major drainage channels on the Cumberland Plain. At its closest to the study area according to the Strahler stream order and topographic maps the creek is a non perennial, second order stream. Approximately 2.2 kilometres to the north-west of the study area, Eastern Creek becomes a permanent water source, before ultimately draining into the Hawkesbury River 26 kilometres to the north north-west. An unnamed, non-perennial first order tributary of Eastern Creek runs approximately 400 metres west of the study area and two ephemeral watercourses run through the northern and southern extents of the study area. There are also a number of other low order streams in the wider region, the closest being Prospect Creek, 1.2 kilometres to the north east. The significant distance of the study area from permanent water sources would have severely detracted from its appeal as a long term camp site to Aboriginal groups as reliable water resources would not have been available.

Approximately 1.2 kilometres to the north of the study area, Prospect Reservoir was built on Prospect Creek as part of the Upper Nepean Scheme after concerns were expressed about the water supply to Sydney in 1867. A Royal Commission was appointed to examine various schemes and in 1869 it recommended the adoption of the Nepean scheme. The sources of the Upper Nepean Scheme are the Nepean, Avon, Cordeaux and Cataract Rivers. The water is diverted at Pheasants Nest weir and then enters a number of channels to the Prospect Reservoir.

The Upper Canal of the Sydney Water Supply lies on a ridge immediately west of the study area, but as it is an artificial watercourse was not considered a permanent water resource for the purpose of this assessment.

3.1.2 Soil landscapes

The majority of the study area belongs to the Luddenham Soil Landscape (Figure 6). It is characterised as an erosional soil landscape (Bannerman and Hazelton 1990, p. 63-66). The topography of this soil landscape is generally of undulating to rolling low hills atop Wianamatta and Bringelly Shale with local relief of 50-80 metres. Landform elements present within this soil landscape consist of moderately inclined slopes, generally with an incline between 10-15%, and narrow ridges and hillcrests with convex upper slopes grading into narrow concave drainage lines. The soil deposits are often shallow to moderately deep podzols. Typical Luddenham soil characteristics are detailed in Table 2 below. Upper topsoil - lu1 is occasionally absent on crests and rare on hill slopes, where lu2 usually occurs. Boundaries between the soil materials are usually clear but occasionally gradual. Due to their high risks of erosion, erosional soil landscapes have the potential to contain archaeological deposits in an open context, such as stone artefacts derived from occupation sites,

with it being noted that there are also occasional deep patches in these soils. Other occupation evidence may include scarred trees where remnant vegetation survives. However, soil movement and high impact of extensive land clearing (usually associated with pastoral and housing development) during more recent times often results in poor preservation of archaeological material. Soil landscapes associated with Luddenham include the Picton Soil Landscape, which occurs in small areas on steeper slopes, and the Blacktown Soil Landscape.

Table 2 Luddenham soil landscape characteristics (Bannerman and Hazelton 1990, p. 63-66).

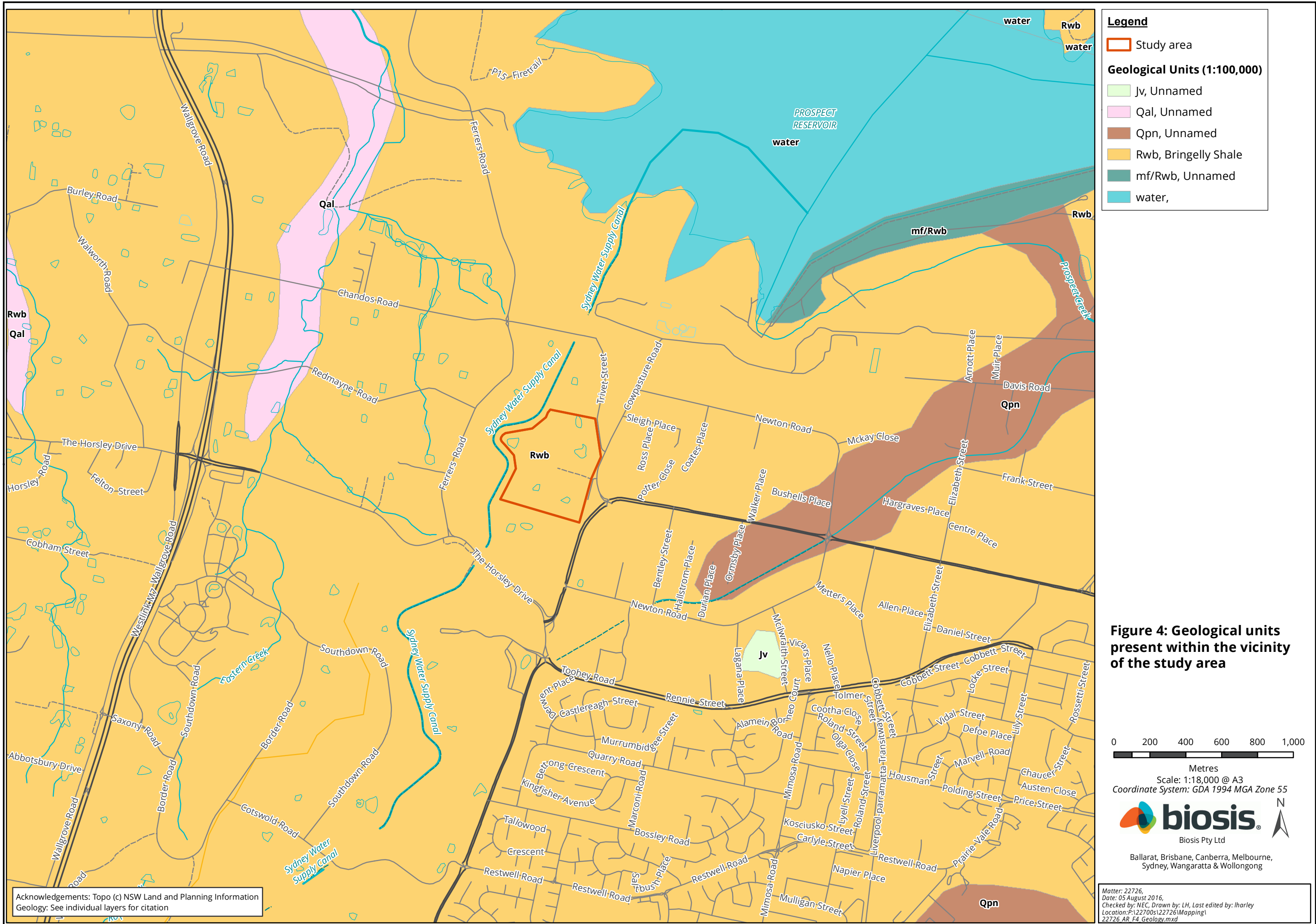
Soil material	Description
Luddenham 1 (lu1)	Friable to hard setting when compacted and dry. Dark brown silt loam to silty clay loam with porous fabric; occurs as topsoil (A1 horizon) to 100mm depth; inclusions consist of small subrounded to rounded shale fragments and occasional charcoal fragments. Roots are common to 10 centimetres.
Luddenham 2 (lu2)	Hardsetting brown clay loam to fine sandy clay loam that occurs as lower topsoil (A2 horizon) for up to 400mm, rarely overlain by lu1; inclusions consist of shale rock and charcoal fragments.
Luddenham 3 (lu3)	Strongly pedal, whole coloured reddish brown medium clay that occurs as subsoil (B horizon) for 500mm; inclusions of shale fragments are common.
Luddenham 4 (lu4)	Strongly pedal, mottled grey plastic clay that occurs as a subsoil. Colour varies from light grey to light reddish grey. Red and yellow mottles and shale rock fragments and gravels are common.
Luddenham 5 (lu5)	Apedal massive brown sandy to light clay subsoil (B horizon). Dense, with colour varying from dull reddish brown to dull yellowish brown. Charcoal inclusions do not occur but roots are common and up to 10% of the volume may be small (2-6mm) angular, weathered shale fragments. Usually overlies deeply weathering shale bedrock

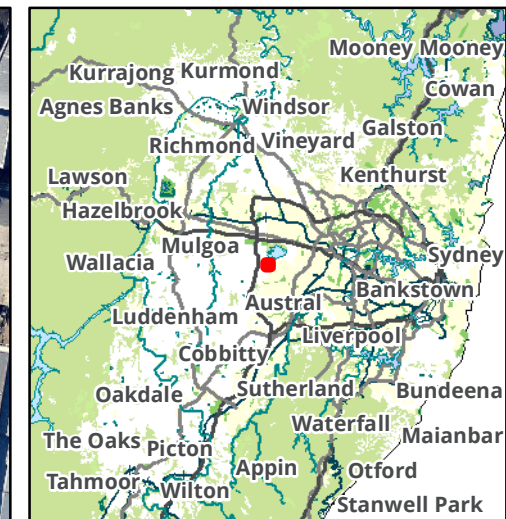
A narrow section of the Blacktown Soil Landscape is present along the western edge of the study area bordering Cowpasture Road (Figure 6). It is characterised as a residual soil landscape (Bannerman and Hazelton 1990: 28-31). The topography of this soil landscape is one of gently undulating rises on Wianamatta Shale with local relief between 10 and 30 metres. Landform elements present within this soil landscape consist of gentle slopes generally with an incline of less than 5% but may pitch up to 10%, crests and ridges that are broad and rounded with convex upper slopes grading into concave lower slopes, broad drainage depressions and valley flats. Outcrops of shale do not occur naturally on the surface, but may occur where soils have been removed. The soil deposits are often shallow to moderately deep podzols. Typical Blacktown soil characteristics are detailed in Table 3 below. Upper topsoil - bt1 is occasionally absent on crests and hill slopes, but boundaries between the soil materials are usually clear. Due to their age and slow accumulation residual soil landscapes have reasonable potential to contain archaeological deposits in an open context, such as stone artefacts derived from occupation sites. Other occupation evidence may include scarred trees where remnant vegetation survives. However, slow accumulation and high impact of extensive land clearing (usually associated with pastoral and housing development) during more recent times often results in poor preservation of archaeological material.

Table 3 Blacktown soil landscape characteristics (Bannerman and Hazelton 1990, p. 28-31).

Soil material	Description
Blacktown 1 (bt1)	Friable to occasionally hardsetting, brownish black loam to clay loam with porous fabric;

Soil material	Description
	occurs as topsoil (A horizon) to 300mm depth; inclusions consist of rounded, iron indurated gravel-sized shale fragments and charcoal.
Blacktown 2 (bt2)	Hardsetting brown clay loam to silty clay loam that occurs as lower topsoil (A2 horizon) for 100-200mm overlain by bt1; inclusions consist of platy ironstone gravel shale fragments.
Blacktown 3 (bt3)	Strongly pedal, mottled brown light to medium clay that occurs as subsoil (B horizon) for 200-1000mm; inclusions consist of fine to coarse gravel shale fragments often occurring in stratified bands.
Blacktown 4 (bt4)	Plastic, light grey silty clay to heavy clay that occurs as deep subsoil above shale bedrock (B3 or C horizon); red, yellow or grey mottles are common; inclusions are strongly weathered ironstone concretions and rock fragments.





Legend

Study area

Landforms

Crest

Disturbed Terrain

Flat

Gentle Slope

Open depression

Figure 5: Landforms present within the vicinity of the study area

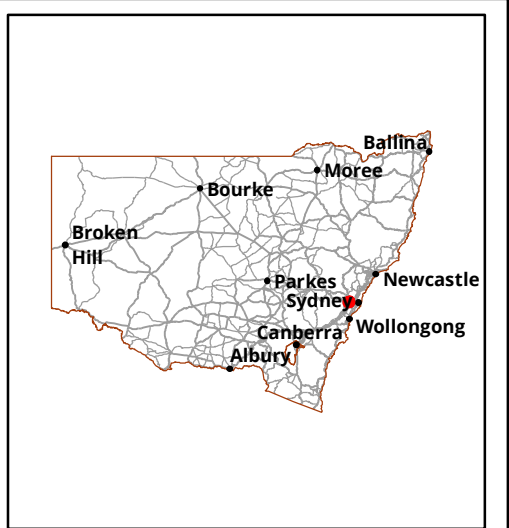
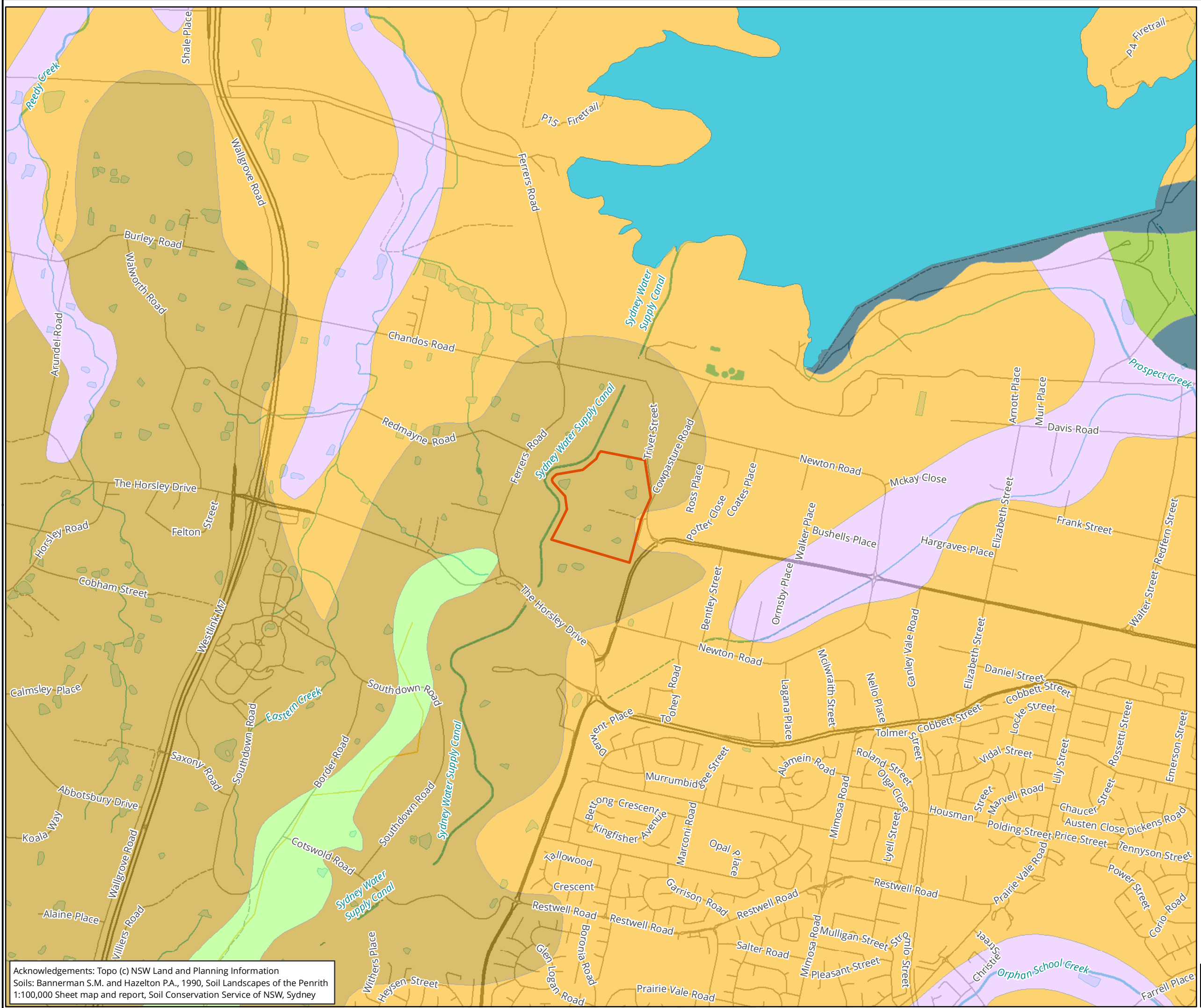
0 20 40 60 80 100
Metres

Scale: 1:2,567 @ A3
Coordinate System: GDA 1994 MGA Zone 56



Ballarat, Brisbane, Canberra, Melbourne, Newcastle, Sydney, Wangaratta & Wollongong

Matter: 22726
Date: 02 September 2016
Checked by: RAM, Drawn by: LH, Last edited by: lharley
Location: P:\22700s\22726\Mapping\22726_AR_F5_Landforms



Legend

Study area

Soil landscape units (1:100,000)

- BLACKTOWN
- DISTURBED TERRAIN
- LUDDENHAM
- PICTON
- SOUTH CREEK
- VOLCANIC
- WATER

Figure 6: Soil landscapes present within the vicinity of the study area

0 200 400 600 800 1,000
Metres

Scale: 1:20,000 @ A3
Coordinate System: GDA 1994 MGA Zone 55

biosis.
Biosis Pty Ltd

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Acknowledgements: Topo (c) NSW Land and Planning Information
Soils: Bannerman S.M. and Hazelton P.A., 1990, Soil Landscapes of the Penrith 1:100,000 Sheet map and report, Soil Conservation Service of NSW, Sydney

Matter: 22726,
Date: 15 August 2016,
Checked by: JAC, Drawn by: LH, Last edited by: lharley
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3.1.3 Landscape resources

While the diverse natural environment would have provided vast and plentiful floral and faunal resources and the temperate climate would have made the area suitable for year-round occupation, the distance of the study area from permanent water sources would have detracted from its appeal as a long term occupation site.

Although extensively cleared today, the Luddenham soil landscape supported wet sclerophyll forest; predominantly species of eucalypt, including Spotted Gum and Grey Box. Broad and Narrow-leaved Ironbarks, Forest Red Gum and Woollybutt are also occasionally present (Bannerman & Hazelton 1990, p. 64).

Many flora species would have been accessible as resources for the Indigenous inhabitants of the area. Vegetation communities of the greater Sydney area have over 200 species with edible parts (Attenbrow 2002). A variety of plant species were also useful for manufacturing tools. Wood from trees was used to manufacture canoe poles, weapons, woomeras, boomerangs and for use in fire. Resins from trees and grasses were used as a fixative in tool making. Bark and fibres were used for carrying vessels, canoes and decorations. Fibres were used to make ropes and nets for trapping fish and birds. In addition, many plants provided sources of both food and medicine. Food, tools, shelter and ceremonial items were derived from floral resources, with the locations of many campsites predicated on the seasonal availability of resources.

These vegetation communities supported a range of faunal resources that would have been utilised by Aboriginal peoples. A variety of land mammals would have been available to the Indigenous inhabitants of the study area. Kangaroo, wallaby, possum, echidna, bandicoots and other small mammals would have provided abundant food resources. Most Australian land mammals are non-migratory and would therefore have been available all year round (Attenbrow 2002). Birds, lizards, freshwater fish and shellfish would also have been available resources in or nearby the study area. Terrestrial and avian resources were not only used for food, but also provided a significant contribution to the social and ceremonial aspects of Aboriginal life.

3.1.4 Land use history

The study area forms a part of a 2,000 acre grant originally alienated in 1805 as a grant to George Johnston by Governor Phillip Gidley King, ostensibly as a gift for his part in stopping the 1804 insurrection at Vinegar Hill (Yarwood 1967). Johnston named the grant 'King's Gift' (Plate 2).

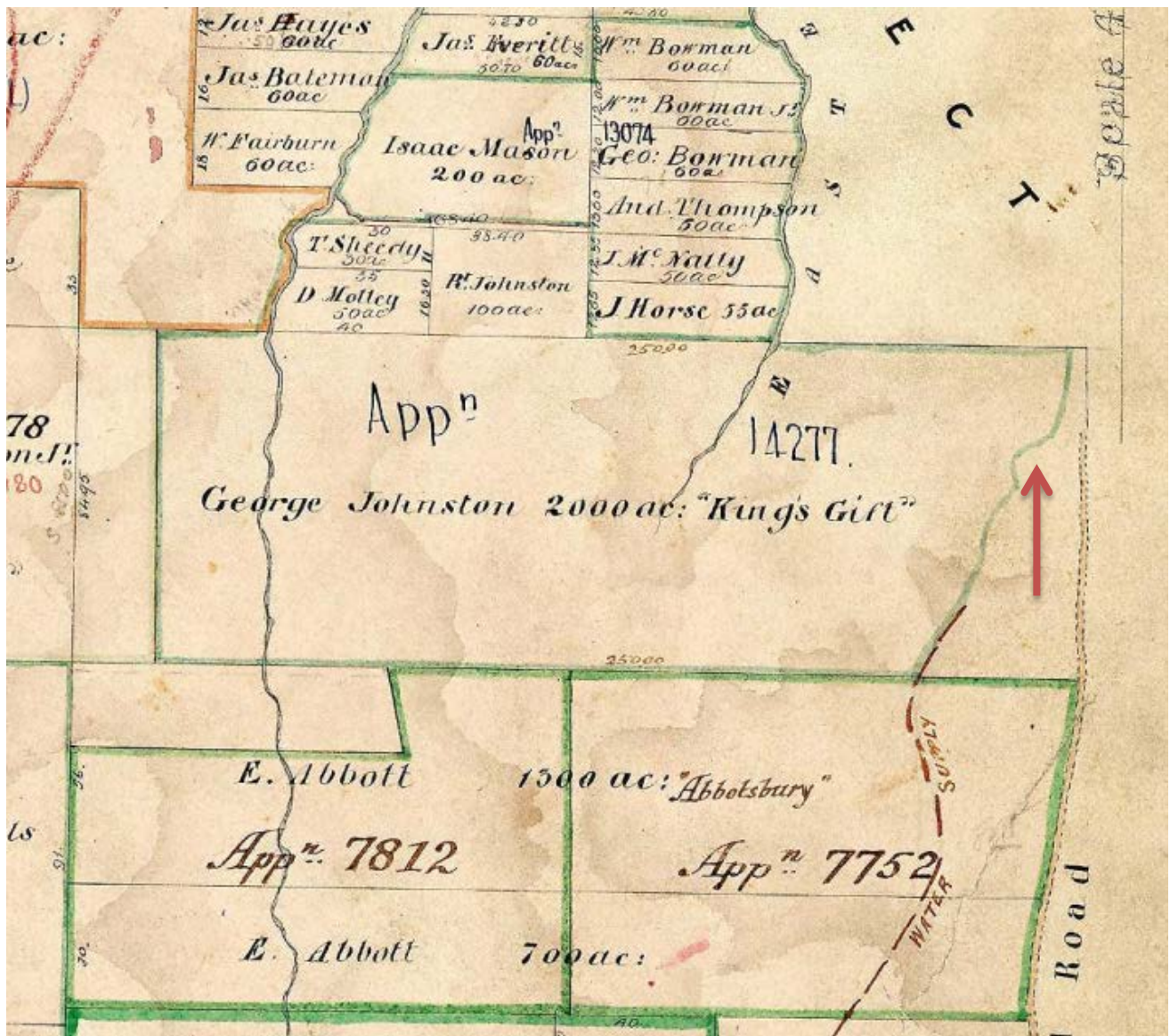


Plate 2 Excerpt from early parish map showing the grant of King's Gift, arrow indicates the location of the study area (NSW LPI 2016).

George Johnston was a soldier and farmer, born in 1764 in Annandale, Scotland. He secured a position as second lieutenant in the 45th company of marines in 1776, and served throughout England, France, and the East Indies. He sailed to Australia as part of a marine detachment to the First Fleet, and was reported to be the first man ashore when the fleet arrived at Port Jackson (Yarwood 1967). Johnston also played a pivotal role in the removal of William Bligh as Governor in 1808, and was court martialled for his role in this in 1811. Johnston had three sons and four daughters, and died in Sydney in 1823.

The property then passed to Johnston's daughter, Blanche, who married in 1829 to Captain Weston of the East India Company's Bengal Army. Shortly after being married, Weston took his wife to India for two years, and on their return in 1831, they moved to the King's Gift property, where they lived in a marquee until the house was completed in 1834. Weston renamed the property 'Horsley', after his birthplace in Surrey, England. The area later became known as 'Horsley Park' (Davidson 2003).

Captain Weston died in 1876 and Blanche in 1904, having lived at Horsley until the end of her life. The estate was advertised for sale following this in 1905, with the advertisement put in the *Sydney Morning Herald* stating that it was 2,045 acres in size. It is also noted that 'the Water Canal forms a boundary at one end', with a

portion of the land having been resumed in the 1870s for the development of the Upper Canal, which runs adjacent to the study area (Plate 3).

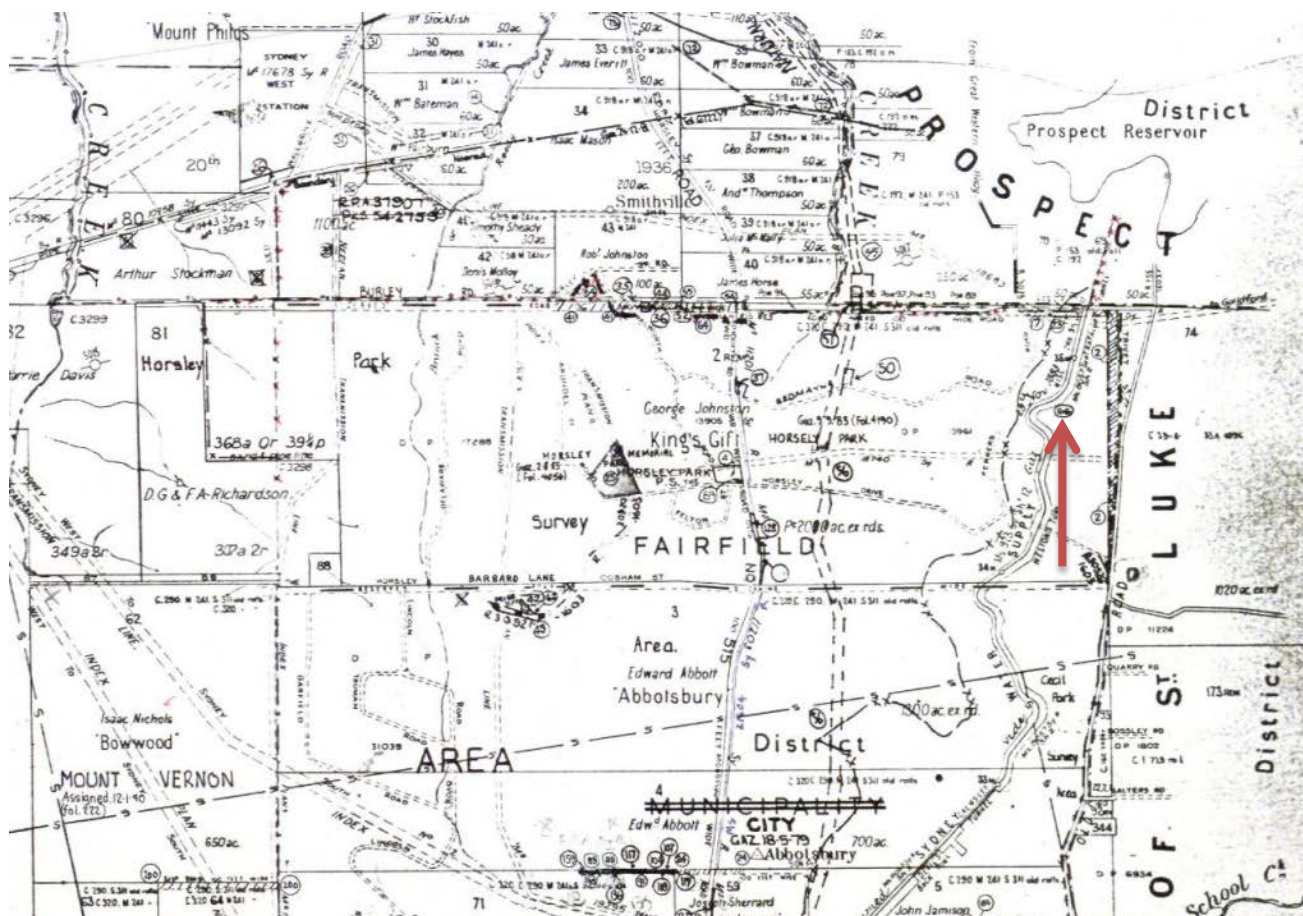


Plate 3 Excerpt from 1967 parish map showing the grant with the Upper Canal flowing through it, arrow indicates the location of the study area (NSW LPI 2016).

By the 1920s the estate was owned by Arthur Rickard and Co Ltd, who proceeded to subdivide the estate and progressively sell off allotments over the course of the 1920s. In 1925, the company reached an agreement with Fairfield Council to construct roads and approaches on the estate in advance of the sales which were advertised in 1926 and 1927. After this point, the study area appears to have been used primarily for grazing and market gardening, with some residential development present along its eastern boundary.

3.2 Previous archaeological work

The study area falls within the Sydney Basin. Aboriginal occupation in this region dates back well into the Pleistocene period (i.e. before 10,000 years ago). This evidence comes from radiocarbon dates retrieved from excavated sites such as Shaw's Creek K2 (14,700 years before present (BP)) (Attenbrow 2002, p. 18) and George & Charles Street Parramatta (circa (c.) 25,000-30,000 BP) (Jo MacDonald Cultural Heritage Management (JMCHM) 2005).

The archaeology of the Sydney Basin region has been well documented through a large number of academic and impact assessment investigations over the past 30 years (e.g. Kohen 1986, Haglund 1980, Smith 1989). This is particularly evident in the Cumberland Plain, largely as a result of archaeological studies related to rapid urban development across the area.

3.2.1 Regional overview

A number of Aboriginal cultural heritage investigations have been conducted for the Sydney region. Models for predicting the location and type of Aboriginal sites with a general applicability to the Cumberland Plain and thus relevant to the study area have also been formulated, some as a part of these investigations and others from cultural heritage investigations for relatively large developments (Table 4).

Table 4 Summary of previous archaeological work undertaken in the region.

Source	Description
Dallas (1988)	Dallas conducted a survey located on and around low lying flood prone land between Cosgroves and South Creeks. The survey identified 12 sites, all open camp sites. The predictive model for the study identified the potential for artefact sites, scarred trees, and grinding grooves to be present within the study area. The potential for subsurface deposits was identified for three of these sites, lying on higher, dry ground above South Creek.
Bickford (1981)	Anne Bickford was engaged by Lyle Marshall and Associates to undertake an archaeological and historical investigation of the Blacktown Native Institute. No new Aboriginal sites were located during the field survey, although a contact site was located on the north west side of the creek that runs through the property. This site consisted of flaked stone artefacts and cores, along with shards of earthenware pottery and pieces of convict brick. A scarred tree was also noted, although its Aboriginal origin was questioned.
JMCHM (2000)	JMCHM undertook a survey in advance of a proposed light industrial subdivision, within Erskine Park. The predictive modelling undertaken primarily identified the potential for sites to be present in association with water sources, with the size and density increasing with stream order. It was also noted that creek junctions provide a focus for activity. Other locations such as ridgetops between drainage lines may provide evidence of occupation (JMCHM 2000, p. 19). The area surveyed contained first and second order creeks, and so it was predicted that background scatters of artefacts may be associated with first order creeks, and that higher density sites may be identified in association with the second order creek. The survey identified nine sites, including six artefact scatters and three isolated finds. Six of the identified sites were located on lower hillslopes, two on creek bank/lower hillslopes, and one on a creek bank/floodplain. The majority of sites were identified between 50 and 200 metres from water sources. Subsequently, sensitivity mapping was developed and it was recommended that subsurface investigation take place in areas of higher sensitivity within the study area.
Dominic Steele Consulting Archaeology (DSCA 2001)	DSCA carried out an assessment and developed a research design for an archaeological investigation in the same area studied by Dallas (1988). Steele noted the presence of silcrete cobbles (a possible source of raw material for stone artefact production) in the area. The predictive modelling developed of the site by Steele is similar to what is presented in DSCA (2003). It was noted that previous finds on the site were well dispersed, with disturbance having been caused by water and flood action, as well as the presence of stock in the study area. The possibility existed that further isolated artefactual material was present along Cosgroves Creek, but given the degree of disturbance, it was unlikely that such material would be substantial, significant or undisturbed (DSCA 2001, p. 29).

Source	Description
Navin Officer (2005a)	Navin Officer was engaged by Abigroup Leighton Joint Venture to complete an Aboriginal cultural monitoring and salvage excavation program prior to the proposed widening of an existing open drain under Rooty Hill Road North, within the grounds of the Blacktown Native Institute at Plumpton. Six trenches were excavated, covering an area of 30 metres squared. No Aboriginal stone artefacts were recovered during the excavation, and the site was determined to be quite disturbed.
Navin Officer (2005b)	Navin Officer conducted machine testing at the CSR lands, Erskine Park. A total of 256 test pits were excavated, with 285 artefacts being identified across 88 of these pits. It is noted in JMCHM (2008, p. 14) that only a sample of the excavated deposit was sieved, and that this may be a contributing factor to the relatively low number of artefacts identified at the site relative to other excavations in the area. The assemblage was primarily comprised of silcrete and silicified tuff, making up about 81% of the total assemblage, and contained a range of artefact types, including microblades, bondi points, and backed artefacts. Based on the results of this testing, Navin Officer characterised the site as having been used as a transient camp, or for peripheral activities in relation to a larger camping area, and stated that it had been subject to low intensity occupation (Navin Officer 2005, p. ii).
Stedinger Associates (2006)	Stedinger Associates (2006) undertook a survey for Aboriginal assessment on behalf of EDAW Australia Pty Ltd, at Acacia Gardens, Blacktown, prior to the proposed development of the area as an open recreational space. One isolated artefact and one area of potential archaeological deposit were identified during the survey.
Navin Officer (2007)	Navin Officer undertook a Cultural Heritage Impact Assessment for the Replacement Flows Project. The project assessed the impact of a water treatment plant, a storage pond, and associated pipelines in St Marys, Penrith and Quakers Hill. The project identified seven previously unrecorded Aboriginal sites and four areas of potential archaeological deposit.
JMCHM (2008)	JMCHM undertook salvage excavations at the proposed light industrial subdivision, within Erskine Park. The salvage excavations retrieved a total of 8,867 lithics from 298 square metres, indicating a density of 29.8 artefacts per square metre. It was identified that the pattern of artefact distribution within site was typical for the Cumberland Plain and was likely higher due to the presence of second and third order streams (which indicates a permanent or semi-permanent water source). Analysis of the artefacts conducted shows that the dominant artefact types recovered from excavations were flake fragments/flaked piece debitage followed by platform debitage. It is notable that there are a large number of cores and other retouched and backed artefacts. It was concluded that the site patterning in the area was typical of the Cumberland Plain, however artefact density was influenced by a number of landscape and resource features in the area, with it being noted that artefact density decreases with stream order and use of silcrete as a raw material decreases with increasing distance from silcrete sources. As a whole, the site displayed a higher than average artefact density, likely due to the presence of nearby sources of silcrete (JMCHM 2008, p. i).
Brown (2008)	Total Earth Care was commissioned to complete an Aboriginal cultural heritage and archaeological assessment of a proposed power line between Glendenning and Quakers Hill. The entire area was designated a potential archaeological deposit, and the Eastern Creek precinct (along which the power line was to run) was designated an archaeological landscape.

Source	Description
Biosis (2009a)	G and M Planning, on behalf of Holroyd City Council, commissioned Biosis to prepare the archaeological assessment. Holroyd City Council proposed to construct a new recreational shooting centre at 2 Hyland Road, Greystanes, and submitted a Development Application No. 2009/195/1 to Holroyd City Council. No features were located in the study area. The condition of the study area indicated that, where occupation of the study area has resulted in the creation of cultural material, then it would likely survive. The proposed development also has the potential to destroy relics relating to the early twentieth century use of the study area as part of a dairy farm (Biosis 2009).
Biosis (2009b)	Biosis was commissioned by Sydney Water to undertake a Aboriginal and historical cultural heritage assessment of the upgrade of Water Line 5, which passes through Blacktown, Marayong and Quakers Hill, NSW. During the assessment an isolated artefact site and a PAD were identified. It was recommended that an exclusion zone be created around the isolated artefact site and that further investigation be undertaken in the PAD if the proposed impact area changed.
Biosis (2010)	Biosis was commissioned by The NSW Roads & Traffic Authority to conduct sub-surface investigation of three Aboriginal sites as per the Aboriginal Heritage Impact Permit 1113179. RTA proposed to construct a link road between Erskine Park Road and Old Wallgrove Road, Erskine Park. Three Aboriginal sites were previously recorded in the study area and would have been impacted by the proposed works. A total of 113 test pits were excavated across the three sites in order to investigate any Aboriginal cultural heritage that might bear an impact during works. The results of these excavations have shown that all three sites RCIF1 (45-5-3843), EPLR1 (45-5-3842) and EP PAD1 (45-5-3842) contained sub-surface Aboriginal cultural material, although very few Aboriginal artefacts were located on the surface. All three sites showed evidence of ground disturbance casting doubt on the integrity of the archaeological deposit and the security of the spatial deposition of the artefacts.
Biosis (2011)	In June 2010 Biosis was commissioned by Perram & Partners, Planning and Environmental Consultants on behalf of TransGrid to undertake an Aboriginal archaeological and built heritage assessment as part of a Review of Environmental Factors. The study area consists of the lands within the suburbs of Guildford, Old Guildford, Chester Hill, Regents Park and Potts Hill (Western Sydney, NSW), located within the Holroyd, Auburn, Bankstown, Fairfield and Parramatta LGAs. No new Aboriginal sites were identified within the study area.
Biosis (2013)	Biosis was commissioned by AW Edwards Pty Ltd, on behalf of Penrith City Council to undertake a Due Diligence assessment of the Kurrambee School, Werrington NSW. The study area was situated on Water Street, Werrington which is located within Penrith LGA. Penrith City Council proposed to expand the current Kurrambee School site to the north west of the existing buildings, within Lot 11 DP 802940. During the assessment one isolated artefact, a broken mudstone flake was identified. The proposed works were located in an area that would normally be considered to be of high potential for Aboriginal sites, in particular isolated artefact finds and artefact scatters.

Source	Description
Biosis (2015)	Biosis was commissioned by WSPT to produce an Archaeological Management Plan in order to meet the Minister of Planning and Infrastructures development consent requirements for the State Significant Development at 5175 Eastern Creek Business Hub development application, Rooty Hill Road, City of Blacktown LGA, NSW. Kayandel Archaeological Services (2012) carried out a brief preliminary assessment of the study area in August 2009, identifying seven PADs. A subsequent recommendation was that a sub surface testing program should commence at PADs 2 to 7. Biosis also undertook a site visit of the study area on the 2 December 2015. The aim of the site visit was to investigate the areas highlighted as PADs and assess the disturbance. Biosis has consequently amended the previous disturbance mapping and determined no further archaeological work is required.
Biosis (2016)	Biosis was commissioned by City Plan Services on behalf of Altis Property Partners to undertake Aboriginal Cultural Heritage consultancy services for the proposed rezoning of the Mamre West Precinct, as well as an area subject to a State Significant Development at Mamre Road, Orchard Hills NSW. Areas of high, moderate and low archaeological potential were identified within the entire study area. Test excavations commenced within an area that was mapped as having high archaeological potential after the survey, located within the slightly elevated landform covering eastern part of the SSD Application Area. All of the four tested areas were locally elevated landforms within an alluvial plain. Five Aboriginal sites have been identified within the study area. This includes one Aboriginal site identified within the study area during the survey (MWP AS) and four artefact scatters (MWP AD1, MWP AD2, MWP AD3, and MWP AD4) identified during the test excavations.

3.2.2 Local overview

A number of Aboriginal cultural heritage investigations have been conducted within an approximately 10 kilometre buffer of the study area. These investigations are briefly summarised below. Most of these investigations were development driven and include surface and sub-surface investigations.

Dallas (1982) conducted an archaeological survey of Quakers Hill, Riverstone and Schofields was commissioned by the Land Commission of NSW, Blacktown City Council and the Department of Environment and Planning to be included in a Local Environmental Study. A total of seven sites and four isolated artefacts were located during the survey. The sites consisted of surface artefact scatters and a number of potential archaeological deposits.

The most concentrated material was located along the edge and over an Eastern Creek tributary. The artefacts were predominately flakes and flaked pieces made of fine grained red and pink silcrete. Dallas concluded that the sites fell into two groups: open campsites associated with the small eastern tributaries of Eastern Creek; and stone tool manufacturing and campsites above and alongside Eastern Creek itself.

McDonald (1986) was commissioned by the Metropolitan Waste Disposal Authority to undertake an archaeological assessment of the proposed Regional Waste Disposal Depot at Schofields. The site of the proposed development was approximately 92 hectares between Townson Road, Eastern Creek and the Plumpton Ridge. This ridge is also known as Stringybark Ridge and is a known source of raw material for artefact production. The survey identified 12 potential archaeological deposits and eight isolated finds. Surface recording and subsurface testing was undertaken within the PADs. The results indicated that silcrete was the most predominant raw material noted (99.1%, 1781 artefacts). The majority of the artefacts recorded were debitage and unmodified flakes and flake pieces (93%, 1659 artefacts).

Smith (1989) undertook an archaeological survey for the proposed Prospect Water Channel 2, west of the Prospect Reservoir, which is north of the current survey area. A total of 4 artefact scatters and one isolated find were identified. Two of the sites were contact sites, with flaked stone and glass artefacts.

Crew (1989) was commissioned by NSW Department of Sport Recreation and Racing to undertake an archaeological survey for the Sydney International Grand Prix Circuit development at Eastern Creek, north-west of Prospect Reservoir and the current study area. In total 9 artefact scatters were identified including one contact site and 10 isolated finds.

Comber (1990a) was commissioned by the NSW Water Board to undertake an archaeological assessment of the proposed pipeline route for the Prospect Reservoir bypass. This assessment was a result of Comber's previous assessment that recorded four Aboriginal sites that would have been impacted by the proposed pipeline. The Water Board decided to reroute the pipeline to the north. A further archaeological survey was commissioned for the portion of the new pipeline route. The pipeline was subsequently moved during the assessment to reduce impacts on the Aboriginal sites.

Comber (1990b) was commissioned by the NSW Water Board to undertake an Aboriginal and historical assessment of the proposed development of a chlorination plant and pipeline facilities as part of the larger Prospect Reservoir bypass project. The chlorination plant was to be built at the southern section of the Prospect Reservoir Complex, immediately north of the current study area. During the assessment four stone artefact sites, three isolated artefacts and one scarred tree were located within the study area.

Comber (1991) was commissioned by the NSW Water board to undertake an Aboriginal and historical assessment of a proposed tunnel and associated shaft at the Prospect Reservoir, north of the current study area. A total of one artefact scatter and one isolated artefact were located during the survey. The artefact scatter consisted of four artefacts made from silcrete and located on the southern bank of a natural watercourse.

JMCHM (2002) was commissioned by Rose Consulting Group on behalf of Stockland Pty Ltd to undergo an archaeological assessment on the old CSIRO Ian Clunes Ross Research Laboratory, north east of the current study area. No new Aboriginal sites were identified as a result of the survey. However, three new PADs were identified. One previously recorded scarred tree was relocated.

Appleton Archaeological Surveys & Report Pty Ltd (2002) was engaged by R.W.Corkery & Co. Pty Ltd, on behalf of Austral brick Company Pty Ltd to undertake an archaeological survey for a Environmental Impact Statement for a proposed development at Horsley Park, Kemps Creek. The proposed development included a new extraction area for the brickworks.

The assessment identified two isolated artefacts, one on the eastern bank of Ropes Creek and the second east of a minor creek in the proposed Sump. A PAD was also identified by it was located in an areas were there was to be no impact from the proposed works. An AHIP was sought to relocate the artefacts located in the proposed Sump.

Haglund & Associates Pty Ltd (2007) were commissioned by The Roads and Traffic Authority of NSW to undertaken an archaeological assessment of the planned widening and upgrading of Horsley Park drive, south of the current study area. During the assessment six PADs were identified for further investigation. The heritage potential was assessed as particularly high in the western part, on either side of Eastern Creek. The aim of the test excavations were to ascertain the archaeological potential of the areas to be affected by the proposed development and to assess the character if significate of any subsurface cultural material. All six PADs tested contained Aboriginal cultural material (Table 5). The most dominant raw material recorded was silcrete, followed by silicified tuff and then quartz.

Table 5 Results of test excavations conducted by Haglund & Associates (2007).

Site	Number of test pits	Results
Site 1	8	47 artefacts
Site 2	8	191 artefacts
Site 3	7	19 artefacts
Site 4	27	47 artefacts and a backed clay feature
Site 5	12	2 artefacts
Site 6	4	1 artefact

Australian Museum Business Services (AMBS 2008) was commissioned by Parsons Brinckerhoff Australia Pty Ltd, on behalf of Alinta Asset Management Pty Ltd to undertake a preliminary Aboriginal and historic archaeological and cultural heritage assessment of the proposed pipeline route for the Rosehill Recycled Water Scheme between Fairfield and Camellia. The study identified areas of potential Aboriginal cultural heritage sensitivity that warranted further assessment. The pipeline route crossed parklands and creeklines, which have the potential to contain physical evidence of Aboriginal activity and occupation. AMBS argued that although some areas are likely to have been affected by landscaping and other modifications, they still have the potential to contain sites and objects of archaeological significance and areas of Aboriginal cultural significance.

Biosis (2014) undertook a Due Diligence assessment for Jemena Limited at the Horsley Park Meter Station. Jemena Limited proposed to upgrade to the existing natural gas facility at Horsley Park, NSW. The Horsley Park Meter Station is located at 194-202 Chandos Road, Horsley Park, on Lot 3 DP 1002746. No Aboriginal objects were located within the study area.

DSCA (2012) carried out an archaeological assessment including survey over an approximately 21.4 hectare area immediately to the south of the current study area, including the southernmost lot within the current study area. This was completed on behalf of the WSPT to meet the requirements of an Aboriginal and non-Aboriginal Archaeological and Cultural Heritage Assessment for the construction of the initial stage of the Horsely Drive Business Park. They identified "attractive" areas, such as permanent water sources, rises and raw material sources as likely locations for long duration visits, marked by more diverse assemblages. Areas which are not in close proximity to these resources are more likely to yield one off finds.

No aboriginal archaeological constraints were identified, with no Aboriginal sites located during the survey. This was attributed to the lack of major water or raw material resources, suggesting the area would have only been occupied sporadically, as well as poor visibility and widespread disturbance from agricultural impacts across the study area. The study area was assessed as having low scientific archaeological significance due to the level of disturbance and as a result it was stated "any finds that would be recovered would likely be largely unexceptional in nature with minimal research potential" (DSCA 2012, p. 96).

3.2.3 AHIMS site analyses

An extensive search of the AHIMS database (Client Service ID: 234312) identified 99 Aboriginal archaeological sites within a 10 by 10 kilometre search area, centred on the proposed study area. Site type frequencies can be seen in Table 6 and the AHIMS search results are provided in Appendix 1.

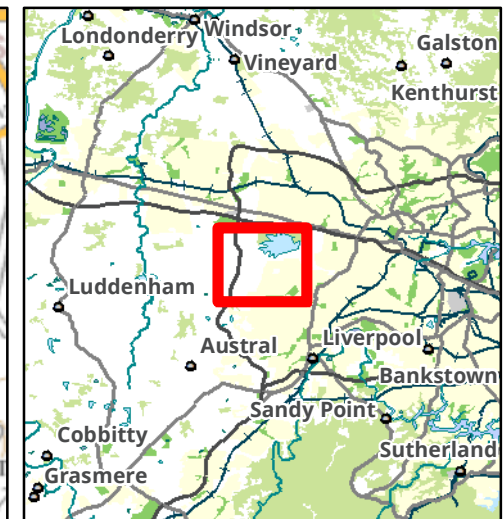
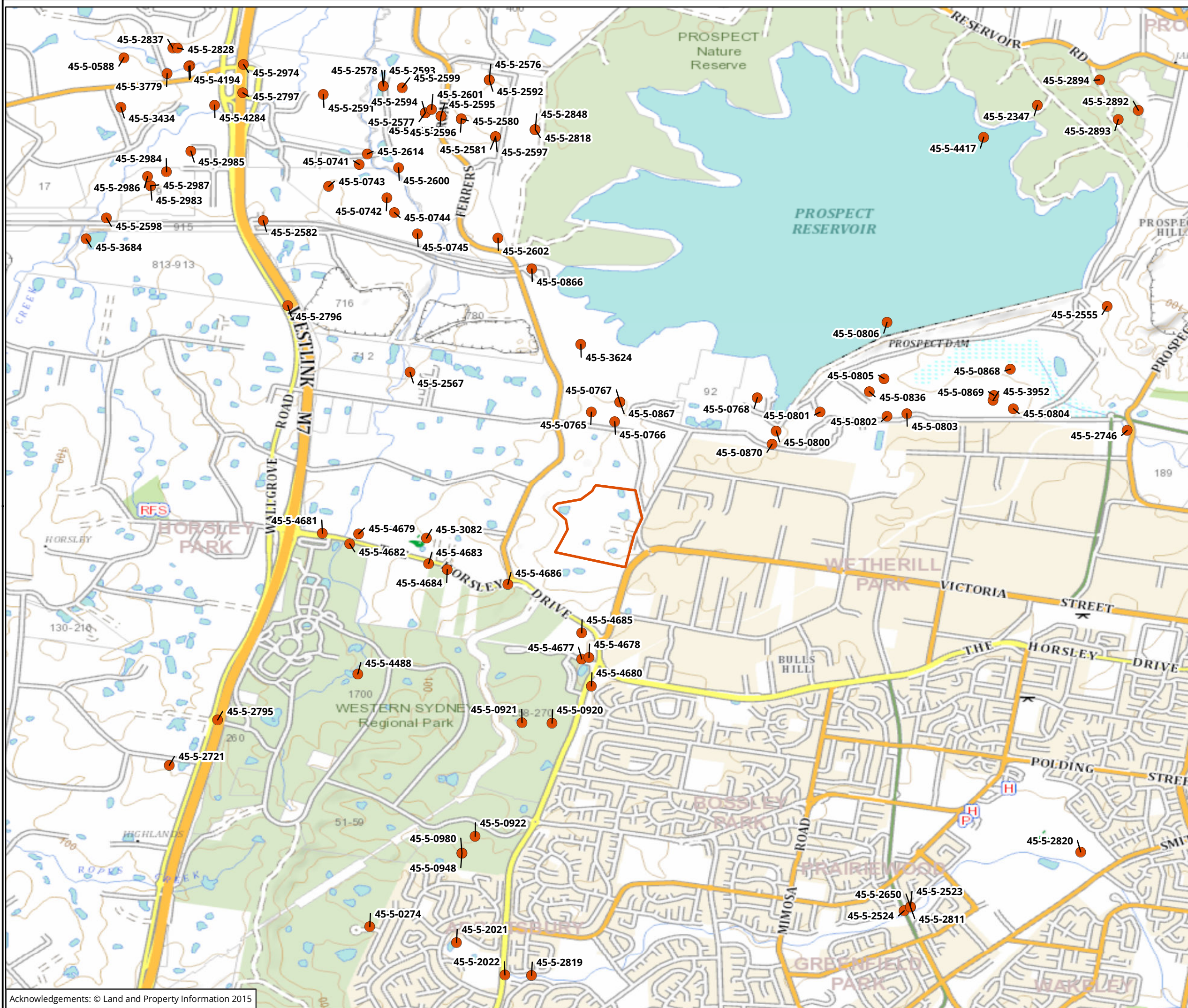
It should be noted that the AHIMS database reflects Aboriginal sites that have been officially recorded and included on the list. Large areas of NSW have not been subject to systematic, archaeological survey; hence AHIMS listings may reflect previous survey patterns and should not be considered a complete list of Aboriginal sites within a given area.

Table 6 AHIMS site frequencies in the vicinity of the study area.

Site type	Number of occurrences	Frequency (%)
Artefact	84	84.85
Artefact, Aboriginal ceremony and dreaming	2	2.02
Artefact, modified tree	1	1.01
Artefact, modified tree, PAD	1	1.01
Modified tree	3	3.03
PAD	8	8.08
Total	99	100

A simple analysis of site frequency shows that artefact sites are the most common site type identified in the vicinity of the study area, with artefacts being present at 89% of the sites identified in the AHIMS results. Areas of PAD have also been identified, being present at 9.1% of identified sites. Modified trees are present at 5% of identified sites. There are also two Aboriginal ceremony and dreaming sites in the local area, both around 600 metres north of the study area.

It is unlikely that grinding grooves, rock shelters, or rock art sites will be present within the study area due to it being located within the Bringelly shale geological units, which do not contain the sandstone outcropping required for these sites.



Legend

- Study area
- AHIMS Records

Figure 7: AHIMS sites within the vicinity of the study area

0 300 600 900 1,200 1,500

Metres

Scale: 1:27,000 @ A3
Coordinate System: GCS GDA 1994



Ballarat, Brisbane, Canberra, Melbourne, Sydney, Wangaratta & Wollongong

Matter:
Date: 16 August 2016,
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3.2.4 Predictive statements

Predictive statements have been formulated to broadly predict the type and character of Aboriginal cultural heritage sites likely to exist(ed) throughout the study area and where they are more likely to be located.

These statements are based on:

- Site distribution in relation to landscape descriptions within the study area.
- Consideration of site type, raw material types and site densities likely to be present within the study area.
- Findings of the ethnohistorical research on the potential for material traces to present within the study area.
- Potential Aboriginal use of natural resources present or once present within the study area.
- Consideration of the temporal and spatial relationships of sites within the study area and surrounding region.

Based on this information, predictive statements have been developed, indicating the site types most likely to be encountered during the survey across the current study area (Table 7). The definition of each site type is described firstly, followed by the predicted likelihood of this site type occurring within the study area.

Table 7 Aboriginal site prediction statements.

Site type	Site description	Potential
Flaked stone artefact scatters and isolated artefacts	Artefact scatter sites can range from high-density concentrations of flaked stone and ground stone artefacts to sparse, low-density 'background' scatters and isolated finds.	High: stone artefact sites have been previously recorded in the region across a wide range of landforms. They have the high potential to be present in undisturbed areas within the study area.
Potential Archaeological Deposits (PADs)	Potential sub surface deposits of cultural material.	High: PADs have been previously recorded in the region across a wide range of landforms in the local area. They have the potential to be present in undisturbed landforms.
Scarred trees	Trees with cultural modifications	Moderate: this is a common site type in the local area. the study area has been subject to extensive land clearance, but aerials show some stands of vegetation present within the study area, indicating the potential for this site type to be present.
Aboriginal ceremony and dreaming sites	Such sites are often intangible places and features and are identified through oral histories, ethnohistoric data, or aboriginal informants.	Low: Two Aboriginal ceremony and dreaming sites have been recorded around 600 metres to the north of the study area, and are associated with the Prospect Reservoir area. both of these sites were associated with artefact sites, indicating a high likelihood that these site types will be found together.

Site type	Site description	Potential
Post-contact sites	These are sites relating to the shared history of aboriginal and non-aboriginal people of an area and may include places such as missions, massacre sites, post-contact camp sites and buildings associated with post-contact aboriginal use.	Low: contact sites have been reported to the north of the study area, near Prospect Hill and Prospect Reservoir, however historical research has not uncovered any evidence or indication that these sites would be present within the study area.
Quarries	Raw stone material procurement sites.	Low: quarries have been recorded in the wider region, although not in close proximity to the study area.
Axe grinding grooves	Grooves created in stone platforms through ground stone tool manufacture.	Low: the geology of the study area lacks suitable horizontal sandstone rock outcrops for axe-grinding grooves. Therefore there is low potential for axe grinding grooves to occur in the study area.
Burials	Aboriginal burial sites.	Low: Aboriginal burial sites are generally situated within deep, soft sediments, caves or hollow trees. Areas of deep sandy deposits will have the potential for aboriginal burials. The soil profiles associated with the study area are not commonly associated with burials.
Rock shelters with art and / or deposit	Rock shelter sites include rock overhangs, shelters or caves, and generally occur on, or next to, moderate to steeply sloping ground characterised by cliff lines and escarpments. These naturally formed features may contain rock art, stone artefacts or midden deposits and may also be associated with grinding grooves.	Low: These sites will only occur where suitable sandstone exposures or overhangs possessing sufficient sheltered space exist, which are not present in the study area. This site type will only occur overlying sandstone geology. The underlying geological formation within the study area is Bringelly Shale, which indicates that there is a low potential for this site type to occur.
Aboriginal places	Aboriginal places may not contain any "archaeological" indicators of a site, but are nonetheless important to aboriginal people. They may be places of cultural, spiritual or historic significance. Often they are places tied to community history and may include natural features (such as swimming and fishing holes), places where aboriginal political events commenced or particular buildings.	Low: there are currently no recorded Aboriginal places near the study area.

Site type	Site description	Potential
Shell middens	Deposits of shells accumulated over either singular large resource gathering events or over longer periods of time.	Low: there is no record of any shell middens within or surrounding the study area, and no higher order water courses present within or around the study area.

4. Archaeological survey

An archaeological survey of the study area was conducted on foot on the 17 August, 2016 by James Cole (Archaeologist) and Rebecca Morris (Heritage Research Assistant) of Biosis and Steve Randall of the DLALC. The survey sampling strategy, methodology and a discussion of results are provided below.

4.1 Archaeological survey aims

The principle aims of the survey were to:

- Provide the LALC an opportunity to view the study area and to discuss previously identified Aboriginal object(s) and/or place(s) within close proximity to the study area.
- To undertake a systematic survey of the study area targeting areas with the potential for Aboriginal heritage.
- Identify and record Aboriginal archaeological sites visible on the ground surface.
- Identify and record areas of PAD.

4.2 Archaeological survey methodology

The survey methods were intended to assess and understand the landforms and to determine whether any archaeological material from Aboriginal occupation or land use exists within the study area.

4.2.1 Sampling strategy

All landforms present within the study area, including gentle slopes, flats, crests and open depressions, were targeted during the survey, as well as minimally disturbed areas. Those areas with a higher potential for Aboriginal heritage, including areas in close proximity to ephemeral water sources, will also be targeted. These areas were shown to contain Aboriginal sites in previous studies carried out by Comber (1990b, 1991).

4.2.2 Survey methods

Recording during the survey followed the archaeological survey requirements of the code and industry best practice methodology. Information that will be recorded during the survey includes:

- Aboriginal objects or sites identified within the study area during the survey.
- Landform elements, distinguishable areas of land approximately 40 metres across or with 20 metre radius (Speight 1998).
- Ground surface visibility (GSV) and areas of exposure.
- Survey coverage.
- Any resources that may have potentially have been exploited by Aboriginal people.
- Photographs of the site indicating landforms.
- Observable past and present disturbances to the landscape from human or animal activities.
- Aboriginal artefacts, culturally modified trees or any other Aboriginal sites.

Distinguishing landform elements and their association with Aboriginal cultural heritage may help with the identification of site patterning, though with the awareness of the following limitations:

- The degree of GSV and amount of exposed areas can significantly bias the discovery of surface artefacts.
- Cultural material exposed on the surface is not necessarily representative of the potential extent of the site (either horizontally or vertically).

Information about GSV and areas of exposures help to provide a general indication of the effectiveness of the survey for identifying Aboriginal cultural heritage exposed to the surface. Observable disturbances are also considered when assessing the integrity of known or potential sites for an area.

Where possible, identification of natural soil deposits within the study area will be undertaken. Photography and recording techniques will be incorporated into the survey including representative photographs of the survey unit, landform, vegetation cover, ground surface visibility, disturbances and the recording of soil information where possible. Any potential Aboriginal objects observed during the survey will be documented and photographed.

Survey transects, the location of Aboriginal cultural heritage and relevant points of interest will be recorded using a hand-held Global Positioning System (GPS) and the Map Grid of Australia (94) coordinate system.

4.3 Survey constraints

The study area is approximately 24.5 hectares in size. The overall effectiveness of the survey for examining the ground for Aboriginal sites was considered to be very low across the majority of the site due to very poor ground surface visibility (GSV) and significant ground disturbance in the southern end of the study area. Opportunities to examine the ground surface were extremely limited due to the poor GSV created by thick vegetation cover. However the ground was inspected in areas of exposure which occurred primarily around areas recently cleared of blackberry bushes, driveways, dam walls, and the occasional scour or cleared patch present in paddocks. High visibility areas occurred across the western portion of the study area as a result of recent vegetation clearing and are discussed further in section 4.4.

The ability to identify obtrusive potential cultural heritage features from a distance within the study area was considered only moderate overall, due to long grass and dense bush and tree cover across much of the study area (Plate 4). Visual identification and survey tracks however still allowed for the identification of landforms and determining areas of archaeological sensitivity. Areas of remnant vegetation were present in a number of stands in the north-western portion of the study area.



Plate 4 Dense, long grass cover in the western portion of the study area, view south-east, 1 metre scale.

Disturbance in the study area is associated with natural and human agents. Natural agents generally affect small areas and include the burrowing and scratching in soil by animals, such as horses, dogs, foxes, and rabbits, and sometimes exposure from slumping or scouring. Disturbances associated with recent human action were prevalent in the study and cover the majority of the study area. Identified disturbances include residential development such as landscaping and construction of residential buildings throughout the study area, farming practices, such as initial vegetation clearance for creation of paddocks, the ploughing of fields for market gardening, fencing, and stock grazing, as well as the creation of dirt tracks and dams and the levelling of paddocks (Plate 5 and Plate 6). The southern portion of the study area was not able to be accessed and was therefore not surveyed as it remained an active worksite and was heavily disturbed by major earthworks from the construction of warehousing, roads and associated infrastructure to the south of the study area (Plate 7).

Despite these limitations, an adequate sample of the study area was able to be inspected to reliably inform the assessment.



Plate 5 Cleared paddock in norther portion of the study area. View east, 1 metre scale.



Plate 6 Informal vehicle track in western portion of the study area, view east, 1 metre scale.



Plate 7 Disturbances in southern extent of study area, view south-west, 1 metre scale.

4.4 Survey results

Over the course of the archaeological survey a total of ten transects were walked across four landforms, with the three surveyors walking two to ten metres apart (Figure 8). This follows the methodology set out in Burke and Smith (2004, p. 65) which states that a single person can only effectively visually survey an area of two linear metres. No Aboriginal sites or PADs were identified during the archaeological survey, likely as a result of the poor GSV and, in scattered areas of high GSV due to recent clearance, the erosion of topsoils as a result of significant disturbance. The results from the survey have been summarised in Table 8.

Generally the survey was hampered by significant disturbance, poor ground surface visibility and narrow and truncated survey transects in some areas due to dense vegetation and grass cover. Overall survey coverage was low, averaging less than 1% in all landforms except for areas of exposure created by the recent clearing of blackberry bushes by an excavator. These areas of exposure generally measured 10 x 15 metres and 10 x 10 metres with scarring from excavator use still visible (Plate 8 and Plate 9). In the areas of most recent disturbances visibility was approaching 100%, exposing the clay subsoil, but no Aboriginal sites were

identified. The study area is characterised as comprising a total of four landforms: flats, gentle slopes, open depressions, and crests. All landforms were targeted during the survey.



Plate 8 Recently cleared area in western extent of the study area, view south, 1 metre scale.



Plate 9 Cleared blackberry bushes in middle of study area, view east, 1 metre scale.

Gentle slopes form the dominant landform in the study area, running from west to east (Plate 10, Plate 11). Overall survey coverage in this landform was low, with medium to high grass cover being observed across all paddocks in the study area and areas of exposure occurring in recently cleared areas and on some crests. In these areas of recent clearance visibility approached 100%, but generally GSV was less than 10% across the gentle slope landform. Transects were walked through these paddocks to identify any potential areas of exposure and to determine the archaeological potential of the landform. Crests are observed to be located along the western edge and north eastern corner of the study area, usually in association with strands of remnant vegetation or residential housing. With the exception of sections of machine clearance, visibility in these areas was poor due to dense grass cover and stands of trees and blackberry bushes. A flat was observed to cover the majority of Lot 22, DP13961. GSV in this paddock was approaching 0% due to dense, long grass, but furrows from plowing were evident during the course of walking the survey and a stand of olive trees, likely from previous agricultural activities, were located in the western portion of this landform (Plate 12).



Plate 10 View north of gentle slopes from middle portion of the study area, 1 metre scale.



Plate 11 View west of gentle slopes in northern portion of the study area, 1 metre scale.



Plate 12 Cleared and furrowed paddock in the southern portion of the study area. View north, 1 metre scale.

Areas of exposure in the gentle slope landforms included areas of the dam embankment (Plate 13) in the southern portion of the site, and dirt vehicle tracks and small scours in the paddocks in the northern portion of the site. These areas of exposure were the result of widespread human disturbance and no Aboriginal sites were identified in this landform.

Open depression drainage channels formed the smallest landform by area in the study area, running west to east across the northern extent of the study area, as well as north to south along the south-western margin of the study area. Dense long grasses and reeds made visibility in these areas close to nil and areas of exposure only occurred in areas of disturbance where these depressions drained into artificial dams, in these areas visibility was approximately 80%. These drainage channels were shallow, and not incised into the landscape like the higher order creeks in the wider region, beyond the study area. Given their highly ephemeral nature, it is unlikely that they would have been used as campsites in the past, and were considered to have low potential for Aboriginal sites.



Plate 13 Dam located within the northern margin of the study area, view west, 1 metre scale.

Disturbances were dispersed throughout the entirety of the study area, with land clearance being by far the most common form of disturbance. Five residential buildings with associated outbuildings and disturbances were scattered throughout the study area and driveways and informal vehicle tracks were also present, primarily adjoining these properties (Plate 14). Four artificial dams were included in the study area, two in the north-eastern (Plate 13), one in the southern and one in the western portions of the study area (Figure 8). Evidence of animal grazing was common throughout the area, particularly in paddocks across the middle portion of the study area where horses and other, smaller livestock continue to be kept. Evidence of ploughing for the cultivation of crops was also common throughout the study area, particularly in its southern portion (Plate 12).



Plate 14 Driveway leading to residential property in study area, view west, 1 metre scale.

Owing to high grass cover across the study area, overall GSV was very low (Plate 4). The most extensive exposures were associated with areas that had recently been cleared of blackberry bushes in the western extent of the study area and along the top of dam embankments (Plate 8 and Plate 13), where visibility approached 100%. The clearance of blackberry bushes appears to have been carried out by an excavator, with scarring from the machinery still visible. In these areas visibility approached 100% and the survey effort targeted these areas as they presented the best opportunity to identify Aboriginal objects, such as artefacts. Small areas of exposure were present in paddocks surveyed throughout the study area, however these were uncommon. No Aboriginal artefacts or areas of archaeological potential were identified during the survey.

As discussed in Section 4.3, the southern portion of the site was not surveyed due to ongoing bulk earthworks and significant disturbance. This area was examined as part of a previous assessment carried out by Dominic Steele Consulting Archaeology in 2012 for the Horsley Drive Business Park development, which identified no sites or areas of potential within it. A large transmission tower was also located in this southern portion of the study area which would have caused extensive sub surface ground disturbance in its construction. Overall an adequate amount of the study area was sampled during the survey, with no Aboriginal sites or areas of archaeological potential being identified.

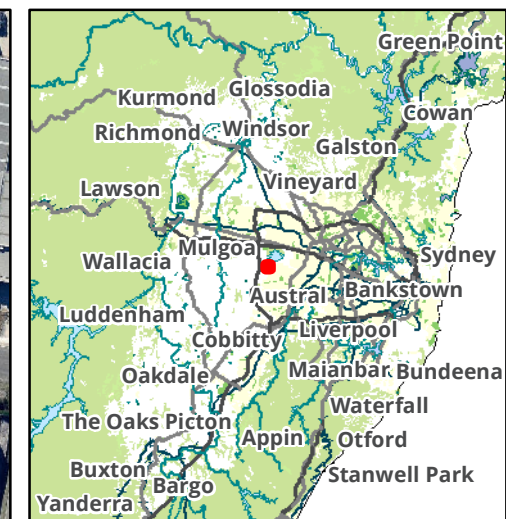
Table 8 Survey coverage.

Survey unit	Landform	Survey unit area (m ²)	Visibility %	Exposure %	Effective coverage area (m ²)	Effective coverage (%)
1	Flat	16872.12	0.00	0.00	0.00	0.00
2	Crest	8910.65	30.00	1.00	267.32	0.03
3	Gentle Slope	126235.42	75.00	1.00	9467.66	0.08
4	Crest	6415.13	90.00	20.00	1154.7	0.18
5	Crest	5150.15	100.00	40.00	2060.06	0.40
6	Crest	4783.76	90.00	40.00	1722.1536	0.36
7	Gentle Slope	21413.87	70.00	30.00	4496.91	0.21
8	Open depression	2165.5	0.00	0.00	0.00	0.00
9	Open depression	199.04	0.00	0.00	0.00	0.00
10	Gentle Slope	219.13	40.00	60.00	52.59	0.24

Table 9 Landform summary.

Landform	Landform area (m ²)	Area effectively surveyed (m ²)	% of landform effectively surveyed	Number of Aboriginal sites	Number of artefacts or features
Disturbed Terrain	51120.16	0.00	0.00	0	0
Flat	16872.12	0.00	0.00	0	0
Gentle Slope	147868.42	14017.16	9.48	0	0

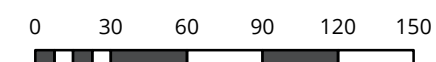
Open Depression	2364.54	0.00	0.00	0	0
Crest	25259.7	5204.23	20.6	0	0



Legend

- Study area
- Survey track 1
- Survey track 2

Figure 8: Survey coverage



Metres
Scale: 1:3,000 @ A3
Coordinate System: GDA 1994 MGA Zone 56



Ballarat, Brisbane, Canberra, Melbourne,
Newcastle, Sydney, Wangaratta & Wollongong

Matter: 22726
Date: 30 August 2016,
Checked by: RAM, Drawn by: LH, Last edited by: lharley
Location: P:\22700s\22726\Mapping\22726 AR F8 SurveyCoverage

4.5 Survey results discussion

The archaeological survey did not identify any Aboriginal sites or areas of PAD. This is consistent with the findings of the previous archaeological survey carried out by Dominic Steele Consulting Archaeology (2012) covering the southern portion of the study area and a number of adjoining lots to the south that identified no new sites or PADs, and assessed the area as being of low scientific archaeological significance due to its highly disturbed nature. As predicted given the clearing of the site for pastoral use in the 19th century, no mature trees with the potential to bear scars or modification were identified over the course of the current survey.

Comber's (1990b, 1991) studies identified artefact scatters, isolated finds and a scarred tree along natural water courses to the north of the study area at Prospect Reservoir. Although low order open depression drainage channels are also present within the study area, they would not have provided sufficiently reliable water sources to make this location suitable for occupation. Site clearing also accounts for the lack of scarred trees within the study area. Furthermore, recent surface clearing within the study area exposed the clay subsoil, indicating shallow A horizon soils and rendering the area unsuitable for burials.

As discussed in the predictive statements, Aboriginal sites in the Sydney region tend to congregate along permanent watercourses. The distance of the site from high order perennial water sources, the closest being Eastern Creek 2.2 kilometres to the north west, and lack of known resources unique to the study area suggests the location would have been used by Aboriginal people only in passing, making large artefact scatters or deposits unlikely. These shallow soil profiles and widespread disturbance means there is a low likelihood of any as yet unidentified isolated finds or background scatters occurring within their original context.

The survey was heavily impacted by the substantial disturbance evident throughout the study area, ranging from bulk earthworks in the southern portion of the site to longstanding agricultural activities through the remainder of the study area. In areas where only limited disturbance seems to have occurred, poor GSV limited the effectiveness of the survey. As noted above, the GSV across the entirety of the study area was extremely low, with it predominantly consisting of grassed paddocks. This has the potential to bias the results of the survey, but despite these constraints an adequate sample of the study area was able to be surveyed.

Further analysis and comparison with previous studies in the vicinity, such as Comber's 1990 and 1991 assessments to the north, does not argue for the occurrence of any as yet unidentified Aboriginal sites within the study area. The distance of the site from a permanent watercourse would have made the study area unsuitable for the long term occupation, while the shallow top soils present on crests within study area and subsequent disturbances would be unlikely to preserve Aboriginal sites left by sporadic use. As such, the proposed works are unlikely to impact on any unknown Aboriginal sites as the entire study area has been assessed as having low archaeological potential.

5. Impact assessment

As previously outlined, the proposal includes the development of general industrial, light industrial, warehouse and distribution uses, and a Stage 1 Development Application (DA) including subdivision, bulk earthworks, estate landscaping and infrastructure works including services and road works.

5.1 Predicted physical impacts

The proposed works will not impact on any known Aboriginal sites and are unlikely to impact on any unknown Aboriginal sites as the entire study area being assessed as having low archaeological potential.

5.2 Management and mitigation measures

Ideally, heritage management involves conservation of sites through the preservation and conservation of fabric and context within a framework of *"doing as much as necessary, as little as possible"* (Marquis-Kyle and Walker 1994, p. 13). In cases where conservation is not practical, several options for management are available. For sites, management often involves the salvage of features or artefacts, retrieval of information through excavation or collection (especially where impact cannot be avoided) and interpretation.

The study area has been assessed as having a low potential to contain Aboriginal sites and therefore there it is considered unlikely that any Aboriginal objects or places will be harmed through the proposed development. Should any unexpected Aboriginal objects be identified during construction, all works in the vicinity of the find must cease and the recommendations outlined in Section 6 in relation to unexpected finds must be followed.

6. Recommendations

Strategies have been developed based on the archaeological (significance) of cultural heritage relevant to the study area and influenced by:

- Predicted impacts to Aboriginal cultural heritage
- The planning approvals framework
- Current best conservation practise, widely considered to include:
 - Ethos of the Australia International Council on Monuments and Sites (ICOMOS)Burra Charter
 - The code.

Prior to any impacts occurring within the study area, the following is recommended:

Recommendation 1: No further archaeological assessment is required

It is recommended that no further archaeological assessment is required in the study area prior to the proposed development as this assessment has concluded that there is a low likelihood for Aboriginal sites to be present within the study area.

Recommendation 2: Discovery of unanticipated Aboriginal objects

All Aboriginal objects and places are protected under the *NSW National Parks and Wildlife Act 1974*. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the Office of Environment and Heritage (OEH). Should any Aboriginal objects be encountered during works associated with this proposal, works must cease in the vicinity and the find should not be moved until assessed by a qualified archaeologist. If the find is determined to be an Aboriginal object the archaeologist will provide further recommendations. These may include notifying the OEH and Aboriginal stakeholders.

Recommendation 3: Discovery of unanticipated historical relics

Relics are historical archaeological resources of local or State significance and are protected in NSW under the *Heritage Act 1977*. Relics cannot be disturbed except with a permit or exception/exemption notification. Should unanticipated relics be discovered during the course of the project, work in the vicinity must cease and an archaeologist contacted to make a preliminary assessment of the find. The Heritage Council will require notification if the find is assessed as a relic.

Recommendation 4: Discovery of Aboriginal ancestral remains

Aboriginal ancestral remains may be found in a variety of landscapes in NSW, including middens and sandy or soft sedimentary soils. If any suspected human remains are discovered during any activity you must:

1. Immediately cease all work at that location and not further move or disturb the remains
2. Notify the NSW Police and OEH's Environmental Line on 131 555 as soon as practicable and provide details of the remains and their location
3. Not recommence work at that location unless authorised in writing by OEH.

Recommendation 5: Continued consultation with the registered Aboriginal stakeholders

As per the consultation requirements, it is recommended that the proponent provides a copy of this draft report to the Aboriginal stakeholders and considers all comments received. A copy of the final report should also be sent to all Aboriginal stakeholders for their records. The proponent should continue to inform these groups about the management of Aboriginal cultural heritage sites within the study area throughout the life of the project.

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Appendices

Appendix 1 AHIMS results

THE FOLLOWING APPENDIX IS NOT TO BE MADE PUBLIC

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 22726

Client Service ID : 234312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-2022	Cowpasture Road;Bossley Park;	AGD	56	302890	6249780	Open site	Valid	Artefact : -	Open Camp Site	103366
	Contact	Recorders	Permits							
45-5-2721	PAD-OS-7	AGD	56	300730	6251330	Open site	Valid	Artefact : -		103366
	Contact	Recorders	Permits							
45-5-2819	Glen Elgin	AGD	56	303060	6249780	Open site	Valid	Artefact : -	1396,1872	103366
	Contact	Recorders	Permits							
45-5-2820	Fairfield GC	AGD	56	306520	6250790	Open site	Valid	Artefact : -		98743,102196
	Contact	Recorders	Permits							
45-5-2795	WSO-IF-1	AGD	56	301030	6251680	Open site	Valid	Artefact : -		103366
	Contact	Recorders	Permits							
45-5-2796	WSO-IF-2	AGD	56	301410	6254840	Open site	Valid	Artefact : -	1398	
	Contact	Recorders	Permits							
45-5-2797	WSO-OS-8	AGD	56	301090	6256450	Open site	Valid	Artefact : -		
	Contact	Recorders	Permits							
45-5-2837	IF:8	AGD	56	300640	6256780	Open site	Valid	Artefact : -	1398	4599,100449
	Contact	Recorders	Permits							
45-5-2818	ECD1	AGD	56	302950	6256210	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Permits							
45-5-2746	PH1	GDA	56	306854	6254189	Open site	Valid	Artefact : -	1445,1584	98743,102196
	Contact	Recorders	Permits							
45-5-2848	ECD/1	AGD	56	302950	6256210	Open site	Valid	Artefact : -		98343
	Contact	Recorders	Permits							
45-5-2828	AWL 6	AGD	56	300670	6256780	Open site	Valid	Artefact : -		4599,98444,10 0449
	Contact	Recorders	Permits							
45-5-2811	OSC-OS-1	AGD	56	305450	6250350	Open site	Valid	Artefact : -	1573,1609,2470	98743,102196
	Contact	Recorders	Permits							
45-5-2892	site REL 2	GDA	56	306875	6256625	Open site	Valid	Artefact : -		
	Contact	Recorders	Permits							
45-5-2893	site REL 3	GDA	56	306750	6256550	Open site	Valid	Artefact : -		
	Contact	Recorders	Permits							
45-5-2894	site REL 4	GDA	56	306625	6256850	Open site	Valid	Artefact : -		
	Contact	Recorders	Permits							

Report generated by AHIMS Web Service on 15/07/2016 for Rebecca Morris for the following area at Datum :GDA, Zone : 56, Eastings : 300050 - 307050, Northings : 6249950 - 6256950 with a Buffer of 50 meters. Additional Info : Aboriginal Cultural Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 99

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 22726

Client Service ID : 234312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-2974	Lucan Park PAD	AGD	56	301090	6256666	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Megan Mebberson					Permits	1941	
45-5-2579	EC5	AGD	56	302350	6256300	Open site	Valid	Artefact : -	Isolated Find	98435
	Contact	Recorders	Mr.Kelvin Officer					Permits		
45-5-0274	Bosley Park	AGD	56	302028	6250129	Open site	Valid	Artefact : -	Open Camp Site	260,1018,9843 5,103366
	Contact	Recorders	Jenny Hanrahan					Permits		
45-5-0948	Abbotsbury 4;	AGD	56	302600	6250700	Open site	Valid	Artefact : -	Open Camp Site	2620,98435,10 3366
	Contact	Recorders	Elizabeth Rich					Permits		
45-5-0765	GPR 1 (Prospect Reservoir)	AGD	56	303350	6254070	Open site	Valid	Artefact : -	Open Camp Site	1723,1857,103 366
	Contact	Recorders	Elizabeth Rich,Laura-Jane Smith,Miss.Lisa Smith					Permits		
45-5-3952	Prospect Pipehead (PP) 3	GDA	56	306000	6254400	Open site	Valid	Artefact : -		102085
	Contact	Recorders	Ms.Jillian Comber,Comber Consultants Pty Limited					Permits	3474	
45-5-2600	WSRA 2	AGD	56	302090	6255900	Open site	Valid	Artefact : -		
	Contact Colin Gale	Recorders	Navin Officer Heritage Consultants Pty Ltd					Permits		
45-5-2021	SCR Abbotsbury	AGD	56	302580	6250020	Open site	Destroyed	Artefact : -	Open Camp Site	98435,103366
	Contact	Recorders	Michael Guider					Permits		
45-5-4677	The Horsley Drive IF 1	GDA	56	303433	6252382	Open site	Valid	Artefact : -		
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd,Mr.Tyler Beebe					Permits		
45-5-4678	The Horsley Drive IF 2	GDA	56	303479	6252394	Open site	Valid	Artefact : -		
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd,Mr.Tyler Beebe					Permits		
45-5-4679	The Horsely Drive AFT 7	GDA	56	301999	6253303	Open site	Valid	Artefact : -		
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd,Mr.Tyler Beebe					Permits		
45-5-4680	The Horsley Drive AFT 8	GDA	56	303498	6252176	Open site	Valid	Artefact : -		
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd,Mr.Tyler Beebe					Permits		
45-5-4681	The Horsley Drive AFT 1	GDA	56	301769	6253302	Open site	Valid	Artefact : -		
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd,Mr.Benjamin Anderson					Permits		
45-5-4682	The Horsley Drive AFT 2	GDA	56	301943	6253227	Open site	Valid	Artefact : -		
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd,Mr.Benjamin Anderson					Permits		
45-5-4683	The Horsley Drive AFT 3	GDA	56	302447	6253086	Open site	Valid	Artefact : -		
	Contact	Recorders	Kelleher Nightingale Consulting Pty Ltd,Mr.Benjamin Anderson					Permits		
45-5-4684	The Horsley Drive AFT 4	GDA	56	302566	6253042	Open site	Valid	Artefact : -		

Report generated by AHIMS Web Service on 15/07/2016 for Rebecca Morris for the following area at Datum :GDA, Zone : 56, Eastings : 300050 - 307050, Northings : 6249950 - 6256950 with a Buffer of 50 meters. Additional Info : Aboriginal Cultural Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 99

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 22726

Client Service ID : 234312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd,Mr.Benjamin Anderson					<u>Permits</u>		
45-5-4685	The Horsley Drive AFT 6	GDA	56	303428	6252579	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd,Mr.Benjamin Anderson					<u>Permits</u>		
45-5-4686	The Horsley Drive AFT 5	GDA	56	302952	6252940	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>	Kelleher Nightingale Consulting Pty Ltd,Mr.Benjamin Anderson					<u>Permits</u>		
45-5-2576	EC2	AGD	56	302650	6256580	Open site	Valid	Artefact : -	Open Camp Site	98435
	<u>Contact</u>	<u>Recorders</u>	Kerry Navin,Mr.Kelvin Officer					<u>Permits</u>	1382	
45-5-2577	EC4	AGD	56	302250	6256320	Open site	Valid	Artefact : -	Open Camp Site	98435
	<u>Contact</u>	<u>Recorders</u>	Mr.Kelvin Officer					<u>Permits</u>		
45-5-2578	EC3	AGD	56	301980	6256520	Open site	Valid	Artefact : -	Open Camp Site	98435
	<u>Contact</u>	<u>Recorders</u>	Mr.Kelvin Officer					<u>Permits</u>		
45-5-2580	EC6	AGD	56	302480	6256280	Open site	Valid	Artefact : -	Isolated Find	98435
	<u>Contact</u>	<u>Recorders</u>	Mr.Kelvin Officer					<u>Permits</u>	1444	
45-5-2581	EC7	AGD	56	302700	6256150	Open site	Valid	Artefact : -	Open Camp Site	98435
	<u>Contact</u>	<u>Recorders</u>	Mr.Kelvin Officer					<u>Permits</u>	1382	
45-5-2582	EC8,	AGD	56	301240	6255480	Open site	Valid	Artefact : -	Isolated Find	98435
	<u>Contact</u>	<u>Recorders</u>	Mr.Kelvin Officer					<u>Permits</u>	1444	
45-5-2567	DLC1	AGD	56	302194	6254349	Open site	Valid	Artefact : -	Open Camp Site	98435,103366
	<u>Contact</u>	<u>Recorders</u>	Annie Nicholson					<u>Permits</u>		
45-5-2555	Prospect Hill 7	AGD	56	306604	6254939	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -, Potential Archaeological Deposit (PAD) : -	Open Camp Site,Scarred Tree	98283,98743,102196
	<u>Contact</u>	<u>Recorders</u>	Mrs.Angela Besant					<u>Permits</u>		
45-5-2523	OSC-IF-1	AGD	56	305450	6250350	Open site	Valid	Artefact : -	Isolated Find	98743,102196
	<u>Contact</u>	<u>Recorders</u>	Mrs.Robynne Mills					<u>Permits</u>		
45-5-2524	OSC-IF-2	AGD	56	305410	6250320	Open site	Valid	Artefact : -	Isolated Find	98743,102196
	<u>Contact</u>	<u>Recorders</u>	Mrs.Robynne Mills					<u>Permits</u>		
45-5-0800	Scarred Tree Prospect Reservoir	AGD	56	304525	6253950	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1857,103366
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber,Elizabeth Rich					<u>Permits</u>		
45-5-0801	PB1 (Prospect Reservoir)	AGD	56	304800	6254100	Open site	Valid	Artefact : -	Open Camp Site	1857,1919,2295,103366
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber,Elizabeth Rich					<u>Permits</u>		

Report generated by AHIMS Web Service on 15/07/2016 for Rebecca Morris for the following area at Datum :GDA, Zone : 56, Eastings : 300050 - 307050, Northings : 6249950 - 6256950 with a Buffer of 50 meters. Additional Info : Aboriginal Cultural Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 99

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 22726

Client Service ID : 234312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-0802	PB2 (Prospect Reservoir)	AGD	56	305225	6254075	Open site	Valid	Artefact : -	Open Camp Site	1857,98743
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber,Elizabeth Rich					<u>Permits</u>		
45-5-0803	PB3 (Prospect Reservoir)	AGD	56	305350	6254100	Open site	Valid	Artefact : -	Open Camp Site	1857,98743
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber,Elizabeth Rich					<u>Permits</u>		
45-5-0804	PB4 (Prospect Reservoir)	AGD	56	306025	6254150	Open site	Valid	Artefact : -	Open Camp Site	1857,1919,982 83,98743,1021 96
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber,Elizabeth Rich					<u>Permits</u>		
45-5-0805	PA1;Prospect Reservoir;	AGD	56	305200	6254360	Open site	Valid	Artefact : -	Open Camp Site	1919,98743
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber					<u>Permits</u>		
45-5-0806	PA2;Prospect Reservoir;	AGD	56	305210	6254790	Open site	Valid	Artefact : -	Open Camp Site	1919,98743
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber					<u>Permits</u>		
45-5-0980	Abbotsbury 4 - duplicate of 45-5-0948	AGD	56	302600	6250700	Open site	Valid	Artefact : -	Open Camp Site	2950,98435,10 3366
	<u>Contact</u>	<u>Recorders</u>	Kerry Navin,Doctor.Susan McIntyre-Tamwoy					<u>Permits</u>		
45-5-2347	PRN1	AGD	56	306130	6256460	Open site	Valid	Artefact : -	Open Camp Site	2866
	<u>Contact</u>	<u>Recorders</u>	Elizabeth Rich,Tony Kondek					<u>Permits</u>		
45-5-0920	Abbotsbury 1;	AGD	56	303150	6251700	Open site	Valid	Artefact : -	Open Camp Site	103366
	<u>Contact</u>	<u>Recorders</u>	Kerry Navin					<u>Permits</u>	461	
45-5-0921	Abbotsbury 2;	AGD	56	302960	6251700	Open site	Valid	Artefact : -	Open Camp Site	98435,103366
	<u>Contact</u>	<u>Recorders</u>	Kerry Navin					<u>Permits</u>		
45-5-0922	Abbotsbury 3;	AGD	56	302680	6250830	Open site	Valid	Artefact : -	Open Camp Site	98435,103366
	<u>Contact</u>	<u>Recorders</u>	Kerry Navin					<u>Permits</u>		
45-5-0866	TPP 1;Prospect Reservoir;	AGD	56	302950	6255150	Open site	Valid	Artefact : -	Open Camp Site	2246,98435
	<u>Contact</u>	<u>Recorders</u>	Denise Donlon					<u>Permits</u>		
45-5-0867	TPP2;Prospect Reservoir;	AGD	56	303530	6254150	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	2246,103366
	<u>Contact</u>	<u>Recorders</u>	Denise Donlon					<u>Permits</u>		
45-5-0868	PP1;Prospect Reservoir;	AGD	56	306000	6254450	Open site	Valid	Artefact : -	Open Camp Site	2225,98283,98 743,102196
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber,L Grey					<u>Permits</u>	340	
45-5-0869	PP2;Prospect Reservoir;	AGD	56	305900	6254250	Open site	Valid	Artefact : -	Open Camp Site	2225,98743,10 2196
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber					<u>Permits</u>		
45-5-0870	Prospect Lagoon 1;Prospect Reservoir;(PL1);	AGD	56	304500	6253850	Open site	Valid	Artefact : -	Open Camp Site	2225,103366
	<u>Contact</u>	<u>Recorders</u>	Denise Donlon					<u>Permits</u>		

Report generated by AHIMS Web Service on 15/07/2016 for Rebecca Morris for the following area at Datum :GDA, Zone : 56, Eastings : 300050 - 307050, Northings : 6249950 - 6256950 with a Buffer of 50 meters. Additional Info : Aboriginal Cultural Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 99

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 22726

Client Service ID : 234312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-0439	Eastern Creek W1	AGD	56	300750	6256650	Open site	Valid	Artefact : -	Open Camp Site	1018,98435
	<u>Contact</u>	<u>Recorders</u>	Doctor.Susan McIntyre-Tamwoy							
45-5-0836	Prospect Tunnel;PT 1;	AGD	56	305110	6254260	Open site	Valid	Artefact : -	Open Camp Site	2074,98743
	<u>Contact</u>	<u>Recorders</u>	Ms.Jillian Comber							
45-5-0741	WDD1	AGD	56	301840	6255920	Open site	Valid	Artefact : -	Open Camp Site	98435
	<u>Contact</u>	<u>Recorders</u>	Margrit Koettig							
45-5-0742	WDD 2	AGD	56	302020	6255670	Open site	Valid	Artefact : -	Open Camp Site	1501,1530,193 5,98435
	<u>Contact</u>	<u>Recorders</u>	Margrit Koettig							
45-5-0743	WDD3	AGD	56	301650	6255750	Open site	Valid	Artefact : -	Open Camp Site	1501,1530,984 35
	<u>Contact</u>	<u>Recorders</u>	Margrit Koettig							
45-5-0744	WDD5	AGD	56	302070	6255560	Open site	Valid	Artefact : -	Open Camp Site	98435
	<u>Contact</u>	<u>Recorders</u>	Margrit Koettig							
45-5-0745	WDD 6	AGD	56	302220	6255400	Open site	Valid	Artefact : -	Open Camp Site	1530,1935,984 35
	<u>Contact</u>	<u>Recorders</u>	Margrit Koettig							
45-5-0588	Blacktown Southwest 1 Eastern Creek	AGD	56	300330	6256700	Open site	Valid	Artefact : -	Open Camp Site	98435
	<u>Contact</u>	<u>Recorders</u>	Jim Kohen							
45-5-0766	PR 2 (Prospect Reservoir)	AGD	56	303500	6254000	Open site	Valid	Artefact : -, Aboriginal Ceremony and Dreaming : -		1723,1857,982 83,103366
	<u>Contact</u>	<u>Recorders</u>	Elizabeth Rich							
45-5-0767	PR 3 (Prospect Reservoir)	AGD	56	303530	6254150	Open site	Valid	Artefact : -, Aboriginal Ceremony and Dreaming : -		1723,1857,982 83,103366
	<u>Contact</u>	<u>Recorders</u>	Elizabeth Rich							
45-5-0768	PR 4 (Prospect Reservoir)	AGD	56	304400	6254200	Open site	Valid	Artefact : -	Open Camp Site	1723,1857,103 366
	<u>Contact</u>	<u>Recorders</u>	Elizabeth Rich							
45-5-2987	AUS 1	AGD	56	300520	6255730	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Jo McDonald							
45-5-2983	Austral 1	AGD	56	300520	6255730	Open site	Valid	Modified Tree (Carved or Scarred) : -, Artefact : 6		
	<u>Contact</u>	<u>Recorders</u>	Doctor.Jo McDonald							

Report generated by AHIMS Web Service on 15/07/2016 for Rebecca Morris for the following area at Datum :GDA, Zone : 56, Eastings : 300050 - 307050, Northings : 6249950 - 6256950 with a Buffer of 50 meters. Additional Info : Aboriginal Cultural Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 99

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 22726

Client Service ID : 234312

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-2984	Austral 2	AGD	56	300620	6255840	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>		Doctor.Jo McDonald				<u>Permits</u>	1994	
45-5-2985	Austral 3	AGD	56	300770	6256000	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>		Doctor.Jo McDonald				<u>Permits</u>	1994	
45-5-2986	Austral PAD 1	AGD	56	300500	6255800	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>	<u>Recorders</u>		Doctor.Jo McDonald				<u>Permits</u>	1994	
45-5-3434	Parramatta SWC PAD	AGD	56	300320	6256325	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	<u>Contact</u>	<u>Recorders</u>		Heritage Concepts				<u>Permits</u>	2965,2966	
45-5-3684	WR1 (Prospect)	AGD	56	300120	6255319	Open site	Valid	Artefact : 4		103004
	<u>Contact</u>	<u>Recorders</u>		Australian Building Certification				<u>Permits</u>		
45-5-3624	EC132KV4	GDA	56	303377	6254772	Open site	Valid	Artefact : -		101291,10336 6
	<u>Contact</u>	<u>Recorders</u>		Mr.Oliver Brown				<u>Permits</u>		
45-5-4284	Erskine Park Link Road 2	GDA	56	301017	6256543	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>		Mr.Alan Williams				<u>Permits</u>	3625	
45-5-4194	CONSERVATION AREA	GDA	56	300847	6256833	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		
	<u>Contact</u>	<u>Recorders</u>		Mr.Alan Williams				<u>Permits</u>	3625	
45-5-4488	Site within Steeplechase Track	GDA	56	302015	6252237	Open site	Valid	Artefact : -		103366
	<u>Contact</u>	<u>Recorders</u>		Ms.Ngaire Richards				<u>Permits</u>	3776	
45-5-2614	Eastern Creek 9	AGD	56	301890	6256000	Open site	Valid	Artefact : -		
	<u>Contact</u>	<u>Recorders</u>		Navin Officer Heritage Consultants Pty Ltd				<u>Permits</u>		
45-5-2650	OSC-OS-1/PAD 3	AGD	56	305450	6250350	Open site	Valid	Potential Archaeological Deposit (PAD) : -		98743,102196
	<u>Contact</u>	<u>Recorders</u>		Mrs.Robynne Mills				<u>Permits</u>	1320,1405	
45-5-2591	EC1	AGD	56	301600	6256450	Open site	Valid	Artefact : -		
	<u>Contact</u> John Gallard	<u>Recorders</u>		Navin Officer Heritage Consultants Pty Ltd				<u>Permits</u>		
45-5-2592	EC2 (Duplicate copy see 45-5-2576)	AGD	56	302650	6256580	Open site	Valid	Artefact : -		
	<u>Contact</u> Colin Gale	<u>Recorders</u>		Navin Officer Heritage Consultants Pty Ltd				<u>Permits</u>		
45-5-2593	EC3 (Duplicate copy of 45-5-2578)	AGD	56	301980	6256520	Open site	Valid	Artefact : -		
	<u>Contact</u> Colin Gale	<u>Recorders</u>		Navin Officer Heritage Consultants Pty Ltd				<u>Permits</u>		

Report generated by AHIMS Web Service on 15/07/2016 for Rebecca Morris for the following area at Datum :GDA, Zone : 56, Eastings : 300050 - 307050, Northings : 6249950 - 6256950 with a Buffer of 50 meters. Additional Info : Aboriginal Cultural Heritage Assessment. Number of Aboriginal sites and Aboriginal objects found is 99

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

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
45-5-2594	EC4 (Duplicate copy of 45-5-2577)	AGD	56	302250	6256320	Open site	Valid	Artefact : -		
	Contact John Gallard	Recorders	Navin Officer Heritage Consultants Pty Ltd Permits							
45-5-2595	EC5 (Duplicate copy of 45-5-2579)	AGD	56	302350	6256300	Open site	Valid	Artefact : -		
	Contact John Gallard	Recorders	Navin Officer Heritage Consultants Pty Ltd Permits 1444							
45-5-2596	EC6 (Duplicate copy of 45-5-2580)	AGD	56	302480	6256280	Open site	Valid	Artefact : -		
	Contact John Gallard	Recorders	Navin Officer Heritage Consultants Pty Ltd Permits							
45-5-2597	EC7 (Duplicate copy of 45-5-2581)	AGD	56	302700	6256150	Open site	Valid	Artefact : -		
	Contact Colin Gale	Recorders	Navin Officer Heritage Consultants Pty Ltd Permits							
45-5-2598	EC8 (Duplicate copy of 45-5-2582)	AGD	56	300245	6255480	Open site	Valid	Artefact : -		
	Contact John Gallard	Recorders	Navin Officer Heritage Consultants Pty Ltd Permits							
45-5-2599	WSRA 1	AGD	56	302100	6256510	Open site	Valid	Artefact : -		
	Contact John Gallard	Recorders	Navin Officer Heritage Consultants Pty Ltd Permits							
45-5-2601	IF1	AGD	56	302290	6256350	Open site	Valid	Artefact : -		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd Permits							
45-5-2602	IF2	AGD	56	302730	6255380	Open site	Valid	Artefact : -		
	Contact John Gallard	Recorders	Navin Officer Heritage Consultants Pty Ltd Permits 1444							
45-5-3082	Horsley Dr PAD	AGD	56	302325	6253090	Open site	Valid	Potential Archaeological Deposit (PAD) : -		100557,10336 6
	Contact Searle	Recorders	Ms.Laila Haglund Permits 2328							
45-5-3779	Link Road PAD	GDA	56	300711	6256775	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Mr.Oliver Brown Permits 3206							
45-5-4417	Prospect Artefact 1	GDA	56	305900	6256400	Open site	Valid	Artefact : -		
	Contact	Recorders	Ms.Kate Lenertz Permits							