Appendix F

Aboriginal cultural heritage assessment report

EMM
creating opportunities

View north along a tributary of White Creek in the modification area.

ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

MODIFICATION 1 TO THE BIRRIWA SOLAR AND BATTERY PROJECT (SSD-29508870)

MID-WESTERN REGIONAL LOCAL GOVERNMENT AREA, NSW

MAY 2025

Report prepared by

OzArk Environment & Heritage

for ACEN Australia

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ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT COVER SHEET

Report Title	Aboriginal Cultural Heritage Assessment Report: Modification 1 to the Birriwa Solar and Battery Project (SSD-29508870)
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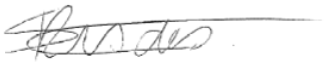

Stephanie Rusden, OzArk Environment & Heritage Senior Archaeologist

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DOCUMENT CONTROLS

Proponent	ACEN Australia Pty Ltd.
Document Description	*Aboriginal Cultural Heritage Assessment Report: Modification 1 to the Birriwa Solar and Battery Project (SSD-29508870)*
File Location	OzArk Job No.
Clients ► ACEN Australia ►Birriwa Solar and Battery Project Modification 1_Sept 2023 ►Addendum ACHAR	4127

Document Status: **V3.0 FINAL**	Date: 8 April 2025
OzArk internal edits	V1.0 ITC author 23/01/2025 V1.1 SR review 5/2/2025
OzArk and client edits	V2.0 OzArk to client 5/2/25 V2.1-2.2 OzArk amends 8/4/25
Final document	V3.0 OzArk finalises 23/05/25
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Acknowledgement

OzArk acknowledge the Traditional Custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

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FIGURES

TABLES

ABBREVIATIONS AND GLOSSARY

ACEN	ACEN Australia Pty Ltd
ACHAR	Aboriginal Cultural Heritage Assessment Report. As set out in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*, all developments where harm to Aboriginal objects is likely must be assessed in an ACHAR.
ACHCRs	*Aboriginal Cultural Heritage Consultation Requirements for Proponents.* Guidelines for conducting Aboriginal community consultation for developments where harm to Aboriginal objects is likely.
ACHMP	Aboriginal Cultural Heritage Management Plan. A requirement of SSDs. An ACHMP both manages impacts to Aboriginal cultural heritage within approved disturbance areas (AHIPs are not required), as well as management of Aboriginal cultural heritage sites and values outside of approved impact areas but within land able to be managed by an applicant.
AHIMS	Aboriginal Heritage Information Management System. Administered by the DCCEEW, AHIMS is the central register of all Aboriginal sites within NSW.
AHIP	Aboriginal Heritage Impact Permit. Issued by Heritage NSW to allow harm to Aboriginal objects.
ASIRF	Aboriginal Site Impact Recording Form. A standardised form for recording authorised impacts to Aboriginal sites. Only with a completed ASIRF can a site be listed as 'destroyed' on the AHIMS.
Assemblage:	All artefacts recorded at a location. In this report, assemblage refers to stone artefacts as this was the only artefact class recorded.
BESS	Battery Energy Storage System
Code of Practice	*Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* under Part 6 NPW Act. Issued by DECCW in 2010, the Code of Practice is a set of guidelines that allows limited test excavation without the need to apply for an AHIP.
cm	Centimetres
Debitage:	The term debitage refers to all the waste material produced during lithic reduction and the production of stone tools. This report uses debitage to describe the small flakes and chips produced purely as a by-product of knapping.

DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water. DCCEEW contains the Environment and Heritage Group including Heritage NSW.
DPHI	NSW Department of Planning, Housing and Infrastructure. DPHI contains the Planning agency.
EIS	Environmental Impact Statement. A required document for major projects documenting all potential impacts to the environment, including heritage, that may arise due to the development.
GSE	Ground surface exposure. A measure of factors that may reveal surface artefacts such as erosion scalds.
GSV	Ground surface visibility. A measure of factors that may obscure the detection of surface artefacts such as leaf litter.
Heritage NSW	Government department tasked with ensuring compliance with the NPW Act. Heritage NSW is advised by the Aboriginal Cultural Heritage Advisory Committee (ACHAC).
km	Kilometres
metres	Metres
mm	Millimetres
mW	Megawatts
NPW Act	*National Parks and Wildlife Act 1974*. Primary legislation governing Aboriginal cultural heritage within NSW.
OzArk	OzArk Environment & Heritage
PAD	Potential archaeological deposit. Indicates that a particular location has potential to contain subsurface archaeological deposits, although no Aboriginal objects are visible.
RAP	Registered Aboriginal Party. An individual or group who have indicated through the ACHCR process that they wish to be consulted regarding the project.
SSD	State Significant Development

EXECUTIVE SUMMARY

ACEN Australia (ACEN; the Applicant) has received approval to construct and operate the Birriwa Solar and Battery Project (the Project), located 15 kilometres (km) southeast of Dunedoo in Central Western New South Wales (NSW) in the Mid-Western Regional Local Government Area (LGA). The Project was approved by the Independent Planning Commission of NSW on 23 August 2024 as State Significant Development (SSD) 29508870.

The Applicant is proposing to assess additional land as part of Modification 1 (the Modification) to the Project. The land subject to the Modification includes Lot 11, 34 (part), 40 and 60 / DP750755 and a section of the Birriwa Bus Route South which may require upgrades.

The Applicant will submit a Modification Report to accompany the application for the Modification under Part 4 section 4.55(2) of the *Environmental Planning and Assessment Act 1979*.

OzArk Environment & Heritage (OzArk) has been engaged by the Applicant to assess the Aboriginal cultural heritage values of the modification area through the preparation of an *Aboriginal Cultural Heritage Assessment Report* (ACHAR).

This ACHAR has been undertaken in accordance the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW*, and the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (the Code of Practice). The Aboriginal cultural heritage assessment of the project has followed the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (the ACHCRs).

Desktop database searches completed prior to the field survey showed that three previously recorded sites listed on the Aboriginal Heritage Information Management System (AHIMS) database are located within the modification area. These sites include two artefact scatters (36-3-4105 [SNI-AS85] and 36-3-4095 [SNI-86]) and a scarred tree (36-3-3918 [Birriwa Bus Route South ST-1]).

The field survey for the Modification was undertaken by OzArk on 11 to 12 December 2024 with the assistance of representatives from four Registered Aboriginal Parties (RAPs). The survey identified three previously unrecorded sites, all isolated finds (White Creek IF-1, White Creek IF-2 and White Creek IF-3).

Overall, six Aboriginal sites are in the modification area and may be impacted by the Modification. The Applicant has designed the development (impact) footprint of the solar panels and associated infrastructure to avoid sites White Creek IF1 to IF3 and 36-3-4095 (SNI86). Site 36-3-4105 (SNI-AS85) is unable to be avoided. Scarred tree site 36-3-3918 (Birriwa Bus Route South ST-1) may be impacted by the Modification should ground disturbing works associated with the Birriwa Bus Route South upgrades encroach on the dripline of the tree. As impacts have not been finalised, there is potential for some for this to remain unharmed by the Modification.

Recommendations concerning Aboriginal cultural values within the modification area are as follows:

1. Following granting of development consent for the Modification, the Applicant will be required to incorporate the Conditions of Approval into an ACHMP for SSD 29508870. The ACHMP should be developed in consultation with the RAPs and Heritage NSW. The ACHMP would also include protocols for unanticipated finds (including skeletal remains), heritage inductions, and management measures for Aboriginal sites in the modification area. The ACHMP must be approved by the DPHI prior to salvage and construction activities occurring in the modification area.
2. Aboriginal site 36-3-4102 (SNI-AS86), located in the development footprint, should be salvaged via surface collection in accordance with the management strategies set out in **Section 9.2.1** following approval of the ACHMP.
3. One site (36-3-3918 [Birriwa Bus Route South ST-1]) may be impacted by the upgrades to Birriwa Bus Route South should ground disturbing works encroach on the dripline of the tree. Should these works be unavoidable within the dripline extent, the management measures outlined in **Section 9.2.2**, or alternative measures developed in consultation with RAPs, should be followed.
4. The Applicant has undertaken to avoid harm to White Creek IF-1 to IF-3 and 36-3-4095 (SNI-AS86) through a considered design the project components. These sites should be protected during the construction of the Modification using high-visibility temporary fencing. A minimum 5 m buffer should be allowed around the site extents.
5. The location of the sites should be shown on all appropriate plans to ensure that they are not inadvertently harmed.
6. All land-disturbing activities should be confined to within the development footprint. Should the parameters of the proposed work extend beyond this, then further archaeological assessment will be required.
7. Inductions for work crews should include a cultural heritage awareness procedure to ensure they are familiar with the location of the recorded Aboriginal sites and are able to recognise Aboriginal artefacts (**Appendix 4**).

1 INTRODUCTION

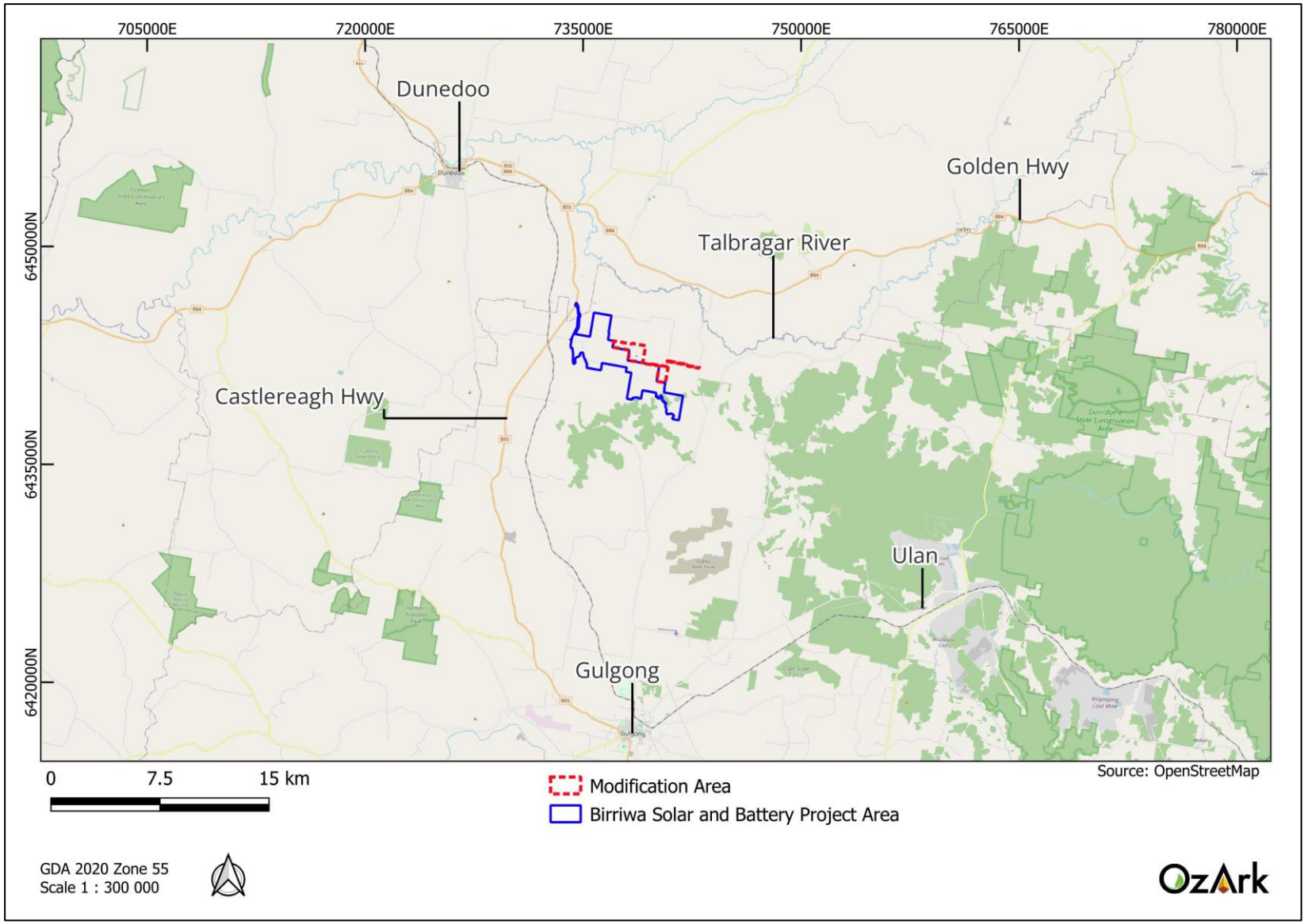
1.1 BACKGROUND

ACEN Australia Pty Ltd (ACEN; the Applicant) has approval to develop the Birriwa Solar and Battery Project, a large scale solar photovoltaic (PV) electricity generation facility along with battery storage and associated infrastructure, including the construction of a temporary accommodation facility (the Project). The solar component of the Project will have an indicative capacity of around 600 megawatts (MW) and will include a centralised battery energy storage system (BESS) of up to 600 MW for a two-hour duration (1,200 MWh). The Project (SSD-29508870) was determined and approved on 16 August 2024 by the NSW Independent Planning Commission, with development consent conditions.

The Project is approximately 15 kilometres (km) south-east of Dunedoo, in the Central-West Orana (CWO) region of New South Wales (NSW), in the localities of Birriwa and Merotherie (refer to **Figure 1-1**). It is situated within the Mid-Western Regional Local Government Area (LGA). Part of the transport access route to the project site via the Castlereagh Highway is situated within the Warrumbungle Shire LGA. The Project is within the CWO Renewable Energy Zone (REZ).

ACEN is seeking approval to modify development consent SSD-29508870 to include additional lots, an alternative secondary access route and upgrade to part of the existing Birriwa Bus Route South, an increase in capacity of the approved temporary accommodation facility, and an increase in the storage capacity and duration of the BESS.

Figure 1-1: Map showing the location of the Modification.



1.2 APPROVED PROJECT OVERVIEW

The approved project comprises the following key components:

- Installation of approximately 1 million solar PV panels and associated mounting infrastructure
- A BESS with a capacity of up to 600 MW and a storage duration of up to 2 hours (1,200 MWh)
- An on-site substation with a connection voltage of up to 500 kilovolts (kV)
- Electrical collection and conversion systems, including inverter and transformer units, switchyard, control room and staff car park
- Underground and aboveground cables
- An operational infrastructure area, including demountable and permanent offices, amenities, and equipment sheds
- Internal access roads
- A temporary construction compound (during construction and decommissioning phases)
- An access route upgrade from Castlereagh Highway to the project site via Barneys Reef Road and Birriwa Bus Route South
- A temporary accommodation facility to provide accommodation for up to 500 construction staff during the construction phase of the project
- An emergency access track providing alternative access to the accommodation facility, suitable for emergency vehicles

1.3 MODIFICATION OVERVIEW

The Applicant is seeking to modify SSD-29508870 under Section 4.55(2) of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) to:

- Increase the project area and development footprint to include three additional lots (Lot 11/DP 750755, Lot 40/DP 750755, Lot 60/DP 750755) and the remaining part of Lot 34/DP 750755, allowing for additional land to be used for solar generation, BESS, and associated ancillary infrastructure, as needed.
- Increase the storage capacity and duration of the BESS from up to approximately 600 MW for a two-hour duration up to approximately 900 MW for a four-hour duration. Modifying the project area and development footprint across additional neighbouring lots will enable flexibility in design and construction, optimisation of the solar array layout, and will allow sufficient space for maintenance. The additional capacity will allow the project to increase its energy storage potential, providing additional firming support and greater network system strength.
- Increase the project area and development footprint to allow for an upgrade to part of the existing Birriwa Bus Routh South Road from the Golden Highway via Merotherie Road as

secondary access route including a public road crossing. This upgrade will enable access to the project for the purpose of constructing and operating the approved temporary accommodation facility, construction, operation and maintenance of the BESS and EnergyCo's infrastructure associated with the project. Note, oversize over-mass vehicles will continue to access the project area, via the primary access point.

- Increase the approved project's accommodation facility capacity from 500 workers to 650 workers, within the approved accommodation footprint (up to an additional 150 workers will reside at the accommodation facility in peak construction periods).
- Amend the schedule of land to include three additional neighbouring lots.

1.4 MODIFICATION AREA

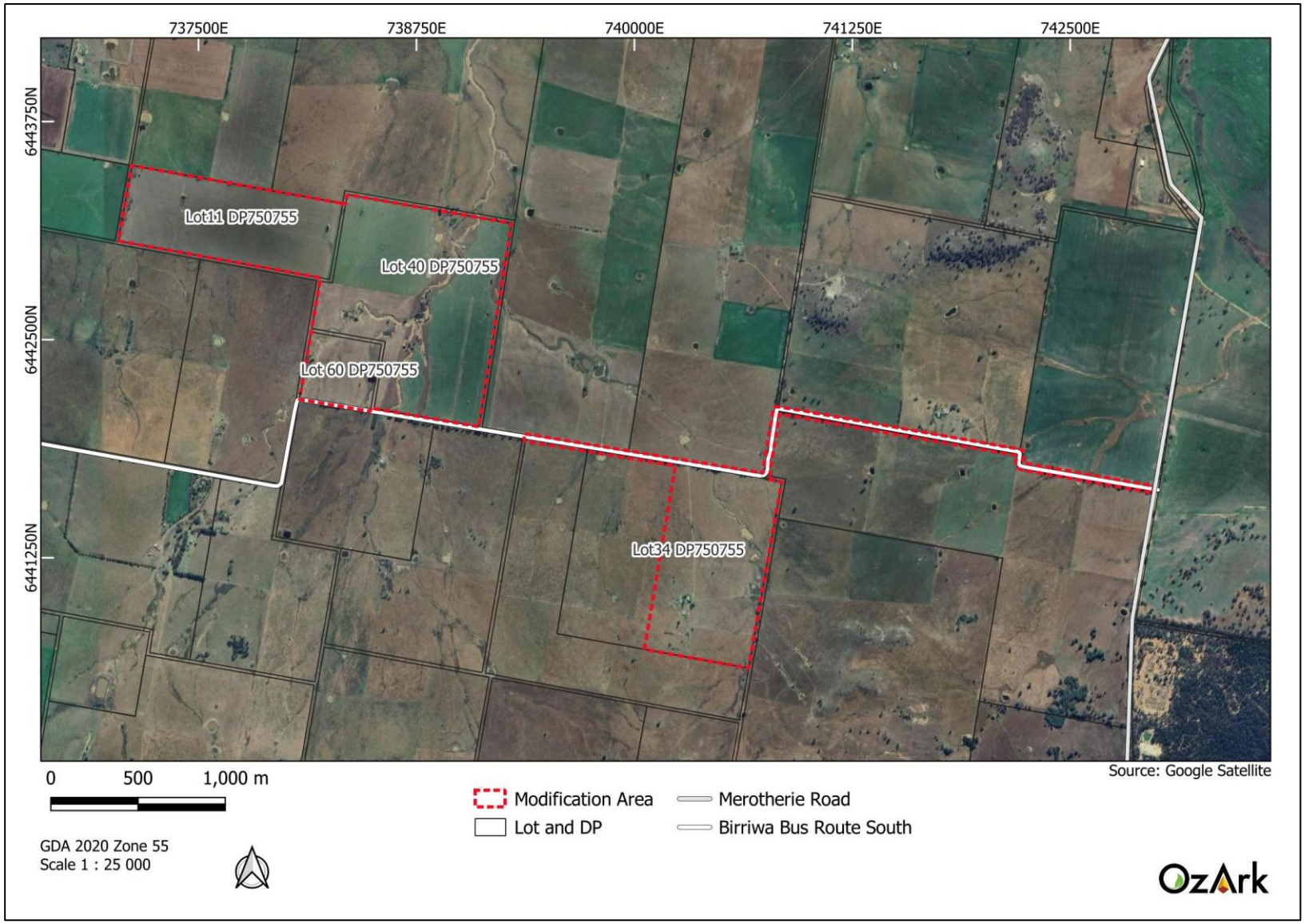
The assessment for the modification area is comprised of approximately 257 ha of land across four land lots (Lot 11, 34 [part] 40 and 60 DP750755) and approximately 4 km of Birriwa Bus Route South extending west from the intersection of Merotherie Road (**Figure 1-2**):

The section of Birriwa Bus Route South which forms part of the modification area was subject to survey by OzArk and representatives of the RAPs registered for the Project (SSD-29508870) in 2023. However, Birriwa Bus Route South was later removed from the scope of works and therefore did not form part of the approved Project. The results of the 2023 field assessment for the portion of Birriwa Bus Route South have been utilised for this assessment. Upgrades to the portion of Birriwa Bus Route South also form part of the Narragamba Solar Project (also being undertaken by the Applicant).

1.5 PURPOSE OF THIS REPORT

OzArk Environment & Heritage (OzArk) has been engaged by the Applicant to assess the Aboriginal cultural heritage values of the modification area through the preparation of an *Aboriginal Cultural Heritage Assessment Report* (ACHAR).

Figure 1-2: Aerial of the modification area.



2 THE ABORIGINAL CULTURAL HERITAGE ASSESSMENT

2.1 RELEVANT LEGISLATION

Cultural heritage is managed by several state and national Acts. Baseline principles for the conservation of heritage places and relics can be found in the *Burra Charter* (Burra Charter). The *Burra Charter* has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The *Burra Charter* generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a State level.

Several Acts of parliament provide for the protection of heritage at various levels of government.

2.1.1 Commonwealth legislation

2.1.1.1 Environment Protection and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), administered by the Commonwealth Department of Climate Change, Energy, the Environment and Water, provides a framework to protect nationally significant flora, fauna, ecological communities, and heritage places. The EPBC Act establishes both a National Heritage List and Commonwealth Heritage List of protected places. These lists may include Aboriginal cultural sites or sites in which Aboriginal people have interests. The assessment and permitting processes of the EPBC Act are triggered when a proposed activity or development could potentially have an impact on one of the matters of national environment significance listed by the Act. Ministerial approval is required under the EPBC Act for Modifications involving significant impacts to national/commonwealth heritage places.

2.1.1.2 Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* is aimed at the protection from injury and desecration of areas and objects that are of significance to Aboriginal Australians. This legislation has usually been invoked in emergency and conflicted situations.

Applicability to the Modification

It is noted there are no Commonwealth or National heritage listed places within the modification area, and as such, the heritage provisions of the EPBC Act and other Commonwealth Acts do not apply.

2.1.2 State legislation

2.1.2.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) established requirements relating to land use and planning. The main parts of the EP&A Act that relate to development assessment and approval are Part 4 (development assessment) and Part 5 (environmental assessment). The purpose of the Part 5 assessment system is to ensure public authorities fully consider environmental issues before they undertake or approve activities that do not require development consent from a council or the Minister. The Minister responsible for the Act is the Minister for Planning.

The EP&A Act currently provides the primary legislative basis for planning and environmental assessment in NSW. The objects of the EP&A Act include encouragement of:

- The proper management, development, and conservation of natural resources
- The provision and coordination of the orderly and economic use and development of land
- Protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats
- Ecologically sustainable development.

The objects also provide for increased opportunity for public involvement and participation in environmental planning and assessment.

The EP&A Act includes provisions to ensure that the potential environmental impacts of a development or activity are rigorously assessed and considered in the decision-making process.

The framework governing environmental and heritage assessment in NSW is contained within the following parts of the EP&A Act:

- Part 4: Local government development assessments, including heritage. May include schedules of heritage items
    - Division 4.7: Approvals process for state significant development
        - Section 4.55(2) Modification of consents—generally.

<u>Applicability to the Modification</u>

The Applicant is seeking to modify SSD-29508870 under Section 4.55(2) of the EP&A Act.

As the Project is a SSD, Section 4.41 of the EP&A Act would apply and therefore an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the NPW Act to harm Aboriginal objects would not be required. Instead, all management related to Aboriginal cultural heritage within the

modification area would be governed by the policies within an approved *Aboriginal Cultural Heritage Management Plan* (ACHMP).

2.1.2.2 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) provides for the protection of Aboriginal objects (sites, objects, and cultural material) and Aboriginal places. Under the Act (Part 6), an Aboriginal object is defined as: any deposit, object, or material evidence (not being a handicraft for sale) relating to Aboriginal habitation of the area that comprises NSW, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction and includes Aboriginal remains.

An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

It is an offence under Section 86 of the NPW Act to 'harm or desecrate an object the person knows is an Aboriginal object'. It is also a strict liability offence to 'harm an Aboriginal object' or to 'harm or desecrate an Aboriginal place', whether knowingly or unknowingly. Section 87 of the Act provides a series of defences against the offences listed in Section 86, such as:

- The harm was authorised by and conducted in accordance with the requirements of an AHIP under Section 90 of the Act
- The defendant exercised 'due diligence' to determine whether the action would harm an Aboriginal object
- The harm to the Aboriginal object occurred during the undertaking of a 'low impact activity' (as defined in the regulations).

Under Section 89A of the Act, it is a requirement to notify the Secretary of the NSW Department of Climate Change, Energy, the Environment and Water (DCCEEW) of the location of an Aboriginal object. Identified Aboriginal items and sites are registered on Aboriginal Heritage Information Management System (AHIMS) that is administered by Heritage NSW.

Applicability to the Modification

Any Aboriginal sites within the modification area are afforded legislative protection under the NPW Act.

The Secretary of DCCEEW will be notified of the location of an Aboriginal object recorded by sending the relevant details to the AHIMS register.

2.2 ASSESSMENT APPROACH

The archaeological assessment followed the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010a).

The Aboriginal cultural heritage assessment followed the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (the Guide; OEH 2011) and the *Aboriginal cultural heritage consultation requirements for proponents* (ACHCRs) (DECCW 2010b).

2.3 PURPOSE AND OBJECTIVES

The purpose of this assessment is to identify and assess heritage constraints relevant to the proposed works.

The assessment will apply the Code of Practice, the Guide, and the ACHCRs in the completion of the Aboriginal cultural heritage assessment to meet the following objectives:

Objective One: Undertake background research on the modification area to formulate a predicative model for site location within the modification area

Objective Two: Identify and record Aboriginal cultural heritage values within the modification area. This includes intangible cultural values, Aboriginal objects, and any landforms likely to contain further archaeological deposits

Objective Three: To assess the significance of any recorded Aboriginal cultural values, Aboriginal objects, or sites.

Objective Four: Assess the likely impacts of the proposed work to Aboriginal cultural heritage values and provide management recommendations.

2.4 REPORT COMPLIANCE WITH THE CODE OF PRACTICE

The Code of Practice establishes requirements that should be followed by all archaeological investigations where harm to Aboriginal objects may be possible. **Table 2-1** tabulates the compliance of this report with the requirements established by the Code of Practice.

Table 2-1: Report compliance with the Code of Practice.

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 1a	Review previous archaeological work	**Section 5.2** and **5.3**
Requirement 1b	Review AHIMS searches	**Section 5.3.1**
Requirement 2	Review the landscape context	**Section 4**
Requirement 3	Summarise and discuss the local and regional character of Aboriginal land use and its material traces	**Section 5.4**
Requirement 4a	Develop predictive model	**Section 5.5**
Requirement 4b	Present predictive model results	**Section 5.5.3**
Requirement 5a	Archaeological survey sampling strategy	**Section 6.1**
Requirement 5b	Archaeological survey requirements	This Requirement was fulfilled during the undertaking of the survey
Requirement 5c	Archaeological survey units	**Section 4.1.1**
Requirement 6	Site definition	**Section 5.5.1** and **5.5.2**
Requirement 7a	Site recording information to be recorded	All sites were recorded in accordance with this Requirement.

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 7b	Site recording: scales for photography	All artefact photographs employed a centimetre scale bar.
Requirement 8a	Geospatial information	All artefact locations were logged using a non-differential handheld GPS.
Requirement 8b	Datum and grid coordinates	All coordinates are provided in GDA Zone 55.
Requirement 9	Record survey coverage data	**Section 6.1**
Requirement 10	Analyse survey coverage	**Section 6.3**
Requirement 11	Archaeological Report content and format	This report adheres to this Requirement.
Requirement 12	Records	OzArk undertakes to maintain all survey records for at least five years.
Requirement 13a	Notifying Heritage NSW of breaches	Not applicable
Requirement 13b	Providing Heritage NSW with information	Not applicable
Requirement 14	Test excavation which is not excluded from the definition of harm	The test excavation did not take place in any of the landforms identified in Requirement 14.
Requirement 15a	Consultation regarding test excavation	Not applicable
Requirement 15b	Developing a test excavation sampling strategy	A test excavation methodology was not required.
Requirement 15c	Providing Heritage NSW with notification of the test excavation	Not applicable
Requirement 16a	Test excavation that can be carried out in accordance with the Code of Practice	Not applicable
Requirement 16b	Objects recovered during test excavations	Not applicable
Requirement 17	When to stop test excavations	Not applicable
Requirement 18–20	Artefact recording	The procedures for artefact recording were adhered to during the investigation.

2.5 DATE OF ARCHAEOLOGICAL ASSESSMENT

The field survey was undertaken on 11 to 12 December 2024.

2.6 OZARK INVOLVEMENT

2.6.1 Field survey

The fieldwork survey was undertaken by:

- Archaeologist: Imogen Crome (OzArk Archaeologist; BA [Archaeology] and BSc [Biological Anthropology] Australian National University)
- Archaeologist: Jordan Henshaw (OzArk Archaeologist; BAncHist Macquarie University).

2.6.2 Reporting

The reporting component of the heritage assessment was undertaken by:

- Report author: Imogen Crome

- Reviewer: Stephanie Rusden (OzArk Senior Archaeologist, BS University of Wollongong, BA University of New England).

3 ABORIGINAL COMMUNITY CONSULTATION

3.1 INTRODUCTION TO CULTURAL VALUES

> *No matter who you are, we all have culture. Each person's culture is important; it's part of what makes us who we are.*
>
> australianstogether.org.au

Many Aboriginal people in Australia have a unique view of the world that's distinct from the mainstream. Land, family, law, ceremony, and language are five key interconnected elements of Aboriginal culture. For example, families are connected to the land through the kinship system, and this connection to land comes with specific roles and responsibilities which are enshrined in the law and observed through ceremony. In this way, the five elements combine to create a way of seeing and being in the world that is distinctly Aboriginal.

Aboriginal and Torres Strait Islander peoples are connected to Country through lines of descent (paternal and maternal), as well as clan and language groups. Territory is defined by spiritual as well as physical links. Landforms have deep meaning, recorded in art, stories, songs, and dance. Songlines or Dreaming Tracks as well as kinship structures link Aboriginal peoples to the territories of other groups. In the past, these links were also used for trade.

Living on this land for more than 50,000 years, Aboriginal and Torres Strait Islanders established effective ways to use and sustain resources. One important aspect is the right of certain people to control the use of resources in a particular area, as well as cultural and spiritual values like totemism that were fundamental in resource management. There was a wide range of traditional methods for gathering food including fish traps, subsistence agriculture, hunting and harvesting a wide range of natural fruits and vegetables. Some groups of people would stay in one place, while others moved around the land according to the seasons, to ensure sustainable and rich food supplies, and to fulfil their spiritual and cultural obligations.

In much of eastern Australia, Aboriginal communities live their lives like most Australians. However, in certain crucial areas, particularly associated with family, leadership roles and caring for Country, Aboriginal lore continues, even in the most urbanised communities.

3.2 ABORIGINAL COMMUNITY CONSULTATION

A major aim of this assessment is to identify any cultural values within the landscape in which the Modification is located so those values can be recognised and incorporated into the Modification's management recommendations.

The Aboriginal cultural heritage assessment of the Modification has followed the ACHCRs (DECCW 2010b). A log and copies of correspondence with Aboriginal community stakeholders is presented in **Appendix 1**.

The ACHCRs include four main stages, and these will be detailed in the following sections.

3.2.1 ACHCRs Stage 1

The aim of Stage 1 is to identify the Registered Aboriginal Parties (RAPs) who wish to be consulted about the Modification.

The ACHCRs undertaken for the approved Project resulted in nine individuals or groups registering to be consulted (OzArk 2023a), as follows:

- Gallanggabang Aboriginal Corporation
- Mudgee Local Aboriginal Land Council (LALC)
- Murong Gialinga Aboriginal & Torres Strait Islander Corporation
- North-Eastern Wiradjuri
- Paul Brydon
- Stakeholder 1[1]
- Warrabinga Native Title Claimants Aboriginal Corporation
- Wellington Valley Wiradjuri Aboriginal Corporation (WVWAC)
- Woka Aboriginal Corporation.

Given the size of the Modification and noting that it had been a considerable time that has lapsed since last formal engagement with the RAPs, the Applicant elected to recommence ACHCRs for the Modification from Stage 1.

A letter was sent by the Applicant to the existing RAPs on 3 October 2024 advising of the Modification (**Appendix 1 Figure 1**).

A letter seeking information from various agencies was sent on 4 October 2024 (**Appendix 1 Figure 2**). These agencies were: Office of the Registrar, *Aboriginal Land Rights Act 1983*; Heritage NSW; National Native Title Tribunal; National Native Title Services Corporation Ltd (NTSCORP); Mudgee LALC, Mid-Western Regional Council, and the Central Tablelands Local Land Services. Responses received from Heritage NSW and NTSCORP are provided in **Appendix 1 Figure 3**. Further correspondence with NTSCORP regarding the registration and subsequent deregistration of the Gomeroi Applicant is provided in **Appendix 1 Figure 4**.

An advertisement was placed in the *Mudgee Guardian* on 5 October 2024 to solicit expressions of interest (**Appendix 1 Figure 5**).

[1] Those identified as Stakeholder 1 have requested to be anonymous.

Letters were sent to individuals and groups whose contact details had been provided by the government agencies (**Appendix 1 Figure 6**). Email registrations are provided in **Appendix 1 Figure 7**.

By the closing date for registration, the following additional individuals/groups registered to be consulted about the Modification:

- Booral Maliyan
- Cindy Foley
- George Flick
- Jeremy Duncan
- Girragirra Murun Aboriginal Corporation
- Gomery Cultural Consultants
- Thomas Dahlstrom
- Wingarra Wilay Aboriginal Corporation.

These individuals/groups, in addition to those that registered for the Project constitute the RAPs for the Modification. There are a total of 17 RAPs.

3.2.2 ACHCRs Stage 2

The aim of Stage 2 is to provide information about the Modification to the RAPs.

Detailed information on the Modification was provided in the assessment methodology that was issued to all RAPs for their consideration on 4 November 2024 (**Appendix 1 Figure 8** and **Appendix 2**).

3.2.3 ACHCRs Stage 3

The aim of Stage 3 is to acquire information regarding Aboriginal cultural values associated with the Modification through RAP consultation and field work.

To inform the RAPs of the assessment, an assessment methodology was issued to all RAPs for their consideration on 4 November 2024 (**Appendix 1 Figure 8** and **Appendix 2**). This document provided the archaeological context of the modification area, a description of the proposed survey across the modification area and asked whether there were any cultural values that should be considered in the assessment.

RAPs were provided the stipulated 28 days in which to review and comment on the assessment methodology as per Stage 3 of the ACHCRs. The closing date for comment was 2 December 2024.

A response was received from Warrabinga Native Title Claimants Aboriginal Corporation on 14 November 2024 and from Thomas Dahlstrom on 28 November 2024. Both responses advised that they had reviewed and supported the methodology (**Appendix 1 Figure 9**). The response from Warrabinga Native Title Claimants Aboriginal Corporation also noted their concerns regarding the Modification were in relation to the semi-permanent creek line (White Creek) and the two tributaries of Huxley's Creek in the northwest section.

The field survey as per Stage 3 of the ACHCRs was undertaken with the assistance of RAP representatives over two days from 11 to 12 December 2024. **Table 3-1** provides a log of the RAPs and their representatives who participated in fieldwork. Wellington Valley Wiradjuri Aboriginal Corporation were invited to participate in the fieldwork, but were unable to supply a site officer at the time of the survey.

Table 3-1: Aboriginal community involvement in the fieldwork.

Individual/group	Name	Day of participation
Mudgee LALC	Jai Tanner	11 December 2024
Thomas Dahlstrom	Ray Hampton	11 December 2024
Warrabinga Native Title Claimants Aboriginal Corporation	Brian Booth	12 December 2024
George Flick	Zac Flick	12 December 2024

3.2.4 ACHCRs Stage 4

Stage 4 involves the production of a draft ACHAR that is issued to all RAPs for their consideration. The ACHAR will document the results of the assessment, outline opportunities for the conservation of Aboriginal cultural values, and suggest recommendations for the management of Aboriginal objects should impacts to these objects be unavoidable.

A draft copy of the ACHAR was sent to all RAPs on 9 April 2025 with a closing date of 13 May 2025 (**Appendix 1 Figure 10**). A reminder email was sent to RAPs on 9 May 2025 (**Appendix 1 Figure 11**) with responses received from WVWAC and Warrabinga Native Title Claimants Aboriginal Corporation. WVWAC stated their agreeance with the recommendations of the report (**Appendix 1 Figure 12**).

Warrabinga Native Title Claimants raised several concerns, some of which pertain to the long-term management of salvaged objects the potential salvage of scarred tree 36-3-3918 (Birriwa Bus Route South ST-1) (**Appendix 1 Figure 13**). These concerns were addressed by OzArk in a letter response provided in **Appendix 1 Figure 14**.

3.3 CULTURAL VALUES IDENTIFIED THROUGHOUT THE ACHCR PROCESS

Warrabinga Native Title Claimants Aboriginal Corporation noted in their Stage 3 response the importance of preserving the cultural and environmental integrity of watercourses, including those in the modification area, which hold significant value to the overall heritage landscape

(**Appendix 1 Figure 9**). Further, WVWAC stated in their Stage 4 response (**Appendix 1 Figure 12**) that "*Socially and Culturally the identified cultural heritage sites and the cultural landscape as a whole are of high significance to us and our members who have continued connection to that area through their Apical Ancestry and regularly visiting sites in the area*".

4 LANDSCAPE CONTEXT

An understanding of the environmental context of a modification area is requisite in any Aboriginal archaeological investigation (DECCW 2010a). It is a particularly important consideration in the development and implementation of survey strategies for the detection of archaeological sites. In addition, natural geomorphic processes of erosion and/or deposition, as well as human-activated landscape processes, influence the degree to which the remains of material culture are retained in the landscape as archaeological sites; and the degree to which they are preserved, revealed and/or conserved in present environmental settings.

4.1 TOPOGRAPHY

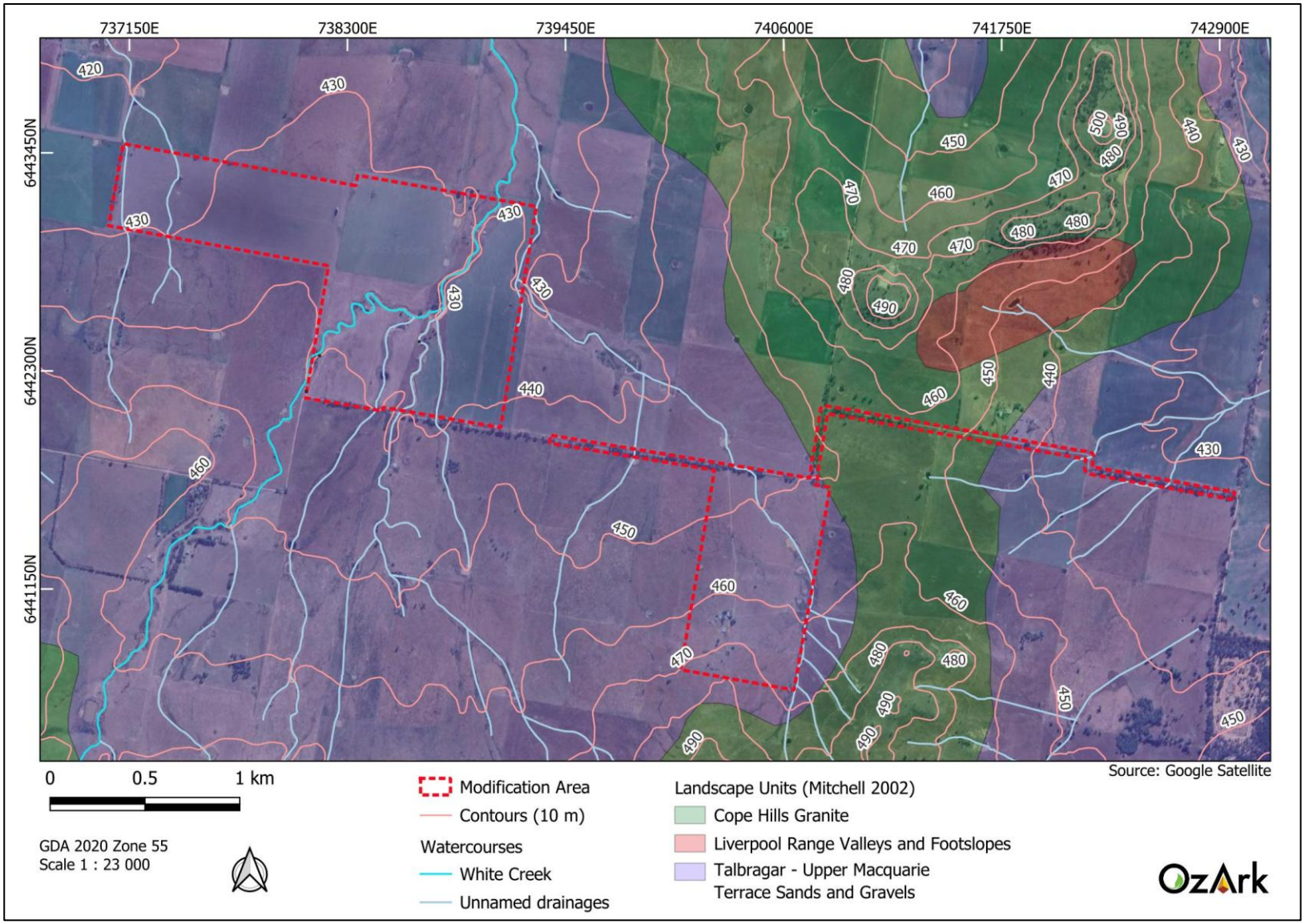
The modification area is predominately in the Talbragar–Upper Macquarie Terrace Sands and Gravels landscape unit characterised by Mitchell (2002). This landscape type is characterised by sandy quaternary alluvial sediments on floodplains and terraces of the Talbragar River, with a general elevation between 350–500 metres (m) (Mitchell 2002: 99). A portion of the modification area along Birriwa Bus Route South is in the Cope Hills Granite landscape unit, which is characterised by undulating and rolling hills on Carboniferous granite and granodiorite, general elevation 500 to 740 m (Mitchell 2002: 65).

The topography of the modification area itself is primarily slopes with gentle gradients or flats, with the highest point being the southern-most boundary with an elevation of 480 m which descends towards the north (see **Figure 4-1** and **Figure 4-2**).

Figure 4-1: Topography of the modification area

<table>
<tr><td>  </td><td>  </td></tr>
<tr><td>1. View south across the very gentle slopes in the southern portion of the modification area.</td><td>2. View north along White Creek and the flats within the northern portion of the modification area.</td></tr>
</table>

Figure 4-2: Environmental context of the modification area.



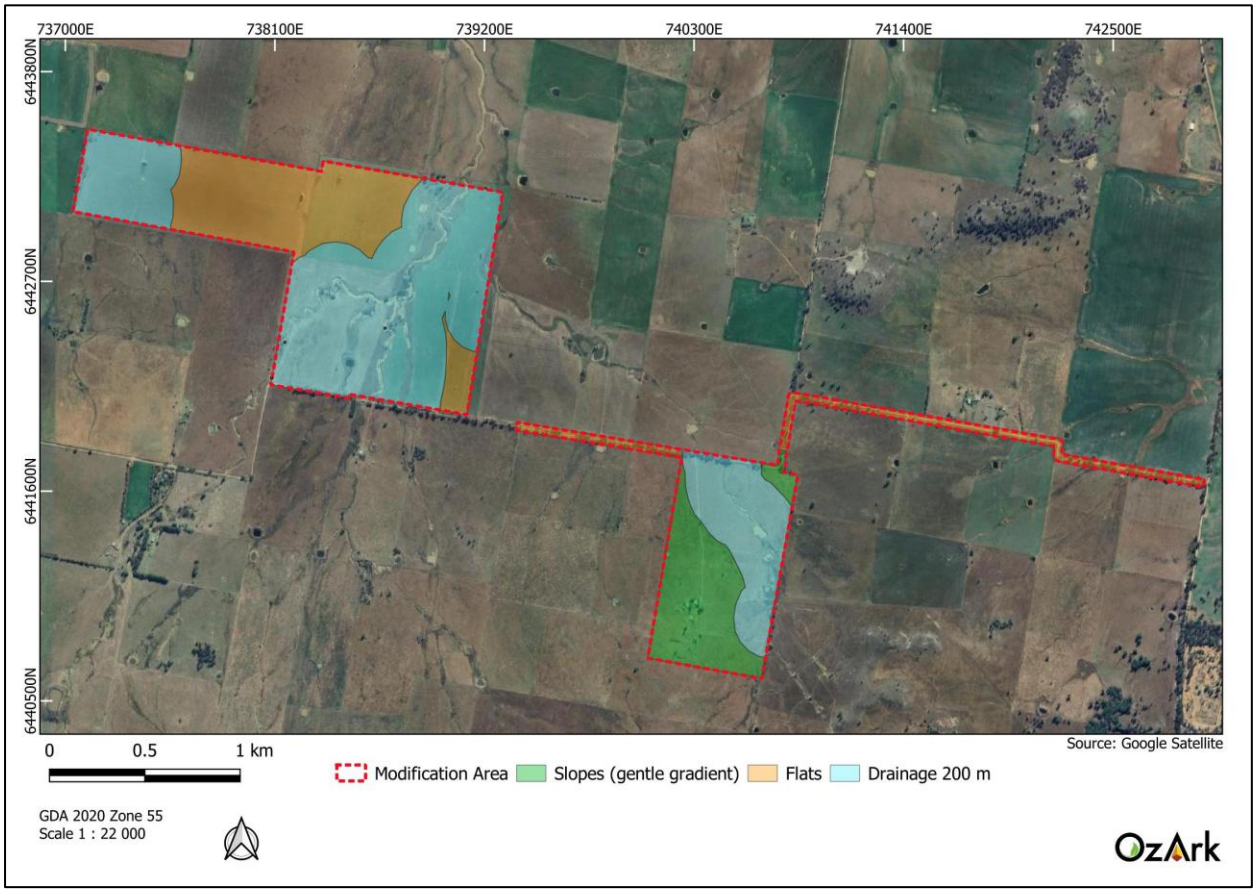
4.1.1 Survey units

Based on the topography of the modification area, survey units were identified to capture the major topographical features of the modification area. The designation of survey units will allow a comparison of the archaeological potential of each major topographical feature in the modification area to understand whether certain landform types are more likely to contain Aboriginal objects than others.

Preliminary landform mapping within the modification area indicates there are three main landform types (**Figure 4-3**):

- Survey unit 1: Drainage (land within 200 m of a drainage line including White Creek)
- Survey unit 2: Slopes (gentle gradient)
- Survey unit 3: Flats.

Figure 4-3: Survey units within the modification area.



4.2 GEOLOGY AND SOILS

The soils inside the modification area consist of Home Rule and Rouse (Murphy & Lawrie 1998).

Geology associated with the Home Rule landscape consists of Gulgong and Rouse Granites, while the Rouse landscape consists of Gulgong Granite, biotite granite, adamellite, granodiorite (Murphy and Lawrie 1998).

Soil analysis has important ramifications for archaeological research through the potential impact of different soils on human activity (such as agricultural exploitation) and the impact of the soils on archaeological evidence (such as post-depositional movement).

The soils consist primarily of siliceous sands, particularly the Home Rule soil type. The Home Rule soil type is characterised by low fertility and water holding capacity. Surface soils tend to be acidic, and prone to seasonal waterlogging. The siliceous sands Home Rule topsoil ranges between 10–35 centimetres (cm) in depth and tends to be loose brown to dark brown loamy sandy with small quartz and felspar gravels present. The subsoil tends to be a bright brown to red-brown loose clayey-sand, with small quartz and felspar gravels. These types of soil are prone to erosion, especially if no surface cover is present. Furthermore, drainage depressions are highly susceptible to gully erosion due to water runoff (Murphy and Lawrie 1998).

The Rouse soil type is characterised by loamy sand to clayey sand topsoil extending to 10-20 cm. Loamy sand to light sandy clay loam subsoil can extend down to around 50 cm. These types of soil are prone to sheet and gully erosion (Murphy and Lawrie 1998).

4.3 HYDROLOGY

The Talbragar River is the closest permanent watercourse and is located approximately 3.6 km north of the modification area. The modification area is intersected by various non-perennial watercourses (**Figure 4-2**). White Creek and its tributaries intersect the centre and eastern portions of the modification area in a general north to south direction. Ephemeral tributaries of the Huxley Creek are present in the westernmost extent of the modification area.

4.4 VEGETATION

Vegetation within the Talbragar - Upper Macquarie Terrace Sands and Gravels landscape typically consists of River red gum species along channels and yellow box, rough-barked apple and white cypress pine on plains (Mitchell 2002: 99). Vegetation in the Cope Hills Granite landscape unit consist of yellow box, Blakely's red gum, red stringybark, apple box, mountain gum and black cypress pine (Mitchell 2002: 65).

Aerial imagery of the modification area shows that the clearing of vegetation inside the modification area is widespread and typical of a highly modified agricultural landscape (**Figure 1-2** and **Figure 4-4**). Remnant trees remain along fence lines, property boundaries and

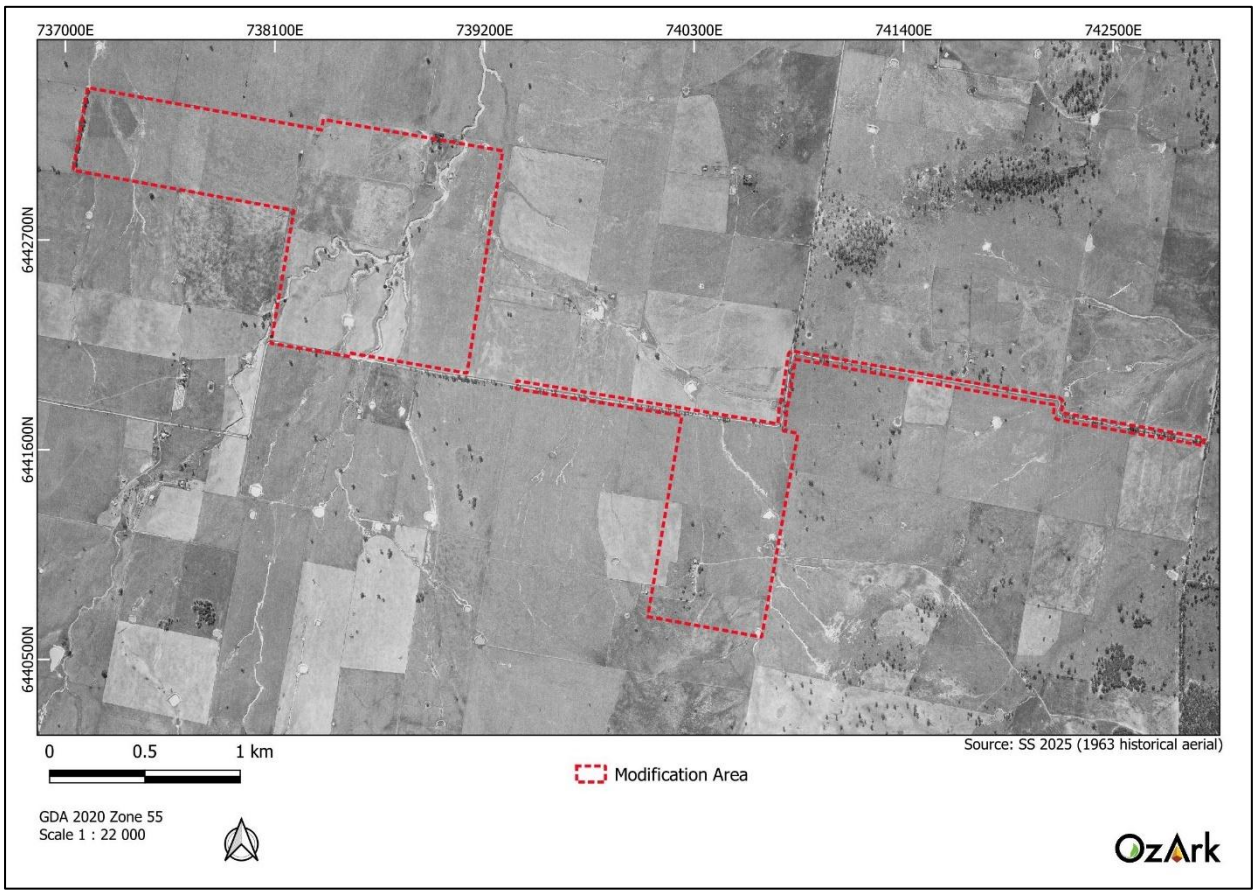
along water courses within the modification area. Birriwa Bus Route South remains densely vegetated.

4.5 LAND USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

Most of the modification area has been subject to cropping and/or grazing. Cropping involves ploughing the ground surface, which ultimately affects the integrity of archaeological Aboriginal sites, in particular open camp sites, within the 'plough zone' by moving deposits both horizontally and vertically. The grazing of hoofed livestock significantly shuffles or compacts the ground surface.

The significant effects of agricultural grazing on the land, particularly on hydrology and soil loss, can be seen on **Figure 4-4**. Significant erosion of drainage lines is also evident across the modification area as well as the presence of unsealed vehicle tracks and roads including Birriwa Bus Route South.

Figure 4-4: 1963 Aerial of the modification area (source: NSW Spatial Services 2025).



4.6 CONCLUSION

The directs impacts to the ground surface through vegetation clearance, cropping and grazing ultimately results in indirect impacts to Aboriginal sites as they ultimately accelerate soil loss. Based on the direct and indirect impacts which have affected the modification area, sites such as

artefact scatters or isolated finds present within the modification area are likely to be in a secondary context and not associated with intact subsurface deposits.

The review of the environmental factors associated with the modification area allows the following conclusions to be drawn in terms past Aboriginal occupation:

- Topography and hydrology: the flat to gently sloping landforms present across the modification area would have been hospitable to Aboriginal people however there are no specific resources across these landforms which would have encouraged occupation (camping). Occupation sites (i.e. stone artefact sites) are more likely to be present across survey unit 1, particularly along the immediate banks of White Creek.

- Geology and soils: geological mapping indicates that any outcropping rock would consist of granite, which is not suitable for manufacturing stone tools. Soils present on the gentle slopes inside the modification area are likely to have been affected by water erosion. The erosional qualities of the soils present will have had an effect on the likelihood for *in situ* archaeological deposits being present. Furthermore, the widespread and comprehensive use of most of the modification area for cultivation would have further promoted soil erosion and loss.

- Vegetation: the modification area would have once supported an open woodland which would have provided some resources for Aboriginal subsistence in the past. However, resources likely to have supported a large population of people would have been present closer to the banks of more permanent water sources. The broad-scale vegetation clearance which has taken place across the much of the modification area for agricultural purposes reduces the likelihood that any culturally modified trees remain present, however, should mature native vegetation remain, particularly along the drainage lines and in the corridors of Birriwa Bus Route South, culturally modified trees may be present.

- Land use: ground surface disturbances such as vegetation clearance, cultivation, and grazing exist throughout the modification area. These activities may have displaced Aboriginal objects and are likely to have reduced the potential for subsurface archaeological material. However, disturbance at a given location does not necessarily mean that there will be no cultural material present, as often a disturbed context will reveal objects which may have previously been subsurface. As noted above, initial vegetation clearing would also have significantly reduced the likelihood of culturally modified trees remaining.

5 ARCHAEOLOGICAL CONTEXT

5.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

At the time of European settlement, the modification area was situated within the territory of people belonging to the *Wiradjuri* tribal and linguistic group (Tindale 1974). The Wiradjuri tribal area is situated within the Murray Darling Basin and extends across three general physiographic regions: the highlands or central tablelands in the east, the riverine plains in the west, and the transitional western slopes zone in-between (Navin Officer 2005: 48). The modification area is at the north-eastern extent of Wiradjuri territory.

'Wiradjuri' means '*people of three rivers*', the three rivers being the Macquarie (*Wambuul*), Murrumbidgee, and Lachlan Rivers (Sahukar et al 2003: 121). These rivers represented the Wiradjuri people's livelihood and supplied consistent and abundant resources. The Wiradjuri people generally moved in smaller groups along river flats, open land, and waterways.

Oral tradition records the presence of over 20 clans within the broader Bathurst–Mudgee region, organised according to matrilineal descent (Navin Officer 2005: 48). Clans were made up of several fairly independent groups, of up to 20 members, in friendly contact with each other, moving separately for much of the year over a shared territory (Pearson 1981; Haglund 1985).

The Wiradjuri social organisation underpinned kinship systems based on totem names and associations. This system governed and controlled marriage and determined ceremonial kinship obligations. Individual identity and clan affiliations were expressed partly through elaborate carvings on wooden implements and on skin cloaks (White 1986).

Rivers and lagoons formed the basis of Wiradjuri lifestyle, supplying shellfish, fish (cod, perch and catfish) as well as yabbies, shrimp, and turtles (Garnsey 1942 and Pearson 1981). Kangaroo and emu meat, fruit and nuts, yam daisies, wattle seeds and orchid tubers supplemented the riverine diet.

5.2 REGIONAL ARCHAEOLOGICAL CONTEXT

There are several broad scale regional archaeological studies which either cover the modification area itself or are in general proximity to it. These studies have been summarised below.

<u>PhD thesis – changing land use and settlement patterns in the upper Macquarie River region of NSW from prehistoric times to 1860 (Pearson 1981)</u>

Pearson's work was primarily in the Upper Macquarie region, which reflects topographic similarities to the current modification area located approximately 17.5 km north. Pearson divided the archaeological sites he recorded into two main categories: occupation sites and non-occupation sites (including grinding grooves, scarred or carved trees, ceremonial and burial sites). Analysis of site locations produced a site prediction model with occupation occurring in

areas with access to water, good drainage, level ground, adequate fuel and appropriate localised weather patterns for summer or winter occupation. Occupation sites were most frequently found on low ridge tops, creek banks, gently undulating hills and river flats and usually in open woodland vegetation (Pearson 1981: 101). The location of non-occupation sites was dependent upon a variety of factors relating to site function. For instance, grinding grooves were found where appropriate sandstone outcropping occurred, as close to occupation sites as possible. The location of scarred trees displayed no obvious patterning, other than proximity to watercourses where camps were more frequently located. Pearson suggested that these patterns would differ on the drier plains to the west, towards Dubbo and beyond, where dependence upon larger, more permanent water supplies was greater.

An assessment of Aboriginal sites in the Dubbo City Area (Koettig 1985)

In 1985, the survey by Koettig investigated the evidence of Aboriginal occupation within 5 km of Dubbo's city limits approximately 83 km west of the modification area. The investigation concluded that sites exist throughout all environmental landscapes surveyed. Artefact scatters, scarred trees and grinding grooves were the most frequently occurring site types; and site location and size were determined by various environmental and social factors. Of the environmental factors, proximity to water, geological formation and availability of food resources were the most important. As such, Koettig's site prediction model suggested that: all site types would occur along watercourses; stone arrangements would occur most frequently on knolls or prominent landscape features; larger campsites would occur most frequently along permanent watercourses, near springs or wetlands; small campsites could occur anywhere; scarred trees could occur anywhere, but particularly in remnant native woodland communities; campsites would be smaller and more sporadic near the headwaters of creeks; grinding grooves could occur where appropriate sandstone existed; quarries could occur wherever there were suitable stone sources; and shell middens could occur only along the Macquarie River.

Assessment of the prehistoric heritage in the Mudgee Shire (Haglund 1985)

Approximately 51 km south of the modification area, Haglund (1985) conducted a study into the prehistoric heritage in the Mudgee Shire and noted that prior to colonial settlement small groups of approximately twenty Aborigines acted independently but engaged in friendly contact. These groups moved after variable intervals, often over a short distance or within the same area, to obtain and use different resources.

Early British explorers and settlers noted considerable variation in the numbers of Aboriginal people that would gather for food procurement activities during different seasons of the year. This seasonality was most obvious in the case of gatherings along major rivers, and it has been suggested that during dry periods the water holes remaining in the major rivers would become focal points for the usually scattered groups (Haglund 1985: 5).

Concerning the Mudgee/Gulgong area, Haglund (1985: 3) notes that the distribution of known sites cannot be seen as accurately reflecting past Aboriginal land use or site location patterns because of site loss since colonial settlement. Those sites known to exist, however, do fit within the general pattern for the various resource zones discerned by Koettig (1985) and Pearson (1981).

Regional cultural heritage study: Brigalow Belt South Bioregion (Purcell 2002)

Purcell (2002) conducted a broad regional cultural heritage study of the Brigalow Belt South Bioregion in NSW. This bioregion extends from Dubbo north to Moree approximately 15 km west of the modification area. Over the course of the study Purcell recorded 110 oral history interviews, located 1,110 Aboriginal sites, documented 60 traditionally used plant species and mapped landforms that have Aboriginal cultural heritage values. Of the 1,110 Aboriginal sites recorded during this assessment 893 existed on the site register prior to the study.

The field survey portion of Purcell's study primarily targeted government owned land such as state forests and a landform mapping project was undertaken to assist with the development of a predictive model for Aboriginal site distribution across the bioregion. Water localities were noted to be the major contributing element influencing the distribution of sites among landforms with sites expected to be concentrated near water localities. The landform types were classified into four key groups as shown in **Table 5-1** below. The study indicated that Aboriginal sites have been recorded more frequently on high contour and alluvial landforms. Most of the sites recorded were within 100-400 m of water.

Table 5-1: Breakdown of landforms mapped by Purcell (2002) in the Brigalow Belt South Bioregion.

Landforms	Description	Likelihood of Aboriginal sites
Alluvial	Low lying areas associated with a variety of water features including rivers, creeks, channels, billabongs, swamps and lakes. Landforms include alluvial fans, alluvial terrace, alluvium, channel, floodplain, flood channel, gilgai, wetland/swamp and palaeochannels.	Aboriginal sites occur frequently
Deep stable sand	Landform types include yellow sand sheets and sand monkey. Water is scare.	Aboriginal sites occur less frequently
Terrace group	Landform types consist of terrace with scalds, terrace with overland flow, terrace and clay pans. Each variety of terrace adjoins a landform associated with an alluvium landform.	Areas where terrace ad floodplains overlap will have a high potential for sites
Higher contour	Landforms that are elevated and consist of rocky ground, rocky ravines, colluvial slope, soil mantled slope, bench, and talus.	High frequency of sites when associated with alluvial landforms or creek lines

Aboriginal heritage study: Dubbo local government area (OzArk 2006)

An assessment of Aboriginal heritage resources within the then Dubbo LGA to assist Dubbo City Council (now amalgamated into the Dubbo Regional Council) with planning was undertaken by OzArk (2006) located approximately 30 km west of the modification area at its closest point. This study aimed to consolidate previous surveys and assessments of Aboriginal heritage; set a

baseline for further study; and survey areas zoned for future expansion. Approximately 1120 ha of land was surveyed within five study areas surrounding the city of Dubbo. During the survey, 26 new Aboriginal sites were recorded, and eight out of 12 previously recorded sites were relocated. Several of the newly recorded site types were similar to those found in previous studies. Fewer scarred trees were found than expected, likely due to intensive agricultural practices and associated tree clearance around Dubbo city compared to the broader former Dubbo LGA. No new grinding groove sites were recorded, which was understandable given that this site type comprised only 3.6% of previously located sites within the former Dubbo LGA. Scarred tree distribution adhered to the predictive model, exclusively following waterways and fence-lines, although this probably reflected land clearing practices more than Aboriginal site patterning. Isolated finds and open sites followed a similar pattern, largely limited to watercourse edges and elevated terraces within 500 m of the Macquarie River and other permanent to semi-permanent waterways. No significant patterning emerged in terms of site size or quality, perhaps because surface manifestations of artefacts often do not adequately reflect site size or complexity.

Predictive model for Aboriginal site locations: the Central West Local Land Services area (OzArk 2016)

In 2016, OzArk established a predictive model for Aboriginal site locations within travelling stock reserves (TSRs) across the Central West Local Land Services area located 10 km west of the Modification area at its closest point. The landscape in the area were divided into the following types: Channel and Floodplains, Alluvial Plains, Slopes, Uplands and Downs. Observations about the location and site types recorded to date within these landforms were compiled by OzArk and it was noted that:

- A high number of sites were recorded in Slope landscapes. This was perhaps biased by the fact that Dubbo is located within this landscape type and the highest number of sites in the area have been recorded to date in and around Dubbo
- The highest concentration of sites was within Channel and Floodplain landscapes
- Alluvial Plains landscapes had the third highest concentration of sites
- Relatively small numbers of sites were recorded in Uplands landscapes
- A moderate number of sites were recorded in Downs landscapes.

The area investigated by OzArk was also divided into two stream orders with major and minor waters noted to have sensitivity with a 200 m buffer added to either side of major waters and a 100 m buffer added either side of minor waterways. The field investigation of 32 TSRs within the area was used to test the predictive model. A total of 59 sites were recorded which included 26 modified trees, 22 artefact scatters and 11 isolated finds. Most of the recorded sites were in Channel and Floodplain landscapes with lower numbers recorded on Slopes, Alluvial Plains and

Down landscapes. OzArk concluded that the most archaeologically sensitive landscape in the Central West Local Land Services area was Channels and Floodplain landscapes. Additionally, OzArk noted that 63% of the sites recorded were within the buffers of major and minor waterways.

5.3 LOCAL ARCHAEOLOGICAL CONTEXT

5.3.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any previously recorded heritage within the modification area. The results of this search are summarised in **Table 5-2** and presented in detail in **Appendix 3**.

Table 5-2: Aboriginal cultural heritage: desktop-database search results.

Name of Database Searched	Date of Search	Type of Search	Comment
Commonwealth Heritage Listings	21/10/2024	Mid-Western LGA	No places listed on either the National or Commonwealth heritage lists are located within the modification area.
National Native Title Claims Search	21/10/2024	NSW	One registered Native Title Claim covers the modification area: Warrabinga-Wiradjuri #7 (NC2018/002, NSD857/2017).
AHIMS	21/10/2024	10 x 10 km centred on the modification area	130 sites resulted from the search. Two artefact scatters (36-3-4102 and 36-3-4095) are located within the modification area and one scarred tree (36-3-3918) is located along Birriwa Bus Route South in the modification area.
Local Environmental Plan (LEP)	21/10/2024	Mid-Western Regional LEP of 2012	None of the Aboriginal places noted occur near the modification area.

Two searches of the AHIMS database were completed on 21 October 2024 covering a total area of 10 km x 10 km centred on the modification area (GDA Zone 55 Eastings: 727644–747644; Northings: 6431970– 6451970; see **Appendix 3**). The searches returned 130 results for Aboriginal sites, with two artefact scatters (36-3-4102 and 36-3-4095) located in the modification area and one scarred tree (36-3-3918) located along Birriwa Bus Route South in the modification area.

Table 5-3 lists site types and frequencies returned in the designated search area and **Figure 5-1** shows the locations of the recorded AHIMS sites in relation to the modification area.

The most frequently recorded site types are isolated finds which contribute 31% of the site types in the vicinity of the modification area. These are closely followed by artefact scatters which contribute 28%. Other frequent site types are grinding grooves (11%), modified trees (10%), and artefacts sites with associated potential archaeological deposit (PAD) (7%). Shelters with art (4%) and deposits (5%) and standalone PADs (3%) are also present in far fewer numbers, as well as rarer site types which only have single recordings in the vicinity of the modification area (see **Table 5-3**).

Site types which include shelters are in the mountainous ranges to the northeast and southwest of the modification area. Open artefact sites (such as scatters, isolated finds and PADs) tend to be in proximity to a watercourse and recorded outside of the more mountainous areas. Modified trees also tend to be located near watercourses. Recorded grinding grooves tend to be located near a watercourse and / or on the edges of mountainous areas where outcropping rock is expected.

Two of the previously recorded sites in the modification area are both artefact scatters located in Lot 34 DP750755. Site 36-3-4095 (SNI-AS86) is located along the immediate bank of an ephemeral drainage line and site 36-3-4102 (SNI-AS85) is located 140 m from that same ephemeral drainage on an access track. **Figure 5-2** shows the location of these sites within the modification area.

One scarred tree (36-3-3918 [Birriwa Bus Route South ST-1) is in the northern corridor of Birriwa Bus Route South, shown on **Figure 5-2**. Another modified tree (36-3-4034) is located approximately 40 m north of the modification area along Birriwa Bus Route South, however, it is noted that the status for this site has been updated to 'not a site'.

Table 5-3: AHIMS site types and frequencies

Site Type	Number	% Frequency
Isolated find	41	31
Artefact scatter	37	28
Grinding groove	14	11
Modified tree (carved or scarred)	13	10
Artefact site with PAD	9	7
Rock shelter with deposit	5	4
Rock shelter with art	4	3
PAD	3	2
Burial/s	1	1
Ceremony and Dreaming	1	1
Stone arrangement	**1**	**1**
Waterhole	1	1
Total	**130**	**100**

Figure 5-1: AHIMS sites in relation to the modification area.

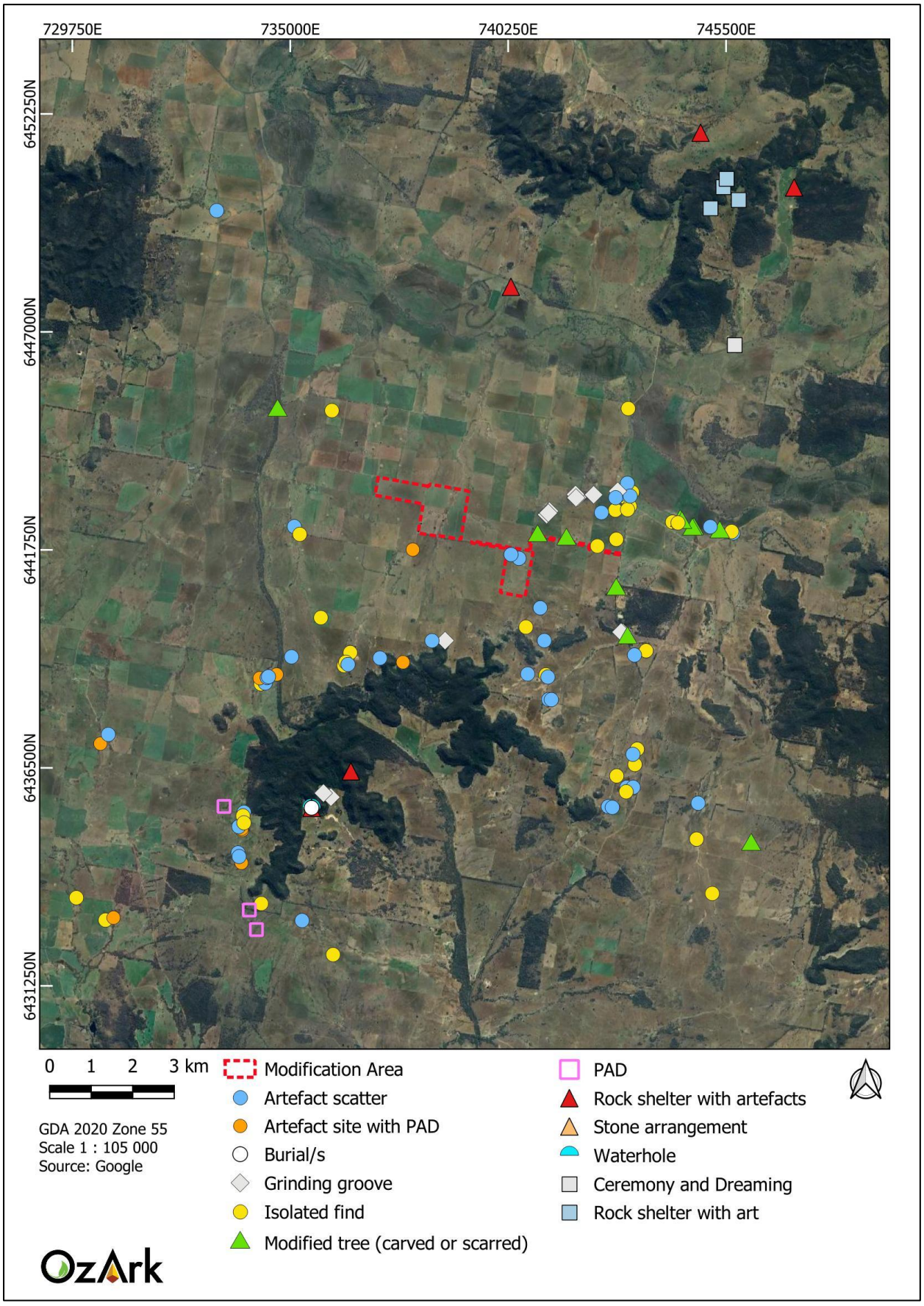
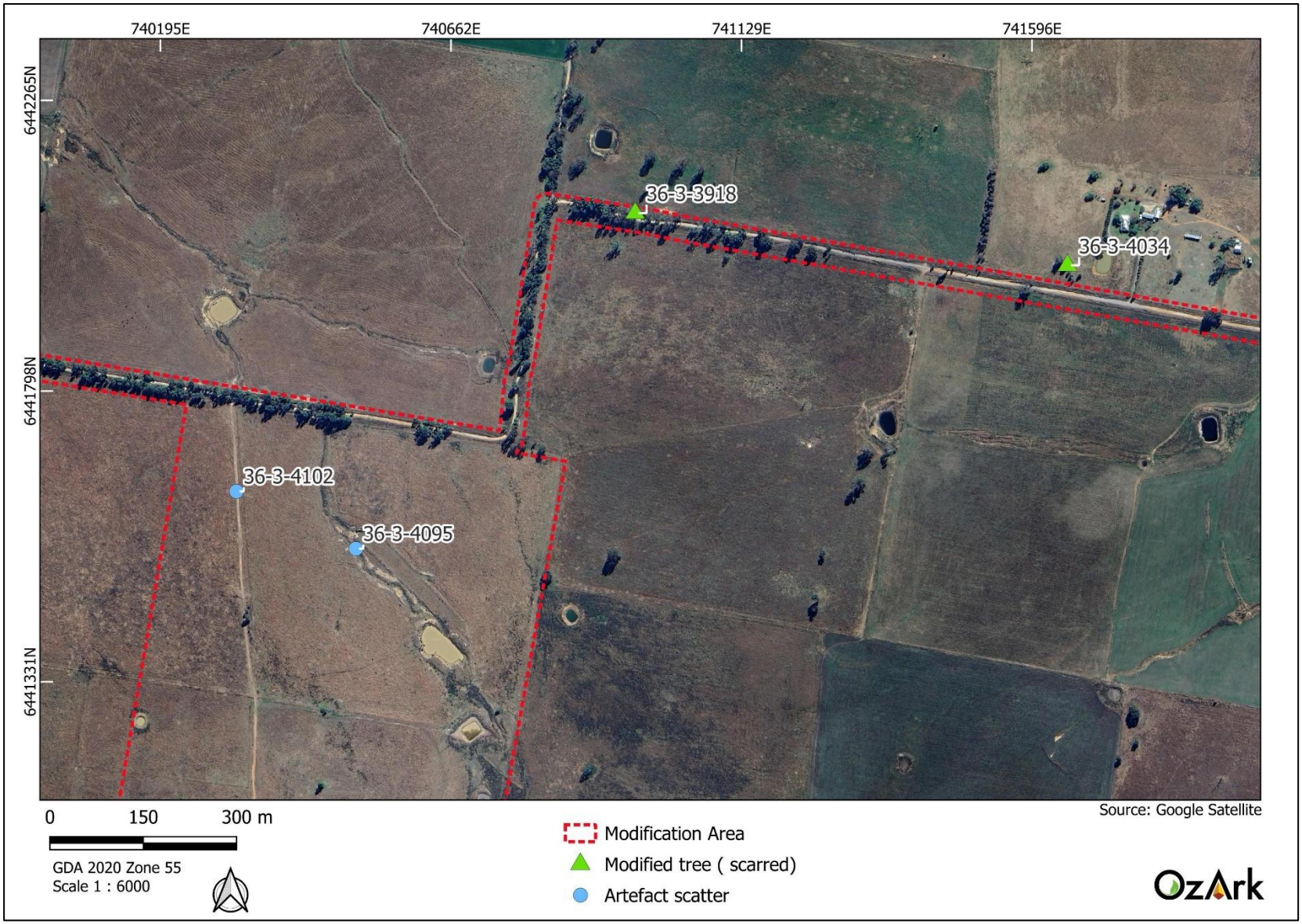


Figure 5-2: Detail of the AHIMS sites recorded in and near the modification area.



5.3.2 Previous studies in or near the modification area

Ulan Coal Mine

Numerous studies undertaken over the past twenty-five years for the Ulan Coal Mine, located approximately 15 km southeast of the modification area, over all portions of their lease areas and have recorded hundreds of Aboriginal sites. Surveys carried out through the 1980s and 1990s by Haglund have been summarised by Kuskie (2000).

As expected, the variety of landforms present within the Ulan assessment area resulted in all site types being recorded (predominately artefact scatters in open or closed contexts) because of these studies (including more unusual sites such as ochre quarries and a utilised rock pool); although, it was noted that in general, the landscapes were highly disturbed because of agricultural activities (clearing, ploughing, grazing) and erosional processes. Overall, quartz appears to be the predominant raw material recorded at Ulan, although significant quantities of chert are also present (Kuskie and Webster 2002; Corkill 1991; Haglund 1996).

One of the more recent and broad scale assessments for the Ulan Coal Mine was completed by Kuskie (2009). The assessment area encompassed 5,431 ha of land, resulting in 709 Aboriginal heritage sites being identified including: 558 open artefact sites; 128 rock shelters with artefacts (art and/or grinding grooves); nine grinding groove sites; five scarred trees; five stone arrangements; two ochre quarries; one waterhole/well; one combined grinding groove and artefact site.

Kuskie (2009) produced a detailed occupation model, arguing that artefacts occur at the very low mean density of 0.0176 artefacts per square metre of effective survey coverage, which is consistent with background discard, and interspersed by occasional focalised areas of higher artefact density where activities or repeated activities occurred. This implies that Aboriginal use of the area was generally of low intensity, which Kuskie argues, is probably the product of a lack of higher order water courses.

Indigenous and non-Indigenous Heritage Assessment: Wollar – Wellington 330kV Electricity Transmission Line (OzArk 2005)

OzArk (2005) undertook an assessment of a proposed 330 kilovolt (kV) electricity transmission line (ETL) between Wollar and Wellington. The area assessed for the ETL is approximately 13.5 km southeast of the modification area. During the assessment, 28 Aboriginal sites were recorded which consisted of 10 artefact scatters, nine artefact scatters with PAD, seven isolated finds and two PADs. Most sites recorded during this assessment were within 200 m of water, either on the valley slopes or the valley floors (terraces / banks of watercourses).

Beryl Solar Farm (NGH Environmental 2017)

An Aboriginal cultural heritage assessment for the Beryl Solar Farm, 35 km south of the modification area, was conducted by NGH Environmental in 2017. The Beryl Solar Farm study area consisted of 332 ha of low undulating slopes surrounding two ephemeral drainage channels. Five sites were identified during the survey, three of which were located close to Wialdra Creek near the Castlereagh River.

The assessment concluded that the survey results were consistent with the model predicting site location close to waterways, and that there was negligible potential for intact subsurface deposits with high densities of objects or cultural materials. The low level of topographic variation across the Beryl study area led to a generic predictive model that has limited applicability to the current study area. However, the survey did record uncommon site types, including an axe blank and a ground-edge axe, despite the small number of identified sites.

Stubbo Solar Farm (OzArk 2020 and 2021)

OzArk conducted an archaeological assessment for the Stubbo Solar Farm located 8 km southeast of the modification area. The assessment resulted in 23 Aboriginal sites being recorded, and two previously recorded AHIMS sites located. The 25 Aboriginal sites inside the study area consist of nine isolated finds, three isolated finds with PADs, two artefact scatters, nine artefact scatters with PADs, one PAD, and one modified tree.

The assessment concluded:

- In total, 309 stone artefacts were recorded during the survey. The predominate material for stone artefacts was quartz (n=246, 79.6%), followed by chert (n=22, 7.1%), mudstone (n=16, 5.2%), and volcanics (n=13, 4.2%). Also present though in much lower quantities were silcrete, petrified wood, greywacke, and chalcedony
- The most frequent type of stone artefact is flakes (n=240, 79.6%), shatter (n=36, 11.7%), cores (n=12, 3.9%), blades (n=9, 2.9%) and backed blades (n=5, 1.6%). Also present in the overall assemblage are end scrapers (n=2), flaked pieces (n=2), ground edge hatchet heads (n=2), and a microlith (n=1)
- Most sites were recorded in the ‘drainage’ landforms along Stubbo Creek or the two main tributaries northwest and southwest of Stubbo Creek.
- The larger and higher-density sites are located at the confluence of Stubbo Creek and the two tributaries or further southwest along Stubbo Creek after the confluence
- The artefact sites (scatters and isolated finds) are located predominately in erosion scalds on the edges of elevated terraces, indicating there is potential for subsurface archaeological deposits where the terrace still has topsoil and A-horizon soils present.

The assessment also concluded that the highest areas of archaeological sensitivity remain to be along the main watercourses (Stubbo Creek and its tributaries), which would have provided at least a semi-permanent source of water in the area. The remainder of the Stubbo Solar Farm assessment area, especially the higher to mid slopes have a much lesser degree of

archaeological sensitivity. The ridgelines and crests of the low-lying rolling hills were also less sensitive for archaeological sites than the landforms immediately adjacent to the main watercourses.

An addendum assessment for the external access tracks to Stubbo Solar Farm was undertaken by OzArk in 2021. The addendum assessment covered two eastern access easements, one western access easement and the extent of the Blue Spring Road between its intersection with Cope Road to where the eastern access easements intersect with the road. No Aboriginal sites were recorded during the addendum assessment.

Dunedoo Solar Farm (NGH Environmental 2020)

In 2020, NGH Environmental conducted archaeological investigations for the Dunedoo Solar Farm, located approximately 15 km northwest of the modification area. During the investigations 26 Aboriginal sites were identified, consisting of 14 artefact scatters, nine isolated finds, and three areas of PAD. Sites were primarily recorded across the alluvial flats.

Due to the results of the survey, test excavations were conducted. Of the 75 test pits excavated across the PADs, only 13 recorded subsurface deposits. A total of five artefacts were recovered from three of the 43 test pits located across the flat plains in the western paddock; 35 artefacts were recovered from seven of the 28 test pits located across the terrace above the floodplain of the Talbragar River in the eastern paddock and a total of 45 artefacts were recovered from two of the five test pits excavated within the substation area located on a terrace adjacent to the Talbragar River.

Artefacts from the survey and test excavation were predominantly manufactured from quartz with a lesser number of chert, tuff, quartzite, fine grained siliceous, and basalt artefacts.

Tallawang Solar Farm (Umwelt [Australia] Pty Ltd 2022)

In 2022, Umwelt (Australia) Pty Ltd (Umwelt) conducted archaeological investigations for the Tallawang Solar Farm, located approximately 13 km south of the modification area. Landforms across the assessment area include low inclination slopes bordering minor drainage lines. The ETL associated with the assessment includes slopes and edges of spur/crests extending from Barneys Reef and crosses Tallawang Creek and associated drainage lines.

Thirty-one Aboriginal sites were identified during the survey, including nine areas of PAD (six with associated surface artefacts), 12 artefact scatters and 10 isolated finds. Of the nine PADs recorded, three were assessed as having low-moderate archaeological potential; three with moderate archaeological potential and the remaining three were assessed as having moderate to high archaeological potential.

Isolated finds and artefact scatters were primarily identified across the low inclination slopes and areas adjacent to the drainage lines. PADs were typically identified across the more undulating

landforms along the ETL, primarily along Tallawang Creek and drainage lines, localised benches mid-slope and foothills.

Birriwa Solar and Battery Project (OzArk 2023a and 2023b)

The ACHAR for the approved Project was completed in 2023. The report focussed on a 1,298 ha area of land adjacent to the modification area.

During the field survey a total of eight previously unrecorded Aboriginal sites were located, including five artefact scatter (one with PAD), two isolated finds and a scarred tree. The dominant raw material identified was quartz, with small quantities of basalt, quartzite, silcrete, mudstone and volcanic materials, and artefacts were predominately unmodified flakes. All recorded sites, except two, were identified within 200 m of ephemeral watercourses.

OzArk (2023b) subsequently assessed the location of the proposed temporary worker accommodation facility for the Project. Five artefact sites were located during the assessment in the assessed area for the temporary worker accommodation facility area and associated access tracks, including three artefact scatters and two isolated finds of predominantly quartz material. Scarred tree (36-3-3918 [Birriwa Bus Route South ST-1), located in the modification area, was also identified during this survey.

Bellambi Heights Battery Energy Storage Project (EMM 2023a)

An ACHAR was completed for the Bellambi Heights Battery Energy Storage Project by EMM in 2023, located approximately 15 km southwest of the modification area.

A field survey was conducted over a one-week period, while test excavations were completed over a two-week program. The field survey comprised linear pedestrian transects equating to a total of 12.5 ha of effective coverage. Visibility and coverage were relatively poor (average ~30%) due to the presence of dense vegetation. No Aboriginal objects were observed during the survey. Two previously identified sites (#36-2-0504 and #36-2-0507) were examined, and it was agreed these areas of PAD were likely to contain Aboriginal objects.

Test excavations focused on three areas predicted to have archaeological potential. Ultimately, 66 test pits (0.25 m²) were excavated on a 10-30 m grid across areas of archaeological potential. The test pits were located within 100 m of the two waterways on dry, elevated areas. Overall, 38 artefacts were recovered from the excavations, with average artefact densities of 0.57/m². The highest concentration of artefacts occurred at depths of 30-40 cm below the ground surface. A total of 17 artefacts (45%) were recovered from Spit 3 (20 - 30 cm), with a total of 5 artefacts (13%) recovered from Spit 4 (30 - 40 cm) and 11 artefacts (29%) recovered from Spit 5 (40 - 50 cm). There were no artefacts recovered below 50 cm. These were primarily found in two locales, on the hilltop within AHIMS site #36-2-0507 and within 100 m of the waterway in the east.

The assemblage was dominated by quartz (n=29, 76.3%), followed by tuff (brown, light grey, orange and yellow/grey dominated) (n=7, 18.3%) with smaller counts of chalcedony (n=1, 2.6%), and quartzite (n=1, 2.6%).

Central West Orana Renewable Energy Zone Transmission Project (EMM 2023b, 2024)

An ACHAR was completed for the CWO REZ Transmission Project by EMM in 2023. Further assessment followed this report, and an addendum report was submitted for public exhibition in 2024. The report focussed on 3,998 ha of land located in the region immediately surrounding the modification area.

A field survey, completed over a 12-week period, encompassed some 798 kilometres (or 3,998 ha) of linear pedestrian transects across the construction area. Despite poor visibility and coverage (~4.5%) due to the presence of dense vegetation, 183 Aboriginal objects, sites and/or places were documented as part of the investigation. These were dominated by stone artefact scatters (n=78) and isolated stone objects (n=65), with lesser occurrences of grinding grooves (n=15) and culturally modified trees (n=14). Spatially, these were found across the construction area, but there were clear clusters primarily located within 250 m of several 2nd to 4th order creeks. The two artefact sites (36-3-4102 and 36-3-4095) which are located within the current modification area were recorded during this investigation.

Test excavations consisted of 128 0.25 m^2 test pits at a small number of proposed transmission tower locations extending across the construction area to supplement and confirm the field survey findings. Overall, some 84 artefacts were recovered from test pits, primarily between 10–20 cm below surface, with no test pits exceeding 80 cm in depth. Overall, artefact densities of 2.1/m^2 were recovered. When extrapolating values from the test excavation, four test pits (and two groups of test pits) returned values of >17/m^2, which was considered to reflect above background levels of activity. These were on average ~104 m from 2nd – 4th order creek lines, with high densities recorded along Copes Creek and Sportsman Hollow Creek. The assemblage indicates a focus on extraction of raw materials potentially from these (and other) creeks, notably a milky quartz, and likely dating to the last few thousand years. All cultural materials were recovered from the upper 40 cm of the soil profile within test pits, and most of the assemblage recovered from the upper two spits (i.e. 0–20 cm). Most of the artefacts were made white, milky quartz (a macrocrystalline variety) (n=44), with lesser occurrences of tuff (n=26), chalcedony (n=2) and chert (n=2).

Across the construction area, incised creeks or ploughed fields typically revealed a 20–30 cm topsoil – usually a clay loam – was present above under-lying heavy clay subsoils or immediately onto geological substrate. Sandstone exposures and outcroppings were frequently observed and especially within many of the creek-lines, and its prevalence may explain in part the abundance

of grinding grooves documented in the region. Few remnant trees or vegetation were observed due to de-vegetation.

The addendum assessment covered an additional 254 km of field survey and recorded the results of test excavations of nine creek corridors. The addendum assessment recorded an additionally 73 Aboriginal sites and places. Isolated and low-density stone artefact sites were the primarily recorded site type, however rock shelters (n=2), grinding grooves (n=2) and scarred trees (n=6) were also identified. Test excavations found that the Laheys, Sandy, and Tallawang Creeks were utilised more than others investigated, exhibiting higher density artefact deposits.

The findings demonstrate that the most significant cultural deposits appear to be primarily found along major watercourses and/or strongly influenced by other environmental factors such as the presence of sandstone outcrops and over hangs.

5.4 ARCHAEOLOGICAL CONTEXT: SUMMARY

The archaeological investigations surrounding the modification area as summarised in **Sections 5.2** and **5.3** indicate that:

- Stone artefact sites (isolated finds and artefact scatters) frequent sites recorded in the area, especially in association with watercourses
- Higher artefact density sites are located near to permanent waterways and low-density artefact distributions are found at further distances
- Quartz is the predominant material for stone artefacts in the area, although volcanic materials, silcrete, quartzite, mudstone, chert, and chalcedony could also be present
- Artefact assemblages recorded in the region consist largely of unmodified flakes with few formal tools
- Modified trees are still relatively common despite widespread vegetation clearance and may be present anywhere where mature species remain
- Grinding grooves are common site types in landforms where outcropping sandstone is present, generally on higher elevation landforms or along watercourses
- Shelters tend to be located near mountainous areas where necessary geological formations are present. These suitable landform types are not present within the modification area.

5.5 PREDICTIVE MODEL FOR SITE LOCATION

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including plant and animal foods, stone and ochre resources and rock shelters, as well as by their general proximity to other

sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes, or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials such as stone artefacts, stone hearths, shells, and some bones that remain preserved in the current landscape. Even these, however, may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport, both over short- and long-time scales, or (b) the historical impacts associated with the introduction of European farming practices including grazing and cropping, land degradation, and farm related infrastructure. Scarred trees, due to their nature, may survive for up to several hundred years but rarely beyond.

5.5.1 Site types in the region of the modification area

The site types listed in **Table 5-4** are present in the region of the modification area. The likelihood of these sites being present in the modification area is discussed in **Section 5.5.2**.

Table 5-4: Site types recorded in the region of the modification area.

Site type	Site description
Isolated finds	May be indicative of random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or subsurface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.
Open artefact scatters	Artefact scatters are defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of a background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'. Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources. Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.
Culturally modified trees	Aboriginal scarred trees contain evidence of the removal of bark (and sometimes wood) in the past by Aboriginal people, in the form of a scar. Bark was removed from trees for a wide range of reasons. It was a raw material used in the manufacture of various tools, vessels, and commodities such as string, water containers, roofing for shelters, shields and canoes. Bark was also removed because of gathering food, such as collecting wood boring grubs or creating footholds to climb a tree for possum hunting. Due to the multiplicity of uses and the continuous process of occlusion (or healing) following removal, it is difficult to accurately determine the intended purpose for any example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematical because some forms of natural trauma and European bark extraction create similar scars. Many remaining scarred trees probably date to the historic period when bark was removed by Aboriginal people for

Site type	Site description
	both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.
Grinding grooves	Grinding grooves are the remnants of ground edge hatchet manufacture and sometimes from food preparation. The site is most likely to occur on flat outcrops of coarse-grained sandstone in the vicinity of water sources, however, grinding grooves have also been recorded on fine-grained granite and quartzite outcrops.
PAD	Any location where the potential for subsurface archaeological material is moderate or high, relative to the surrounding modification area landscape. The potential for subsurface material to be present is assessed using criteria developed from the results of previous surveys and excavations relevant to the region.
Rockshelters and art sites	Utilised in the past for both habitation and ceremonial purposes. The term 'rock shelter site' refers to rock shelters/rock overhangs that contain evidence such as stone artefacts and/or bones and/or plant remains (from meals eaten at the site) and/or hearths (fireplaces). Most rock shelter sites are secular in nature; however, those that also contain rock art or engravings are often believed to be non-secular in nature. The term 'rock art site' generally refers to Aboriginal ochre paintings or ochre or charcoal drawings located on a rock slab (generally in a sheltered place like the floor of a cave or rock shelter), boulder, cliff-face, cave or rock shelter wall or roof, or wall of a rock overhang. Most rock art sites are found in locations that are sheltered from the elements. This observation, however, is probably biased to some extent, as rock art would not preserve well in open positions. Rock art sites are generally believed to be non-secular in nature.
Burials	Generally found in soft sediments such as aeolian sand, alluvial silts, and rock shelter deposits. In valley floor and plains contexts, burials may occur in locally elevated topographies rather than poorly drained sedimentary contexts. Burials are also known to have occurred on rocky hilltops in some limited areas. Burials are generally only visible where there has been some disturbance of sub-surface sediments or where some erosional process has exposed them.

5.5.2 Landform modelling of archaeological potential

The large number of archaeological studies undertaken within the vicinity of the modification area provides information to obtain a sound understanding of the nature and distribution of archaeological sites within the area. In the region, artefact sites and scarred trees will almost exclusively only be recorded on flats and gently undulating landforms, generally within 200 m of waterways. While others of the previously identified sites are recorded as 'closed' which suggests they are associated with a rock shelter, closed sites are most likely to be recorded on slopes greater than 10 degrees where ridges or crests are present, however, necessary geological features (i.e. sandstone overhangs) are not present within the modification area.

As most of the modification area consists of flats to gentle slopes intersected by ephemeral drainage lines, previous findings indicate that low-density artefact scatters would be the most common site type to be present.

The clearing of vegetation inside the modification area is widespread and typical of a highly modified agricultural landscape. Remnant trees remain throughout the modification area in areas such as along fence lines, property boundaries, along watercourses and the corridors of Birriwa Bus Route South. The extent of vegetation clearance across the modification area increases the likelihood that any modified trees have been removed. However, should mature native vegetation remain, particularly along watercourses within the modification area, culturally modified trees may be present.

Most of the modification area has been subject to cropping and/or grazing. Cropping involves ploughing the ground surface, which ultimately affects the integrity of archaeological Aboriginal

sites, in particular open camp sites, within the 'plough zone' by moving deposits both horizontally and vertically. The grazing of hoofed livestock significantly shuffles or compacts the ground surface.

The directs impacts to the ground surface through vegetation clearance, cropping and grazing ultimately results in indirect impacts to Aboriginal sites as they ultimately accelerate soil loss. Based on the direct and indirect impacts which have affected the modification area, sites such as artefact scatters or isolated finds present within the modification area are likely to be in a secondary context and not associated with intact subsurface deposits.

5.5.3 Conclusion

Based on knowledge of the environmental contexts of the modification area and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of landforms within the modification area to contain Aboriginal objects (**Table 5-5**), and what types of sites may be present within the modification area (**Table 5-6**).

Table 5-5: Likelihood of landforms within the modification area to contain Aboriginal objects.

Survey Unit	Landform type	Likelihood to contain Aboriginal objects
1	Drainage	Archaeological studies in the region indicate that banks and elevated terraces adjacent to drainage lines or watercourses were favoured occupation locations and therefore have high potential for occupation sites to be present. Due to the presence of a semi-permanent creek (White Creek) in the modification area, low-density artefact scatters are the most likely site type to be recorded. Previous studies in the district also indicate that these landforms may contain intact deposits however as most of these landforms have been impacted by erosion and cultivation these sites may be dispersed, and intact deposits would only be present if deposits are deep.
2	Slopes (gentle gradient)	Slopes are a degrading landform, especially in the modification area where vegetation removal, cultivation and grazing has accelerated soil loss. Given the slopes in the modification area consist of gentle gradients they are still suitable for occupation and often favoured as they are more elevated, however, when distant to water they are less likely to have been occupied. The mid-slopes located to the south are less likely to have been utilised for camping.
3	Flats	Flat landforms were favoured occupation locations when in proximity to permanent and semi-permanent water sources. However, the flat landforms characterised in this survey unit include areas over 200 m from water sources. Due to this distant and the uniformity of this landform there are no distinct resources which would have encouraged occupation. Past studies show that isolated finds and low-density artefact scatters may still be present in the landforms however they are generally in a secondary context from agricultural practices.

Table 5-6: Likelihood of certain site types being present in the modification area.

Site type	Likelihood of being present in the modification area
Isolated finds	As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the modification area.
Open artefact scatters	Stone artefact distributions of variable artefact densities are some of the most common Aboriginal objects found within the region. A general correlation between landform and the nature of the evidence of past Aboriginal occupation is evident. As most of the modification area is within gently sloping to flat landforms intersected by drainages, artefact scatters are one of the most likely site types to be identified. However, as the watercourses within the modification area are ephemeral, sites are most likely to be low density and low complexity, reflecting short term or one-off occupation patterns. It is noted that two artefact scatters (36-3-4095 [SNI-AS86] and 36-3-4102 [SNI-AS85]) are present in the modification area, and that this generally increases the likelihood for further artefact to be present in the landscape.

Site type	Likelihood of being present in the modification area
Culturally modified trees	While most of the modification area has been cleared for agricultural activities, remnant stands of mature vegetation are scattered throughout the modification area associated with the drainage lines, fence line, property boundaries and along Birriwa Bus Route South. The extent of vegetation clearance across the modification area increases the likelihood that any modified trees have been removed. However, should mature native vegetation remain, particularly along watercourses within the modification area, culturally modified trees may be present. Scarred trees have also been commonly recorded across the local area despite widespread vegetation clearance.
Grinding grooves	Fourteen grinding grooves sites have been recorded in the surrounding area indicating this site type has potential to be recorded if outcropping sandstone is present. Outcropping sandstone is most likely to be present along the drainages or higher elevation landforms as opposed to flats and gentle slopes.
PAD	This site type is considered possible in areas where A-Horizon soils are relatively undisturbed. However, given the high levels of disturbance across the project area and the lack of permanent and semi-permanent waterways, the likelihood of identifying PADs is significantly reduced.
Rock shelters	Several rock shelters have been recorded near the modification area however rock shelters will not be recorded in the modification area due to the lack of escarpments.
Bora/Ceremonial sites	The distribution of ceremonial sites and Bora grounds across the landscape is somewhat unpredictable as the choice of their location appears to be based on spiritual reasons rather than simply landscape features and resources. As site types such as modified trees and art sites have been recorded in the district, their presence in the modification area cannot be discounted. Overall, this site type is a rare site type with a low likelihood of being present and remaining extant. These sites are generally identified through consultation with the RAPs.

5.6 RESEARCH QUESTIONS

Several research questions can meaningfully be applied to the investigation of the modification area. These research questions include:

- What resources were available to the Aboriginal people using the land within the modification area (food, stone, and water) and what resources were transported to the area?
- What tasks were Aboriginal people undertaking at the sites?
- How do the raw materials recorded within the modification area compare to those in recorded in the surrounding region?

6 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

6.1 SAMPLING STRATEGY AND FIELD METHODS

Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004).

The aim of any archaeological survey is not to locate each artefact in a landscape but to undertake investigations so that the archaeological potential and archaeological characteristics of all landforms within the modification area are known. Therefore, the aims of the survey were to:

- Inspect all landform types in the modification area so that their archaeological potential can be determined
- Evaluate whether the predictive model set out in **Section 5.5** is valid
- Determine if the research questions set out in **Section 5.6** can be answered
- Determine if any landforms of the modification area require test excavation to understand the archaeological potential at a particular location
- Undertake sufficient assessment to satisfy Sections 2.2, 2.4, 2.5, 2.6, and 2.7 in the Guide
- Collect sufficient data so that the results can be presented in an ACHAR as set out in Section 3 in the Guide
- Undertake survey and record keeping satisfying Requirements 1–13 of the Code of Practice.

Full pedestrian survey was completed across survey unit 1 (drainage landforms) with surveyors spaced approximately 20 m apart as per the assessment methodology provided in **Appendix 2**. Flat and gently sloping landforms (survey unit 2 and 3) were subject to targeted survey. All trees deemed to be of sufficient maturity to contain cultural modification were inspected.

The Birriwa Bus Route South portion of the modification area was not surveyed as part of this assessment as it has been previously surveyed by OzArk in 2023. The results of the 2023 survey along Birriwa Bus Route South have been incorporated into the results below. One site identified during these previous assessments (36-3-3913; Birriwa Bus Route ST-1) is located along the portion of Birriwa Bus Route South (see **Section 6.5**).

6.2 PROJECT CONSTRAINTS

Constraints primarily consisted of poor ground surface exposure (GSE) in survey unit 3 (gentle slopes) in the southwest portion of the modification area where ground visibility was impeded by dense ground cover (**Figure 6-1**). No other constraints were encountered during the survey of the modification area.

Figure 6-1: Examples of exposure and visibility within the modification area.

	
1. View south across grazed paddock within survey unit 3.	2. View south across ploughed paddock extending from survey unit 2 to survey unit 1.

6.3 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are ground surface visibility (GSV) and GSE. These factors are quantified to ensure that the survey data provides adequate evidence for the evaluation of the archaeological materials across the landscape. For the purposes of the current assessment, these terms are used in accordance with the definitions provided in the Code of Practice.

GSV is defined as:

> *… the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials. It is important to note that visibility, on its own, is not a reliable indicator of the detectability of buried archaeological material. Things like vegetation, plant or leaf litter, loose sand, stone ground or introduced materials will affect the visibility. Put another way, visibility refers to 'what conceals'* (DECCW 2010a: 39).

GSE is defined as:

> *… different to visibility because it estimates the area with a likelihood of revealing buried artefacts or deposits rather than just being an observation of the amount of bare ground. It is the percentage of land for which erosion and exposure was sufficient to reveal archaeological evidence on the surface of the ground. Put another way, exposure refers to 'what reveals'* (DECCW 2010a: 37).

Table 6-1 calculates the effective survey coverage within the modification area. In general, **Table** 6-1 presents an approximation of the amount of ground surface able to be seen at any location within specific landform units. For example, at any one location within the flat and drainage landforms of the modification area approximately 50% of the ground surface could be seen due

to recent crop harvest. Large exposures in these landforms were generally confined to eroded drainage lines, vehicle access tracks and dam contours. GSE within sloping landforms were confined to exposures along vehicle tracks.

Despite the high level of exposure within flats, GSV was less than that within drainage landforms due to the recent harvesting resulting in more cropped material/debris obscuring the ground surface.

Within the gently sloping landforms, GSE was restricted to vehicles tracks.

Table 6-1: Effective survey coverage within the modification area.

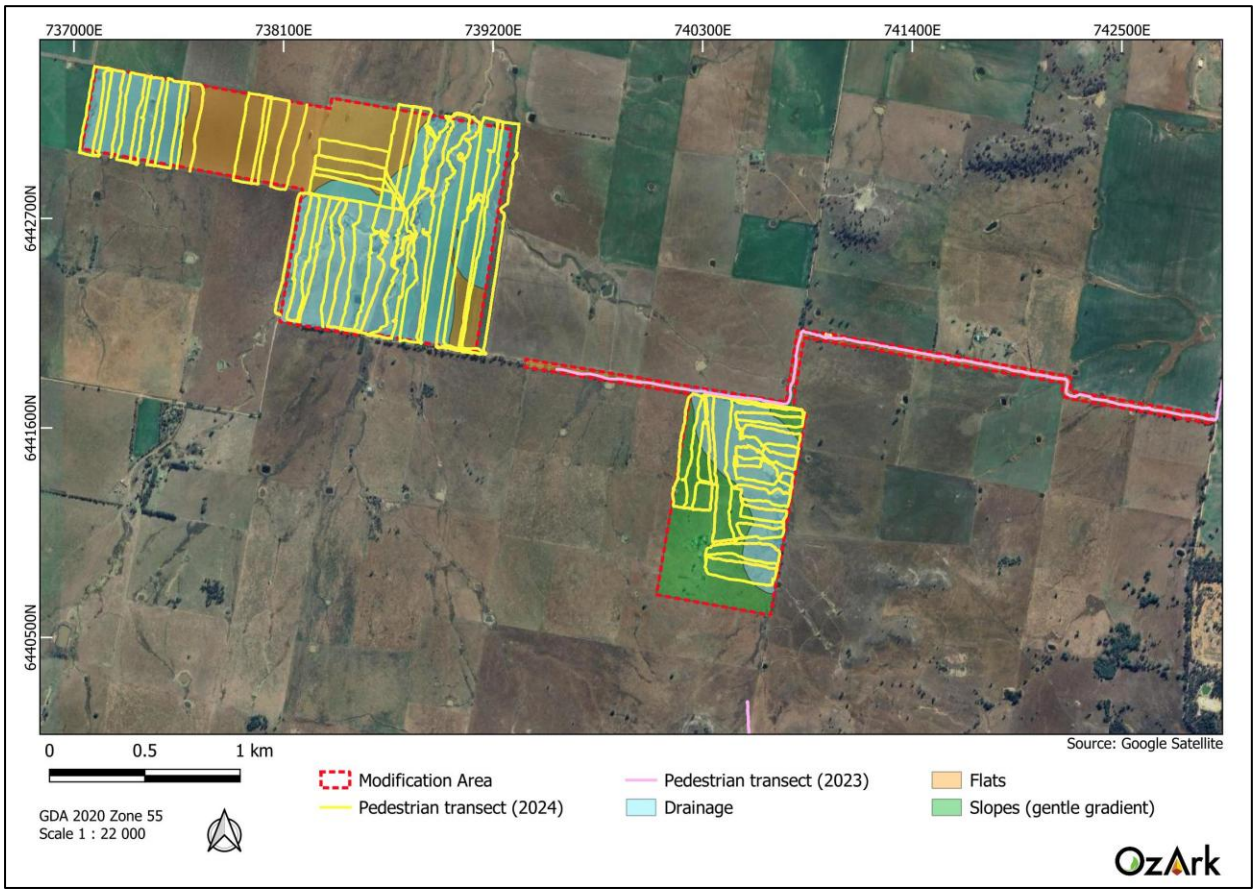
Survey Unit	Landform	Survey Unit Area (sq m)	Visibility %	Exposure %	Effective Coverage Area (sq m)	Effective Coverage %
1	Drainage	1,585,346.1	60	50	475,603.83	30
2	Flats	632,176.77	15	50	47,413.26	7.5
3	Slopes	475,486.09	60	15	42,793.7481	9

Table 6-2 demonstrates that although the survey efficacy within survey units 2 and 3 within the modification area was low at 7.5% and 9% respectively due to the dense grass vegetation and recent harvesting hampering visibility across the areas of exposure. However, survey efficacy within survey unit 1 which comprises majority of the modification area was much higher at 30%, and considered to be the most archaeologically sensitive landform present across the modification area. **Figure 6-2** shows the pedestrian coverage in relation to the survey units.

Table 6-2: Effective survey coverage and incidences of site recording.

Landform	Landform area (sq m)	Area Effectively Surveyed	% of Landform Effectively Surveyed	Number of Sites	Number of recorded artefacts or features
Drainage	1,585,346.1	475,603.83	30	3	3
Flats	632,176.77	47,413.26	7.5	0	0
Slopes	475,486.09	42,793.7481	9	0	0

Figure 6-2: Survey coverage across the modification area.



6.4 ABORIGINAL SITES RECORDED

Three isolated finds were identified during the survey. **Table 6-3** summarises the Aboriginal cultural heritage sites recorded and further details on each site follows. The location of these sites within the modification area is shown on **Figure 6-3**.

Table 6-3: Aboriginal cultural heritage sites recorded during the survey.

AHIMS ID	Site name	Site type	Coordinates (GDA Zone 55) East	Coordinates (GDA Zone 55) North	Survey Unit
36-3-4283	White Creek IF-1	Isolated find	738680	6442455	1
36-3-4284	White Creek IF-2	Isolated find	738153	6442381	1
36-3-4285	White Creek IF-3	Isolated find	738083	6442193	1

Figure 6-3: Recorded sites within the modification area.

White Creek IF-1

Site type: Isolated find

GPS coordinates: GDA 2020 Zone 55 738680 E, 6442455 N

Location of site: The site is located approximately 6.2 km east of Birriwa and approximately 390 m north of Birriwa Bus Route South in Lot 40 DP750755.

Description of site: The site consists of a complete flake manufactured from a fine-grained siliceous material situated in a deeply incised tributary of White Creek (**Figure 6-4**). The artefact measures 34 x 35 x 10 millimetres (mm) and is in a tertiary state of reduction. The GSE at the time of recording was low to moderate (30%) with high GSV (80%). Soils include yellow-brown sandy clay soil with some creek gravel material present. Surrounding vegetation comprises of low grasses and weeds and scattered box vegetation.

The site is in a secondary context given its location in a highly incised drainage line and is not associated with subsurface deposits.

Figure 6-4: White Creek IF-1. View of site and recorded artefact.

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<tr>
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<tr>
<td>1. View southeast of White Creek IF-1.</td>
<td>2. Ventral view of the complete flake at White Creek IF-1</td>
</tr>
</table>

White Creek IF-2

Site type: Isolated find

GPS coordinates: GDA 2020 Zone 55 738153E 6442381N

Location of site: The site is located approximately 5.7 km east of Birriwa and approximately 220 m north of Birriwa Bus Route South in Lot 60 DP750755.

Description of site: The site includes a basalt axe blank fragment located on a livestock track that runs parallel to White Creek (**Figure 6-5**). The fragment measures 84 x 55 x 17 mm with no

evidence of grinding. Surrounding vegetation comprises of low grasses and weeds and scattered box vegetation.

The site is likely in a secondary context as indicated by the surrounding evidence of wash erosion and livestock trampling and is not considered to be associated with subsurface deposits.

Figure 6-5: White Creek IF-2. View of site and recorded artefact.

	
1. View of south of White Creek IF-2 showing site location in proximity to White Creek.	2. Basalt axe blank fragment at White Creek IF-2.

White Creek IF-3

Site type: Isolated find

GPS coordinates: GDA 2020 Zone 55 738083E 6442193N

Location of site: The site is located approximately 5.7 km east of Birriwa and approximately 20 m north of Birriwa Bus Route South in Lot 60 DP750755.

Description of site: The site is situated on a flat landform adjacent to White Creek and comprises a complete flake manufactured from a fine-grained siliceous material (**Figure 6-6**). The artefact measures 31 x 18 x 4 mm and is in a tertiary state of reduction. The GSE at the time of recording was moderate (50%) with high GSV (80%) that revealed compact yellow-brown clay soil.

The site is in a cultivated paddock and is therefore in a secondary context. As such, the site is not considered to be associated with potential subsurface deposits.

Figure 6-6: White Creek IF-3. View of site and the recorded artefact.

	
1. View south across White Creek IF-3 in a cultivated paddock looking towards Birriwa Bus Route South.	2. Ventral view of the recorded complete flake at White Creek IF-3.

6.5 PREVIOUSLY RECORDED ABORIGINAL SITES LOCATED

Three previously recorded and registered Aboriginal sites are in the modification area (**Figure 6-10**). Further details of these sites follow.

36-3-3918 (Birriwa Bus Route South ST-1)

Site type: Modified tree (scarred)

GPS coordinates: GDA 2020 Zone 55 740958E 6442084N

Description of site: The site was recorded by OzArk in 2023(b) as "*Birriwa Bus Route South ST-1 consists of two scars on a mature yellow box tree. The tree exhibits two scars, one northeast-facing and one southwest-facing. The northeast-facing scar is an oval shape measuring 87 cm in length and 17 cm in width. Indications of burning are evident on the lower half of the scar. The southwest-facing scar is an elongated shape measuring 137 cm in length and 20 cm in width. No axe marks were observed on either scar.*

The site is located over 200 m from the nearest water source, with the nearest named waterway being White Creek, 2 km to the west."

Assessment results: As the site was recently assessed by OzArk in 2023(b), it was not reinspected as part of this ACHAR (**Figure 6-7**).

Figure 6-7: 36-3-3918 (Birriwa Bus Route South ST-1) during OzArk 2023b assessment.

	
1. View of the southwest orientated oval scar.	2. Close up view of the northeast orientated oval scar.

36-3-4095 (SNI-AS86)

Site type: Artefact scatter

GPS coordinates: GDA 2020 Zone 55 740509E 6441545N

Description of site: The site was recorded by EMM (2024) as "*Two artefacts identified on a modified 2nd order creek line (dammed), a tributary of White Creek. Artefacts identified include a quartz flake and potential silcrete flake (broken). Natural silcrete cobbles were observed in the vicinity of the artefacts. Dead livestock nearby prevented extensive investigation in this locale, but potentially more artefacts have been exposed during dam construction.*"

Assessment results: The site location was located during the survey however no artefacts were observed despite moderate GSE (40%) (**Figure 6-8**). The site has been disturbed by stock trampling and erosional processes that may have displaced the artefacts since initial recording.

Figure 6-8: View of site 36-3-4095 (SNI-AS86) location during the survey.

	
1. View northwest across 36-3-4095 (SNI-AS86) at the time of assessment.	2. View east across 36-3-4095 (SNI-AS86) at the time of assessment.

36-3-4102 (SNI-AS85)

Site type: Artefact scatter

GPS coordinates: GDA 2020 Zone 55 740317E 6441637N

Description of site: The site was recorded by EMM (2024) as "*Two artefacts identified across 50m of an access track which leads to a homestead. One artefact was an orange/red mudstone flake, with fossilised leaf imprints on both sides. The other artefact was a grey silcrete core. Visibility and exposure were good on the access track, however there is potential for more surface artefacts to be hidden in the surrounding grasses where visibility is poor.*"

Assessment results: The site location was successfully located during the survey; however, no artefacts were observed (**Figure 6-9**). The lack of visible artefacts may be attributed to the use of the vehicle track that intersects the site extent and very low ground surface visibility beyond the vehicle track exposure.

Figure 6-9: View of site 36-3-4102 (SNI-AS85) location during the survey.

	
1. View north across 36-3-4102 (SNI-AS85) at the time of assessment.	2. View south across 36-3-4102 (SNI-AS85) at the time of assessment.

Figure 6-10: Previously recorded sites within the modification area.

6.6 ABORIGINAL COMMUNITY COMMENTS ON THE SURVEY

No specific comments relating to the survey methodology, or the landforms being surveyed, were raised by the RAPs during the survey. No cultural values relating to the modification area were identified to OzArk during the survey.

6.7 SUMMARY OF SURVEY RESULTS

Two previously recorded sites (36-3-4095 [SNI-AS86] and 36-3-4102 [SNI-AS85]) were revisited during the survey. No artefacts could be located at either site. Site 36-3-3913 (Birriwa Bus Route South ST-1) was not revisited as the site had recently been inspected by OzArk (2024) which described the tree and scar are in good condition.

Three previously unrecorded isolated finds (White Creek IF-1, White Creek IF-2 and White Creek IF-3) were recorded during the survey. Of these, two were identified on the immediate bank of White Creek and the third was identified within the channel of an unnamed tributary of White Creek. None of the recorded sites are considered to be associated with intact subsurface deposits.

All recorded stone artefact sites are in survey unit 1 (drainages) while the scarred tree is in survey unit 2 (flats).

Recorded artefacts include two flakes manufactured from a fine-grained siliceous material and the other is an axe blank fragment manufactured from basalt.

6.8 DISCUSSION

The previous studies and predictive model suggested that artefact scatters and isolated finds would be the most common site types to be recorded, with scarred trees as a possibility, should mature trees be present (**Section 5.4**). These sites were predicted to be identified primarily across survey unit 1 (land within 200 m of drainages) due to the proximity to water. The results of the survey are consistent with the predictive model in outline in **Section 5.5** with all newly recorded sites recorded within 50 m of either White Creek or a tributary of the watercourse.

The sites recorded during the survey (all isolated finds) are representative of sites recorded in the region. Regional studies show quartz as the dominant material with some instances of mudstone and volcanics such as basalt, and that most artefacts recorded will be unmodified flakes. While no artefacts manufactured from quartz were identified during the survey, the materials recorded (fine-grained siliceous materials and basalt) are common materials in the regions. Additionally, two of the recorded artefacts are unmodified flakes. While axe blanks are less common artefact types in the region, similar artefact types were identified at Beryl (NGH Environmental 2017).

In the past, sites such as isolated finds would have been common, and on a state-wide scale, isolated finds would remain the most common site type recorded. While the recorded basalt axe blank fragment is less common in terms of artefact type, this is typical of all formal tools.

Although the sites recorded during this assessment are not considered to have increased archaeological or research potential, their presence alone, in albeit a much-modified landscape, remains a memory of the past in a landscape that is fast changing (or has changed). The survey confirmed that the land within the modification area has been heavily disturbed through agricultural practices, including ploughing, grazing, dams, contour banks and road construction. This confirms that the potential for intact subsurface archaeological deposits is low, and test excavation was not warranted (refer to **Section 6.8.1**).

6.8.1 Need for test excavation

A major aim of this assessment was to determine whether any portions of the modification area require test excavation to understand the archaeological potential at a particular location (**Section 6.1**).

At a desktop level, the archaeological potential of the landforms present was considered greatest across survey unit 1 which includes a 200 m buffer of watercourses including and White Creek. This determination was based on the results of previous archaeological assessments completed across the region which indicate that artefacts scatters, isolated finds and PADs have been commonly recorded within 100 m of similar semi-permanent watercourses but are more commonly found along the immediate banks and/or terraces associated with these watercourses (**Section 5.2** and **5.3**). These site types have also been recorded along drainage lines, but previous investigations show they are typically found within 30 m of drainages given they are less reliable sources of water.

While previous archaeological assessments in the surrounding area indicate an increased likelihood of PADs being present in association with surface manifestations within the modification area based on watercourses (particularly White Creek) being present, the results of the field survey conclude that the general site integrity is low for the recorded isolated finds. The determination that none of the recorded sites are associated with PAD was based on the observation that all recorded sites are in secondary contexts having been moved by the repeated, extensive ploughing undertaken across the modification area, or being in the channel of a drainage line.

With regards the remaining areas within survey unit 1, no areas of PAD were identified, the lack of PAD recordings is based on the extent of cultivation and erosion evident across these landforms. Thin A-horizon soils were evident in soil profiles along White Creek and its tributaries (**Figure 6-11**). Additionally, there was no topographic variation in the landforms in these areas.

As such, no areas of subsurface potential were identified, and no test excavation was undertaken for this assessment.

Figure 6-11: View of the stratigraphic profile within the modification area.

	
1. Stratigraphic profile of soils adjacent to White Creek (approximately 10 cm).	2. Stratigraphic profile of soils adjacent to White Creek (approximately 10 cm).

6.8.2 Responses to the research questions

In **Section 5.6** several research questions were advanced to guide the survey of the modification area. Following the survey, responses to these research questions are set out below.

- What resources were available to the Aboriginal people using the land within the modification area (food, stone, and water) and what resources were transported to the area?
    - No specific food resource locations were noted, and water resources were limited to White Creek and its tributaries. At the time of survey, little water was present within the creek. No outcropping rock was present within the modification area. Therefore, the implication is that all the raw material used in the manufacturing of the recorded artefacts was transported into the area.
- What tasks were Aboriginal people undertaking at the sites?
    - Isolated finds are generally associated with discard during transit or activities that leave little material trace, such as hunting and resource gathering, rather than habitation.
    - The discard of the axe blank fragment is difficult to attribute to a specific activity given the lack of associated debitage and the location of the object in a secondary context.
    - The low density of the artefact scatter 36-3-4095 (SNI-AS86) and 36-3-4102 (SNI-AS85) identified within the modification area in proximity to the drainage lines demonstrates a short-term or one-off occupational pattern within the area. This may be associated with transitory periods.

- How do the raw materials recorded within the modification area compare to those in recorded in the surrounding region?
    - The artefacts recorded in the modification area included two unmodified flakes manufactured from a fine-grained siliceous material and a broken ground edge axe manufactured from basalt. Due to the very small size of the artefact assemblage the assemblage is not robust enough for statistical analysis or comparison to raw materials identified across the broader region other than acknowledging that these materials are commonly identified in the surrounding region.

7 SIGNIFICANCE ASSESSMENT

7.1 INTRODUCTION TO SIGNIFICANCE ASSESSMENT

7.1.1 Identifying cultural significance

The concept of cultural significance is used in Australian heritage practice and legislation to encompass all the cultural values and meanings that might be recognised in a place. The *Burra Charter*'s definition of cultural significance is broad and encompasses places that are significant to Indigenous cultures.

The *Burra Charter* definition of 'place' is also broad and encompasses Indigenous places of cultural significance. 'Place' includes locations that embody spiritual value (such as Dreaming places, sacred landscapes, and stone arrangements), social and historical value (such as massacre sites), as well as scientific value (such as archaeological sites). In fact, one place may be all these things or may embody all these values at the same time.

In some cases, the find-spot of a single artefact may constitute a 'place'. Equally, a suite of related locations may together comprise a single 'place', such as the many individual elements that make up a Songline. These more complex places are sometimes called a cultural landscape or cultural route.

The Guide notes that cultural significance is comprised of an assessment of social values, scientific values, aesthetic values, and historic values. These values are described below.

7.1.1.1 Social or cultural value

Social or cultural value refers to the spiritual, traditional, historical, or contemporary associations and attachments the place or area has for Aboriginal people. Social or cultural value is how people express their connection with a place and the meaning that place has for them (Articles 1.1, 1.2, 1.12, 5, and 8–11: Burra Charter).

Places of social or cultural value 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 or cultural value be damaged or destroyed.

There is not always consensus about a place's social or cultural value, because people experience places and events differently, expressions of social or cultural value do vary and, in some instances, will be in direct conflict. When identifying values, it is not necessary to agree with or acknowledge the validity of each other's values, but it is necessary to document the range of values identified.

Social or cultural value can only be identified through consultation with Aboriginal people. This could involve a range of methodologies, such as cultural mapping, oral histories, archival

documentation, and specific information provided by Aboriginal people specifically for the investigation.

Cultural value involves both traditional links with specific areas, as well as an overall concern by Aboriginal people for their sites generally and the continued protection of these. This type of value may not be in accord with interpretations made by the archaeologist: a site may have low archaeological value but high social value, or vice versa.

7.1.1.2 Scientific (archaeological) value

This refers to the importance of a landscape, area, place or object because of its rarity, representativeness, and the extent to which it may contribute to further understanding and information (Articles 1.2, 5, and 8: Burra Charter).

Assessing a site in this context involves placing it into a broader regional framework, as well as assessing the site's individual merits in view of current archaeological discourse. This type of value relates to the ability of a site to answer current research questions and is also based on a site's condition (integrity), content and representativeness.

The overriding aim of cultural heritage management is to preserve a representative sample of the archaeological resource. This will ensure that future research within the discipline can be based on a valid sample of the past. Establishing whether a site can contribute to current research also involves defining 'research potential'. Questions regularly asked when determining significance are: can this site contribute information that no other site can? Is this site representative of other sites in the region?

Information about scientific values will be gathered through any archaeological investigation undertaken. Archaeological investigations must be carried out according to Heritage NSW's Code of Practice.

Often scientific values are informed by social values that allow a contemporary understanding of the archaeological data to be understood.

7.1.1.3 Aesthetic value

This refers to the sensory, scenic, architectural, and creative aspects of the place (Articles 1.12 and 8: Burra Charter). It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use.

7.1.1.4 Historic value

Historic value refers to the associations of a place with a historically important person, event, phase, or activity in an Aboriginal community. Historic places do not always have physical

evidence of their historical importance (such as structures, planted vegetation or landscape Modifications). They may have 'shared' historic values with other (non-Aboriginal) communities (Articles 1.12–1.16: Burra Charter).

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain enough understanding of historic values.

7.2 ASSESSED SIGNIFICANCE OF THE RECORDED SITES

Table 7-1 presents a summary of the significance assessment of Aboriginal cultural heritage sites recorded during this assessment. Further details of each of the assessment criteria are provided below.

Social or Cultural Value

The social and cultural value of Aboriginal sites is generally determined through consultation with Aboriginal people. Generally, the Aboriginal community regard all sites as having high cultural significance. This is due to all sites, even displaced artefact sites, being able to provide a connection to their ancestors, as well as being a tangible reminder of the past Aboriginal occupation of the area.

A copy of the draft ACHAR was sent to all RAPs on 9 April 2025 with a 28-day review period closing 13 May 2025. WVWAC responded denoting the high social and cultural significance of all Aboriginal sites located within the modification area.

Archaeological/Scientific Value

White Creek IF-1, White Creek IF-2 and White Creek IF-3 have been assessed as having low archaeological significance. Past land use, principally cultivation, and erosion has disturbed the integrity of the sites. Further, these sites have low scientific values because they have little or no research potential and a very limited ability to inform researchers about the nature and extent of Aboriginal occupation in the area.

Sites 36-3-4095 (SNI-AS86) and 36-3-4102 (SNI-AS85) were recorded by EMM (2023b). EMM did not assess significance of each site individually, instead concluding that most isolated or low-density artefact sites have limited scientific potential.

Site 36-3-3913 (Birriwa Bus Route South ST-1) has been assessed as having low archaeological and scientific value as multiple other culturally modified trees have been identified by local studies, and they are therefore not a rare or representative sample of the region.

Aesthetic Value

White Creek IF-1, White Creek IF-2 and White Creek IF-3 been assessed as having low aesthetic value. The sites do not have significant aesthetic value as the integrity of the sensory landscape has been altered in historic and modern times. Additionally, the artefacts themselves are not remarkable and are located within secondary locations.

EMM (2023b) did not assign a level aesthetic value to any sites recorded within the modification area however it is noted that "*all sites have some level of significance*" (EMM 202b3: 404). Therefore, sites 36-3-4095 (SNI-AS86) and 36-3-4102 (SNI-AS85) have been assessed as having low aesthetic value.

Site 36-3-3913 (Birriwa Bus Route South ST-1) is in a road reserve and has also been assigned low aesthetic value.

Historic Value

The recorded Aboriginal sites do not have any association with important persons, places, or events. Therefore, the sites have no historic values.

Table 7-1: Aboriginal cultural heritage: significance assessment.

AHIMS ID	Site Name	Social or Cultural Value	Archaeological / Scientific Value	Aesthetic Value	Historic Value
36-3-4283	White Creek IF-1	High (provisional)	Low	Low	Nil
36-3-4284	White Creek IF-2	High (provisional)	Low	Low	Nil
36-3-4285	White Creek IF-3	High (provisional)	Low	Low	Nil
36-3-3918	Birriwa Bus Route South ST-1	High (provisional)	Low	Low	Nil
36-3-4095	SNI-AS86	High (provisional)	Low	Low	Nil
36-3-4102	SNI-AS85	High (provisional)	Low	Low	Nil

7.2.1 Statement of significance

The intangible Aboriginal cultural values across the wider district relate to several important places and themes associated with non-archaeological cultural values. These places mainly relate to spiritual and ceremonial connections across the broader landscape that may encompass areas of culturally significant geographical features.

There may be places with intangible cultural significance within the modification area, although no specific locations have so far been identified by the Aboriginal community.

The scientific value of the sites within the modification area are considered to have low potential to provide further information on the traditional Aboriginal use of the region. The remainder of the modification area has very low scientific value as the recorded artefacts are likely in a secondary context within landforms heavily disturbed by agricultural activities.

Apart from the general understanding of the aesthetic qualities of the modification area, there are no known places with identified aesthetic values.

8 ASSESSING HARM

8.1 AVOIDING AND MINIMISING HARM

8.1.1 Conserving significant Aboriginal cultural heritage

An object of the NPW Act is the '*conservation of objects places and features… of cultural value within the landscape, including… places, objects and features of significance to Aboriginal people*' (s.2A(1(b)(i)).

Two primary objectives when managing harm to an Aboriginal object are:

- Impacts to significant Aboriginal objects and places should always be avoided wherever possible
- Where impacts to Aboriginal objects and places cannot be avoided, Modifications should be amended to reduce the extent and severity of impacts to significant Aboriginal objects and places using reasonable and feasible measures.

8.1.2 Opportunities to conserve Aboriginal cultural heritage values

Based on the outcomes of the survey, the Applicant has designed the modification development (impact) footprint of the solar panels and associated infrastructure to avoid sites White Creek IF1 to IF-3 and 36-3-4095 (SNI-AS86) . Site 36-3-4102 (SNI-AS85) is unable to be avoided.

The dripline of scarred tree site 36-3-3918 (Birriwa Bus Route South ST-1) extends into the development footprint for the Birriwa Bus Route South upgrades however there are opportunities to avoid harm to this site through the implementation of management measures such as building the road up at this location as opposed to undertaking any grading within the dripline.

No areas of PAD were identified across the modification area, or at any of the recorded sites, despite the presence of White Creek and its tributaries for several reasons including high levels of disturbance (both man-made and natural), lack of deep cultural bearing deposits, lack of differentiation across the landforms and lack of tangible evidence. While this assessment has concluded that the landforms across the modification area adjacent to the watercourses have low archaeological potential, a 40 m buffer has been applied to White Creek and its main tributary.

8.2 LIKELY IMPACTS TO ABORIGINAL HERITAGE FROM THE MODIFICATION

Table 8-1 presents a summary of potential impacts to Aboriginal cultural heritage associated with the Modification.

As noted in **Section 8.1.2**, the three newly recorded isolated finds and a previously recorded artefact scatter will be avoided (see **Figure 8-1**) however one previously recorded artefact scatter (36-3-4102 [SNI-AS85]) will be harmed (see **Figure 8-2**).

There is potential for site 36-3-3918 (Birriwa Bus Route South ST-1) to be avoided from harm during the proposed upgrades to Birriwa Bus Route South (see **Figure 8-3**) however as impacts have not been finalised in this location, this site has been listed as a site that has potential be harmed.

Table 8-1: Aboriginal cultural heritage: impact assessment.

AHIMS ID	Site Name	Type of Harm (Direct/Indirect / None)	Degree of Harm (Total/Partial / None)	Consequence of Harm (Total/Partial/No Loss of Value)
36-3-4283	White Creek IF-1	None	None	No loss of value
36-3-4284	White Creek IF-2	None	None	No loss of value
36-3-4285	White Creek IF-3	None	None	No loss of value
36-3-3918	Birriwa Bus Route ST-1	Direct	Partial	Partial loss of value
36-3-4102	SNI-AS85	Direct	Total	Total loss of value
36-3-4095	SNI-AS86	None	None	No loss of value

Figure 8-1: Location of the newly recorded isolated finds in relation to the development footprint.

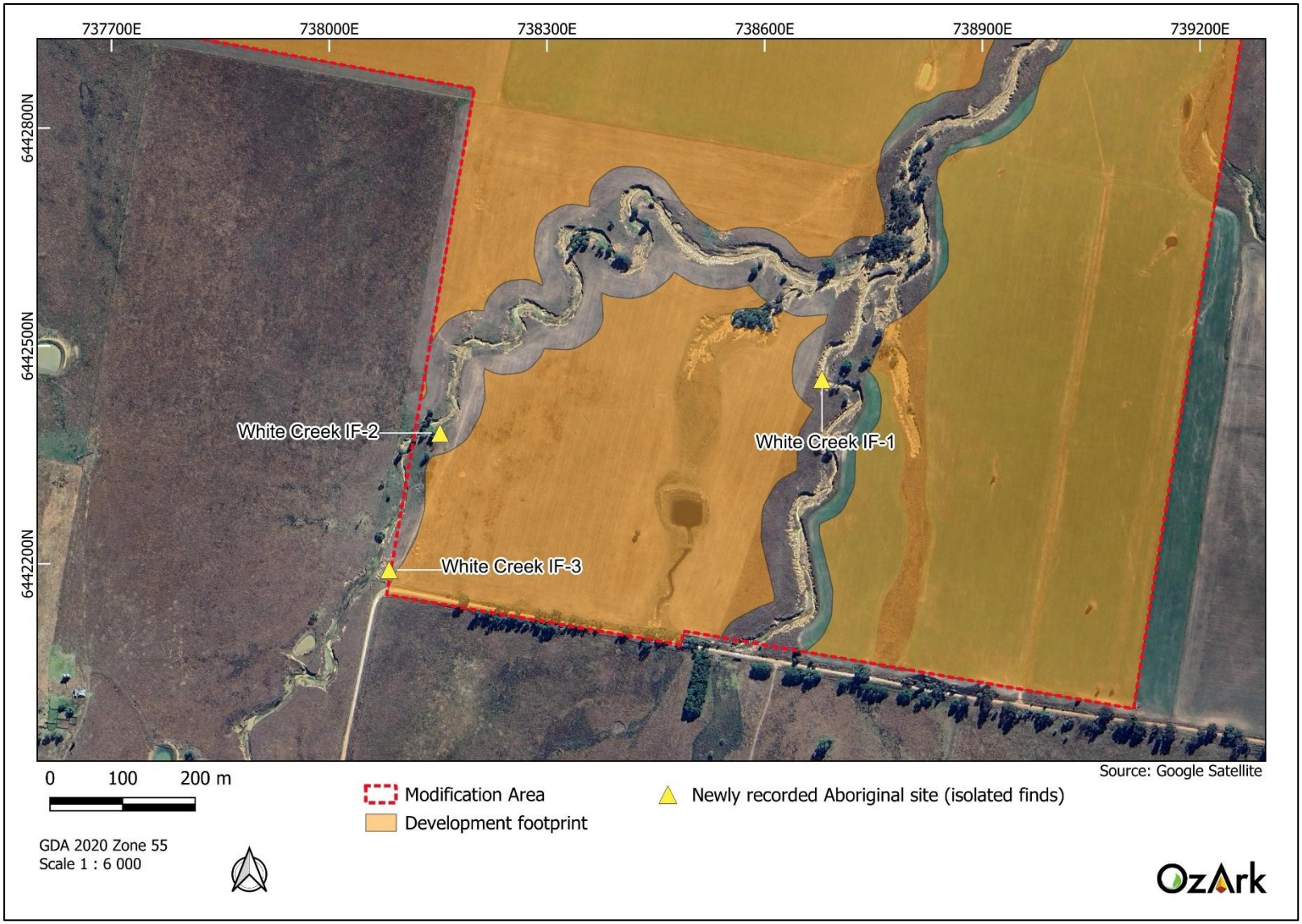


Figure 8-2: Location of the previously recorded artefact scatters in relation to the development footprint.

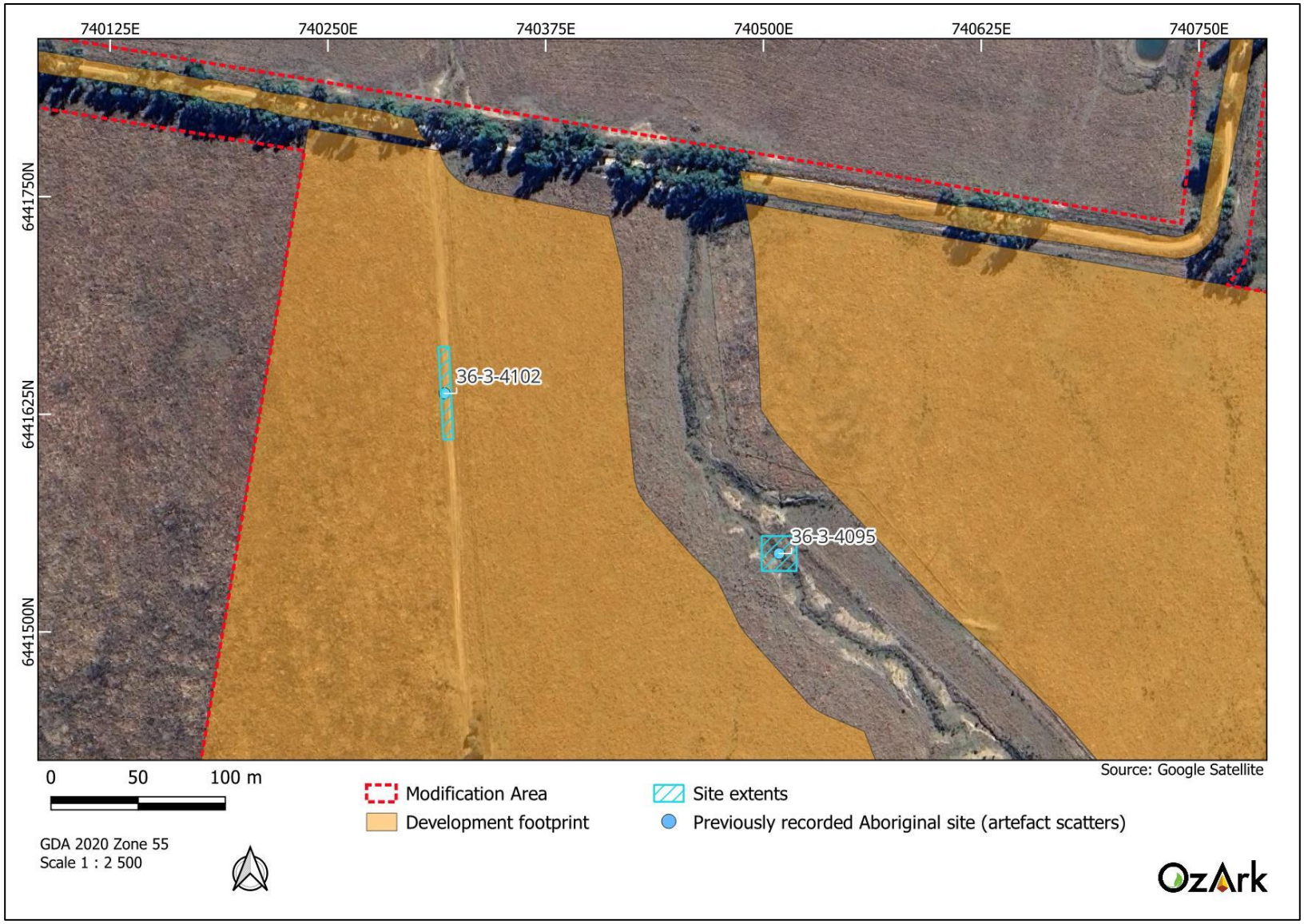
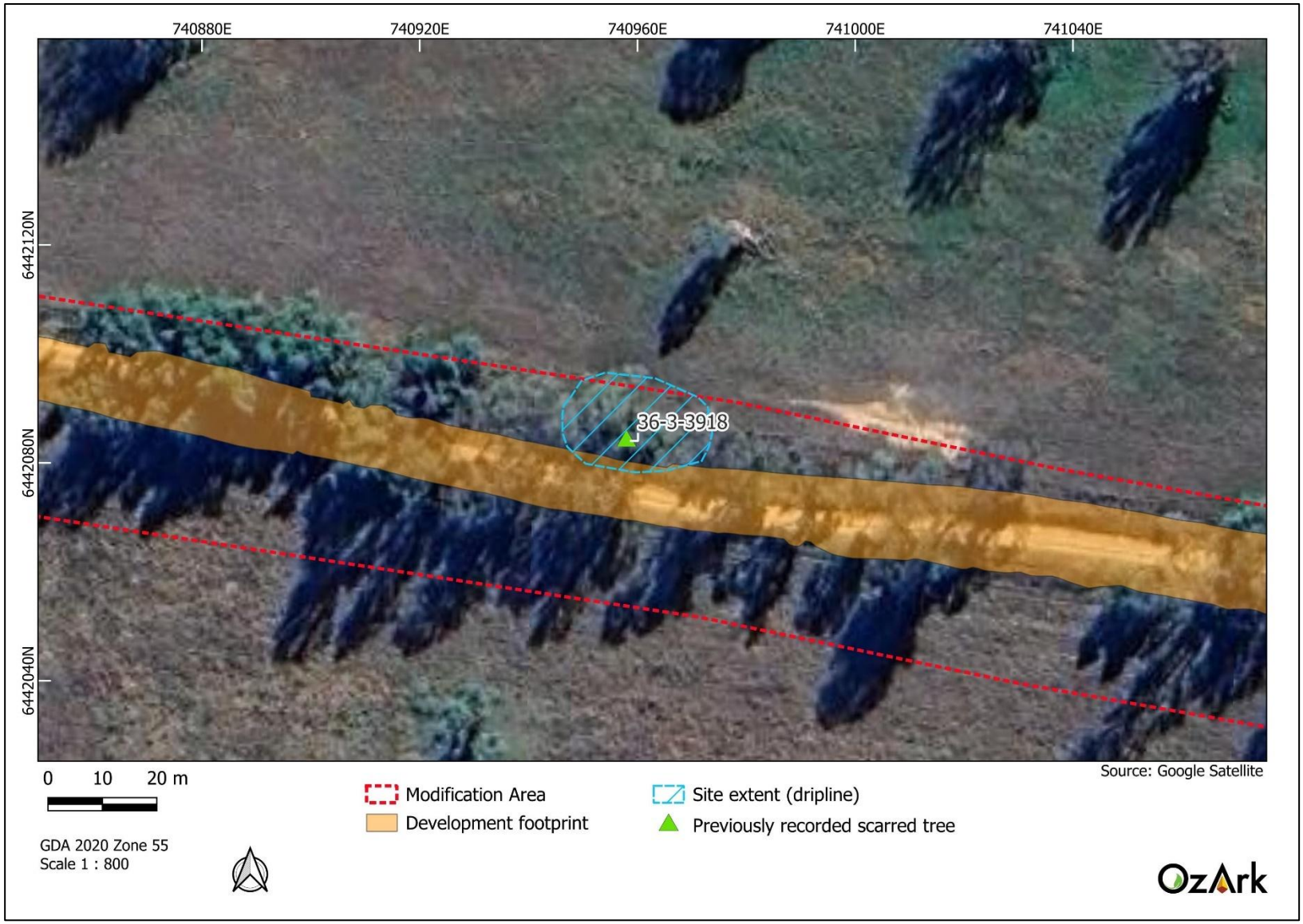


Figure 8-3: Location of the previously recorded scarred tree in relation to the development footprint.



8.3 ECOLOGICALLY SUSTAINABLE DEVELOPMENT PRINCIPLES

Ecologically sustainable development principles (ESD) (defined in s.6 of the *Protection of the Environment Administration Act 1991*) requires the integration of economic and environmental considerations (including cultural heritage) in the decision-making process. Regarding Aboriginal cultural heritage, ESD can be achieved by applying the principle of intergenerational equity and the precautionary principle.

8.3.1 Intergenerational equity

Intergenerational equity is the principle whereby the present generation should ensure the health, diversity, and productivity of the environment for the benefit of future generations.

In terms of Aboriginal heritage, intergenerational equity can be considered in terms of the cumulative impacts to Aboriginal objects and places in a region. If few Aboriginal objects and places remain in a region (for example, because of impacts under previous permits), fewer opportunities remain for future generations of Aboriginal people to enjoy the cultural benefits of those Aboriginal objects and places.

Information about the integrity, rarity or representativeness of the Aboriginal objects and places proposed to be impacted, and how they illustrate the occupation and use of land by Aboriginal people across the region, will be relevant to the consideration of intergenerational equity and the understanding of the cumulative impacts of the Modification.

Where there is uncertainty, the precautionary principle should also be followed.

8.3.2 The precautionary principle

The precautionary principle states that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

In relation to Aboriginal cultural heritage values, the precautionary principle should be applied if:

- The Modification involves a risk of serious or irreversible damage to Aboriginal objects or places or to the value of those objects or places
- There is uncertainty about the Aboriginal cultural heritage values or scientific or archaeological values, including in relation to the integrity, rarity or representativeness of the Aboriginal objects or places proposed to be impacted.

8.3.3 Principle of Integration

The Plan of Implementation of the World Summit on Sustainable Development held in Johannesburg, 2002, noted the need to "*promote the integration of the three components of sustainable development- economic development, social development and environmental protection- as interdependent and mutually reinforcing pillars*".

The principle of integration ensures mutual respect and reciprocity between economic and environmental considerations:

- Environmental considerations are to be integrated into economic and other development plans, programs, and projects
- Development needs are to be considered in applying environmental objectives.

8.3.4 Applicability to the Modification

Two of the six Aboriginal sites in the modification area have potential to be harmed by the Modification. However, of the sites which have potential to be harmed, site 36-3-3918 (Birriwa Bus Route South ST-1) may be able to be avoided once the nature of works required for the upgrades to Birriwa Bus Route South are known.

It is acknowledged that there has been an increase in the number of Aboriginal sites being harmed in the local area due to the number of renewable projects being developed, and therefore the Modification contributes to the accumulative impacts to the Aboriginal cultural heritage of the area.

Table 8-2 examines the application of ESD principles to the Modification.

Table 8-2: Application of ESD principles to the modification.

ESD principle	Response
Avoiding and minimising harm	**Section 9** sets out mechanisms by which to avoid and minimise harm to Aboriginal cultural heritage values from the Modification.
The integration principle	The Modification presents a strong case for the broader environmental benefits arising from environmentally responsible development. The environmental consequences of the Modification have been carefully assessed.
The precautionary principle	The Aboriginal cultural heritage investigation has followed the precautionary principle by undertaking a robust Aboriginal cultural heritage assessment to ensure that the Aboriginal objects and values at the modification area have been identified. The robust assessment has also allowed for practical measures to minimise or avoid impact to Aboriginal sites. The survey adopted a precautionary principle when it came to describing and assessing landforms within the modification area.
The intergenerational equity principle	The location of the Modification on previously disturbed agricultural land is an advantage from the perspective of integrating environmental (i.e. heritage) and development considerations. The artefact sites with potential to be harmed by the Modification have been previously displaced from their original context and the scarred tree is not a rare representation within the region, therefore significant cultural landscapes will not be impacted. In terms of Aboriginal heritage, the Modification integrates the management of Aboriginal cultural heritage and the development of an ecologically important project.

9 MANAGEMENT OF ABORIGINAL CULTURAL HERITAGE SITES

9.1 GENERAL MANAGEMENT PRINCIPLES

Appropriate management of cultural heritage items is primarily determined based on their assessed significance as well as the likely impacts of the Modification. **Section 7.2** and **Section 8.2** describe, respectively, the significance / potential of the recorded sites and the likely impacts of the Modification. The following management options are general principles, in terms of best practice and desired outcomes, rather than mitigation measures against individual site disturbance.

- Avoid impact by altering the Modification to avoid impact to a recorded Aboriginal site. If this can be done, then a suitable curtilage around the site must be provided to ensure its protection both during the short-term construction phase of development and in the long-term use of the area. If plans are altered, care must be taken to ensure that impacts do not occur to areas not previously assessed.

- If impact is unavoidable then approval to disturb sites under the authority of an ACHMP must be sought from DPHI. Normally the management recommendations contained in the ACHAR become policies of the ACHMP. As the Aboriginal community have been provided the opportunity to view the draft ACHAR, the ACHAR must make it clear that a future ACHMP will manage Aboriginal cultural heritage within the modification area so that the Aboriginal community can assess the management recommendations with this knowledge. The ACHMP policies will often stipulate that the Aboriginal community should be involved in any salvage activities and will dictate what the fate of any salvaged Aboriginal objects will be.

9.2 MANAGEMENT AND MITIGATION OF RECORDED ABORIGINAL SITES

9.2.1 Surface collection of artefacts

Management for Aboriginal site 36-3-4102 (SNI-AS85), an artefact scatter, is recommended to include salvage through the recording and collection of the surface artefacts, prior to construction works proceeding. This recommendation is made due to:

- The cultural value of the sites and its importance to the Aboriginal community
- The nature of the impacted sites (stone artefact sites)
- Being in a landform with high previous disturbance from a range of factors including road construction, erosion, and land use practices
- The low archaeological value assigned to the sites preclude more intensive archaeological investigations

- Sites such as this have a limited ability to further inform the community about the history and culture of the area. While any potential research questions are limited, some information can nevertheless be gained.

The recommended methodology for the salvage would be finalised after the approvals process as part of the ACHMP, but should include the following measures:

- The visible artefacts will be flagged in the field
- The sites will be photographed after flagging and before recording
- The following artefact information will be recorded for the artefacts:
    - Location
    - Artefact class
    - Artefact type
    - Size
    - Reduction level
    - Raw material
- The artefacts will be photographed
- An Aboriginal Site Impact Recording Form (ASIRF) will be submitted by the archaeologist detailing the salvage process at the sites.

9.2.2 Scarred tree relocation

Removal of scarred tree 36-3-3918 (Birriwa Bus Route South ST-1) is not anticipated for the upgrades along Birriwa Bus Route South, however the proposed ground disturbing works associated with the upgrades may encroach on the dripline of the tree.

Should ground disturbing works within this dripline be unavoidable, management of the tree may be required in consultation with RAPs. These management measures may include salvage (i.e. removal of the scarred portion of the tree) or alternate management of the tree should it be preferred to remain *in situ*.

The recommended methodology for the salvage would be finalised after the approvals process and documented in the ACHMP, once the exact nature of impacts is known.

9.2.3 Long-term management of Aboriginal objects

The ACHMP would include protocols for the long-term management of the Aboriginal sites salvaged for the Modification, as well as any unanticipated Aboriginal sites discovered during construction and operation of the Modification.

Regarding stone artefacts, suitable procedures for the long-term management could include:

- Reburial of artefacts at a location outside of the development footprint
- Movement of artefacts to a location outside of the development footprint
- Removal of Aboriginal objects to an agreed place of safe keeping.

Any long-term management of Aboriginal objects will be done in consultation with the RAPs.

9.2.4 Protective measures

The Applicant has avoided harm to Aboriginal sites White Creek IF-1 to IF-3 and 36-3-4095 (SNI-AS86) through a considered design of the project components. These sites should be protected during the construction of the Modification using high-visibility temporary fencing. A minimum 5 m buffer should be allowed around the site extents.

If harm to site 36-3-3918 (Birriwa Bus Route South ST-1), located along Birriwa Bus Route South, can be avoided by the Project, the site should also be temporarily fenced while works are being undertaken near the site.

The location of all sites should be shown on all appropriate plans to ensure that they are not inadvertently harmed.

9.2.5 Unanticipated finds protocol

Should development consent for the Modification be obtained, an ACHMP would be developed in consultation with RAPs and Heritage NSW. The ACHMP will contain procedures should any unanticipated finds be encountered during construction and/or operation of the Modification.

The procedure in **Section 9.2.5.1** is an example of an unanticipated finds protocol that could be incorporated into the ACHMP.

9.2.5.1 Unanticipated finds protocol example

An Aboriginal artefact is anything which is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally scarred trees) and animal (if showing signs of modification, i.e. smoothing, use). Human bone (skeletal) remains may also be uncovered while onsite.

Cultural heritage significance is assessed by the Aboriginal community and is typically based on traditional and contemporary lore, spiritual values, and oral history, and may also consider scientific and educational value.

Protocol to be followed if previously unrecorded or unanticipated Aboriginal object(s) are encountered:

1. If any Aboriginal object is discovered and/or harmed in, or under the land, while undertaking the proposed development activities, the Applicant must:

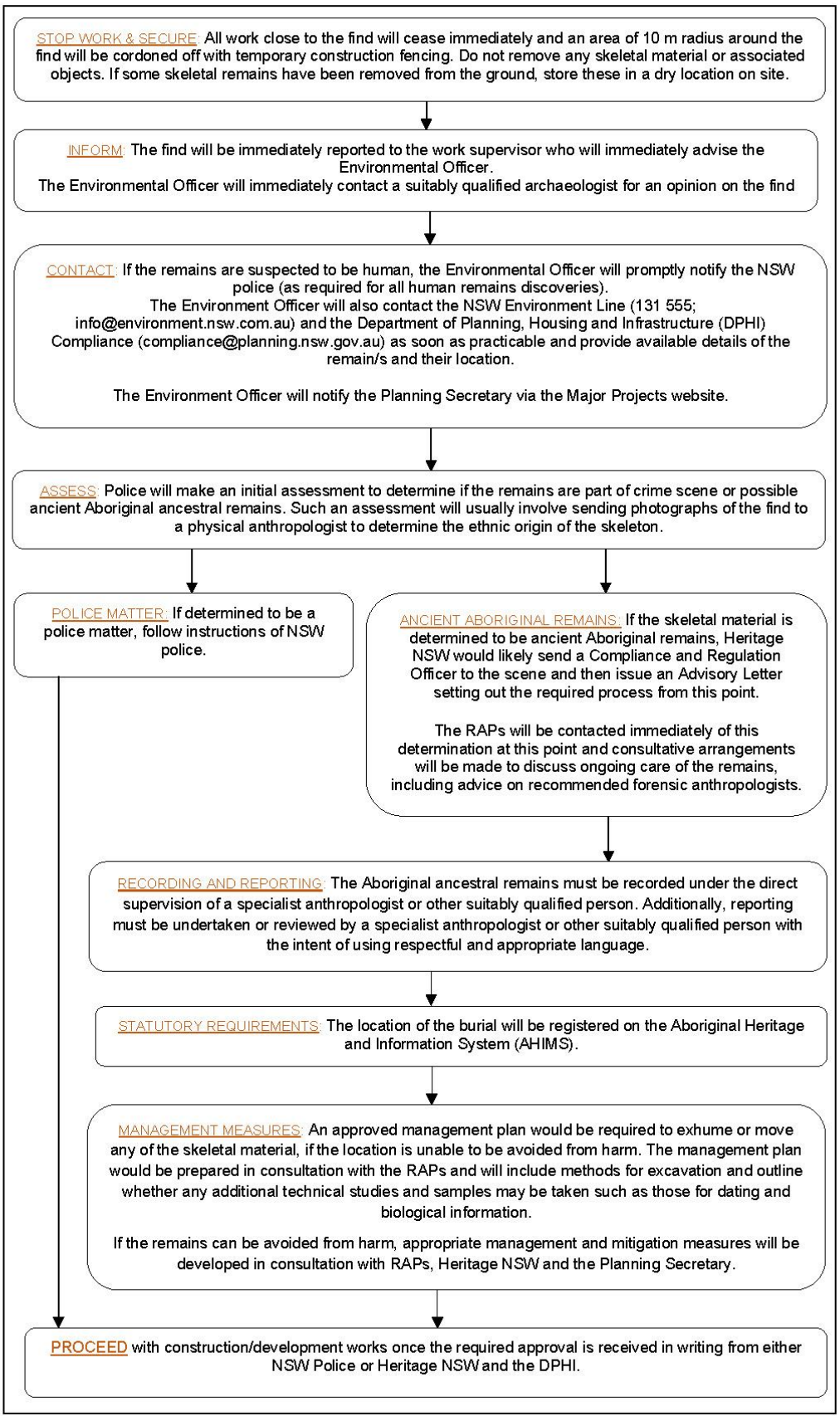
a. Not further harm the object
b. Immediately cease all work at the particular location
c. Secure the area to avoid further harm to the Aboriginal object
d. Notify the DPHI Compliance (compliance@planning.nsw.gov.au) and the NSW Environment Line (131 555; info@environment.nsw.com.au) as soon as practical, providing any details of the Aboriginal object and its location; and
e. Not recommence any work at the particular location unless authorised in writing by DPHI and / or Heritage NSW.

2. Cooperate with the appropriate authorities and relevant Aboriginal community representatives to facilitate:
   a. The recording and assessment of the find(s)
   b. The fulfilment of any legal constraints arising from the find(s), including complying with DPHI and / or Heritage NSW directions
   c. The development and implementation of appropriate management strategies, including consultation with stakeholders and the assessment of the significance of the find(s).
3. Where the find(s) are determined to be Aboriginal object(s), recommencement of work in the area of the find(s) can only occur in accordance with any consequential legal requirements and after gaining written approval from DPHI and / Heritage NSW (through the procedures of an approved ACHMP).

9.2.6 Unanticipated skeletal remains protocol

The ACHMP would also contain procedures should human skeletal remains be encountered during construction and/or operation of the Modification. A potential flow-chart relating to the discovery of human skeletal remains that could be incorporated into the ACHMP is shown on **Figure 9-1**.

Figure 9-1: Example of a human skeletal remains procedure.



10 RECOMMENDATIONS

Under Section 89A of the NPW Act it is mandatory that all newly recorded Aboriginal sites be registered with AHIMS. As a professional in the field of cultural heritage management it is the responsibility of OzArk to ensure this process is undertaken.

To this end it is noted that three Aboriginal sites previously unrecorded sites were identified during the assessment.

The following recommendations are made based on these impacts and regarding:

- Legal requirements under the terms of the NPW Act whereby it is illegal to damage, deface or destroy an Aboriginal place or object without an approved ACHMP
- The findings of the current investigations undertaken within the modification area
- The interests of the Aboriginal community.

Recommendations concerning Aboriginal cultural values within the modification area are as follows:

8. Following granting of development consent for the Modification, the Applicant will be required to incorporate the Conditions of Approval into an ACHMP for SSD 29508870. The ACHMP should be developed in consultation with the RAPs and Heritage NSW. The ACHMP would also include protocols for unanticipated finds (including skeletal remains), heritage inductions, and management measures for Aboriginal sites in the modification area. The ACHMP must be approved by the DPHI prior to salvage and construction activities occurring in the modification area.
9. Aboriginal site 36-3-4102 (SNI-AS86), located in the development footprint, should be salvaged via surface collection in accordance with the management strategies set out in **Section 9.2.1** following approval of the ACHMP.
10. One site (36-3-3918 [Birriwa Bus Route South ST-1]) may be impacted by the upgrades to Birriwa Bus Route South should ground disturbing works encroach on the dripline of the tree. Should these works be unavoidable within the dripline extent, the management measures outlined in **Section 9.2.2**, or alternative measures developed in consultation with RAPs, should be followed.
11. The Applicant has undertaken to avoid harm to White Creek IF-1 to IF-3 and 36-3-4095 (SNI-AS86) through a considered design the project components. These sites should be protected during the construction of the Modification using high-visibility temporary fencing. A minimum 5 m buffer should be allowed around the site extents.

12. The location of the sites should be shown on all appropriate plans to ensure that they are not inadvertently harmed.
13. All land-disturbing activities should be confined to within the development footprint. Should the parameters of the proposed work extend beyond this, then further archaeological assessment will be required.
14. Inductions for work crews should include a cultural heritage awareness procedure to ensure they are familiar with the location of the recorded Aboriginal sites and are able to recognise Aboriginal artefacts (**Appendix 4**).

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OzArk 2023b	OzArk Environmental & Heritage. 2023. *Addendum Aboriginal Cultural Heritage & Historic Heritage Impact Assessment Report: Birriwa Solar*

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APPENDIX 1: ABORIGINAL CONSULTATION

Appendix 1 Table 1: Aboriginal consultation log.

Date	Organisation	Comment	Method
3.10.24	Gallanggabang Aboriginal Corporation	ACEN (the Applicant) sent an email providing an update on the Project	Email
3.10.24	Mudgee Local Aboriginal Land Council	ACEN (the Applicant) sent an email providing an update on the Project	Email
3.10.24	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	ACEN (the Applicant) sent an email providing an update on the Project	Email
3.10.24	North-Eastern Wiradjuri	ACEN (the Applicant) sent an email providing an update on the Project	Email
3.10.24	Paul Brydon	ACEN (the Applicant) sent an email providing an update on the Project	Email
3.10.24	Stakeholder 1	ACEN (the Applicant) sent an email providing an update on the Project	Email
3.10.24	Warrabinga Native Title Claimants Aboriginal Corporation	ACEN (the Applicant) sent an email providing an update on the Project	Email
3.10.24	Wellington Valley Wiradjuri Aboriginal Corporation	ACEN (the Applicant) sent an email providing an update on the Project	Email
3.10.24	Woka Aboriginal Corporation	ACEN (the Applicant) sent an email providing an update on the Project	Email
3.10.24	Booral Maliyan	Catherine Burrows (CB; OzArk) received email registering for the project	Email
3.10.24	George Flick	CB received email registering for the project	Email
4.10.24	Heritage NSW	CB emailed agency letter - closing date - 18.10.24	Email
4.10.24	Mudgee Local Aboriginal Land Council	CB emailed agency letter - closing date - 18.10.24	Email
4.10.24	Office of The Registrar, ALRA	CB emailed agency letter - closing date - 18.10.24	Email
4.10.24	National Native Title Tribunal	CB emailed agency letter - closing date - 18.10.24	Email
4.10.24	NTSCORP	CB emailed agency letter - closing date - 18.10.24	Email
4.10.24	Mid-Western Regional Council	CB emailed agency letter - closing date - 18.10.24	Email
4.10.24	Local Lands Services Central Tablelands	CB emailed agency letter - closing date - 18.10.24	Email
5.10.24	Mudgee Guardian	CB confirmed ad placement Mudgee Guardian 5.10.24 - Closing date 18.10.24	Email
9.10.24	NTSCORP	CB received email registering for the project on behalf of the Gomeroi Applicant	Email
9.10.24	NTSCORP	CB replied with thanks for registration	Email
18.10.24	Binjang Wellington Wiradjuri heritage Survey	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Deborah Foley	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Edgerton kwiembal AC	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Gomery Cultural Consultants	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Jeremy Duncan	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Kamilaroi Yankuntjatjara Working Group	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Konanggo Aboriginal Cultural Heritage Services	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Mingaan Aboriginal Corporation	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Natasha Rodgers	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	North- Eastern Wiradjuri	CB emailed community letter - Closing date 1.11.24	Email

Date	Organisation	Comment	Method
18.10.24	Thomas Dahlstrom	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Timothy Stubbs	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Wailwan Aboriginal Group	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Wiradjuri Council of Elders	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Wiradjuri traditional Owners Central West Aboriginal Corporation	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Wurrumay Culture Heritage Consultants	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Girragirra Murun Aboriginal Corporation	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Wingarra Wilay Aboriginal Corporation	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Guthers Aboriginal Corporation	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Kalthi Consultancy	CB emailed community letter - Closing date 1.11.24	Email
18.10.24	Darlina Verrills	CB posted community letter - Closing date 1.11.24	Post
18.10.24	David Maynard	CB posted community letter - Closing date 1.11.24	Post
18.10.24	Dhuuluu-Yala Aboriginal Corporation	CB posted community letter - Closing date 1.11.24	Post
18.10.24	Jodie Mckinnon	CB posted community letter - Closing date 1.11.24	Post
18.10.24	Katrina Mckinnon	CB posted community letter - Closing date 1.11.24	Post
18.10.24	Trevor Robinson	CB posted community letter - Closing date 1.11.24	Post
18.10.24	Wamarr Cultural Consultants	CB posted community letter - Closing date 1.11.24	Post
18.10.24	Wiradjuri Interim Working Party	CB posted community letter - Closing date 1.11.24	Post
18.10.24	Bill Allen	CB posted community letter - Closing date 1.11.24	Post
18.10.24	Jeremy Duncan	CB received email registering for the project	Email
18.10.24	Gomery Cultural Consultants	CB received email registering for the project	Email
19.10.24	Cindy Foley	CB received email registering for the project	Email
20.10.24	Girragirra Murun Aboriginal Corporation	CB received email registering for the project	Email
20.10.24	Wingarra Wilay Aboriginal Corporation	CB received email registering for the project	Email
21.10.24	Jeremy Duncan	CB replied with thanks for registration	Email
21.10.24	Gomery Cultural Consultants	CB replied with thanks for registration	Email
21.10.24	Cindy Foley	CB replied with thanks for registration	Email
21.10.24	Girragirra Murun Aboriginal Corporation	CB replied with thanks for registration	Email
21.10.24	Wingarra Wilay Aboriginal Corporation	CB replied with thanks for registration	Email
22.10.24	Thomas Dahlstrom	CB received email registering for the project	Email
22.10.24	Thomas Dahlstrom	CB replied with thanks for registration	Email
27.10.24	NTSCORP	Stephanie Rusden (SR) emailed confirming registration as the modification is in the registered claim of Warrabinga-Wiradjuri #7	Email
29.10.24	NTSCORP	SR received an email confirming Gomeroi People to be removed as a RAP	Email
29.10.24	NTSCORP	SR confirmed Gomeroi People have been removed as a RAP	Email
30.10.24	Dhuuluu-Yala Aboriginal Corporation	CB received return to sender post	Post

Date	Organisation	Comment	Method
4.11.24	Mudgee Local Aboriginal Land Council	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Paul Brydon	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Warrabinga Native Title Claimants Aboriginal Corporation	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Wellington Valley Wiradjuri Aboriginal Corporation	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Woka Aboriginal Corporation	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Stakeholder 1	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	North-Eastern Wiradjuri	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	" Gallanggabang Aboriginal Corporation	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Booral Maliyan	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	George Flick	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Jeremy Duncan	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Gomery Cultual Consultants	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Cindy Foley	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Girragirra Murun Aboriginal Corporation	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Wingarra Wilay Aboriginal Corporation	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
4.11.24	Thomas Dahlstrom	CB emailed Stage 2-3 Draft methodology -closing date 2.12.24	Email
7.11.24	Heritage NSW	CB emailed notification of registrations	Email
7.11.24	Mudgee LALC	CB emailed notification of registrations	Email
14.11.24	Warrabinga Native Title Claimants Aboriginal Corporation	CB received email on methodology	Email
14.11.24	Warrabinga Native Title Claimants Aboriginal Corporation	CB replied with thanks	Email
28.11.24	Thomas Dahlstrom	CB received email response - *Thanks for the email. I have had a read thru. It's all pretty basic. Lot of activity surrounding the area with plenty of reports to go off in terms of material and density etc*	Email
9.4.25	Mudgee Local Aboriginal Land Council	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Paul Brydon	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Warrabinga Native Title Claimants Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Wellington Valley Wiradjuri Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Woka Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Stakeholder 1	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email

Date	Organisation	Comment	Method
9.4.25	North-Eastern Wiradjuri	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Gallanggabang Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Booral Maliyan	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	George Flick	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Jeremy Duncan	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Gomery Cultual Consultants	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Cindy Foley	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Girragirra Murun Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Wingarra Wilay Aboriginal Corporation	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
9.4.25	Thomas Dahlstrom	CB emailed Stage 4 draft ACHAR - **Closing date 13.5.25**	Email
7.5.25	Warrabinga Native Title Claimants Aboriginal Corporation	CB received response letter to Stage 4 draft ACHAR	Email
9.5.25	Mudgee Local Aboriginal Land Council	ITC emails reminder for ACHAR review	Email
9.5.25	Paul Brydon	ITC emails reminder for ACHAR review	Email
9.5.25	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	ITC emails reminder for ACHAR review	Email
9.5.25	Wellington Valley Wiradjuri Aboriginal Corporation	ITC emails reminder for ACHAR review	Email
9.5.25	Woka Aboriginal Corporation	ITC emails reminder for ACHAR review	Email
9.5.25	Stakeholder 1	ITC emails reminder for ACHAR review	Email
9.5.25	North-Eastern Wiradjuri	ITC emails reminder for ACHAR review	Email
9.5.25	Gallanggabang Aboriginal Corporation	ITC emails reminder for ACHAR review	Email
9.5.25	Booral Maliyan	ITC emails reminder for ACHAR review	Email
9.5.25	George Flick	ITC emails reminder for ACHAR review	Email
9.5.25	Jeremy Duncan	ITC emails reminder for ACHAR review	Email
9.5.25	Gomery Cultual Consultants	ITC emails reminder for ACHAR review	Email
9.5.25	Cindy Foley	ITC emails reminder for ACHAR review	Email
9.5.25	Girragirra Murun Aboriginal Corporation	ITC emails reminder for ACHAR review	Email
9.5.25	Wingarra Wilay Aboriginal Corporation	ITC emails reminder for ACHAR review	Email
9.5.25	Thomas Dahlstrom	ITC emails reminder for ACHAR review	Email
9.5.25	Girragirra Murun Aboriginal Corporation	ITC reemails reminder with OneDrive link	Email
9.5.25	Wingarra Wilay Aboriginal Corporation	ITC reemails reminder with OneDrive link	Email
9.5.25	Thomas Dahlstrom	ITC reemails reminder with OneDrive link	Email
9.5.25	Gallanggabang Aboriginal Corporation	ITC reemails reminder with OneDrive link	Email
9.5.25	Booral Maliyan	ITC reemails reminder with OneDrive link	Email
9.5.25	Mudgee Local Aboriginal Land Council	ITC reemails reminder with OneDrive link	Email
9.5.25	Paul Brydon	ITC reemails reminder with OneDrive link	Email

Date	Organisation	Comment	Method
9.5.25	Murong Gialinga Aboriginal & Torres Strait Islander Corporation	ITC reemails reminder with OneDrive link	Email
9.5.25	Wellington Valley Wiradjuri Aboriginal Corporation	ITC reemails reminder with OneDrive link	Email
9.5.25	Woka Aboriginal Corporation	ITC reemails reminder with OneDrive link	Email
9.5.25	Stakeholder 1	ITC reemails reminder with OneDrive link	Email
11.5.25	Wellington Valley Wiradjuri Aboriginal Corporation	CB received email - *Wellington Valley Wiradjuri Aboriginal Corporation have reviewed and discussed the proposed Draft Modification 1 - Birriwa Solar and Battery Project Aboriginal Cultural Heritage Assessment Report (ACHAR). Socially and Culturally the identified cultural heritage sites and the cultural landscape as a whole are of high significance to us and our members who have continued connection to that area through their Apical Ancestry and regularly visiting sites in the area. WVWAC membership and Knowledge Holders discussed the report and agree to the recommendations.*	Email
22.5.25	Warrabinga Native Title Claimants Aboriginal Corporation	CB emails OzArk letter response to Stage 4 feedback	Email
22.5.25	Warrabinga Native Title Claimants Aboriginal Corporation	CB receives email with thanks.	Email

Appendix 1 Figure 1: Letter to existing Project RAPs.

ACEN Australia

4 October 2024

Cc: Catherine Burrowes
catherine@ozarkehm.com.au

Dear RAP

Subject: Modification 1 to the Birriwa Solar and Battery Project

As a Registered Aboriginal Party (RAP) for Birriwa Solar and Battery Project (the Project), I am writing to update you on the Project being developed by ACEN Australia (ACEN) as it has been some time since an update was last provided.

The Environmental Impact Statement (EIS) for the Project was submitted to the NSW Government in 2022, and in August 2024, the Project was approved by the Independent Planning Commission (IPC).

ACEN is now proposing to submit an application to modify the Project, which would form Modification 1 to the Project. The proposed modification includes an additional area of approximately 240 hectares (ha) of land for the development footprint of the Project (referred to as the Modification Area). Please refer to enclosed map for more information.

ACEN has engaged specialist cultural heritage consultant OzArk Environment & Heritage (OzArk) to guide the Aboriginal cultural heritage assessment and management activities for the Modification Area.

In accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (DECCW 2010), Expressions of Interest from relevant Aboriginal stakeholder groups and / or individuals in the area who hold cultural knowledge relevant to determining the significance of Aboriginal objects and / or places within the vicinity of the Modification Area is being sought.

As an existing RAP for this Project, unless your interest in this Project has changed and you no longer wish to be registered, there is no action for you, and you will remain listed as a RAP. Should you wish to de-register your interest as a RAP, however, please notify ACEN by 1st November 2024.

RAPs will assist OzArk in preparing the Aboriginal Cultural Heritage Assessment Report (ACHAR). The ACHAR will assist the Department of Planning, Housing and Infrastructure, and Heritage NSW in their consideration and determination of the modification.

Myself, colleague Joey Chalk, ACEN's Indigenous Participation Manager and OzArk would be pleased to offer you a briefing on the Project and I welcome you to contact them on the details below to arrange, or if you have any queries.

Catherine Burrowes, OzArk Office Manager/ Community Liaison
catherine@ozarkehm.com.au
02 6882 0118

ACEN Australia
Suite 2, Level 2, 15 Castray Esplanade
Battery Point, Hobart
Tasmania, Australia 7004
ACN 616 856 672
ABN 27 616 856 672

Joey Chalk, ACEN Indigenous Participation Manager
joey.chalk@acenrenewables.com.au
0408 271 101

ACEN looks forward to continuing its relationships with project RAPs.

Once again, I would like to thank you for your support and involvement in the project.

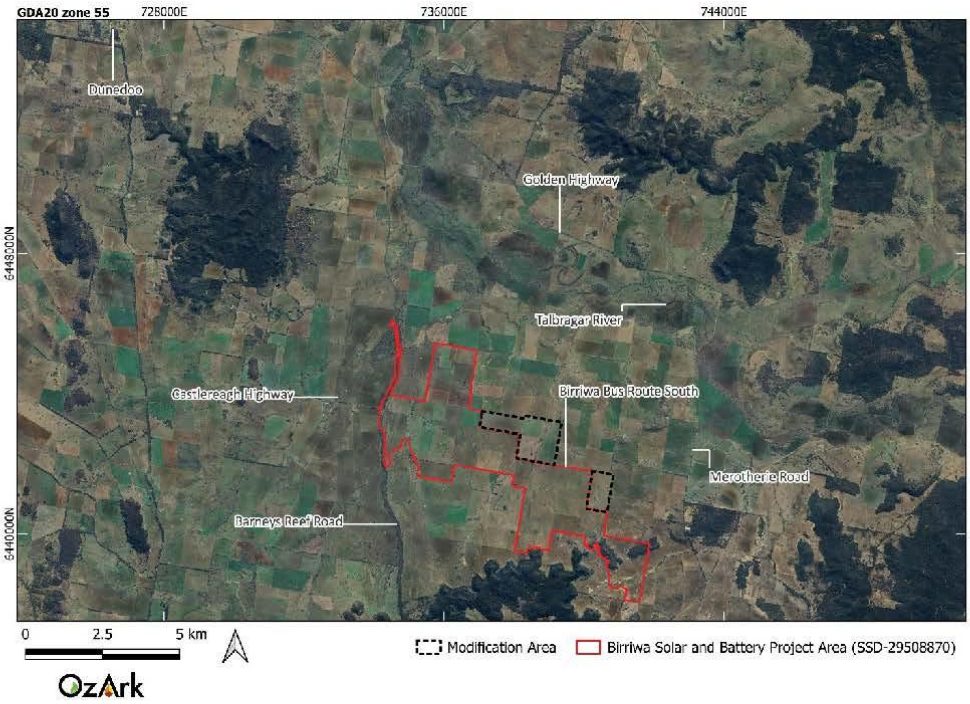
Yours sincerely

Signed by:
Carolay Guarin
A62226C4BF774B6...

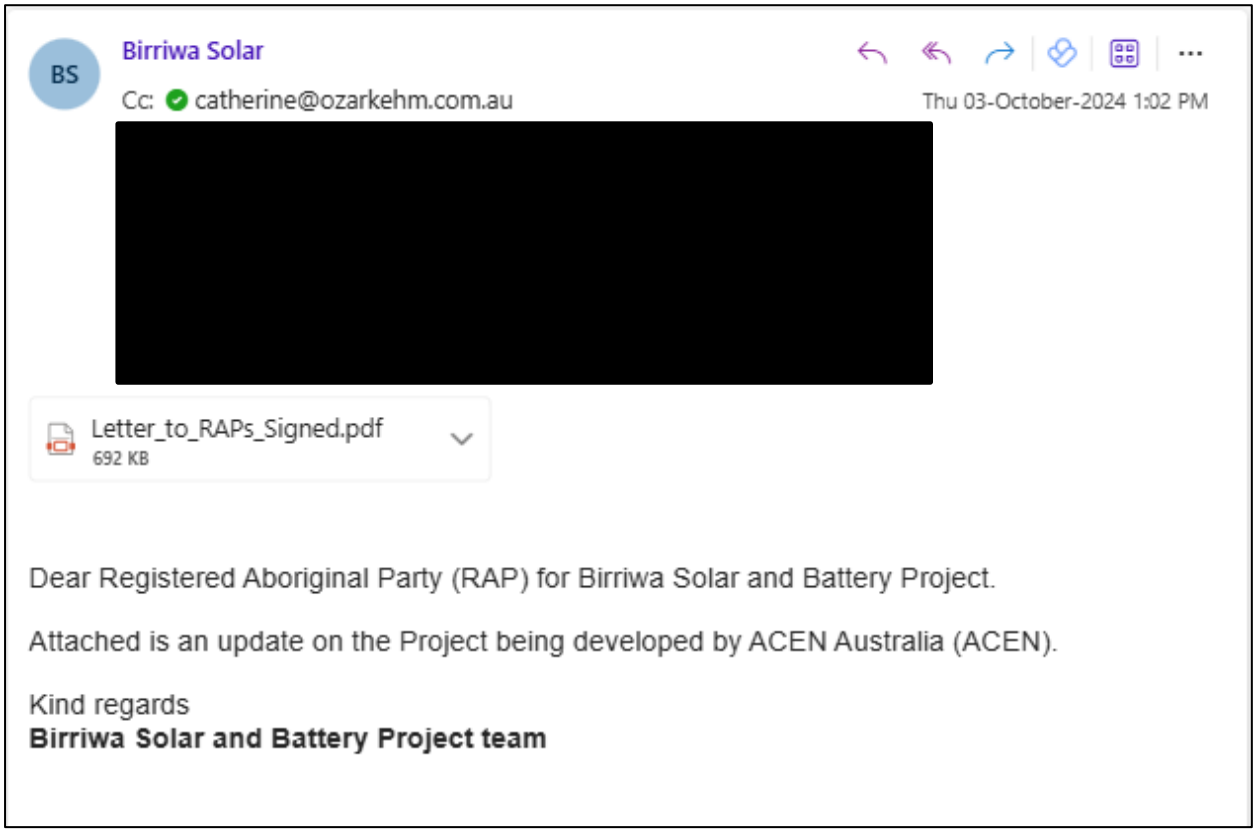
Carolay Guarin
Project Developer
ACEN Australia

2

Figure 1: Location map of the Modification Area.



3



BS

Birriwa Solar

Cc: catherine@ozarkehm.com.au

Thu 03-October-2024 1:02 PM

[redacted]

Letter_to_RAPs_Signed.pdf
692 KB

Dear Registered Aboriginal Party (RAP) for Birriwa Solar and Battery Project.

Attached is an update on the Project being developed by ACEN Australia (ACEN).

Kind regards
Birriwa Solar and Battery Project team

Appendix 1 Figure 2: Sample letter to agencies.

OzArk Environment & Heritage
Dubbo | Queanbeyan
Wollongong | Newcastle
Katoomba
T: 02 6882 0118
enquiry@ozarkehm.com.au
www.ozarkehm.com.au
ABN 29 675 720 564
145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

4 October 2024

Heritage NSW
Department of Premier and Cabinet
heritagemailbox@environment.nsw.gov.au

ABORIGINAL CULTURAL HERITAGE ASSESSMENT
MODIFICATION 1 TO THE BIRRIWA SOLAR AND BATTERY PROJECT

Dear Sir/Madam,

OzArk Environment & Heritage (OzArk) has been engaged by ACEN Australia Pty Ltd (the proponent) to undertake Aboriginal community consultation as per the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010).

The proponent is proposing to assess additional land as part of Modification 1 (the modification) to the Birriwa Solar and Battery Project (**Figure 1**). The land subject to the modification includes Lot 11, 34 (part), 40 and 60 / DP750755, near Birriwa, NSW, in the Mid-Western Regional local government area (LGA). These activities may result in harm to Aboriginal cultural heritage.

We are therefore seeking Expressions of Interest from relevant Aboriginal stakeholder groups and / or individuals in the area who hold cultural knowledge relevant to determining the significance of Aboriginal objects and / or places within the Mid-Western LGA.

This consultation group will assist OzArk in preparing the Aboriginal Cultural Heritage Assessment Report (ACHAR) and to assist the Department of Planning, Housing and Infrastructure and Heritage NSW in their consideration and determination of the modification.

If your organisation can recommend and provide contact details for any known Aboriginal groups or individuals with cultural knowledge relevant to determining the impacts to the cultural significance of the above-mentioned modification, please advise our office.

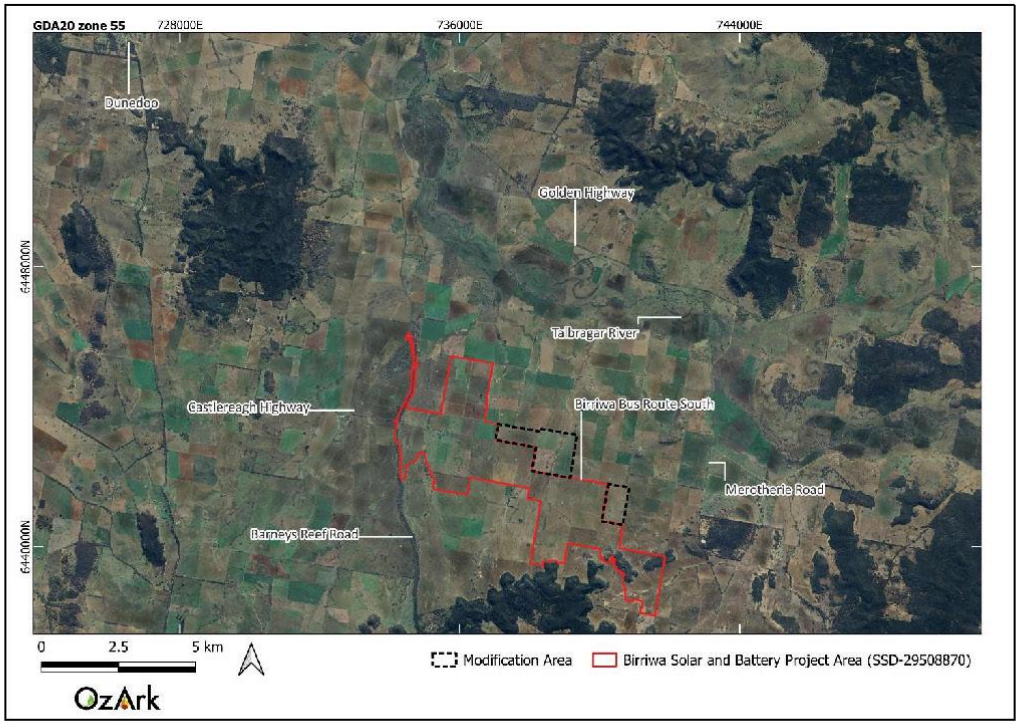
We would appreciate it if you could provide any feedback, by responding to this email catherine@ozarkehm.com.au, regarding these Aboriginal stakeholder groups by 18 October 2024 or sooner if possible.

Kind regards,

Catherine Burrowes
Office Manager/ Community Liaison

OzArk Environment & Heritage

Figure 1: Location map of the Modification Area.



Appendix 1 Figure 3: Agency responses.

Heritage NSW Aboriginal stakeholder list for Birriwa Solar and Battery Project Modification 1.

Reply | Reply All | Forward | ...

BG Barry Gunther <Barry.Gunther@environment.nsw.gov.au>
To Catherine Burrowes
Fri 11/10/2024 3:03 PM

Heritage NSW Aboriginal stakeholder list for Mid Western LGA.docx .docx File

Heritage NSW Stage 1_Agency letter SSD.docx .docx File

Hi Catherine,

Please find attached the Heritage NSW Aboriginal stakeholder list for Birriwa Solar and Battery Project Modification 1.

regards

Barry Gunther
Aboriginal Senior Assessment Officer
Heritage NSW
Department of Climate Change,
Energy, the Environment and Water

www.environment.nsw.gov.au/topics/heritage

Locked bag 5020
Parramatta NSW 2124

Working days Monday to Friday, 9:00am - 5:00pm

I acknowledge the traditional custodians of the land and pay respects to Elders past and present. I also acknowledge all the Aboriginal and Torres Strait Islander staff working with NSW Government at this time.

Please consider the environment before printing this email.

Gomeroi – ACHA – Proposed Development – Birriwa Bus Route South, Birriwa NSW – 4 October 2024

Reply | Reply All | Forward | ...

NN NTSCORP Notifications <notifications@ntscorp.com.au>
To Catherine Burrowes
Wed 9/10/2024 11:50 AM

You replied to this message on 27/10/2024 2:11 PM.

Dear Catherine,

Thank you for your email.

The Gomeroi Applicant acting on behalf of the Gomeroi People native title claim group are cultural knowledge holders for the project area and as such the Gomeroi Applicant wishes to register as a Registered Aboriginal Party for this project and to be notified and involved throughout the consultation and assessment process.

The Relevant contact details are:

- Gomeroi Applicant
- c/- NTSCORP Limited
- Level 1, 44-70 Rosehill Street
- Redfern NSW 2016
- Email: notifications@ntscorp.com.au wscott@ntscorp.com.au and jsvenson@ntscorp.com.au
- Phone: (02) 9310 3188

Kind regards,

Maggie Lai | Paralegal

ntscorp

NTSCORP proudly acknowledge that our office is situated on the country of the Gadigal People of the Dharug Nation.
We also acknowledge and pay our respect to their Elders past and present.

f 02 9310 4177 | t 61 2 9310 3188 |
e mlai@ntscorp.com.au | w www.ntscorp.com.au
Level 1, 44-70 Rosehill Street, Redfern, NSW 2016 Australia

Appendix 1 Figure 4: Correspondence with NTSCORP.

From: Stephanie <Stephanie@ozarkehm.com.au>
Sent: Sunday, 27 October 2024 2:12 PM
To: NTSCORP Notifications <notifications@ntscorp.com.au>
Cc: Catherine Burrowes <catherine@ozarkehm.com.au>
Subject: RE: Gomeroi – ACHA – Proposed Development – Birriwa Bus Route South, Birriwa NSW – 4 October 2024

You don't often get email from stephanie@ozarkehm.com.au. Learn why this is important

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi Maggie,

Thank you for your email on behalf of the Gomeroi Applicant to register as a RAP for this project.

I just wanted to confirm the registration as the project is wholly located in the registered claim of Warrabinga-Wiradjuri #7 (NC2018/002).

Are you able to confirm whether the Gomeroi Applicant wishes to continue being consulted on this project.

Kind regards,

Stephanie Rusden
OzArk Environment & Heritage
Senior Archaeologist and Director
0438 700 041
(02) 6882 0118

RE: Gomeroi – ACHA – Proposed Development – Birriwa Bus Route South, Birriwa NSW – 4 October 2024

NN NTSCORP Notifications <notifications@ntscorp.com.au>
To Stephanie

Reply | Reply All | Forward | ...
Tue 29/10/2024 10:39 AM

Follow up. Start by Tuesday, 29 October 2024. Due by Tuesday, 29 October 2024.

Dear Stephanie,

Thank you for your email.

My apologies for the oversight, please disregard the Gomeroi Applicant as a RAP for this project. I have forwarded the notice to Warrabinga-Wiradjuri and, if interested, they will contact you directly for registration.

Kind regards,

Maggie Lai | Paralegal

ntscorp

NTSCORP proudly acknowledge that our office is situated on the country of the Gadigal People of the Dharug Nation.
We also acknowledge and pay our respect to their Elders past and present.

f 02 9310 4177 | t 61 2 9310 3188 |
e mlai@ntscorp.com.au | w www.ntscorp.com.au
Level 1, 44-70 Rosehill Street, Redfern, NSW 2016 Australia

NTSCORP is committed to supporting local Aboriginal businesses where possible through the purchase of goods and services.

Appendix 1 Figure 5: Mudgee Guardian expression of interest (5 October 2024).

16 MUDGEE GUARDIAN Saturday, October 5, 2024 mudgeeguardian.com.au

Connect with Classifieds

Mudgee Guardian

Phone: 02 6372 1455
classifieds@mudgeeguardian.com.au

Mudgee Guardian
Connect with Classifieds
Place a Classifieds ad
02 6372 1455
classifieds@mudgeeguardian.com.au
Save time, submit online 24/7
addirect.com.au
Print and online packages available throughout Australia.
Advertising self service enquiries: acmadonline@austcommunitymedia.com.au
Self Service

Garage Sales

With the weather warming up, it's time to spruce up your home and have a declutter.
Why not book a garage sale ad today and pay just $55 for a bold heading and five lines.
To book please call our local team on 02 8894 3230 or 03 9049 7710 or email classifieds.western@austcommunitymedia.com.au
Offer expires November 3rd 2024

Public Notices

HOUSING PLUS
PLUS COMMUNITY
NOTICE: HOUSING PLUS & PLUS COMMUNITY AGM
The Housing Plus & Plus Community Annual General Meeting willbe held at 5.00pm Thursday 31st October 2024.
The meeting will be conducted via Microsoft Teams.
Guest Speakers include Dom Rowe, CEO Homelessness NSW.
RSVP by Thursday 24th October 2024.
Enquiries and RSVPs to the Executive Assistant via jane@housingplus.com.au

Builders and Building Services

Wanted
People Interested in Small Development Sites. Builder looking to work with owners or investors wanting to build 1 to 6 Homes on DA Approved sites in Regional NSW.
Please call Steve on 0417 172 211 or Rex on 0400 712 433
Hi-Tech Modular Homes has Offices in:
- Bringelly
- Dubbo
- Narrandera
- Canberra
- Narooma

HI-TECH MODULAR HOMES

In Memoriam

[redacted]

GERZURGAN
Curly
27/3/1963 - 09/10/2014
Not Forgotten Bro
TUMBLEWEED

Public Notices

Expression of Interest
Cultural Heritage Management

OzArk Environment & Heritage has been engaged by ACEN Australia Pty Ltd (the proponent) to complete an Aboriginal cultural heritage assessment for Modification 1 to the Birriwa Solar and Battery Project (the modification) in the Mid-Western Regional local government area. The modification will involve developing additional land for the Birriwa Solar and Battery Project at the locality of Birriwa, along Birriwa Bus Route South.

OzArk is seeking Aboriginal persons and / or groups who wish to be consulted about the modification. This consultation group will assist OzArk and the proponent in the preparation of an Aboriginal Cultural Heritage Assessment Report and to assist the Department of Planning, Housing, and Infrastructure and Heritage NSW in their consideration and determination of the modification.

If you hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects or places in the modification area, please register your interest to be consulted.

Registrations can be made by post
OzArk EHM PO Box 2069 Dubbo NSW 2830;
catherine@ozarkehm.com.au or by
OzArk on 02 6882 0118.
All submissions should be received no later than Friday 18 October 2024.

Ulan Coal Community Information Line
If you have feedback or would like to ask a question or register a complaint, please contact us on 1800 647 630 or ulancommunity@glencore.com.au
ULAN COAL
GLENCORE

Trade Services

MUDGEE TREE SERVICES
Removal, Pruning, Chipping, Stump Grinding.
Qualified & Insured.
ANDY VIVERS
0427 073 260

PATIOS, sunrooms and cladding. We'll be in your area. Free quotes. 6372 6996. BL83737c

Adult Services

ABBEY
Asian lady new to Mudgee
Come in and relax
Great service, gentle touch
0478 886 457

ADD COLOUR TO YOUR AD

Local Roofing Company says:
"I have so much work going, I am at a stage where I can pick & choose work & contemplating putting another roofer on as well. I wouldn't be where I am today if it wasn't for my little yellow ad in the classifieds."
Connect with Classifieds

YOU TOO CAN GROW YOUR BUSINESS, CONTACT YOUR LOCAL CLASSIFIEDS TODAY

Connect with Local Business
Is your business missing? We can fix that! Call us on 6372 1865 to get your business in front of new potential customers.
Mudgee Guardian

Guttering
Guttering
LOCAL GUTTERS & SERVICES
40 years Experience Lic No. 1039240
• Roof Cleaning & Roof Spraying
• Gutters • New Gutters • Leaf Guards
• House Painting • Asbestos Removal
0413 552 179

SAVE TIME, SUBMIT ONLINE
By placing your classified ad through our self-service portal, addirect.com.au
- Submit your ad at any time of the day
- Access the portal from anywhere in Australia
- Place an ad into newspaper, website and mobile with three easy steps

Connect with Classifieds

Appendix 1 Figure 6: Sample letter to Aboriginal community seeking consultation.

OzArk Environment & Heritage
Dubbo | Queanbeyan
Wollongong | Newcastle
Katoomba
T: 02 6882 0118
enquiry@ozarkehm.com.au
www.ozarkehm.com.au
ABN 29 675 720 564
145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

18 October 2024

ABORIGINAL CULTURAL HERITAGE ASSESSMENT

MODIFICATION 1 TO THE BIRRIWA SOLAR AND BATTERY PROJECT

Dear Sir/Madam,

OzArk Environment & Heritage (OzArk) has been engaged by ACEN Australia Pty Ltd (the proponent) to undertake Aboriginal community consultation as per the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010).

The proponent is proposing to assess additional land as part of Modification 1 (the modification) to the Birriwa Solar and Battery Project (**Figure 1**). The land subject to the modification includes Lot 11, 34 (part), 40 and 60 / DP750755, near Birriwa, NSW, in the Mid-Western Regional local government area (LGA). These activities may result in harm to Aboriginal cultural heritage.

Accordingly, we are seeking Expressions of Interest from relevant Aboriginal groups and individuals in the Birriwa area, to form a consultation group. This consultation group will assist OzArk in preparing the Aboriginal Cultural Heritage Assessment Report (ACHAR) to assist Heritage NSW and the Department of Planning, Housing and Infrastructure in their consideration and determination of the project.

If you hold cultural knowledge relevant to determining the impacts to the cultural significance of this project area, should you wish to register for the project please provide the following information:

- Group or individual name
- Contact name (if registering as a group)
- Email or postal address
- Contact number

Please do this by contacting our office on (02) 6882 0118 or responding to this email catherine@ozarkehm.com.au. The closing date for expressions of interest is 1 November 2024.

If you wish to register interest it is noteworthy that as per the Heritage NSW guidelines, we are required to provide your details to Heritage NSW and the Local Aboriginal Lands Council unless we are advised that you do not wish your details to be released.

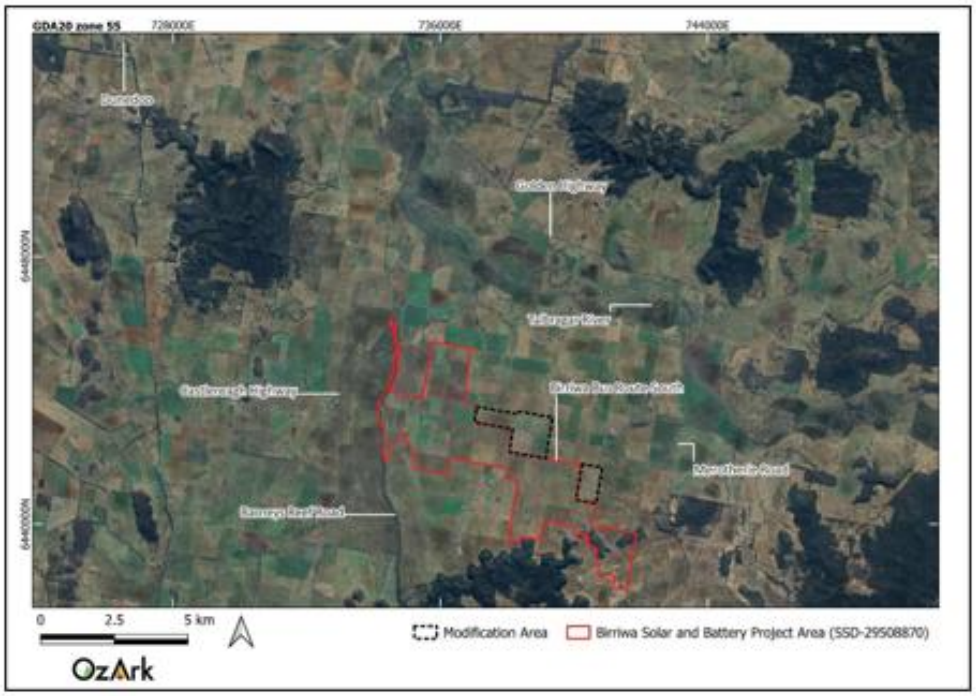
Once relevant groups and individuals have been identified, they will form part of the formal consultation process for the project.

OzArk Environment & Heritage

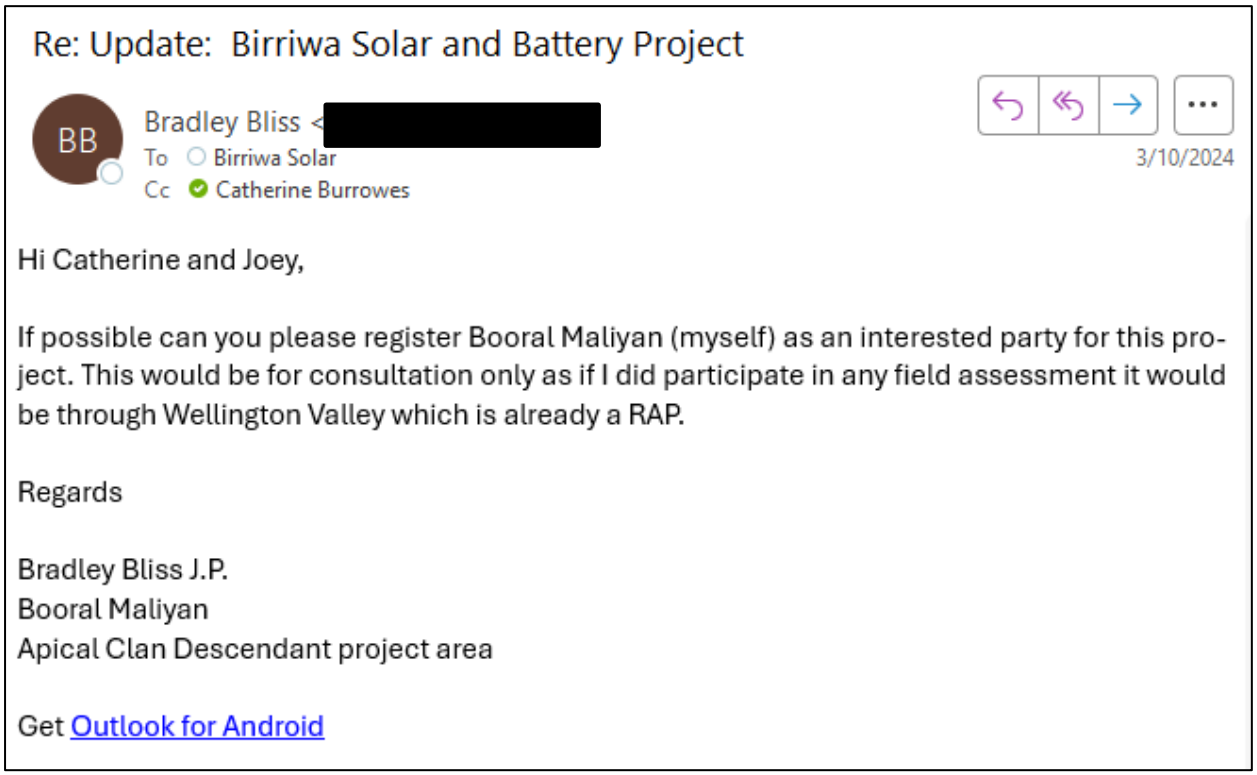
Kind regards,

Catherine Burrowes
Office Manager/ Community Liaison

Figure 1: Location map of the Modification Area.



Appendix 1 Figure 7: RAP registrations.



Re: Update: Birriwa Solar and Battery Project

BB Bradley Bliss <[redacted]
To Birriwa Solar
Cc Catherine Burrowes

3/10/2024

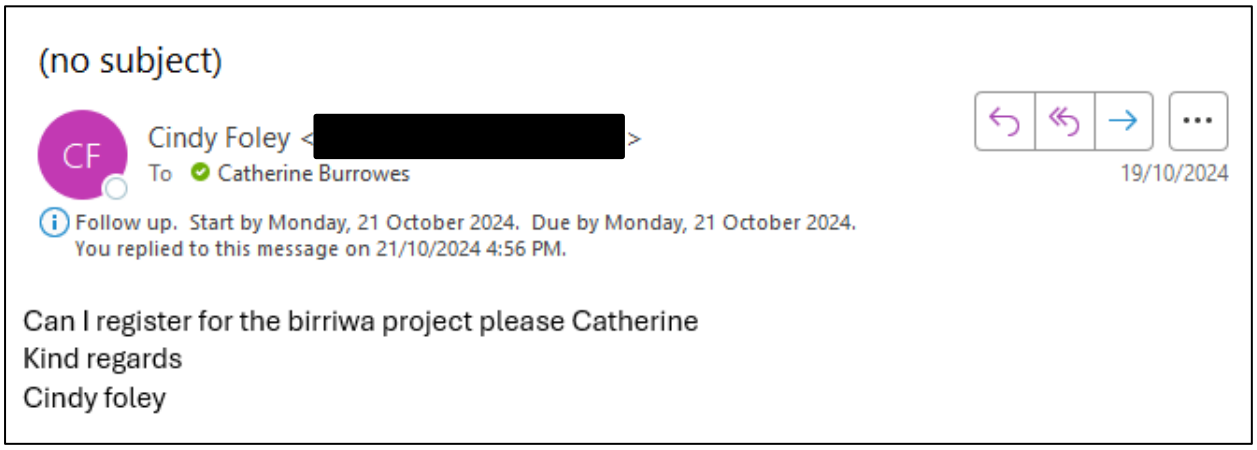
Hi Catherine and Joey,

If possible can you please register Booral Maliyan (myself) as an interested party for this project. This would be for consultation only as if I did participate in any field assessment it would be through Wellington Valley which is already a RAP.

Regards

Bradley Bliss J.P.
Booral Maliyan
Apical Clan Descendant project area

Get Outlook for Android



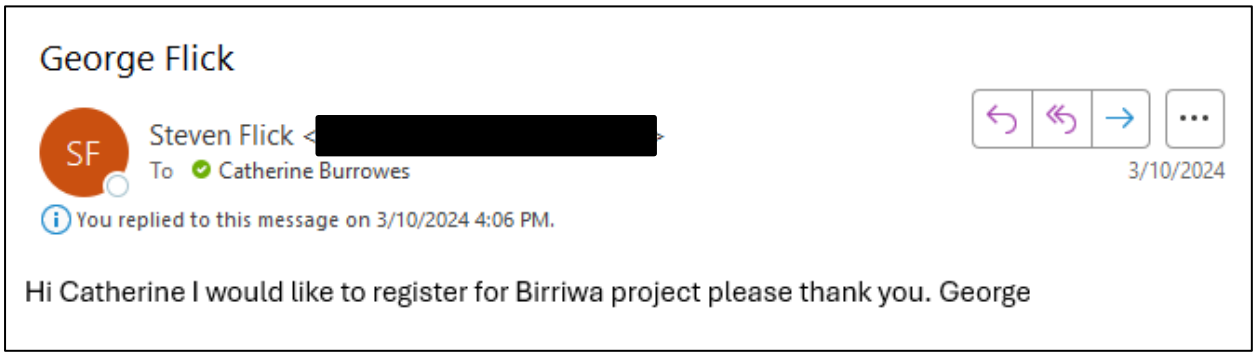
(no subject)

CF Cindy Foley <[redacted]>
To Catherine Burrowes

19/10/2024

Follow up. Start by Monday, 21 October 2024. Due by Monday, 21 October 2024.
You replied to this message on 21/10/2024 4:56 PM.

Can I register for the birriwa project please Catherine
Kind regards
Cindy foley



George Flick

SF Steven Flick <[redacted]>
To Catherine Burrowes

3/10/2024

You replied to this message on 3/10/2024 4:06 PM.

Hi Catherine I would like to register for Birriwa project please thank you. George

Re: ACHA - Community letters- Modification 1 Birriwa Solar and Battery Pr...

GM Girra Murun <[redacted]>
To Catherine Burrowes
20/10/2024

Follow up. Completed on Monday, 21 October 2024.
You replied to this message on 21/10/2024 4:58 PM.

Good morning Catherine,

Would you register Girragirra Murun as a RAP for the consultation for this project please.

Regards
Diana Astin
Girragirra Murun

Re: ACHA - Community letters- Modification 1 Birriwa Solar and Battery Pr...

DH David Horton <[redacted]>
To Catherine Burrowes
18/10/2024

Follow up. Completed on Monday, 21 October 2024.
You replied to this message on 21/10/2024 4:51 PM.

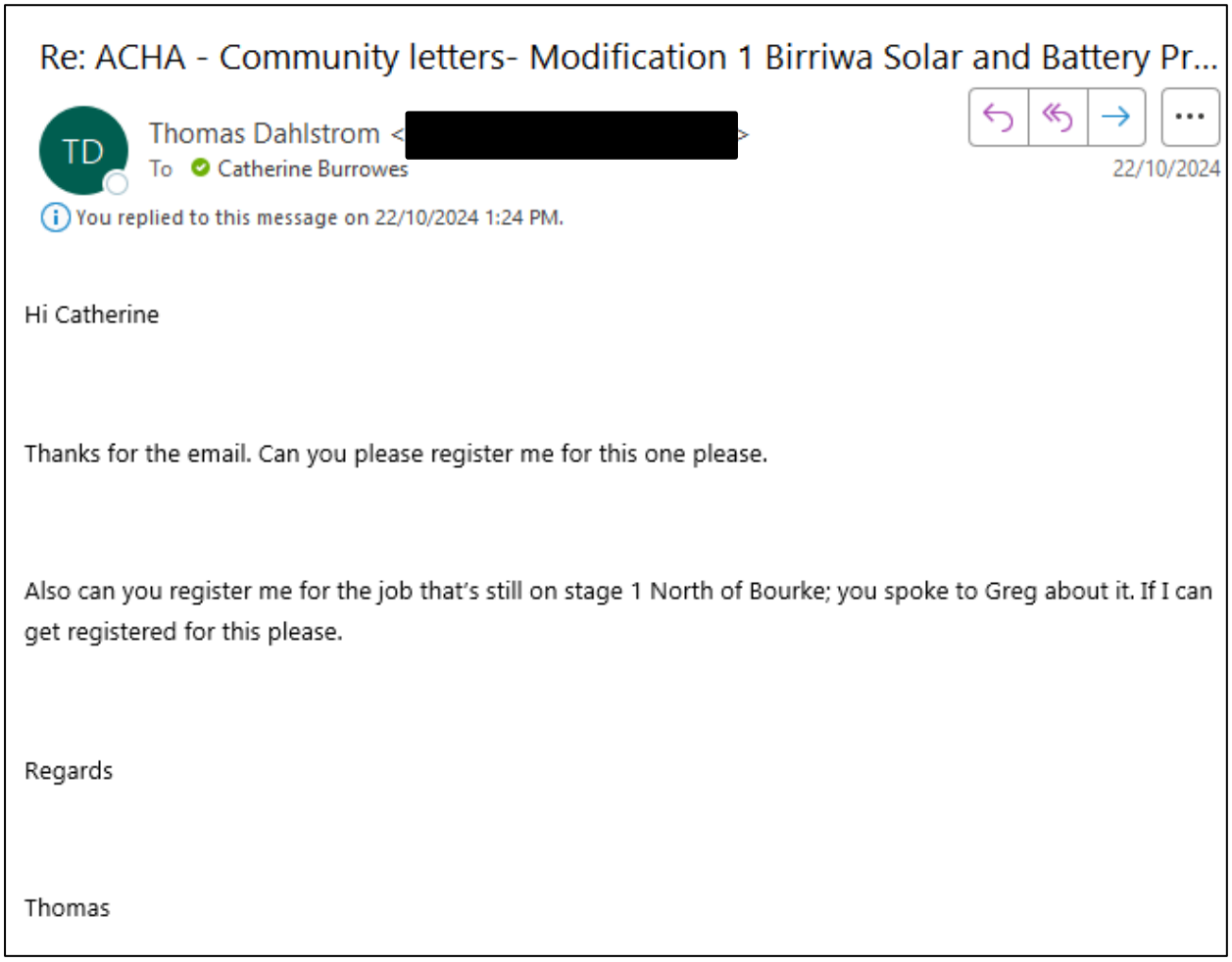
Hi Catherine,it's David Horton gomery cultural consultants can you add me to raps list please.thank you

Re: ACHA - Community letters- Modification 1 Birriwa Solar and Battery Pr...

JD Jeremy Duncan <[redacted]>
To Catherine Burrowes
18/10/2024

Follow up. Completed on Monday, 21 October 2024.
You replied to this message on 21/10/2024 4:50 PM.

I Jeremy Duncan would like to be involved. [redacted]



Re: ACHA - Community letters- Modification 1 Birriwa Solar and Battery Pr...

TD Thomas Dahlstrom <[redacted]>
To Catherine Burrowes
22/10/2024

You replied to this message on 22/10/2024 1:24 PM.

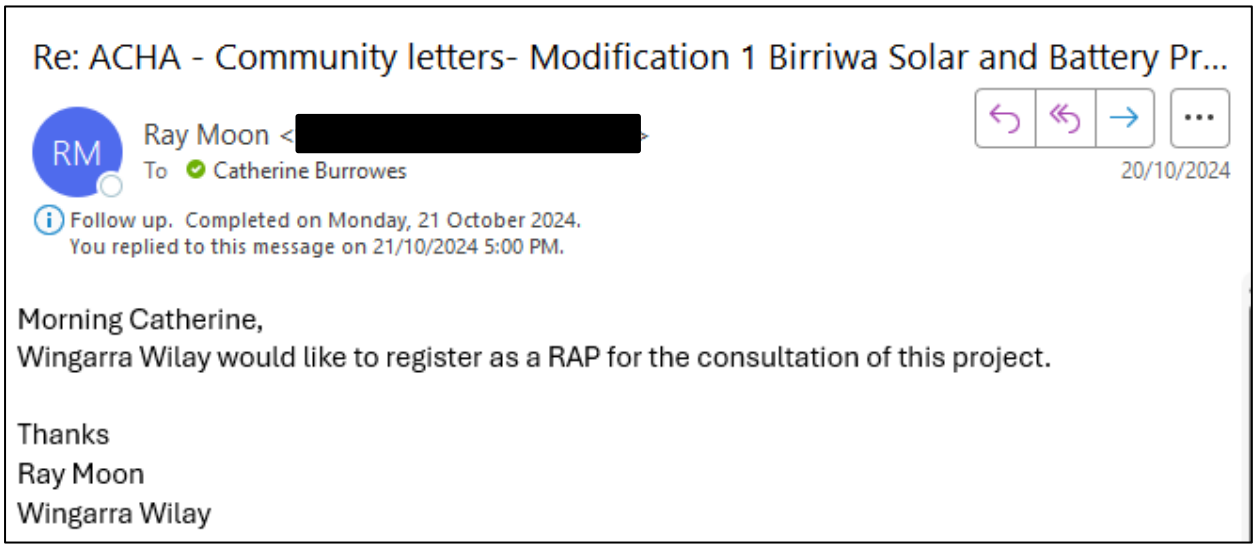
Hi Catherine

Thanks for the email. Can you please register me for this one please.

Also can you register me for the job that's still on stage 1 North of Bourke; you spoke to Greg about it. If I can get registered for this please.

Regards

Thomas



Re: ACHA - Community letters- Modification 1 Birriwa Solar and Battery Pr...

RM Ray Moon <[redacted]>
To Catherine Burrowes
20/10/2024

Follow up. Completed on Monday, 21 October 2024.
You replied to this message on 21/10/2024 5:00 PM.

Morning Catherine,
Wingarra Wilay would like to register as a RAP for the consultation of this project.

Thanks
Ray Moon
Wingarra Wilay

Appendix 1 Figure 8: Stage 2/3 assessment methodology covering letter.

OzArk Environment & Heritage
Dubbo | Queanbeyan
Wollongong | Newcastle
Katoomba
T: 02 6882 0118
enquiry@ozarkehm.com.au
www.ozarkehm.com.au
ABN 29 675 720 564
145 Wingewarra St
PO Box 2069
DUBBO NSW 2830

4 November 2024

ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR MODIFICATION 1 TO THE BIRRIWA SOLAR AND BATTERY PROJECT

Dear Members,

Thank-you for your registration of interest to become a Registered Aboriginal Party (RAP) to be consulted for the proposed Modification 1 to the Birriwa Solar and Battery Project. OzArk are currently undertaking an Aboriginal Cultural Heritage Assessment (ACHA) for ACEN Australia.

The purpose of the ACHA is to determine any impacts the proposed development will have on Aboriginal heritage values present within the study area and to assist in developing/modifying designs in order to minimise the impacts on Aboriginal heritage values.

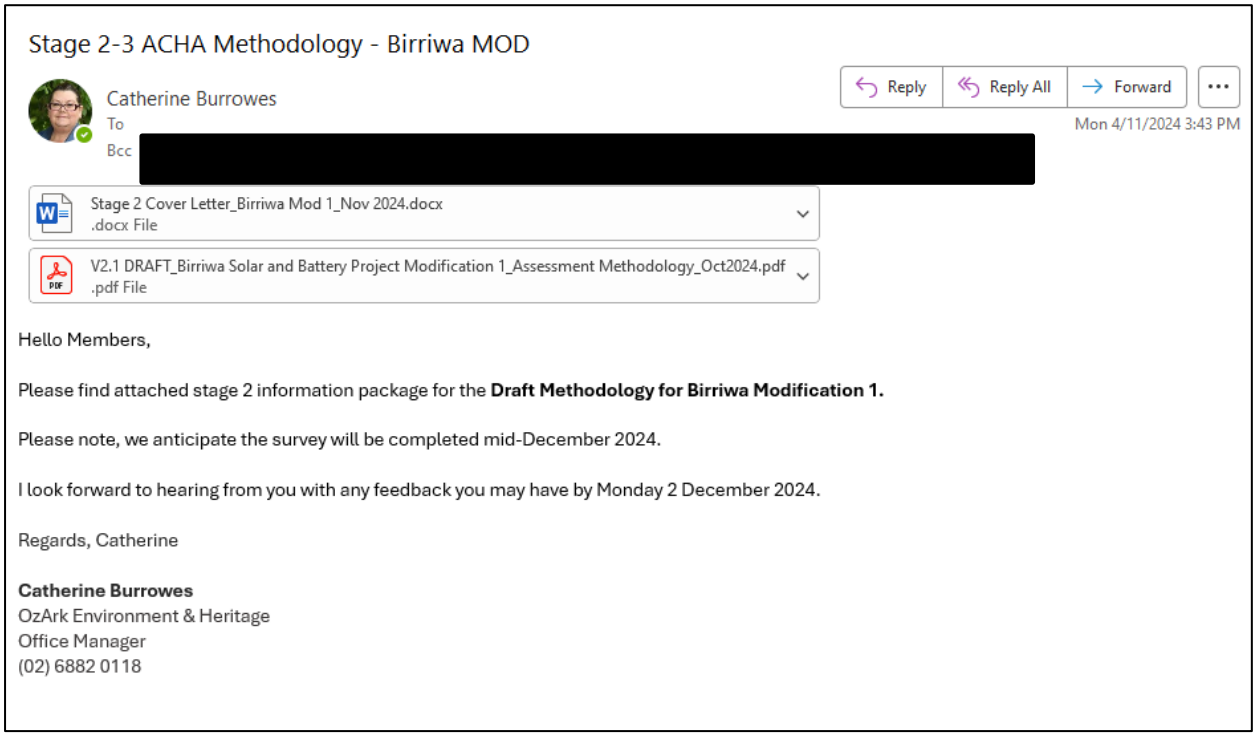
The following project information and assessment methodology has been provided in accordance with section 4.2 and section 4.3 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010a). The aim of this letter is to invite you to comment on the enclosed draft methodology for the Aboriginal Cultural Heritage Assessment Methodology, Modification 1 to the Birriwa Solar and Battery Project, Mid-Western LGA, November 2024.

In addition to comments on the draft report, if you can share any Aboriginal cultural heritage knowledge relevant to the proposed study area, we welcome this input to improve our assessment outcomes and to ensure Aboriginal cultural values are considered. OzArk is required to give you 28 days to supply feedback on the attached documents. This period closes 5pm **on Monday 2nd December 2024.**

If you need any help supplying feedback or have any queries in relation to the enclosed information, please do not hesitate to contact our office.

Kind regards,

Catherine Burrowes
Customer Liaison



Stage 2-3 ACHA Methodology - Birriwa MOD

Reply | Reply All | Forward | ...

Catherine Burrowes
To
Bcc [redacted]

Mon 4/11/2024 3:43 PM

Stage 2 Cover Letter_Birriwa Mod 1_Nov 2024.docx
.docx File

V2.1 DRAFT_Birriwa Solar and Battery Project Modification 1_Assessment Methodology_Oct2024.pdf
.pdf File

Hello Members,

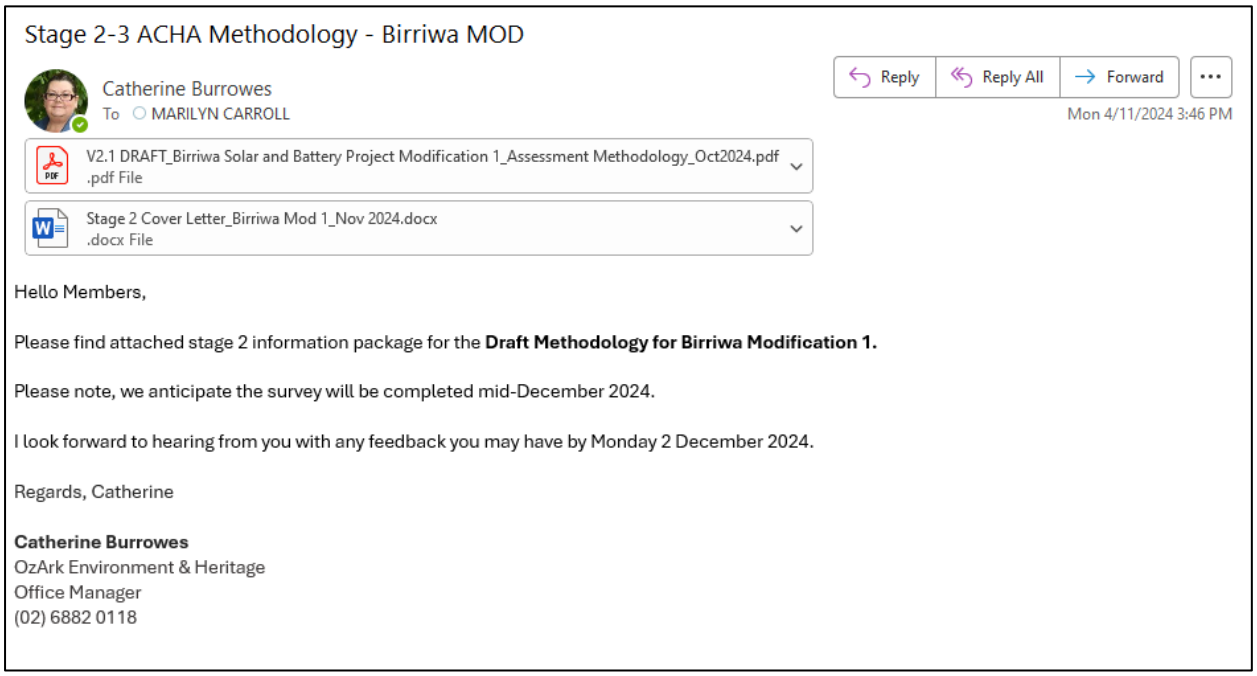
Please find attached stage 2 information package for the **Draft Methodology for Birriwa Modification 1.**

Please note, we anticipate the survey will be completed mid-December 2024.

I look forward to hearing from you with any feedback you may have by Monday 2 December 2024.

Regards, Catherine

Catherine Burrowes
OzArk Environment & Heritage
Office Manager
(02) 6882 0118



Stage 2-3 ACHA Methodology - Birriwa MOD

Reply | Reply All | Forward | ...

Catherine Burrowes
To MARILYN CARROLL

Mon 4/11/2024 3:46 PM

V2.1 DRAFT_Birriwa Solar and Battery Project Modification 1_Assessment Methodology_Oct2024.pdf
.pdf File

Stage 2 Cover Letter_Birriwa Mod 1_Nov 2024.docx
.docx File

Hello Members,

Please find attached stage 2 information package for the **Draft Methodology for Birriwa Modification 1.**

Please note, we anticipate the survey will be completed mid-December 2024.

I look forward to hearing from you with any feedback you may have by Monday 2 December 2024.

Regards, Catherine

Catherine Burrowes
OzArk Environment & Heritage
Office Manager
(02) 6882 0118

Appendix 1 Figure 9: Stage 3 feedback.

Birriwa mod 1 response

[redacted]

To Catherine Burrowes

Reply | Reply All | Forward | ...

Thu 14/11/2024 9:51 AM

You replied to this message on 14/11/2024 10:28 AM.

Birriwa Mod 1.docx
.docx File

Hi Catherine

Please sees attached Warrabinga response.

Kind Regards,
Warrabinga NTCAC.
Kylie Manson
[redacted]

KNOW YOUR COUNTRY
KNOWYOURCOUNTRY.COM.AU

THIS EMAIL COMES TO YOU FROM
WIRADJURI
COUNTRY

Warrabinga- Wiradjuri #7 Native Title Claimants

-c/o Warrabinga Native Title Claimants Aboriginal Corporation

66 Dangar Street

Kandos Nsw 2848

Ozark Environment & heritage

Dubbo Nsw

Catherine@ozarkehm.com.au

08-11-2024

Subject: Response to Draft Aboriginal Cultural Heritage Assessment Methodology for Birriwa Solar and Battery Project (Modification 1, SSD-29508870)

Dear Catherine,

Thank you for sharing the draft Aboriginal Cultural Heritage Assessment Methodology for the Modification 1 to the Birriwa Solar and Battery project (SSD-29508870).

The Warrabinga Wiradjuri #7 are in agreement with the proposed methodology within the draft document. Our primary concerns are focused on the semi-permanent White Creek and the two tributaries of Huxley's Creek in the northwest section of the project area, as indicated on the Drainage Area Map (Figure 4-1). We emphasize the importance of preserving the cultural and environmental integrity of these watercourses, which hold significant value within our heritage landscape.

We look forward to collaborating with you to ensure that these considerations are integrated effectively within the project framework.

Thank you again for your consultation

Kylie Manson

Chair – Working Group of the Warrabinga-Wiradjuri Native Title Claimants

[redacted]

Re: Stage 2-3 ACHA Methodology - Birriwa MOD

TD Thomas Dahlstrom <gamila_roi@yahoo.com.au>
To Catherine Burrowes

Reply | Reply All | Forward | ...
Thu 28/11/2024 10:29 AM

Hi Catherine

Thanks for the email. I have had a read thru. It's all pretty basic. Lot of activity surrounding the area with plenty of reports to go off in terms of material and density etc.

Have a great week Catherine

Regards

Thomas D

Appendix 1 Figure 10: Stage 4 request for comments and cover letter (sample).

Outlook

Stage 4 Draft ACHAR - Birriwa Solar and Battery Project Modification

From Catherine Burrowes <catherine@ozarkehm.com.au>
Date Wed 09-April-2025 3:42 PM
Bcc [redacted]

1 attachment (107 KB)
Stage 4 Cover Letter.docx;

Hello Members,

Please find attached the draft stage 4 information package (Link below & letter attached) for the Birriwa Solar and Battery Project Modification.

DRAFT_Birriwa Solar and Battery Project Modification 1_ACHAR_2025.pdf

I look forward to hearing from you with any feedback you may have by Tuesday 13 May 2025.

Regards, Catherine

Catherine Burrowes
OzArk Environment & Heritage
Office Manager
(02) 6882 0118

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DUBBO NSW 2830

9 April 2025

ABORIGINAL CULTURAL HERITAGE ASSESSMENT FOR THE BIRRIWA SOLAR AND BATTERY PROJECT MODIFICATION

Dear Members,

Thank-you for your continued participation as a Registered Aboriginal Party (RAP) and involvement in the above-mentioned project.

ACEN Australia Pty Ltd (the Proponent) would like to offer you the opportunity to provide feedback on the draft Aboriginal Cultural Heritage assessment Report (ACHAR) that has been undertaken in accordance with stage four (4) of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCR).

As per the ACHCRs we are required to give you twenty-eight (28) days to supply feedback on the attached draft ACHAR. This period closes on the **Tuesday 13 May 2025.** Should you or your community have any additional cultural values relevant to the study area that you would like to see included, please let us know and we can discuss this further. If our office is not contacted within this time frame, we will presume that you are satisfied with the contents of the ACHAR as it stands.

If you need any help supplying feedback or have any queries, please do not hesitate to contact our office.

Kind regards,

Catherine Burrowes
Office Manager/ Community Liaison

Appendix 1 Figure 11: Email reminder for comments 9 May 2025.

Outlook

DRAFT ACHAR - Modification 1 to the Birriwa Solar and Battery Project

From Imogen Crome <Imogen@ozarkehm.com.au>
Date Fri 09-May-2025 12:49 PM
Cc Catherine Burrowes <catherine@ozarkehm.com.au>
Bcc [redacted]

1 attachment (103 KB)
Stage 4 Cover Letter.docx;

Dear Members,

This email is a courtesy reminder that the Stage 4 review period for the Modification 1 Birriwa Solar and Battery Project Aboriginal Cultural Heritage Assessment Report (ACHAR) **closes next Tuesday 13 May 2025.**

If you have any input or would like to request any edits be made, please contact our office as soon as possible

I have uploaded a OneDrive copy of the ACHAR here for your convenience:
DRAFT_Birriwa Solar and Battery Project Modification 1_ACHAR_2025.pdf

We look forward to hearing from you

Kind regards,
Imogen

Imogen Crome
Archaeologist

OzArk Environment & Heritage
PO Box 2069 DUBBO 2830
02 6882 0118
imogen@ozarkehm.com.au
www.ozarkehm.com.au

OzArk and staff respectfully acknowledge the Traditional Owners and Custodians of the Country on which we work.

Appendix 1 Figure 12: WVWAC Stage 4 feedback.

Outlook

Re: DRAFT ACHAR - Modification 1 to the Birriwa Solar and Battery Project

From WVWAC Contact Officer <[redacted]>
Date Sun 11-May-2025 8:04 PM
To Imogen Crome <Imogen@ozarkehm.com.au>; Catherine Burrowes <catherine@ozarkehm.com.au>

Wellington Valley Wiradjuri Aboriginal Corporation have reviewed and discussed the proposed Draft Modification 1 - Birriwa Solar and Battery Project Aboriginal Cultural Heritage Assessment Report (ACHAR).

Socially and Culturally the identified cultural heritage sites and the cultural landscape as a whole are of high significance to us and our members who have continued connection to that area through their Apical Ancestry and regularly visiting sites in the area.

WVWAC membership and Knowledge Holders discussed the report and agree to the recommendations.

Regards

Bradley R Bliss J.P.
WVWAC CEO and Contact Officer
P.O. Box 1583
Orange NSW 2800
[redacted]

Get Outlook for Android

Appendix 1 Figure 13: Warrabinga Native Title Claimants Aboriginal Corporation Stage 4 feedback.

Warrabinga- Wiradjuri #7 Native Title Claimants

-c/o Warrabinga Native Title Claimants Aboriginal Corporation

66 Dangar Street

Kandos Nsw 2848

[redacted]

29-04-2025

Subject: Response to Draft ACHAR – Birriwa Solar and Battery Project Modification

Ozark Environment & Heritage

Dear Catherine,

The Warrabinga Wiradjuri #7 Native Title Claimants have reviewed the Draft Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed modification to the Birriwa Solar and Battery Project and raise the following key concerns:

- Salvage of Site 36-03-41029 (Unavoidable): we are in agreeance with 9.2.1- surface collection and artefacts but There is no clear information regarding the storage location for salvaged material from this site, noting 9.2.3 giving option decisions to be made regarding location will be paramount. We request that the proposed storage location be disclosed and agreed upon in consultation with Traditional Owners & Registered Aboriginal Parties (RAPs), with a preference for storage on Country where appropriate and culturally safe.
- Desecration of Site 36-03-3918: This site raises serious concerns. Warrabinga insists on a clear plan for the cultural management and healing of Country. This site must not be overlooked, and any works in proximity must be conducted under strict cultural supervision.

Monitoring and Compliance: Traditional Owners & RAPs must be involved in all stages of implementation to ensure compliance with the ACHMP. This includes:

- Regular walkover inspections, particularly given the close proximity of Aboriginal heritage sites to proposed works.
- Monthly updates via a shared portal, with transparent reporting of all cultural heritage management actions.
- Inclusion of RAPs in all decisions related to cultural salvage, site protection, and mitigation measures.

Trust and Accountability: Warrabinga Wiradjuri #7 has previously raised concerns about this proponent's conduct, including inconsistent engagement and bending of procedural rules.

Acen's Social Participation and Communications Policy released by David Pollington, Managing Director of ACEN Australia in November 2023, supports this; however, your current practices are breaching your own policies.

Acen's commit to honouring the Clean Energy Council's Best Practice Charter in ACEN'S renewable energy projects and associated transmission infrastructure, alongside ACEN's Social Participation and Communications Policy released by David Pollington, Managing Director of ACEN Australia in November 2023, supports this; however, their current practices are breaching their own policies and commitments.

[8757295:41847773_2]

There is an evident lack of transparency, and this continues to undermine trust. We want to be very clear: Warrabinga Wiradjuri #7 Native Title Claimants will not support this project unless:

There is clear, respectful, and ongoing engagement with our Claimant Group.

Our input is treated with integrity and not as a "tick-the-box" requirement.

Preserving Cultural heritage is treated as a living and sacred obligation, not an obstacle to advancement and development.

Our land and culture are not negotiable. We expect to be part of this process on Country, at all stages, and insist that our voices and responsibilities as Traditional Custodians are acknowledged, respected and upheld.

We await your response and the necessary amendments to the ACHAR and ACHMP to reflect our concerns and conditions.

Kind regards,

Kylie Manson- Chairperson

Warrabinga Wiradjuri #7 Native Title Claimants

[redacted]

[8757295:41847773_2]

Appendix 1 Figure 14: OzArk response to Warrabinga Native Title Claimants Aboriginal Corporation Stage 4 feedback.

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PO Box 2069
DUBBO NSW 2830

22 May 2025

BIRRIWA SOLAR FARM AND BATTERY PROJECT MODIFICATION 1

RESPONSE TO STAGE 4 FEEDBACK

Dear Members,

Thank you for taking the time to review the provided *Aboriginal Cultural Heritage Assessment for the Birriwa Solar Farm and Battery Project Modification 1* (herein referred to as the ACHAR) and providing your feedback dated 29 April 2025.

Please see below responses to your concerns:

- Section 9.2.3 of ACHAR presents options for consideration regarding the long-term management of the Aboriginal objects. The protocols for the long-term management will be determined through consultation with the Registered Aboriginal Parties (RAPs) during the preparation of the *Aboriginal Cultural Heritage Management Plan* (ACHMP) which will be prepared following project approval.
- As outlined in Section 8.1.2 and Section 9.2.2 of the ACHAR, the dripline of scarred tree site 36-3-3918 (Birriwa Bus Route South ST-1) extends into the development footprint for the Birriwa Bus Route South upgrades however there are opportunities to avoid harm to this site through the implementation of management measures such as building the road up at this location as opposed to undertaking any grading within the dripline. As stated in the ACHAR, removal of scarred tree 36-3-3918 (Birriwa Bus Route South ST-1) is not anticipated for the upgrades along Birriwa Bus Route South, however the proposed ground disturbing works associated with the upgrades may encroach on the dripline of the tree. Should ground disturbing works within this dripline be unavoidable, management of the tree may be required in consultation with RAPs. These management measures may include salvage (i.e. removal of the scarred portion of the tree) or alternate management of the tree should it be preferred to remain in situ. The recommended methodology for the salvage would be finalised after the approvals process and documented in the ACHMP, once the exact nature of impacts is known. The dripline of scarred tree site 36-3-3918 (Birriwa Bus Route South ST-1) extends into the development footprint for the Birriwa Bus Route South upgrades however there are opportunities to avoid harm to this site through the implementation of management measures such as building the road up at this location as opposed to undertaking any grading within the dripline.
- Management measures relating to Aboriginal heritage will be developed in consultation with the RAPs during the development of the ACHMP following project approval. The management measures recommended by Warrabinga Wiradjuri #7 Native Title Claimants have been passed on to ACEN Australia Pty Ltd (ACEN; the proponent) for consideration when the ACHMP is being developed.

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- OzArk notes your concerns and have passed along your feedback regarding Trust and Accountability to ACEN.

Again, we thank you for taking the time to review the draft ACHAR. If you have any further questions relating to the information provided above, please feel free to contact myself or our office on (02) 6882 0118.

Kind regards,

Stephanie Rusden
Senior Archaeologist
stephanie@ozarkehm.com.au

APPENDIX 2: ASSESSMENT METHODOLOGY

ABORIGINAL CULTURAL HERITAGE ASSESSMENT METHODOLOGY

MODIFICATION 1 TO THE BIRRIWA SOLAR AND BATTERY PROJECT (SSD-29508870)

MID-WESTERN REGIONAL LOCAL GOVERNMENT AREA, NSW

DECEMBER 2024

Report prepared by

OzArk Environment & Heritage

for ACEN Australia

OzArk
Environment & Heritage

145 Wingewarra St
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DOCUMENT CONTROLS

Proponent	ACEN Australia
Document Description	Aboriginal Cultural Heritage Assessment Methodology: Modification 1 to the Birriwa Solar and Battery Project (SSD-29508870)
File Location	OzArk Job No.
S:\OzArk EHM Data\Clients\ACEN Australia\Birriwa Solar and Battery Project Modification 1_Sept 2023\Assessment methodology	4127

Document Status: V3.0 FINAL	Date: 10 December 2024
Draft V1: OzArk internal edits	V1.0 SG author 22/10/2024 V1.1 SR review 27/10/2024
Draft V2: OzArk and client edits	V2.0 OzArk to client 27/10/2024 V2.1 OzArk incorporates client comments 1/11/2024
Final V3: Final document	V3.0 OzArk finalises 10/12/2024
Prepared for	Prepared by
Carolyn Guarin Project Developer ACEN Australia Suite 2 Level 2, 15 Castray Esplanade Hobart TAS 7004 carolay.guarin@acenrenewables.com.au	Sophia Grubnic Archaeologist OzArk Environment & Heritage 145 Wingewarra Street (PO Box 2069) Dubbo NSW 2830 P: 02 6882 0118 sophia@ozarkehm.com.au

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Acknowledgement

OzArk acknowledge the traditional custodians of the area on which this assessment will take place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

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1 INTRODUCTION

1.1 OVERVIEW

ACEN Australia (ACEN, the Proponent) has received approval to construct and operate the Birriwa Solar and Battery Project (the Project), located 20 kilometres (km) southeast of Dunedoo in Central Western NSW in the Mid-Western Regional Local Government Area (LGA) (**Figure 1-1**). The Project was approved by the Independent Planning Commission of NSW on 23 August 2024 as State Significant Development (SSD) 29508870.

The Proponent is proposing to assess additional land as part of Modification 1 (the Modification) to the Project. The land subject to the Modification includes Lot 11, 34 (part), 40 and 60 / DP750755 and a section of the Birriwa Bus Route South which may require upgrades.

The Project has had an opportunity to incorporate four additional parcels of land (approximately 240 hectares [ha]), with these landholders having recently been formally signed on as Project partners/host landholders.

- The additional land will allow for the relocation of some solar panels and avoid areas in the original footprint with some biodiversity values.
- The additional land allows for the optimisation of the design of the panel rows, allowing for sufficient space for shade and maintenance equipment.
- The additional land allows for the delivery of 600 megawatts (MW) capacity into the energy market, while also helping to provide additional setbacks from Project boundaries – in response to feedback received during the Environmental Impact Statement (EIS) process.
- The modification also allows for the consideration of an alternative access route for the construction and operation of the accommodation facility and operation of the Battery Energy Storage System (BESS) and EnergyCo's infrastructure associated with the Birriwa Solar and Battery Project; this new proposed route will be aligned with roads used by EnergyCo for Central West Orana Renewable Energy Zone (CWO REZ) infrastructure – meaning the Project can better manage the impacts to construction traffic on local roads can be better managed.

OzArk Environment & Heritage (OzArk) has been engaged by the proponent to prepare an assessment methodology for the Modification. This methodology is in accordance with Stage 3 of the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs; DECCW 2010a). The Modification information provided here also complies with Stage 2 of the ACHCRs.

The investigation set out in this methodology aims to identify Aboriginal cultural values, both tangible and intangible, that exist in the Modification Area. The results of this investigation will be presented in an *Aboriginal Cultural Heritage Assessment Report* (ACHAR).

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1.2 PURPOSE OF THE ACHAR

The purpose of the ACHAR is to identify, assess and propose management for the Aboriginal heritage values related to the Modification Area. The ACHAR will include:

- Details of the nature of the Modification
- A description of the potential impacts
- Full details of the Registered Aboriginal Parties (RAPs) consultation process
- The results of an AHIMS search, Native Title search, and other relevant searches
- Development of a predictive model
- Details of the survey methodology and results
- Details of archaeological test excavation, if required
- Details of any Aboriginal sites/objects/potential archaeological deposits located during the survey, including an assessment of the potential significance of sites and the potential harm to these sites by the Modification
- An assessment of the Aboriginal cultural heritage significance (as provided by the RAPs) of the Modification Area
- A discussion of management options and recommendations.

1.3 PROPOSED SCHEDULE

The indicative schedule for the Modification is outlined in **Table 1-1**.

Table 1-1: Indicative schedule.

Indicative Timing	Activity	Detail
Q4 2024	Draft assessment methodology (this document) issued to RAPs for review and comment.	28-day review period for RAPs to submit feedback about the proposed assessment methodology.
Q4 2024	Field surveys to be undertaken	-
Q1 2025	Archaeological test excavation (if required)	-
Q1 2025	Draft ACHAR issued to RAPs for review and comment	-
Q1 2025	Potential in-person Aboriginal Focus Group (AFG) Meeting to discuss draft ACHAR.	This meeting may occur during the 28-day ACHAR review period.
Q1 2025	Finalisation of ACHAR	-

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Figure 1-1: Location of the Modification Area.

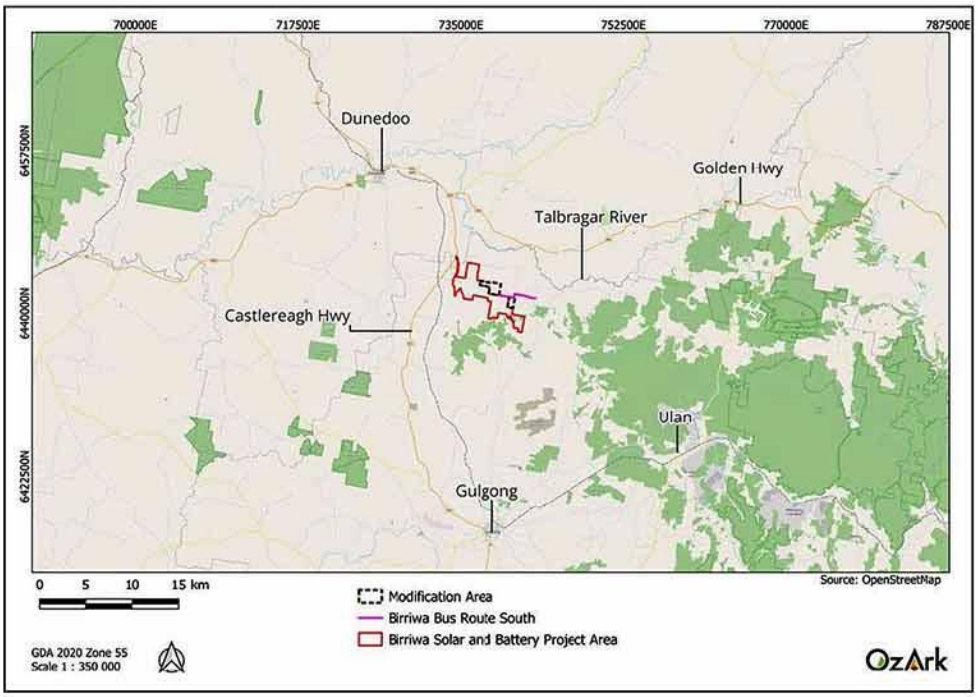
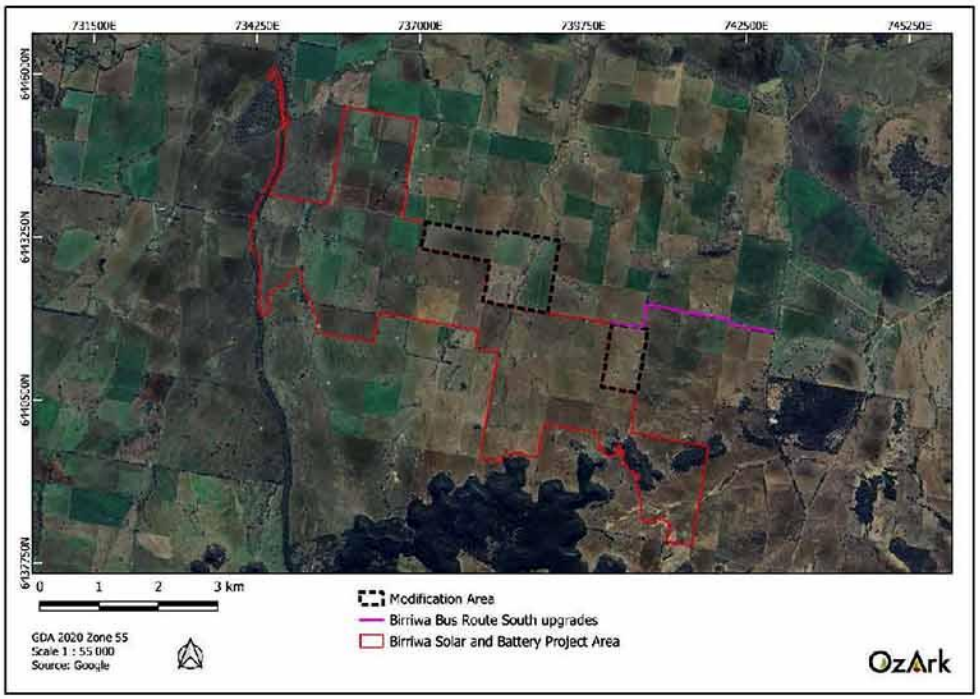


Figure 1-2: The Modification Area in relation to the Project Area.



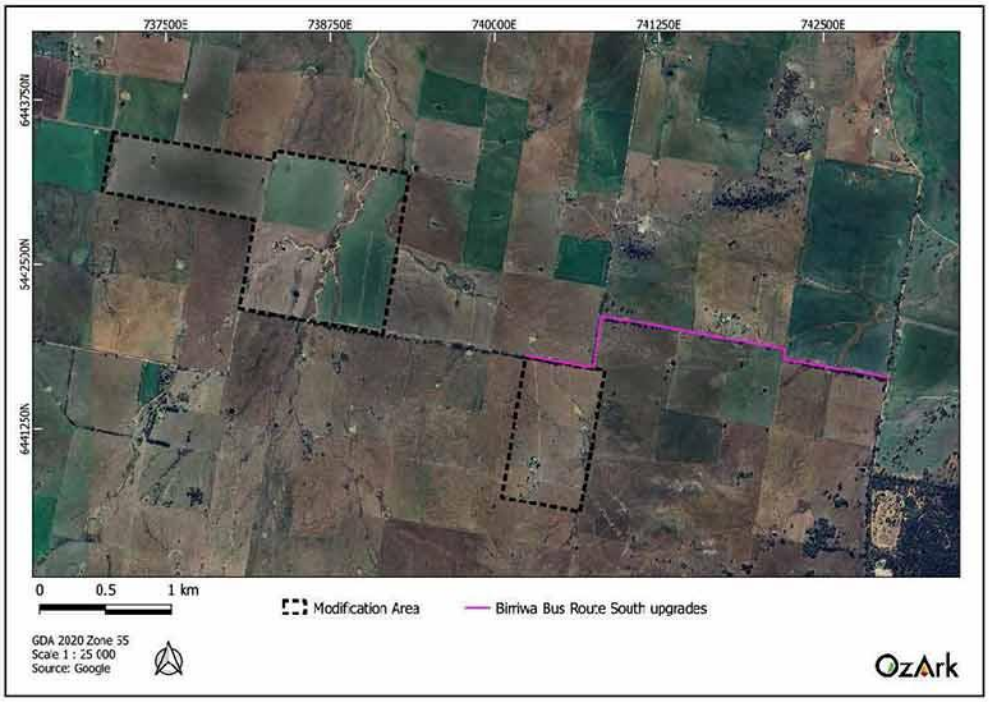
1.4 MODIFICATION AREA

The assessment for the Modification consists of two components (**Figure 1-3**):

- The 'Modification Area' which is comprised of approximately 240 ha of agricultural land across four land lots
- The 'Birriwa Bus Route South upgrades' which covers a section of approximately 3.2 km across the eastern end of the road, ending at the intersection with Merotherie Road.

The section of Birriwa Bus Route South which forms part of the Modification has previously been surveyed by OzArk in 2023 as part of the Narragamba Solar Project by the Proponent and therefore will not be subject to further survey.

Figure 1-3: Aerial of the Modification Area and the Birriwa Bus Route South upgrades.



1.5 CONSULTATION ON THIS METHODOLOGY

Consultation has followed the guidelines established in the ACHCRs (DECCW 2010a).

The ACHCRs undertaken for the Project resulted in nine individuals or groups registering to be consulted (Ozark 2023a), as follows:

- Gallanggabang Aboriginal Corporation
- Mudgee Local Aboriginal Land Council (LALC)
- Murong Gialinga Aboriginal & Torres Strait Islander Corporation

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- North-Eastern Wiradjuri
- Paul Brydon
- Stakeholder 1[1]
- Warrabinga Native Title Claimants Aboriginal Corporation
- Wellington Valley Wiradjuri Aboriginal Corporation (WVWAC)
- Woka Aboriginal Corporation.

Given the area size of the Modification and noting that it has been a considerable time that has lapsed since last formal engagements with RAPs, the Proponent has elected to recommence ACHCRs for the Modification from Stage 1.

A letter was sent by the Proponent to the existing RAPs on 3 October 2024 advising of the Modification.

On 5 October 2024 an advertisement was placed in the *Mudgee Guardian* requesting expressions of interest in being consulted about the Modification. In addition, the following agencies were contacted to identify potential stakeholders for the area: Heritage NSW; the Mudgee LALC; the Office of The Registrar, *Aboriginal Land Rights Act 1983*; the National Native Title Tribunal; Native Title Services Corporation Limited (NTSCORP); the Mid-Western Regional Council; and the Central Tablelands Local Land Services.

As a result, the additional following individuals/groups registered to be consulted about the Modification:

- Booral Maliyan
- Cindy Foley
- George Flick
- Jeremy Duncan
- Girragirra Murun Aboriginal Corporation
- Gomery Cultural Consultants
- Thomas Dahlstrom
- Wingarra Wilay Aboriginal Corporation

These 17 individuals/groups constitute the RAPs for the Modification.

[1] Those identified as Stakeholder 1 have requested to be anonymous.

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1.6 LANDSCAPE CHARACTERISTICS OF THE MODIFICATION AREA

The Modification Area is located at the eastern edge of the NSW South Western Slopes bioregion and the Talbragar–Upper Macquarie Terrace Sands and Gravels as characterised by Mitchell (2002). This landscape type is characterised by sandy quaternary alluvial sediments on floodplains and terraces of the Talbragar River, with a general elevation between 350–500 metres (m) (Mitchell 2002: 99). The topography is primarily gentle slopes or flats, with the highest point being the southern-most boundary with an elevation of 480 m which descends towards the north (see **Figure 1-4**).

The soils consist primarily of siliceous sands, particularly the Home Rule soil type. The Home Rule soil type is characterised by low fertility and water holding capacity. Surface soils tend to be acidic, and prone to seasonal waterlogging. The siliceous sands Home Rule topsoil ranges between 10–35 centimetres (cm) in depth and tends to be loose brown to dark brown loamy sandy with small quartz and felspar gravels present. The subsoil tends to be a bright brown to red-brown loose clayey-sand, with small quartz and felspar gravels. These types of soil are prone to erosion, especially if no surface cover is present. Furthermore, drainage depressions are highly susceptible to gully erosion due to water runoff (Murphy and Lawrie 1998).

Most of the vegetation inside is classified as non-native. Examination of the aerial imagery (see **Figure 1-3**) shows that most of the Modification Area has been cleared, though some small stands of trees and paddock trees remain scattered throughout it.

The Talbragar River is the closest permanent watercourse and is located approximately 2 km north of the Modification Area. Several watercourses and tributaries intersect through the Modification Area in a general north–south direction and flow into the Talbragar River. These include White Creek, several tributaries of White Creek and two tributaries of Huxleys Creek in the northwestern section.

The Modification Area is used primarily for grazing and cropping purposes and Birriwa Bus Route South has been cleared and graded for use as a transport corridor. Disturbances inside the Modification Area appear to be limited to construction of homesteads and agriculture infrastructure, fence lines, dams and unsealed tracks. An aerial from 1964 which covers the Modification Area shows there has been little change in terms of land use over the past 60 years (**Figure 1-5**).

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Figure 1-4: Topography and drainage of the Modification Area.

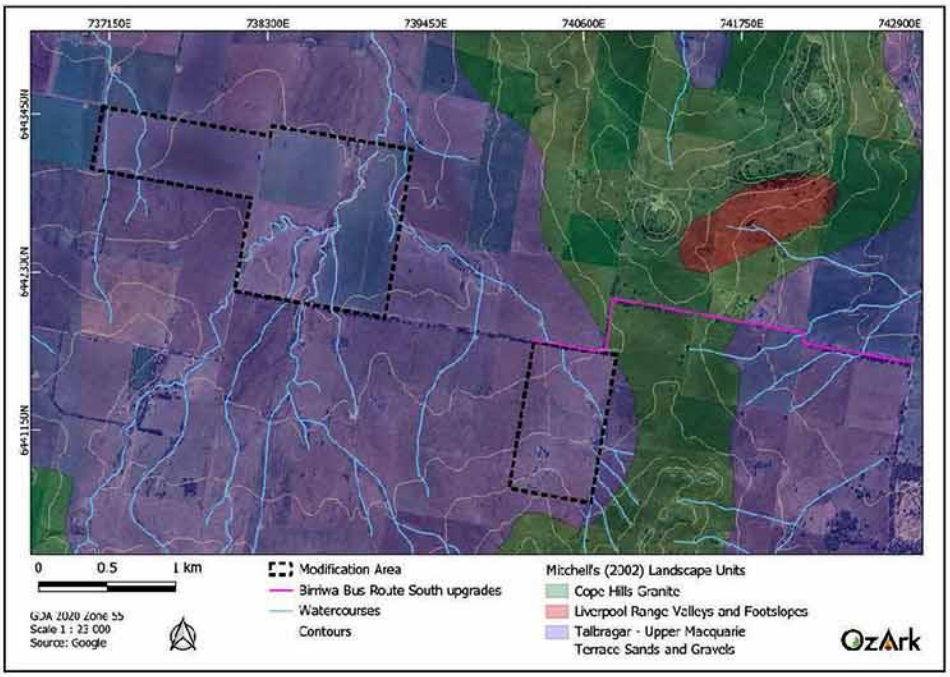
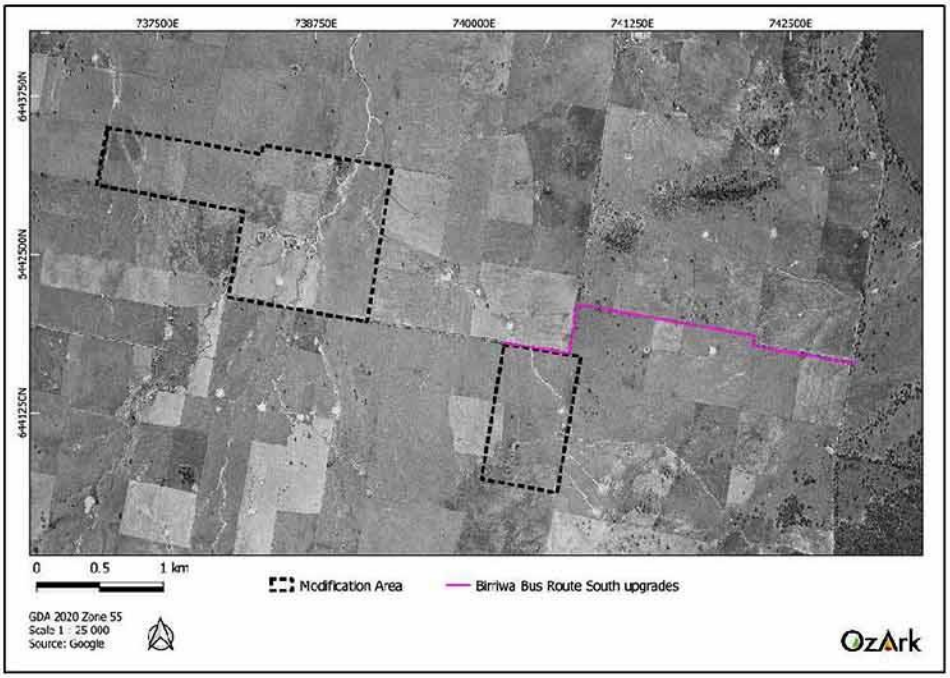


Figure 1-5: 1964 aerial with overlay of Modification Area (source: SS 2021).



OzArk Environment & Heritage

2 CULTURAL VALUES

2.1 INTRODUCTION TO CULTURAL VALUES

No matter who you are, we all have culture. Each person's culture is important; it's part of what makes us who we are.

australianstogether.org.au

Many Aboriginal people in Australia have a unique view of the world that's distinct from the mainstream. Land, family, law, ceremony, and language are five key interconnected elements of Aboriginal culture. For example, families are connected to the land through the kinship system, and this connection to land comes with specific roles and responsibilities which are enshrined in the law and observed through ceremony. In this way, the five elements combine to create a way of seeing and being in the world that is distinctly Aboriginal.

Fundamentally, culture is living and is not static:

- Culture is acquired - we learn about culture from others in our community, including our parents
- Culture is shared - culture does not exist in a vacuum, it is shared amongst a group of people
- Culture defines core values - because we have been taught our culture and share it with our cultural group, we tend to form the same core values
- Cultures resist change but are not static - culture does and can change, but change is usually slow and gradual.

2.1.1 Connection to Country

Aboriginal and Torres Strait Islander peoples are connected to Country through lines of descent (paternal and maternal), as well as clan and language groups.

Although in the past (and sometimes into the present) there have been conflicts between different tribal groups, these were rarely over land. Aboriginal and Torres Strait Islander people have such a strong sense of belonging to country; they have no desire to own the land of others.

Territory is defined by spiritual as well as physical links. Landforms have deep meaning, recorded in art, stories, songs, and dance. Songlines or Dreaming Tracks as well as kinship structures link Aboriginal peoples to the territories of other groups. In the past, these links were also used for trade.

"When we say Country we might mean homeland, or tribal or clan area and in saying so we may mean something more than just a place; somewhere on the map. We are not necessarily referring to place in a geographical sense. But we are talking about the whole of the landscape, not just the places on it."

Professor Mick Dodson AM, August 2007

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2.1.2 Managing Country

Living on this land for around 50,000 years, Aboriginal and Torres Strait Islanders established effective ways to use and sustain resources. One important aspect is the right of certain people to control the use of resources in a particular area. Aboriginal and Torres Strait Islander people don't see themselves as 'owning' land, animals, plants, or nature, but rather belonging with these things as equal parts of creation.

The rights of different groups to live in and manage certain areas of land are clear and recorded through art, stories, songs, and dance.

Deep cultural and spiritual values like totemism have also played an important part in Aboriginal and Torres Strait Islander resource management. Totemism is a belief and value system that connects human beings to other animals, plants, and aspects of nature. Groups and individuals are assigned a particular animal that they are related to and must care for. This gives them a profound sense of connection to and responsibility for the natural world.

Aboriginal and Torres Strait Islanders people have a wide range of traditional methods for gathering food including fish traps, subsistence agriculture, hunting and harvesting a wide range of natural fruits and vegetables. Some groups of people would stay in one place, while others moved around the land according to the seasons, to ensure sustainable and rich food supplies, and to fulfil their spiritual and cultural obligations.

Even before 1788 there were complex relationships for long distance trade between Aboriginal and Torres Strait Islander communities especially for coastal shells and stone hatchets. When people from different groups met socially to share resources, for ceremonies or to settle disputes, they brought items to exchange. Items included stones for hatchets, kangaroo skins, timber for spears, ochre or clay for paint and marine shells for decoration. The exchange of objects was not motivated by a desire for wealth accumulation but a social system to build connection between people and groups.

2.1.3 Recognising lore

In much of eastern Australia, Aboriginal communities live their lives like most Australians. However, in certain crucial areas, particularly associated with family, leadership roles and caring for Country, Aboriginal lore continues, even in the most urbanised communities.

2.2 IDENTIFYING CULTURAL VALUES

A major aim of this assessment is to identify any cultural values within the landscape in which the Modification is located so that those values can be recognised and incorporated into the ACHAR's management recommendations.

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Any cultural values relating to the Modification Area will be captured by the OzArk archaeologists (if such information is provided by RAPs during the survey) and included in the ACHAR.

Understanding cultural landscapes can only come from the views of a particular community, in this case, the Aboriginal community. Unless informed, OzArk will not know of the community's feelings towards the cultural landscape in which the modification will be located. Should any RAPs have knowledge of cultural values regarding the Modification Area that they wish to share or that may affect the survey methodology set out in **Section 5**, OzArk invites them to contact us so that these values can be recorded and/or responded to in the methodology.

2.2.1 Use of information collected

An ACHAR will be prepared for the Modification which articulates Aboriginal cultural values and associated conservation methods across the Modification Area, as identified during the consultations. The ACHAR will be circulated to all RAPs for comment as is set out in the ACHCRs. The ACHAR will be available to Heritage NSW for their consideration of the Modification and the report will be publicly available.

2.2.2 Public / confidential information

Information will be treated in accordance with instructions received by Aboriginal informants. Information described as confidential (culturally sensitive) will not be detailed in the publicly available report. Confidential information should be made available to the proponent, its heritage consultants, and Heritage NSW so that significant cultural values can be conserved. On advice from the provider of the information, a redacted ACHAR would be made available to the wider public where any sensitive cultural information is removed.

2.2.3 Copyright

Information collected for this assessment remains the property of the Aboriginal informants and the author. Without written permission from individual informants and the author information may not be used for purposes other than those outlined above.

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3 ARCHAEOLOGICAL CONTEXT

3.1 ABORIGINAL PEOPLE OF THE MODIFICATION AREA

At the time of British settlement, the Modification Area was situated within the territory of people belonging to the *Wiradjuri* tribal and linguistic group (Tindale 1974). The Wiradjuri tribal area is situated within the Murray Darling Basin and extends across three general physiographic regions: the highlands or central tablelands in the east, the riverine plains in the west, and the transitional western slopes zone in-between (Navin Officer 2005: 48). The Modification Area is at the north-eastern extent of Wiradjuri territory.

Oral tradition records the presence of over 20 clans within the broader Bathurst–Mudgee region, organised according to matrilineal descent (Navin Officer 2005: 48). Clans were made up of several fairly independent groups, of up to 20 members, in friendly contact with each other, moving separately for much of the year over a shared territory (Pearson 1981; Haglund 1985).

The Wiradjuri social organisation underpinned kinship systems based on totem names and associations. This system governed and controlled marriage and determined ceremonial kinship obligations. Individual identity and clan affiliations were expressed partly through elaborate carvings on wooden implements and on skin cloaks (White 1986).

Rivers and lagoons formed the basis of Wiradjuri lifestyle, supplying shellfish, fish (cod, perch and catfish) as well as yabbies, shrimp, and turtles (Garnsey 1942 and Pearson 1981). Kangaroo and emu meat, fruit and nuts, yam daisies, wattle seeds and orchid tubers supplemented the riverine diet.

3.2 REGIONAL ARCHAEOLOGICAL CONTEXT

There are several broad scale regional archaeological studies which either cover the Modification Area itself or are in general proximity to it. These studies have been summarised below.

3.2.1 PhD thesis – changing land use and settlement patterns in the upper Macquarie River region of NSW from prehistoric times to 1860 (Pearson 1981)

Pearson's work was primarily in the Upper Macquarie region, which reflects topographic similarities to the current Modification Area. Pearson divided the archaeological sites he recorded into two main categories: occupation sites and non-occupation sites (including grinding grooves, scarred or carved trees, ceremonial and burial sites). Analysis of site locations produced a site prediction model with occupation occurring in areas with access to water, good drainage, level ground, adequate fuel and appropriate localised weather patterns for summer or winter occupation. Occupation sites were most frequently found on low ridge tops, creek banks, gently undulating hills and river flats and usually in open woodland vegetation (Pearson 1981: 101). The location of non-occupation sites was dependent upon a variety of factors relating to site function. For instance, grinding grooves were found where appropriate sandstone outcropping occurred,

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as close to occupation sites as possible. The location of scarred trees displayed no obvious patterning, other than proximity to watercourses where camps were more frequently located. Pearson suggested that these patterns would differ on the drier plains to the west, towards Dubbo and beyond, where dependence upon larger, more permanent water supplies was greater.

3.2.2 An assessment of Aboriginal sites in the Dubbo City Area (Koettig 1985)

In 1985, the survey by Koettig investigated the evidence of Aboriginal occupation within 5 km of Dubbo's city limits. The investigation concluded that sites exist throughout all environmental landscapes surveyed. Artefact scatters, scarred trees and grinding grooves were the most frequently occurring site types; and site location and size were determined by various environmental and social factors. Of the environmental factors, proximity to water, geological formation and availability of food resources were the most important. As such, Koettig's site prediction model suggested that: all site types would occur along watercourses; stone arrangements would occur most frequently on knolls or prominent landscape features; larger campsites would occur most frequently along permanent watercourses, near springs or wetlands; small campsites could occur anywhere; scarred trees could occur anywhere, but particularly in remnant native woodland communities; campsites would be smaller and more sporadic near the headwaters of creeks; grinding grooves could occur where appropriate sandstone existed; quarries could occur wherever there were suitable stone sources; and shell middens could occur only along the Macquarie River.

3.2.3 Assessment of the prehistoric heritage in the Mudgee Shire (Haglund 1985)

Haglund (1985) conducted a study into the prehistoric heritage in the Mudgee Shire and noted that prior to colonial settlement small groups of approximately twenty Aborigines acted independently but engaged in friendly contact. These groups moved after variable intervals, often over a short distance or within the same area, to obtain and use different resources.

Early British explorers and settlers noted considerable variation in the numbers of Aboriginal people that would gather for food procurement activities during different seasons of the year. This seasonality was most obvious in the case of gatherings along major rivers, and it has been suggested that during dry periods the water holes remaining in the major rivers would become focal points for the usually scattered groups (Haglund 1985: 5).

Concerning the Mudgee/Gulgong area, Haglund (1985: 3) notes that the distribution of known sites cannot be seen as accurately reflecting past Aboriginal land use or site location patterns because of site loss since colonial settlement. Those sites known to exist, however, do fit within the general pattern for the various resource zones discerned by Koettig (1985) and Pearson (1981).

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3.2.4 Aboriginal heritage study: Dubbo local government area (OzArk 2006)

An assessment of Aboriginal heritage resources within the then Dubbo LGA to assist Dubbo City Council (now amalgamated into the Dubbo Regional Council) with planning was undertaken by OzArk (2006). This study aimed to consolidate previous surveys and assessments of Aboriginal heritage; set a baseline for further study; and survey areas zoned for future expansion. Approximately 1120 ha of land was surveyed within five study areas surrounding the city of Dubbo. During the survey, 26 new Aboriginal sites were recorded, and eight out of 12 previously recorded sites were relocated. Several of the newly recorded site types were similar to those found in previous studies. Fewer scarred trees were found than expected, likely due to intensive agricultural practices and associated tree clearance around Dubbo city compared to the broader former Dubbo LGA. No new grinding groove sites were recorded, which was understandable given that this site type comprised only 3.6% of previously located sites within the former Dubbo LGA. Scarred tree distribution adhered to the predictive model, exclusively following waterways and fence-lines, although this probably reflected land clearing practices more than Aboriginal site patterning. Isolated finds and open sites followed a similar pattern, largely limited to watercourse edges and elevated terraces within 500 m of the Macquarie River and other permanent to semi-permanent waterways. No significant patterning emerged in terms of site size or quality, perhaps because surface manifestations of artefacts often do not adequately reflect site size or complexity.

3.3 LOCAL ARCHAEOLOGICAL CONTEXT

Two searches of the Heritage NSW administered Aboriginal Heritage Information Management System (AHIMS) database were completed on 21 October 2024 covering a total area of 10 km x 10 km centred on the Modification Area (GDA Zone 55 Eastings: 727644–747644; Northings: 6431970– 6451970). The searches returned 130 results for Aboriginal sites within the 10 km radius of the Modification Area, with two sites (36-3-4102 and 36-3-4095) located within the Modification Area and one site (36-3-3918) located along Birriwa Bus Route South.

Table 3-1 shows site types and frequencies and **Figure 3-1** shows the AHIMS sites in relation to the Modification Area.

The most frequently recorded site types are isolated finds which contribute 31% of the site types in the vicinity of the Modification Area, these are closely followed by artefact scatters which contribute 28%. Other frequent site types are grinding grooves (11%), modified trees (10%), and artefacts sites with associated potential archaeological deposit (PAD) (7%). Shelters with art (4%) and deposits (5%) and standalone PADs (3%) are also present in far fewer numbers, as well as rarer site types which only have single recordings in the vicinity of the Modification Area (see **Table 3-1**).

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Site types which include shelters are in the mountainous ranges to the northeast and southwest of the Modification Area. Open artefact sites (such as scatters, isolated finds and PADs) tend to be in proximity to a watercourse and recorded outside of the more mountainous areas. Modified trees also tend to be located near watercourses. Recorded grinding grooves tend to be located near a watercourse and on the edges of mountainous areas.

The two previously recorded sites located in the Modification Area are artefact scatters located near the intersecting ephemeral watercourse. Site 36-34102 is located 140 m from the waterway and site 36-3-4095 is located directly on the drainage line. **Figure 3-2** shows the location of these sites within the Modification Area.

One culturally modified tree (36-3-3918) has been previously recorded along the road shoulder of Birriwa Bus Route South, shown on **Figure 3-3.** Another modified tree (36-3-4034) can be seen nearby, approximately 40 m north of the road, however, it is noted that AHIMS shows that the site status has been updated to 'not a site'.

Table 3-1: AHIMS site types and frequencies

Site Type	Number	% Frequency
Artefact scatter	37	28
Artefact site with PAD	9	7
Burial/s	1	1
Ceremony and Dreaming	1	1
Grinding groove	14	11
Isolated find	41	31
Modified tree (carved or scarred)	13	10
PAD	3	2
Rock shelter with art	**4**	**3**
Rock shelter with deposit	**5**	**4**
Stone arrangement	**1**	**1**
Waterhole	1	1
Total	**130**	**100**

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Figure 3-1: AHIMS sites in relation to the Modification Area.

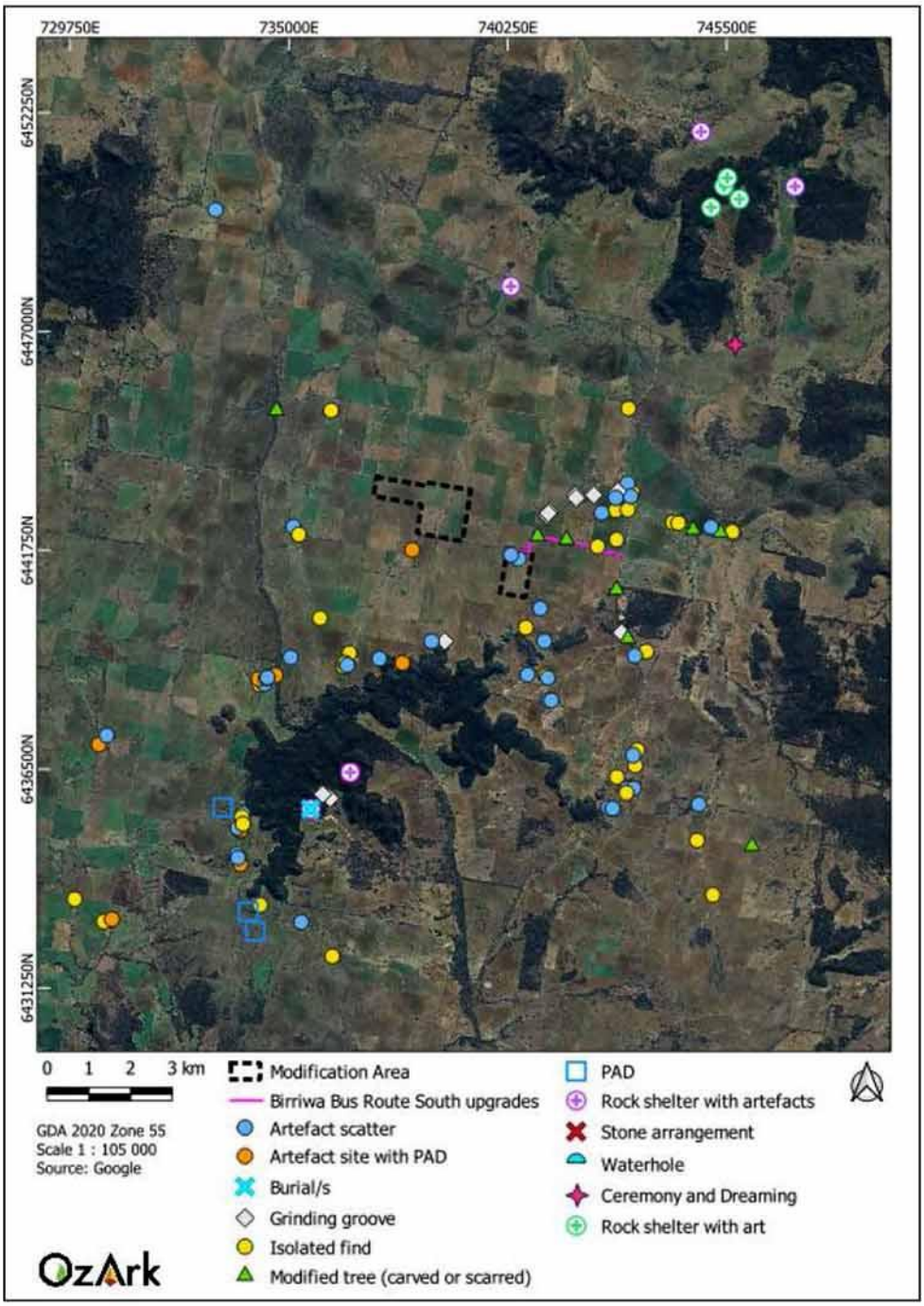

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Figure 3-2: Detail of the AHIMS sites recorded within the Modification Area.

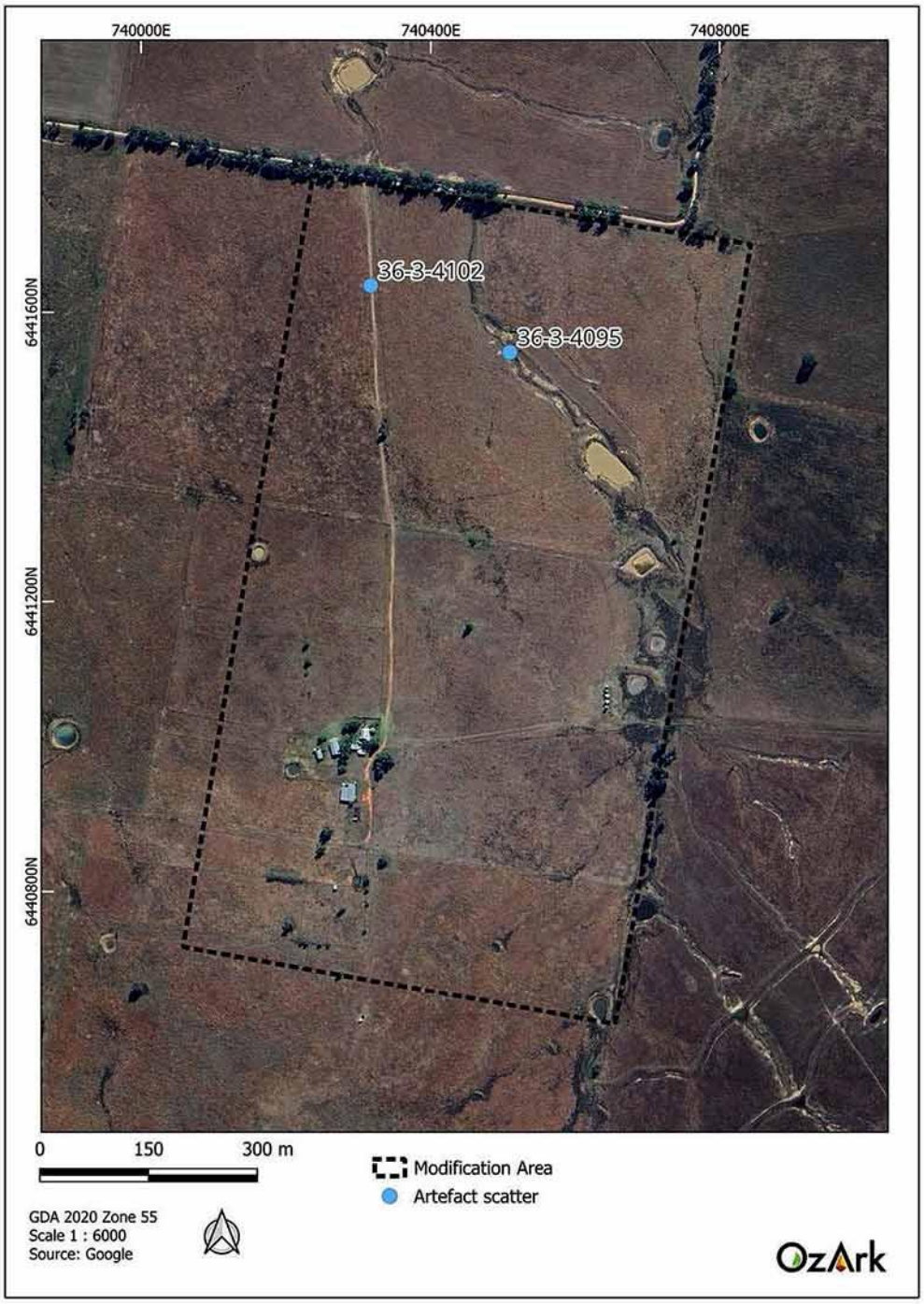

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Figure 3-3: Detail of AHIMS sites recorded along Birriwa Bus Route South

3.3.1 Archaeological investigations near the Modification Area

Ulan Coal Mine

Numerous studies undertaken over the past twenty-five years for the Ulan Coal Mine over all portions of their lease areas and have recorded hundreds of Aboriginal sites. Surveys carried out through the 1980s and 1990s by Haglund have been summarised by Kuskie (2000). As expected, the variety of landforms present within the Ulan project area resulted in all site types being recorded as a result of these studies (including more unusual sites such as ochre quarries and a utilised rock pool); although, it was noted that in general, the landscapes were highly disturbed as a result of agricultural activities (clearing, ploughing, grazing) and erosional processes. Overall quartz appears to be the predominant raw material recorded at Ulan, although significant quantities of chert are also present (Kuskie and Webster 2002; Corkill 1991; Haglund 1996).

Indigenous and non-Indigenous Heritage Assessment: Wollar – Wellington 330kV Electricity Transmission Line (OzArk 2005)

OzArk (2005) undertook an assessment of a proposed 330 kilovolt (kV) electricity transmission line (ETL) between Wollar and Wellington. The area assessed for the ETL is approximately 13.5 km southeast of the Modification Area. During the assessment, 28 Aboriginal sites were recorded which consisted of 10 artefact scatters, nine artefact scatters with PAD, seven isolated finds and

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two PADs. Most sites recorded during this assessment were within 200 m of water, either on the valley slopes or the valley floors (terraces / banks of watercourses).

Beryl Solar Farm (NGH Environmental 2017)

An Aboriginal cultural heritage assessment for the Beryl Solar Farm, 35 km south of the Modification Area, was conducted by NGH Environmental in 2017. The Beryl Solar Farm study area consisted of 332 ha of low undulating slopes surrounding two ephemeral drainage channels. Five sites were identified during the survey, three of which were located close to Wialdra Creek near the Castlereagh River.

The assessment concluded that the survey results were consistent with the model predicting site location close to waterways, and that there was negligible potential for intact subsurface deposits with high densities of objects or cultural materials. The low level of topographic variation across the Beryl study area led to a generic predictive model that has limited applicability to the current study area. However, the survey did record uncommon site types, including an axe blank and a ground-edge axe, despite the small number of identified sites.

Stubbo Solar Farm (OzArk 2020 and 2021)

OzArk conducted an archaeological assessment for the Stubbo Solar Farm located 8 km southeast of the Modification Area. The assessment resulted in 23 Aboriginal sites being recorded, and two previously recorded AHIMS sites located. The 25 Aboriginal sites inside the study area consist of nine isolated finds, three isolated finds with PADs, two artefact scatters, nine artefact scatters with PADs, one PAD, and one modified tree.

The assessment concluded:

- In total, 309 stone artefacts were recorded during the survey. The predominate material for stone artefacts was quartz (n=246, 79.6%), followed by chert (n=22, 7.1%), mudstone (n=16, 5.2%), and volcanics (n=13, 4.2%). Also present though in much lower quantities were silcrete, petrified wood, greywacke, and chalcedony
- The most frequent type of stone artefact is flakes (n=240, 79.6%), shatter (n=36, 11.7%), cores (n=12, 3.9%), blades (n=9, 2.9%) and backed blades (n=5, 1.6%). Also present in the overall assemblage are end scrapers (n=2), flaked pieces (n=2), ground edge hatchet heads (n=2), and a microlith (n=1)
- Most sites were recorded in the 'drainage' landforms along Stubbo Creek or the two main tributaries northwest and southwest of Stubbo Creek.
- The larger and higher-density sites are located at the confluence of Stubbo Creek and the two tributaries or further southwest along Stubbo Creek after the confluence

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- The artefact sites (scatters and isolated finds) are located predominately in erosion scalds on the edges of elevated terraces, indicating there is potential for subsurface archaeological deposits where the terrace still has topsoil and A-horizon soils present.

The assessment also concluded that the highest areas of archaeological sensitivity remain to be along the main watercourses (Stubbo Creek and its tributaries), which would have provided at least a semi-permanent source of water in the area. The remainder of the Stubbo Solar Farm assessment area, especially the higher to mid slopes have a much lesser degree of archaeological sensitivity. The ridgelines and crests of the low-lying rolling hills were also less sensitive for archaeological sites than the landforms immediately adjacent to the main watercourses.

An addendum assessment for the external access tracks to Stubbo Solar Farm was undertaken by OzArk in 2021. The addendum assessment covered two eastern access easements, one western access easement and the extent of the Blue Spring Road between its intersection with Cope Road to where the eastern access easements intersect with the road. No Aboriginal sites were recorded during the addendum assessment.

Birriwa Solar and Battery Project (OzArk 2023a and 2023b)

The ACHAR for the Project was completed in 2023. The report focussed on a 1,298 ha area of land adjacent to the Modification Area.

During the field survey a total of eight previously unrecorded Aboriginal sites were located, including five artefact scatter (one with PAD), two isolated finds and a scarred tree. The dominant raw material identified was quartz, with small quantities of basalt, quartzite, silcrete, mudstone and volcanic materials, and artefacts were predominately unmodified flakes. All recorded sites, except two, were identified within 200 m of ephemeral watercourses.

OzArk (2023b) subsequently assessed the location of the proposed temporary worker accommodation facility for the Project. Five artefact sites were located during the assessment, including three artefact scatters and two isolated finds of predominantly quartz material.

Central West Orana Renewable Energy Zone Transmission Project (EMM 2023, 2024)

An ACHAR was completed for the CWO REZ Transmission Project by EMM in 2023. Further assessment followed this report, and an addendum report was submitted for public exhibition in 2024. The report focussed on 3,998 ha of land located in the region immediately surrounding the Modification Area.

A field survey, completed over a 12-week period, encompassed some 798 kilometres (or 3,998 ha) of linear pedestrian transects across the construction area. Despite poor visibility and coverage (~4.5%) due to the presence of dense vegetation, 183 Aboriginal objects, sites and/or places were documented as part of the investigation. These were dominated by stone artefact

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scatters (n=78) and isolated stone objects (n=65), with lesser occurrences of grinding grooves (n=15) and culturally modified trees (n=14). Spatially, these were found across the construction area, but there were clear clusters primarily located within 250 m of several 2nd to 4th order creeks. The two artefact sites (36-3-4102 and 36-3-4095) which are located within the current Modification Area were recorded during this investigation.

Test excavations consisted of 128 0.25 m^2 manually dug test pits at a small number of proposed transmission tower locations extending across the construction area to supplement and confirm the field survey findings. Overall, some 84 artefacts were recovered from test pits, primarily between 10–20 cm below surface, with no test pits exceeding 80 cm in depth. Overall, artefact densities of 2.1/m^2 were recovered. When extrapolating values from the test excavation, four test pits (and two groups of test pits) returned values of >17/m^2, which was considered to reflect above background levels of activity. These were on average ~104 m from 2nd – 4th order creek lines, with high densities recorded along Copes Creek and Sportsman Hollow Creek. The assemblage indicates a focus on extraction of raw materials potentially from these (and other) creeks, notably a milky quartz, and likely dating to the last few thousand years. All cultural materials were recovered from the upper 40 cm of the soil profile within test pits, and most of the assemblage recovered from the upper two spits (i.e. 0–20 cm). Most of the artefacts were made white, milky quartz (a macrocrystalline variety) (n=44), with lesser occurrences of tuff (n=26), chalcedony (n=2) and chert (n=2).

Across the construction area, incised creeks or ploughed fields typically revealed a 20–30 cm topsoil – usually a clay loam – was present above under-lying heavy clay subsoils or immediately onto geological substrate. Sandstone exposures and outcroppings were frequently observed and especially within many of the creek-lines, and its prevalence may explain in part the abundance of grinding grooves documented in the region. Few remnant trees or vegetation were observed due to de-vegetation.

The addendum assessment covered an additional 254 km of field survey and recorded the results of test excavations of nine creek corridors. The addendum assessment recorded an additionally 73 Aboriginal sites and places. Isolated and low-density stone artefact sites were the primarily recorded site type, however rock shelters (n=2), grinding grooves (n=2) and scarred trees (n=6) were also identified. Test excavations found that the Laheys, Sandy, and Tallawang Creeks were utilised more than others investigated, exhibiting higher density artefact deposits.

The findings demonstrate that the most significant cultural deposits appear to be primarily found along major watercourses and/or strongly influenced by other environmental factors such as the presence of sandstone outcrops and over hangs.

Narragamba Solar Project (OzArk 2024)

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In 2024, OzArk completed an archaeological assessment for the nearby Narragamba Solar Project located approximately 4 km southwest of the Modification Area. A total of 13 new Aboriginal heritage sites were recorded, including isolated finds, seven artefact scatters (one with PAD), and one scarred tree. The most commonly recorded artefact type was unmodified flakes, and the dominant raw material recorded was quartz, with lower quantities of chert, silcrete, mudstone and chalcedony present.

While at a regional level, site distribution has generally reflected that higher proportions of sites occur within 50 m of drainages, the survey results showed higher numbers of site recordings outside of 50 m and up to 100 m from drainages.

The results of the survey concluded that overall site integrity is low due to the wide range of past and current land uses including cultivation, grazing and construction of roads and infrastructure.

3.4 ARCHAEOLOGICAL CONTEXT: SUMMARY

The archaeological investigations surrounding the Modification Area as summarised in **Sections 3.2** and **3.3** indicate that:

- Though shelters are one of the most prevalent site types in the general region, these tend to be located near mountainous areas where necessary geological formations are present. These suitable landform types are not present within the Modification Area
- Stone artefact sites (isolated finds and artefact scatters) are also frequent sites recorded in the area, especially in association with watercourses
- Quartz is the predominant material for stone artefacts in the area, although volcanic materials, silcrete, quartzite, mudstone, chert, and chalcedony could also be present
- Artefact assemblages recorded in the region consist largely of unmodified flakes with few formal tools
- Higher artefact density sites are located near to permanent waterways and low-density artefact distributions are found at further distances.

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4 PREDICTIVE MODEL

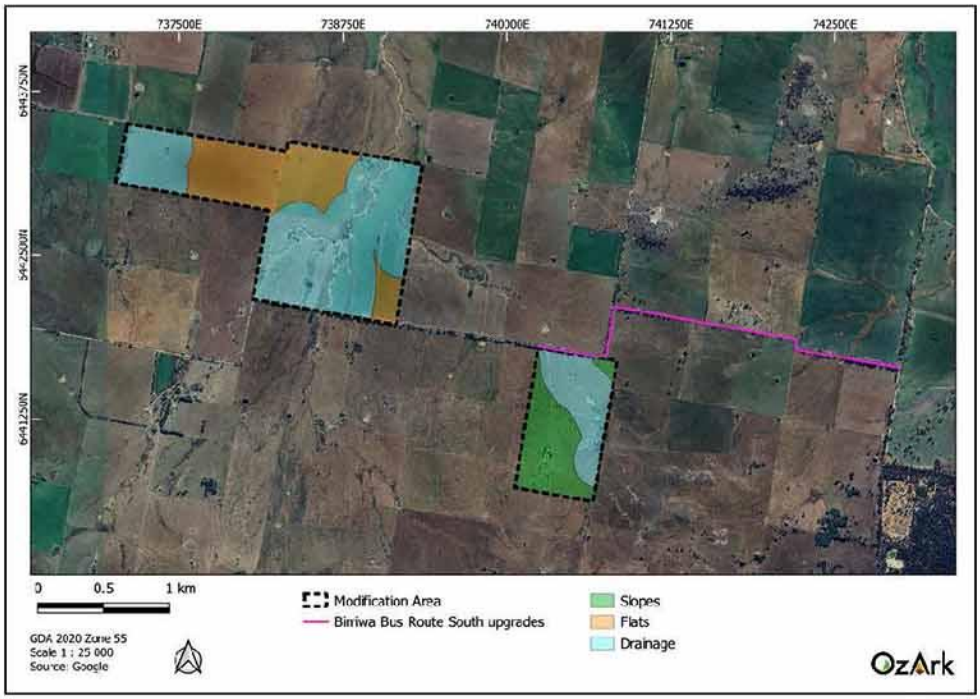
4.1 LANDFORM MODELLING

The topography of the Modification Area is primarily gentle slopes or flats, with the highest point being the southern-most boundary of the Modification Area with an elevation of 480 m which descends towards the north (see **Figure 1-4**). Previous studies in the district (OzArk 2020, 2023, 2024) indicate that these gentle slopes or flats are likely to contain intact sites, especially near the watercourses which intersect with the Modification Area.

Preliminary landform mapping within the Modification Area indicates there are three main landform types (**Figure 4-1**):

- drainage lines with a 200 m buffer around them, including White Creek
- gentle slopes in the southern portion of the Modification Area
- flats across the northern portion of the Modification Area.

Figure 4-1: Landforms within the Modification Area.



4.2 PREDICTIVE MODEL FOR THE MODIFICATION AREA

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the

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availability of and/or accessibility to a range of other natural resources including: plant and animal foods; stone and ochre resources and rock shelters; as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials such as stone artefacts, stone hearths, shell, and some bones that remain preserved in the current landscape. Even these however may not be found in their original depositional context since these may be subject to either (a) the effects of wind and water erosion/transport—both over short- and long-time scales—or (b) the historical impacts associated with the introduction of colonial farming practices. Scarred trees, by their nature, may survive for up to several hundred years but rarely beyond.

4.2.1 Site types in the region of the Modification Area

The site types listed in **Table 4-1** are present in the region of the Modification Area. The likelihood of these sites being present in the Modification Area is discussed in **Section 4.2.3**.

Table 4-1: Site types recorded in the region of the Modification Area.

Site type	Site description
Isolated finds	May be indicative of random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or subsurface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.
Open artefact scatters	Artefact scatters are defined as two or more artefacts, not located within a rock shelter, and located no more than 50 m away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short- or long-term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of a background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'. Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources. Topographies which afford effective through-access across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.
Culturally modified trees	Aboriginal scarred trees contain evidence of the removal of bark (and sometimes wood) in the past by Aboriginal people, in the form of a scar. Bark was removed from trees for a wide range of reasons. It was a raw material used in the manufacture of various tools, vessels, and commodities such as string, water containers, roofing for shelters, shields and canoes. Bark was also removed because of gathering food, such as collecting wood boring grubs or creating footholds to climb a tree for possum hunting. Due to the multiplicity of uses and the continuous process of occlusion (or healing) following removal, it is difficult to accurately determine the intended purpose for any example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematical because some

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Site type	Site description
	forms of natural trauma and European bark extraction create similar scars. Many remaining scarred trees probably date to the historic period when bark was removed by Aboriginal people for both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.
Grinding grooves	Grinding grooves are the remnants of ground edge hatchet manufacture and sometimes from food preparation. The site is most likely to occur on flat outcrops of coarse-grained sandstone in the vicinity of water sources, however, grinding grooves have also been recorded on fine-grained granite and quartzite outcrops.
PAD	Any location where the potential for subsurface archaeological material is moderate or high, relative to the surrounding Modification Area landscape. The potential for subsurface material to be present is assessed using criteria developed from the results of previous surveys and excavations relevant to the region.
Rockshelters and art sites	Utilised in the past for both habitation and ceremonial purposes. The term 'rock shelter site' refers to rock shelters/rock overhangs that contain evidence such as stone artefacts and/or bones and/or plant remains (from meals eaten at the site) and/or hearths (fireplaces). Most rock shelter sites are secular in nature, however, those that also contain rock art or engravings are often believed to be non-secular in nature. The term 'rock art site' generally refers to Aboriginal ochre paintings or ochre or charcoal drawings located on a rock slab (generally in a sheltered place like the floor of a cave or rock shelter), boulder, cliff-face, cave or rock shelter wall or roof, or wall of a rock overhang. Most rock art sites are found in locations that are sheltered from the elements. This observation, however, is probably biased to some extent, as rock art would not preserve well in open positions. Rock art sites are generally believed to be non-secular in nature.
Burials	Generally found in soft sediments such as aeolian sand, alluvial silts, and rock shelter deposits. In valley floor and plains contexts, burials may occur in locally elevated topographies rather than poorly drained sedimentary contexts. Burials are also known to have occurred on rocky hilltops in some limited areas. Burials are generally only visible where there has been some disturbance of sub-surface sediments or where some erosional process has exposed them.

4.2.2 Landform modelling of archaeological potential

The large number of archaeological studies undertaken within the vicinity of the Modification Area provides information to obtain a sound understanding of the nature and distribution of archaeological sites within the area. In the region, artefact sites and scarred trees will almost exclusively only be recorded on flats and gently undulating landforms, generally within 200 m of waterways. While others of the previously identified sites are recorded as 'closed' which suggests they are associated with a rock shelter, closed sites are most likely to be recorded on slopes greater than 10 degrees where ridges or crests are present, however, necessary geological features (i.e. sandstone overhangs) are not present within the Modification Area.

As most of the Modification Area consists of flats to gentle slopes intersected by ephemeral drainage lines, previous findings indicate that low-density artefact scatters would be the most common site type to be present.

The clearing of vegetation inside the Modification Area is widespread and typical of a highly modified agricultural landscape. Remnant trees remain throughout the survey area in areas such as along fence lines, property boundaries and along watercourses. The extent of vegetation clearance across the Modification Area increases the likelihood that any modified trees have been removed. However, should mature native vegetation remain, particularly along creeks within the Modification Area, culturally modified trees may be present.

Most of the Modification Area has been subject to cropping and/or grazing. Cropping involves ploughing the ground surface, which ultimately affects the integrity of archaeological Aboriginal

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sites, in particular open camp sites, within the 'plough zone' by moving deposits both horizontally and vertically. The grazing of hoofed livestock significantly shuffles or compacts the ground surface.

The directs impacts to the ground surface through vegetation clearance, cropping and grazing ultimately results in indirect impacts to Aboriginal sites as they ultimately accelerate soil loss. Based on the direct and indirect impacts which have affected the Modification Area, sites such as artefact scatters or isolated finds present within the survey area are likely to be in a secondary context and not associated with intact subsurface deposits.

4.2.3 Conclusion

Based on knowledge of the environmental contexts of the Modification Area and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of landforms within the Modification Area to contain Aboriginal objects (**Table 4-2**), and what types of sites may be present within the Modification Area (**Table 4-3**).

Table 4-2: Likelihood of landforms within the Modification Area to contain Aboriginal objects.

Survey Unit	Landform type	Likelihood to contain Aboriginal objects
1	Drainage	Archaeological studies in the region indicate that banks and elevated terraces adjacent to drainage lines or watercourses were favoured occupation locations and therefore have high potential for occupation sites to be present. Due to the presence of a semi-permanent creek (White Creek) in the Modification Area, low-density artefact scatters are the most likely site type to be recorded. Previous studies in the district also indicate that these landforms may contain intact deposits however as most of these landforms have been impacted by erosion and cultivation these sites may be dispersed and intact deposits would only be present if deposits are deep.
2	Slopes	Slopes are a degrading landform, especially in the Modification Area where vegetation removal, cultivation and grazing has accelerated soil loss. Given the lower slopes in the Modification Area consist of gentle gradients they are still suitable for occupation and often favoured as they are more elevated, however, when distant to water they are less likely to have been occupied. The mid-slopes located to the south are less likely to have been utilised for camping.
3	Flats	Flat landforms were favoured occupation locations when in proximity to permanent and semi-permanent water sources. However, the flat landforms characterised in this survey unit include areas over 200 m from water sources. Due to this distant and the uniformity of this landform there are no distinct resources which would have encouraged occupation. Past studies show that isolated finds and low-density artefact scatters may still be present in the landforms however they are generally in a secondary context from agricultural practices.

Table 4-3: Likelihood of certain site types being present in the Modification Area.

Site type	Likelihood of being present in the Modification Area
Isolated finds	As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the Modification Area.
Open artefact scatters	Stone artefact distributions of variable artefact densities are some of the most common Aboriginal objects found within the region. A general correlation between landform and the nature of the evidence of past Aboriginal occupation is evident. As most of the Modification Area is within gently sloping to flat landforms intersected by drainages, artefact scatters are one of the most likely site types to be identified. However, as the watercourses within the Modification Area are ephemeral, sites are most likely to be low density and low complexity, reflecting short term or one-off occupation patterns. It is noted that two artefact scatters (SNI-AS85 and SNI-AS86) are present within the Modification Area, and that this generally increases the likelihood for further artefact to be present in the landscape.

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Site type	Likelihood of being present in the Modification Area
Culturally modified trees	While most of the Modification Area has been cleared for agricultural activities, remnant stands of mature vegetation are scattered throughout the Modification Area associated with the drainage lines and fence lines. The site type is not highly represented in the surrounding area and is predicted to be rare within the Modification Area, though there is potential to identify this site if trees of an appropriate age are present, particularly near the drainage lines.
Grinding grooves	Fourteen grinding grooves sites have been recorded in the surrounding area indicating this site type has potential to be recorded if outcropping sandstone is present. Outcropping sandstone is most likely to be present along the drainages or sloping landforms.
PADs	This site type is considered possible in areas where A-Horizon soils are relatively undisturbed. However, given the high levels of disturbance across the project area and the lack of permanent and semi-permanent waterways, the likelihood of identifying PADs is significantly reduced.
Rock shelters	Rock shelters have been recorded extensively at a regional level in relation to the project area. However, based on preliminary landform analysis of the project area it is unlikely suitable landforms for large rock outcrops or overhangs are present within the project area. Therefore, rock shelters are not expected to be recorded.
Bora/Ceremonial sites	The distribution of ceremonial sites and Bora grounds across the landscape is somewhat unpredictable as the choice of their location appears to be based on spiritual reasons rather than simply landscape features and resources. As site types such as modified trees and art sites have been recorded in the district, their presence in the survey area cannot be discounted. Overall, this site type is a rare site type with a low likelihood of being present and remaining extant. These sites are generally identified through consultation with the RAPs.

4.3 RESEARCH QUESTIONS

Several research questions can meaningfully be applied to the investigation of the Modification Area. These research questions include:

- What resources were available to the Aboriginal people using the land within the Modification Area (food, stone and water) and what resources were transported to the area?
- What tasks were Aboriginal people undertaking at the sites?
- How do the raw materials and artefact types recorded within the Modification Area compare with those recorded in the surrounding region?
- Do the survey results support the predictive model set out in **Section 4.2.3**?

The survey methodology set out in **Section 5** will be framed to help answer these questions; should sites of sufficient significance be encountered. However, based on the results of previous assessments and past disturbances, it not expected that the land within the Modification Area will contain sites of sufficient significance to help answer those research questions that require a robust data set.

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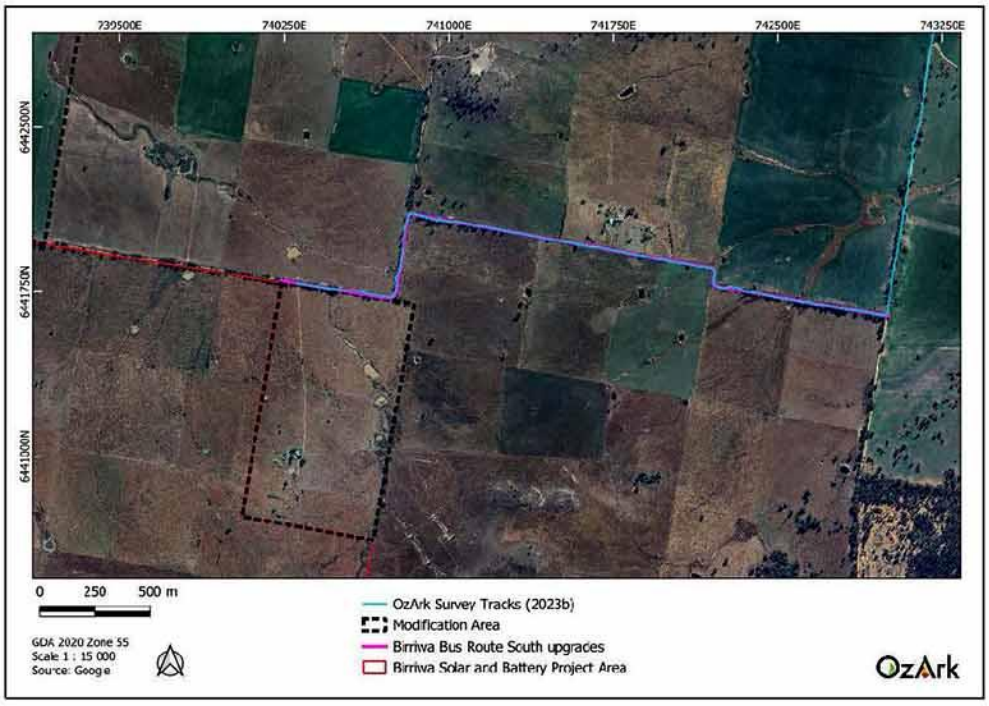
5 SURVEY METHODOLOGY

5.1 ASSESSMENT APPROACH

The Aboriginal cultural heritage assessment of the Modification Area will follow the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010b). The field inspection will follow the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales* (The Guide, OEH 2011).

No survey will be conducted along Birriwa Bus Route South as it was subject to survey in 2023 (**Figure 5-1**). The Birriwa Bus Route South upgrades will be assessed as part of the ACHAR, utilising the previous survey results from the Narragamba Solar Project (also being undertaken by the Proponent).

Figure 5-1: Previously surveyed section of the Birriwa Bus Route South.



5.2 SURVEY AIMS

The aim of any archaeological survey is not to locate each artefact in a landscape but to undertake investigations so that the archaeological potential and archaeological characteristics of all landforms within the Modification Area are known. Therefore, the aims of the survey will be to:

- Inspect all landform types in the Modification Area so that their archaeological potential can be determined

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- Evaluate whether the predictive model set out in **Section 4.2** is valid
- Determine if the research questions set out in **Section 4.2.1** can be answered
- Determine if any landforms of the Modification Area require test excavation to understand the archaeological potential at a particular location
- Undertake sufficient assessment to satisfy Sections 2.2, 2.4, 2.5, 2.6, and 2.7 in the Guide
- Collect sufficient data so that the results can be presented in an ACHAR as set out in Section 3 in the Guide
- Undertake survey and record keeping satisfying Requirements 1–13 of the Code of Practice.

5.3 SURVEY METHODOLOGY

Standard archaeological field survey and recording methods will be employed in this assessment (Burke & Smith 2004) and will follow the Code of Practice.

As highlighted in **Sections 3** and **4**, greater Aboriginal archaeological potential tends to exist on landforms within 200 m of permanent and ephemeral water sources, along access or trade routes, and areas with suitable flora/fauna and shelter. Archaeological potential is generally reduced on landforms disturbed by erosion and historical impacts (e.g., farming and infrastructure installation). As such, during the field assessment, greater survey effort will be expended on landforms deemed to have greater Aboriginal archaeological potential. 'Full pedestrian survey' refers to systematic transects walked by surveyors spaced approximately 20 m apart throughout the landform or area being surveyed. 'Targeted pedestrian survey' refers to transects walked by surveyors spaced approximately 20 m apart that will not cover the entire area but instead will focus on understanding the archaeological potential of representative landforms within these areas.

As such, the field assessment will include:

- Full pedestrian survey will occur across land within 200 m of watercourses (**Figure 5-2**)
- Targeted pedestrian survey will occur across the gentle slopes and flats (**Figure 5-2**)
- All trees deemed to be of sufficient maturity to contain cultural modification will be inspected, as well as any areas with outcropping rock
- Some areas may not be physically surveyed if the RAPs and OzArk staff agree they are too disturbed or possess a very low likelihood of sites.

In the field, OzArk staff will identify, record and evaluate physical (i.e., archaeological) evidence. Site recording will capture all the information required to complete current AHIMS site recording forms (e.g., site location, site boundary, site plan, representative photographs, artefact recording and feature recording). RAPs will participate in the survey, identifying Aboriginal objects,

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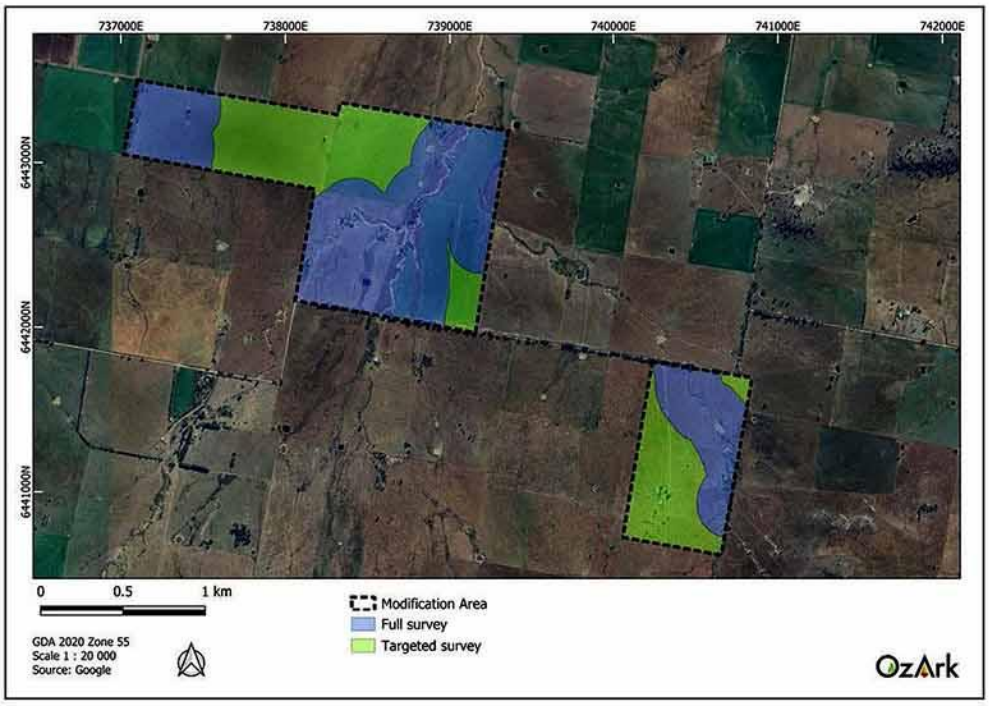
determining the cultural significance of Aboriginal objects, and identifying cultural places or non-physical site types within the Modification Area. OzArk staff understand that cultural knowledge may not be provided in some instances due to cultural sensitivities (e.g., men's and/or women's places). Under these circumstances, to assess the potential impacts, OzArk staff will need to be told, only in general terms, why a particular place is important, and what the significance of the impact will be. OzArk staff will liaise with RAPs on a case-by-case basis to determine how to record the location in a culturally sensitive manner.

Figure 5-2: Aerial showing the proposed sampling strategy.



5.4 TEST EXCAVATION

It is possible that the survey may identify landforms where test excavation under the Code of Practice (Requirements 14–17) is required. Should such landforms be identified during the survey, the test excavation methodology will be prepared as a separate document that will be circulated to all RAPs for review and comment.

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APPENDIX 3: AHIMS SEARCH RESULT

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

Your Ref/PO Number : Birriwa Mod 1 #4127
Client Service ID : 941942

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-2-0516	Barneys Reef Road ST-1	GDA	55	734691	6445104	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Stephanie Rusden					Permits		
36-2-0518	Mangarlowe IF-2	GDA	55	736001	6445104	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Stephanie Rusden					Permits		
36-2-0519	Mangarlowe OS-1	GDA	55	735095	6442310	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Stephanie Rusden					Permits		
36-3-4044	SNI-GG04	GDA	55	741920	6443013	Open site	Valid	Grinding Groove : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4136	SNI-IF76	GDA	55	743041	6443152	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4137	SNI-IF75	GDA	55	743063	6443021	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4138	SNI-IF78	GDA	55	744209	6442418	Open site	Valid	Artefact : -		
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36-3-4148	SNI-IF93	GDA	55	742832	6442707	Open site	Valid	Artefact : -		
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36-3-4169	SNI-AS90	GDA	55	742924	6443073	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-0082	Rock Linden No.1;	AGD	55	745010	6449790	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	1333
	Contact	Recorders	Warren Bluff					Permits		
36-3-0083	Rock Linden No 4;	AGD	55	745320	6450300	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
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36-3-0089	GUNDOOEE NO1;	AGD	55	747024	6450293	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	Warren Bluff					Permits		
36-3-4045	SNI-GG07	GDA	55	741244	6442683	Open site	Valid	Grinding Groove : -		
	Contact	Recorders	AHIMS APP Users,AHIMS APP Users,Miss.Rohani (emm consulting) Dutch,Miss.Rob					Permits		
36-2-0778	Wattle Grove IF1	GDA	55	728463	6450405	Open site	Valid	Artefact : -		
	Contact	Recorders	Ms Sophia Grubnic					Permits		
36-3-4159	SNI-IF66	GDA	55	743236	6443137	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4163	SNI-AS99	GDA	55	745667	6442155	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4108	SNI-IF92	GDA	55	743179	6442800	Open site	Valid	Artefact : -		

Report generated by AHIMS Web Service on 21/10/2024 for Sophia Grubnic for the following area at Datum :GDA, Zone : 55, Eastings : 727644.0 - 747632.0, Northings : 6441861.0 - 6451970.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 48

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Client Service ID : 941942

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
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36-3-4051	Galamaay (Brothers)	GDA	55	745707	6446680	Open site	Valid	Aboriginal Ceremony and Dreaming : -		
	Contact	Recorders	Darkinjung LALC - Wyong,Ms.Sharon Hodgetts					Permits		
36-2-0790	Wattle Grove ST1	GDA	55	728382	6451292	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	Ms Sophia Grubnic					Permits		
36-3-4031	SNI-GG02	GDA	55	741872	6443084	Open site	Valid	Grinding Groove : -		
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36-3-4034	SNI-CMT02	GDA	55	741653	6442000	Open site	Not a Site	Modified Tree (Carved or Scarred) : -		
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36-3-4098	SNI-CMT18	GDA	55	744723	6442249	Open site	Valid	Modified Tree (Carved or Scarred) : -		
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36-2-0500	Craboon-1	GDA	55	733226	6449921	Open site	Valid	Artefact : -		
	Contact	Recorders	RPS AAP Consulting Pty Ltd - Hamilton,Mr.Ben Slack					Permits		
36-2-0517	Mangarlowe IF-1	GDA	55	735227	6442124	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Stephanie Rusden					Permits		
36-3-4052	SNI-GG09	GDA	55	741174	6442597	Open site	Valid	Grinding Groove : -		
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36-3-4061	SNI-AS75	GDA	55	743121	6443353	Open site	Valid	Artefact : -		
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36-3-4171	SNI-AS88	GDA	55	742497	6442647	Open site	Valid	Artefact : -		
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36-3-4155	SNI-IF73	GDA	55	742855	6442003	Open site	Valid	Artefact : -		
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36-3-4160	SNI-CMT21	GDA	55	744393	6442443	Open site	Valid	Modified Tree (Carved or Scarred) : -		
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36-3-4101	SNI-IF77	GDA	55	743141	6445152	Open site	Valid	Artefact : -		
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36-3-4043	SNI-GG05	GDA	55	742307	6443076	Open site	Valid	Grinding Groove : -		
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36-3-4046	SNI-GG08	GDA	55	741215	6442638	Open site	Valid	Grinding Groove : -		

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36-3-4154	SNI-IF74	GDA	55	743125	6442720	Open site	Valid	Artefact : -		
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36-3-4168	SNI-AS92	GDA	55	743189	6443046	Open site	Valid	Artefact : -		
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36-3-4097	SNI-CMT17	GDA	55	744688	6442238	Open site	Valid	Modified Tree (Carved or Scarred) : -		
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	Contact	Recorders	Warren Bluff					Permits		
36-3-0080	Rock Linden No 3;	AGD	55	745690	6449990	Closed site	Valid	Art (Pigment or Engraved) : -	Shelter with Art	
	Contact	Recorders	Warren Bluff					Permits		
36-3-0114	Waringle;	AGD	55	740200	6447900	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders	Warren Bluff					Permits		
36-3-3918	Birriwa Bus Route South ST-1	GDA	55	740958	6442084	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Mr.Brendan Fisher					Permits		
36-3-4140	SNI-IF80	GDA	55	745633	6442190	Open site	Valid	Artefact : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Miss.Phillipa O'Brien-Pounde					Permits		
36-3-0127	Bald Ridge No:1;	AGD	55	744770	6451610	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	Warren Bluff					Permits		
36-3-4058	SNI-CMT16	GDA	55	744435	6442399	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4059	SNI-CMT19	GDA	55	745346	6442172	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4060	SNI-GG16	GDA	55	742888	6443163	Open site	Valid	Grinding Groove : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4038	SNI-GG03	GDA	55	741883	6443005	Open site	Valid	Grinding Groove : -		
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36-3-4139	SNI-IF79	GDA	55	744340	6442400	Open site	Valid	Artefact : -		
	Contact	Recorders	EMM Consulting - St Leonards - Individual users,Miss.Phillipa O'Brien-Pounde					Permits		

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SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
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	Contact	Recorders	AHIMS APP Users,AHIMS APP Users,Miss.Rohani (emm consulting) Dutch,Miss.Rob					Permits		
36-3-4170	SNI-AS89	GDA	55	742837	6443006	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		

**** Site Status**
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 21/10/2024 for Sophia Grubnic for the following area at Datum :GDA, Zone : 55, Eastings : 727644.0 - 747632.0, Northings : 6441861.0 - 6451970.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 48

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

Your Ref/PO Number : Birriwa Mod 1 #4127 2.0
Client Service ID : 941944

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-2-0614	Tallawang PAD 6	GDA	55	734183	6432604	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp					Permits		
36-3-0013	Tallawang;	AGD	55	735864	6435608	Open site	Valid	Water Hole : -, Grinding Groove : -	Axe Grinding Groove,Water Hole/Well	1299
	Contact	Recorders	ASRSYS					Permits		
36-3-0033	Puggoon;Nagundie;	AGD	55	735397	6435351	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	1299,2077
	Contact	Recorders	T.E Wittingham					Permits		
36-2-0205	SAC 02	GDA	55	730545	6432832	Open site	Valid	Artefact : 1		
	Contact	Recorders	Doctor.Tim Owen					Permits		
36-2-0419	CBR - IF - 06B	GDA	55	729844	6433371	Open site	Valid	Artefact : 1		
	Contact	Recorders	Mr.Neville Baker					Permits		
36-3-4091	SNI-IF46	GDA	55	736295	6438963	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4065	SNI-AS62	GDA	55	741120	6439564	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-3916	Winora IF-1	GDA	55	741158	6438739	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Mr.Brendan Fisher					Permits		
36-2-0769	Green Hills IF1	GDA	55	728552	6441595	Open site	Valid	Artefact : -		
	Contact	Recorders	Ms.Sophia Grubnic					Permits		
36-3-4131	Narragamba IF-5	GDA	55	744789	6434782	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4132	Narragamba IF-4	GDA	55	745166	6433473	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4095	SNI-AS86	GDA	55	740509	6441545	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0742	SNI-IF69	GDA	55	734291	6438523	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0744	SNI-AS84	GDA	55	734395	6438541	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0633	Tallawang IF3	GDA	55	728240	6433587	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp,Ms.Sophia Grul					Permits		
36-3-3834	Winora OS-1	GDA	55	740718	6438760	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Stephanie Rusden					Permits		
36-2-0515	Ulan ID #1675 (MC417)	GDA	55	735735	6440117	Open site	Valid	Artefact : 1		

Report generated by AHIMS Web Service on 21/10/2024 for Sophia Grubnic for the following area at Datum :GDA, Zone : 55, Eastings : 727666.0 - 747644.0, Northings : 6431970.0 - 6442065.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 82

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

Your Ref/PO Number : Birriwa Mod 1 #4127 2.0
Client Service ID : 941944

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	South East Archaeology - Hughes ACT,Mr.Corey O'Driscoll					Permits		
36-2-0707	SNI-IF23	GDA	55	733758	6435085	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4047	SNI-GG15	GDA	55	743014	6439756	Open site	Valid	Grinding Groove : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4048	SNI-GG01	GDA	55	738728	6439565	Open site	Valid	Grinding Groove : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-3914	Winora OS-3	GDA	55	741224	6438145	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Mr.Brendan Fisher					Permits		
36-3-4157	SNI-IF71	GDA	55	736443	6439274	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4102	SNI-AS85	GDA	55	740317	6441637	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0739	SNI-IF22	GDA	55	734299	6433230	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0632	Tallawang IF2	GDA	55	728240	6433703	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp,Ms.Sophia Grul					Permits		
36-3-3836	White Creek OS-1	GDA	55	737950	6441755	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Stephanie Rusden					Permits		
36-3-0034	Puggoon;Nagundie;	AGD	55	735397	6435351	Open site	Valid	Water Hole : -	Water Hole/Well	2077
	Contact	Recorders	T.E Wittingham					Permits		
36-2-0714	SNI-AS25	GDA	55	733740	6434451	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0689	SNI-AS59	GDA	55	730424	6437082	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0698	SNI-AS44	GDA	55	730613	6437304	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4125	Narragamba OS-6	GDA	55	742660	6435566	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4116	SNI-GG10	GDA	55	742970	6439769	Open site	Valid	Grinding Groove : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-1427	IF 27	GDA	55	736030	6432000	Open site	Valid	Artefact : 1		
	Contact	Recorders	Doctor.Tim Owen					Permits		

Report generated by AHIMS Web Service on 21/10/2024 for Sophia Grubnic for the following area at Datum :GDA, Zone : 55, Eastings : 727666.0 - 747644.0, Northings : 6431970.0 - 6442065.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 82

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Birriwa Mod 1 #4127 2.0
Client Service ID : 941944

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-2-0720	SNI-AS18	GDA	55	733883	6435427	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-3917	Winora IF-2	GDA	55	740676	6439890	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Mr.Brendan Fisher					Permits		
36-3-4030	SNI-AS43	GDA	55	737159	6439143	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4034	SNI-CMT02	GDA	55	741653	6442000	Open site	Not a Site	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	AHIMS APP Users,AHIMS APP Users,AHIMS APP Users,Miss.Rohani (emm consultir					Permits		
36-3-4127	Narragamba OS-4	GDA	55	743107	6436028	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4122	SNI-BS1	GDA	55	741022	6440352	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4123	Merotherie Road ST-1	GDA	55	743123	6439624	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4156	SNI-IF72	GDA	55	742399	6441841	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4158	SNI-IF70	GDA	55	736335	6439044	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0738	SNI-IF24	GDA	55	733859	6435342	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0683	SNI-FA06	GDA	55	733839	6434998	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	AHIMS APP Users,AHIMS APP Users,Miss.Rohani (emm consulting) Dutch,Miss.Rol					Permits		
36-2-0616	Tallawang PAD 8 with AS	GDA	55	733828	6435033	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp					Permits		
36-3-0029	Nagundie, Dubbo	AGD	55	735684	6435706	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	
	Contact	Recorders	Michael Pearson					Permits		
36-3-0032	Puggoon;Nagundie;	AGD	55	736344	6436231	Open site	Valid	Stone Arrangement : -	Stone Arrangement	1299,2077
	Contact	Recorders	T.E Wittingham					Permits		
36-3-0035	Puggoon;Nagundie;	AGD	55	735397	6435351	Closed site	Valid	Artefact : -	Shelter with Deposit	2077

Report generated by AHIMS Web Service on 21/10/2024 for Sophia Grubnic for the following area at Datum :GDA, Zone : 55, Eastings : 727666.0 - 747644.0, Northings : 6431970.0 - 6442065.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 82

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Birriwa Mod 1 #4127 2.0
Client Service ID : 941944

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	Recorders	T.E Wittingham					Permits		
36-2-0731	SNI-IF57	GDA	55	733822	6434211	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4089	SNI-IF32	GDA	55	743572	6439320	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4080	SNI-AS27	GDA	55	743292	6439216	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0715	SNI-AS24	GDA	55	733757	6435083	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-3913	Winora OS-2	GDA	55	741289	6438142	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Mr.Brendan Fisher					Permits		
36-3-4033	SNI-CMT13	GDA	55	742852	6440797	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	AHIMS APP Users,AHIMS APP Users,Miss.Rohani (emm consulting) Dutch,Miss.Rol					Permits		
36-3-4135	Narragamba IF-2	GDA	55	743303	6436580	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4155	SNI-IF73	GDA	55	742855	6442003	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0746	SNI-FA10	GDA	55	734262	6438659	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0615	Tallawang PAD 7 with IF	GDA	55	734011	6433075	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp					Permits		
36-2-0617	Tallawang PAD 9 with AS	GDA	55	733400	6435570	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp					Permits		
36-2-0631	Tallawang IF1	GDA	55	728099	6433742	Open site	Valid	Artefact : -		
	Contact	Recorders	Umwelt (Australia) Pty Limited - Individual users,Mr.Andrew Crisp,Ms.Sophia Grul					Permits		
36-2-0520	Mangarlowe OS-2	GDA	55	735028	6439173	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Stephanie Rusden					Permits		
36-3-0031	Puggoon;Nagundie;	AGD	55	736344	6436231	Closed site	Valid	Artefact : -	Shelter with Deposit	
	Contact	Recorders	T.E Wittingham					Permits		

Report generated by AHIMS Web Service on 21/10/2024 for Sophia Grubnic for the following area at Datum :GDA, Zone : 55, Eastings : 727666.0 - 747644.0, Northings : 6431970.0 - 6442065.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 82

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

Your Ref/PO Number : Birriwa Mod 1 #4127 2.0
Client Service ID : 941944

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-2-0204	SAC 01	GDA	55	730739	6432890	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		
	Contact	Recorders	Doctor.Tim Owen					Permits		
36-3-4076	SNI-AS42	GDA	55	736389	6438990	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0713	SNI-AS26	GDA	55	733765	6434363	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0696	SNI-AS46	GDA	55	735282	6432821	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4128	Narragamba OS-3	GDA	55	743260	6436031	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-3835	Roxanna OS-1	GDA	55	738413	6439561	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Stephanie Rusden					Permits		
36-3-0036	Puggoon;Nagundie;	AGD	55	735397	6435351	Open site	Valid	Burial : -	Burial/s	1299,2077
	Contact	Recorders	T.E Whittingham					Permits		
36-3-4035	SNI-CMT01	GDA	55	746104	6434648	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-3915	Winora OS-4	GDA	55	741205	6438687	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Mr.Brendan Fisher					Permits		
36-2-0677	SNI-AS57	GDA	55	734668	6438747	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4129	Narragamba OS-2	GDA	55	744826	6435648	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4133	Narragamba IF-3	GDA	55	743091	6435923	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4134	Narragamba IF-1	GDA	55	743357	6436948	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4088	SNI-IF34	GDA	55	742863	6436305	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0725	SNI-IF31	GDA	55	733882	6435175	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		

Report generated by AHIMS Web Service on 21/10/2024 for Sophia Grubnic for the following area at Datum :GDA, Zone : 55, Eastings : 727666.0 - 747644.0, Northings : 6431970.0 - 6442065.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 82

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

Your Ref/PO Number : Birriwa Mod 1 #4127 2.0
Client Service ID : 941944

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
36-3-4067	SNI-AS58	GDA	55	737714	6439042	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-2-0678	SNI-AS41	GDA	55	734441	6438675	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		
36-3-4126	Narragamba OS-5	GDA	55	742758	6435547	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-3-4130	Narragamba OS-1	GDA	55	743254	6436825	Open site	Valid	Artefact : -		
	Contact	Recorders	OzArk Environmental and Heritage Management - Dubbo,Miss.Tenae Robertson					Permits		
36-2-0751	SNI-AS83	GDA	55	734473	6438694	Open site	Valid	Artefact : -		
	Contact	Recorders	AHIMS APP Users,Miss.Rohani (emm consulting) Dutch					Permits		

**** Site Status**
Valid - The site has been recorded and accepted onto the system as valid
Destroyed - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.
Partially Destroyed - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground
Not a site - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 21/10/2024 for Sophia Grubnic for the following area at Datum :GDA, Zone : 55, Eastings : 727666.0 - 747644.0, Northings : 6431970.0 - 6442065.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 82

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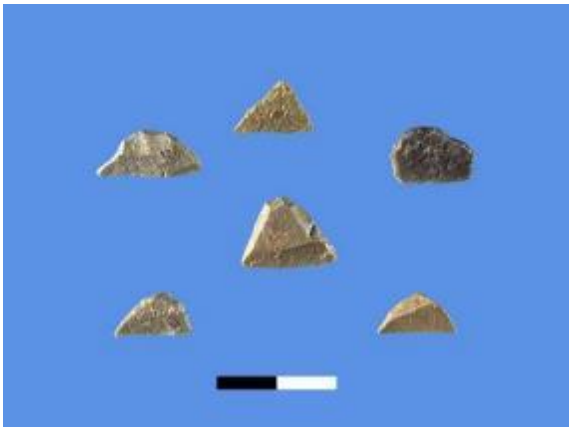
APPENDIX 4: ABORIGINAL ARTEFACT IDENTIFICATION

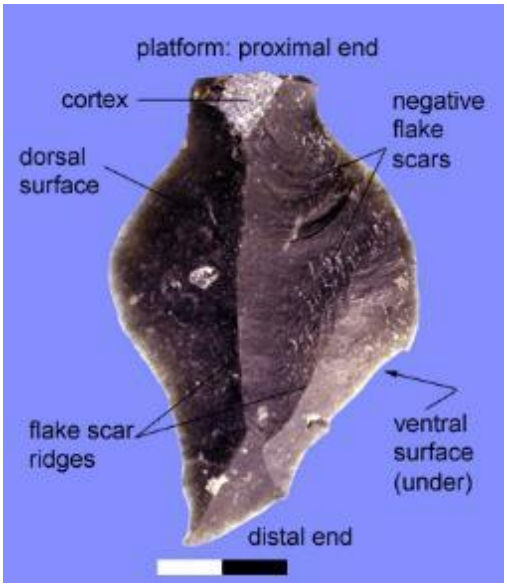
A retouched silcrete flake

A quartz flake



Microliths (scale = 1 cm)

Volcanic flakes



Flake characteristics (scale = 1 cm)

A mudstone/tuff core from which flakes have been removed