155-1475 Burragorang Road, and 1838 Barkers Lodge Road, Oakdale, NSW Archaeological Report

Prepared for Colliers International Engineering & Design (NSW) Pty Ltd

FINAL REPORT

8 March 2024

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Biosis acknowledges the contribution of the following people and organisations in undertaking this study:

- Colliers International Engineering & Design (NSW) Pty Ltd.

Biosis staff involved in this project were:

- Otto Reichelt (assistance in the field).
- Grace O'Loghlin and Jen Townsend (mapping).

Summary

Biosis Pty Ltd (Biosis) was commissioned by Colliers International Engineering & Design (NSW) Pty Ltd (Colliers) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) of a proposed rezoning at 1455-1475 Burragorang Road, and 1838 Barkers Lodge Road, Oakdale, New South Wales (NSW) (the study area). This Archaeological Report (AR) documents the findings of the archaeological investigations conducted as part of the ACHA. As required under Section 2.3 of *The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a) (the Code), the AR provides evidence about the material traces of Aboriginal land use to support the conclusions and management recommendations in the ACHA.

The project will be assessed until Part 3 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The study area is located in private land in Sydney's southwest suburb of Oakdale and approximately 90 kilometres south-west of the Sydney central business district (CBD). There are two Aboriginal cultural heritage sites registered with the Aboriginal Heritage Information Management System (AHIMS) register, both within the study area: AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02. Neither of these sites are near the water courses inside the study area, which are tributaries of Back Creek.

The Aboriginal community was consulted regarding the heritage management of the project throughout its lifespan. Consultation has been undertaken as per the process outlined in the Department of Environment Climate Change and Water document (DECCW) document*, Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010b) (consultation requirements).

An archaeological survey was conducted on 9 August 2023 by Crystal Garabedian (Biosis, Heritage Consultant) and Otto Reichelt (Biosis, Graduate Heritage Consultant). The overall effectiveness of the survey for examining the ground for Aboriginal sites was deemed low. This was attributed to vegetation cover restricting ground surface visibility (GSV) combined with low exposure. Attempts during the archaeological survey were made to locate AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02; however, the sites were unable to be relocated. No previously unrecorded Aboriginal cultural heritage sites were identified during the field investigation, and no areas of archaeological potential were identified.

As there are two previously recorded sites located within the study area, there is the potential for proposed development to impact on these. Strategies have been developed based on the archaeological significance of cultural heritage relevant to the study area. The strategies also take into consideration:

- Predicted impacts to Aboriginal cultural heritage.
- The planning approvals framework.
- Current best conservation practice, widely considered to include:
  - The ethos of the Australia — International Council on Monuments and Sites (ICOMOS) publication, *The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS 2013) (Burra Charter).
  - the Code.

The recommendations that resulted from the consultation process are provided below.

Management recommendations

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

Recommendation 1: Application for an Aboriginal Heritage Impact Permit to harm AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02

An Aboriginal Heritage Impact Permit (AHIP) is required for any activities likely to have an impact on Aboriginal objects or places or cause land to be disturbed for the purposes of discovering an Aboriginal object. Heritage NSW, Department of Planning and Environment (Heritage NSW) issues AHIPs under Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act).

It is recommended that Colliers apply to Heritage NSW for an AHIP to harm AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02. The AHIP should allow for impacts to both sites through the proposed works. **The AHIP should be for a period of 10 years.**

As part of the AHIP, prior to impacts RAPs should be afforded the opportunity for the community collection of the artefacts associated with AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02. RAPs must be consulted on ongoing care and control of salvaged artefacts from AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02.

Advice preparing AHIPs

AHIPs should be prepared by a qualified archaeologist and lodged with Heritage NSW. Once the application is lodged processing time can take between eight and 12 weeks. It should be noted that there will be an application fee levied by the Heritage NSW for the processing of AHIPs, which is dependent on the estimated total cost of the development project. Where there are multiple sites within one study area an application for an AHIP to cover the entire study area is recommended.

Recommendation 2: Areas identified as having low archaeological potential

No further investigations are required for areas assessed as having low archaeological potential. This recommendation is conditional upon Recommendations 5 and 6.

Recommendation 3: Mitigating impacts to Aboriginal cultural heritage

The following measures should be undertaken to mitigate impacts of the proposed development to Aboriginal cultural heritage.

Connecting with Country

The project should be developed in accordance with the best practice guidelines presented in the *Connecting with Country* framework (Government Architect NSW 2023) to ensure that Aboriginal cultural heritage is incorporated into the design of the proposed development.

Heritage interpretation

To mitigate the impacts to AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02, heritage interpretation should be included as part of the development to inform the wider community of the Aboriginal cultural heritage of the study area and vicinity. Heritage interpretation should be undertaken in consultation with the RAPs and in accordance with the following guidelines and best practice:

- *Heritage Information Series: Interpretating Heritage Places and Items Guidelines* (NSW Heritage Office 2005).

- *We're a Dreaming Country: Guidelines for Interpretation of Aboriginal Heritage* (National Trust of Australia (WA) 2012).
- *The ICOMOS Charter for the Interpretation and Presentation of Cultural Heritage Sites* (ICOMOS 2008).

Heritage induction

All site workers, contractors and subcontractors must undertake a heritage induction to provide them with information on the Aboriginal cultural heritage of the study area, their responsibilities under the NPW Act and fines for breaches of the NPW Act.

Unexpected finds procedure during works

To ensure that any unexpected Aboriginal objects are treated appropriately, an unexpected finds protocol, including protocol for the discovery of human remains, must be developed, and included in a construction management plan for the proposed development (see Recommendations 5 and 6).

Recommendation 4: Continued Aboriginal community consultation

In accordance with the consultation requirements, a copy of the draft ACHA must be provided to all RAPs for their review and comment. In addition, RAPs must be consulted regarding care and control of any artefacts from AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02 able to be obtained through community collection. A copy of the final ACHA should also be provided to the RAPs 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.

Recommendation 5: Discovery of Unanticipated Aboriginal Objects

All Aboriginal objects and Places are protected under the NSW NPW Act. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the Heritage NSW. 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 Heritage NSW and Aboriginal stakeholders.

Recommendation 6: Discovery of human remains

If any suspected human remains are discovered during any activity works, all activity in the vicinity must cease immediately. The remains must be left in place and protected from harm or damage. The following contingency plan describes the immediate actions that must be taken in instances where human remains or suspected human remains are discovered. Any such discovery at the study area must follow these steps:

1. **Discovery:** If suspected human remains are discovered all activity in the vicinity must stop to ensure minimal damage is caused to the remains; and the remains must be left in place, and protected from harm or damage.
2. **Notification:** Once suspected human skeletal remains have been found, the Coroner's Office and the NSW Police must be notified immediately. Following this, the find will be reported to the Aboriginal parties and Heritage NSW.

Contents

Tables

Figures

Photographs

Glossary

ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AR	Archaeological Report
Biosis	Biosis Pty Ltd
Burra Charter	*The Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS 2013)
CBD	Central Business District
Colliers	Colliers International Engineering & Design (NSW) Pty Ltd
Consultation requirements	*Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010b)
DECCW	Department of Environment, Climate Change and Water (now Heritage NSW)
DP	Deposited Plan
EP&A Act	*Environmental Planning and Assessment Act 1979*
GDA	Geocentric Datum of Australia
GPS	Global Positioning System
GSV	Ground Surface Visibility
Heritage NSW	Heritage NSW, Department of Planning and Environment
ICOMOS	International Council on Monuments and Sites
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
MGA	Map Grid of Australia
NPW Act	*National Parks and Wildlife Act 1974*
NPWS	National Parks and Wildlife Service
NSW	New South Wales
PAD	Potential Archaeological Deposit
RAP	Registered Aboriginal Party
Study area	Defined as 1455-1475 Burragorang Road, and 1838 Barkers Lodge Road, Oakdale, NSW (Lot 6 DP734561, Lot 2 DP734561, and Lot 1 DP734561)
the Code	*Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a)

1. Introduction

1.1. Project background

Biosis has been commissioned by Colliers to undertake an ACHA for the proposed rezoning at 1455–1475 Burragorang Road, and 1838 Barkers Lodge Road, Oakdale NSW (Figure 1, Figure 2). This AR documents the findings of the archaeological investigations conducted as part of the ACHA. The AR provides evidence about the material traces of Aboriginal land use to support the conclusions and management recommendations in the ACHA.

This investigation has been carried out under Part 6 of the NPW Act and in accordance with the Code. The Code has been developed to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the NPW Act. The archaeological investigation must be undertaken in accordance with the requirements of the Code.

It is stated in Section 1.2 of the Code that where the ACHA report concludes that the proposed activity will result in harm to Aboriginal objects or declared Aboriginal Places, an application for an AHIP will be required. This application must be supported by an ACHA report.

The project will be assessed under Part 3 of the EP&A Act. The EP&A Act includes provisions for local government authorities to consider environmental impacts in land-use planning and decision making. Each Local Government Area (LGA) is required to create and maintain a Local Environmental Plan (LEP) that includes Aboriginal and historical heritage items. Local Councils identify items that are of significance within their LGA, and these items are listed on heritage schedules in the local LEP and are protected under the EP&A Act and *Heritage Act 1977*.

1.2. Study area

The study area is located within Lot 6 DP734561, Lot 2 DP734561, and Lot 1 DP734561in Sydney's south-west suburb of Oakdale, approximately 90 kilometres south-west of the Sydney city CBD (Figure 1). It encompasses 22.7 hectares of semi-rural private land and the adjacent road reserves.

The study area is within the:

- Wollondilly LGA.
- Parish of Burragorang.
- County of Camden.

The study area is bounded by Barkers Lodge Road to the west, Burragorang Road to the north, Lot 3 DP734561 to the East and Lot 10 DP609714 to the south (Figure 2).

1.3. Planning approvals

The proposed development will be assessed against Part 3 of the EP&A Act. Other relevant legislation and planning instruments that will inform this assessment include:

- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*.
- NSW NPW Act.

- NSW *National Parks and Wildlife Amendment Act 2010*.
- *State Environmental Planning Policy (Transport and Infrastructure) 2021*.
- Wollondilly LEP 2011.
- *Wollondilly Development Control Plan 2016*.

1.4. Objectives of the investigation

The objectives of the investigation can be summarised as follows:

- To identify and consult with any registered Aboriginal stakeholders and the Tharawal Local Aboriginal Land Council (LALC).
- To conduct additional background research 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 a field survey of the study area to locate unrecorded or previously recorded Aboriginal sites and to further assess 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.

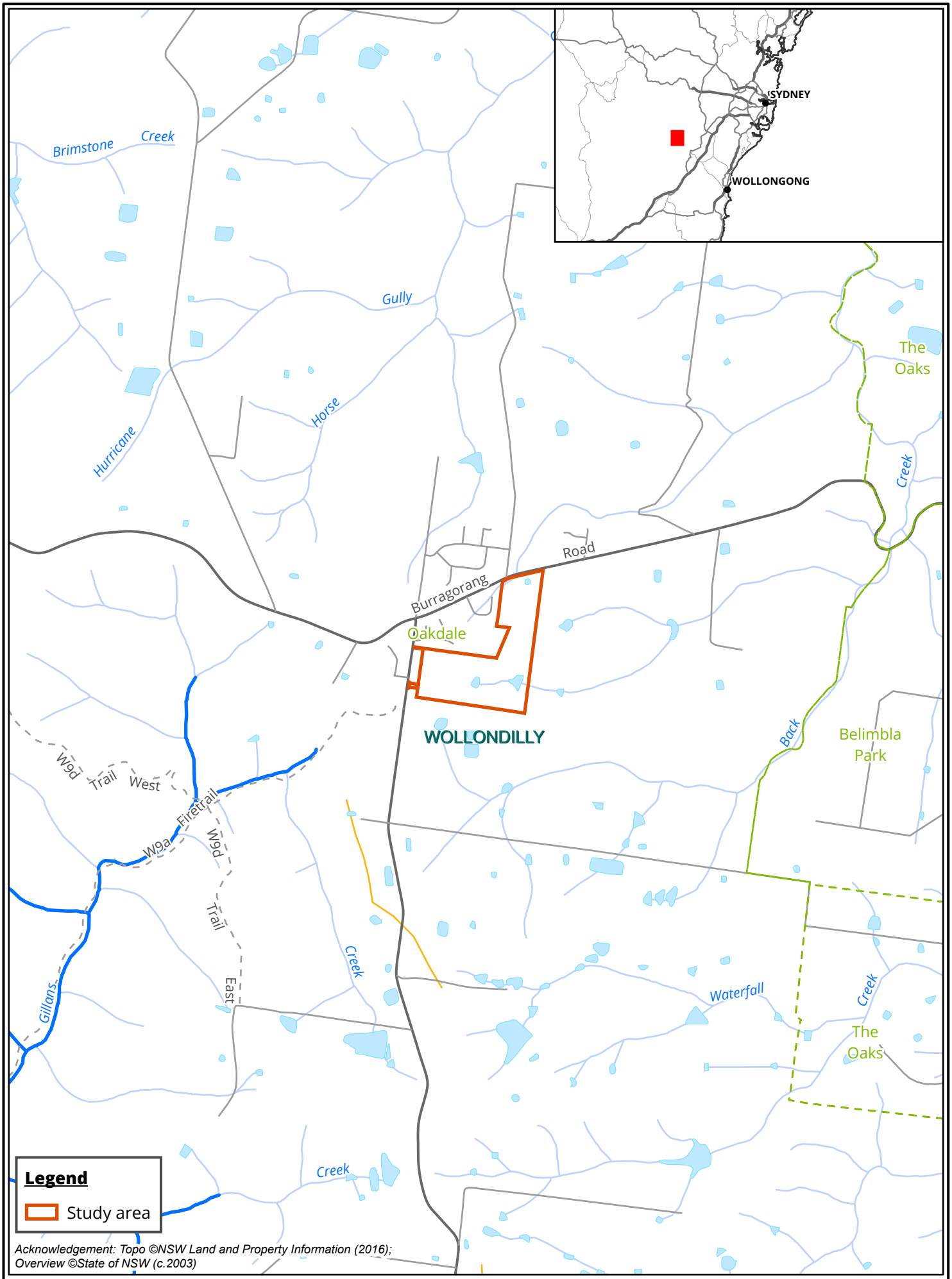
1.5. Investigators and contributors

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

Table 1 Investigators and contributors

Name and qualifications	Experience summary	Project role
Maggie Butcher BSc/BA (Hons)	Maggie is a Senior Associate Heritage Consultant and Excavation Director with the Biosis Sydney office. Maggie has over eight years' experience as an archaeologist and has experience in conducting desktop assessments, archaeological survey and Aboriginal and historical excavation as well as consulting with Traditional Owners. She has also successfully managed a number of ACHAs to completion since her commencement at Biosis.	Quality assurance Technical advice

Name and qualifications	Experience summary	Project role
Crystal Garabedian BA Archaeology (Hons)/BSc Geology and Geophysics	Crystal joined the Heritage team in the Biosis Sydney office in 2021 and is currently a Heritage Consultant. Since joining Biosis, Crystal has gained experience in Aboriginal community consultation, project management, research, report writing, field surveys, test and salvage excavations. She has managed Historical Heritage Assessments, Aboriginal Due Diligence Assessments and ACHAs for a variety of projects throughout New South Wales. Crystal holds specialist skills in the identification of marine zooarchaeological material.	Project Management Field Investigation Reporting
Hannah Mills BA, MA	Hannah is a Heritage Consultant based in Wollongong, with experience in the Sydney, South Coast and Newcastle areas. Having already worked as a casual and subcontractor for a number of heritage consultancies, Hannah brought with her experience in historical and Aboriginal test excavations. Since joining Biosis, Hannah has gained experience in project managing Aboriginal heritage assessments in the Wollongong and Batemans Bay areas, Aboriginal community consultation, artefact analysis, background research and report preparation.	Reporting
Bronte Baonza BA Archaeology & Ancient History/International Relations	Bronte joined Biosis in 2023 as a Graduate Heritage Consultant with the Sydney Heritage team. During her time with Biosis, she has supported project managers in conducting archaeological surveys, test excavations, Aboriginal consultation, and background research.	Background Research Consultation
Otto Reichelt BA Built Environment (Architecture)	Otto joined Biosis in 2023 as a Graduate Heritage Consultant with the Sydney Heritage team. During his time with Biosis, he has supported project managers in conducting archaeological surveys, test excavations, Aboriginal community consultation and background research.	Field Investigation Background research
Jen Townsend BSc Physical Geography and Environmental Geosciences	Jennifer is a GIS Analyst and has been a member of the GIS team at Biosis since November 2021. In her time at Biosis, she has gained experience across a wide range of technical skills, including data collection and management, digitisation, and cartographic design. Since joining Biosis, Jennifer has been committed to producing high quality maps and spatial analyses for clients on a wide range of projects including historical and Aboriginal heritage reports, and complex ecological assessments throughout NSW and Victoria.	Mapping



Acknowledgement: Topo ©NSW Land and Property Information (2016); Overview ©State of NSW (c.2003)

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Figure 1 Location of the study area

Matter: 39164, Date: 16 May 2023,
Drawn by: JET, Checked by: BB, Last edited by: gologhlin
Location: P:\39100s\39164\Mapping\
39164_OakdalePlanningProposalACHAandHHA
Layout: 39164_ACHA_F1_Locality

0 200 400 600 800 1,000
Metres
Scale 1:25,000@ A4, GDA 1994 MGA Zone 56

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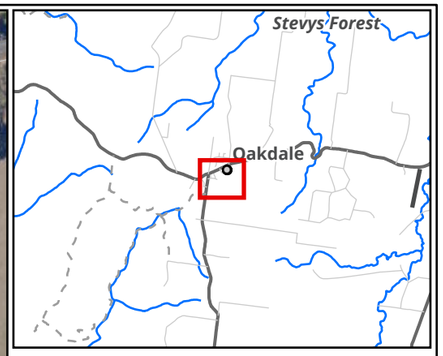

Legend

- Study area
- Lot

Figure 2 Study area detail

0 30 60 90 120

Metres

Scale: 1:3,000@ A3

Coordinate System:
GDA 1994 MGA Zone 56

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Matter: 39164, Date: 16 May 2023,
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Layout: 39164_ACHA_F2_StudyArea

2. Proposed development

The proposed development will involve the subdivision of the study area into up to 212 lots and construction of residential buildings. This development will include several works associated with residential development of the area (Figure 3). This will comprise the rezoning of up to 19.1 hectares of the study area to R2 Low Density Residential, facilitating a yield of up to 208 residential lots. To facilitate this development, earthworks, road construction, services and infrastructure installation will occur. These activities will result in disturbance of the ground throughout the study area.

The concept subdivision contains a range of lot sizes including several large residential lots intended to facilitate the retention of native vegetation. Subject to detailed design based on ecological, bushfire and engineering assessments it is envisaged that these lots would include dwelling envelopes on the land title. A restriction may also be placed on the title of these lots relating to the retention of existing trees.

The interface between the proposed subdivision and adjoining rural land has been addressed either using perimeter roads or relatively larger lots. Lots fronting Burragorang Road have an average lot size of 840 square meters in keeping with the character of the village.

It is proposed that the existing large dam in the southeast part of the site be re-purposed as a stormwater detention basin to be contained within a drainage reserve.

The study area will retain approximately 39146 square metres of C2 Environmental Conservation zoned land and 28207 square metres (4784 square metres on the northern portion and 23423 square metres on the southern portion) of C3 Environmental Management zoned land to support the conservation of existing native vegetation adjoining Willis Park. A total of 212 lots are proposed, with the aforementioned 208 Low Density Residential lots, as well as three super lots for Environmental Conservation and Environmental Management purposes and one lot containing a stormwater basin.

Legend

- Study area
- Lot
- Proposed works

Figure 3 Proposed works

0 25 50 75 100

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

N

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Matter: 39164, Date: 10 November 2023,
Prepared for: CG, BB, HM, Prepared by: HL., Last edited by: jtownsend
Location: P:\39100s\39164\Mapping\
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Layout: 39164_ACHA_F3_ProposedWorks

3. Desktop assessment

The desktop assessment involves researching and reviewing existing archaeological studies and reports relevant to the study area and surrounding region. This information is combined to develop an Aboriginal site prediction model for the study area, and to 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 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. Topography and hydrology

The study area lies within Sydney Basin Bioregion of Burragorang, whose geology primarily consists of Permian and Triassic sandstones and shales on the western edge of the Basin (NPWS 2003). The study area lies within Wianamatta Group shales and sandstones in the northern and western portions and the central portion lies within the Hawkesbury sandstone geological formation. The Wianamatta geological group is Middle Triassic in age (245-235 million years ago) and it overlays Hawkesbury Sandstone. The lower bed of the Wianamatta Group consists of Ashfield Shale, which is present within the study area and contains black sideric claystone and limonite. The upper bed is Bringelly Shale that consists of a shale/sandstone sequence in which brown shale dominates. The frequency of lithic sandstone increases in the upper-most sections (Hazelton & Tille 1990, pp. 2–3). Common site types within the Ashfield Shale include artefact and PAD sites. The Hawksbury Sandstone geological formation is characterised as medium to coarse grained quartz sandstone with minor shale and laminite lenses (Hazelton & Tille 1990, pp. 45). It also occurs as flat topped outcrops (platforms of varying sizes) and boulders, mainly on ridge tops, and also along the sides of gullies and in valley bottoms (JMCHM 2008). Common site types within the Hawkesbury Sandstone geological formation include rock shelter, art and grinding groove sites (Figure 4).

Topography within the study area can be characterised as undulating. There is a crest located in the west that slopes down in an eastward direction towards drainage depressions in the south-east and north-west (Figure 5).

Stream order is recognised as a factor which helps the development of predictive modelling in Aboriginal archaeology. Predictive models which have been developed for the region have a tendency to favour permanent water courses as the locations of complex sites that have been continuously occupied, 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 (Jo McDonald Cultural Heritage Management 2000, pp. 19).

The stream order system used for this assessment was originally developed by Strahler (1964). It functions by adding two streams of equal order at their confluence to form a higher order stream, as shown in Photo 1. As stream order increases, so does the likelihood that the stream would be a perennial source of water.

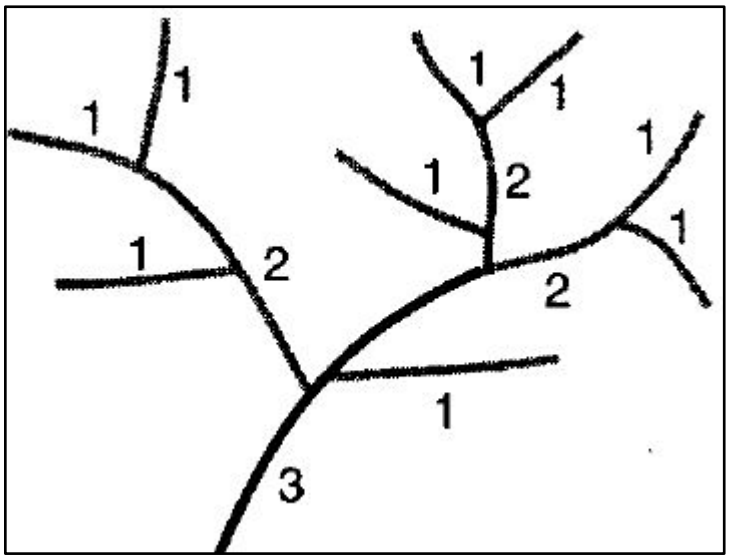

Photo 1 Diagram showing Strahler stream order (Ritter et al 1995, p. 151)

There are two non-perennial water courses present within the study area; these flow to Back Creek, approximately 2 kilometres north-east from the study area (Figure 5). One of first-order streams flow in a westward direction into the study area, while the second first-order stream flows in a south-western past the northern portion of the study area. Back Creek is a non-perennial tributary of the fifth order Werriberri Creek, a perennial water course 4.25 kilometres east of the study area. Gilsons Creek, located 580 meters south-west from the study area is a tributary of Lake Burragorang, a modified eighth order perennial water source which is also impounded by Warragamba Dam.

3.1.2. Soil landscapes

Soil landscapes have distinct morphological and topological characteristics that result in specific archaeological potential. Because they are defined by a combination of soils, topography, vegetation and weathering conditions, soil landscapes are essentially terrain units that provide a useful way to summarise archaeological potential and exposure.

The study area is comprised of the Blacktown soil landscape which is a residual soil landscape consisting of gently undulating rises, broad rounded crests and gently inclined slopes with a gradient of less than 5% (Figure 6). Local relief within the Blacktown soil landscape is up to 30 metres and rocky outcropping is absent. This is in contrast to the typical characteristics of the Hawkesbury Sandstone geological formation, suggesting that the combination of the Blacktown soil landscape and the Hawkesbury Sandstone geological formation may result in reduced frequency of sandstone outcroppings. Dominant soils consist of shallow to moderately deep (<100 centimetres) red and brown podzols on crests in well drained topographies, and deep (150–300 centimetres) yellow podzolic soils and soloths on lower slopes and drainage lines (Bannerman & Hazelton 1990a, pp. 28).

Residual soils form from the *in situ* weathering of bedrock material, resulting in slow accumulation of soils over long periods of time. Due to their age and slow accumulation, residual soil landscapes have reasonable potential to preserve archaeological deposits in an open context, such as stone artefacts derived from occupation sites. However, the slow accumulation and high impact of extensive land clearing (usually associated with pastoral and civic development) often results in poor preservation of archaeological material where disturbances have occurred. Other occupational evidence might include scarred trees where remnant

vegetation occurs. This is evident in the number of sites found within and nearby the study area, which area also located within this soil landscape.

The Blacktown soil landscape distribution patterns vary dependant on the landform type it is contained within, therefore altering the depths at which subsurface archaeological artefact deposits are found. The majority of the study area contains upper to mid-slopes, with 20 centimetres of clay loam >50 centimetres of strong pedal mottled clay >100 centimetres of light grey plastic mottled clay. On average, soil depth is less than 200 centimetres.

Table 2 Blacktown soil landscape characteristics (Bannerman & Hazelton 1990b, pp. 29–30)

Soil material	Description
Blacktown 1 (*bt1*)—Friable brownish-black loam	Friable brown loam to clay loam with a moderately pedal subangular block structure and rough-faced porous fabric ped fabric. This soil material generally occurs as a topsoil (A horizon) up to 30 cm in thickness. Peds are well defined and range from 2–20 mm. Rounded iron indurated fine gravel-sized shale fragments and charcoal fragments sometimes occur as inclusions. Soil colour is brownish black (10YR 2/2) and can also range from dark reddish brown (5YR 3/2) to dark yellowish brown (10yYR 3/4). Soil varies from moderately acidic to neutral.
Blacktown 2 (*bt2*)—Hardsetting brown clay loam	Hardsetting brown clay loam to silty clay loam, with an apedal massive to weakly pedal structure and porous earthy fabric. Occurs as an A2 Horizon deposit and occasionally an A1 horizon topsoil. Typically between 10–30 cm in thickness. Peds range from 20–50 mm. Platy, iron indurated gravel sized shale fragments are common, with rare inclusions of charcoal and roots. Soil colour is predominately dark brown (7.5YR 4/3) but can range from dark reddish brown (2.5YR 3/3) to dark brown (10YR 3/3). Soil acidity varies from moderately acidic to slightly acidic.
Blacktown 3 (*bt3*)—Strongly pedal, mottled brown light clay	Brown light to medium clay with strong pedal polyhedral or subangular-blocky structure and smooth faced dense ped fabric that occurs as a subsoil (B horizon). The soil texture increases with depth and peds range from 5–20 mm. Fine to coarse gravel sized shale fragments are common inclusions and often occur within stratified bands, with roots and charcoal rarely being present. Soil colour is brown (7.5YR 4/6) and can range from reddish brown (2.5YR 2/6) to brown (10YR 4/6). The pH of this soil material varies from strongly acidic to slightly acidic.
Blacktown 4 (*bt4*)—Light grey plastic mottled clay	Plastic light grey silty clay to heavy clay with moderately pedal polyhedral to subangular blocky structure, and smooth-faced dense ped fabric, that occurs as a deep subsoil deposit overlying shale bedrock (B3 or C Horizon). Peds range between 2–20 mm. Inclusion consists of weathered ironstone concretions and rock fragments. Gravel sized shale fragments and roots occur occasionally, but charcoal is rare within this soil deposit. Red, yellow, and brown mottles are present and soil colour is usually light grey (10YR 7/1) or sometimes greyish yellow (2.5YR 6/2). Soil acidity ranges from strongly acidic to moderately acidic.

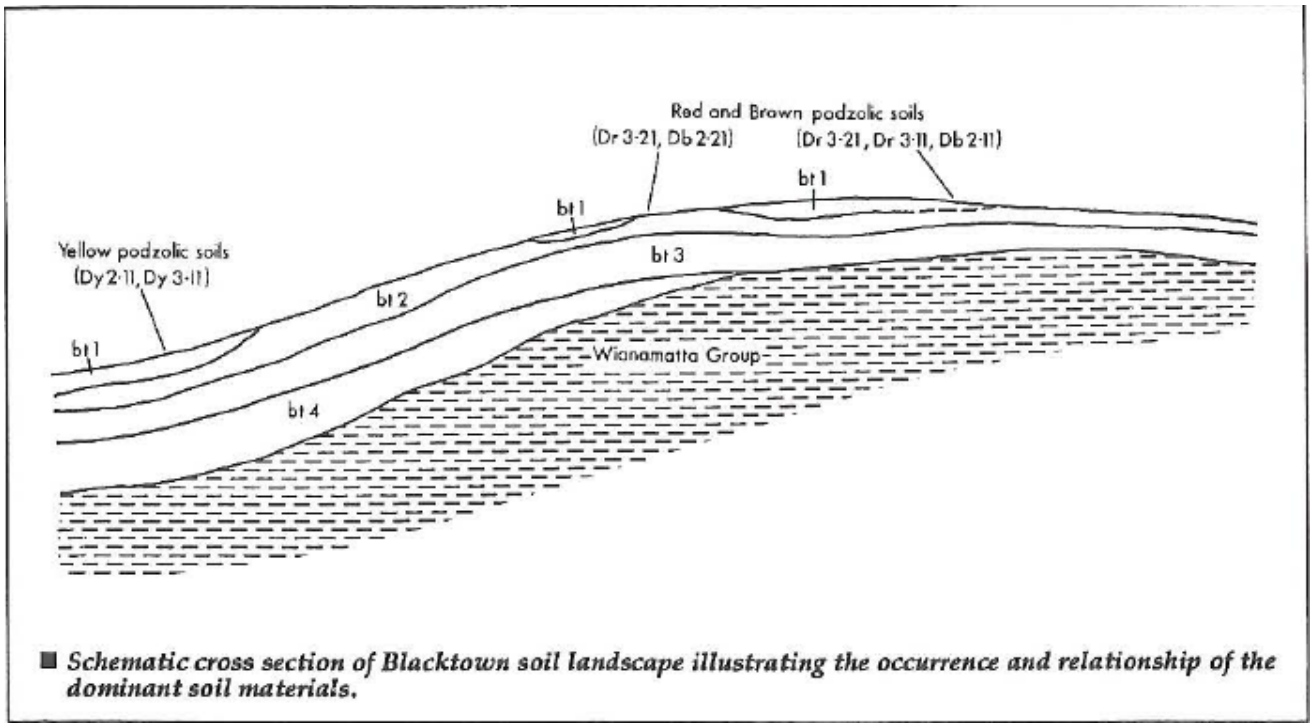

Photo 2 Schematic cross section of the Blacktown soils (Bannerman & Hazelton 1990a, pp. 28)

Legend

Study area

Geological units

- Q_a,Alluvium
- Tuth,Hawkesbury Sandstone
- Twia,Ashfield Shale

Figure 4 Geological units in the vicinity of the study area

0 200 400 600 800

Metres

Scale: 1:20,000@ A3

Coordinate System:
GDA 1994 MGA Zone 56

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Matter: 39164, Date: 16 May 2023,
Drawn by: JET, Checked by: BB, Last edited by: gologhlin
Location: P:\39100s\39164\Mapping\
39164_OakdalePlanningProposalACHAandHHA,
Layout: 39164_AR_F4_Geology

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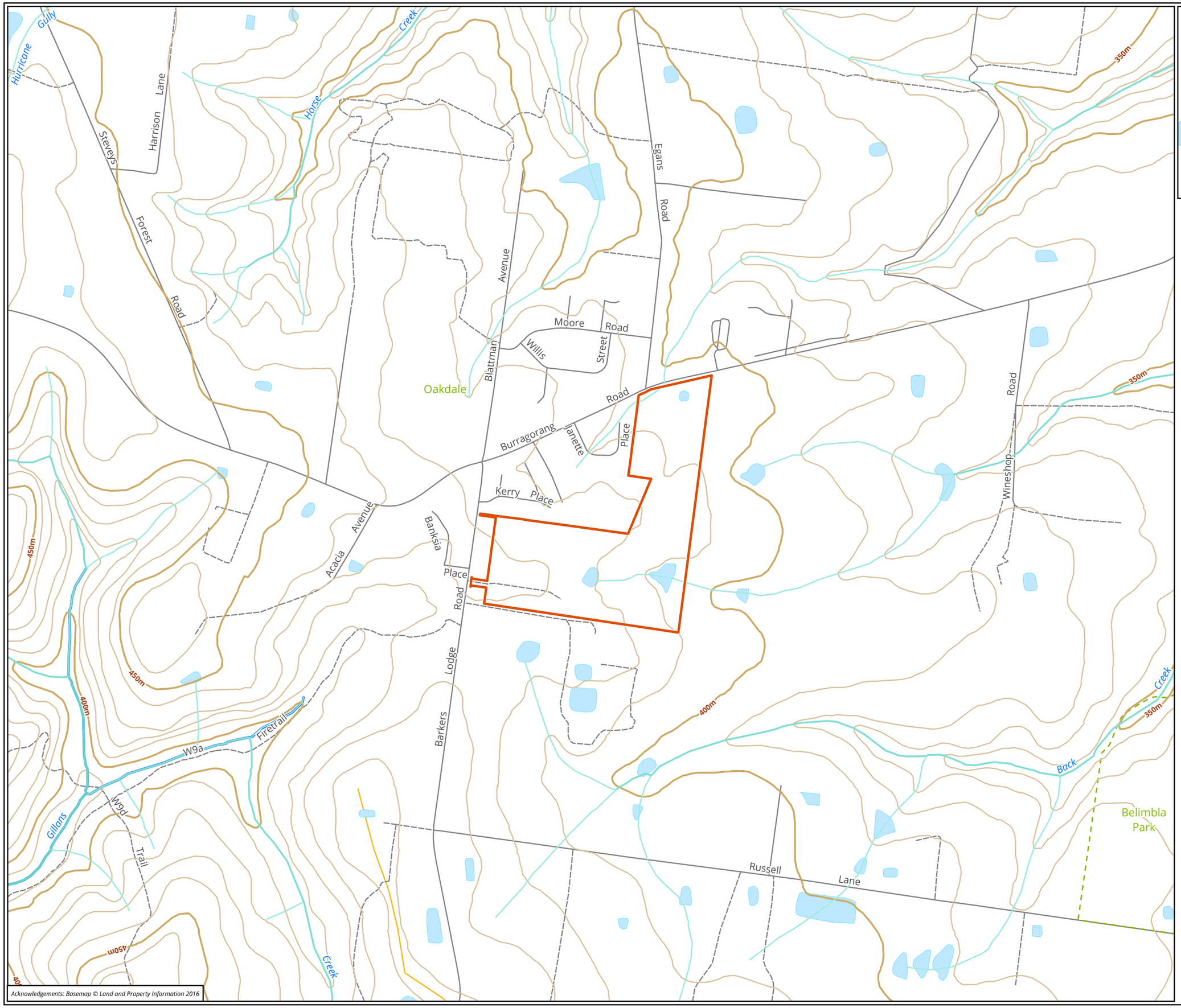

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Figure 5 Hydrology and topography in the vicinity of the study area

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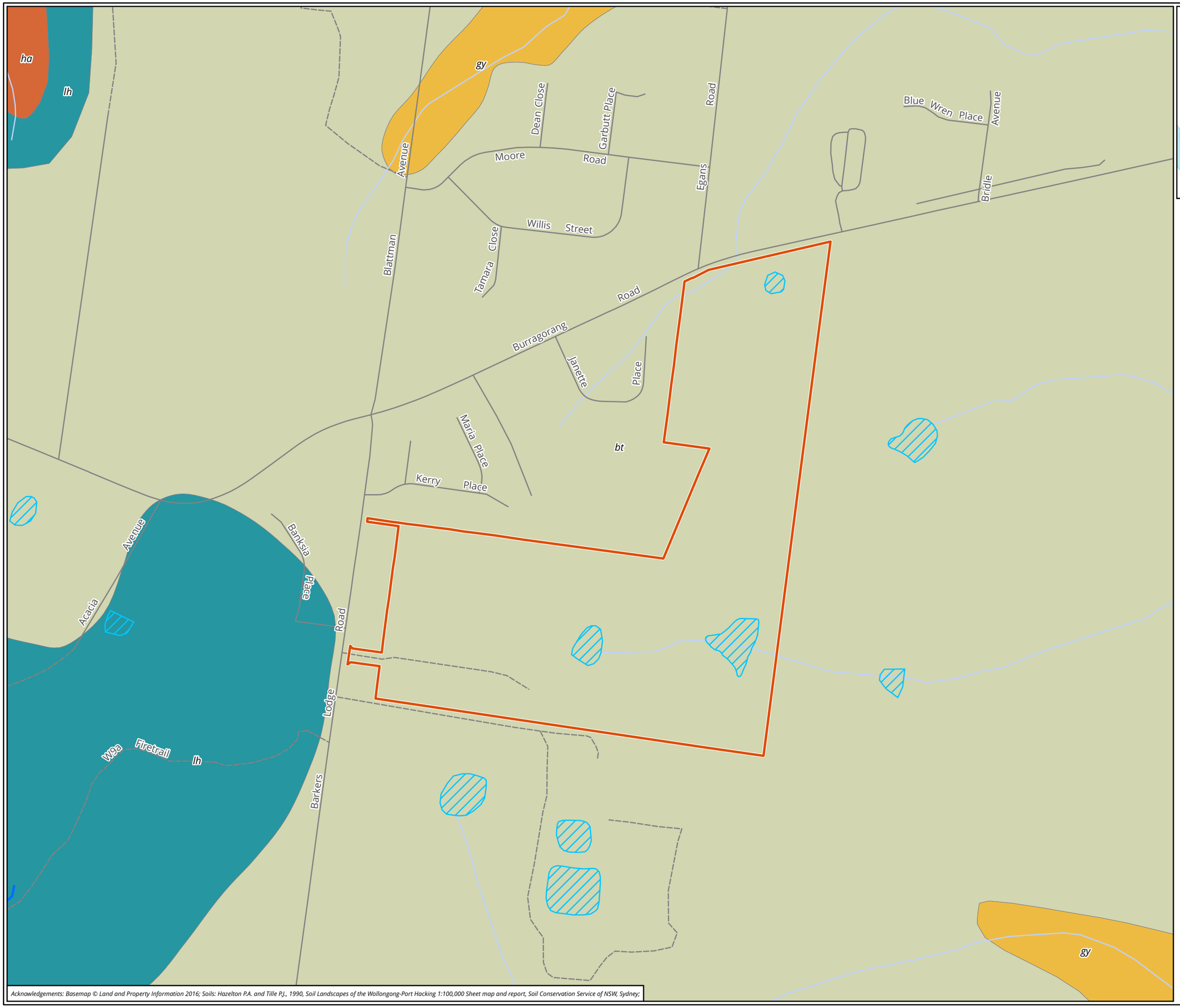
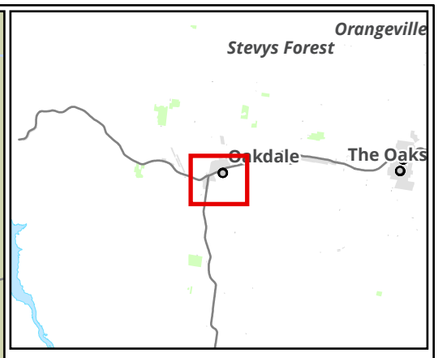
Layout: 39164_AR_F5_Hydrology





Legend

Study area

Soil landscape units

- bt - BLACKTOWN
- gy - GYMEA
- ha - HAWKESBURY
- lh - LUCAS HEIGHTS

Figure 6 Soil landscapes in the vicinity of the study area

0 50 100 150 200

Metres

Scale: 1:5,000@ A3

Coordinate System: GDA 1994 MGA Zone 56

N

biosis

Matter: 39164, Date: 17 October 2023,
Drawn by: JET, Checked by: BB, Last edited by: jtownsend
Location: P:\39100s\39164\Mapping\39164_HL_OakdalePlanningProposalACHAandHHA,
Layout: 39164_AR_F6_Soils

Acknowledgements: Basemap © Land and Property Information 2016; Soils: Hazelton P.A. and Tille P.J., 1990, Soil Landscapes of the Wollongong-Port Hacking 1:100,000 Sheet map and report, Soil Conservation Service of NSW, Sydney;

3.1.3. Landscape resources

The wider region includes distinct ecological zones, including open forest and open woodland, with riparian vegetation extending along many of the watercourses. Each ecological zone hosts a different array of floral and faunal species, many of which would have been utilised according to seasonal availability. Aboriginal inhabitants of the region would have had access to a wide range of avian, terrestrial and aquatic fauna and repeated firing of the vegetation would have opened up the foliage allowing ease of access through and between different resource zones.

The Blacktown soil landscape, while now almost fully cleared, would have supported tall open-forest (wet sclerophyll forest, open-forest and woodland (dry sclerophyll forest). Remaining traces of these may include remnant Sydney Blue Gum *Eucalyptus saligna* and Blackbutt *E. pilularis* in higher rainfall areas, while in drier areas, original woodlands and open-forests feature Forest Red Gum *E. tereticornis*, Narrow-leaved Ironbark *E. crebra* and Grey Box *E. microcarpa* (eSPADE 2023).

Plant resources were used in a variety of ways. Fibres were twisted into string, which was used for many purposes, including the weaving of nets, baskets and fishing lines. String was also used for personal adornment. Bark was used in the provision of shelter; a large sheet of bark being propped against a stick to form a gunyah (Attenbrow 2002).

As well as being important food sources, animal products were also used for tool making and fashioning a myriad of utilitarian and ceremonial items. For example, tail sinews are known to have been used to make fastening cord, while 'bone points', which would have functioned as awls or piercers, have been identified in the archaeological record. Animals such as Brush-tailed Possums were highly prized for their fur, with possum skin cloaks worn fastened over one shoulder and under the other. Kangaroo teeth were incorporated into decorative items, such as head bands (Attenbrow 2002).

Native fauna that may have inhabited the area or its surrounds include mammals such as the Koala *Phascolarctos cinereus*, Common Ringtail Possum *Pseudocheirus peregrinus*, Common Wombat *Vombatus ursinus*, Eastern Grey Kangaroo *Macropus giganteus*, Short-beaked Echidna *Tachyglossus aculeatus*, Swamp Wallaby *Wallabia bicolor* and Common Brushtail Possum *Trichosurus vulpecula*. Bird species that may have inhabited the area include the Crimson Rosella *Platycercus elegans*, Glossy Black-cockatoo *Calyptorhynchus lathami*, Australian Magpie *Gymnorhina tibicen*, Kookaburra *Dacelo novaeguineae* and the Yellow-tailed Black-cockatoo *Calyptorhynchus (Zanda) funereus*. The Red-bellied Black Snake *Pseudechis porphyriacus* may also have been present.

3.1.4. Land use history

The study area is contained within land granted to Patrick Martin of Picton in 1862 (Photo 3). An obituary for Patrick Martin noted he was a pastoralist of the Campbelltown and Camden district ('Obituary.', 1891). Later annotations on the Crown plan for this land indicate the property was reserved for classification in 1907, but this was revoked in 1908 (NSW Land Registry Services, Crown plan C189.1521). The land was acquired by Elizabeth Willis in 1920 (NSW Land Registry Services, Certificate of Title Volume 102 Folio 162).

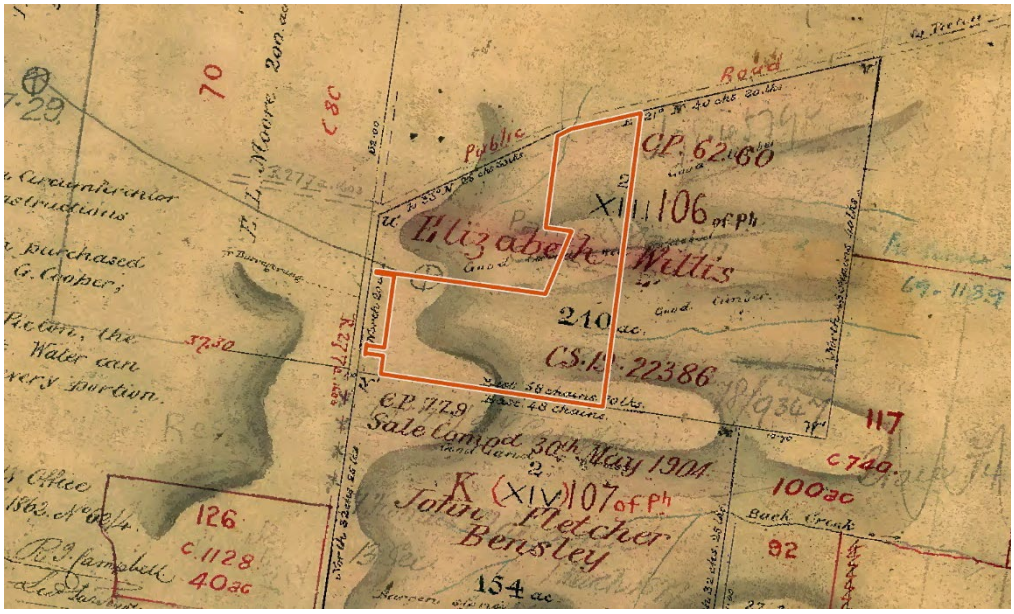


Photo 3 **Crown plan of land containing the study area, which is outlined in red (Source: NSW Land Registry Services, Crown plan C189.1521)**

A review of historical aerial photographs allows for an analysis of change within the study area from the mid-20th century onwards. By 1975, the southern portion of the study area has been cleared of vegetation while the north portion remains with dense forestry (Photo 4). Pastoral grazing and farming is evident, as well as residential buildings and a pathway from Barkers Lodge Road. Two dams are also present in the study area.

Photo 4 **1975 aerial photograph of the study area (Source: NSW aerial imagery)**

By 1990, the northern portion of study area has undergone significant changes, with the clearing of vegetation for agriculture as well as the construction of residential buildings with entrances from Burragorang

Road (Photo 5). A dam has also been developed, with the construction of tracks evident across the study area. Significant residential development is also seen surrounding the study area.

Photo 5 1990 aerial photograph of the study area (Source: NSW aerial imagery)

Further changes had occurred by 2005, comprising further removal of vegetation around the residential buildings in the northern portion of the study area (Photo 6). The tracks towards the dam in the south-east portion are less prominent.

Photo 6 2005 aerial photograph of the study area (Source: NSW aerial imagery)

3.2. Previous archaeological work

Several cultural heritage surface (surveys) and sub-surface (excavations) investigations have been conducted throughout the Sydney Basin in the past 30 years. There has been an increasing focus on cultural heritage assessments in NSW due to ever increasing development, along with the legislative requirements for this work and greater cultural awareness of Aboriginal cultural heritage.

3.2.1. Regional overview

Several Aboriginal cultural heritage investigations have been conducted for the Cumberland Plain region. Models for predicting the location and type of Aboriginal sites with a general applicability to the Burragorang region 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.

JMCHM (2007) developed a predictive model for Aboriginal site distribution on the Cumberland Plain that will be applicable to the study area. This has been developed using the Aboriginal occupation models proposed for the Camden area by Haglund and Associates (1989, cited by JMCHM 2007) and data collected from other areas of the Cumberland Plain where trends in the distribution of archaeological sites have been apparent. The following predictive model for the Cumberland Plain has been taken from JMCHM (2007).

- The size (density and complexity) of archaeological features will vary according to permanence of water, landscape unit and proximity to stone resources in the following way:
  - At the headwaters of upper tributaries (first-order creeks) archaeological evidence will be sparse and will comprise little more than background scatters of stone artefacts.
  - At the middle reaches of minor tributaries (second-order creeks) archaeological evidence will be sparse but indicate focussed activity.
  - At the lower reaches of tributary creeks (third-order creeks) archaeological evidence will indicate more frequent occupation and evidence of repeated, more concentrated activities.
  - On major creek lines and rivers (fourth-order creeks) archaeological evidence will indicate more permanent occupation, which is of greater complexity.
  - Creek junctions and swamps may provide foci for site activity.
  - Ridgetop locations between drainage lines will usually contain limited archaeological evidence.
- Where sandstone features occur (overhangs or platforms), these may have provided a focus for several activities including camping or art production or the sharpening of axes. Sandstone platforms may also have been used to produce art (engravings), although these are very rare on the margins of the Cumberland Plain.

JMCHM (2007) studies within the Cumberland Plain have noted that whilst the recognised predictive modelling is still relevant, an analysis of lithics assemblages within the region has identified additional considerations separate from the established model.

White & McDonald (2010) undertook a review of previous work in the Rouse Hill development area, approximately 83 kilometres north-east of the study area, discussing lithic artefact distribution in previous excavations carried out by JMCHM in 2008. The study considered several factors including stream order, distance from water, landform, aspect, and distance to silcrete sources. As a result of the assessment, the following statements were made:

- Stream order: water supply was a significant factor influencing Aboriginal land use and habitation in the area. There was a correlation between increasing stream order and larger numbers and higher densities of artefacts (from a comparison of first, second, and fourth order streams).
- Distance from water: the results showed that an assumption that sites would be clustered within 50 metres of water sources was not entirely correct from the data available. In first order stream landscapes, there was no significant correlation between artefact distribution and distance to water. In second order landscapes, artefact density was highest within 50 metres of water, and then declined with increasing distance. In fourth order landscapes, density was highest between 51-100 metres from water.
- Landform: Artefact density was lowest on upper slopes and ridgetops, with density increasing on mid and lower slopes. Density was highest in terrace landforms, and lower on creek flats, likely due to repeated flooding events and the erosion that caused.
- Distance to silcrete sources: the results of the study showed no significant difference between sites located closer to or further away from silcrete sources. However, 6 kilometres was the maximum tested distance from silcrete sources, so the sample is only representative of a limited area.
- Aspect: only appeared to have an influence on sites in the lower parts of valleys may have been sited to take advantage of steady factors such as the rising/setting sun and wind direction. Sites in higher parts of valleys may have been influenced by weather and other factors.

The study concluded that landform and distance from water had an impact on site distribution, with artefacts becoming more numerous closer to creeks, and along higher order creeks. It also found that although artefacts are found on all landforms, landform type influences artefact distribution, with the preference being for slightly elevated, well-drained areas in the lower parts of valleys.

(2000) conducted an assessment for a proposed development for Sydney Gas operations at Kay Park, Cawdor, approximately 15 kilometres east of the current study area. The area had been subject to some disturbance resulting from pastoral and farming activities. An archaeological survey of the area identified two sites, both were artefact scatters. The first contained six artefacts and was located on a hillslope; the second contained four artefacts and was located approximately 50 metres from an ephemeral water course. Most of these artefacts were made of either silcrete or chert. The proposed development was changed in order to avoid impacting on these identified sites, and a subsequent survey was carried out of the revised assessment area (Dibden 2002). This survey did not identify any further sites.

Dibden (2003) conducted an assessment at Menangle Park, approximately 20 kilometres east of the current study area. The assessment involved an investigation of approximately 80 proposed gas well locations. The combined archaeological surveys resulted in the identification of 20 newly identified sites, the majority of which were isolated artefacts. The sites were listed as having low research potential, as they were representative of a common site type on the Cumberland Plain and were subject to high levels of disturbance. In addition to previously recorded sites in the Menangle Park study area, a total of 20 artefact scatters, eight isolated finds and seven scarred trees were identified. The dominant material type was silcrete, with some chert, tuff, and quartz artefacts also being identified.

JMCHM (2007) conducted an assessment for the Oran Park and Turner Road Precincts located approximately 30 kilometres north-east of the current study area as a part of the NSW Growth Centres assessment. The Oran Park archaeological survey identified a total of 44 sites, as well as four areas of archaeological potential; few undisturbed areas were present. The newly identified sites revealed that occupation in the area was focused around first and second order tributaries of creeks, as well as along ridge tops, hill crests, and low order creek flats. The stone artefacts discovered were predominantly silcrete, with some quartz and tuff

artefacts also present. The Turner Road archaeological survey recorded 14 newly identified sites. Of these sites, nine were open camp sites, three were scarred trees, three were potential archaeological deposits (PADs), and one was an isolated find. As with the Oran Park survey most artefacts identified were silcrete, with some artefacts of quartz and tuff also being present. The lithics analysis concluded that previous Aboriginal activity in the area was concentrated on ridge tops, hill crests, and low order creek flats, with sites being focused at river junctions.

ENSR (2009) conducted sub surface investigations for the Oran Park and Turner Road Precincts, following the JMCHM assessments conducted in 2007. The sub surface investigations at Oran Park comprised of 340, 1 by 1 metre test pits, as well as 160 square metres of open excavation. A total of 4780 stone artefacts were recovered, with silcrete artefacts accounting for about three-quarters of the total assemblage. Most artefacts were recovered from pits on creek banks, creek side flats, and particularly slopes. The sub surface investigations within the Turner Road Precinct comprised a total of 140 test pits excavated along four transect areas. The results can be seen in Table 3.

Table 3 Results of archaeological excavation at Turner Road Precinct (ENSR 2009, pp. 33)

Transect	Location	Number of test pits	Findings	Comments
E	Transect E was located either side of South Creek near a confluence of the creek and feeder drainage lines	30	Total of 106 artefacts Majority were recovered from 3 test pits	Transect E demonstrates the relative paucity of artefacts at this creek flat location with minor concentrations evident within mostly barren topsoil. Test pits with larger artefact numbers are located well back (~50 m) from the creek channel
F	Transect F is located on crest and slope landform situated well away from the creek and without good outlook directly over the South Creek Valley	40	Total of 10 artefacts Recovered from 9 of the 40 test pits excavated	Transect F demonstrates the absence of artefact concentrations. Archaeological evidence is limited to isolated random artefact occurrences within a predominantly archaeologically barren area
G	Transect G was located on a spur crest and upper slope facing the South Creek Valley. Test pit sets were arranged along the Northing lines	40	Total of 169 artefacts Recovered from 27 of the 40 test pits excavated	Transect G demonstrates the presence of significant camp site concentrations in areas of good outlook over major watercourse on elevated ground at 200 m distance from the creek. Once one moves away from this view, artefact frequency drops off to practically nothing
H	Transect H was located on the slope and creek side flat next to a second order creek	30	Total of 179 artefacts Recovered from 22 of the 30 test pits excavated	Transect H demonstrates the presence of significant camp site concentrations in areas of good outlook over second order watercourse on elevated ground at 120 m distance from the creek. There is no evident trend of increased artefact density nearer to the creek

Particular trends were evident when comparing artefact distribution across areas excavated. Most of the artefacts were located on creek side flats and slopes, which was also the location of the majority of the test pits excavated. Creek banks, ridges, and spurs had smaller artefact concentrations, and from the 15 test pits excavated on crests, only four artefacts were recovered. The results of the assessment indicated that there

was no trend evident of there being a higher number of artefacts located near creeks of a higher order. Instead, artefacts were more common in areas that maintained a good outlook over water courses.

Mary Dallas Consulting Archaeologists (MDCA 2007) assessed an area approximately 20 kilometres east of the current study area. The assessment comprised of sub surface investigations, where a total of 60 test squares and trenches were excavated across four areas. A total of 66 artefacts were recovered from 24 out of 60 excavated units. These artefacts were predominantly made of silcrete, with some chert, quartzite and quartz being present. The site was assessed as having low archaeological significance due to the level of existing disturbance and the relative lack of artefacts.

AMBS (2012) assessed the Austral and Leppington North Precincts prior to their development. An AHIMS search of the area identified 86 previously recorded sites, including 39 artefact scatters, 37 isolated finds, eight PADs, and two scarred trees. The predictive model stated that stone artefact sites were most likely to be identified during archaeological survey of the area. The survey recorded six newly identified sites, including five isolated artefacts, and one artefact scatter and PAD. Most of the artefacts found were made of silcrete, although chert was also present. Four of the artefacts were present on creek flats, and two were located on slopes. Sensitivity mapping conducted by AMBS highlighted areas in proximity to creeklines, and ridgelines as the main areas of archaeological sensitivity within the Austral and Leppington North precincts. Ridgelines and other areas of elevated terrain were assigned moderate potential, and areas adjacent to waterways were assigned high potential, with this decreasing to moderate with increasing distance to water.

3.2.2. Local overview

A small number of development-driven assessments have been undertaken within the region surrounding the study area. The findings from this work have contributed to a more informed understanding of Aboriginal cultural heritage across Cumberland Plains and the Cumberland Lowlands. Those most relevant to the study area have been summarised below.

Haglund and Associates (1989) completed salvage excavations as part of conditions of consent to destroy AHIMS sites AHIMS 52-1-0077/Nattai River 6, AHIMS 52-1-0078/Nattai River , AHIMS 52-1-0079/Nattai River 4 and AHIMS 52-1-0080/Nattai River 3, approximately 5-6 kilometres north-west of the study area, for the construction of a long term coal washery reject emplacement. The initial archaeological survey completed by Conyers et al. (1983, cited by Haglund and Associates 1989, pp. 3) covered an area 1.15 by 0.85 kilometres, during which two rock shelters with art (AHIMS 52-1-0081/Nattai River 7, AHIMS 52-1-0080/Nattai River 3), a grinding groove site (AHIMS 52-1-0082/Nattai River 8) and three shelters with PAD (AHIMS 52-1-0077/Nattai River 6, AHIMS 52-1-0078/Nattai River, AHIMS 52-1-0079/Nattai River 4) were identified. Test excavations confirmed the shelters with PAD contained archaeological deposits (Haglund 1984, cited by Haglund and Associates 1989, pp. 4). The preliminary results reported 2000-3000 artefacts were recovered from salvage excavations of 1 metre squared to a depth of 35-38 centimetres at AHIMS 52-1-0079/Nattai River 4, largely described to be 'flaking debris' with few cores or retouched artefacts present. A total of 2 square metres were excavated at AHIMS 52-1-0077/Nattai River 6 to a maximum depth of 80 centimetres. A hearth was identified at the surface level and traces in the upper 30 centimetres of the deposit, along with 'a couple of thousand' artefacts comprising mainly of small flake fragments and flaking debris. Following an initial inspection of an area of disturbance caused by animal scratching, no further excavation occurred at AHIMS 52-1-0080/Nattai River 3 due to a likely absence of artefactual material.

Navin Officer (1993) undertook an archaeological survey to identify Aboriginal sites in an area proposed for longwall mining at Oakdale Cola Mine at Oakdale, approximately 3 kilometres north of the study area. It was predicted that rock shelters with art, occupation deposit and/or PAD, grinding grooves, rock engravings artefact sites and modified trees may be present in the assessment area. The archaeological survey,

conducted by four people over seven days targeted landform surface features which were at most risk of land subsidence from mining activities, such as sandstone rock shelters, overhangs and platforms. The survey identified 12 Aboriginal sites and 19 rock shelters with PAD. Of the 12 sites, four were shelters with art (AHIMS 52-2-1689/Oakdale 1;, AHIMS 52-2-1696/Oakdale 8;, AHIMS 52-2-1698/Oakdale 10;, AHIMS 52-2-1700/Oakdale 12;), two were shelters with art and deposit (AHIMS 52-2-1690/Oakdale 2;, AHIMS 52-2-1691/Oakdale 3;), one was shelter with PAD (AHIMS 52-2-1697/Oakdale 9;), three were grinding groove sites (AHIMS 52-2-1693/Oakdale 5;, AHIMS 52-2-1694/Oakdale 6;, AHIMS 52-2-1695/Oakdale 7;), and two were artefact scatters (AHIMS 52-2-1692/Oakdale 4;, AHIMS 52-2-1699/Oakdale 11;). The results of the survey are biased in that the areas targeted for the survey would not necessarily be conducive to other site types, such as artefact sites and modified trees. It is noted that these other site types are likely present, but the works would not cause impacts due to the deep subsurface nature of the works. The assessment determined there would be no long-term constraints to the proposed longwall mining activities, and it was recommended that rock art sites should be recorded, shelter art sites and grinding groove sites should be monitored for damage.

Navin Officer (1994) was engaged to undertake further survey and assessment of an additional area for proposed longwall mining at Oakdale Coal Mine at Oakdale, approximately 1.6 kilometres north of the study area. Similar to the survey conducted of the western area (Navin Officer Archaeological Resource Management 1993), predicted site types within the assessment area included rock shelters with art, occupation deposit and/or PAD, grinding grooves, rock engravings artefact sites and modified trees. A similar approach was taken with regards to the survey strategy, in that landform surface features likely to be affected by land subsidence resulting from mining activities were targeted, such as sandstone rock shelters, overhangs and platforms. The survey was conducted by four people over five days and resulted in 13 Aboriginal sites and 16 PADs being identified. Of the 13 sites, three were rock shelters with occupation deposit and art (AHIMS 52-2-1706/Oakdale 20, AHIMS 52-2-1705/Oakdale 21, AHIMS 52-2-1704/Oakdale 22, and AHIMS 52-2-1703/Oakdale 23), one was a rock shelter with occupation deposit, art and grinding grooves (AHIMS 52-2-1708/Oakdale 18), six were rock shelters with occupation deposit (AHIMS 52-2-1712/Oakdale 14, AHIMS 52-2-1711/Oakdale 15, AHIMS 52-2-1710/Oakdale 16, AHIMS 52-2-1704/Oakdale 22, AHIMS 52-2-1702/Oakdale 24, and AHIMS 52-2-1701/Oakdale 25), one was a grinding groove site (AHIMS 52-2-1709/Oakdale 17), one was a modified tree (AHIMS 52-2-1713/Oakdale 13) and one was a stone arrangement of undetermined origin (AHIMS 52-2-1707/Oakdale 19). Due to the areas targeted, these results are also biased and there are likely more sites of varying type within the assessment area which were not surveyed. The assessment determined there would be no long-term constraints to the proposed longwall mining activities, and it was recommended that rock art sites should be recorded, shelter art sites and grinding groove sites should be monitored for damage.

Navin Officer (1994a) was commissioned by Clutha Limited to undertake an archaeological survey of Portion B of the eastern coal reserve at the Oakdale Colliery, located approximately 380 metres north. The survey identified 13 Aboriginal archaeological sites and 16 PADs: six rock shelters with occupational deposits, three rock shelters with occupational deposit and art, one rock shelter with occupational deposit, art and grinding grooves, one grinding groove site and one stone arrangement of undetermined origin.

Navin Officer (1994b) was commissioned by Clutha Limited to undertake an archaeological survey within the eastern coal reserves area in Area A-1 and B-1, located approximately 380 metres north of the study area. A survey was undertaken that targeted surface landform features thought to be most at risk of potential land subsidence caused by mining activity (for example, rock shelters, overhangs and platforms) (Navin Officer 1994b, pp. 1). Three Aboriginal sites were recorded including a scarred tree, artefact scatter and shelter with deposit and art; all of these sites are within 2 kilometres of the current study area. These sites are registered as AHIMS 48-2-0055/Oakdale 26, AHIMS 52-2-3619/Oakdale 27 and AHIMS 52-2-3620/Oakdale 28. Navin Officer identified six PADs. It was recommended that detailed recording for the shelter with deposit and art be carried out. The scarred tree is located on a hillslope 1.4 kilometers from the study area in dry sclerophyll

forest. AHIMS 52-2-3619/Oakdale 27 consisted of five chert artefacts located in a completely disturbed area, directly under a transmission line, 530 meters north-west from the study area. AHIMS 52-2-3620/Oakdale 28 is a mostly undisturbed rock shelter 844 meters north-east from the study area on a sandstone outcrop on a hillslope. Three artefacts were located in the shelter dripline – one chert and two quartz. The art in the rock shelter is limited to a small area on the roof.

Navin Officer (1995) completed an archaeological survey and assessment for Clutha Limited for two areas proposed for longwall mining activities at Brimstone Colliery, approximately 7 kilometres north of the study area. Based on environmental and archaeological research, it was predicted that rock shelter sites with occupation deposit and / or rock art, PAD, modified tree, grinding groove and artefact site types would be present within the assessment area. Similar to previous assessments, the survey targeted areas which would likely be affected by land subsidence caused by mining activities, namely sandstone rock shelters, overhangs and platforms. The survey was conducted by three people over 2.5 days, resulting in the identification of two Aboriginal sites and two PADs. Of the two sites, one was a modified tree (AHIMS 52-2-1811/Oakdale 29) and the other was a rock shelter with art (AHIMS 52-1-0164/Oakdale 30). The assessment determined there would be no constraints to the proposed longwall mining activities, and no further recording of sites was required.

Biosis Research (2010) was commissioned by TCG Planning on behalf of Wollondilly Shire Council to undertake Aboriginal and historical assessment of the proposed rezoning of two properties at The Oaks, approximately 8 kilometres east of the current study area. No new Aboriginal sites or areas of archaeological sensitivity were identified.

Artefact Heritage (2013) was commissioned by Precise Planning to conduct and Aboriginal heritage assessment to support a Planning Proposal for the re-zoning of 35 Egans Road in Oakdale, approximately 350 metres to the north-east of the current study area. Two artefact scatters were located during the survey. The entire area was considered to have high to moderate levels of previous disturbance and was assessed as having low archaeological potential. Recommendations included applying for an AHIP if impacts to two Aboriginal sites are proposed in the future. No further archaeological work was required.

Biosis (2016) conducted an Aboriginal heritage due diligence assessment at 1550 Burragorang Road, Oakdale, approximately 155 metres north-west of the study area, in 2013 and identified areas of moderate archaeological sensitivity in association with a drainage channel, elevated landform, and a crest within the southwest portion of the study area. Test excavations were undertaken by Biosis for the area of moderate sensitivity within the crest landform as well as and a small rise to the immediate north of a small drainage line near the western boundary in May 2016. A total of 10 test pits were excavated and no artefacts were recovered. The landforms were compared with that of those present within the current study area and it was confirmed that the landforms present within the current study area were more likely to yield Aboriginal objects, due to their elevated position within the landscape.

Biosis (2019) undertook an ACHA for Michael Brown Planning Strategies Pty Ltd at 1590 Burragorang Road, Oakdale, approximately 445 metres west of the study area. Based on background research, it was anticipated that there was high likelihood for artefact sites to be present within the assessment area, along with moderate likelihood for modified trees, axe grinding grooves and PAD sites. While no existing sites were recorded within the assessment area, the archaeological survey identified an artefact scatter comprising four artefacts (AHIMS 52-2-4504/Burragorang Road AS1), along with areas of high and moderate archaeological potential across the entire assessment area. AHIMS 52-2-4504/Burragorang Road AS1 featured a silcrete complete flake, a quartz distal flake, and two quartz angular fragments. Test excavations were undertaken, resulting in the identification of a sub-surface artefact scatter comprising three artefacts (AHIMS 52-2-4503/Burragorang Road AS2), all of which were complete chert flakes recovered from a depth range of 5-30 centimetres. Both AHIMS 52-2-4504/Burragorang Road AS1 and AHIMS 52-2-4503/Burragorang Road AS2 were assessed to hold low significance, and an AHIP was recommended to impact upon the sites.

Biosis (2023) prepared an Aboriginal and non-Aboriginal desktop constraints assessment for Tudor Planning and Design for 650 Burragorang Road, The Oaks, approximately 5.5 kilometres north-east of the study area. The background research identified environmental features which increased the likelihood for Aboriginal sites to be present. These environmental features comprise the presence of non-perennial water sources within and near the assessment area, Ashfield and Bringelly Shale and the Minchinbury Sandstone geological formations, the residual Blacktown soil landscape and broad slopes and flat landforms within the assessment area. It was recommended that a formal Aboriginal Due Diligence Assessment be undertaken to determine whether Aboriginal sites or areas of archaeological potential were present within the assessment area.

3.2.3. AHIMS site analysis

A search of the AHIMS database (Client Service ID: 780128) identified 97 Aboriginal archaeological sites within a 9 x 9 kilometre search area, centred on the study area (Figure 7). Two of these registered sites are located within the study area (Figure 7). AHIMS search results are provided in Appendix A. Table 4 provides the frequencies of Aboriginal site types in the vicinity of the study area. The mapping coordinates recorded for these sites were checked for consistency with their descriptions and location on maps from Aboriginal heritage reports where available. These descriptions and maps were relied upon where there were notable discrepancies.

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. Some recorded sites consist of more than one element, for example artefacts and a modified tree, however for the purposes of this breakdown and the predictive modelling, all individual site types will be studied and compared. This explains why there are 109 results presented here, compared to the 97 sites identified in AHIMS.

Table 4 AHIMS site type frequency

Site type	Number of occurrences	Frequency (%)
Artefact	41	35.65
Art (Pigment or Engraved)	23	20.00
Modified Tree (Carved or Scarred)	18	15.65
Grinding Groove	16	13.91
Burial	8	6.96
Water Hole	4	3.48
Stone Arrangement	2	1.74
Shell	1	0.87
PAD	1	0.87
Aboriginal Resource and Gathering	1	0.87
Total	**109**	**100.00**

A simple analysis of the Aboriginal cultural heritage sites registered within the 9 by 9 kilometre buffer of the study area indicates that artefact sites are the most common site type at 35.65% (n=41). This followed by art sites at 20% (n=23), then modified trees at 15.65% (n=18) as well as burial sites at 6.96% (n=8). Water hole sites represent 3.48% (n=4) of the site types followed by stone arrangement at 1.74% (n=2). Shell, PAD and

Aboriginal Resource and Gathering are the least represented sites registered within the radius, each at 0.87% (n=1).

The presence of large amounts of artefact sites is likely due to the landforms of the region, in particular the presence of elevated landforms such as crests and slopes in proximity to large perennial creek lines outside the study area. The small number of PADs are likely the result of both modern development in the area and a gap in archaeological recording. This modern development significantly alters the landscape often destroying or displacing Aboriginal objects. In the case of the study area, tree clearing activities by at least the 1960s may have destroyed other archaeological site types if they were present within the study area.

AHIMS sites within the study area

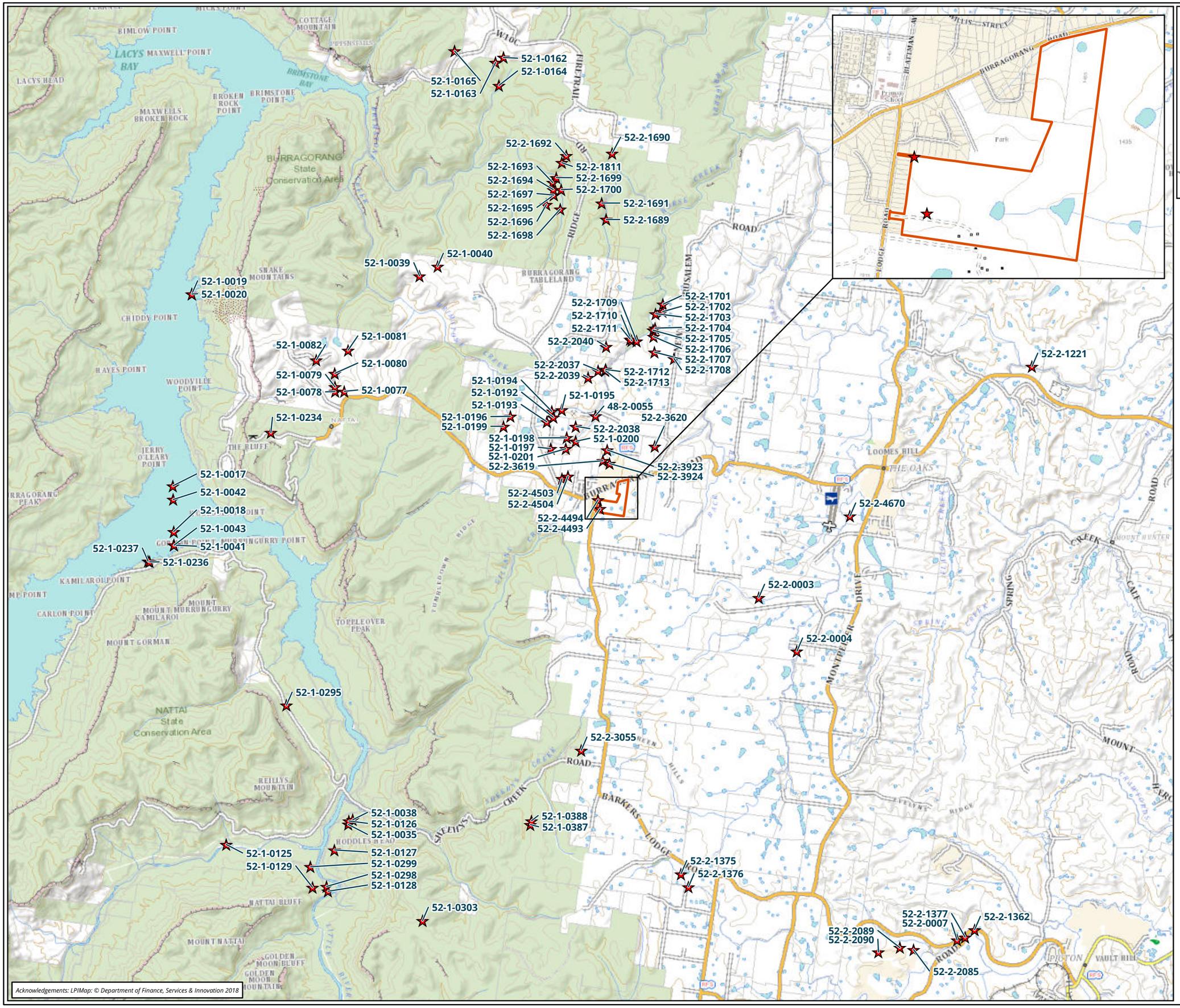
Two AHIMS sites AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02 are located within the study area. Each of the site cards for these AHIMS were reviewed and checked for inconsistencies. A summary of each site is provided below.

AHIMS 52-2-4494/BR-IF-01

BR-IF-01 consists of an isolated silcrete artefact located on the north-west border of the study area, 52 meters east from Bakers Lodge Road. The site is located on a crest of cleared grassland in a distributed residential area used for grazing. The site card has little information recorded, with references made to the report being prepared for the sites. The site was recorded by Kayandel Archaeological Services. At the time of preparing this report, it has not been possible to obtain a copy of the report prepared by Kayandel Archaeological Services.

AHIMS 52-2-4493/BR-IF-02

BR-IF-02 consists of isolated quartzite artefact located 68 meters east from the west study area boundary. The site is located on a crest of cleared grassland in a distributed residential area used for grazing. The site card has little information recorded, with references made to the report being prepared for the sites. The site was recorded by Kayandel Archaeological Services. At the time of preparing this report, it has not been possible to obtain a copy of the report prepared by Kayandel Archaeological Services.



Legend

- Study area
- AHIMS

NOT TO BE MADE PUBLIC

Figure 7 AHIMS within the vicinity of the study area

0 0.75 1.5 2.25 3

Kilometres

Scale: 1:70,000@ A3

Coordinate System:
GDA 1994 MGA Zone 56

N

biosis

Matter: 39164, Date: 18 May 2023,
Drawn by: JET, Checked by: BB, Last edited by: gologhlin
Location: P:\39100s\39164\Mapping\
39164_OakdalePlanningProposalACHAandHHA,
Layout: 39164_AR_F7_AHIMS

3.2.4. Discussion

The study area is underlain by the Hawkesbury Sandstone and Ashfield Shale geological formations and is contained within the Blacktown soil landscape. Topographically, the study area is located within an undulating landscape, with a crest located in the west that slopes down in an eastward direction towards drainage depressions in the south-east and north-west of the study area. Aboriginal sites such as artefacts and PAD are common across the Ashfield Shale geological formation and the Blacktown soil landscape, while rock shelter, art and grinding groove sites occur within the Hawkesbury Sandstone geological formation. Erosion can disturb or displace any present archaeological deposits, especially since this process is exacerbated by the clearance of natural vegetation as occurs with urban development as is seen around the study area (Chapman et al. 1989). This may mean that archaeological deposits (if present) have been disturbed by these processes, compromising their stratigraphic integrity, and leaving them unlikely to remain intact. The gently undulating landforms within the study area do not appear to be conducive to the exposure of sandstone in the form of rock shelters and platforms, and none have been observed in aerial photographs; however, any exposures associated with the two first order streams in the northern and southern portions of the study area may have provided opportunities for grinding groove sites, should said exposures be present.

In addition to the two first-order watercourses within the study area, Back Creek, a second order non-perennial stream, is located approximately 2 kilometres east of the study area. There are further first and second order non-perennial water sources in the vicinity of the study area, formed in the depressions caused by the undulating landscape. The proximity to multiple water courses of a range of stream order levels, suggests that Aboriginal people would have had sustained access to ample water sources in the wider area. As a result, there would have been access to an array of resources including various faunal and floral species used for subsistence, ritual and medicinal purposes. Proximity of the study area to ample resources increases the potential of discovering Aboriginal artefacts in subsurface deposits.

Archaeological assessments in the local area indicate that sites associated with exposed sandstone, such as rock shelters with art or deposits, grinding groove and other art sites, are common in areas with more severe terrain, i.e. steeper slopes and scarp areas to the west. This can be partially attributed to geology and landforms in these locations. It should also be noted that several local studies have reported bias in their assessments due to their targeting of specific landforms to effectively identify sites which could be affected by mining activity, namely rock shelters, platforms and overhands. While less intensively assessed, in the more undulating gentle landforms closer to the study area, artefact and PAD sites appear to be more common.

Aerial photographs indicate there has been relatively little disturbance compared to the surrounding areas that have been subject to residential development. Tree clearing, ploughing, animal grazing, construction of dams and minimal residential development appear to have been the main activities that have occurred within the study area. This may result in higher integrity of Aboriginal sites such as PADs and surface artefacts, with areas containing remnant vegetation holding potential for modified trees also.

3.2.5. Predictive statements

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

This 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.

Table 5 indicates the site types most likely to be encountered across the present study area. The definition of each site type is described firstly, followed by the predicted likelihood of this site type occurring within the study area.

Table 5 Aboriginal site prediction statements

Site type	Site description	Potential
PADs	Potential sub surface deposits of cultural material.	Medium: PADs have been previously recorded in the region across a wide range of landforms including alluvial flats. They have the potential to be present in undisturbed landforms, or those with lower levels of disturbance.
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.	Medium: Two artefact sites have been recorded within the study area. Stone artefact sites have been previously recorded in the region across a wide range of landforms; they have moderate potential to be present in areas of lower disturbance within the study area.
Shell middens	Deposits of shells accumulated over either singular large resource gathering events or over longer periods of time.	Low: Shell midden sites have not been recorded within the study area. One shell site has been recorded adjacent to Lake Burragorang, a modified eighth order perennial stream which now operates as a drinking water reservoir. Shell middens are often associated with and are in proximity to perennial salt or fresh water sources. The two first order streams within the study area are unlikely to have provided consistent water sources to have allowed for marine resources to develop.
Quarries	Raw stone material procurement sites.	Low: There is no record of any quarries being within or surrounding the study area.
Modified trees	Trees with cultural modifications	Moderate: Modified trees are the third most common site type in the vicinity of the study area. A small number of mature native trees have survived within the study area, due to extensive vegetation clearing from the 1800s onwards. There is moderate potential for modified trees to be present in areas of remnant mature vegetation.
Axe grinding grooves	Grooves created in stone platforms through ground stone tool manufacture.	Moderate: The study area is partially located within the Hawkesbury Sandstone geological formation. Sandstone exposures in proximity to water sources may provide opportunity for grinding groove sites. Grinding groove sites are the fourth most common site type in the vicinity of the study area. The presence of two first order streams suggest there is moderate likelihood for grinding groove sites where there are

Site type	Site description	Potential
		sandstone exposures associated with these two drainage lines.
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: The sites will only occur where suitable sandstone exposures or overhangs possessing sufficient sheltered space exist. The study area is partially located within the Hawkesbury Sandstone geological formation. However, the gently undulating nature of the study area and observations from aerial photographs indicate there are no sandstone overhangs or exposures suitable for shelters within the study area.
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: There are currently no recorded mythological stories for the study area.
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: There are no post-contact sites previously recorded in the study area and historical sources do not identify one.
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 historical associations for the study area.

4. Archaeological survey

A field survey of the study area was undertaken on 25 September 2023, attended by Crystal Garabedian (Biosis, Heritage Consultant), Otto Reichelt (Biosis, Graduate Heritage Consultant), and Jamie Currell (Cultural Sites Office, Kamilaroi Yankuntjatjara Working Group). The field survey sampling strategy, methodology and a discussion of results are provided below.

4.1. Archaeological survey objectives

The objectives of the survey were to:

- Provide RAPs an opportunity to view the study area and to discuss previously identified Aboriginal object(s) and/or place(s) in or within proximity to the study area.
- Attempt to re-identify Aboriginal archaeological sites AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02 previously identified in the study area.
- 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 PADs.

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

The survey consisted of one meandering transect across visible and accessible landforms within the study area. Surveyors were spaced approximately two metres apart for effective ground coverage. This follows the methodology set out in Burke and Smith (2004, pp. 65), which states that a single person can only effectively visually survey an area of two linear metres.

4.2.2. Survey methods

The archaeological survey was conducted on foot with a field team of three members. Recording during the survey followed the archaeological survey requirements of the Code and industry best practice methodology. Information that recorded during the survey included:

- Aboriginal objects or sites present in the study area during the survey.
- Survey coverage.
- Any resources that may have been exploited by Aboriginal people.
- Landform.
- Photographs of the site indicating landform.
- Evidence of disturbance.

- Aboriginal artefacts, culturally modified trees, or any other Aboriginal sites.

Where possible, identification of natural soil deposits within the study area was undertaken. Photographs and recording techniques were incorporated into the survey including representative photographs of survey units, landform, vegetation coverage, ground surface visibility and the recording of soil information for each survey unit were possible.

Any potential Aboriginal objects observed during the survey were documented and photographed. The location of Aboriginal cultural heritage and points marking the boundary of the landform elements were recorded using a handheld Global Positioning System (GPS) and the Map Grid of Australia (MGA) (94) coordinate system.

4.3. Archaeological survey results

A total of one meandering transect was walked across five landforms, with the three surveyors walking 2 metres apart (Figure 8). The location of previously recorded sites AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02 were visited, though neither isolated find was re-identified. No Aboriginal sites or PADs were identified in the study area. The results from the field survey have been summarised in Table 6 below and full transect details are provided in Figure 8.

Table 6 Survey coverage

Survey unit	Landform	Survey unit area (m²)	Visibility (%)	Exposure (%)	Effective coverage area (m²)	Effective coverage (%)
1	Crest	1,322	5	5	3.31	0.25
2	Ridge	2,904	5	5	7.26	0.25
3	Shoulder	11,257	15	10	168.86	1.5
4	Slope	24,876	15	10	373.14	1.5
5	Valley	2,588	20	15	77.64	3

Table 7 Landform summary

Landform	Landform area (m²)	Area effectively surveyed (m²)	Landform effectively surveyed (%)	No. of Aboriginal sites	No. of artefacts or features
Crest	4,284	3.31	0.08	0	0
Ridge	31,176	7.26	0.02	2	2 (previously recorded AHIMS)
Shoulder	80,970	168.86	0.21	0	0
Slope	91,612	497.52	0.54	0	0
Valley	18,981	77.64	0.41	0	0

4.3.1. Constraints to the survey

With any archaeological survey there are several factors that influence the effectiveness (the likelihood of finding sites) of the survey. The factors that contributed most to the effectiveness of the survey within the study area were limited GSV throughout the study area due to grass and vegetation coverage.

4.3.2. Visibility

In most archaeological reports and guidelines visibility refers to GSV, and is usually a percentage estimate of the ground surface that is visible and allowing for the detection of (usually stone) artefacts that may be present on the ground surface (DECCW 2010a). GSV varied throughout the study area; GSV was low (5%) on crest and ridge landforms (Photo 7, Photo 8), moderate (15%) within the shoulder and slope landforms (Photo 9, Photo 10) and relatively high (20%) within the valley landform (Photo 11). Low GSV was due to extensive grass and vegetation coverage. High GSV within the valley landform is largely attributed to grass clearance in proximity to the dam.

Photo 7 Low GSV (5%) observed within crest landform (photo facing north)

Photo 8 **Low GSV (5%) observed within ridge landform (photo facing north)**

Photo 9 **Moderate GSV (15%) observed within shoulder landform, facing north-west**

Photo 10 **Moderate GSV (15%) observed within slope landform, facing east**

Photo 11 **High GSV (20%) observed within valley landform, facing north-west**

4.3.3. Exposure

Exposure refers to the geomorphic conditions of the local landform being surveyed and attempts to describe the relationship between those conditions and the likelihood the prevailing conditions provide for the exposure of (buried) archaeological materials. Whilst also usually expressed as a percentage estimate, exposure is different to visibility in that it is in part a summation of geomorphic processes, rather than a simple observation of the ground surface (Burke & Smith 2004, pp. 79, DECCW 2010a).

Overall, the study area displayed moderate exposure (20%). Areas of high exposure were primarily associated with the artificial dams within the study area (Photo 12, Photo 13 and Photo 14).

Photo 12 Area of high exposure (80%) associated with articifial dam, facing east

Photo 13 **Area of moderate exposure (40%) within the slope landform, facing south-west**

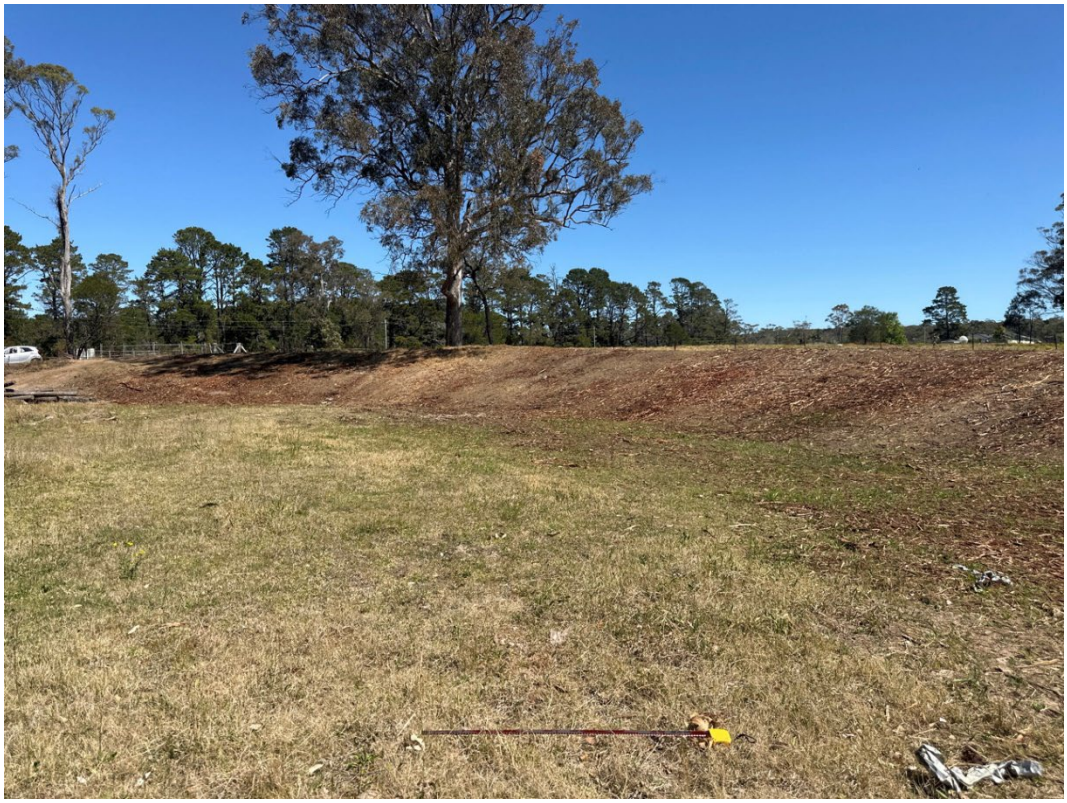


Photo 14 **Area of exposure (40%) near modified, raised area in the eastern portion of the study area, facing south-west**

4.3.4. Disturbances

Disturbance in the study area is associated with natural and human agents. Overall, the study area displays a moderate level of disturbance. Natural agents generally affect small areas and include the burrowing and scratching in soil by animals, such as wombats, foxes, rabbits, and wallabies, and sometimes exposure from slumping or scouring.

Disturbances observed within the study area were primarily associated with human agents. This included construction of access paths (Photo 15), storage buildings (Photo 16), residential buildings (Photo 17), fencing (Photo 18), and water management (Photo 19, Photo 20).

Photo 15 Disturbance associated with vehicle access tracks, facing north-west

Photo 16 Disturbance associated with construction of storage facilities, facing north-east

Photo 17 Disturbance associated with construction of residential buildings, facing south

Photo 18 Disturbance associated with fencing, facing north

Photo 19 Disturbance associated with water management, facing west

Photo 20 Disturbance associated with bore holes, facing west

4.4. Discussion of archaeological survey results

The survey consisted of a single meandering transect walked across the study area (Figure 8). The topography of the study area varied greatly, including crest, ridge, shoulder, slope and valley landforms (Figure 9).

The study area lies within Sydney Basin Bioregion of Burragorang, whose geology primarily consists of Permian and Triassic sandstones and shales on the western edge of the Basin (NPWS 2003). The study area is located within the Hawkesbury Sandstone formation of the Wianamatta Group formation. While this underlying geology could indicate potential for the presence grinding groove or rock shelter sites, the archaeological survey confirmed that the necessary landforms and sandstone outcrops are not present within the study area.

There are two non-perennial water courses present within the study area; these are tributaries of Back Creek, located approximately 1.1 kilometres east of the study area. The presence of an intermittent water source within the study area increases the likelihood of previous land use by Aboriginal groups moving through the area. However, the presence of Back Creek and Gillans Creek, both second-order non-perennial water sources, located more than 1 kilometre from the study area may have provided more reliable water and resources, making the study area less conducive for repeated occupation and use.

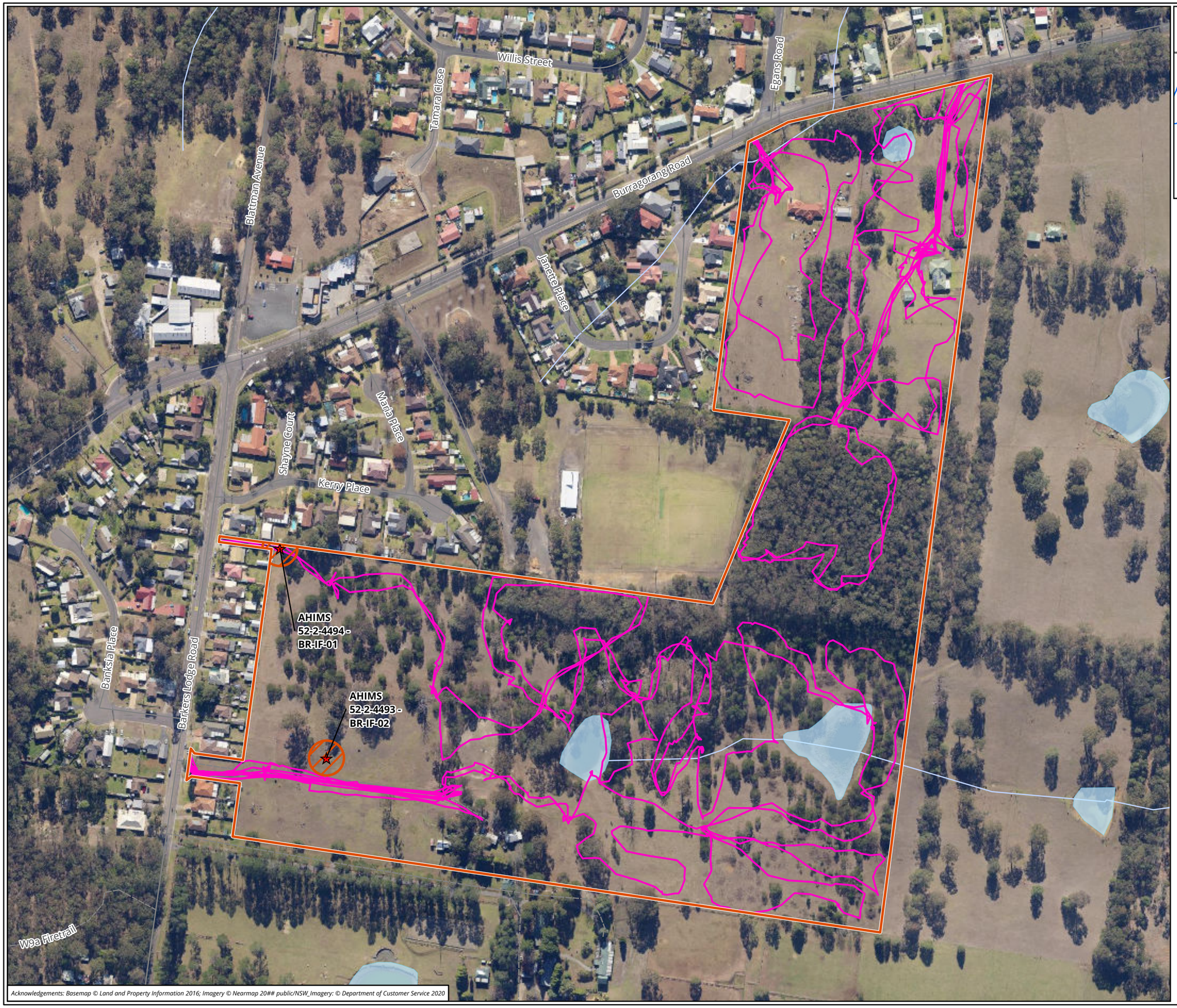
The study area is within the Blacktown Soil Landscape, a residual soil landscape containing reasonable potential to contain archaeological deposits in an open context, such as stone artefacts derived from occupation sites. This has been demonstrated within the study area by the previous identification of isolated finds (AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02). However, when these landscapes are impacted by extensive land clearing, areas of disturbance often feature much poorer preservation of archaeological materials. This is likely the case within the study area, which has undergone extensive vegetation clearance and consistent previous pastoral land use.

The location of AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02 were revisited during the survey, but no artefacts were re-identified. This is likely due to ongoing pastoral land use within the study area which has resulted in further disturbance of both previously recorded sites. Both previously recorded sites display evidence of ongoing land use (Photo 21 and Photo 22).

Photo 21 Location of AHIMS 52-2-4494/BR-IF-01, facing north

Photo 22 Location of AHIMS 52-2-4493/BR-IF-02, facing north-east

The archaeological survey of the study area confirmed moderate levels of disturbance throughout the study area and no Aboriginal sites were identified. Overall, the study area has been assessed to hold low potential to contain intact archaeological deposits (Figure 10).



Legend

- Study area
- Survey tracks

AHIMS sites within the study area

- AHIMS sites
- 15 metre site buffer

Figure 8 Survey coverage

0 20 40 60 80

Metres

Scale: 1:3,000@ A3

Coordinate System:
GDA 1994 MGA Zone 56

N

biosis

Matter: 39164, Date: 24 October 2023,
Prepared for: CG, BB. Prepared by: HL, Last edited by: hliswoyo
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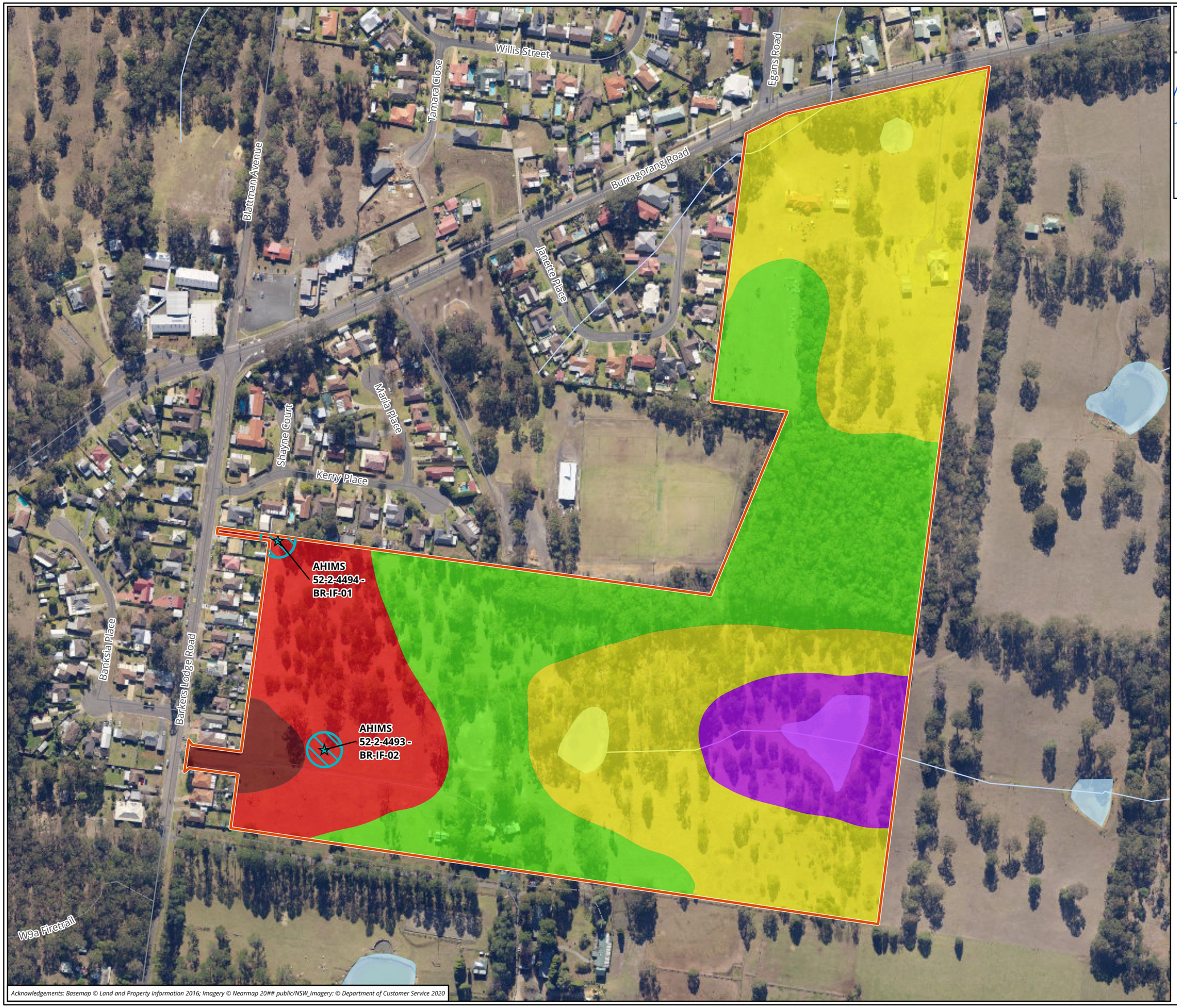

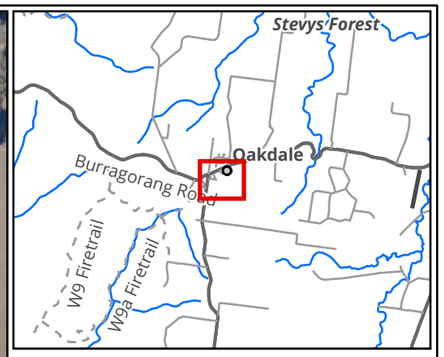

Legend

Study area

Landform

- Crest
- Ridge
- Shoulder
- Slope
- Valley

AHIMS sites within the study area

- AHIMS sites
- 15 metre site buffer

Figure 9 Landforms

0 20 40 60 80

Metres

Scale: 1:3,000@ A3

Coordinate System:
GDA 1994 MGA Zone 56

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biosis

Matter: 39164, Date: 24 October 2023,
Prepared for: CG, BB. Prepared by: HL, Last edited by: hliswoyo
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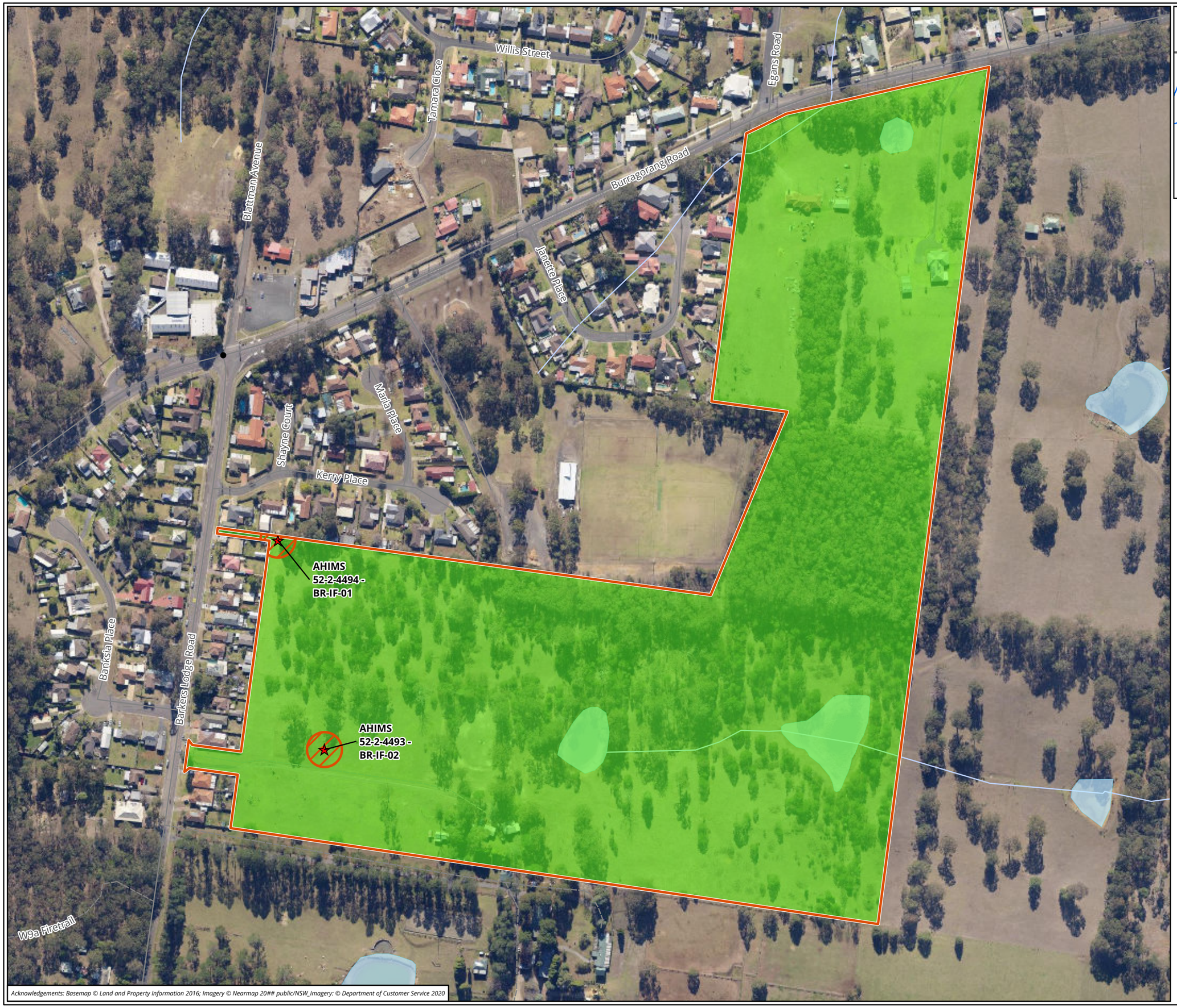

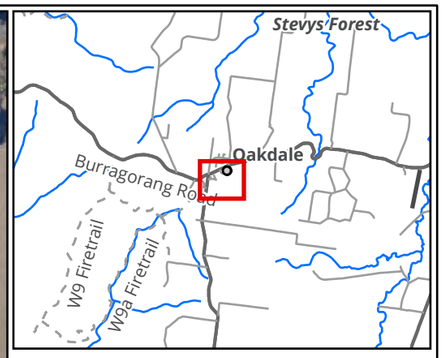

Legend

Study area

Archaeological potential

Low potential

AHIMS sites within the study area

AHIMS sites

15 metre site buffer

Figure 10 Survey results

0 20 40 60 80

Metres

Scale: 1:3,000@ A3

Coordinate System:
GDA 1994 MGA Zone 56

N

biosis

Matter: 39164, Date: 24 October 2023,
Prepared for: CG, BB. Prepared by: HL, Last edited by: hliswoyo
Location: P:\39100s\39164\Mapping\
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5. Scientific values and significance assessment

The two main values addressed when assessing the significance of Aboriginal sites are cultural values to the Aboriginal community and archaeological (scientific) values. This report will assess scientific values while the ACHA report will detail the cultural values of Aboriginal sites in the study area.

5.1. Introduction to the assessment process

Heritage assessment criteria in NSW fall broadly within the significance values outlined in the ICOMOS Burra Charter. This approach to heritage has been adopted by cultural heritage managers and government agencies as the set of guidelines for best practice heritage management in Australia. These values are provided as background and include:

- **Historical significance** (evolution and association) refers to historic values and encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment.
- **Aesthetic significance** (Scenic/architectural qualities, creative accomplishment) refers to the sensory, scenic, architectural and creative aspects of the place. It is often closely linked with social values and may include consideration of form, scale, colour, texture, and material of the fabric or landscape, and the smell and sounds associated with the place and its use.
- **Social significance** (contemporary community esteem) refers to the spiritual, traditional, historical or contemporary associations and attachment that the place or area has for the present-day community. Places of social significance have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods or events. Communities can experience a sense of loss should a place of social significance be damaged or destroyed. These aspects of heritage significance can only be determined through consultative processes with local communities.
- **Scientific significance** (Archaeological, industrial, educational, research potential and scientific significance values) refers to the importance of a landscape, area, place or object because of its archaeological and/or other technical aspects. Assessment of scientific value is often based on the likely research potential of the area, place or object and will consider the importance of the data involved, its rarity, quality or representativeness, and the degree to which it may contribute further substantial information.

The cultural and archaeological significance of Aboriginal and historic sites and places is assessed on the basis of the significance values outlined above. As well as the ICOMOS Burra Charter significance values guidelines, various government agencies have developed formal criteria and guidelines that have application when assessing the significance of heritage places within NSW. Of primary interest are guidelines prepared by the Commonwealth Department of the Environment and Energy, Heritage NSW, NSW Department of Planning, Industry and Environment. The relevant sections of these guidelines are presented below.

These guidelines state that an area may contain evidence and associations which demonstrate one or any combination of the ICOMOS Burra Charter significance values outlined above in reference to Aboriginal

heritage. Reference to each of the values should be made when evaluating archaeological and cultural significance for Aboriginal sites and places.

In addition to the previously outlined heritage values, the Heritage NSW Guidelines (OEH 2011) also specify the importance of considering cultural landscapes when determining and assessing Aboriginal heritage values. The principle behind a cultural landscape is that 'the significance of individual features is derived from their inter-relatedness within the cultural landscape'. This means that sites or places cannot be 'assessed in isolation' but must be considered as parts of the wider cultural landscape. Hence the site or place will possibly have values derived from its association with other sites and places. By investigating the associations between sites, places, and (for example) natural resources in the cultural landscape the stories behind the features can be told. The context of the cultural landscape can unlock 'better understanding of the cultural meaning and importance' of sites and places.

Although other values may be considered — such as educational or tourism values — the two principal values that are likely to be addressed in a consideration of Aboriginal sites and places are the cultural/social significance to Aboriginal people and their archaeological or scientific significance to archaeologists. The determinations of archaeological and cultural significance for sites and places should then be expressed as statements of significance that preface a concise discussion of the contributing factors to Aboriginal cultural heritage significance.

5.2. Archaeological (scientific significance) values

Archaeological significance (also called scientific significance, as per the ICOMOS Burra Charter) refers to the value of archaeological objects or sites as they relate to research questions that are of importance to the archaeological community, including indigenous communities, heritage managers and academic archaeologists. Generally the value of this type of significance is determined on the basis of the potential for sites and objects to provide information regarding the past life-ways of people (Burke & Smith 2004, pp. 249, NSW National Parks and Wildlife Service 1997).

For this reason, the National Parks and Wildlife Service (NPWS) summarises the situation as 'while various criteria for archaeological significance assessment have been advanced over the years, most of them fall under the heading of archaeological research potential' (NSW National Parks and Wildlife Service 1997, pp. 26).

The NPWS criteria for archaeological significance assessment are based largely on the ICOMOS Burra Charter.

Research potential

Research potential is assessed by examining site content and site condition. Site content refers to all cultural materials and organic remains associated with human activity at a site. Site content also refers to the site structure – the size of the site, the patterning of cultural materials within the site, the presence of any stratified deposits and the rarity of particular artefact types. As the site contents criterion is not applicable to scarred trees, the assessment of scarred trees is outlined separately below. Site condition refers to the degree of disturbance to the contents of a site at the time it was recorded.

Table 8 and Table 9 outline the site content and site condition rating used for archaeological sites.

Table 8 Site contents ratings used for archaeological sites

Rating	Description
0	No cultural material remaining.

Rating	Description
1	Site contains a small number (e.g. 0–10 artefacts) or limited range of cultural materials with no evident stratification.
2	Site contains a larger number, but limited range of cultural materials; and/or some intact stratified deposit remains; and/or are or unusual example(s) of a particular artefact type.
3	Site contains a large number and diverse range of cultural materials; and/or largely intact stratified deposit; and/or surface spatial patterning of cultural materials that still reflect the way in which the cultural materials were deposited.

Table 9 Site condition ratings used for archaeological sites

Rating	Description
0	Site destroyed.
1	Site in a deteriorated condition with a high degree of disturbance; lack of stratified deposits; some cultural materials remaining.
2	Site in a fair to good condition, but with some disturbance.
3	Site in an excellent condition with little or no disturbance. For surface artefact scatters this may mean that the spatial patterning of cultural materials still reflects the way in which the cultural materials were laid down.

Pearson and Sullivan (1995, pp. 149)note that Aboriginal archaeological sites are generally of high research potential because 'they are the major source of information about Aboriginal prehistory'. Indeed, the often great time depth of Aboriginal archaeological sites gives them research value from a global perspective, as they are an important record of humanity's history. Research potential can also refer to specific local circumstances in space and time — a site may have particular characteristics (well preserved samples for absolute dating, or a series of refitting artefacts, for example) that mean it can provide information about certain aspects of Aboriginal life in the past that other less or alternatively valuable sites may not (Burke & Smith 2004, pp. 247–8). When determining research potential value particular emphasis has been placed on the potential for absolute dating of sites.

The following sections provide statements of significance for the Aboriginal archaeological sites recorded during the sub-surface testing for the assessment. The significance of each site follows the assessment process outlined above. This includes a statement of significance based on the categories defined in the Burra Charter. These categories include social, historic, scientific, aesthetic and cultural (in this case archaeological) landscape values. Nomination of the level of value — high, moderate, low or not applicable — for each relevant category is also proposed. Where suitable the determination of cultural (archaeological) landscape value is applied to both individual sites and places (to explore their associations) and also, to the Study Area as a whole. The nomination levels for the archaeological significance of each site are summarised below.

Representativeness

Representativeness refers to the regional distribution of a particular site type. Representativeness is assessed by whether the site is common, occasional, or rare in a given region. Assessments of representativeness are subjectively biased by current knowledge of the distribution and number of archaeological sites in a region. This varies from place to place depending on the extent of archaeological research. Consequently, a site that is assigned low significance values for contents and condition, but a high significance value for representativeness, can only be regarded as significant in terms of knowledge of the regional archaeology. Any such site should be subject to re-assessment as more archaeological research is undertaken.

Assessment of representativeness also considers the contents and condition of a site. For example, in any region there may only be a limited number of sites of any type that have suffered minimal disturbance. Such sites would therefore be given a high significance rating for representativeness, although they may occur commonly within the region.

Table 10 outlines the site representativeness ratings used for archaeological sites.

Table 10 Site representativeness ratings used for archaeological sites

Rating	Description
1	Common occurrence
2	Occasional occurrence
3	Rare occurrence

Overall scientific significance ratings for sites, based on a cumulative score for site contents, site integrity and representativeness are provided in Table 11.

Table 11 Scientific significance ratings used for archaeological sites

Rating	Description
1–3	Low scientific significance
4–6	Moderate scientific significance
7–9	High scientific significance

Each site is given a score based on these criteria. The overall scientific significance is determined by the cumulative score. This scoring procedure has been applied to the Aboriginal archaeological sites identified during the sub-surface testing. The results are provided in Table 14.

5.2.1. Statements of archaeological significance

The following archaeological significance assessment is based on Requirement 11 of the Code. Using the assessment criteria detailed in Scientific Values and Significance Assessment, an assessment of significance was determined and a rating for each site was determined. The results of the archaeological significance assessment are given in Table 12 below.

Table 12 Scientific significance assessment of archaeological sites recorded within the study area.

Site name	Site content	Site condition	Representativeness	Scientific significance
AHIMS 52-2-4494/BR-IF-01	0	0	1	1 – Low
AHIMS 52-2-4493/BR-IF-02	0	0	1	1 – Low

Table 13 Statements of scientific significance for archaeological sites recorded within the study area.

Site name	Statement of significance
AHIMS 52-2-4494/ BR-IF-01	AHIMS 52-2-4494/ BR-IF-01 consists of an isolated silcrete artefact located on the north-west border of the study area, 52 meters east from Bakers Lodge Road. The site is located on a crest of cleared grassland in a disturbed area used for grazing, approximately 370 metres north-west of a first-order, nonperennial watercourse. The site type is common and the condition of the site is poor. No artefacts were identified in the survey carried out by Biosis. AHIMS 52-2-4494/ BR-IF-01 possesses low scientific significance.

Site name	Statement of significance
AHIMS 52-2-4493/ BR-IF-02	AHIMS 52-2-4493/BR-IF-02 consists of isolated quartzite artefact located in the south-west of the study area. The site is located on a crest of cleared grassland in a disturbed residential area used for grazing, approximately 247 metres west of a first-order, nonperennial watercourse. The site type is common and the condition of the site is poor. No artefacts were identified in the survey carried out by Biosis. AHIMS 52-2-4493/BR-IF-02 possesses low scientific significance.

6. Impact assessment

As previously outlined, the proposed development will involve the subdivision and construction of residential buildings.

6.1. Predicted physical impacts

The proposed development will involve the subdivision of the study area into up to 208 lots and construction of residential buildings. This development will include several works associated with residential development of the area (Figure 3). To facilitate this development, earthworks, road construction, services and infrastructure installation will occur. These activities will result in disturbance of the ground throughout the study area and will or have the potential to impact Aboriginal sites within the study area.

Should the current proposed subdivision layout for the planning proposal remain unchanged, these activities may disturb or completely remove Aboriginal objects. A summary of impacts is provided below in Table 14 and shown in Figure 11.

Table 14 Summary of potential archaeological impacts

AHIMS site no.	Site name	Significance	Type of harm	Degree of harm	Consequence of harm
AHIMS 52-2-4494	BR-IF-01	1 – Low	Direct	Whole	Total loss of value
AHIMS 52-2-4493	BR-IF-02	1 – Low	Direct	Whole	Total loss of value

6.1.1. Ecologically Sustainable Development

One of the primary aims of the NPW Act is the 'conservation of objects places and features … of cultural value within the landscape, including … places, objects and features of significance to Aboriginal people …' ((s.2A(1)(b)(i)). The *Operational Policy: Protecting Aboriginal Cultural Heritage (Version 2)* (State of NSW and Office of Environment and Heritage NSW 2011) provides guidance to proponents in term of Ecologically Sustainable Development (ESD).

ESD has been defined in Part 3, 6. (2) Objective of the Authority of the *Protection of the Environment Administration Act 1991* (NSW). This outlines that the ESD requires the integration of economic and environmental considerations (including cultural heritage) in the decision-making process. Regarding Aboriginal cultural heritage, ESD can be achieved by applying the principle of intergenerational equity and the precautionary principle.

> ***Intergenerational equity***
>
> *The principle of intergenerational equity states that the present generation should make every effort to ensure the health, diversity and productivity of the environment – which includes cultural heritage – for the benefit of future generations.*
>
> *In terms of Aboriginal cultural heritage, intergenerational equity can be considered in terms of the 'cumulative impacts' of any proposal to Aboriginal objects and places. For example, if few Aboriginal objects and places remain in a region (because of harm authorised under previous AHIPs), fewer*

opportunities remain for future generations of Aboriginal people to enjoy the cultural benefits of those Aboriginal objects and places.

Information about the significance of Aboriginal cultural heritage values associated with the Aboriginal objects and places proposed to be harmed will be relevant to the consideration of intergenerational equity and an understanding of the cumulative impacts of a proposal.

Where there is uncertainty, the precautionary principle should also be followed (see below).

The precautionary principle

The precautionary principle states that the lack of full scientific certainty about the threat of harm should not be used as a reason for not taking measures to prevent harm from occurring.

In applying the precautionary principle, decisions should be guided by:

- *a careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment (which includes cultural heritage)*
- *an assessment of the risk-weighted consequences of various options.*

The precautionary principle is relevant to Heritage NSW consideration of potential harm to Aboriginal cultural heritage where:

- *the proposal involves a risk of serious or irreversible harm to Aboriginal objects or places or to the value of those objects or places, and*
- *there is a lot of uncertainty about the significance of Aboriginal cultural heritage values of the Aboriginal objects or places proposed to be harmed.*

Where this is the case, a precautionary approach should be taken and all cost-effective measures implemented to prevent or reduce harm to the Aboriginal objects/place (State of NSW and Office of Environment and Heritage NSW 2011, pp. 26).

The results of this assessment identified two existing Aboriginal sites (AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02) within the study area; no further Aboriginal sites or areas of archaeological potential were identified. As identified in the background research and through Aboriginal community consultation, the region containing the study area, particularly to the north and west, contains a range of sites, landforms and landscapes that are significant to local Aboriginal groups. Therefore, this assessment has been able to further our knowledge of Aboriginal archaeology in the area, by highlighting the environmental and cultural significance of the surrounding landscape and how this may have been intertwined with the current study area.

6.2. Avoiding harm to Aboriginal heritage

As part of the current subdivision design, harm cannot be avoided to Aboriginal sites within the study area as a part of the proposed works. Therefore, mitigation measures and recommendations have been developed (Section 6.3 and Section 7).

6.3. 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' (Australia ICOMOS

2013). 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.

Avoidance of impact to archaeological and cultural heritage sites through the design of the development is the primary mitigation and management strategy, and should be implemented where practicable.

Application for an AHIP to impact sites within the study area

Isolated find sites AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02 have been previously recorded within the study area. These sites could not be relocated by Biosis during the field survey, existed in areas that have undergone moderate level of disturbances, and have been assessed to hold low scientific significance. As impacts to cannot be avoided to these sites, an AHIP should be sought to permit impact to these sites through the proposed development. As part of the AHIP, salvage through community collection of AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02 should be undertaken to ensure that artefacts associated with these sites can be recovered prior to impacts. RAPs must be consulted on ongoing care and control of salvaged artefacts from AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02.

Connecting with Country

The project should be developed in accordance with the best practice guidelines presented in the *Connecting with Country* framework (Government Architect NSW 2023) to ensure that Aboriginal cultural heritage is incorporated into the design of the proposed development.

Heritage interpretation

To mitigate the impacts to AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02, heritage interpretation should be included as part of the development to inform the wider community of the Aboriginal cultural heritage of the study area and vicinity. Heritage interpretation should be undertaken in consultation with the RAPs and in accordance with the following guidelines and best practice:

- *Heritage Information Series: Interpretating Heritage Places and Items Guidelines* (NSW Heritage Office 2005).
- *We're a Dreaming Country: Guidelines for Interpretation of Aboriginal Heritage* (National Trust of Australia (WA) 2012).
- *The ICOMOS Charter for the Interpretation and Presentation of Cultural Heritage Sites* (ICOMOS 2008).

Heritage induction

All site workers, contractors and subcontractors must undertake a heritage induction to provide them with information on the Aboriginal cultural heritage of the study area, their responsibilities under the NPW Act and fines for breaches of the NPW Act.

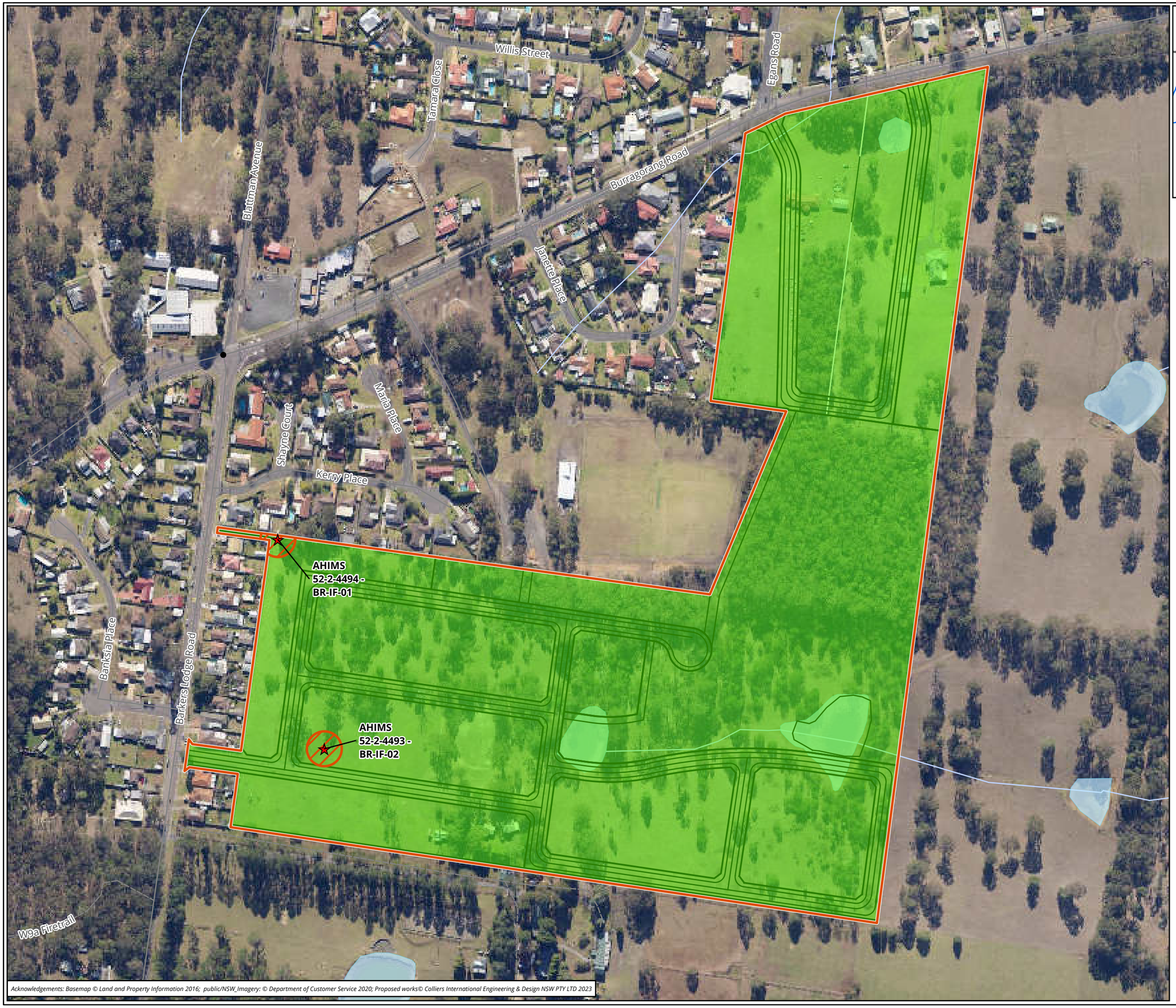
Unexpected finds procedure during works

To ensure that any unexpected Aboriginal objects are treated appropriately, an unexpected finds protocol, including protocol for the discovery of human remains, must be developed and included in a construction management plan for the proposed development.

Continued Aboriginal community consultation

In accordance with the consultation requirements, a copy of the draft ACHA must be provided to all RAPs for their review and comment. In addition, RAPs must be consulted regarding care and control of any artefacts from AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02 able to be obtained through community collection. A copy of the final ACHA should also be provided to the RAPs 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.



Legend

- Study area
- Lot
- Proposed works

Archaeological potential

- Low potential

AHIMS sites within the study area

- AHIMS sites
- 15 metre site buffer

Figure 11 Impact assessment

0 20 40 60 80

Metres

Scale: 1:3,000@ A3

Coordinate System:
GDA 1994 MGA Zone 56

biosis

Matter: 39164, Date: 10 November 2023,
Prepared for: CG, BB. Prepared by: HL, Last edited by: jtownsend
Location: P:\39100s\39164\Mapping\
39164_HL_OakdalePlanningProposalACHAandHHA,
Layout: 39164_AR_F11_ImpactAssessment

Acknowledgements: Basemap © Land and Property Information 2016; public/NSW_Imagery: © Department of Customer Service 2020; Proposed works© Colliers International Engineering & Design NSW PTY LTD 2023

7. 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 ICOMOS Burra Charter.
  - The Code.

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

Recommendation 1: Application for an Aboriginal Heritage Impact Permit (AHIP) to harm AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02

An AHIP is required for any activities likely to have an impact on Aboriginal objects or places or cause land to be disturbed for the purposes of discovering an Aboriginal object. Heritage NSW issues AHIPs under Part 6 of the NPW Act.

It is recommended that Colliers apply to Heritage NSW for an AHIP to harm AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02. The AHIP should allow for impacts to both sites through the proposed works. **The AHIP should be for a period of 10 years.**

As part of the AHIP, prior to impacts RAPs should be afforded the opportunity for the community collection of the artefacts associated with AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02. RAPs must be consulted on ongoing care and control of salvaged artefacts from AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02.

Advice preparing AHIPs

AHIPs should be prepared by a qualified archaeologist and lodged with Heritage NSW. Once the application is lodged processing time can take between eight and 12 weeks. It should be noted that there will be an application fee levied by the Heritage NSW for the processing of AHIPs, which is dependent on the estimated total cost of the development project. Where there are multiple sites within one study area an application for an AHIP to cover the entire study area is recommended.

Recommendation 2: Areas identified as having low archaeological potential

No further investigations are required for areas assessed as having low archaeological potential. This recommendation is conditional upon Recommendations 3 and 4.

Recommendation 3: Mitigating impacts to Aboriginal cultural heritage

The following measures should be undertaken to mitigate impacts of the proposed development to Aboriginal cultural heritage.

Connecting with Country

The project should be developed in accordance with the best practice guidelines presented in the *Connecting with Country* framework (Government Architect NSW 2023) to ensure that Aboriginal cultural heritage is incorporated into the design of the proposed development.

Heritage interpretation

To mitigate the impacts to AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02, heritage interpretation should be included as part of the development to inform the wider community of the Aboriginal cultural heritage of the study area and vicinity. Heritage interpretation should be undertaken in consultation with the RAPs and in accordance with the following guidelines and best practice:

- *Heritage Information Series: Interpretating Heritage Places and Items Guidelines* (NSW Heritage Office 2005).
- *We're a Dreaming Country: Guidelines for Interpretation of Aboriginal Heritage* (National Trust of Australia (WA) 2012).
- *The ICOMOS Charter for the Interpretation and Presentation of Cultural Heritage Sites* (ICOMOS 2008).

Heritage induction

All site workers, contractors and subcontractors must undertake a heritage induction to provide them with information on the Aboriginal cultural heritage of the study area, their responsibilities under the NPW Act and fines for breaches of the NPW Act.

Unexpected finds procedure during works

To ensure that any unexpected Aboriginal objects are treated appropriately, an unexpected finds protocol, including protocol for the discovery of human remains, must be developed and included in a construction management plan for the proposed development (see Recommendations 5 and 6).

Recommendation 4: Continued Aboriginal community consultation

In accordance with the consultation requirements, a copy of the draft ACHA must be provided to all RAPs for their review and comment. In addition, RAPs must be consulted regarding care and control of any artefacts from AHIMS 52-2-4494/BR-IF-01 and AHIMS 52-2-4493/BR-IF-02 able to be obtained through community collection. A copy of the final ACHA should also be provided to the RAPs 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.

Recommendation 5: Discovery of Unanticipated Aboriginal Objects

All Aboriginal objects and Places are protected under the NSW NPW Act. It is an offence to knowingly disturb an Aboriginal site without a consent permit issued by the Heritage NSW. 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 Heritage NSW and Aboriginal stakeholders.

Recommendation 6: Discovery of human remains

If any suspected human remains are discovered during any activity works, all activity in the vicinity must cease immediately. The remains must be left in place and protected from harm or damage. The following contingency plan describes the immediate actions that must be taken in instances where human remains or suspected human remains are discovered. Any such discovery at the study area must follow these steps:

3. **Discovery:** If suspected human remains are discovered all activity in the vicinity must stop to ensure minimal damage is caused to the remains; and the remains must be left in place, and protected from harm or damage.
4. **Notification:** Once suspected human skeletal remains have been found, the Coroner's Office and the NSW Police must be notified immediately. Following this, the find will be reported to the Aboriginal parties and Heritage NSW.

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APPENDICES

Appendix A. AHIMS results

THE FOLLOWING APPENDIX IS NOT TO BE MADE PUBLIC.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 39164 - CG - 9 km

Client Service ID : 780128

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
52-1-0234	Burragorang lookout	AGD	56	263484	6227174	Open site	Valid	Grinding Groove : -, Water Hole : -		
	Contact T Russell	**Recorders**	Mr.Mark Simon					**Permits**		
52-1-0035	Warragamba Reservoir, Mount Burragorang	AGD	56	265036	6219312	Open site	Valid	Water Hole : -	Water Hole/Well	
	Contact	**Recorders**	James Farrell					**Permits**		
52-1-0039	Oakdale, Brimstone Gully 1	AGD	56	266467	6230317	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	**Recorders**	Ann Jelinek					**Permits**		
52-1-0040	Oakdale, Brimstone Gully 2	AGD	56	266829	6230507	Closed site	Valid	Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Art	
	Contact	**Recorders**	Ann Jelinek					**Permits**		
52-1-0197	Oakdale 56	AGD	56	269100	6226850	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
52-2-4503	Burragorang Road AS 2	GDA	56	269428	6226438	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
52-2-3055	Burragorang SCA 001	AGD	56	269709	6220799	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact T Russell	**Recorders**	NPWS - Nattai Sub-District					**Permits**		
52-2-2038	Oakdale 47 (Camden)	AGD	56	269600	6227300	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	4075
	Contact	**Recorders**	Ben Evans,R Williams,Tom Knight					**Permits**		
52-2-4670	OA-PAD-2020-01	GDA	56	275203	6225686	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Extent Heritage Pty Ltd - Pyrmont - Individual users,Doctor.Tse Siang Lim					**Permits**		
52-2-1705	Oakdale 21;	AGD	56	271150	6229230	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	2793
	Contact	**Recorders**	Mr.Kelvin Officer					**Permits**		
52-2-1701	Oakdale 25;	AGD	56	271350	6229750	Closed site	Valid	Artefact : -	Shelter with Deposit	2793
	Contact	**Recorders**	Mr.Kelvin Officer					**Permits**		
52-1-0237	Burragorang lake Midden 1	AGD	56	261021	6224592	Open site	Valid	Shell : -		
	Contact T Russell	**Recorders**	Miss.Rebecca Chalker					**Permits**		
52-1-0295	Sheehys Creek Road - Paperbark Resource	GDA	56	263900	6221891	Open site	Valid	Aboriginal Resource and Gathering : -		

Report generated by AHIMS Web Service on 09/05/2023 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 261018.0 - 279785.0, Northings : 6216669.0 - 6235454.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 97

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Mr.Mark Simon					Permits		
52-1-0299	Orange Tree Flat - AFT 01	GDA	56	264384	6218652	Open site	Valid	Artefact : 2		
	Contact	Recorders	Mr.Mark Simon					Permits		
52-1-0387	Sheehys Creek Art01	GDA	56	268794	6219499	Closed site	Valid	Art (Pigment or Engraved) : -		
	Contact	Recorders	Mr.Mark Simon					Permits		
52-2-1696	Oakdale 8;	AGD	56	269010	6231750	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2664
	Contact	Recorders	Kerry Navin					Permits		
52-2-1693	Oakdale 5;	AGD	56	269140	6232190	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	2664
	Contact	Recorders	Kerry Navin					Permits		
52-2-1695	Oakdale 7;	AGD	56	269160	6231940	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	2664
	Contact	Recorders	Kerry Navin					Permits		
52-2-0003	Waterfall Creek;Oakdale;	AGD	56	273271	6223864	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	103104
	Contact	Recorders	Australian Museum					Permits		
52-1-0165	Oakdale 33	AGD	56	267170	6234830	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	3196
	Contact	Recorders	P Saunders					Permits		
52-1-0164	Oakdale 30	AGD	56	268060	6234140	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	3092
	Contact	Recorders	P Saunders					Permits		
52-2-1707	Oakdale 19;	AGD	56	271180	6228790	Open site	Valid	Stone Arrangement : -	Stone Arrangement	2793
	Contact	Recorders	Mr.Kelvin Officer					Permits		
52-1-0019	Nattai River 1	AGD	56	261900	6229954	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	Recorders	Fred McCarthy					Permits		
52-1-0125	Nattai River 9	AGD	56	262590	6218910	Open site	Valid	Artefact : -	Open Camp Site	1720
	Contact	Recorders	Helen Brayshaw,Mary Dallas Consulting Archaeologists (MDCA)					Permits		
52-1-0129	Little River 4	AGD	56	264320	6218050	Open site	Valid	Artefact : -	Open Camp Site	1720
	Contact	Recorders	Doctor.Jo McDonald,Murray Williams					Permits		
52-1-0196	Oakdale 55	AGD	56	268290	6227500	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	Recorders	Kerry Navin,Mr.Kelvin Officer					Permits		
52-2-1697	Oakdale 9;	AGD	56	269160	6231940	Closed site	Valid	Artefact : -	Shelter with Deposit	2664

Report generated by AHIMS Web Service on 09/05/2023 for Samantha Keats for the following area at Datum :GDA, Zone : 56, Eastings : 261018.0 - 279785.0, Northings : 6216669.0 - 6235454.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 97

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 39164 - CG - 9 km

Client Service ID : 780128

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	Kerry Navin					Permits		
52-1-0195	Oakdale 54	AGD	56	269320	6227630	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	Recorders	Kerry Navin,Mr.Kelvin Officer					Permits		
52-2-1698	Oakdale 10;	AGD	56	269290	6231660	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2664
	Contact	Recorders	Kerry Navin					Permits		
52-2-1692	Oakdale 4;	AGD	56	269410	6232730	Open site	Valid	Artefact : -	Open Camp Site	2664
	Contact	Recorders	Kerry Navin					Permits		
52-2-4494	BR-IF-01	GDA	56	270152	6226017	Open site	Valid	Artefact : 1		
	Contact	Recorders	Kayandel Archaeological Services,Miss.Meg Walker					Permits		
52-2-3619	Oakdale 27	GDA	56	270250	6226800	Open site	Valid	Stone Arrangement : 5		3001
	Contact	Recorders	Kerry Navin,Doctor.Susan (left ahms) Mcintyre-Tamwoy					Permits		
52-2-3924	EG-S-02	GDA	56	270383	6226742	Open site	Valid	Artefact : 2		
	Contact	Recorders	Artefact - Cultural Heritage Management - Pyrmont,Mr.Leigh Bate					Permits		
52-1-0199	Oakdale 58	AGD	56	268150	6227300	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	Recorders	Kerry Navin,Mr.Kelvin Officer					Permits		
52-2-1710	Oakdale 16;	AGD	56	270720	6229020	Closed site	Valid	Artefact : -	Shelter with Deposit	2793
	Contact	Recorders	Mr.Kelvin Officer					Permits		
52-2-1702	Oakdale 24;	AGD	56	271340	6229600	Closed site	Valid	Artefact : -	Shelter with Deposit	2793
	Contact	Recorders	Mr.Kelvin Officer					Permits		
52-2-1362	Moyen Gully;	AGD	56	277600	6217200	Open site	Valid	Burial : -	Burial/s	1333,103104,103105
	Contact	Recorders	Warren Bluff					Permits		
52-2-1221	Flaggy Creek 1;	AGD	56	278750	6228500	Closed site	Valid	Artefact : -	Shelter with Deposit	1281
	Contact	Recorders	Margrit Koettig					Permits		
52-2-2089	NG/IF2 Long Gully Creek 2	AGD	56	276100	6216840	Open site	Valid	Artefact : -	Isolated Find	4573,98440,103104,103105
	Contact	Recorders	Stephanie Garling					Permits	1008	
52-1-0080	Nattai River 3	AGD	56	264767	6228363	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	1718
	Contact	Recorders	Ms.Bronwyn Conyers					Permits	77,89	
52-1-0388	Sheehys Creek Art02	GDA	56	268816	6219575	Closed site	Valid	Art (Pigment or Engraved) : -		
	Contact	Recorders	Mr.Mark Simon					Permits		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 39164 - CG - 9 km

Client Service ID : 780128

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
52-1-0194	Oakdale 53	AGD	56	269120	6227600	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
52-1-0198	Oakdale 57	AGD	56	269420	6227070	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
52-2-4493	BR-IF-02	GDA	56	270192	6225837	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Kayandel Archaeological Services,Miss.Meg Walker					**Permits**		
52-2-2037	Oakdale 48;Oakdale;	AGD	56	270050	6228420	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	**Recorders**	Ben Evans,R Williams,Tom Knight					**Permits**		
52-2-1713	Oakdale 13;	AGD	56	270190	6228420	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	2793
	Contact	**Recorders**	Mr.Kelvin Officer					**Permits**		
52-2-3923	EG-S-01	GDA	56	270336	6227016	Open site	Valid	Artefact : 4		
	Contact	**Recorders**	Artefact - Cultural Heritage Management - Pyrmont,Mr.Leigh Bate					**Permits**		
52-2-1689	Oakdale 1;	AGD	56	270210	6231450	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2664
	Contact	**Recorders**	Kerry Navin					**Permits**	591	
52-2-1376	Crocodile creek;	AGD	56	271860	6218060	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	1333
	Contact	**Recorders**	Warren Bluff					**Permits**		
52-2-3620	Oakdale 28	GDA	56	271290	6227090	Closed site	Valid	Artefact : 3		3001
	Contact	**Recorders**	Kerry Navin,Doctor.Susan (left ahms) Mcintyre-Tamwoy					**Permits**		
52-2-0007	Barkers Lodge;	AGD	56	277248	6216990	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : -	Burial/s,Carved Tree	103104,103105
	Contact	**Recorders**	NPWS - Blackheath Office,R Etheridge,W.A Cuneo,Bruce Knox					**Permits**		
52-1-0303	Hoddles track - grinding grooves01	GDA	56	266632	6217573	Open site	Valid	Water Hole : -, Grinding Groove : -		
	Contact	**Recorders**	Mr.Mark Simon					**Permits**		
52-1-0126	Little River 1	AGD	56	265050	6219380	Open site	Valid	Artefact : -	Open Camp Site	1720
	Contact	**Recorders**	Doctor.Jo McDonald,Murray Williams					**Permits**		
52-1-0038	Mount Burragorang	AGD	56	265126	6219405	Open site	Valid	Water Hole : -	Water Hole/Well	
	Contact	**Recorders**	James Farrell					**Permits**		
52-1-0193	Oakdale 52	AGD	56	269020	6227390	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
52-1-0201	Oakdale 60	AGD	56	269400	6226850	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
52-2-2039	Oakdale 49 (Camden)	AGD	56	269850	6228280	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	4075
	Contact	**Recorders**	Ben Evans,R Williams,Tom Knight					**Permits**		
52-2-1703	Oakdale 23;	AGD	56	271200	6229560	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	2793
	Contact	**Recorders**	Mr.Kelvin Officer					**Permits**		
52-1-0042	Lake Burragorang, Gormans Flat	AGD	56	261524	6225830	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : -	Burial/s,Carved Tree	
	Contact	**Recorders**	David Bell					**Permits**		
52-2-1377	Crocodile creek;	AGD	56	277410	6217050	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	1333,103104,103105
	Contact	**Recorders**	Warren Bluff					**Permits**		
52-1-0020	Nattai River 2	AGD	56	261900	6229954	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	**Recorders**	R Etheridge					**Permits**		
52-2-2090	NG/IF3 Long Gully Creek	AGD	56	275670	6216750	Open site	Valid	Artefact : -	Isolated Find	4573,103105
	Contact	**Recorders**	Stephanie Garling					**Permits**	1007	
52-1-0298	Orange Tree Flat - Isolated find 01	GDA	56	264706	6218258	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.Mark Simon					**Permits**		
52-1-0128	Little River 3	AGD	56	264630	6217970	Open site	Valid	Artefact : -	Open Camp Site	1720
	Contact	**Recorders**	Doctor.Jo McDonald,Murray Williams					**Permits**		
52-1-0078	Nattai River 5	AGD	56	264774	6227997	Closed site	Valid	Artefact : -	Shelter with Deposit	1718
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**	77,89	
52-1-0079	Nattai River 4	AGD	56	264773	6228089	Closed site	Valid	Artefact : -	Shelter with Deposit	1718
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**	77,89	
52-1-0077	Nattai River 6	AGD	56	264957	6228001	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	1718
	Contact	**Recorders**	Ms.Laila Haglund					**Permits**	77,89	
52-1-0081	Nattai River 7	AGD	56	265033	6228826	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	**Recorders**	Ms.Bronwyn Conyers					**Permits**		
52-2-1699	Oakdale 11;	AGD	56	269210	6232290	Open site	Valid	Artefact : -	Open Camp Site	2664

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Kerry Navin					**Permits**		
48-2-0055	Oakdale 26	GDA	56	270100	6227700	Open site	Valid	Modified Tree (Carved or Scarred) : 1		3001
	Contact	**Recorders**	Kerry Navin					**Permits**		
52-1-0163	Oakdale 31	AGD	56	267990	6234600	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3367
	Contact	**Recorders**	Mr.Kelvin Officer,P Saunders					**Permits**		
52-1-0041	Wollondilly, Nattai River Junction	AGD	56	261542	6224915	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : -	Burial/s,Carved Tree	
	Contact	**Recorders**	David Bell,R Etheridge,T.P Hayes					**Permits**		
52-1-0236	Burra lake flake 1	AGD	56	261052	6224582	Open site	Valid	Artefact : -		
	Contact T Russell	**Recorders**	Miss.Rebecca Chalker					**Permits**		
52-1-0082	Nattai River 8	AGD	56	264396	6228630	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	**Recorders**	Ms.Bronwyn Conyers					**Permits**		
52-1-0127	Little River 2	AGD	56	264760	6218800	Open site	Valid	Artefact : -	Open Camp Site	1720
	Contact	**Recorders**	Doctor.Jo McDonald,Murray Williams					**Permits**		
52-2-1694	Oakdale 6;	AGD	56	269150	6232050	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	2664
	Contact	**Recorders**	Kerry Navin					**Permits**		
52-2-4504	Burragorang Road AS 1	GDA	56	269550	6226487	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Biosis Pty Ltd - Wollongong,Mrs.Samantha Keats					**Permits**		
52-2-1700	Oakdale 12;	AGD	56	269310	6232050	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	2664
	Contact	**Recorders**	Kerry Navin					**Permits**		
52-2-1811	Oakdale 29;	AGD	56	269320	6232590	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3092
	Contact	**Recorders**	P Saunders					**Permits**		
52-2-2040	Oakdale IF 1;Oakdale;	AGD	56	270210	6228900	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Ben Evans,R Williams,Tom Knight					**Permits**		
52-2-1375	Crocodile creek;	AGD	56	271710	6218320	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	1333
	Contact	**Recorders**	Warren Bluff					**Permits**		
52-2-1708	Oakdale 18;	AGD	56	271570	6228660	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -, Grinding Groove : -	Axe Grinding Groove,Shelter with Art,Shelter with Deposit	2793

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Mr.Kelvin Officer,Ms.Trish Saunders					**Permits**		
52-2-2085	NG/IF1 Long Gully Creek 1	AGD	56	276375	6216800	Open site	Valid	Artefact : -	Isolated Find	4573,103104,103105
	Contact	**Recorders**	Stephanie Garling					**Permits**	1012	
52-2-1711	Oakdale 15;	AGD	56	270690	6229050	Closed site	Valid	Artefact : -	Shelter with Deposit	2793
	Contact	**Recorders**	Mr.Kelvin Officer					**Permits**		
52-1-0017	Central Burragorang 1	AGD	56	261518	6226104	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : -	Burial/s,Carved Tree	
	Contact	**Recorders**	R Etheridge,Australian Museum					**Permits**		
52-1-0162	Oakdale 32	AGD	56	268150	6234700	Closed site	Valid	Artefact : -	Shelter with Deposit	3367
	Contact	**Recorders**	Mr.Kelvin Officer,P Saunders					**Permits**		
52-1-0192	Oakdale 51	AGD	56	269150	6227480	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
52-1-0200	Oakdale 59	AGD	56	269600	6227000	Open site	Valid	Artefact : -	Isolated Find	
	Contact	**Recorders**	Kerry Navin,Mr.Kelvin Officer					**Permits**		
52-2-1712	Oakdale 14;	AGD	56	270200	6228440	Closed site	Valid	Artefact : -	Shelter with Deposit	2793
	Contact	**Recorders**	Mr.Kelvin Officer,Ms.Trish Saunders					**Permits**		
52-2-1691	Oakdale 3;	AGD	56	270120	6231780	Closed site	Valid	Art (Pigment or Engraved) : -, Artefact : -	Shelter with Art,Shelter with Deposit	2664
	Contact	**Recorders**	Kerry Navin					**Permits**		
52-2-1690	Oakdale 2;	AGD	56	270330	6232780	Closed site	Valid	Art (Pigment or Engraved) : -, Artefact : -	Shelter with Art,Shelter with Deposit	2664
	Contact	**Recorders**	Kerry Navin					**Permits**		
52-2-0004	The Hermitage;The Oak;	AGD	56	274035	6222788	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : -	Burial/s,Carved Tree	103104
	Contact	**Recorders**	David Bell,NPWS - Blackheath Office					**Permits**		
52-2-1709	Oakdale 17;	AGD	56	270820	6229010	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	2793
	Contact	**Recorders**	Mr.Kelvin Officer,Ms.Trish Saunders					**Permits**		
52-2-1706	Oakdale 20;	AGD	56	271160	6229100	Closed site	Valid	Artefact : -, Art (Pigment or Engraved) : -	Shelter with Art,Shelter with Deposit	2793
	Contact	**Recorders**	Mr.Kelvin Officer					**Permits**		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 39164 - CG - 9 km

Client Service ID : 780128

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
52-2-1704	Oakdale 22;	AGD	56	271190	6229270	Closed site	Valid	Artefact : -	Shelter with Deposit	2793
	Contact	**Recorders**	Mr.Kelvin Officer					**Permits**		
52-1-0043	Lake Burragarong, Larry Gormans Flat	AGD	56	261542	6224915	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : -	Burial/s,Carved Tree	
	Contact	**Recorders**	David Bell					**Permits**		
52-1-0018	Central Burragorang 2	AGD	56	261536	6225189	Open site	Valid	Burial : -	Burial/s	
	Contact	**Recorders**	R Etheridge					**Permits**		

**** Site Status**

Valid - The site has been recorded and accepted onto the system as valid

Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.

Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground

Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

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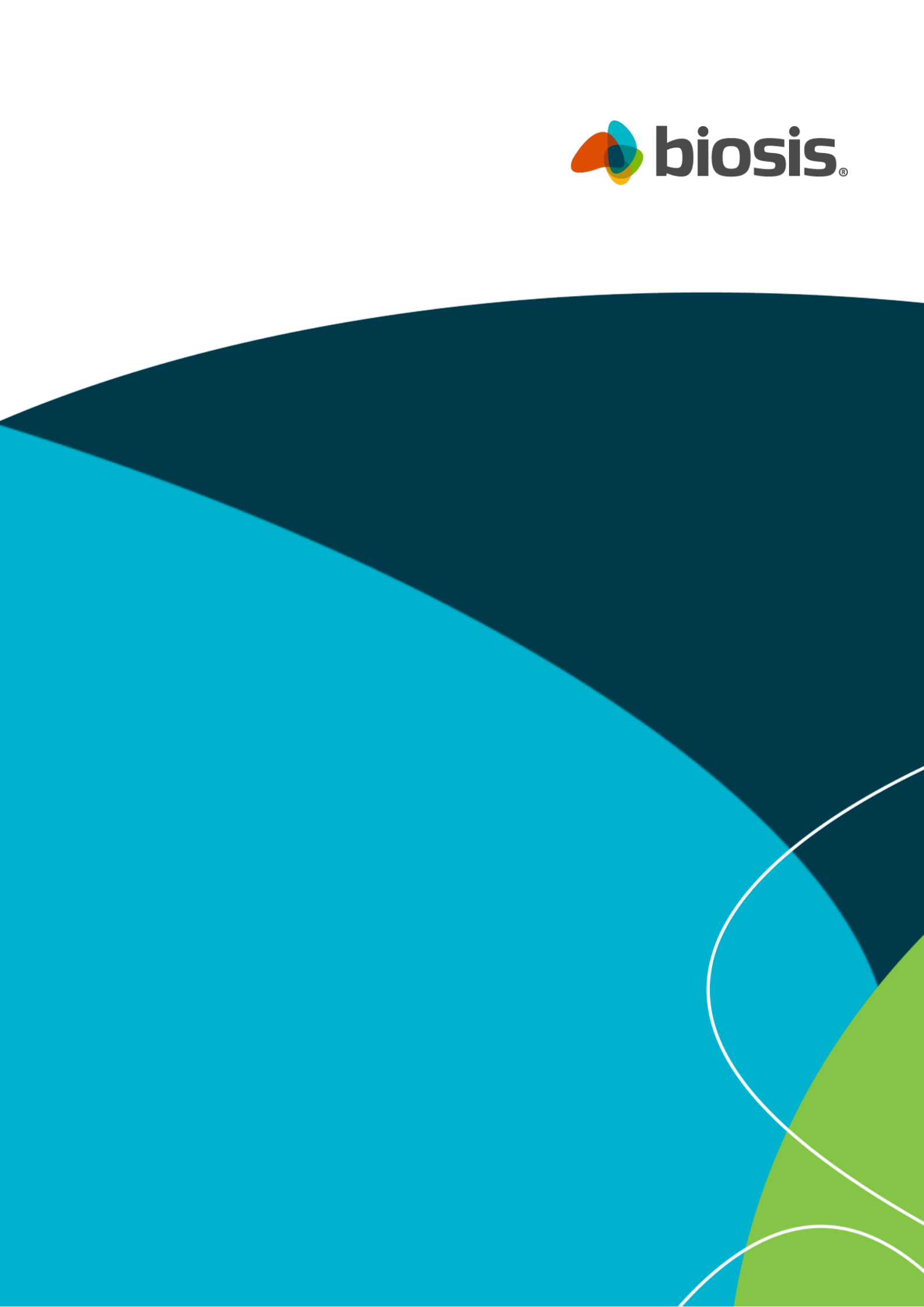
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