



View to the northeast of the study area.

ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

WEE WAA HIGH SCHOOL

WEE WAA, NSW

OCTOBER 2021

Report prepared by
OzArk Environment & Heritage
for NSW Department of Education

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ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT COVER SHEET

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Acknowledgement

OzArk acknowledge 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.

ABBREVIATIONS AND GLOSSARY

ACHAR	Aboriginal Cultural Heritage Assessment Report. As set out in the <i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> , all developments where harm to Aboriginal objects is likely must be assessed in an ACHAR.
ACHCRs	<i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> . Guidelines for conducting Aboriginal community consultation for developments where harm to Aboriginal objects is likely.
ACHMP	Aboriginal Cultural Heritage Management Plan
AHIMS	Aboriginal Heritage Information Management System. Administered by Department of Premier and Cabinet, AHIMS is the central register of all Aboriginal sites within NSW.
Assemblage:	All artefacts recorded at a location. In this report, assemblage refers to stone artefacts as this was the only artefact class recorded.
Code of Practice	<i>Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales</i> 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.
DPIE	NSW Department of Planning, Industry and Environment
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. Refers to the area where the ground surface can be observed.
GSV	Ground surface visibility. Refers to the area obscured by factors such as leaf litter within exposures.
Heritage NSW	Government department tasked with ensuring compliance with the NPW Act. Heritage NSW is advised by the Aboriginal Cultural Heritage Advisory Committee (ACHAC) and is part of the Environment, Energy and Science cluster within DPIE.
NPW Act	<i>National Parks and Wildlife Act 1974</i> . Primary legislation governing Aboriginal cultural heritage within NSW.

RAP	Registered Aboriginal Party. An individual or group who have indicated through the ACHCR process that they wish to be consulted regarding the project.
SEARs	Secretary's Environmental Assessment Requirements issued by the NSW Department of Planning and Environment.
SDD	State Significant Development

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by NSW Education School Infrastructure to complete an Aboriginal Cultural Heritage Assessment Report (ACHAR) of approximately 6.3 hectares (ha) in Wee Waa, NSW, which has the potential to be impacted by construction associated with the proposed Wee Waa High School. All impacts associated with the proposal are located within the study area.

The study area is in Wee Waa NSW. The study area is in the Narrabri Shire Local Government Area.

The study area was surveyed on 15 September 2021 by a team consisting of one archaeologist and one representative from a Registered Aboriginal Party (RAP). The study area was surveyed by pedestrian transects with the archaeologist and RAP representative spread 10 metres (m) apart.

No Aboriginal cultural heritage values or objects were identified within the study area during field survey or through consultation with the Aboriginal community.

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

1. Following approval of the proposal, Aboriginal cultural heritage values will be managed by the policies within an Aboriginal Cultural Heritage Management Plan (ACHMP). The ACHMP will be developed in consultation with the RAPs and must be approved by the Department of Planning, Industry and Environment (DPIE). The recommendations of this ACHAR will normally be incorporated into the ACHMP.
2. This ACHAR concludes that the proposal may proceed without further archaeological investigation under the following conditions:
 - a. All land and ground disturbance activities must be confined to within the study area, as this will eliminate the risk of harm to Aboriginal objects in adjacent landforms. Should the parameters of the proposal extend beyond the assessed areas, then further archaeological assessment may be required.
 - b. All staff and contractors involved in the proposed work should be made aware of the legislative protection requirements for all Aboriginal sites and objects. The procedures to conserve Aboriginal cultural heritage values in the ACHMP should also be made clear to all personnel involved with ground disturbing activities.
3. The ACHMP will contain procedures for the management of unanticipated finds and human skeletal material.

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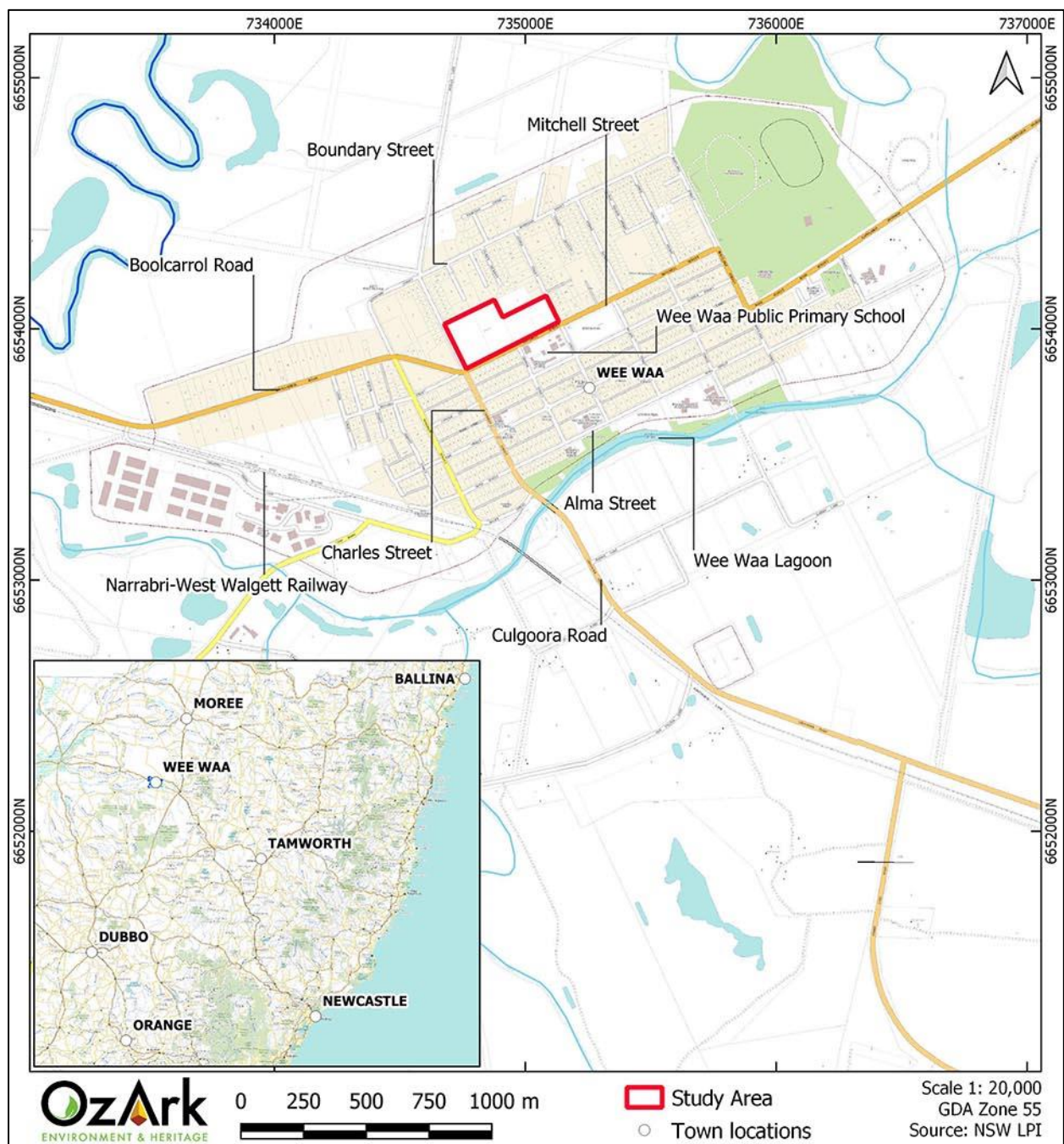
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1 INTRODUCTION

1.1 DESCRIPTION OF THE PROPOSAL

OzArk Environment & Heritage (OzArk) has been engaged by the NSW Department of Education (the proponent) to complete an Aboriginal Cultural Heritage Assessment Report (ACHAR) of 105-107 Mitchell Street, Wee Waa, which has the potential to be impacted by a proposed new high school (the proposal). The proposal is in the Narrabri Shire Local Government Area (LGA) (Figure 1-1).

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



1.2 BACKGROUND

In June 2021, OzArk undertook an Aboriginal due diligence and historical heritage assessment of the proposed location for the new Wee Waa High School (OzArk 2021). The visual inspection of the proposed location was undertaken by OzArk Project Archaeologist, Taylor Foster on 31 March 2021. Standard archaeological field survey and recording methods were employed. No representatives of the Aboriginal community were present for the survey. No Aboriginal objects or historic items were recorded during the visual inspection.

The undertaking of the Due Diligence process resulted in the conclusion that the proposed works will have an impact on the ground surface, however, no Aboriginal objects or intact archaeological deposits, or items of historic significance, will be harmed by the proposal.

However, as the proposal is a State Significant Development (SSD) (SSD-21854025), the Planning Secretary's Environmental Assessment Requirements (SEARs) stipulated that an ACHAR was required making the initial due diligence assessment informative but statutorily redundant.

1.3 PROPOSED WORK

The SSD Application will seek consent for the construction of a new high school with a capacity of 300 students. Specifically, it will seek consent for:

- Site preparation, earthworks and remediation as required.

Construction of the following:

- A new two-storey school building
- A multi-purpose gymnasium/hall
- A Covered Outdoor Learning Area (COLA)
- Two grass sport fields with a perimeter running track and two asphalt playing courts
- An Agricultural and Environment Centre with two agricultural plots and large animal paddocks
- An Aboriginal Education Community and Learning Centre
- Internal vehicular access road from George Street running east-west through the site
- Hard stand car park comprising approximately 10 staff/visitor spaces and two emergency vehicle spaces
- Bicycle storage
- Tree removal within the footprint of the new building, sports fields and agricultural plots, as required.
- Retention of the established Eucalypt stands

- Installation of landscaping, additional tree planting and fencing to integrate with the design of the new school
- Installation and augmentation of associated services and stormwater infrastructure to service the new school.

The indicative site layout is shown on **Figure 1-2**.

1.4 STUDY AREA

The proposed proposal location is on a 6.3 hectare (ha) parcel of land located at 105–107 Mitchell Street, Wee Waa which covers the following lots:

- Lot 125 DP757125
- Lot 124 DP757125
- Lot 2 DP550633
- Lot 1 DP577294

The study area is predominantly level at 192 metres (m) Australian Height Datum, with no existing improvements or development. There is an established stand of mature Eucalypt trees in the north-eastern portion of the study area, with more sparsely scattered trees throughout the study area, with another smaller dense stand along the western boundary in the north-western corner. The remainder of the study area is flat grassland.

There are existing stormwater channels that drain across the study area with the primary one being from George Street to Charles Street through the centre of the study area. Three smaller channels feed the primary channel from Mitchell Street.

Three of the four allotments are Crown Land, with the fourth owned by the NSW Department of Education. A lease currently exists over the Crown Land to permit investigation works to be undertaken, expiring in February 2022. The NSW Department of Education – School Infrastructure NSW (SINSW) are currently in the process of acquiring the Crown Land parcels.

Figure 1-3 shows an aerial of the study area with the associated lot boundaries.

Figure 1-2: Indicative site layout.

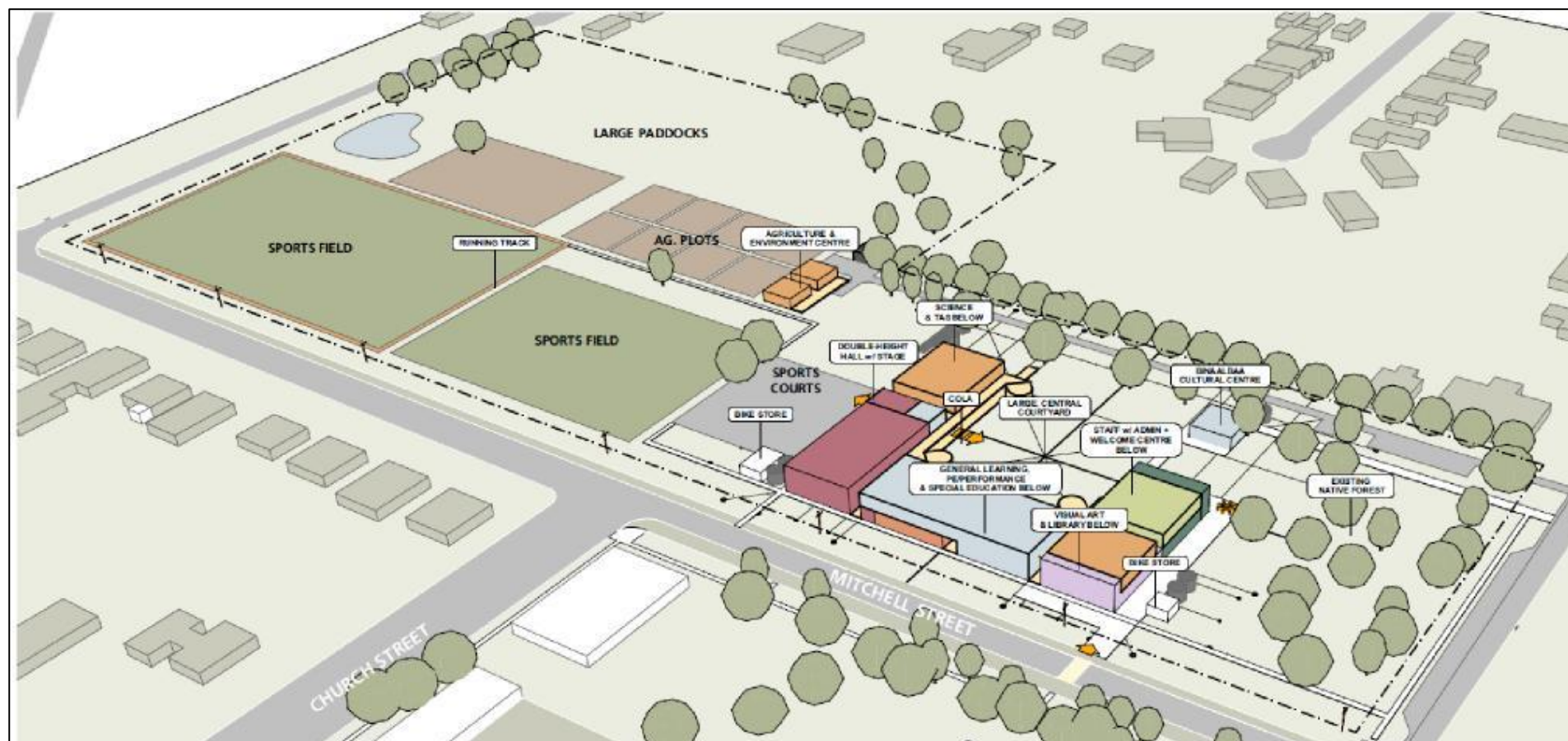


Figure 1-3: Aerial showing the study area.



2 THE ARCHAEOLOGICAL ASSESSMENT

2.1 DATE OF ARCHAEOLOGICAL ASSESSMENT

The fieldwork component of this assessment was undertaken by OzArk on 15 September 2021.

2.2 OZARK INVOLVEMENT

2.2.1 Field assessment

The fieldwork component of the heritage assessment was undertaken by:

- Fieldwork Director: Brendan Fisher (OzArk Project Archaeologist, BA Archaeology, The University of Sydney)

The reporting component of the heritage assessment was undertaken by:

- Report Author: Dr Alyce Cameron (background, BA [Hons] and PhD [Archaeology & palaeoanthropology] Australian National University)
- Contributor: Brendan Fisher
- Reviewer: Ben Churcher (OzArk Principal Archaeologist, BA[Hons], Dip Ed).

2.3 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 2013). 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.

2.3.1 State legislation

State Environmental Planning Policy (State and Regional Development) 2011

The State Environmental Planning Policy (State and Regional Development) 2011 (SEPP SRD) identifies development which is declared to be State Significant. Clause 15 of Schedule 1 of the Policy provides that the following development is SSD:

Clause 15: Educational establishments:

- (1) Development for the purpose of a new school (regardless of the capital investment value).

- (2) Development that has a capital investment value of more than \$20 million for the purpose of alterations or additions to an existing school.
- (3) Development for the purpose of a tertiary institution (within the meaning of State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017), including associated research facilities, that has a capital investment value of more than \$30 million.

Since the proposal is for the purposes of a new school, it is an SSD.

Environmental Planning and Assessment Act 1979 (EP&A Act)

This Act established requirements relating to land use and planning. 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.

National Parks and Wildlife Act 1974 (NPW Act)

The 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 indigenous and non-European 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 *Aboriginal Heritage Impact Permit* (AHIP) under Section 90 of the Act;
- The defendant exercised 'due diligence' to determine whether the action would harm an Aboriginal object; or
- 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 DPIE 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.

2.3.2 Commonwealth legislation

***Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)**

The EPBC Act, administered by the Commonwealth Department of the Environment and Energy, 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 proposals involving significant impacts to national/commonwealth heritage places.

Other

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.

2.3.3 Applicability to the proposal

The EP&A Act establishes the assessment framework for SSDs. Under Section 4.38 of the Act the Minister for Planning is the consent authority for SSD. Section 4.12(8) requires that a development application for SSD is to be accompanied by an Environmental Impact Statement (EIS) in the form prescribed by the Regulations.

Section 4.41 notes that an AHIP under section 90 of the NPW Act is not required for SSD projects. Any Aboriginal sites within the study area are afforded legislative protection under the NPW Act. It is noted there are no Commonwealth or National heritage listed places within the study area, and as such, the heritage provisions of the EPBC Act and other Commonwealth Acts do not apply.

2.4 ASSESSMENT APPROACH

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

Field assessment and reporting followed the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (the Guide, OEH 2011).

Aboriginal community consultation has followed the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs) (DECCW 2010b).

This assessment is accordance with the Planning Secretary's Environmental Assessment Requirements (SEARs) for SSD-21854025 issued on the 6 July 2021. The SEARs for Aboriginal Heritage state that an ACHAR is required that follows the requirements listed in **Table 2-1**.

Table 2-1: Report compliance with the SEARs.

<u>SEARs requirement</u>	<u>Concordance in this report</u>
Identifies and describes the Aboriginal cultural heritage values that exist across the site.	Section 3.3
Includes surface surveys and test excavations where necessary	Section 6.1
Has been prepared in accordance with the Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (OEH, 2011) and Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH, 2010).	See Table 2-2
Incorporates consultation with Aboriginal people in accordance with Aboriginal Cultural Heritage Consultation Requirements for Proponents (Department of Environment, Climate Change and Water, 2010).	Section 3
Documents the significance of cultural heritage values of Aboriginal people who have a cultural association with the land.	Section 3.3
Identifies, assesses and documents all impacts on the Aboriginal cultural heritage values.	Section 7.1
Demonstrates attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR and EIS must outline measures proposed to mitigate impacts.	Section 10
Demonstrates attempts to interpret the Aboriginal cultural heritage significance identified into the development.	Section 9.1.1

2.5 PURPOSE AND OBJECTIVES

The purpose of the current study is to identify and assess heritage constraints relevant to the proposed works.

2.5.1 Aboriginal archaeological assessment objectives

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

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

Objective Two: Identify and record objects or sites of Aboriginal heritage significance within the study area, as well as any landforms likely to contain further archaeological deposits

Objective Three: Through consultation with the Aboriginal community, understand the cultural values, both tangible and intangible, that exist within the study area

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

2.6 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 2-2** tabulates the compliance of this report with the requirements established by the Code of Practice.

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

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 1	Review previous archaeological work	<i>See subheadings below</i>
Requirement 1a	Previous archaeological work	Section 5
Requirement 1b	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 5.4.6
Requirement 4	Predict the nature and distribution of evidence	<i>See subheadings below</i>
Requirement 4a	Predictive model	Section 5.3.2
Requirement 4b	Predictive model results	Section 5.4.6
Requirement 5	Archaeological survey	<i>See subheadings below</i>
Requirement 5a	Survey sampling strategy	Section 6.1
Requirement 5b	Survey requirements	This Requirement was fulfilled during the undertaking of the survey
Requirement 5c	Survey units	Section 6.1
Requirement 6	Site definition	Section 5.4.6
Requirement 7	Site recording	<i>See subheadings below</i>
Requirement 7a	Information to be recorded	Not applicable to this report as no new sites were recorded.
Requirement 7b	Scales for photography	Not applicable to this report as no artefacts were recorded.
Requirement 8	Location information and geographic reporting	<i>See subheadings below</i>
Requirement 8a	Geospatial information	Not applicable to this report as no artefacts were recorded.
Requirement 8b	Datum and grid coordinates	All coordinates are provided in GDA Zone 55.
Requirement 9	Record survey coverage data	Section 6.3
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 13	Notifying OEH and reporting	<i>See subheadings below</i>
Requirement 13a	Notification of breaches	Not applicable
Requirement 13b	Provision of information	Not applicable
Requirement 14	Test excavation which is not excluded from the definition of harm	Test excavation was not undertaken.
Requirement 15	Pre-conditions to carrying out test excavation	<i>See subheadings below</i>
Requirement 15a	Consultation	Consultation has included the ACHCRs, see Section 3 .

Code of Practice Requirement	Context of the Requirement	Concordance in this report
Requirement 15b	Test excavation sampling strategy	Not applicable
Requirement 15c	Notification	Not applicable
Requirement 16	Test excavation that can be carried out in accordance with this Code	<i>See subheadings below</i>
Requirement 16a	Test excavations	Not applicable
Requirement 16b	Objects recovered during test excavations	Not applicable
Requirement 17	When to stop test excavations	Not applicable

3 ABORIGINAL COMMUNITY CONSULTATION

3.1 ABORIGINAL COMMUNITY CONSULTATION

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

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

3.1.1 ACHCRs Stage 1

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

On 13 July 2021 an advertisement was placed in *'The Courier'* requesting expressions of interest in being consulted about the proposal (**Appendix 1 Figure 2**). In addition, the following agencies were contacted to identify potential stakeholders for the area: Heritage NSW; the Wee Waa Local Aboriginal Land Council (LALC); the Office of the Registrar, ALRA; the National Native Title Tribunal; NTSCORP; Narrabri Shire Council; and the North West Local Land Services (NWLLS). Copies of letters sent and replies from agencies are provided in **Appendix 1 Figure 3** and **Appendix 1 Figure 4**.

Letters were sent to individuals and groups whose contact details had been provided by the government agencies (**Appendix 1 Figure 5**).

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

- Wee Waa LALC
- Gomeroi People Native Title Claim
- Malcolm Talbott
- Talcon Pty Ltd
- Stakeholder 1
- AT Gomilaroi Cultural Consultancy.

These individuals/groups constitute the RAPs for the proposal. An individual/group that did not wish to be publicly identified are referred to as 'Stakeholder 1'.

3.1.2 ACHCRs Stages 2 & 3

The aim of Stages 2 and 3 is to provide information about the proposal to the RAPs and to acquire information regarding Aboriginal cultural values associated with the proposal either through consultation and/or field work. Often these two stages are run together, and the detailed project

information is provided in the assessment methodology that is issued to all RAPs for their consideration.

On 16 August 2021 all RAPs were sent an information package including the development overview and proposed assessment methodology (**Appendix 1 Figure 6** and **Appendix 1 Figure 7**).

3.1.3 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.

<<to be updated following Stage 4 RAP review>>

3.2 ABORIGINAL COMMUNITY INVOLVEMENT IN THE ASSESSMENT

The field survey was undertaken on 15 September 2021. The following RAP representative participated in the fieldwork:

- Allan Tighe (Gomeri People).

3.2.1 Comments arising from the survey

No comments or issues regarding the survey were raised by Allan Tighe during the field survey.

3.3 CULTURAL VALUES IDENTIFIED THROUGHOUT THE ACHCR PROCESS

The Wee Waa Local Aboriginal Land Council (LALC) was contacted outside the ACHCRs undertaken for this assessment, and no known cultural values relating to the study area were identified (OzArk 2021). However, the strong cultural values of Aboriginal communities towards landscapes and cultural heritage sites are recognised.

4 LANDSCAPE CONTEXT

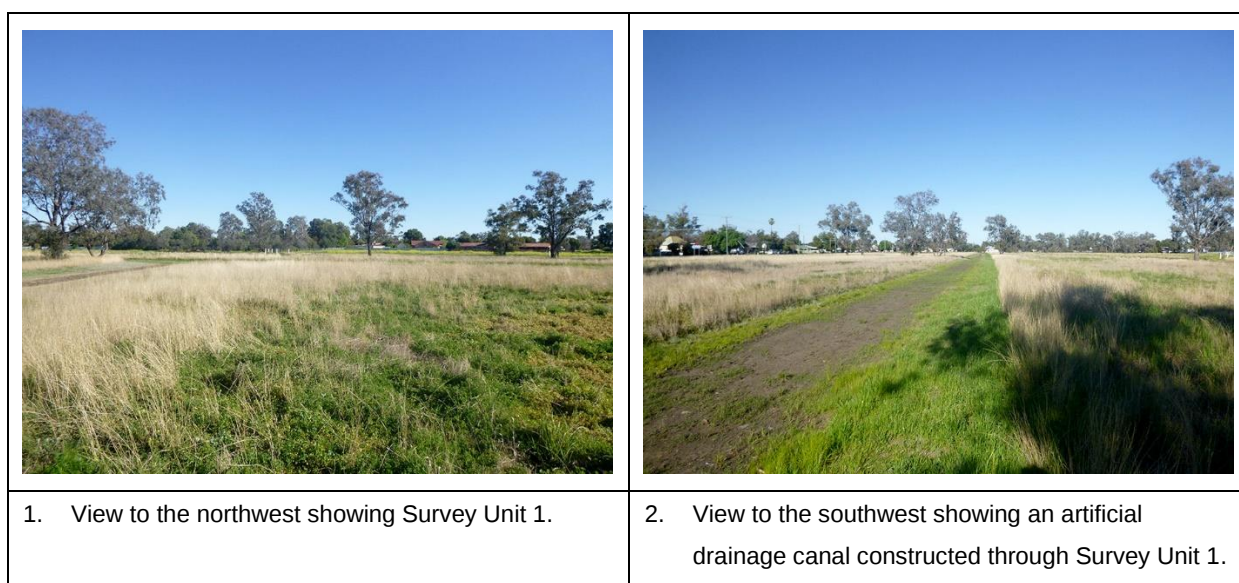
An understanding of the environmental contexts of a study area is requisite in any Aboriginal archaeological investigation (DECCW 2010). It is a particularly important consideration in the development and implementation of survey strategies for the detection of archaeological sites. In addition, natural geomorphic processes of erosion and/or deposition, as well as humanly activated landscape processes, influence the degree to which these material culture remains 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 study area is located within the Darling Riverine Plains bioregion. Within this bioregion, the study area is in the Namoi Alluvial Plains Landscape as defined by Mitchell (2002). This landscape is characterised by fluvial sediments of back-plain and channelized back-plain facies on the Namoi River and its effluent streams.

The study area itself is flat and consists of a single landform: flat plains (Survey Unit 1). There are drainage channels cut into parts of the study area, however, these are not natural.

Figure 4-1: Topography of the study area.



	
3. View to the south showing Survey Unit 1.	4. View to the northwest showing an artificial drainage canal constructed through Survey Unit 1.

Table 4-1: Survey Unit and landform within the study area.

Survey Unit	Landform type	Definition	Total area (ha)	Percentage of landform within study area
1	Flat plains	Flat, undifferentiated landform	6.3	100%

4.2 GEOLOGY AND SOILS

Soils in the Namoi Alluvial Plains Landscape consist of dark yellow brown to brown silty clay with patches of sand and carbonate nodules deposited from suspended sediments in floodwater (Mitchell 2002).

4.3 HYDROLOGY

No prominent water courses are near the study area. The closest source of water to the study area is the Wee Waa Lagoon, located 540 m to the southeast. The closest major watercourse is the Namoi River, located 1.1 kilometres (km) northwest of the study area. The study area is also located approximately 1 km southwest of Quinns Billabong. **Figure 4-2** shows the location of the study area in relation to the watercourses.

4.4 VEGETATION

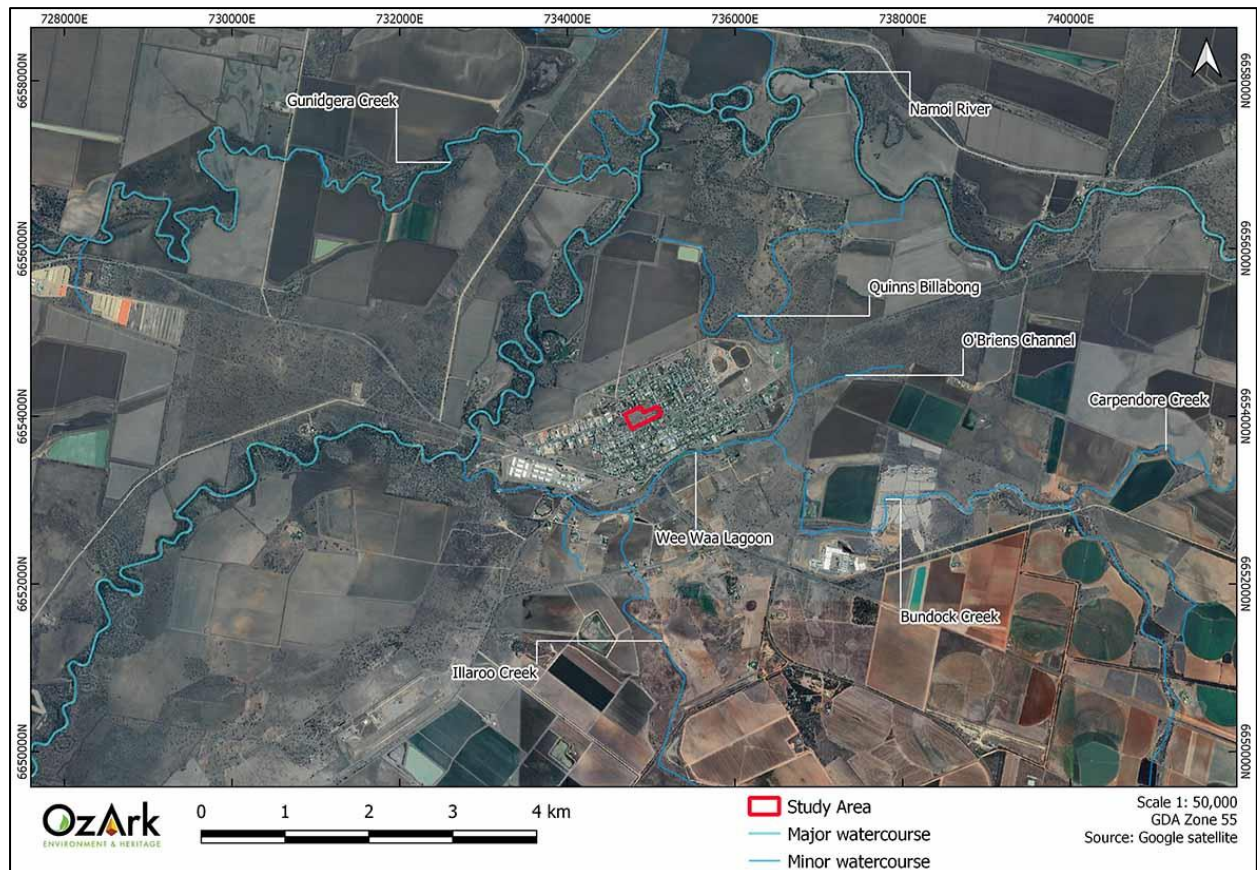
Vegetation in the Namoi Alluvial Plains Landscape often comprises of open grasslands with scattered eucalyptus types including coolabah, black box, and bimbale box. Much of this landscape type has been extensively cleared, cropped, and grazed (Mitchell 2002).

The study area has an established stand of mature Eucalypt trees in the north-eastern portion of the study area, with more sparsely scattered trees throughout the study area, with another smaller dense stand along the western boundary in the north-western corner. The remainder of the study area is a grass paddock.

4.5 CLIMATE

The region lies in a semi-arid climatic zone which is hot and persistently dry (NPWS 2003). Climate data from the closest weather station (Narrabri West Post Office) located approximately 33 km southeast of the study area indicates that January tends to be warmest month with a mean maximum temperature of 33.8°C. The coolest month is July with a mean minimum temperature of 3.7°C. The average annual rainfall for the area is 658 millimetres (mm) (BOM 2021).

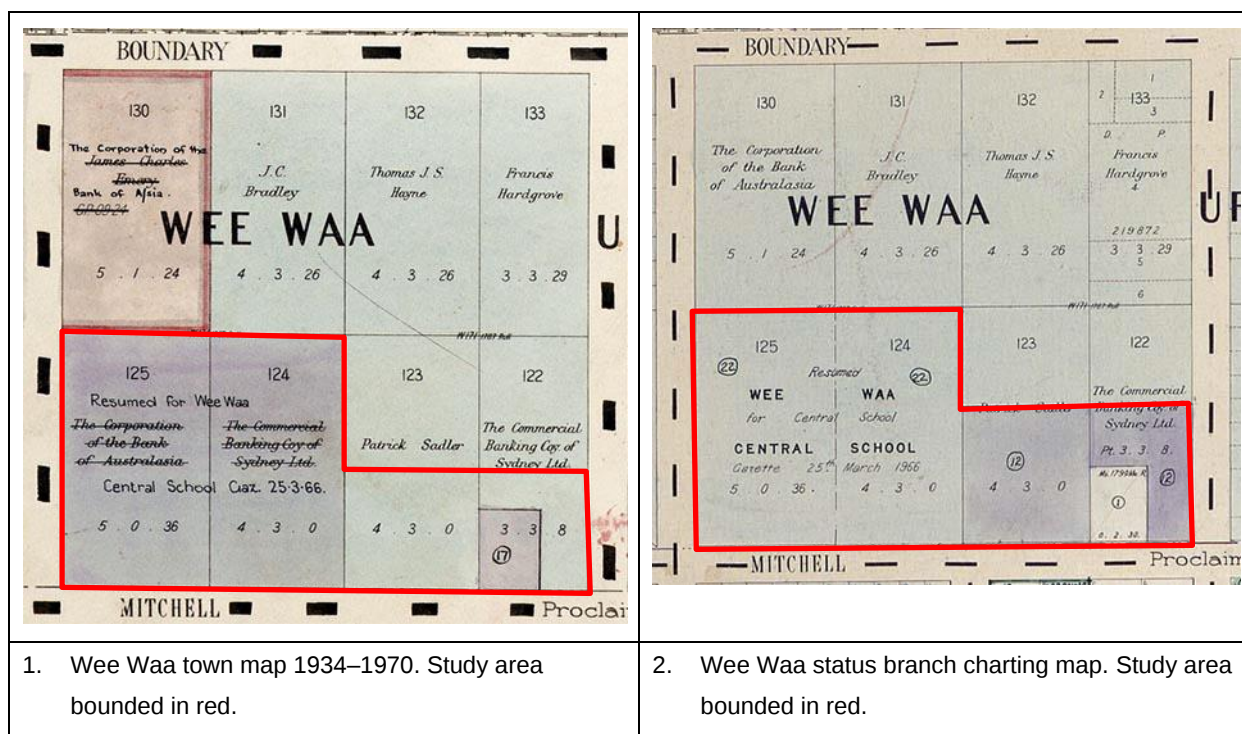
Figure 4-2: Drainage lines near the study area.



4.6 LAND USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

The Wee Waa town map in use between 1934 and 1970 shows that Lot 125 and Lot 124 of DP757125 were gazetted for the Wee Waa Central School in March 1966. This town map also shows that Lot 1 DP577294 was gazetted for the Public School in June 1964. The status chart branching map in use between 1969 and at least 1980 show that part of Lots 123 and 122 were purchased for Wee Waa Central School by the Education Department in April 1973 (now Lot 2 DP550633 as shown on **Figure 4-3**). Excerpts covering the study area from the 1934–1970 town map and the status chart branching map are shown on **Figure 4-3**.

Figure 4-3: Wee Waa town map excerpts (source: HLRS 2021).



An aerial of the Wee Waa township from 1965 shows that the study area had been nearly completely cleared of vegetation and that there was possibly a dwelling or a water tank located in the north-eastern corner of Lot 124 DP757125, as well as an unsealed driveway between the potential dwelling and Mitchell Street (**Figure 4-4**). By 1983, it appears as if the potential dwelling or water tank in the 1965 aerial is no longer present, and the unsealed driveway has partially grown over (**Figure 4-5**). By 1998, the study area appears to have the first drainage channel cut through the southern half parallel to Mitchell Street, and there are additional vehicle tracks across the area (**Figure 4-6**). The recent aerial of the study area (see **Figure 1-3**) shows that since 1998 at least three additional drainage channels have been cut in between Mitchell Street and the lengthwise channel shown on the 1998 aerial.

There has been little historical disturbance to the study area, excepting the potential dwelling / water tank shown in **Figure 4-4** and vegetation clearance. Much of the disturbance visible across the study area today appears to have occurred primarily in the past two decades.

Figure 4-4: 1965 aerial with study area in red (source: SS HIV 2021).



Figure 4-5: 1983 aerial with study area in red (source: SS HIV 2021).



Figure 4-6: 1998 aerial with study area in red (source: SS HIV 2021).



4.7 CONCLUSION

The study area is a flat, cleared landform that has been moderately disturbed due to past building construction, vehicle tracks, and artificial drainage channels. Though the general region and the climate is conducive for occupation and use, it is assessed that the potential of Aboriginal sites being present, while still possible, is diminished due to the absence of natural water sources near the study area.

5 ABORIGINAL ARCHAEOLOGY BACKGROUND

5.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

According to Tindale (1974), the study area falls within the boundaries of Kamilaroi (also Gamilaraay) ethno-linguistic group (see also Austin et al. 1980). The Kamilaroi tribal area extends from Walgett, NSW to Nindigully, QLD and included areas near Talwood and Garah at Moree, Mungindi, Mogil Mogil, Narrabri, Pilliga, Gunnedah, Bingara, Tamworth, Quirindi, Bundella, Barraba, Gwabegar, and Come-by-Chance; on headwaters of the Hunter River (Tindale 1974). The study area is located within the centre of the Kamilaroi tribal territory. It is acknowledged that use of the term 'tribe' and the delineation of 'tribal boundaries' on maps is problematic, although distinctive ethno-linguistic groups are known to exist.

Prior to colonial settlement, the Kamilaroi people practiced a hunting, gathering, and fishing economy with the Namoi River and the Gwydir River providing an abundance of resources. The Traditional Owners caught a variety of freshwater species including fish, eels, crayfish, yabbies, turtles, and mussels using fishing lines and nets made from reed fibres. Watercraft was manufactured from large slabs of bark cut from the native River Red Gum trees. Away from the freshwater sources, the Kamilaroi people hunted kangaroos, wallabies, koalas, possums, echidnas, emus, lizards, snakes, and frogs. Plant foods included grass seeds, wild orange, emu apple, melons, tubers, yams, and roots. It is highly probable that the vegetation structure which existed prior to colonial occupation was a result of Aboriginal land management practices such as controlled burning (Appleton 2009).

The surveyor-general Sir Thomas Livingstone Mitchell (1839) described two Aboriginal villages on the Moree plains. The first was located on the Gwydir River:

Each hut was semi-circular, or circular; the roof conical, and from one side a flat roof stood forward like a portico, supported by two sticks. Most of them were close to the trunk of a tree, and they were covered, not as in other parts, by sheets of bark, but with a variety of materials, such as reeds, grass, and boughs. (Mitchell 1839: 77)

The second village was located on a lagoon between Collarenebri and Bellata and comprised seven huts of substantial construction, neatly thatched with dry grass and reeds (Mitchell 1839: 121). By the late 1830s, many prime grazing sites along the Namoi River and Gwydir River had been taken up by British settlers, including James Cox at Moree, Thomas Simpson Hall at Wee Bella Bolla, and John Fleming at Mundi Bundie (Elder 2003: 75).

Balme (1986) compiled a list of objects that likely comprised the toolkit used by Aboriginal people in the region from reports by early eye-witnesses. Based on this list, the toolkit used by Kamilaroi people is likely to have included bark containers for holding water and gathering food, throwing sticks for hunting, cloaks of kangaroo skin, wooden clubs for fighting, hafted stone axes, nets for

catching fish and birds, spears and spear throwers, and fish traps constructed in major creeks and rivers.

The explorer and natural scientist Alfred William Howitt was an early pioneer authority on Aboriginal cultures. In *Native Tribes of South-East Australia*, Howitt (1996 [1904]) discusses Kamilaroi social and political organisation, kinship, ritual practices, long distance trade and communication. Presbyterian minister Reverend William Ridley (1875) and surveyor and amateur anthropologist Robert Hamilton Mathews (1903) provided early linguistic descriptions of the Kamilaroi language. More recently, Austin and Tindale (1985) provided a translation of the Kamilaroi Dreaming story of the Emu and the Brolga, as recorded by Tindale in 1938; and Austin (1993) produced a Kamilaroi reference dictionary.

5.2 REGIONAL ARCHAEOLOGICAL CONTEXT

Prior to 1980 little or no systematic archaeological studies had been undertaken in the Moree-Narrabri region (Haglund 1984). In the interim, several archaeological studies have since been conducted, providing baseline data for placing past Aboriginal sites within a regional landscape context (e.g. Balme 1986; Pearson 1981; Purcell 2000).

Pearson (1981) worked primarily in the Upper Macquarie region; nevertheless, the proximity of the Upper Macquarie to the study area and general topographic similarities renders the findings relevant. Pearson divided the recorded archaeological sites 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 located 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 outcropping sandstone occurred close to occupation sites. The location of scarred trees displayed no obvious patterning, other than proximity to watercourses. 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.

The North-Central Rivers study undertaken by Balme (1986) examined site location in terms of site preservation. Balme (1986: 182) found that, other than historic impacts, site distribution was most affected by geomorphic processes affecting site preservation and leading to site exposure. There was little scope for the assessment of site chronologies as few datable contexts had been located. Balme concluded that sites recorded on the AHIMS register from ethnographic accounts were unlikely to be located in the current landscape. Balme (1986) reported that, of the 200 carved trees reported in the area, only five remained *in situ* at the time of the study; 50 are known to be

in museum and private collections, and the whereabouts of the remainder are unknown, with many suspected to be in private collections.

As part of this assessment, Balme (1986) undertook a study focused on the Moree plains area, including surveys of the four major landforms identified in the area: major river channels, minor channels, floodplain areas not frequently inundated, and frequently inundated floodplains. Aboriginal scarred trees and open camp sites were the most recorded site types. Most sites were located close to water or on elevated areas more distant from water. Erosion had exposed many of the sites. Balme noted that open camp sites were poorly represented, probably due to sediment deposition during flood events, rather than reflecting a true absence of sites.

High levels of land use disturbance in the Moree region have also been implicated for the apparent paucity of Aboriginal sites in the region. Witter (2004: 139) describes the Barwon Basin Region, which includes the Moree plains, as one of the major regions of archaeological disaster in NSW. Extensive areas of black alluvial cracking clays occur throughout the region. The self-mulching action of these soils is likely to have disrupted evidence of Aboriginal camps sites and vast areas have been laser levelled for irrigation, obliterating the remaining archaeology.

In an assessment of the Pilliga and Goonoo State Forests, Purcell (2000) recorded 47 and 106 Aboriginal sites, respectively. Purcell (2000: 31) found that sites were more frequently located within alluvium landforms including creeks, swamps and chains of ponds surrounded by floodplains and terraces, and that 91.5 per cent of sites were recorded within 200 to 300 m of water. Purcell (2002) found that sites located in the Moree area were often on floodplain and alluvial landforms within a few hundred metres of water. In the Northern Outwash subregion, sites were found up to 750 m from water sources, with an average distance of 101 m.

In 2018 OzArk conducted a heritage assessment for the Wee Waa Sewage Treatment plant. During this assessment, no sites were recorded with the designated study area. Despite some impact area being located near the Wee Waa Gully/Lagoon, it was thought the lack of archaeological sites was due to the high levels of disturbance due to the construction of pre-existing sludge pits and associated infrastructure. No further landforms with archaeological potential were identified during the assessment. All mature trees within the study area were inspected, however, no trees with cultural modifications were recorded.

5.3 LOCAL ARCHAEOLOGICAL CONTEXT

5.3.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any potential previously recorded heritage within the study area. The results of this search are summarised in **Table 5-1** and presented in detail in **Appendix 2**.

Table 5-1: Aboriginal cultural heritage: desktop-database search results.

Name of Database Searched	Date of Search	Type of Search	Comment
Commonwealth Heritage Listings	1 April 2021	Narrabri LGA	No places listed on either the National or Commonwealth heritage lists are located within the study area
National Native Title Claims Search	1 April 2021	NSW	One Native Title Claim covers the study area.
DPC AHIMS	18 March 2021	10 x 10 km centred on the study area	No sites within the study area.
Local Environmental Plan (LEP)	1 April 2021	Narrabri LEP of 2012	None of the Aboriginal places noted occur near the study area.

As per **Table 5-1**, it is noted that the study area includes land currently subject to Native Title Claim (NC2011/006, NSD37/2019, Gomeroi People).

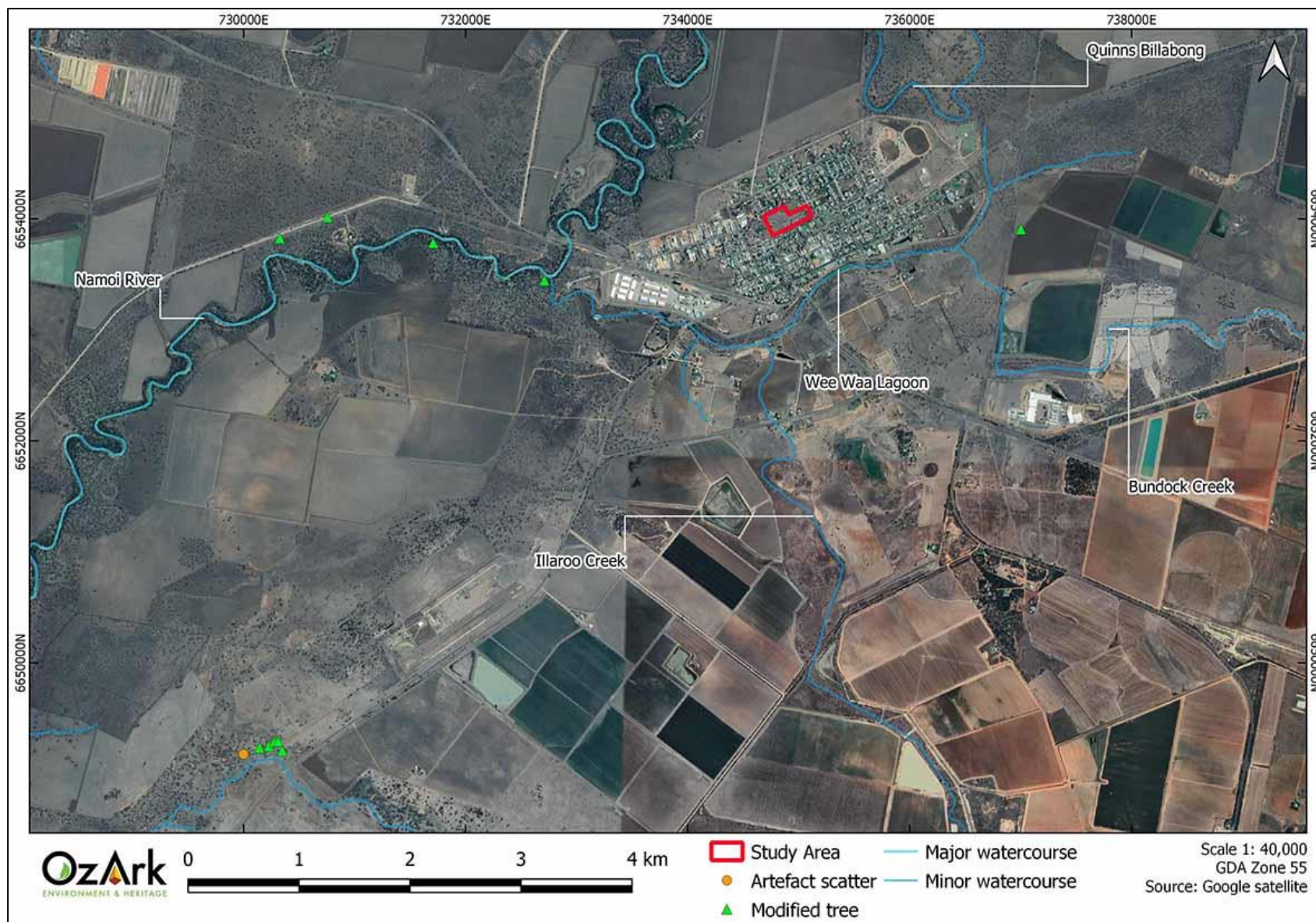
A search of the Heritage NSW AHIMS database on 18 March 2021 returned 11 results for previously recorded sites within a 10 km radius centred on the study area (GDA Zone 55 Eastings: 729945–739960, Northings: 6648500–6659665 with no buffer). See **Table 5-2** for site types and frequencies and **Figure 5-1** for the site locations.

Table 5-2: AHIMS site types and frequencies

Site Type	Number	% Frequency
Modified Tree (Carved or Scarred)	10	90.9%
Artefact Scatter	1	9.1%
Total	11	100

The AHIMS data shows that the most common site type in the area is modified trees, which account for approximately 90.9% of sites in the area. The only other site type recorded in the area are artefact sites, which consist of the remaining 9.1% of sites. The AHIMS sites are in two main concentrations, both in relation to watercourses. Four of the sites are located between 2 km and 5 km west of the study area and are associated with the Namoi River. All four sites are modified trees. The second cluster consists of six sites located roughly 6.3 km southwest of the study area and are associated with a minor unnamed watercourse. Five of the sites are modified trees, and one of the sites is an artefact scatter. The remaining site is a modified tree, located approximately 1.8 km east of the study area. Nine of the 11 sites are located within 200 m of watercourses. The remaining two sites are approximately 350 m from the closest source of water.

Figure 5-1: Location of previously recorded AHIMS sites in relation to the study area.



5.3.2 Archaeological investigations near the study area

5.3.2.1 Narrabri Aboriginal cultural heritage study (OzArk 2020)

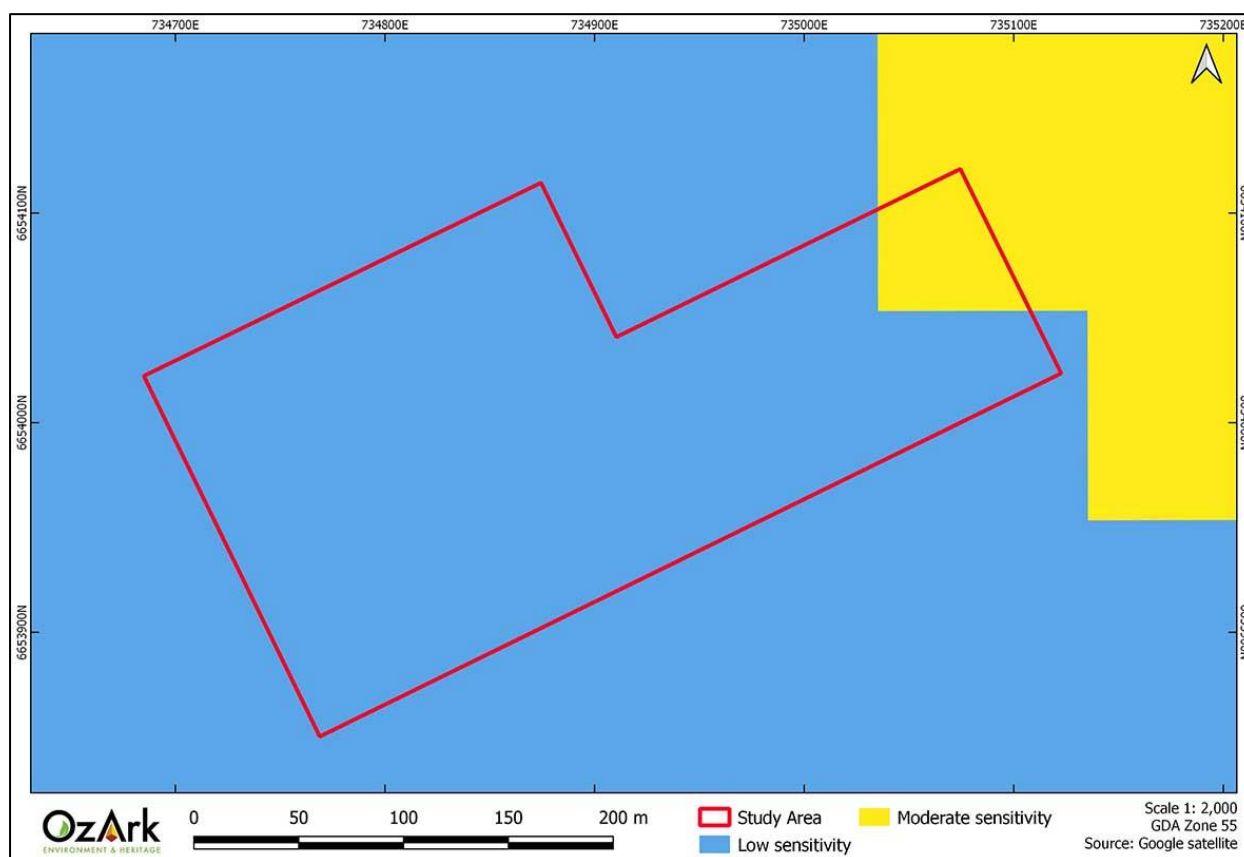
In 2020, OzArk conducted an Aboriginal cultural heritage study for the Narrabri LGA for the Narrabri Shire Council and funded by the NSW government. The aim of the study was to identify sites of significance to Aboriginal people that may be appropriate for listing as local heritage items on the Narrabri Local Environmental Plan (LEP) under Schedule 5 Environmental Heritage. As a result of the consultation undertaken for this study, a number of places were put forward by the local Aboriginal community as being significant and warranting further investigation and potential inclusion on the Narrabri LEP. Of these places, five were put forward that are associated with the Wee Waa area. Details of these sites are presented in **Table 5-3**.

The most relevant of these Aboriginal places to the study area are the presence of the Bora Ground at Wee Waa Lagoon, adjacent to the study area, and the presence of culturally scarred trees in the area. The occurrence of these sites suggests increased sensitivity within the study area.

Table 5-3: Aboriginal places identified during the 2020 OzArk Aboriginal Heritage Study.

Name of Place	Details	Preliminary location information
Wee Waa Bora Ground/ Corroboree	Described as being circular and still evident today. No AHIMS site recording for location.	Either on eastern or western edge of Wee Waa lagoon. Exact location unknown.
Scarred trees at Tulladunna bridge	Culturally scarred portion of tree has been relocated next to southern side of Kamilaroi Highway on the western side of bridge coming into Wee Waa from Narrabri. Unable to determine which (if any) AHIMS site is scarred tree original location, or relocation spot.	Original location unknown, but likely along Kamilaroi Highway alignment. Relocated location is south of Kamilaroi Highway, west of bridge into Wee Waa, and east of Wee Waa proper.
Cuttabri Reserve	Reserve between Pilliga and Wee Waa near Coghill Creek and Namoi River.	713714E 6643684N
Yarrie Lake	Crater lake 17 km southeast of Wee Waa. Part is a TSR (R24046). 21 AHIMS sites recorded around Yarrie Lake consisting of artefact scatters and modified trees.	East of Nuable Road with Lake Circuit cutting through east-west of area.
Cemeteries	The issue of Aboriginal remains in existing LEP landmarks such as Wee Waa.	Wee Waa General Cemetery (LEP I004)

Also included in the study was archaeological sensitivity mapping which modelled and classified the archaeological sensitivity across the Narrabri LGA into areas of 'high', 'medium' and 'low' potential. The sensitivity modelling was based on an analysis of previously recorded sites in the LGA, in conjunction with landforms, accumulated impacts, and proximity to watercourses. **Figure 5-2** shows the sensitivity mapping from OzArk (2020) in relation to the study area and shows that most of the study area is classified as low potential landforms.

Figure 5-2: The study area and Narrabri sensitivity mapping (OzArk 2020).

5.3.2.2 Wee Waa Highschool (OzArk 2021)

In 2021, OzArk conducted a heritage assessment for the proposed Wee Waa high school which included a visual inspection of the study area. The ground surface visibility was low–moderate overall within the study area. The study area was densely overgrown with weeds in the northernmost section; however, erosion scalds provided some visibility. Grass coverage and waterlogging covered the rest of the study area; however, ground surface exposure was still approximately 30%, with high visibility within those exposures. Soils generally consisted of a brown silty loam with sand.

During this assessment, no Aboriginal objects were recorded within the study area. No Aboriginal community members accompanied the due diligence visual inspection, however, the Wee Waa LALC was contacted and stated that there were no known cultural values within the study area.

5.4 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.

5.4.1 Settlement strategies

The archaeological studies undertaken within the vicinity of the study area provide information to obtain an understanding of the nature and distribution of archaeological sites within the area. Although there is some conjecture about the relationship between stream order, site numbers and densities, the general pattern is that most sites are present close to watercourses. As the study area is located away from any prominent watercourses, it is unlikely it was used as a long term or frequent occupation site.

5.4.2 Past land use

Crucial for the preservation of archaeological deposits is the history of past land use in an area. As stated in **Section 4.6** there has been little historical disturbance to the study area, excepting the potential dwelling / water tank and vegetation clearance. Much of the disturbance visible across the study area today appears to have occurred primarily in the past two decades. Despite the disturbances present inside the study area which would be detrimental to the preservation of archaeological deposits, there is land inside the study area where no obvious disturbances have occurred. In these areas, undisturbed archaeological sites may be present.

5.4.3 Previously recorded sites

The results of past archaeological investigations near the study area indicates that the most common site type will be scarred trees. However, as most of the study area has been cleared of previous vegetation, this reduces the likelihood of scarred trees being present.

5.4.4 Landform modelling

The study area is flat and sits at an elevation of 192 m above sea level. Previous studies in the region (OzArk 2020) indicate that these flat landforms situated in urban areas are of low sensitivity due to the high amount of disturbance and accumulated impacts. Instead, intact sites are most likely to be nearer a watercourse where less extensive ground surface or modifications have occurred.

Landforms of the survey area comprise of a flat cleared area with scattered trees. The study area and surrounding land is primarily urban housing, and the study area has been previously disturbed by habitation (historic remains were noted in the study area during the due diligence assessment; OzArk 2021), and drainage works.

5.4.5 Previous studies

Previous archaeological studies indicate that there is low potential for archaeological sites or deposits to be present inside the study area (see OzArk 2021).

5.4.6 Conclusion

Based on knowledge of the environmental contexts of the study area and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of those site types being recorded within the study area:

Isolated finds may be indicative of a random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or sub-surface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.

- Applicability to the study area: As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the study area, though based on the results of the due diligence visual inspection, this is an unlikely possibility.

Open artefact scatters are here 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 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.

- Applicability to the study area: The study area has low potential for surface or subsurface deposits of stone artefacts. Prior disturbances such as artificial drainage lines and vehicle tracks are present across the study area and the study area is distant to a reliable water source. Additionally, the due diligence survey failed to record this site type in the study area and artefact scatters are unlikely to be present.

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 as a consequence 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 particular 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 both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.

- Applicability to the study area: Modified trees are the most frequent site type previously recorded in the vicinity of the study area (see **Section 5.3.1**), however, the study area has been previously cleared and the vegetation currently present is all younger than 50 years old (see **Section 4.6**). Furthermore, the trees located inside the study area were all inspected during the due diligence visual inspection (OzArk 2021), and none had been culturally modified.

Bora/Ceremonial sites are places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.

- Applicability to the study area: There is low potential for this site type to be present inside the study area based on information provided by the Wee Waa LALC for the due diligence assessment (OzArk 2021).

Other site types such as quarry sites, grinding grooves, and burials are unlikely to be present based both on the results of the due diligence assessment (OzArk 2021) and the disturbed nature of the study area.

6 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

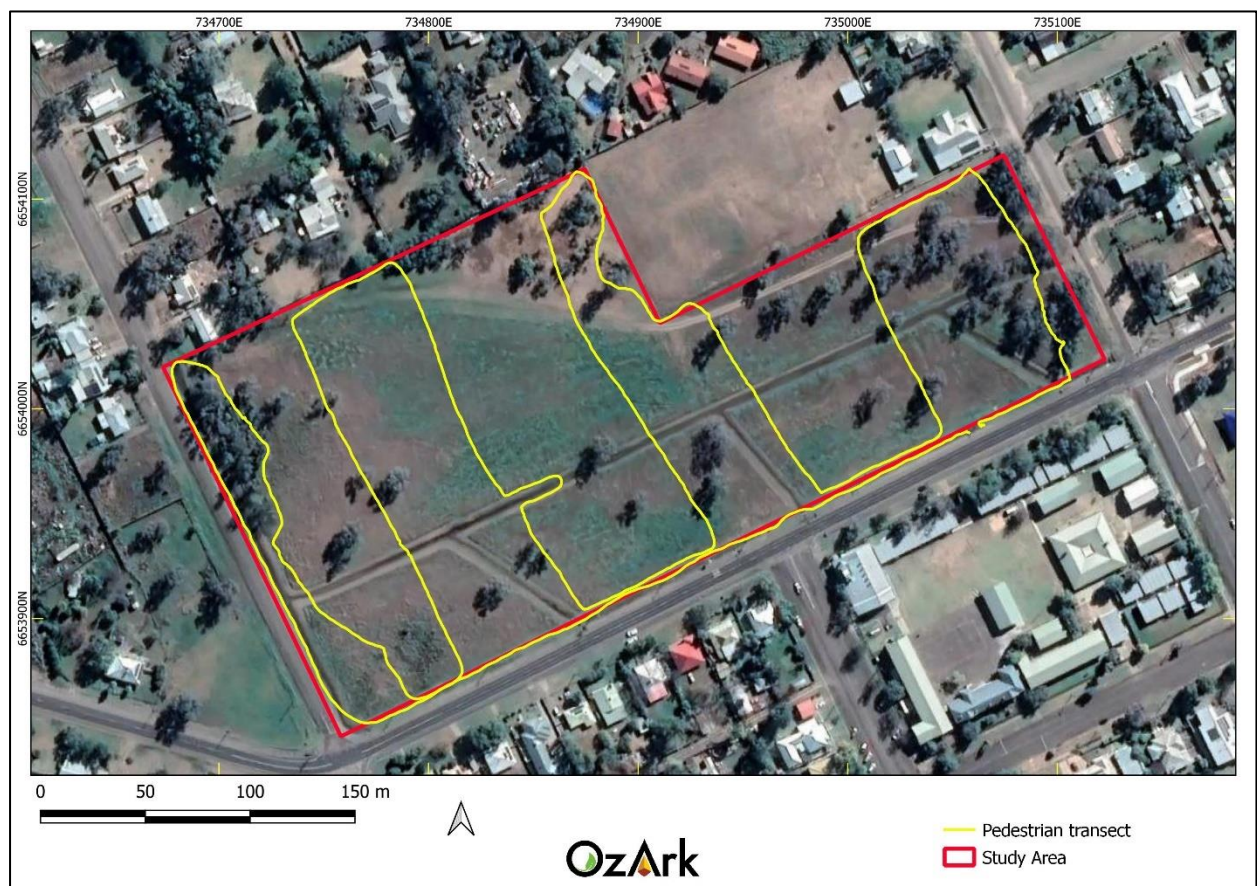
6.1 SAMPLING STRATEGY AND FIELD METHODS

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

The survey of the study area was undertaken by OzArk Project Archaeologist, Brendan Fisher, with the assistance of Allan Tighe, a Gomeroi People representative, on 15 September 2021.

Survey consisted of assessing the landform within the study area. **Figure 6-1** shows the areas surveyed via pedestrian means, where the two surveyors were spaced 10 m apart.

Figure 6-1: Aerial showing the survey coverage within the study area.



6.2 PROJECT CONSTRAINTS

The main constraint during the fieldwork was poor ground surface visibility (GSV) due to the dense ground covers across the study area. The ground covers were especially luxuriant due to the large amount of rainfall that the region has experienced since early 2020.

6.3 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are GSV and ground surface exposure (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.

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 2010: 37).

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 2010: 39).

Table 6-1 calculates the effective survey coverage within the study area. In general, **Table 6-1** presents an approximation of the amount of ground surface able to be seen at any location within landform units. Regarding the study area, at any one location, approximately <5% of the ground surface could be seen. Exposures in this landform were generally confined to the artificial canals or vehicle tracks. Visibility within Survey Unit 1 was hampered by leaf litter and gravels.

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

Survey Unit	Landform	Survey Unit Area (sq m)	Visibility %	Exposure %	Effective Coverage Area (sq m) (= Survey Unit Area x Visibility % x Exposure %)	Effective Coverage % (= Effective Coverage Area / Survey Unit Area x 100)
1	Flat plains	63 000	60	<5	1 890	3

7 DISCUSSION

7.1 DISCUSSION OF SURVEY RESULTS

7.1.1 Aboriginal Community Comments on the Survey

During the survey, the Gomeroi People representative, Allan Tighe discussed a possible area of the curriculum that the proposed high school could teach students in relation to the cultural values of the surrounding region. Allan believes that the teaching about modified trees (carved or scarred), in particular, coolamon scars, would provide students with knowledge on a common Aboriginal site type in the local area. Teachings for modified trees could involve the following questions:

- What are they?
- What do they look like?
- What can they mean?
- Where can they be located?

As the AHIMS search in **Section 5.3.1** indicates that modified trees are the most common site type in the area surrounding Wee Waa, Allan believes that the passing of this knowledge to the upcoming generations can assist in the protection and preservation of these site types.

7.1.2 Summary of survey results

No Aboriginal sites were identified during the survey of the study area. No intangible cultural values relating specifically to the study area have been made known to OzArk, however, as shown in **Section 5.3.2.1**, the study area is within a cultural landscape that includes ceremonial areas at the nearby Wee Waa Lagoon.

7.1.3 Discussion

In **Section 5.4.4** the landform modelling within the study area was confirmed during the visual inspection, as the flat urban area is of low sensitivity due to the high amount of disturbance and accumulated impacts (**Plate 1**). This is supported by the fact that most of the previously recorded sites near the study area are located on elevated terraces along the Namoi River or other natural waterways.

The study area has been subject to numerous floods throughout the years and Allan Tighe has personally seen the area underwater during large precipitation events. As a result, if any artefacts were to be present, they would most likely be isolated finds that are not situated in primary context. Additionally, the history of flooding would make the area a poor long-term camping location, and if it was used during drier periods, flooding may have removed evidence of this activity.

In **Section 5.3.1** the previously recorded sites in the area were predominantly modified trees (carved or scarred), where all were located within 200 m of a natural waterway. The visual inspection confirmed the prediction that it would be unlikely to record a modified tree within the study area due to the distance to water and the lack of suitable trees.

It can be concluded that no Aboriginal sites were identified because of the high levels of disturbance from the construction of the drainage canals, vegetation clearing, and European habitation in the study area (**Plate 2**).

8 SIGNIFICANCE AND IMPACT ASSESSMENT

8.1 AVOIDING AND MINIMISING HARM

8.1.1 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.

8.1.1.1 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 proposal.

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

8.1.1.2 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 values, the precautionary principle should be guided by:

- The proposal 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.

8.1.1.3 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.

8.1.1.4 Applicability to the proposal

There is a very low impact to Aboriginal cultural heritage values as no Aboriginal sites were recorded within the study area. Further, no intangible values applying to a specific area have been identified. Consequently, there will be ground surface impacts from the levelling and structural foundations for the school buildings, however, the results of the survey indicate that significant archaeological sites are not present at the impact location. As no places of cultural heritage value have been identified in the study area, it is unlikely that the proposal will impact cultural or aesthetic values.

Table 8-1 examines the application of ESD principles to the proposal

Table 8-1: Application of ESD principles to the proposal.

ESD principle	Response
Avoiding and minimising harm	As no Aboriginal sites were recorded during the survey, site specific avoidance or mitigation measures are not necessary.
The integration principle	The proposal presents a strong case for the future education of rural NSW students. The environmental consequences of the proposal will be rigorously assessed in the EIS.
The precautionary principle	The proposal has followed the precautionary principle through undertaking a robust impact assessment to ensure that harm to Aboriginal objects is minimised. The survey adopted a precautionary principle when it came to describing and assessing landforms within the study area.
The intergenerational equity principle	It is assessed at this stage that the proposal will not harm Aboriginal cultural heritage values and that there will be no diminution of intergenerational equity. The stated aim of the proposal is to enhance Aboriginal education with a proposed Aboriginal Education Community and Learning Centre. This has the potential to increase intergenerational equity, especially if curriculum initiatives such as that suggested by Allan Tighe (Section 7.1.1) are incorporated.

9 MANAGEMENT AND MITIGATION OF RECORDED ABORIGINAL SITES

9.1.1 Opportunities to conserve Aboriginal cultural heritage values

As no Aboriginal cultural values have been identified within the study area, the proposal will not be able to enhance nor diminish known Aboriginal cultural heritage values.

9.1.2 Management of potentially impacted cultural heritage values

As no Aboriginal cultural values have been identified within the study area, the proposal will not harm known Aboriginal cultural heritage values.

9.1.3 Test excavation

No landforms were identified in the Survey Boundary that indicated that intact subsurface archaeological deposits of conservation value may be present. Therefore, test excavation is not a recommendation of this report.

9.1.4 Unanticipated finds protocol

Should consent for the proposal be gained, an Aboriginal Cultural Heritage Management Plan (ACHMP) will be developed in consultation with RAPs and DPIE. The ACHMP will contain procedures should a new discovery of Aboriginal artefacts be made during construction or operation of the proposal. The procedure in **Section 9.1.4.1** is an example of an unanticipated finds protocol that could be incorporated into the ACHMP.

9.1.4.1 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 on site.

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 take into account 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 proponent 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. Follow the procedures of the ACHMP such as obtaining identification of the find by a qualified archaeologist, undertaking consultation with the RAPs, and registering the find with the AHIMS register.
2. Where the find(s) are determined to be Aboriginal object(s), recommencement of work in the area of the find(s) must not commence until all necessary procedures set out in the ACHMP have been fulfilled.

9.1.5 Unanticipated skeletal remains protocol

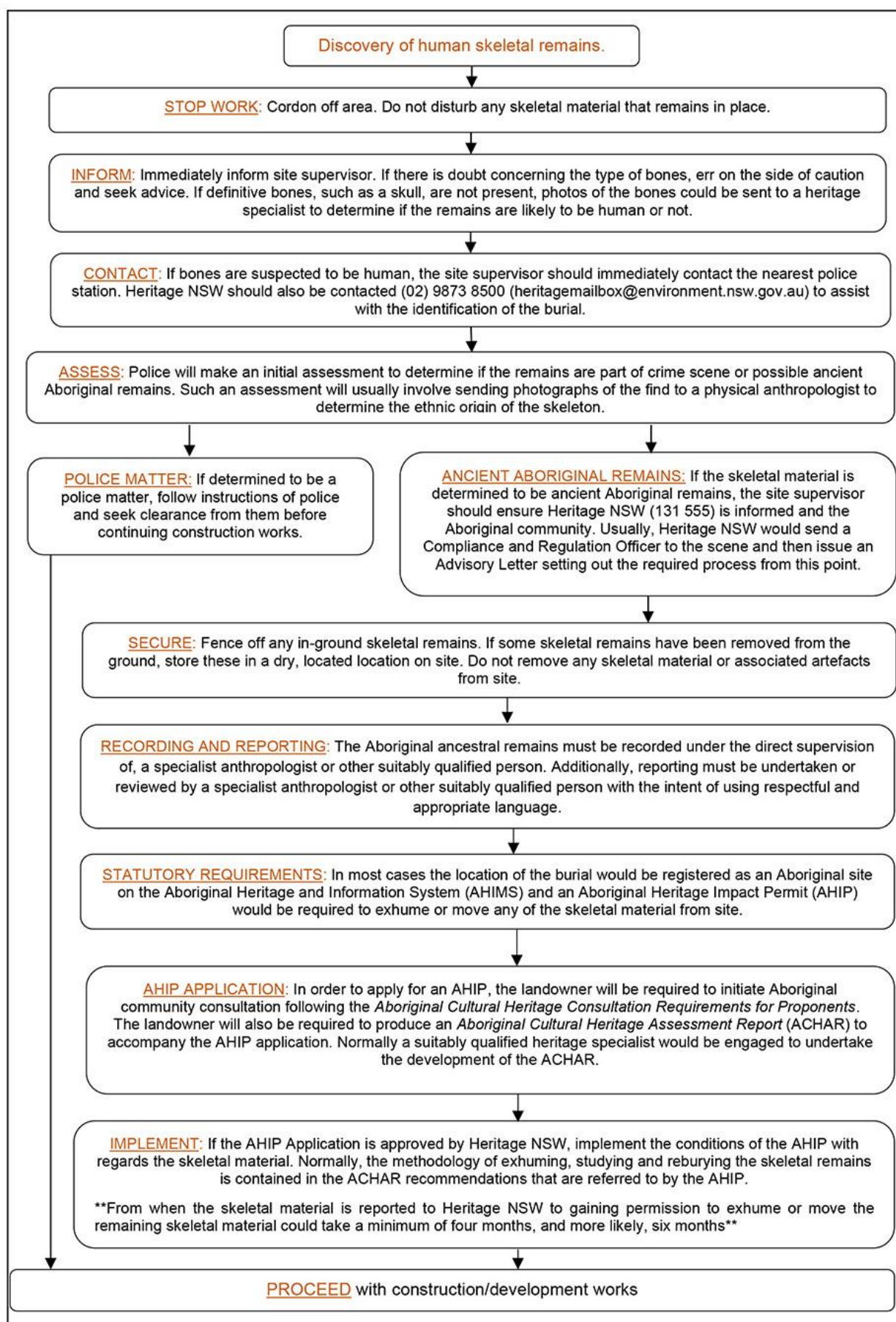
Should consent for the proposal be gained, an ACHMP will be developed in consultation with RAPs and DPIE. The ACHMP will contain procedures should a new discovery of human skeletal remains be made during construction or operation of the proposal. The procedure shown on **Figure 9-1** is an example of a human skeletal remains protocol that could be incorporated into the ACHMP.

9.1.6 Long-term management of Aboriginal objects

The ACHMP will include protocols for the long-term management of any Aboriginal objects discovered during the construction or operation of the proposal.

The protocol will adhere to the procedures of Care Agreements that are enacted between Heritage NSW and RAPs. Suitable procedures could include the reburial of artefacts at a location outside of impacts that adheres to Requirement 26 of the Code of Practice, or the removal of artefacts to an agreed place of safe-keeping as agreed to by RAPs and Heritage NSW.

Figure 9-1: Example of a procedure for the discovery of human skeletal material.



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 no Aboriginal sites were recorded 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 the prior written consent of Heritage NSW, or its equivalent
- The findings of the current investigations undertaken within the study area
- The interests of the Aboriginal community.

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

1. Following approval of the proposal, Aboriginal cultural heritage values will be managed by the policies within an ACHMP. The ACHMP will be developed in consultation with the RAPs and must be approved by DPIE. The recommendations of this ACHAR will normally be incorporated into the ACHMP.
2. This ACHAR concludes that the proposal may proceed without further archaeological investigation under the following conditions:
 - a. All land and ground disturbance activities must be confined to within the study area, as this will eliminate the risk of harm to Aboriginal objects in adjacent landforms. Should the parameters of the proposal extend beyond the assessed areas, then further archaeological assessment may be required.
 - b. All staff and contractors involved in the proposed work should be made aware of the legislative protection requirements for all Aboriginal sites and objects. The procedures to conserve Aboriginal cultural heritage values in the ACHMP should also be made clear to all personnel involved with ground disturbing activities.
3. The ACHMP will contain procedures for the management of unanticipated finds and human skeletal material.

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PLATES



Plate 1: View to the southwest of the study area, showing an artificial drainage canal.



Plate 2: View to the southwest of the study area showing the disturbance by European habitation.

APPENDIX 1: ABORIGINAL COMMUNITY CONSULTATION

<TO BE ADDED BEFORE STAGE 4 SEND OUT>

Appendix 1 Figure 1: Consultation Log.

Appendix 1 Figure 2: Stage 1 advertisement.

Appendix 1 Figure 3: Stage 1 letters to agencies.

Appendix 1 Figure 4: Stage 1 replies from agencies.

Appendix 1 Figure 5: Stage 1 expressions of interest to Aboriginal community stakeholders.

Appendix 1 Figure 6: Stage 2/3 letters to RAPs.

Appendix 1 Figure 7: Stage 2/3 assessment methodology.

Appendix 1 Figure 8: Stage 2/3 responses & feedback from RAPs.

Appendix 1 Figure 9: Invitation to participate in fieldwork.

Appendix 1 Figure 10: Project updates sent to RAPs.

Appendix 1 Figure 11: Stage 4 letters to RAPs.

Appendix 1 Figure 12: Stage 4 responses and feedback from RAPs.

APPENDIX 2: AHIMS EXTENSIVE SEARCH

Office of
Environment
& Heritage

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

Your Ref/PO Number : Wee Waa High School

Client Service ID : 577086

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
19-2-0055	BBS; Wee Waa LALC; Namoi River stock routes 1	AGD	55	730112	6649065	Open site	Valid	Modified Tree (Carved or Scarred) : 1		99027
	Contact			Recorders	Phil Purcell, Wee Waa LALC - BBS Survey team					
19-2-0056	BBS; Wee Waa LALC; Namoi River stock routes 2	AGD	55	730162	6649103	Open site	Valid	Modified Tree (Carved or Scarred) : 1		99027
	Contact			Recorders	Phil Purcell, Wee Waa LALC - BBS Survey team					
19-2-0057	BBS; Wee Waa LALC; Namoi River stock routes 3	AGD	55	730195	6649109	Open site	Valid	Modified Tree (Carved or Scarred) : 1		99027
	Contact			Recorders	Phil Purcell, Wee Waa LALC - BBS Survey team					
19-2-0058	BBS; Wee Waa LALC; Namoi River stock routes 4	AGD	55	730232	6649023	Open site	Valid	Modified Tree (Carved or Scarred) : 1		99027
	Contact			Recorders	Phil Purcell, Wee Waa LALC - BBS Survey team					
19-2-0061	BBS; Wee Waa LALC; Namoi River stock routes 7	AGD	55	730026	6649050	Open site	Valid	Modified Tree (Carved or Scarred) : 1		99027
	Contact			Recorders	Phil Purcell, Wee Waa LALC - BBS Survey team					
19-2-0063	BBS; Wee Waa LALC; Namoi River stock routes 9	AGD	55	729884	6648992	Open site	Valid	Artefact : 8		99027
	Contact			Recorders	Phil Purcell, Wee Waa LALC - BBS Survey team					
19-2-0092	WEE WAA WEST TSR ST 1	AGD	55	736890	6653722	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact			Recorders	Mr. Patrick Gaynor					
19-2-0093	Narrabri Local Aboriginal Land WEE WAA WEST TSR ST 2	AGD	55	731593	6653599	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact			Recorders	Mr. Patrick Gaynor					
19-2-0094	Narrabri Local Aboriginal Land WEE WAA WEST TSR ST 8	AGD	55	732595	6653260	Open site	Valid	Modified Tree (Carved or Scarred) : -		
	Contact			Recorders	Mr. Patrick Gaynor					
19-2-0028	GR-ST-1	AGD	55	730210	6653640	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact			Recorders	Central West Archaeological and Heritage Services Pty Ltd					

Report generated by AHIMS Web Service on 18/03/2021 for Taylor Foster for the following area at Datum :GDA, Zone : 55, Eastings : 729945 - 739960, Northings : 6648500 - 6659665 with a Buffer of 0 meters. Additional Info : Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 11

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Office of Environment & Heritage

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Wee Waa High School

Client Service ID : 577086

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
19-2-0029	GR-ST-2	AGD	55	730640	6653830	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
Contact		Recorders		Central West Archaeological and Heritage Services Pty Ltd						Permits

Report generated by AHIMS Web Service on 18/03/2021 for Taylor Foster for the following area at Datum :GDA, Zone : 55, Eastings : 729945 - 739960, Northings : 6648500 - 6659665 with a Buffer of 0 meters. Additional Info : Archaeological Assessment. Number of Aboriginal sites and Aboriginal objects found is 11

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