Cleveland Road North Precinct:
Aboriginal Cultural Heritage Assessment

DRAFT REPORT

Prepared for Newquest Property

14 February 2020

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- James Davis
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- Leanne Tungai
- Tracy Henry
- Paul Knight
- Kayla Williamson

Biosis staff involved in this project were:

- Anne Murray

Contents

Tables

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Glossary

ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal Heritage Information Management System
CHMP	Cultural Heritage Management Plan
DA	Determining Authority
DECCW	Department of Environment, Climate Change and Water (now EES)
DP	Deposited Plan
EES	NSW Environment, Energy and Science Group
EP&A Act	*Environmental Planning and Assessment Act 1979*
ICOMOS	International Council on Monuments and Sites
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
LGA	Local Government Area
NNTT	National Native Title Tribunal
NPW Act	*National Parks and Wildlife Act 1974*
NPWS	National Parks and Wildlife Service
NSW	New South Wales
NTSCORP	Native Title Services Corporation
PAD	Potential Archaeological Deposit
RAPs	Registered Aboriginal Parties
SEPP	State Environmental Planning Policy

Summary

Biosis Pty Ltd was commissioned by Newquest Property to undertake an Aboriginal Cultural Heritage Assessment (ACHA) of a proposed development along Cleveland Road (the study area). The study area is located within the Wollongong Local Government Area (LGA), Parish of Kembla, County of Camden. The study area incorporates Lot 1 and 2 DP 730326, Lot 200 DP 803810, Lot 59 DP 1125379, Lot 1 DP 156208, Lot 1 DP 532391, Lot 312 DP 1188000, Lot 202 and 203 DP 1175709, and Lot 210 DP 1057565

Consultation

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 DECCW document, *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010a) (consultation requirements). The appropriate government bodies were notified and advertisements placed in the Illawarra Mercury newspaper (1 November 2019), which resulted in the following Aboriginal organisations registering their interest (Table 1):

Table 1 Registered Aboriginal Parties

N.	Organisation
1	Leanne Tungai
2	Illawarra Local Aboriginal Land Council
3	Guunamaa Dreamin Sites and Surveying
4	James Davies
5	Tungai Tonghi
6	Woronora Plateau Gundungara Elders Council
7	South Coast NSW Aboriginal Elders Incorporated
8	Duncan Falk Consultancy
9	Goobah Development Pty Ltd (Murrin Clan/Peoples)
10	Barraby
11	Yurrandaali

A search conducted by the Office of the Registrar, *Aboriginal Land Rights Act 1983* listed no Aboriginal Owners with land within the study area. A search conducted by the National Native Title Tribunal (NNTT) listed the South Coast People Registered Native Title Claim over the study area; however the study area is located in freehold land which extinguishes Native Title.

Upon registration, the Aboriginal parties were invited to provide their knowledge on the study area and on the proposal provided in the Cleveland Road Stage 3 methodology. The responses identified the study area as an area of high cultural significance, due to the widespread use of the Mullet Creek region by Aboriginal

people in the past and the presence of Aboriginal sites in the area. Responses from the Registered Aboriginal Parties (RAPs) are included in Appendix 3.

The outcome of the consultation process was that the RAPs considered the study area to have a high level of cultural significance, due to the widespread of use of the Mullet Creek region by Aboriginal people in the past. The results of the consultation process are included in this document.

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

Results

The ACHA assessment undertook background research for the proposed study area.

A review of the Aboriginal Heritage Information Management System (AHIMS) register identified 114 Aboriginal cultural heritage sites registered within 6 kilometres of the study area. Thirteen of these registered sites were located within the study area, however, two of these sites are not valid sites and one has been destroyed under a previous AHIP, indicating that there are 10 valid AHIMS sites in the study area that may be impacted.

Key considerations arising from the background research include:

- The dominant site type recorded in the vicinity of the study area are artefact sites, consisting of low density artefact scatters and isolated artefacts
- Creek and drainage lines typically have greater numbers of artefacts than those on the open floodplain at Mullet Creek

Biosis undertook a field survey of the study area on the 9 and 12 October 2018. Two new artefact sites and four areas of potential archaeological deposit (PAD) were identified within the study area (CR IF1, CRIF2, CR PAD1, CR PAD2, CR PAD3, CR PAD4). No Aboriginal modified trees were identified within the proposed development area during this survey. These sites identified were located primarily in undisturbed areas along a creek line running through the study area. Following the survey, test excavations of CR PAD 1and CR PAD 2 were undertaken as these areas of PAD were within the proposed development impact footprint. A total of 38 test pits were excavated across the alluvial flat and hillslope landforms at CR PAD 1 and a total of 10 artefacts from four test pits were identified, primarily on the junction of the hillslope and alluvial flat landforms. At CR PAD 2 35 test pits were excavated across an alluvial flat and micro-rise landform. The excavations identified four artefacts from four test pits, all of which were located on the micro-rise landform. It was determined that the low density and nature of the artefacts, which did not contain artefacts with use wear or retouch suggested that the area has been used as a resource gathering zone.

The archaeological assessment has identified 19 sites within the study area. Two of these sites have undergone test excavations in the past and were determined not to be valid sites (AHIMS 52-5-0585/Cleveland Road PAD 3 and AHIMS 52-5-3765/Cleveland Road PAD 5) and one site (AHIMS 52-5-0586/Cleveland Road PAD 4) has been previously destroyed under an AHIP application. A total of seven sites will be impacted by the proposed works and harm to 10 sites will be avoided (refer to Table 2).

Table 2 Site details

Site name	Site type	Significance	Type of harm before mitigated	Consequence of unmitigated harm	Consequence of mitigated harm	Site specific recommendations
AHIMS pending/CR PAD 1	Artefact	Low	Direct	Partial loss of value	Partial loss of value	AHIP application

Site name	Site type	Significance	Type of harm before mitigated	Consequence of unmitigated harm	Consequence of mitigated harm	Site specific recommendations
AHIMS pending/CRPAD 2	Artefact	Low	Direct	Total loss of value	Total loss of value	AHIP application
AHIMS pending/CR PAD 3	PAD		No harm	No loss of value	No loss of value	Avoid impacts
AHIMS pending/CR PAD 4	PAD		Direct	Total loss of value	Total loss of value	Undertake test excavation
AHIMS pending/CR IF1	Artefact	Low	Direct	Total loss of value	Total loss of value	AHIP application, surface collection
AHIMS pending/CR IF2	Artefact	Low	Direct	Total loss of value	Total loss of value	AHIP application, surface collection
AHIMS 52-5-0496/WDRA_AX_23	Artefact	Low	No harm	No loss of value	No loss of value	Avoid impacts
AHIMS 52-5-0497/WDRA_AX_24	Artefact	Low	Direct	Total loss of value	Total loss of value	AHIP application
AHIMS 52-5-0498/WDRA_AX_25	Artefact	Low	Direct	Total loss of value	Total loss of value	AHIP application
AHIMS 52-2-1688/WD1	Artefact	Low	No harm	No loss of value	No loss of value	Avoid impacts
AHIMS 52-2-3831/Cleveland Road FT 1	Aboriginal ceremony and dreaming	High	No harm	No loss of value	No loss of value	Avoid impacts
AHIMS 52-2-3832/Cleveland Road FT 2	Aboriginal ceremony and dreaming	High	No harm	No loss of value	No loss of value	Avoid impacts
AHIMS 52-2-0619/Cleveland Road AFT-6	Artefact	Low	No harm	No loss of value	No loss of value	Avoid impacts
AHIMS 52-5-0584/Cleveland Road PAD 2	Artefact	Low	No harm	No loss of value	No loss of value	Avoid impacts
AHIMS 52-5-0585/Cleveland Road PAD 3	Not a site	None	No harm	No loss of value	No loss of value	None
AHIMS 52-5-0586/Cleveland Road PAD 4	Artefact	Low	No harm	No loss of value	No loss of value	Avoid impacts

Site name	Site type	Significance	Type of harm before mitigated	Consequence of unmitigated harm	Consequence of mitigated harm	Site specific recommendations
AHIMS 52-5-3765/Cleveland Road PAD 5	Not a site	None	No harm	No loss of value	No loss of value	None
AHIMS 52-2-3815/Riverpark Way AFT-1	Artefact	Low	No harm	No loss of value	No loss of value	Avoid impacts
AHIMS 52-2-3285/WDRA_AX_22	Artefact	Low	No harm	No loss of value	No loss of value	Avoid impacts

Management recommendations

The management and mitigation measures included below have been developed in consultation with the project RAPs. Prior to any development impacts occurring within the study area, the following is recommended:

Recommendation 1: Application for an Aboriginal Heritage Impact Permit for sites AHIMS 52-5-0497/WDRA_AX_24, AHIMS 52-5-0498/WDRA_AX_25, CR PAD 1, CR PAD2, CR IF1, CR IF2, CR PAD4.

It is recommended that an AHIP application is made to impact on sites AHIMS 52-5-0497/WDRA_AX_24, AHIMS52-5-0498/WDRA_AX_25 and AHIMS 52-2-3285 CR PAD 1, CR PAD2, CR PAD4, CR IF1, and CR IF2 which cannot be avoided by the proposed development works. It is recommended that this AHIP be for a timeframe of 15 years.

For information about AHIPs and their preparation, see below.

Advice preparing AHIPs

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. Environment, Energy and Science (EES) issues AHIPs under Part 6 of the NPW Act.

AHIPs should be prepared by a qualified archaeologist and lodged with the EES. Once the application is lodged processing time can take between 8-12 weeks. It should be noted that there will be an application fee levied by the EES 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: Surface collection of CR IF1 and CR IF2

It is recommended that surface artefacts at sites CR IF1 and CR IF2 are collected as part of a surface salvage program in accordance with the proposed AHIP application prior to the commencement of works

Recommendation 3: Further investigation of AHIMS pending/CR PAD 4 is required

Access to AHIMS pending/CR PAD 4 was not available at the time of this assessment and test excavations could not be undertaken in this area. It is recommended that test excavations of this site are undertaken by an experienced archaeologist prior to submission of an AHIP to ascertain if this site needs to be included before impacts can occur.

Recommendation 4: Avoidance of sites AHIMS 52-5-0496/WDRA_AX_23, AHIMS 52-2-3815/Riverpark Way AFT-1, AHISM 52-2-1688/WD1, 52-2-3831/Cleveland Road FT 2, AHIMS 52-2-3832/Cleveland Road FT 2, AHIMS 52-2-3285/WDRA_AX_22, AHIMS 52-5-0619/Cleveland Road AFT-6, 52-0584/Cleveland Road PAD 2, CR PAD 3

AHIMS sites 52-5-0496/WDRA_AX_23, AHIMS 52-2-3815/Riverpark Way AFT-1, AHIMS 52-2-1688/ WD1, AHIMS 52-2-3831/Cleveland Road FT 1, AHIMS 52-2-3832/Cleveland Road FT 2, AHIMS 52-0584/Cleveland Road PAD 2, AHIMS 52-5-0619/Cleveland Road AFT-6, and CR PAD 3 are located outside of the propose development footprint and it is recommended that impacts to these sites are avoided.

Recommendation 5: Development of a Cultural Heritage Management Plan (CHMP)

It is recommended that a CHMP be developed in consultation with the RAP's, DPE and EES prior to the commencement of works. The CHMP will outline Aboriginal site management requirements including the management of identified sites, unexpected finds, and further works required prior to development.

Management options – previously identified sites

The CHMP should provide provisions to ensure that the identified sites located outside of the development area are not unintentionally impacted during works. This should include provision for exclusion fencing and development of suitable no go buffers if required.

Stop works provision – previously unidentified sites or objects

The CHMP should include a stop work provision for any potential heritage sites identified during construction, not identified as part of this assessment or the CHMP

All Aboriginal places and objects are protected under the NPW Act. This protection extends to Aboriginal objects and places that have not been identified but might be unearthed during construction. If construction proceeds, work must cease if Aboriginal objects or places are identified which have not previously been identified as part of this assessment or have not been approved for harm under a CHMP. OEH and the archaeologist must be notified to make an assessment of the find and advise on subsequent management.

Historical archaeological sites are protected under the relics provisions (s139 – 146) of the NSW *Heritage Act 1977*. Should any historical archaeological sites be identified during any phase of the proposed development, all works must cease in the vicinity of the find and the project archaeologist and OEH notified. Should the archaeological nature of the find be confirmed the Heritage Branch of the NSW Department of Planning, will require notification.

Stop works provision – Discovery of Aboriginal Ancestral Remains

The CHMP should also include a provision for the discovery of Aboriginal Ancestral Remains

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

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

Heritage training and induction

The CHMP should develop a training and heritage induction for all employees, contractors and associated subcontractors working on site. The induction training should address elements related to:

- Relevant legislation.
- CHMP conditions.
- Location of identified heritage sites.
- Basic identification skills for Aboriginal and non-Aboriginal artefacts and human remains.
- Procedure to follow in the event of an unexpected heritage item find during construction works.

- Procedure to follow in the event of discovery of human remains during construction works.
- Penalties and non-compliance.

Long term care and control agreement

As part of the CHMP, a long term care agreement of artefacts should be developed for all Aboriginal artefacts identified during the test excavations and salvage works. This should be undertaken in consultation with the RAPs.

Recommendation 6: Discovery of Unanticipated Historical Relics

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

Recommendation 7: Continued consultation with the registered Aboriginal stakeholders

As per the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010a), it is recommended that the proponent provides a copy of this draft report to the Aboriginal stakeholders and considers all comments received. The proponent should continue to inform these groups about the management of Aboriginal cultural heritage sites within the study area throughout the life of the project.

1 Introduction

1.1 Project background

Biosis Pty Ltd was commissioned by Newquest Property to undertake an ACHA of the proposed Cleveland Road North residential development (the study area) (Figure 1).

This report details the investigation, consultation and assessment of Aboriginal cultural heritage undertaken for the study area.

This investigation has been carried out under Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act). It has been undertaken 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 *Environmental Planning and Assessment Act 1979* (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 incorporates Lot 1 and 2 DP 730326, Lot 200 DP 803810, Lot 59 DP 1125379, Lot 1 DP 156208, Lot 1 DP 532391, Lot 312 DP 1188000, Lot 202 and 203 DP 1175709, and Lot 210 DP 1057565. It is bounded by the village of Horsley to the north, Cleveland Road to the south and Mullet Creek to the east (Figure 2).

1.3 Proposed development

The proposed development will involve the subdivision and construction of residential housing in Lot 1 and 2 DP 730326, Lot 200 DP 803810, Lot 59 DP 1125379, Lot 1 DP 156208, Lot 1 DP 532391, Lot 312 DP 1188000, Lot 202 and 203 DP 1175709, and Lot 210 DP 1057565.

This development will include a number of works associated with residential development of the area including:

- Bulk earthworks for landscaping including infilling of existing dams and modification of drainage lines.
- Site compounds and material laydown areas.
- Construction of services and amenities including underground utilities such as electrical, telecommunication and waste water services.
- Construction of roads and associated features such as roundabouts, signage and kerbing.

- Subdivisions and construction of residential dwellings and associated infrastructure such as parks and pedestrian pathways.
- Construction of OSD basins and retention ponds.

1.4 Planning approvals

The proposed development will be assessed against Part 4 of the EP&A Act. Other relevant legislation and planning instruments that will inform the assessment include:

- NPW Act
- *National Parks and Wildlife Amendment Act 2010* (NSW)
- *Wollongong Local Environmental Plan 2009* (LEP).

1.5 Restricted and confidential information

Appendix 1 and Figure 7 of the Archaeological Report contains AHIMS information which is confidential and not to be made public. This is clearly marked on the title page for the Attachment.

1.6 Aboriginal cultural heritage

1.6.1 General description

According to Allen and O'Connell (2003), Aboriginal people have inhabited the Australian continent for the last 50,000 years.

In NSW, according to Bowler et al. (2003), Aboriginal people have occupied the land for over 42,000 years. However, preliminary evidence presented by Biosis (2016) from a subsurface testing program in south-western NSW suggests Aboriginal people may have occupied the semi-arid zone of the region for 50,000 years.

Without being part of the Aboriginal culture and the productions of this culture, it is not possible for non-Aboriginal people to fully understand the meaning of site, objects and places to Aboriginal people – only to move closer towards understanding this meaning with the help of the Aboriginal community. Similarly, definitions of Aboriginal culture and cultural heritage without this involvement constitute outsider interpretations.

With this preface Aboriginal cultural heritage broadly refers to things that relate to Aboriginal culture and hold cultural meaning and significance to Aboriginal people (DECCW 2010a, pp. 3). There is an understanding in Aboriginal culture that everything is interconnected. In essence Aboriginal cultural heritage can be viewed as potentially encompassing any part of the physical and/or mental landscape, that is, 'Country' (DECCW 2010a, pp. iii).

Aboriginal people's interpretation of cultural value is based on their 'traditions, observance, lore, customs, beliefs and history' (DECCW 2010a, pp. 3). The things associated with Aboriginal cultural heritage are continually and actively being defined by Aboriginal people (DECCW 2010a, pp. 3). These things can be associated with traditional, historical or contemporary Aboriginal culture (DECCW 2010a, pp. 3).

1.6.2 Tangible Aboriginal cultural heritage

Three categories of tangible Aboriginal cultural heritage may be defined:

- Things that have been observably modified by Aboriginal people.
- Things that may have been modified by Aboriginal people but no discernible traces of that activity remain.
- Things never physically modified by Aboriginal people (but associated with Dreamtime Ancestors who shaped those things).

1.6.3 Intangible Aboriginal cultural heritage

Examples of intangible Aboriginal cultural heritage would include memories of stories and 'ways of doing', which would include language and ceremonies (DECCW 2010a, pp. 3).

1.6.4 Statutory

Currently Aboriginal cultural heritage, as statutorily defined by the NPW Act, consists of objects and places which are protected under Part 6 of the Act.

Aboriginal objects are defined as:

> *any deposit, object or material evidence…relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains*

Aboriginal places are defined as a place that is or was of special Aboriginal cultural significance. Places are declared under section 84 of the NPW Act.

1.6.5 Values

Aboriginal cultural heritage is valued by Aboriginal people as it is used to define their identity as both individuals and as part of a group (DECCW 2010a, pp. iii). More specifically it is used:

- To provide a:
  - '*Connection and sense of belonging to Country*' (DECCW 2010a, pp. iii).
  - Link between the present and the past (DECCW 2010a, pp. iii).
- As a learning tool to teach Aboriginal culture to younger Aboriginal generations and the general public (DECCW 2010a, pp. 3).
- As further evidence of Aboriginal occupation prior to European settlement for people who do not understand the magnitude to which Aboriginal people occupied the continent (DECCW 2010a, pp. 3).

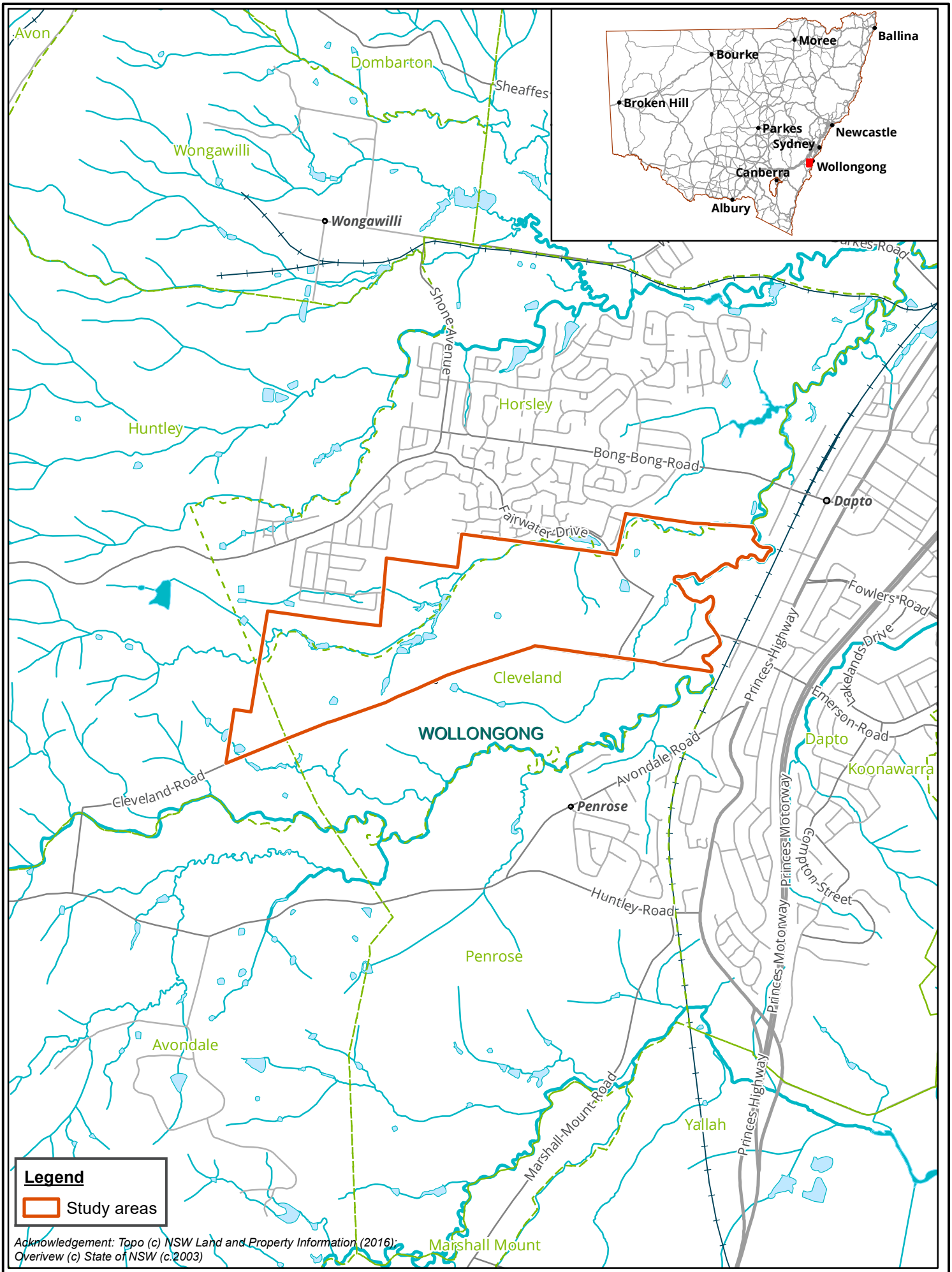


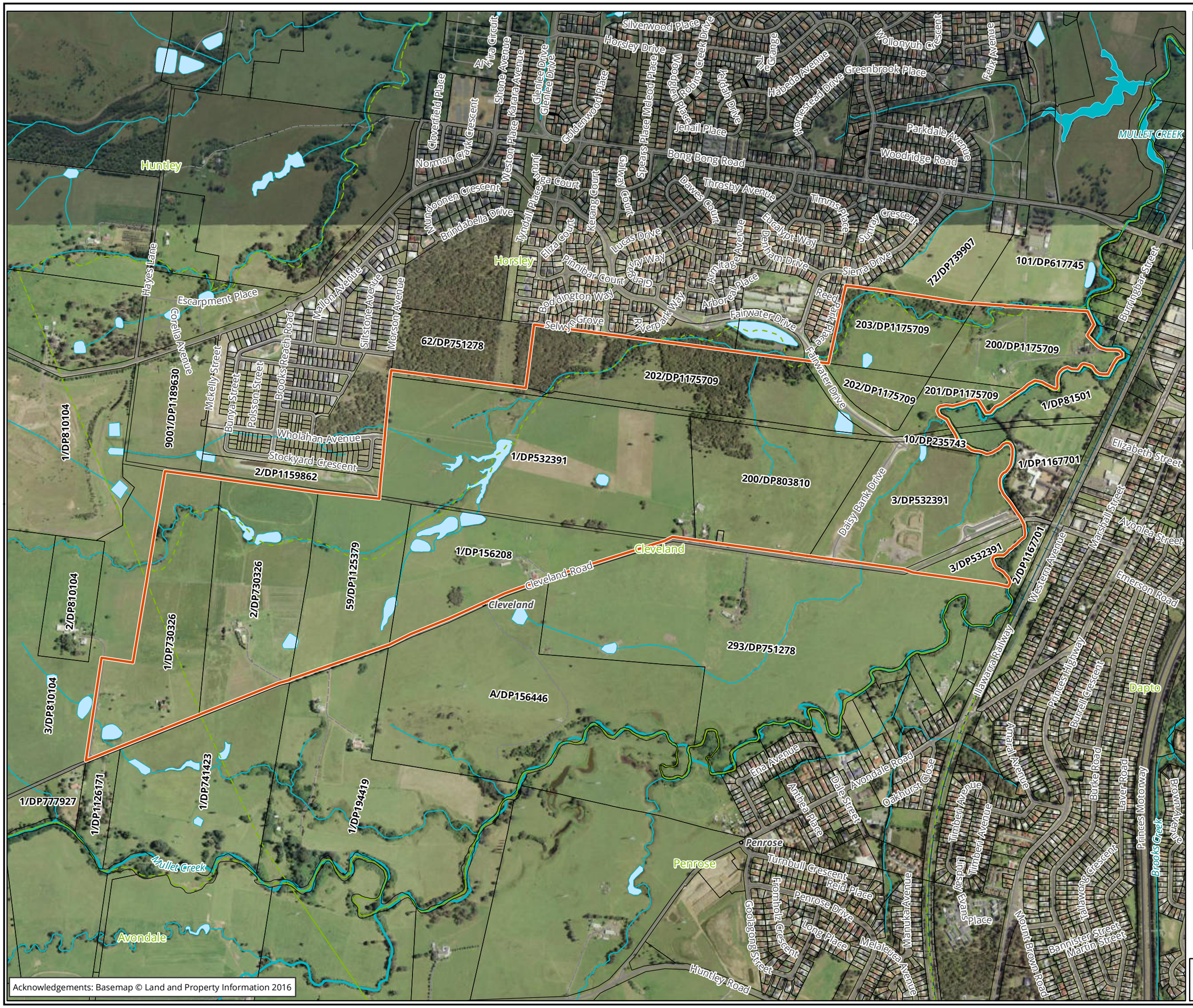
Figure 1 Location of the study area

Biosis Pty Ltd
Albury, Ballarat, Melbourne,
Newcastle, Sydney, Wangaratta & Wollongong

Matter: 30982
Date: 09 January 2020,
Checked by: MJS, Drawn by: SSK, Last edited by: skumar
Location:P:\30900s\30982\Mapping\

0 300 600 900 1,200
Metres
N

Scale 1:30,000 @ A4, GDA 1994 MGA Zone 56



Acknowledgements: Basemap © Land and Property Information 2016

Figure 2 Study area detail

Acknowledgements: Basemap © Land and Property Information 2016

Legend

- Study area
- Proposed development footprint

Figure 3 Proposed development

0 100 200 300 400 500

Metres

Scale: 1:10,500 @ A3

Coordinate System: GDA 1994 MGA Zone 56

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Biosis Pty Ltd

Albury, Ballarat, Melbourne, Newcastle, Sydney, Wangaratta & Wollongong

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Date: 09 January 2020,
Checked by: MJS, Drawn by: SSK, Last edited by: skumar
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2 Study area context

This section discusses the study area in regards to its landscape, environmental and Aboriginal cultural heritage context. This section should be read in conjunction with the archaeological report attached in Appendix 6. The background research has been undertaken in accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b) (the Code).

2.1 Topography, geology and hydrology

The study area consists of low lying, mostly cleared, alluvial lowland and floodplain adjacent to Mullet Creek and its tributaries, and an undulating midland valley. The study area is situated within a rural landscape with irregular stands of forest vegetation surrounding homesteads, along drainage lines and upon low knolls.

The geology of the study area consists primarily of quaternary aged alluvial floodplain deposits consisting of quartz fluvial sands, clays and silts. Red brown and grey lithic sandstone is also present in the study area (Stroud et al. 1985, pp. 9029–9129).

There are a number of hydrological features within and surrounding the study area. They are primarily in the form of small creeks and streams. One unnamed third order creek line runs through the study area from west to east. This creek line drains into the fourth order stream Mullet Creek on the eastern boundary of the study area. There is also a second order creek line which runs north to south off of the northern boundary line. This creek line drains into the same fourth order stream on the eastern boundary of the study area. These creek lines would have provided useful resources for Aboriginal people in the region and could contain evidence of Aboriginal occupation as a result.

2.2 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.

There are three soil landscapes within the study area; the Fairy Meadow, Shellharbour, and Albion Park soil landscapes (Hazelton & Tille 1990). The Fairy Meadow soil landscape is associated with the alluvial plains, floodplains, valley flats, swamp landscapes and terraces below the Illawarra Escarpment. Soils present within the Fairy Meadow soil landscape consist of friable alluvial loams and siliceous sands on the upper flood plains with dark brown sands and heavy clays on the lower alluvial flats. The dominant soil materials of the Fairy Meadow soil landscape are outlined in Table 3. The limitation of this type of soil landscape is the flood prone nature of the low wet bearing, highly permeable soils, with high seasonable water table (Hazelton & Tille 1990, pp. 100).

The total depth of Fairy Meadow soil landscape within upper floodplains and terraces is less than 100 centimetres. They overlay Quaternary sediments that consist of quartz sand, lithic fluvial sand, silt and clay. Total soil depth within valley flats is less than 150 centimetres and overlies Quaternary sediments. The Fairy Meadow soil landscape is a swamp landscape that is characterised by soils that are at least seasonally wet, with water tables frequently close to the surface (Hazelton & Tille 1990, pp. 100). Parent soil material includes large amounts of accumulated decayed organic matter. Since they accumulate parent soils and deposit transported soils, swamp soil landscapes would preserve archaeological material; although their susceptibility to flooding and water inundation suggests there is a lower likelihood that they were intensively occupied.

Table 3 Fairy Meadow soil landscape characteristics (Hazelton & Tille 1990, pp. 100).

Soil Material	Description
Fairy Meadow 1 (fa1)	Brownish black loose sandy loam, fa1 is associated with upper floodplains and terraces; typically forms a topsoil up to 20 centimetres thick.
Fairy Meadow 2 (fa2)	Brown sand, fa2 overlies fa1 on upper floodplains, and forms topsoil on valley flats; depths vary, but fa2 is generally up to 40 centimetres thick.
Fairy Meadow 3 (fa3)	Yellowish brown clay that underlies fa2 for a depth of up to 50 centimetres in valley flats.
Fairy Meadow 4 (fa4)	Olive brown clay that underlies fa3 for a depth of up to 80 centimetres in valley flats; it sits above Quaternary sediments.

The Shellharbour soil landscape is associated with rolling low hills with long side slopes and broad drainage plains which occur on Budgong sandstone on the coastal plain. It is described as a deep prairie soil which occur on crests and supper slopes with brown krasnozems which occur on mid slopes, red podzolic soils and prairie soils occur on lower slopes and drainage plains. The dominant soil materials of the Shellharbour soil landscape are outlined in Table 4. The limitation of this soil landscape is the mass movement nature of shallow soils, water erosion hazard, sodicity, hard setting, low permeability, low wet bearing strength with a high shrink swell. The mass movement of shallow soils is not likely to preserve *in situ* archaeological material frequently in the top soil layer; however, archaeological material could be preserved in the layers below albeit in mixed soil contexts.

Table 4 Shellharbour soil landscape characteristics (Hazelton & Tille 1990, pp. 58)

Soil Material	Description
Shellharbour 1 (sh1)	Friable brownish black sandy loam 2-5 millimetre crumb peds.
Shellharbour 2 (sh2)	Hard setting organic rich black light clay, moderately pedal, 5-10 millimetre platy peds.
Shellharbour 3 (sh3)	Mottled dull reddish brown, sandy clay with characteristic stone line.
Shellharbour 4 (sh4)	Brown strongly pedal heavy clay 20-50 millimetre sub angular to columnar peds
Shellharbour 5 (sh5)	Very sticky, strongly pedal dull reddish brown sandy clay loam to sandy clay at depth.

The Albion Park soil landscape is associated with short steep upper slopes that grade into long gentle foot slopes. These occur on the Berry Formation on the Coastal Plain. The Berry Formation is comprised of mid grey to dark grey siltstone, mudstone and fine sandstone with localized outcrops of Budgong Sandstone (red brown and grey lithic volcanic sandstone) on mid to upper slopes. Localised outcrops of Bumbo Latite occasionally occur on crests. Reliefs range from 60-100 metres and drainage lines are incised on upper slopes that grade into broad drainage plains on lower slopes (Hazelton 1992, pp. 40). Soils present within the Albion Park soil landscape consist of friable sandy clay loam and clays (Table 5).The Albion Park landscape is an erosional landscape and is unlikely to preserve Aboriginal sites *in situ* due to processes of erosional soil movement. The formation of this landscape through erosional processes combined with the generally sloped nature of landforms within it would have removed artefacts and artefact bearing soils.

Table 5 Albion Park soil landscape characteristics (Hazelton 1992, pp. 41)

Soil Material	Description
Albion Park 1 (ap1)	Friable brownish black sandy clay loam (topsoil), rough faced porous fabric, with <2 millimetre peds.
Albion Park 2 (ap2)	Hard setting weakly pedal dark brown loam (topsoil), rough faced porous fabric, with <2 millimetre peds.
Albion Park 3 (ap3)	Mottled moderately pedal greyish brown light clay (subsoil), moderately pedal, 50-100 millimetre angular blocky peds, with rough faced, porous fabric.
Albion Park 4 (ap4)	Weakly pedal bright yellowish brown sandy loam (subsoil), rough faced porous fabric, with <2 millimetre peds.
Albion Park 5 (ap5)	Mottled moderately pedal yellow orange heavy clay (subsoil), moderately pedal, 20-50 millimetre sub-angular blocky peds, with rough faced, porous fabric.

2.3 Landscape resources

The margins of the Wollongong Plains are characterised by mixed warm temperate and subtropical rainforest complexes on rich shale soils and alluvium under the Illawarra Escarpment, interspersed with patches of lowland forest and woodland communities. The study area is located within areas that have been cleared or retain pockets of disturbed native vegetation, with intact remnant vegetation situated along the creek line corridors.

The Wollongong Plains generally provides a number of resources used by Aboriginal inhabitants. Lithic resources would have been accessible in the outcrops of siltstone, shale and tuffaceous sandstones of the Berry Siltstone formation, while coastal rock platforms provided areas where tools might be ground and sharpened and art might be engraved. Quartz would have been available locally and dispensed through trading with other groups (Donlon & Sefton 1988, pp. 23). Igneous raw materials would have come from the south of the study area in areas like Gerringong, due to its volcanic nature (Donlon & Sefton 1988, pp. 55). Angular cobbles and pebbles of fossilised wood have also been recorded near the study area in the bed of Robins Creek (Sefton 1990, p. 4), which is located north of the current study area.

Aerial imagery and vegetation mapping undertaken by the National parks and Wildlife Service (NPWS 2002) shows that the study area has been cleared of native vegetation; however, native vegetation communities in the vicinity of the study area and around Lake Illawarra would have been comparable to vegetation found in the study area prior to clearing. These vegetation communities include (NPWS 2002):

- Lowland Woollybutt – Melaleuca Forest located on flat low-lying Shoalhaven Group sediments at elevations between 10 and 35 metres above sea level. It is characterised by the presence of Woolybutt (*Eucalyptus longifolia*), Stringybark (*Eucalyptus globoidea, Eucalyptus eugenioides*), and Honey Myrtle (*Melaleuca decora).*

The bark from Stringybark and red gum species was used as rope and string to make nets, fishing lines, as well as to construct shelters and canoes (Stewart & Percival 1997).Trees in the acacia family also provided useful resources as the seeds from certain acacia species could be eaten and the bark tannin used for fishing (Stewart & Percival 1997, pp. 8).

Terrestrial and avian resources were used for food, but they also provided a significant contribution to the social and ceremonial aspects of Aboriginal life through their use as ritual implements or even simply through fashioning as personal adornments (Attenbrow 2002, pp. 107). Mammals such as kangaroos, possums and

wombats were used as a food source and also for tool making. Bones and teeth were used as points or barbs for hunting spears and fishing spears, while tail sinews are known to have been used as a fastening cord (Attenbrow 2002, pp. 99). Aquatic species such as freshwater crayfish would have been easily accessible in larger waterways (Rosen 1995). Aquatic vertebrates, fish and eels, would also have been present within larger creeks and waterways. Fishing spears were described as being barbed with fish teeth as wells a fish bones (Attenbrow 2002, pp. 117).

There are a number of historical records from the nineteenth century observations of Aboriginal people in the Illawarra that refer to activities around Mullet Creek.

Alexander Harris who visited the Illawarra between 1828 and 1838 published his autobiographical work *Settlers and Convicts* in 1847 where he noted usage of Cabbage Trees *Livistona australis* as footbridge over the Mullet Creek (Organ 1990, pp. 163)::

> *The Mullet Creek where we passed it must have been nearly five and thirty feet wide; and the bridge was one of those slender cabbage trees grown on the bank and flung by some bushman or black across the creek with his axe, either with a view to using it as a bridge or for the sake of the interior part of the head, which is very similar when dressed to cabbage, and is a favourite article of food with many...*

A local settler at the Lake Illawarra, John Brown, noted extensive Aboriginal exploitation of the Mullet Creek area in 1888 (Organ 1990, pp. 348). John Brown noted a great number of Aboriginal canoes on Mullet Creek:

> *...He (Mr George Brown) has always taken a deep and active interest in the lake and its islands, and also in Mullet Creek, down which he had made his first trip in a boat in 1837, blackfellow canoes then being the order of the day...*

2.4 European land use history

Within the study area, soil disturbance has been associated with historic pastoral land-use practices. The Dapto area has been subjected to extensive grazing and agricultural practices from 1880's onwards (McDonald 1976). Cedar cutters were the first to open up the Illawarra area from as early as 1805. When they had exhausted the easily accessible timber by 1820, cattle grazing took over and the coastal plain was extensively settled and cleared for pastoral estates and farms. Many early houses were built of rough slab or timber construction (Kass 2010, pp. 66).

This history of pastoralism continued into the 1990s. Title deeds from 1966 indicate that land adjacent to the south-western portion of the road was owned by Robert Martin, a farmer (Land Registry Services Book 2779 No. 564). Additional land across the road was originally owned by Edward Kelly, also a farmer (Land Registry Services Folio 1264 Plan 26). Further evidence for pastoral use of land surrounding Cleveland Road is supplied by land deeds which show a property adjacent to the central portion of the road was owned by Daniel Timothy Nunan, a dairy farmer in 1977(Land Registry Services Book 3290 No. 89).

3 Aboriginal cultural heritage context

3.1 Ethnohistory

It is generally accepted that Aboriginal peoples have inhabited Australia for the last 50,000 years (Allen & O'Connell 2003). Despite a proliferation of known Indigenous sites there is considerable ongoing debate about the nature, territory and range of pre-contact Indigenous language groups in the Illawarra region. These debates have arisen largely due to the lack of ethnographic and linguistic information recorded at the time of European contact. By the time colonial diarists, missionaries and proto-anthropologists began making detailed records of Indigenous people in the late 19th Century; pre-European Indigenous groups had been broken up and reconfigured by European settlement activity. The following information relating to Indigenous people in the Illawarra is based on such early detailed records.

The Illawarra region is the traditional land of the Wodi Wodi, a group of people who spoke a variant of the Dharawal language (Wesson 2009). The area occupied by this group extended from Botany Bay down the coast to around Nowra. To the north of the Wodi Wodi, the Darug are identified as the traditional owners, to the west are the Gundanguura, and in the south the Thoorga (Tindale 1974).

The areas inhabited by each of these groups are considered to be indicative only and would have changed through time and may have been dependent on certain circumstances (i.e. availability and distribution of resources). Interactions between different types of social groupings would have varied with seasons and resource availability.

Traditional stories tell of the arrival of the Wodi Wodi to Lake Illawarra, bringing with them the *Dharawa*l or cabbage tree palm from which their language is named (Wesson 2009, pp. 5). Analysis of middens in the region has provided dates of occupation dating back 6000 to 7000 years on the coast and at Lake Illawarra, and it is accepted that Aboriginal occupation of the south coast dates to around 20,000 years ago (AMBS 2008, pp. 33).

The first recorded contact between Aboriginal and European peoples occurred in 1770, when Captain Cook sailed down the east coast of Australia in the Endeavour and observed cook fires and Aboriginal people carrying canoes along the coast (Organ 1990, pp. 2). The next recorded contact occurred in 1796, when Flinders and Bass travelled along the coast in the Tom Thumb (Organ 1990, pp. 8). (Organ 1993, pp. 49), followed by an expedition from Jervis Bay by George William Evans, in which the expedition met several groups of Aboriginal people on the way through the Wollongong area in 1812.

An article in the South Coast Times from 31 January 1957 by A. Armstrong includes a reference about Dapto and Charley Hooka (Organ 1990, pp. 385):

> *The name "Dapto" derived from the Aboriginal name of "Dabpeto" meaning "plenty water" and the land on which the township of Dapto arose was owned by an Aboriginal chief, Charley Hooka... He was popular amongst the chiefs of the Illawarra tribes and owned a large area of land in the district and also a large portion of Lake Illawarra.*

In November 1970 W.G.McDonald published an article from 25 July 1893 by John Brown on King Hooka and the Hooka Islands of Lake Illawarra that refer to the Aboriginal name for Dapto (Organ 1990, pp. 354–355). It was understood that the word "high water" does not relate to flood waters but to the many streams of beautiful fresh water that flow through that portion of the district. Chief Hooka was regarded as the great chief amongst other Aboriginal people as his land was abundant with fish and large quantity of game of any sort (Organ 1990, pp. 384). He was thought be killed and laid to rest on "the opposite side of Hooka Creek on a hillock of sand" (Organ 1990, pp. 375).

3.2 Aboriginal heritage located in the study area

The archaeological report attached in Appendix 6 provides details for Aboriginal sites identified during the archaeological assessment. A brief description of each site is provided below.

AHIMS pending/CR PAD 1

PAD 1 consists of low density subsurface deposit located on at the junction of hillslope and alluvial flat landforms within 50 metres of a first order creek line. A total of 10 artefacts consisting of 2 complete flakes, 2 distal flake fragments, 2 angular fragments, 1 medial flake fragment and 3 proximal flake fragments were identified across four test pits. Artefacts consisted of chert, quartz, quartzite and silcrete raw materials and were identified in the top 200 mm of soil deposit.

AHIMS pending/CRPAD 2

PAD 1 consists of low density subsurface deposit located on a mini rise on the alluvial flat landforms within 100 metres of a first order creek line. A total of four artefacts consisting of 2 complete flakes, 1 medial flake fragment and 1 unidirectional core were identified across four test pits. Artefacts consisted of chert, petrified wood and silcrete raw materials and were identified between 100 and 300 mm of soil deposit.

AHIMS pending/CR PAD 3

CR PAD 3 consists of an area of PAD located on an alluvial flat landform within 50 metres of a creek line.

AHIMS pending/CR PAD 4

CR PAD 4 consists of an area of PAD located on an alluvial flat landform within 50 metres of a creek line.

AHIMS pending/CR IF1

CR IF1 was located on the western boundary of the study area, next to the creek line. This site consisted of a single basalt complete flake, with flaked platform and retouched termination

AHIMS pending/CR IF2

CR IF2 consisted of a complete silcrete flake that had been broken into three fragments by cattle trampling and was located on the southern side of a creek line.

AHIMS 52-5-0496/WDRA_AX_23

WDRA_AX_23 consisted of three artefacts recovered from a 1m x 1m test pit excavated on a terrace adjacent to a first order creekline. The artefacts consisted of two chert and one petrified wood flakes, one of which contained retouch and usewear. These artefacts were recovered from upper 20 cm of deposit

AHIMS 52-5-0497/WDRA_AX_24

WDRA_AX_24 consisted of one quartz broken flake recovered from a 1m x 1m test pit excavated on a hillslope landform. The artefact was recovered from between 10 and 20 cm in depth. AMBS (2006) assigned this site with low archaeological potential. This site represents a common site type in the area and has a limited range of artefact types.

AHIMS 52-5-0498/WDRA_AX_25

WDRA_AX_25 consisted of three chert artefacts and one petrified wood artefact recovered from two 1m x 1m test pits excavated as a part of a 40 sq metre excavation program on a hill crest landform. This site was

assigned low archaeological potential by AMBS (2006). The artefact was recovered from the upper 30 cm of soil and consisted of one complete flake and three broken flakes.

AHIMS 52-2-1688/WD1

Artefacts at AHIMS 52-2-1688/WD1 were recovered from the upper 26cm of the soil profile and consisted of silicified wood, chert and quartz flakes and one unidentified sedimentary core. Navin Officer stated that it was unlikely the artefacts were in situ, due to the extensive land use modifications of the topsoil from where artefacts were recovered (Navin Officer 1993, pp. 11). Given the dense grass cover, size of the test area and the limitations of subsurface testing, Navin Officer considered that there was a possibility that more artefacts were present both on surface and subsurface in WD1. However, potential for archaeologically significant sites and/or undisturbed archaeological deposits was assessed to be minimal (Navin Officer 1993, pp. 12). A Consent to Destroy was issued by National Parks and Wildlife in 1993 in order to destroy the site, however, AHIMS currently lists this site as valid.

AHIMS 52-2-3831/Cleveland Road FT 1

Cleveland Road FT1 was identified by the Aboriginal community as a potential birthing tree during the Biosis (2011) assessment of the Fairwater Drive extension to Cleveland Road. Aboriginal birthing trees are a rare site type in the region and there is potential that sub-surface deposits are present at the base of this tree.

AHIMS 52-2-3832/Cleveland Road FT 2

Cleveland Road FT2 was identified by the Aboriginal community as a potential birthing tree during the Biosis (2011)assessment of the Fairwater Drive extension to Cleveland Road. Aboriginal birthing trees are a rare site type in the region and there is potential that sub-surface deposits are present at the base of this tree.

AHIMS 52-2-0619/Cleveland Road AFT-6

This site was located within alluvial flats 10m from Mullet Creek Eight test pits were excavated across this site and six artefacts were recovered from three of these pits. Artefacts consisted of two flakes and four pieces of debitage and were made from silcrete, chert and mudstone.

AHIMS 52-5-0584/Cleveland Road PAD 2

This site is located within alluvial flats 10m from the western bank of Mullet Creek. Eight test pits were excavated to the sterile clay layer and seven artefacts were recovered from four test pits. Artefacts consisted of three flakes, a core and three pieces of debitage and were made from silcrete, chert and mudstone

AHIMS 52-5-0585/Cleveland Road PAD 3

This site was located within alluvial flats 200m from Mullet Creek on the western side of the drainage line. Four test pits were excavated across this PAD and no Aboriginal cultural material was identified. Results indicated that Cleveland Road PAD 5 has undergone partial subsurface disturbance due to the previous residential construction and assumed demolition (Biosis 2011, pp. 32). This is not a valid site and the area has since been disturbed as part of the construction of Daisy Banks Drive.

AHIMS 52-5-0586/Cleveland Road PAD 4

This site is located within alluvial flats 200m from Mullet Creek to the east of the small drainage line. Five test pits were excavated with one artefact recovered, a hammerstone made of andesite. Due to the lack of additional cultural material in other excavated test pits, It was considered that the artefact was an isolated find, and that no further sub-surface deposits are present across the entire PAD area or associated landform.

AHIMS 52-5-3765/Cleveland Road PAD 5

This site was located within alluvial flats 50m south of Reid Creek. Three test pits were excavated in this area of PAD by Biosis and no Aboriginal cultural material was recovered. It was determined that this area was associated with a braided drainage channel and had been heavily disturbed as a result. This is not a valid site and the area has since been disturbed as part of the construction of the Fairwater Drive extension to Daisy Banks Drive.

AHIMS 52-2-3815/Riverpark Way AFT-1

This site consisted of an isolated chalcedony flake that was originally identified on the surface of a drainage channel.

AHIMS 52-2-3285/WDRA_AX_22

WDRA_AX_22 consisted of two artefacts that were recovered from the upper 10 centimetres of a 1 metre x 1 metre test pit. The site was located on an alluvial flat that was subject to overbank flows. AMBS (2006) assigned the site with low archaeological potential

3.3 Interpretation of past Aboriginal land use

The Wollongong Plain of the Illawarra region generally provides a number of resources used by Aboriginal inhabitants. Lithic resources would have been accessible in the outcrops of siltstone, shale and tuffaceous sandstones of the Berry Siltstone formation, while coastal rock platforms provided areas where tools might be ground and sharpened and art might be engraved. Angular cobbles and pebbles of fossilised wood have been recorded near the study area in the bed of Robins Creek (Sefton 1990:4). Stone was used by Aboriginal people for a variety of purposes as tools or in the social information exchange as symbols or indexes, for example, stone markers. A number of edible plant and faunal species would have been available within the study area and its immediate surroundings prior to European use and many of these species would have been utilised by Aboriginal people. As suggested by Sefton (1984), in AMBS (AMBS 2006) although resources in West Dapto area would have been attractive, they were probably not sufficient to allow for the locality to be economically self-contained. The area was probably used in conjunction with the resources from the coastal zone and Lake Illawarra. This is supported by the general nature of sites in the area, which typically consist of low density or isolated artefact sites, and are widespread but most often sporadically placed in close proximity to creek lines.

4 Aboriginal community consultation

Consultation with the Aboriginal community has been undertaken in compliance with the consultation requirements as detailed below. A consultation log of all communications with RAPs is provided in Appendix 1.

4.1 Stage 1: Notification of project proposal and registration of interest

4.1.1 Identification of relevant Aboriginal stakeholders

In accordance with the consultation guidelines, Biosis Pty Ltd notified the following bodies regarding the proposal:

- Wollongong City Council
- EES.
- NSW Native Title Services Corporation Limited (NTSCORP Limited).
- Office of the Registrar, Aboriginal Land Rights Act 1983 of Aboriginal Owners.
- National Native Title Tribunal (NNTT).
- South Coast Local Land Services.
- Illawarra Local Aboriginal Land Council.

A list of known Aboriginal stakeholders in the Illawarra Region was provided by EES (a copy of this response is provided in Appendix 2.

A search conducted by the Office of the Registrar, *Aboriginal Land Rights Act 1983* (NSW) listed no Aboriginal Owners with land within the study area. A search conducted by the NNTT listed one Registered Native Title Claim;

4.1.2 Public notice

In accordance with the consultation guidelines, a public notification was placed in the following newspapers:

- Illawarra Mercury (1 November 2019)

The advertisement invited Aboriginal people who hold cultural knowledge to register their interest in a process of community consultation to provide assistance in determining the significance of Aboriginal object(s) and/or places in the vicinity of the study area. A copy of the public notice is provided in Appendix 2.

4.1.3 Registration of Aboriginal parties

Aboriginal groups identified in Section 4.1.1 were sent a letter inviting them to register their interest in a process of community consultation to provide assistance in determining the significance of Aboriginal object(s) and/or places in the vicinity of the study area. In response to the letters and public notice, a total of 11 groups registered their interest in the project. Responses to registration from Aboriginal parties are provided in Appendix 3. A full list of Aboriginal parties who registered for consultation is provided in Table 6 below.

Table 6 Registered Aboriginal Parties

N.	Organisation
1	Leanne Tungai
2	Illawarra Local Aboriginal Land Council
3	Guunamaa Dreamin Sites and Surveying
4	James Davies
5	Tungai Tonghi
6	Woronora Plateau Gundungara Elders Council
7	South Coast NSW Aboriginal Elders Incorporated
8	Duncan Falk Consultancy
9	Goobah Development Pty Ltd (Murrin Clan/Peoples)
10	Barraby
11	Yurrandaali

4.2 Stage 2: Presentation of information about the proposed project

On 4 December 2019 Biosis provided RAPs with details about the proposed development works (project information pack). A copy of the project information pack is provided in Appendix 3.

4.3 Stage 3: Gathering information about cultural significance

4.3.1 Archaeological assessment methodology information pack

On 4 December 2019, Biosis provided each RAP with a copy of the project methodology pack outlining the proposed ACHA process and methodology for this project. RAPs were given 28 days to review and prepare feedback on the proposed methodology. A copy of the project methodology pack is provided in Appendix 4.

Two comments were received as part of the stage 3 consultation. One comment from Lee Field of Barraby Cultural Services who noted their support of the proposed methodology. A second comment was received from Geoff Berry who confirmed receipt of the methodology for the South Coast NSW Aboriginal Elders Incorporated and their intent to provide comment.; however no further comments were received.

4.4 Stage 4: Review of draft ACHA report - TBD

To be completed following completion of stage 4 consultation

5 Aboriginal cultural 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 the cultural and scientific values of Aboriginal sites in the study area. In depth details of the scientific significance assessment of Aboriginal sites in the study area are provided in Appendix 6.

5.1 Introduction to the assessment process

Heritage assessment criteria in NSW fall broadly within the significance values outlined in the Australia International Council on Monuments and Sites (ICOMOS) *Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (Australia ICOMOS 2013) (the 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, a 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 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 Australian

Government, the NSW EES and the Heritage Branch, and the 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 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 EES *Guidelines to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (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 consideration of Aboriginal sites and places are the cultural/social significance to Aboriginal people and their archaeological or scientific significance to archaeologists and the Aboriginal community. 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 Cultural (social significance) values

Cultural or social significance refers to the spiritual, traditional, historical and/or contemporary associations and values attached to a place or objects by Aboriginal people. Aboriginal cultural heritage is broadly valued by Aboriginal people as it is used to define their identity as both individuals and as part of a group (DECCW 2010a, pp. iii). More specifically it provides:

- A '*connection and sense of belonging to Country*' (DECCW 2010a, pp. iii).
- A link between the present and the past (DECCW 2010a, pp. 3).
- A learning tool to teach Aboriginal culture to younger Aboriginal generations and the general public (DECCWa 2010 p.3).
- Further evidence of Aboriginal occupation prior to European settlement for people who do not understand the magnitude to which Aboriginal people occupied the continent (DECCW 2010a, pp. 3).

It is acknowledged that Aboriginal people are the primary determiners of the cultural significance of Aboriginal cultural heritage. During consultation the following information was provided by RAPs in regards to the cultural values of the study area.

- Mullet Creek has a very high cultural significance to local Aboriginal people as a very important resource gathering area.

5.3 Historic values

Historic significance refers to associations a place or object may have with a historically important person, event, phase or activity to the Aboriginal and other communities. The study area is not known to have any historic associations.

5.4 Archaeological (scientific significance) values

An archaeological scientific assessment was undertaken for the study area and is presented in detail as part of the attached Archaeological Report (Appendix 6). Sites identified in the study area typically contain low scientific significance, with test excavations and surveys having identified low density or isolated artefact sites made up of common artefact types and raw materials that are found throughout the area. Two fig trees were also identified as potential birthing trees and may possess sub-surface deposits at their base. These two fig trees contain high archaeological significance as they are a rare occurrence in the area.

5.5 Aesthetic values

The study area consists primarily of cleared land that has been used for pastoral purposes. The landscape has been modified and contains residential dwellings, dams and roads, with a large scale residential development to the north and east. The study area has low aesthetic value due to the surrounding development and its modification for pastoral land uses.

5.6 Statement of significance

The significance of sites was assessed in accordance with the following criteria:

- Requirements of the Code.
- The Burra Charter.
- *Guide to Investigating and Reporting on Aboriginal Heritage.*

The combined use of these guidelines is widely considered to represent the best practice for assessments of Aboriginal cultural heritage. The identification and assessment of cultural heritage values includes the four values of the Burra Charter: social, historical, scientific and aesthetic values. The resultant statement of significance has been constructed for the study area based on the significance ranking criteria assessed.

5.6.1 Statement of significance for AHIMS pending/CR PAD 1

CR PAD 1 consists of low density subsurface deposit located on at the junction of hillslope and alluvial flat landforms within 50 metres of a first order creek line. A total of 10 artefacts consisting of 2 complete flakes, 2 distal flake fragments, 2 angular fragments, 1 medial flake fragment and 3 proximal flake fragments were identified across four test pits. Artefacts consisted of chert, quartz, quartzite and silcrete raw materials and were identified in the top 200 mm of soil deposit. The common nature of the site and limited density and range of artefact types indicates low scientific significance. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 7 AHIMS pending/CR PAD 1 Significance assessment criteria

Site name	Criteria	Ranking
AHIMS pending/CR PAD 1	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains a low density artefact deposit that is a common site in the area.	Low
	Aesthetic – the site is located on a micro rise on alluvial flats. The area has been cleared of trees and there is residential development to the north and east giving the site a low aesthetic value as a result.	Low

5.6.2 Statement of significance for AHIMS pending/CR PAD 2

CR PAD 2 consists of low density subsurface deposit located on a micro rise on the alluvial flat landform within 100 metres of a first order creek line. A total of four artefacts consisting of 2 complete flakes, 1 medial flake fragment and 1 unidirectional core were identified across four test pits. Artefacts consisted of chert, petrified wood and silcrete raw materials and were identified between 100 and 300 mm of soil deposit. The common nature of the site and limited density and range of artefact types indicates low scientific significance. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 8 AHIMS pending/CRPAD 2 Significance assessment criteria

Site name	Criteria	Ranking
AHIMS pending/CRPAD 2	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains a low density artefact deposit that is a common site in the area.	Low
	Aesthetic – the site is located on a micro rise on alluvial flats. The area has been cleared of trees and there is residential development to the north and east giving the site a low aesthetic value as a result.	Low

5.6.3 Statement of significance for AHIMS pending/CR PAD 3

CR PAD 3 consists of an area of PAD located on an alluvial flat landform within 50 metres of a creek line. The scientific significance of this site is currently unknown. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral

use, giving it a low aesthetic significance. Its cultural significance is unknown but the local Aboriginal people strongly associate with the general area around Mullet Creek.

Table 9 AHIMS pending/CR PAD 3 Significance assessment criteria

Site name	Criteria	Ranking
AHIMS pending/CR PAD 3	Cultural – This cultural value of this site is currently unknown as no test excavations have been undertaken.	Unknown
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – The scientific value of this site is currently unknown as no test excavations have been undertaken.	Unknown
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and the site contains low aesthetic value as a result.	Low

5.6.4 Statement of significance for AHIMS pending/CR PAD 4

CR PAD 4 consists of an area of PAD located on an alluvial flat landform within 50 metres of a creek line. The scientific significance of this site is currently unknown. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is unknown but the local Aboriginal people strongly associate with the general area around Mullet Creek.

Table 10 AHIMS pending/CR PAD 4 Significance assessment criteria

Site name	Criteria	Ranking
AHIMS pending/CR PAD 4	Cultural – This cultural value of this site is currently unknown as no test excavations have been undertaken.	Unknown
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – The scientific value of this site is currently unknown as no test excavations have been undertaken.	Unknown
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and the site contains low aesthetic value as a result.	Low

5.6.5 Statement of significance for AHIMS pending/CR IF1

AHIMS pending/CR IF1 was located on the western boundary of the study area, next to the creek line. This site consisted of a single basalt complete flake, with flaked platform and retouched termination. This site represents a common site type in the area and contains a low density deposit which is of low scientific significance. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 11 AHIMS pending/CR IF1 Significance assessment criteria

Site name	Criteria	Ranking
AHIMS pending/CR IF1	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it consists of an isolated artefact that is a common site in the area.	Low
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and the site contains low aesthetic value as a result.	Low

5.6.6 Statement of significance for AHIMS pending/CR IF2

CR IF2 consisted of a complete silcrete flake that had been broken into three fragments by cattle trampling and was located on the southern side of a creek line. This site was in a disturbed context and consisted of a common site type in the area. The site contains low scientific significance. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 12 AHIMS pending/CR IF2 Significance assessment criteria

Site name	Criteria	Ranking
AHIMS pending/CR IF2	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it consists of an isolated artefact that is a common site in the area.	Low
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and the site contains low aesthetic value as a result.	Low

5.6.7 Statement of significance for AHIMS 52-5-0496/WDRA_AX_23

AHIMS 52-5-0496/WDRA_AX_23 consisted of three artefacts recovered from a 1m x 1m test pit excavated on a terrace adjacent to a first order creek line. The artefacts consisted of two chert and one petrified wood flakes, one of which contained retouch and use wear. These artefacts were recovered from upper 20 cm of deposit. This site represents a common site type in the area and contains a low density deposit. The site contains low scientific significance. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 13 AHIMS 52-5-0496/WDRA_AX_23 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-5-0496/WDRA_AX_23	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains a low density artefact deposit that is a common site in the area.	Low
	Aesthetic – the site is located on a modified hill crest that has been cleared of trees. There is residential development to the north and residential building on the crest giving the site a low aesthetic value as a result.	Low

5.6.8 Statement of significance for AHIMS 52-5-0497/WDRA_AX_24

AHIMS 52-5-0497/WDRA_AX_24 consisted of one quartz broken flake recovered from a 1m x 1m test pit excavated on a hillslope landform. The artefact was recovered from between 10 and 20 cm in depth. AMBS (2006) assigned this site with low archaeological potential. This site represents a common site type in the area and has a limited range of artefact types. The site contains low scientific significance. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 14 AHIMS 52-5-0497/WDRA_AX_24 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-5-0497/WDRA_AX_24	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains an isolated artefact deposit that is a common site in the area.	Low
	Aesthetic – the site is located on a modified hill crest that has been cleared of trees. There is residential development to the north and residential building on the crest giving the site a low aesthetic value as a result.	Low

5.6.9 Statement of significance for AHIMS 52-5-0498/WDRA_AX_25

AHIMS 52-5-0498/WDRA_AX_25 consisted of three chert artefacts and one petrified wood artefact recovered from two 1m x 1m test pits excavated as a part of a 40 square metre excavation program on a hill crest landform. This site was assigned low archaeological potential by AMBS (2006). The artefact was recovered from the upper 30 cm of soil and consisted of one complete flake and three broken flakes. This site represents a common site type in the area and has a limited range of artefact types. The site contains low

scientific significance.

The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 15 AHIMS 52-5-0498/WDRA_AX_25 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-5-0498/WDRA_AX_25	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains a low density artefact deposit that is a common site in the area.	Low
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and east and it contains low aesthetic value as a result.	Low

5.6.10 Statement of significance for AHIMS 52-2-1688/WD1

Artefacts at AHIMS 52-2-1688/WD1 were recovered from the upper 26cm of the soil profile and consisted of silicified wood, chert and quartz flakes and one unidentified sedimentary core. Navin Officer stated that it was unlikely the artefacts were in situ, due to the extensive land use modifications of the topsoil from where artefacts were recovered (Navin Officer 1993, pp. 11). Given the dense grass cover, size of the test area and the limitations of subsurface testing, Navin Officer considered that there was a possibility that more artefacts were present both on surface and subsurface in WD1. However, potential for archaeologically significant sites and/or undisturbed archaeological deposits was assessed to be minimal (Navin Officer 1993, pp. 12). A Consent to Destroy was issued by National Parks and Wildlife in 1993 in order to destroy the site, however, AHIMS currently lists this site as valid. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 16 AHIMS 52-2-1688/WD1 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-2-1688/WD1	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains a low density artefact deposit that is unlikely to be in-situ. This site is also a common site in the area.	Low
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and	Low

Site name	Criteria	Ranking
	east and it contains low aesthetic value as a result	

5.6.11 Statement of significance for AHIMS 52-2-3831/Cleveland Road FT 1

Cleveland Road FT1 was identified by the Aboriginal community as a potential birthing tree during the Biosis (2011) assessment of the Fairwater Drive extension to Cleveland Road. Aboriginal birthing trees are a rare site type in the region and there is potential that sub-surface deposits are present at the base of this tree, therefore the site contains high scientific significance. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 17 AHIMS 52-2-3831/Cleveland Road FT 1 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-2-3831/Cleveland Road FT 1	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value as it may have been associated with a women's business such as birthing.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses high archaeological value as it is a rare site type in the area and contains potential for sub-surface deposits at its base	High
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north, west and east and it contains low aesthetic value as a result.	Low

5.6.12 Statement of significance for AHIMS 52-2-3832/Cleveland Road FT 2

Cleveland Road FT2 was identified by the Aboriginal community as a potential birthing tree during the Biosis (2011) assessment of the Fairwater Drive extension to Cleveland Road. Aboriginal birthing trees are a rare site type in the region and there is potential that sub-surface deposits are present at the base of this tree, therefore the site contains high scientific significance. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 18 AHIMS 52-2-3832/Cleveland Road FT 2 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-2-3832/Cleveland Road FT 2	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value as it may have been associated with a women's business such as birthing.	High
	Historical – the site is not connected to any historical event or personage.	Low

Site name	Criteria	Ranking
	Scientific – the site possesses high archaeological value as it is a rare site type in the area and contains potential for sub-surface deposits at its base	High
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and east and it contains low aesthetic value as a result.	Low

5.6.13 Statement of significance for AHIMS 52-2-0619/Cleveland Road AFT-6

This site was located within alluvial flats 10m from Mullet Creek. Eight test pits were excavated across this site and six artefacts were recovered from three of these pits. Artefacts consisted of two flakes and four pieces of debitage and were made from silcrete, chert and mudstone. The site was assessed as having low significance as it is a common site type in the region and contained a limited range of artefact types. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 19 AHIMS 52-2-0619/Cleveland Road AFT-6 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-2-0619/Cleveland Road AFT-6	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains a low density artefact deposit that is a common site in the area.	Low
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and east and it contains low aesthetic value as a result	Low

5.6.14 Statement of significance for AHIMS 52-5-0584/Cleveland Road PAD 2

This site is located within alluvial flats 10m from the western bank of Mullet Creek. Eight test pits were excavated to the sterile clay layer and seven artefacts were recovered from four test pits. Artefacts consisted of three flakes, a core and three pieces of debitage and were made from silcrete, chert and mudstone. The site was assessed as having low significance as it is a common site type in the region and contained a limited range of artefact types. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 20 AHIMS 52-5-0584/Cleveland Road PAD 2 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-5-0584/Cleveland Road	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High

Site name	Criteria	Ranking
PAD 2	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains a low density artefact deposit that is a common site in the area.	Low
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and east of this site and it contains low aesthetic value as a result	Low

5.6.15 Statement of significance for AHIMS 52-5-0585/Cleveland Road PAD 3

This site was located within alluvial flats 200m from Mullet Creek on the western side of the drainage line. Four test pits were excavated across this PAD and no Aboriginal cultural material was identified. Results indicated that Cleveland Road PAD 5 has undergone partial subsurface disturbance due to the previous residential construction and assumed demolition and is not a valid site (Biosis 2011, pp. 32).

5.6.16 Statement of significance for AHIMS 52-5-0586/Cleveland Road PAD 4

This site is located within alluvial flats 200m from Mullet Creek to the east of the small drainage line. Five test pits were excavated with one artefact recovered, a hammer stone made of andesite. Due to the lack of additional cultural material in other excavated test pits, It was considered that the artefact was an isolated find, and that no further sub-surface deposits are present across the entire PAD area or associated landform. The site was assessed as having low scientific value due to its isolated nature and has since been destroyed under an AHIP. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 21 AHIMS 52-5-0586/Cleveland Road PAD 4 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-5-0586/Cleveland Road PAD 4	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains an isolated artefact that is a common site type in the area.	Low
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and it contains low aesthetic value as a result	Low

5.6.17 Statement of significance for AHIMS 52-5-3765/Cleveland Road PAD 5

This site was located within alluvial flats 50m south of Reid Creek. Three test pits were excavated in this area by Biosis (2011). No Aboriginal cultural material was recovered. It was determined that this area was associated with a braided drainage channel and had been heavily disturbed as a result. This is not a valid site.

5.6.18 Statement of significance for AHIMS 52-2-3815/Riverpark Way AFT-1

This site consisted of an isolated chalcedony flake that was originally identified on the surface of a drainage channel. The site was identified with low scientific potential due to its location in the disturbed drainage channel and isolated nature. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 22 AHIMS 52-2-3815/Riverpark Way AFT-1 significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-2-3815/Riverpark Way AFT-1	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains an isolated artefact located in an area of erosion and is a common site in the area.	Low
	Aesthetic – the site is located on a drainage line exposure with residential development to the north. It contains low aesthetic value as a result.	Low

5.6.19 Statement of significance for AHIMS 52-2-3285/WDRA_AX_22

AHIMS 52-2-3815/WDRA_AX_22 consisted of two artefacts that were recovered from the upper 10 cm of a 1 m by 1 m test pit. The site was located on an alluvial flat that was subject to overbank flows. AMBS (2006) assigned the site with low archaeological potential and due to the common nature and limited artefact types the site is of low scientific significance. The site has no historical associations with the Aboriginal community and it is surrounded by development to the north and has been cleared for pastoral use, giving it a low aesthetic significance. Its cultural significance is high as local Aboriginal people strongly associate themselves with their ancestors who extensively utilised the area around Mullet Creek for resources.

Table 23 AHIMS 52-2-3285/WDRA_AX_22significance assessment criteria

Site name	Criteria	Ranking
AHIMS 52-2-3285/WDRA_AX_22	Cultural – discussions with the local Aboriginal communities reflect that the site is high in value.	High
	Historical – the site is not connected to any historical event or personage.	Low
	Scientific – the site possesses low archaeological value as it contains a low density artefact deposit that is a common site in the area.	Low
	Aesthetic – the site is located on an alluvial flat that has been cleared of trees. There is residential development to the north and it contains low aesthetic value as a result	Low

6 Impact assessment

As previously outlined, the project proposes to subdivide and develop the study area into a number of residential lots.

6.1 Predicted physical impacts

The proposed development will involve a number of construction works that will have the potential to directly impact on Aboriginal sites in the study area (Figure 4). These works include

- Bulk earthworks for landscaping including infilling of existing dams and modification of drainage lines.
- Site compounds and material laydown areas.
- Construction of services and amenities including underground utilities such as electrical, telecommunication and waste water services.
- Construction of roads and associated features such as roundabouts, signage and kerbing.
- Subdivisions and construction of residential dwellings and associated infrastructure such as parks and pedestrian pathways.
- Construction of OSD basins and retention ponds.

A summary of impacts these works will have on Aboriginal sites in the study area is provided below in Table 24.

Table 24 Summary of potential archaeological impacts

AHIMS site no.	Site name	Significance	Type of harm	Degree of harm	Consequence of harm
AHIMS pending	CR PAD 1	Low	Direct	Partial	Partial loss of value
AHIMS pending	CR PAD 2	Low	Direct	Total	Total loss of value
AHIMS pending	CR PAD 3	Low	No harm	None	No loss of value
AHIMS pending	CR PAD 4	Low	Direct	Total	Total loss of value
AHIMS pending	CR IF1	Low	Direct	Total	Total loss of value
AHIMS pending	CR IF2	Low	Direct	Total	Total loss of value
52-5-0496	WDRA_AX_23	Low	No harm	None	No loss of value

52-5-0497	WDRA_AX_24	Low	Direct	Total	Total loss of value
52-5-0498	WDRA_AX_25	Low	Direct	Total	Total loss of value
52-2-3815	Riverpark Way AFT-1	Low	No harm	None	No loss of value
52-2-1688	WD1	Low	No harm	None	No loss of value
52-2-3831	Cleveland Road FT 1	High	No harm	None	No loss of value
52-5-0585	Cleveland Road PAD 3	None	No harm	None	No loss of value
52-5-0586	Cleveland Road PAD 4	Low	No harm	None	No loss of value
52-5-0584	Cleveland Road PAD 2	Low	No harm	None	No loss of value
52-5-0619	Cleveland Road AFT-6	Low	No harm	None	No loss of value
52-2-3832	Cleveland Road FT 2	High	No harm	None	No loss of value
52-2-3765	Cleveland Road PAD 5	None	No harm	None	No loss of value
52-2-3285	WDRA_AX_22	Low	No harm	None	No loss of value

6.2 Management and mitigation measures

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

Avoidance of impact to archaeological and cultural heritage sites through design of the development is the primary mitigation and management strategy, and should be implemented where practicable. The development has been designed to avoid Aboriginal sites were possible; however, it is not feasible to avoid all sites without significantly altering the project design and as such mitigation measures have been implemented to retrieved as much information as possible.

A survey of the study area was undertaken to identify potential surface and subsurface sites that may be present in the study area. This survey identified two surface artefacts and four areas of potential archaeological deposit. Test excavations were then undertaken in the study area to determine the nature of the PAD sites and retrieve as much data as possible about Aboriginal occupation of the study area. Two areas of PAD (CR PAD 1 and CR PAD 2) were tested, as these areas were located within the development footprint and impacts could not be avoided. Testing was not undertaken at one area of PAD (CR PAD 3) as the site was located outside of the development footprint and no impacts would occur. This allowed the perseveration of that site for future generations in accordance with the principles of intergenerational equity. One are of PAD (CR PAD 4) was also unable to be tested as the landowner had restricted land access. It is recommended that

this area of PAD be tested by a suitably qualified archaeologist prior to development of the area to ensure as much information can be retrieved before impacting it.

In addition to the test excavations undertaken in the study area it is also recommended that collection of surface artefacts is undertaken to preserve these artefacts for future generations and it is recommended that a Cultural Heritage Management Plan (CHMP) be implemented to ensure the continued protection and management of the two fig tree sites, as well as any artefact and PAD sites that are located outside of the development footprint.

Acknowledgements: Basemap © Land and Property Information 2016

Legend

- Study area
- Lot
- Client footprint
- PAD
- AHIMS

Test pit - Artefact

- 0
- 1 - 5
- >5

Figure 4.1 Aboriginal sites in the study area

0 50 100 150 200 250

Metres
Scale: 1:5,000 @ A3
Coordinate System: GDA 1994 MGA Zone 56

N

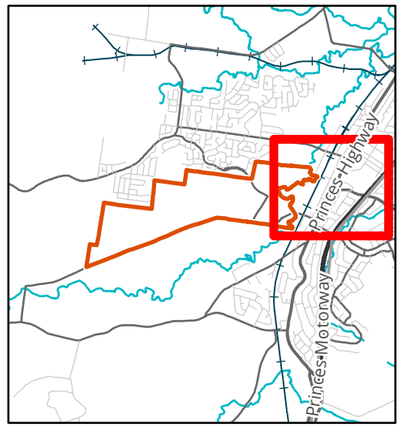
Biosis Pty Ltd

Albury, Ballarat, Melbourne,
Sydney, Newcastle, Wangaratta & Wollongong

Matter: 30982,
Date: 14 February 2020,
Checked by: MJS, Drawn by: SSK, Last edited by: skumar
Location:P:\30900s\30982\Mapping
30982_F10_AboriginalSites.mxd

Figure 4.2 Aboriginal sites in the study area

Acknowledgements: Basemap © Land and Property Information 2016



Legend

- Study area
- Lot
- Client footprint
- PAD
- AHIMS

Test pit - Artefact

- 0
- 1 - 5
- >5

Figure 4.3 Aboriginal sites in the study area

0 50 100 150 200 250

Metres

Scale: 1:5,000 @ A3

Coordinate System: GDA 1994 MGA Zone 56

N

Biosis Pty Ltd

Albury, Ballarat, Melbourne,
Sydney, Newcastle, Wangaratta & Wollongong

Matter: 30982,
Date: 14 February 2020,
Checked by: MJS, Drawn by: SSK, Last edited by: skumar
Location:P:\30900s\30982\Mapping
30982_F10_AboriginalSites.mxd

7 Recommendations

The recommendations below respond specifically to the wishes of the RAPs. Recommendations regarding the archaeological value of the site, and the subsequent management of Aboriginal cultural heritage is provided in the archaeological report (Appendix 6).

Recommendation 1: Application for an Aboriginal Heritage Impact Permit for sites AHIMS 52-5-0497/WDRA_AX_24, AHIMS 52-5-0498/WDRA_AX_25, CR PAD 1, CR PAD2, CR IF1, CR IF2, CR PAD4.

It is recommended that an AHIP application is made to impact on sites AHIMS 52-5-0497/WDRA_AX_24, AHIMS52-5-0498/WDRA_AX_25 and AHIMS 52-2-3285 CR PAD 1, CR PAD2, CR PAD4, CR IF1, and CR IF2 which cannot be avoided by the proposed development works. It is recommended that this AHIP be for a timeframe of 15 years.

For information about AHIPs and their preparation, see below.

Advice preparing AHIPs

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. Environment, Energy and Science (EES) issues AHIPs under Part 6 of the NPW Act.

AHIPs should be prepared by a qualified archaeologist and lodged with the EES. Once the application is lodged processing time can take between 8-12 weeks. It should be noted that there will be an application fee levied by the EES 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: Surface collection of CR IF1 and CR IF2

It is recommended that surface artefacts at sites CR IF1 and CR IF2 are collected as part of a surface salvage program in accordance with the proposed AHIP application prior to the commencement of works

Recommendation 3: Further investigation of AHIMS pending/CR PAD 4 is required

Access to AHIMS pending/CR PAD 4 was not available at the time of this assessment and test excavations could not be undertaken in this area. It is recommended that test excavations of this site are undertaken by an experienced archaeologist prior to submission of an AHIP to ascertain if this site needs to be included before impacts can occur.

Recommendation 4: Avoidance of sites AHIMS 52-5-0496/WDRA_AX_23, AHIMS 52-2-3815/Riverpark Way AFT-1, AHISM 52-2-1688/WD1, 52-2-3831/Cleveland Road FT 2, AHIMS 52-2-3832/Cleveland Road FT 2, AHIMS 52-2-3285/WDRA_AX_22, AHIMS 52-5-0619/Cleveland Road AFT-6, 52-0584/Cleveland Road PAD 2, CR PAD 3

AHIMS sites 52-5-0496/WDRA_AX_23, AHIMS 52-2-3815/Riverpark Way AFT-1, AHIMS 52-2-1688/ WD1, AHIMS 52-2-3831/Cleveland Road FT 1, AHIMS 52-2-3832/Cleveland Road FT 2, AHIMS 52-0584/Cleveland Road PAD 2, AHIMS 52-5-0619/Cleveland Road AFT-6, and CR PAD 3 are located outside of the propose development footprint and it is recommended that impacts to these sites are avoided.

Recommendation 5: Development of a CHMP

It is recommended that a CHMP be developed in consultation with the RAP's, DPE and EES prior to the commencement of works. The CHMP will outline Aboriginal site management requirements including the management of identified sites, unexpected finds, and further works required prior to development.

Management options – previously identified sites

The CHMP should provide provisions to ensure that the identified sites located outside of the development area are not unintentionally impacted during works. This should include provision for exclusion fencing and development of suitable no go buffers if required.

Stop works provision – previously unidentified sites or objects

The CHMP should include a stop work provision for any potential heritage sites identified during construction, not identified as part of this assessment or the CHMP

All Aboriginal places and objects are protected under the NPW Act. This protection extends to Aboriginal objects and places that have not been identified but might be unearthed during construction. If construction proceeds, work must cease if Aboriginal objects or places are identified which have not previously been identified as part of this assessment or have not been approved for harm under a CHMP. OEH and the archaeologist must be notified to make an assessment of the find and advise on subsequent management.

Historical archaeological sites are protected under the relics provisions (s139 – 146) of the NSW *Heritage Act 1977*. Should any historical archaeological sites be identified during any phase of the proposed development, all works must cease in the vicinity of the find and the project archaeologist and OEH notified. Should the archaeological nature of the find be confirmed the Heritage Branch of the NSW Department of Planning, will require notification.

Stop works provision – Discovery of Aboriginal Ancestral Remains

The CHMP should also include a provision for the discovery of Aboriginal Ancestral Remains

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

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

Heritage training and induction

The CHMP should develop a training and heritage induction for all employees, contractors and associated subcontractors working on site. The induction training should address elements related to:

- Relevant legislation.
- CHMP conditions.
- Location of identified heritage sites.
- Basic identification skills for Aboriginal and non-Aboriginal artefacts and human remains.
- Procedure to follow in the event of an unexpected heritage item find during construction works.

- Procedure to follow in the event of discovery of human remains during construction works.
- Penalties and non-compliance.

Long term care and control agreement

As part of the CHMP, a long term care agreement of artefacts should be developed for all Aboriginal artefacts identified during the test excavations and salvage works. This should be undertaken in consultation with the RAPs.

Recommendation 6: Discovery of Unanticipated Historical Relics

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

Recommendation 7: Continued consultation with the Registered Aboriginal Parties

As per the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010a), it is recommended that the proponent provides a copy of this draft report to the project RAPs and considers all comments received. The proponent should continue to inform these groups about the management of Aboriginal cultural heritage sites within the study area throughout the life of the project.

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Appendices

Appendix 1 Consultation log

Stage 1 – Notification of project proposal and registration of interest

Step 1- Identification of Aboriginal people/parties with an interest in the proposed study area.

Organisation contacted	Date and type of contact	Date and type of response	Response details
South East Local Land Services	18/10/2019 - email	23/10/2019 -email	Recommended contacting EES
Illawarra Local Aboriginal Land Council	18/10/2019 - email	N/A	N/A
National Native Title Tribunal	18/10/2019 - email	N/A	N/A
Native Title Services Corporation	18/10/2019 - email	18/10/2019 - email	Noted the Tribunal was unable to provide the assistance required and suggested consulting public registers at NNTT website
Office of the Registrar Aboriginal Land Rights Act 1983	18/10/2019 - email	11/11/2019 - email	Suggested contacting ILALC
Department of Planning, Industry and Environment	18/10/2019 - email	4/11/2019 - email	Provided EES stakeholder list
Wollongong Local Council	18/10/2019 - email	N/A	N/A

Step 2- Public advertisement

The public notice was published in the Illawarra Mercury on the 1 November 2019. A copy of the advertisement is provided in Appendix 2.

Step 3- Registration of interest.

The registration period ran from the 19 November to 3 December 2019. Leeway was given to Aboriginal parties/groups who provided responses shortly after the close of this period and they have been registered as Aboriginal parties for consultation.

Organisation contacted	Date and type of contact	Date and type of response	Response details
Illawarra Aboriginal Corporation	19/11/2019 - email	N/A	N/A
Ken Foster	19/11/2019 - email	N/A	N/A

Organisation contacted	Date and type of contact	Date and type of response	Response details
Korewal Elouera Jerrungurah Trbal Elders Council	19/11/2019 - email	N/A	N/A
Kullila Site Consultants and Koori Site Management	19/11/2019 - email	N/A	N/A
La Perouse Botany Bay Corporation	19/11/2019 - email	N/A	N/A
NIAC	19/11/2019 - email	N/A	N/A
South West Rocks Corporation	19/11/2019 - email	N/A	N/A
The Wodi Wodi Elders Corporation	19/11/2019 - email	N/A	N/A
Badu (Murrin Clan/Peoples	19/11/2019 - email	N/A	N/A
Barraby Cultural Services	19/11/2019 - email	1/11/2019 - email	Registered an interest
Yerramurra	19/11/2019 - email	N/A	N/A
Biamanga (Murrin Clan/Peoples)	19/11/2019 - email	N/A	N/A
Bilinga (Murrin Clan/Peoples)	19/11/2019 - email	N/A	N/A
Goobah Development Pty Ltd (Murrin Clan/Peoples)	19/11/2019 - email	20/11/2019 - email	Registered an interest
Illawarra Local Aboriginal Land Council	19/11/2019 - email	26/11/2019 - email	Registered an interest
Coomaditchie United Aboriginal Corporation	19/11/2019 - email	N/A	N/A
Cullendulla (Murrin Clan/Peoples)	19/11/2019 - email	N/A	N/A
Darryl Caines	19/11/2019 - email	N/A	N/A
Darug Land Observations	19/11/2019 - email	N/A	N/A
Dharug (Murrin Clan/Peoples)	19/11/2019 - email	N/A	N/A
Duncan Falk Consultancy	19/11/2019 - email	4/12/2019 -email	Registered an interest
Gadhu Dreaming	19/11/2019 - email	N/A	N/A
Gary Caines	19/11/2019 - email	N/A	N/A
Gundungurra Tribal Technical Services	19/11/2019 - email	N/A	N/A
Gunyuu (Murrin Clan/Peoples)	19/11/2019 - email	N/A	N/A
Three Ducks Dreaming Surveying and Consulting	19/11/2019 - email	N/A	N/A

Organisation contacted	Date and type of contact	Date and type of response	Response details
Jerringong (Murrin Clan/Peoples)	19/11/2019 - email	N/A	N/A
James Davies	19/11/2019 - email	24/11/2019 - email	Registered an interest
Karrial (Murrin Clan/Peoples)	19/11/2019 - email	N/A	N/A
Woronora Plateau Gundungara Elders Council	19/11/2019 - email	19/11/2019 - email	Registered an interest
Bellambi Indigenous Corporation	19/11/2019 - email	N/A	N/A
Leanne Tungai	19/11/2019 - email	28/11/2019 - email	Registered an interest
Minnamunnung	19/11/2019 - email	N/A	N/A
Munyunga (Murrin Clan/Peoples)	19/11/2019 - email	N/A	N/A
Mura Indigenous Corporation	19/11/2019 - email	N/A	N/A
Murrumbul	19/11/2019 - email	N/A	N/A
Nundagurri	19/11/2019 - email	N/A	N/A
Gumaraa	19/11/2019 - email	N/A	N/A
South Coast NSW Aboriginal Elders Incorporated	19/11/2019 - email	21/11/2019 - email	Registered an interest
Pemulwuy	19/11/2019 - email	N/A	N/A
Garrara Aboriginal Corporation	19/11/2019 - email	N/A	N/A
Raymond Garbutt	19/11/2019 - email	N/A	N/A
Guunamaa Dreamin Sites and Surveying	19/11/2019 - email	19/11/2019 - email	Registered an interest
Thoorga Nura	19/11/2019 - email	N/A	N/A
Tungai Tonghi	19/11/2019 - email	19/11/2019 - email	Registered an interest
Walbunja	19/11/2019 - email	N/A	N/A
Walgalu	19/11/2019 - email	N/A	N/A
Warra Bingi Nunda Gurri	19/11/2019 - email	N/A	N/A
Wullung	19/11/2019 - email	N/A	N/A
Yurrandaali Cultural Services	19/11/2019 - email	1/11/2019 - email	Registered an interest

Stage 2 – Presentation of information about the proposed project

Step 1- Provision of project information pack

A copy of the information pack is provided in Appendix 3 and a copy of the covering email is provided following.

Organisation contacted	Date and type of contact	Date and type of response	Response details
Leanne Tungai	4/12/2019 - email	N/A	N/A
Illawarra Local Aboriginal Land Council	4/12/2019 - email	N/A	N/A
Guunamaa Dreamin Sites and Surveying	4/12/2019 - email	N/A	N/A
James Davies	4/12/2019 - email	N/A	N/A
Tungai Tonghi	4/12/2019 - email	N/A	N/A
Woronora Plateau Gundungara Elders Council	4/12/2019 - email	N/A	N/A
South Coast NSW Aboriginal Elders Incorporated	4/12/2019 - email	N/A	N/A
Duncan Falk Consultancy	4/12/2019 - email	N/A	N/A
Goobah Development Pty Ltd (Murrin Clan/Peoples)	4/12/2019 - email	N/A	N/A
Barraby	4/12/2019 - email	N/A	N/A
Yurrandaali	4/12/2019 - email	N/A	N/A

Stage 3 – Gathering information about cultural significance

Step 1- Provision of project methodology pack and consultation meeting

A copy of the methodology pack is provided in Appendix 4 and a copy of the covering email is provided following. The methodology back was sent to RAPs on the 4 December 2019 for comment. The stage 3 comment ran for 28 days to the 1 January 2020.

Organisation contacted	Date and type of contact	Date and type of response	Response details
Leanne Tungai	4/12/2019 - email	N/A	N/A
Illawarra Local Aboriginal Land Council	4/12/2019 - email	N/A	N/A
Guunamaa Dreamin Sites and Surveying	4/12/2019 - email	N/A	N/A
James Davies	4/12/2019 - email	N/A	N/A
Tungai Tonghi	4/12/2019 - email	N/A	N/A
Woronora Plateau Gundungara Elders Council	4/12/2019 - email	N/A	N/A
South Coast NSW Aboriginal Elders Incorporated	4/12/2019 - email	5/12/2019 - email	Confirmed receipt and indicated they would respond. No further response was received.
Duncan Falk Consultancy	4/12/2019 - email	N/A	N/A
Goobah Development Pty Ltd (Murrin Clan/Peoples)	4/12/2019 - email	N/A	N/A
Barraby	4/12/2019 - email	5/12/2019 - email	Confirmed support of the methodology
Yurrandaali	4/12/2019 - email	N/A	N/A

Step 2- Field survey Stage 4 – Review of draft report -TBD

Step 1- Provision of draft report for review

Organisation contacted	Date and type of contact	Date and type of response	Response details

Appendix 2 Stage 1: Notification of project proposal and registration of interest

Appendix 3 Stage 2: Presentation of information about the proposed project

Appendix 4 Stage 3: Gathering information about cultural significance

Appendix 5 Stage 4: Review of draft cultural heritage assessment report

Appendix 6 Archaeological report