LAGGAN LANE ESTATE, LAGGAN, NSW

ARCHAEOLOGICAL TECHNICAL REPORT

Report to Laterals Engineering and Management
on behalf of Sutton Park

LGA: Upper Lachlan

February 2023

APEX ARCHAEOLOGY

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Executive Summary

Apex Archaeology have been engaged to assist Laterals Engineering and Management on behalf of Sutton Park to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for a proposed development at Peelwood Road, Laggan. The study area is legally defined as Lot 2 DP 1233492, Lot 1 DP 239858 and Lots 21-24 DP 1697 and is within the Upper Lachlan Shire Local Government Area (LGA).

This report details the results of the archaeological assessment of the site, prepared in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (September 2010) (the Code of Practice). This report forms an appendix to the ACHA report prepared for the project and has been prepared to support a Planning Proposal for the site.

It is proposed to subdivide the subject land within the study area at Peelwood Road into residential lots. A Planning Proposal is required to rezone the land from RU2 (Rural Landscape) to RU5 (Village Zone) and RU4 (Rural Small Holdings). The study area comprises approximately 36ha and is bound by Peelwood Road and two vacant lots on the east, and farming lots on the southern, western and northern boundaries.

There are no previously registered or recorded sites within the study area. A pedestrian survey was conducted in August 2022 by Leigh Bate, archaeologist and director of Apex Archaeology, in conjunction with Christopher McAlister Jr from Pejar Local Aboriginal Land Council. The inspection confirmed the findings of the initial assessment outlined in Apex Archaeology's Aboriginal heritage due diligence assessment in 2019 that concluded that there was no evidence of archaeological material or potential within the study area. The land was found to have been significantly impacted over many decades by previous land clearing, modification to drainage lines for the construction of dams, and ongoing agricultural practices. No archaeological material was found, and no areas of potential subsurface archaeological deposits were identified.

Based on the results of the cultural heritage and archaeological assessments, the following recommendations have been made for the project:

Recommendation 1: No Further Archaeological Assessment Required

This report details the archaeological potential of the site, which has been assessed as nil. No further archaeological assessment is required for the site. No application for an Aboriginal Heritage Impact Permit (AHIP) is necessary, as no Aboriginal heritage sites would be impacted by the proposed works.

Recommendation 2: Development Boundaries

The proposed development works must be contained within the assessed boundaries for this project. If there is any alteration to the boundaries of the proposed development to include areas not assessed as part of this archaeological investigation, further investigation of those areas should be completed to assist in

managing Aboriginal objects and places which may be present in an appropriate manner.

RECOMMENDATION 3: STOP WORK PROVISION

Should unanticipated Aboriginal archaeological material be encountered during site works, all work must cease in the vicinity of the find and an archaeologist contacted to make an assessment of the find and to advise on the course of action to be taken. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.

In the unlikely event that suspected human remains are identified during construction works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW Police must be notified immediately. If the finds are confirmed to be human and of Aboriginal origin, further assessment by an archaeologist experienced in the assessment of human remains and consultation with both Heritage NSW and the RAPs for the project would be required.

RECOMMENDATION 4: REPORTING

One digital copy of this report should be forwarded to the AHIMS registrar for inclusion on the AHIMS database.

One copy of this report should be forwarded to each of the registered Aboriginal stakeholders for the project.

Apex Archaeology acknowledges and pays respect to the past, present and future Traditional Custodians and Elders of this nation and in whose land this assessment took place, and to the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

Document Control

The following register documents the development and issue of the document entitled 'Laggan Lane Estate, Lagan NSW: Archaeological Technical Report', prepared by Apex Archaeology in accordance with its quality management system.

Revision	Prepared	Reviewed	Comment	Issue Date
1 – Draft	Rebecca Bryant & Leigh Bate	Jenni Bate	Draft for client	17 Nov 2022
2 – Draft	Jenni Bate	Laterals	Draft for RAPs	22 Nov 2022
3 – Final	Jenni Bate	RAPs	Issue of final	10 Feb 2023

GLOSSARY OF TERMS

Aboriginal Object	An object relating to the Aboriginal habitation of NSW (as defined in the NPW Act), which may comprise a deposit, object or material evidence, including Aboriginal human remains.
ACHA	Aboriginal Cultural Heritage Assessment
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACHCRs	*Aboriginal cultural heritage consultation requirements for proponents 2010*
AHIMS	Aboriginal Heritage Information Management System maintained by Heritage NSW, detailing known and registered Aboriginal archaeological sites within NSW
AHIP	Aboriginal Heritage Impact Permit
AR	Archaeological report
ASIRF	Aboriginal Site Impact Recording Form
BP	Before Present, defined as before 1 January 1950.
Code of Practice	The DECCW September 2010 *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*
Consultation	Aboriginal community consultation in accordance with the DECCW April 2010 *Aboriginal cultural heritage consultation requirements for proponents 2010.*
DA	Development Application
DECCW	The Department of Environment, Climate Change and Water (now Heritage NSW)
Disturbed Land	If land has been subject to previous human activity which has changed the land's surface and are clear and observable, then that land is considered to be disturbed
DPIE	Department of Planning, Industry and Environment
Due Diligence	Taking reasonable and practical steps to determine the potential for an activity to harm Aboriginal objects under the *National Parks and Wildlife Act 1974* and whether an application for an AHIP is required prior to commencement of any site works, and determining the steps to be taken to avoid harm
Due Diligence Code of Practice	The DECCW Sept 2010 *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*
GIS	Geographical Information Systems
GSV	Ground Surface Visibility
Harm	To destroy, deface or damage an Aboriginal object; to move an object from land on which it is situated, or to cause or permit an object to be harmed
Heritage NSW	Heritage NSW within the Department of Premier and Cabinet; responsible for overseeing heritage matters within NSW
ka	Kiloannus, a unit of time equating to 1,000 years
LALC	Local Aboriginal Land Council
LGA	Local Government Area
NPW Act	NSW *National Parks and Wildlife Act* 1974
NPWS	National Parks and Wildlife Service
OEH	The Office of Environment and Heritage of the NSW Department of Premier and Cabinet (now Heritage NSW)
PAD	Potential Archaeological Deposit
RAPs	Registered Aboriginal Parties

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1.0 Introduction

Apex Archaeology have been engaged to assist Laterals Engineering and Management on behalf of Sutton Park to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for a proposed development at Peelwood Road, Laggan, known as Laggan Lane Estate. The project is located within the Upper Lachlan Shire Local Government Area (LGA). This report details the results of the archaeological assessment of the site, prepared in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (September 2010) (the Code of Practice). This report forms an appendix to the ACHA report prepared for the project.

1.1 Project Proponent

The proponent for the project is Sutton Park and the project manager is Laterals Engineering and Management. The client contact for the project was Robert Mowle of Laterals Engineering and Management.

1.2 Objectives of the Archaeological Assessment

The archaeological investigation was undertaken to meet the requirements of the Code of Practice.

The purpose of the archaeological investigation is to understand and establish the potential harm the proposed development may have on Aboriginal cultural heritage within the study area, both tangible and intangible.

Any development works which disturb the ground surface have the potential to impact Aboriginal archaeological deposits and therefore an assessment of whether the study area contains such deposits is required prior to the commencement of construction works. An assessment of whether the proposed development would impact these deposits (if present) is also necessary, and identification of to what extent the deposits would be impacted is also required. The degree of impact which may be allowable is determined, in part, with consideration of the level of cultural significance attributed to the cultural values of the study area, both tangible and intangible.

As such, the objectives of the assessment are to determine whether Aboriginal cultural values exist within the study area, and whether the proposed project can avoid impact to these values, or if mitigation measures may be necessary.

1.3 Study Area and Project Brief

The study area is located on Peelwood Road, Laggan and is legally defined as Lot 2 DP 1233492, Lot 1 DP 239858 and Lots 21-24 DP 1697. It is within the Upper Lachlan Shire Local Government Area (LGA) and is approximately 36 ha in size. The study area is bound by Peelwood Road and two vacant lots on the east, and farming lots on the southern, western and northern boundaries.

The proposed works (Figure 3) will include the rezoning and subdivision of the subject land into small and large residential lots with access roads. Vegetation zones are also proposed primarily in the eastern and northern sections. These activities and implementation of services such as water, electricity and telecommunications are expected to result in subsurface excavations and modification to the natural landscape. There is also a probability that excavated soil will be removed from the study area or redeposited within it, and other fill may be introduced to the site. It is necessary to identify any Aboriginal archaeological constraints at the Planning Proposal stage so as to ensure appropriate management is put in place during the subdivision works, if the project is approved.

1.4 Project Framework

This assessment has been undertaken to support a Planning Proposal (PP) for the study area by changing the Zone and Minimum Lot Size Provisions of Lot 2 DP 1233492 and Lot 1 DP 239858 from RU2 Rural Landscape to RU4 Rural Smallholding in part and to RU5 Village in part.

Laggan is identified as a growth area, with a requirement to enhance the distinctive character of the village through careful development that respects the rural nature of the village. The current proposal provides for urban growth while minimising the impact on broad acre agricultural land. The proposal is necessary to attract additional residents to the area to support the continuation of the village. The project will need to be determined by the NSW Department of Planning and Environment as part of the Gateway process, and then Upper Lachlan Shire Council are the approval body.

1.5 Investigators and Contributors

This archaeological assessment was commissioned by Laterals Engineering and Management. Apex Archaeology thanks Robert Mowle of Laterals Engineering and Management for his assistance with the project. Thanks are also extended to the registered Aboriginal groups for their participation and assistance with the project, with particular thanks to Delise Freeman CEO of PLALC and PLALC Sites officer Christopher McAlister Jr.

This report has been prepared by Leigh Bate, Director and Archaeologist with Apex Archaeology and Rebecca Bryant, Archaeologist with Apex Archaeology. The report was reviewed by Jenni Bate, Director and Archaeologist with Apex Archaeology. Both Jenni and Leigh have over fifteen years of archaeological consulting experience within NSW, and Rebecca has 10 years' experience in archaeological research projects (inc four years in consultancy). Project team roles and qualifications are shown in Table 1.

Table 1: Project team roles and qualifications

Name	Role	Qualifications
Jenni Bate	Project Manager; Report Author; Field Inspection; Review	B.Archaeology; Grad. Dip. CHM
Leigh Bate	Report Author; Review; GIS	B.Archaeology; Grad. Dip. Arch; Dip. GIS
Rebecca Bryant	Report Author	B.Science (Arch/Paleo); Mphil (TBC 2022)

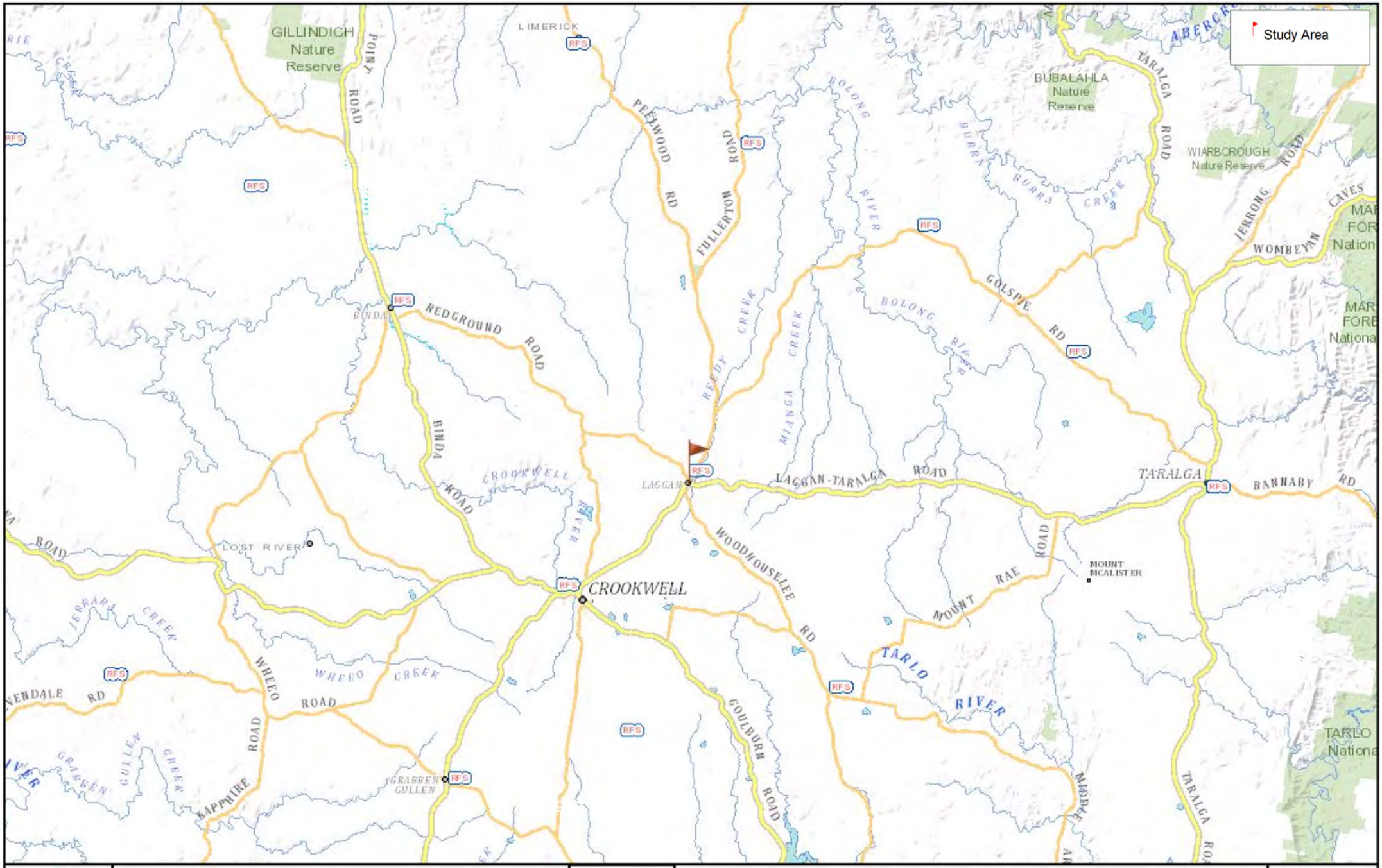
1.6 LIMITATIONS

This report relies in part on previously recorded archaeological and environmental information for the wider region. This includes information from AHIMS, which is acknowledged to be occasionally inaccurate, due to inaccuracies in recording methods. No independent verification of the results of external reports has been made as part of this report.

It should be noted that AHIMS results are a record only of the sites that have been previously registered with AHIMS and are not a definitive list of all Aboriginal sites within an area, as there is potential for sites to exist within areas that have not previously been subject to archaeological assessment.

Field investigations for this report included a pedestrian survey, and the results are indicative of the area. However, even though Aboriginal objects and sites have not been identified as part of this assessment, they may be present within the wider area.

This report does not include a consideration of historic heritage significance.



PO Box 236
NOWRA
NEW SOUTH WALES 2541

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kilometres

Projection:
MGA Zone 55 (GDA 94)
Base Map:
Six Maps Topo
FINAL - Version 1

Figure 1: Study area within its regional context.

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NEW SOUTH WALES 2541

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Projection:
MGA Zone 55 (GDA 94)
Base Map:
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Figure 2: Study area in its local context.

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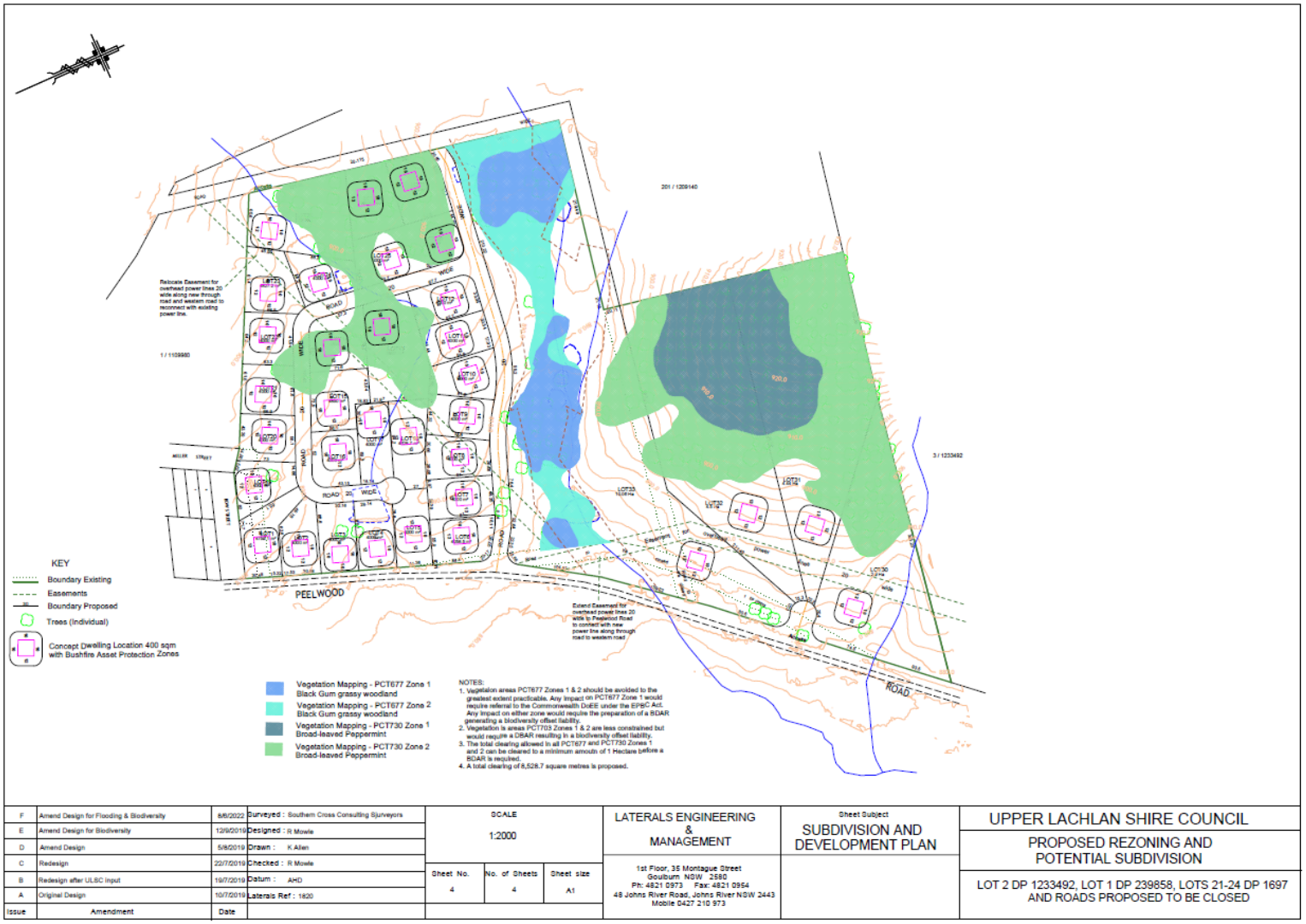


Figure 3: Proposed development layout (Source: Lateral Engineering and Management 2019).

2.0 Statutory Context

Heritage in Australia, including both Aboriginal and non-Aboriginal heritage, is protected and managed under several different Acts. The following section presents a summary of the applicable Acts which provide protection to cultural heritage within NSW.

2.1 Commonwealth Legislation

2.1.1 Aboriginal and Torres Strait Islander Heritage Protection Act 1984

This Act provides for the preservation and protection of injury and/or desecration of areas and objects in Australia and its waters that are of significance to Aboriginal people, in accordance with Aboriginal tradition.

Under this Act, the responsible Minister has provision to make both temporary and/or long-term declarations, in order to provide protection to areas and objects which are at threat of injury or desecration. In some instances, this Act can override State or Territory provisions, or be invoked if State or Territory provisions are not enforced. An Aboriginal or Torres Strait Islander individual or organisation must invoke the Act.

No items within the study area are listed or protected under this Act.

2.1.2 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act provides protection to environmental sites of national significance, including places with cultural heritage values that contribute to Australia's national identity. The Act aims to respect the role of Indigenous peoples in the conservation and ecologically sustainable use of Australia's biodiversity, and to enhance the protection and management of important natural and cultural places. Additionally, the Act is designed to promote the use of Indigenous peoples' knowledge of biodiversity with the involvement of, and in cooperation with, the owners of the knowledge.

The National Heritage List provides a listing of natural, historic and Indigenous places of outstanding significance to the nation, while the Commonwealth Heritage List details the Indigenous, historic and natural places owned or controlled by the Australian Government.

Under the EPBC Act, approvals are required if any action is proposed that will have (or is likely to have) a significant impact on the National Heritage values of a National Heritage place. Therefore, actions must be referred to the Australian Government Minister for the Environment and Heritage. A decision will be made as to whether the proposed action will have a significant impact on any matters of national significance.

A search of both the NHL and the CHL did not identify any items within the study area.

2.1.3 Native Title Act 1993

The *Native Title Act 1993*, as amended, provides protection and recognition for Native title. Native title is recognised where the rights and interests of over land or waters where Aboriginal and Torres Strait Islander practiced traditional laws and customs prior to the arrival of European settlers, and where these traditional laws and customs have continued to be practiced.

The National Native Title Tribunal (NNTT) was established to mediate native title claims made under this Act. Three registers are maintained by the NNTT, as follows:

- National Native Title Register
- Register of Native Title Claims
- Register of Indigenous Land Use Agreements.

Searching the NNTT registers allows identification of potential Aboriginal stakeholders who may wish to participate in consultation.

A search of all three registers did not identify any registered Native Title claims within the search area. The closest registered native title claimant is approximately 65 km to the south east (NC2017/003) of the current study area.

2.2 New South Wales Legislation

2.2.1 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* provides protection for all Aboriginal objects and places within NSW. Aboriginal objects are defined as the material evidence of the Aboriginal occupation of NSW, while Aboriginal Places are defined as areas of cultural significance to the Aboriginal community. All Aboriginal objects are protected equally under the Act, regardless of their level of significance. Aboriginal Places are gazetted if the Minister is satisfied that the location was and/or is of special significance to Aboriginal people.

Following amendments to the NPW Act in 2010, approval to impact Aboriginal cultural heritage sites is only granted under a Section 90 AHIP, which is granted by Heritage NSW in the Department of Premier and Cabinet.

2.2.2 Environmental Planning & Assessment Act 1979

Under the EP&A Act, it is necessary to consider environmental impacts, including impact to cultural heritage, as part of the land use process. Local Environmental Plans (LEPs) and Development Control Plans (DCPs) are also required to be prepared by Local Government Areas (LGAs) in order to provide guidance on the applicable level of environmental assessment. LGAs are required to maintain a list of locally significant heritage items as part of their LEP.

Under the EP&A Act, Part 3 describes the planning instruments at both local and regional levels; Part 4 relates to development assessment and consent processes, and Part 5 refers to infrastructure and environmental impact assessment.

2.2.3 UPPER LACHLAN LEP 2014

The *Upper Lachlan Local Environmental Plan (LEP) 2010* is the overarching planning instrument applicable to the Upper Lachlan Shire LGA.

Clause 5.10(1) (d) identifies that the objectives of this clause are to conserve Aboriginal objects and Aboriginal places of heritage significance. Further, Clause 5.10(2) requires consent for: (a) the demolishing or moving of an Aboriginal object; (c) disturbing or excavating an archaeological site; (d) disturbing an Aboriginal place of heritage significance; (e) erecting a building on land on which an Aboriginal object is located, or that is within an Aboriginal place of heritage significance; (f) subdividing land on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

Exceptions to the requirement for development consent are detailed by Clause 5.10(3) (a) and include work that is minor in nature or is for the maintenance of a heritage item, Aboriginal object, Aboriginal place, archaeological site or heritage conservation area, and would not adversely affect the heritage significance of the heritage item, Aboriginal object, Aboriginal place, archaeological site or heritage conservation area, or (b) the development is in a cemetery or burial ground and the proposed development would not cause disturbance to human remains, relics, Aboriginal objects in the form of grave goods, or to an Aboriginal place of heritage significance.

Clause 5.10(8) (a & b) require that the effect of any development on an Aboriginal place of heritage significance must be considered, and the Aboriginal community must be notified of any proposed developments and take into consideration any responses received with 28 days after the notice was sent. This document details the notification to the registered Aboriginal community regarding the intention to develop the study area and the consultation undertaken regarding the proposed development's potential impact on Aboriginal cultural heritage in the area.

The current study area falls over two of the LEP Heritage maps and there are no heritage items, heritage conservation areas or archaeological sites identified on the ULLEP 2010 heritage map or within or in close proximity of the study area.

There are no known items of Aboriginal heritage significance identified within the LEP that fall within the current study areas (Figure 4). The absence of nearby Aboriginal heritage items does not necessarily mean that the land has low Aboriginal cultural heritage significance.

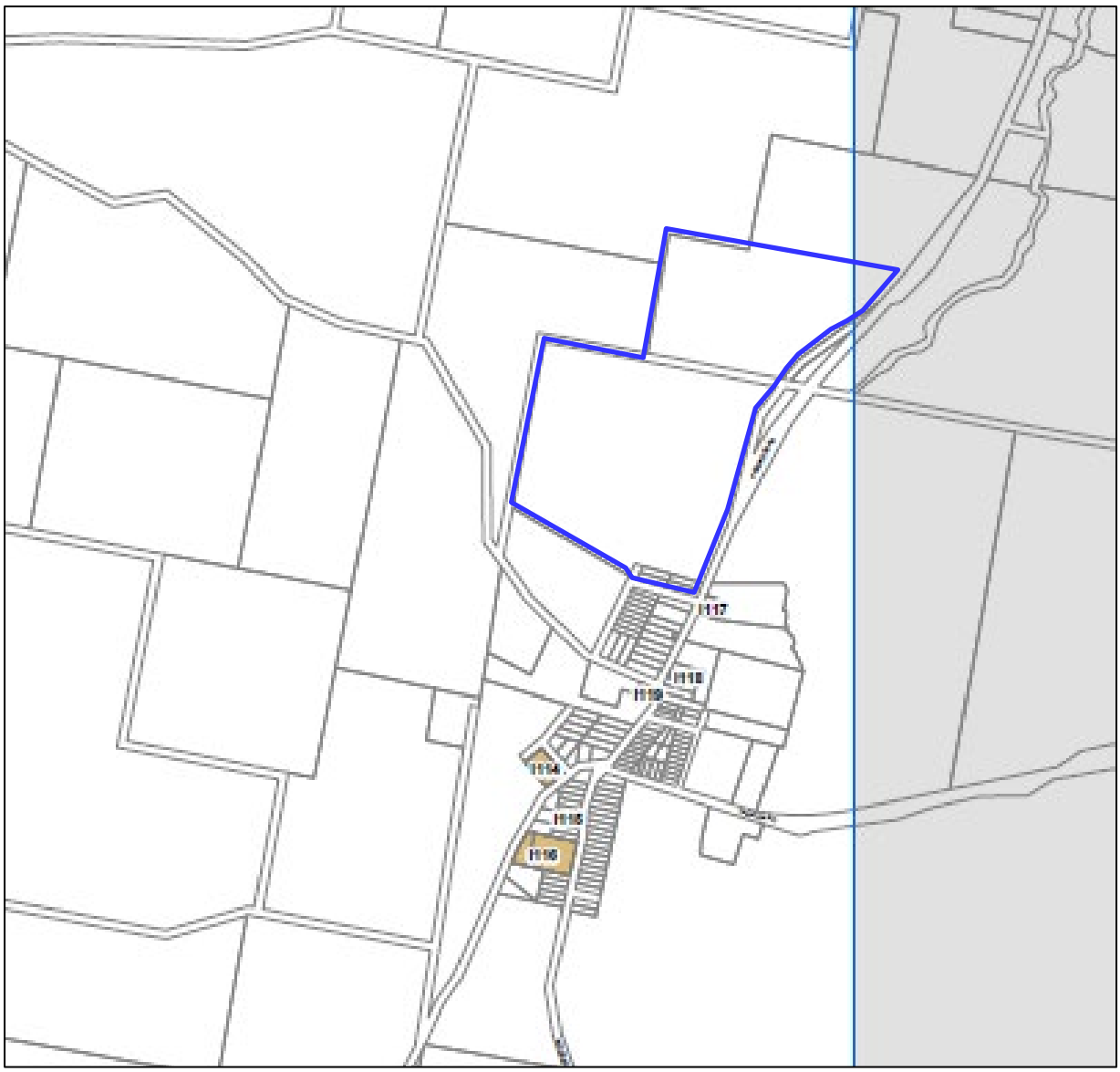


Figure 4: Upper Lachlan LEP 2010 Heritage Map, with approximate study area outlined in blue (Source: ULLEP 2010 Sheet HER_05E)

2.2.4 UPPER LACHLAN DCP 2010

The *Upper Lachlan Local Development (DCP) 2010* provides a framework for the consideration of potential impact on indigenous heritage and archaeological values from proposed development within the shire. A generalised map of places of Aboriginal significance has been produced in consultation with the Pejar Local Aboriginal Land Council and other government bodies (Figure 5). The map was largely based on what was identified in previous archaeological investigations and the Aboriginal sites registered on AHIMS. As it does not include areas of predictive Aboriginal heritage sensitivity, a matrix table was also developed. The matrix table listed particular landforms that may contain Aboriginal heritage and detailed the level of investigation required.

Although the current study is not mapped as being in an area of Aboriginal significance, it is within 40 m of a water course and the proposed subdivision includes the construction of new roads. As such, a heritage impact assessment is required (Upper Lachlan Development Control Plan 2010: 36). This is to be included in the development application as part of the Statement of Environmental Effects.

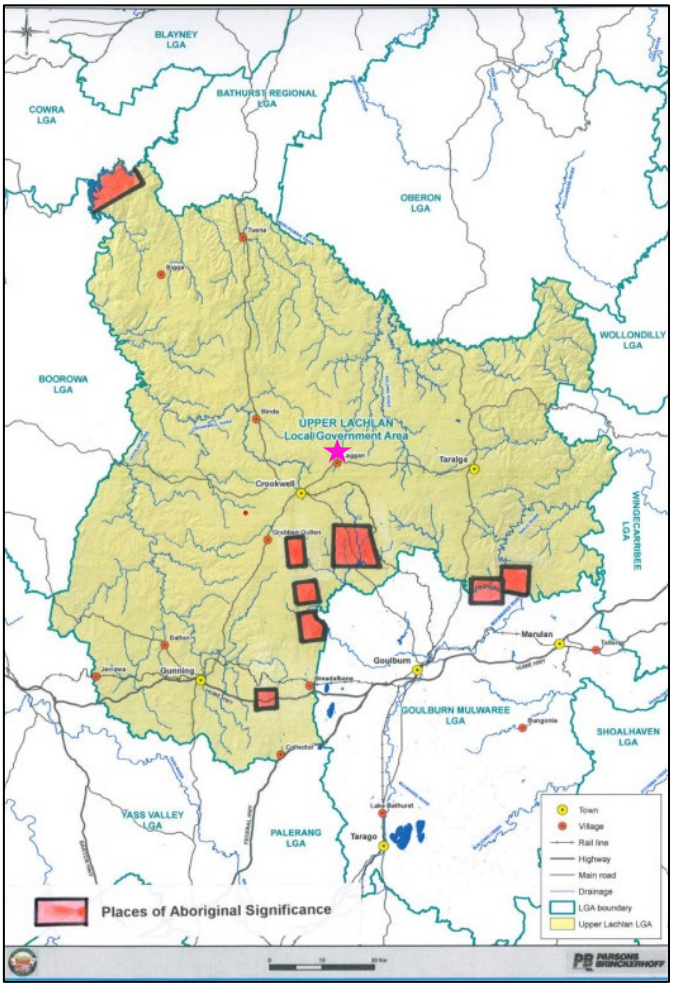


Figure 5. Places of Aboriginal Significance Map within the Upper Lachlan LGA (Approx. location of study area indicated by pink star).

3.0 Aboriginal Cultural Heritage

This section presents information about both the physical and cultural landscape in which the study area is located, as well as previous archaeological and ethnohistorical studies, to provide context and background to the existing knowledge of Aboriginal culture in the area.

3.1 Existing Environment

The study area is located within the South Eastern Highlands Bioregion which covers the dissected ranges and plateau of the Great Dividing Range that are topographically lower than the Australian Alps, which lie to the southwest. Laggan was founded for pastoral use which included large-scale clearing of the original vegetation and modification of waterways. It was also used as a stop for convicts during the building of roads between Bathurst and Goulbourn. This extensive clearing of vegetation and modification of the landscape to construct dams for agricultural purposes is evident with current study area.

Soils, Geology and Topography

The study areas falls wholly within the Blakney Creek soil landscape. The Blakney Creek soil landscape is identified as having shallow topsoil with moderate to severe gullying and moderate sheet erosion to occur extensively. The underlying geology is made up of undifferentiated Ordovician and Silurian sediments. Rocks include silty sandstone, siltstone, greywacke, phyllite, shale, slate and quartzite. Elevations in the area are generally from 600 – 900 m. Slope gradients are usually <10%. Local relief is between 20 – 50 m.

Flora and Fauna

The vegetation within the area consists of savannah woodland of yellow box and gum and dry sclerophyll forest dominated by red stringybark. Snow gum is found at higher altitudes and in frost pockets. Although extensive clearing has now taken place throughout the area, many of these species would have provided resources for Aboriginal people, either for dietary needs or to provide tools, or to feed fauna that were hunted.

Hydrology

The nearest major permanent water source is the Bolong River. The Bolong River is a watercourse that is part of the Lachlan catchment within the Murray–Darling basin. The hydrology of the study area consists of a first order ephemeral drainage line which drains east and connects to a second order ephemeral watercourse called Reedy Creek. Reedy Creek connects to the Bolong River ~20km north of the study area.

Watercourse classification ranges from first order through to fourth order (and above) with first order being the lowest, ie a minor creek or ephemeral watercourse, and fourth or above being a large watercourse such as a river, as defined by the Department of Planning and Environment (DPE; Figure 6).

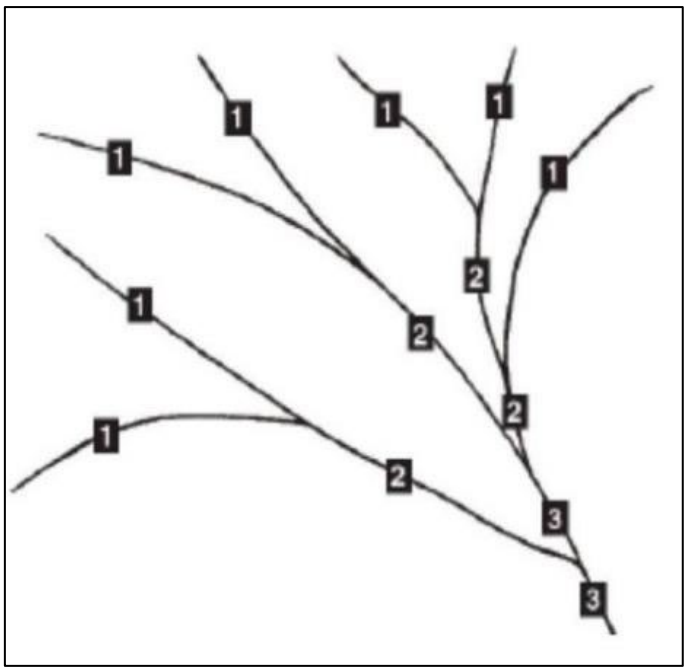


Figure 6: The Strahler system (Source: Department of Planning and Environment 2016).

3.1.1 Raw Materials

A wide range of raw materials were selected by Aboriginal people for flaking to create stone implements. Material types ranged from high quality to poor quality for flaking purposes, depending on the geology of the area and readily available material types. The following is a description of a range of raw material types known to have been utilised by Aboriginal people for the creation of stone artefacts. Not all occur naturally within all environments, although different resources can be identified within different regions due to trade or resource carrying (ie 'manuport' stone).

Breccia

Breccias are coarse, angular volcanic fragments cemented together by a finer grained tuffaceous matrix.

Chalcedony

Chalcedony is a microcrystalline, siliceous rock which is very smooth and can be glossy. Introduction of impurities can produce different coloured versions of chalcedony, including yellow/brown (referred to as carnelian), brown (sard), jasper (red/burgundy) and multicoloured agate. It flakes with a sharp edge and was a prized material type for the creation of stone artefacts in parts of Australia (Kuskie & Kamminga 2000: 186).

Chert

Chert is a highly siliceous sedimentary rock, formed in marine sediments and also found within nodules of limestone. Accumulation of substances such as iron oxide during the formation process often results in banded materials with strong colours. Chert is found in the Illawarra Coal Measures and also as pebbles and colluvial

gravels. It flakes with durable, sharp edges and can range in colour from cream to red to brown and grey.

Petrified Wood

Petrified wood is formed following burial of dead wood by sediment and the original wood being replaced by silica. Petrified wood is a type of chert and is a brown and grey banded rock and fractures irregularly along the original grain.

Quartz

Pure quartz is formed of silicon dioxide, and has a glossy texture and is translucent. Introduction of traces of minerals can lead to colouration of the quartz, such as pink, grey or yellow. The crystalline nature of quartz allows for minute vacuoles to fill with gas or liquid, giving the material a milky appearance.

Often quartz exhibits internal flaws which can affect the flaking quality of the material, meaning that in general it is a low-quality flaking material (Kuskie & Kamminga 2000: 186). However, quartz is an abundant and widely available material type and therefore is one of the most common raw materials used for artefact manufacture in Australia. Flaking of quartz can produce small, very sharp flakes which can be used for activities such as cutting plant materials, butchering and skinning.

Quartzite

Formed from sandstone, quartzite is a metamorphic stone high in silica that has been heated or had silica infiltrate the voids found between the sand grains. Quartzite ranges in colour from grey to yellow and brown.

Silcrete

Silcrete is a siliceous material formed by the cementing of quartz clasts with a matrix. These clasts may be very fine grained to quite large. It ranges in colour from grey to white, brown, red or yellow. Silcrete flakes with sharp edges and is quite durable, making silcrete suitable for use in heavy duty woodworking activities and also for spear barbs (Kuskie & Kamminga 2000:184).

Tuff/Indurated Mudstone

There is some disagreement relating to the identification of lithic materials as tuff or indurated mudstone. The material is a finely textured, very hard yellow/orange/reddish-brown or grey rock. Kuskie and Kamminga (2000: 6, 180) describe that identification of lithic materials followed the classification developed by Hughes (1984), with indurated mudstone described as a common stone material in the area. However, Kuskie and Kamminga's analysis, which included x-ray diffraction, identified that lithics identified as 'indurated mudstone' was actually rhyolitic tuff, with significant differences in mineral composition and fracture mechanics between the stone types. They define mudstone as rocks formed from more than 50% clay and silt with very fine grain sizes and then hardened.

The lithification of these mudstones results in shale (Kuskie & Kamminga 2000: 181) and thus 'indurated mudstone', in the opinion of Kuskie and Kamminga, do not produce stones with the properties required for lithic manufacture.

In 2011, Hughes, Hiscock and Watchman undertook an assessment of the different types of stones to determine whether tuff or indurated mudstone is the most appropriate terminology for describing this lithic material. The authors undertook thin section studies of a number of rocks and determined that the term 'indurated mudstone' is appropriate, with an acknowledgment that some of this material may have been volcanic in origin. They also acknowledge that precise interpretation of the differences between material types is difficult without detailed petrological examination, and suggest that artefacts produced on this material are labelled as 'IMT' or 'indurated mudstone/tuff'.

BASALT

Both volcanic and acid volcanic stones are a used raw material type within the South Coast. Without detailed petrological analysis it can be sometimes difficult to identify the specific raw material. However, probably one of the most common and recognisable types of volcanic stone is basalt, which is commonly referred to as 'blue metal'. It is solidified lava that was produced by now extinct volcanoes and diatremes that are spread-out within the Sydney Basin. If the lava cools quickly it results in fine-grained basalt that is easily flaked or ground to make tools, implements or weapons. Tuff forms from the tiny ash particles that are also released during volcanic explosions. When it cools it hardens into a fine-grained rock called 'tuff', as discussed above.

Basalt would have been either collected from the primary deposits formed during the eruption, which would require pieces to be broken off (quarried) or it was collected in cobble-form from a creek bed or shoreline. Cobbles are referred to as secondary sources as they are formed from pieces of rock that have been dislodged from their primary source and end up in creeks and/or river systems (Petrequin 2016; Attenbrow et al. 2017). The flow of water moves them around and smooths them into water-rolled cobbles that can be transported considerable distance from the original source. Basalt was often used to make axes which were either flaked into the desired shape from quarried stone, or from cobbles which quite often only required only one end to be ground into a sharp working edge.

Basalt cobbles can be found along the banks of rivers, and in bedrock quarries within the South Coast region. Recent research undertaken by the Australian Museum and University of New England using portable XRF technology demonstrated that a number of stone axes held at the Australian Museum have been traced to these sources (Attenbrow et al. 2017).

3.1.2 PROCUREMENT

Assemblage characteristics are related to and dependent on the distance of the knapping site from raw materials for artefact manufacture, and different material types were better suited for certain tasks than other material types. Considerations such as social or territorial limitations or restrictions on access to raw material sources, movement of groups across the landscape and knowledge of source locations can influence the procurement behaviour of Aboriginal people. Raw materials may also have been used for trade or special exchange between different tribes.

3.1.3 MANUFACTURE

A range of methodologies were used in the manufacture of stone artefacts and tools, through the reduction of a stone source. Stone may have been sourced from river gravels, rock outcrops, or opportunistic cobble selection. Hiscock (1988:36-40) suggests artefact manufacture comprises six stages, as follows:

1. The initial reduction of a selected stone material may have occurred at the initial source location, or once the stone had been transported to the site.
2. The initial reduction phase produced large flakes which were relatively thick and contained high percentages of cortex. Generally the blows were struck by direct percussion and would often take advantage of prominent natural ridges in the source material.
3. Some of these initial flakes would be selected for further reduction. Generally only larger flakes with a weight greater than 13-15 grams would be selected for further flaking activities.
4. Beginning of 'tranchet reduction', whereby the ventral surface of a larger flake was struck to remove smaller flakes from the dorsal surface, with this retouch applied to the lateral margins to create potential platforms, and to the distal and proximal ends to create ridges and remove any unwanted mass. These steps were alternated during further reduction of the flake.
5. Flakes were selected for further working in the form of backing.
6. Suitable flakes such as microblades were retouched along a thick margin opposite the chord to create a backed blade.

Hiscock (1986) proposed that working of stone materials followed a production line style of working, with initial reduction of cores to produce large flakes, followed by heat treatment of suitable flakes before the commencement of tranchet reduction. These steps did not necessarily have to occur at the same physical location, but instead may have been undertaken as the opportunity presented.

Although probably less common than the process of flaking stone to modify it, the grinding technique was used within the Sydney Basin. This has been documented by early settlers particularly in the manufacture of axe heads where the end of a cobble was ground to achieve a working edge (Corkill 2005).

3.2 Land Use History

Indigenous Occupation

When Aboriginal occupation of Australia is likely to have first commenced, around 60,000 years ago (Mulvaney and Kamminga 1999; Bowdler *et al* 2003; Attenbrow 2010), sea levels were around 30-35m lower than present levels, and this further decreased to up to 130m lower than present sea levels (Attenbrow 2010). Sea levels stabilised around 7-6,500 years ago, and as a result many older coastal sites would have been inundated with increasing sea levels. It is possible that areas that are now considered "coastal" would once have limited resources available to Aboriginal people, and as such would have been less likely to have been occupied or used for repeated habitation sites.

Archaeological work at the Madjedbebe site in Arnhem Land in the Northern Territory revealed evidence confidently dated to the period before 45-46 ka and possibly up to 50-55 ka (Clarkson et al 2015). In NSW, there is strong evidence available to support Aboriginal occupation of the Cumberland Plain region in the Pleistocene period (approximately 40 ka) and possibly earlier. Work in Cranebrook Terrace was dated to 41,700 years BCE by Stockton and Holland (1974), and a site in Parramatta within deep sandy deposits was dated to 25-30 ka (JMcDCHM 2005). Kohen's 1984 assessment of Shaws Creek in the Blue Mountain foothills yielded ages of 13 ka, while Loggers Shelter at Mangrove Creek was dated to 11 ka by Attenbrow (1987). Deeply stratified occupation deposits at Pitt Town were dated to 39ka (Apex Archaeology 2018). These ages are obtained from both radiocarbon and optically stimulated luminescence (OSL) dating.

Some experts have cast doubt onto the assessment of the items from Cranebrook Terrace as artefactual (Mulvaney & Kamminga 1999; McDonald 2008), although they do not doubt the results of the radiocarbon dates – it is the association of the artefacts with the dated deposits that is problematic, and Mulvaney and Kamminga (1999) consider that there are better examples of sites with more robust identification of age available. There has certainly been a great deal of research undertaken within the Sydney region in the intervening years.

Changing sea levels resulted in the ecological systems of the hinterland areas changing too, resulting in differing resources becoming available. This led to an increase in evidence of habitation of areas from around 6,500 BP, although it is unclear whether this relates to the survivability of more recent sites, or an increase in population. Hughes and Lampert (1982) suggested that a population increase is the only plausible explanation for the exponential increase in Holocene sites from 6,000 BP.

During the Holocene period around 6.5ka, sea levels increased and stabilised, which led to those groups on the coastal fringes turning inland (McDonald 2008). Around 5ka a change in archaeological assemblages can be seen, with an emphasis on the use of locally available stone for artefact production. Around 4,000 years ago people

began to decrease their residential mobility and inhabit certain biogeographic zone on a permanent basis (McDonald 2008).

According to Tindale (1974) the main Aboriginal groups thought to traditionally occupy the South-eastern Highlands regions were the Gandangara in the north, Ngunawal to the south and the Wiradjuri to the west. The current study area falls within the Gandangara, also known as Gundungarra, language area, but is also close to the Wiradjuri. It is difficult with the available information to define the original boundary between the Gundungurra and Wiradjuri, and it is important to take into consideration that the boundaries were fluid and shifted over time. The study area is considered to fall within a 'zone of interaction' and would have been an area where the Gandangara, Darug and Wiradjuri peoples interacted.

The life of the Gandangara people would have involved constant travel to utilise the spiritual and physical resources along traditional routes and would have had much wider perceptions and associations when looking at the landscape. For example, when observing trees, they would have scanned the branches for hollows which could contain possums (wille), gliders, birds (budyang) and their eggs (gubugan), and goannas (werrier). Trees also had different values for firewood, and the Gandangara preferred the She-oak (bellang) and Angophra branches which smoulder slowly through the night under a coating of white ash and continue to burtn through rain. In contrast, gum tree branches burn up quickly and need to be replenished much more during the night (Smith 2009).

Post Contact Occupation

Following the establishment of the first European settlement at Sydney Cove, the need for additional agricultural land was identified, as Sydney Cove was considered unsuitable for farming. By November 1788, food supplies were running low for the settlement, and an expedition led by Governor Philip set off up the Parramatta River in search of arable land. An area known as Rose Hill (now Parramatta) was settled by a small group of 11 soldiers and 10 convicts. The grain crops at Sydney Cove failed, and the settlement at Rose Hill was ordered to be used for agriculture. These crops were luckily successful, and a further settlement comprising a convict farm was established at Toongabbie.

The exploration by Hamilton Hume, Charles Throsby, James Meehan and John Oxley between 1817 to 1820 made colonists aware of the potential of the southern tablelands. As a result, an increasing amount of land was settled in the course of the 1820's and a succession of towns were established. The key centre of the tablelands was Goulbourn that was marked out as a town in 1828. It served as an administrative centre to the newly established cattle and sheep stations, as well as agricultural farms that grew crops such as wheat, barley and potatoes. By 1845 there were as many as 1,200 people living there and more permanent houses made of brick or stone were constructed (HO and DUA 1996).

The towns of Crookwell, Binda, Lagan and Boorowa developed around the 1850s. Although Binda was initially established as an administrative centre it did not develop into a township, nor did Laggan. It was Crookwell that became the centre of wheat growing in 1860 and urban allotments were sold until about 1869. The shire of Crookwell was established in 1906 (HO and DUA 1996).

To assess the disturbance that may have resulted from historical occupation, a series of historical aerial photographs dating back to the mid-twentieth century were reviewed. The images indicate that most of the area was in agricultural use by 1963 (Plate 1). By 1972 Peelwood Road had been realigned (Plate 2), but apart from this modification, there appears to be no other obvious changes. Images from 1985 and 1993 (Plate 3 & Plate 4) show a dam had been constructed in the southeast corner and a smaller one near the eastern boundary in the middle section. Although there would have been continuous use of the land for agricultural and animal grazing purposes, as well as the modification of the natural drainage channels and creeks, there is no obvious additional land clearing from the 1960s onwards.

The above-mentioned historical activities would have had a significant impact on the original landscape. The initial clearance of the original vegetation would have removed a substantial amount of topsoil, which also would have led to sheet erosion. Further damage to the soil profile would have been exacerbated by the construction of dams and continued use of the area for crop production and agistment for livestock, which was documented the Apex Archaeology Aboriginal Archaeology due diligence assessment (2019:19). There are stands of scattered trees that may have been part of the original vegetation, however these were checked for cultural markings in both the due diligence and ACHA assessment, and none were found.

Plate 1: 1963 aerial. Study area in blue (Source: NSW Spatial Services HV 2022).

Plate 2: 1972 aerial. Study area in blue (Source: NSW Spatial Services HV 2022).

Plate 3: 1985 aerial. Study area in blue (Source: NSW Spatial Services HV 2022).

Plate 4: 1993 aerial. Study area in blue (Source: NSW Spatial Services HV 2022).

4.0 Literature Review

4.1 Previous Archaeological Work

An analysis of previous archaeological work within the study area assists in the preparation of predictive models for the area, through understanding what has been found previously. By compiling, analysing and synthesising the previous archaeological work, an indication of the nature and range of the material traces of Aboriginal land use is developed. An understanding of the context in which the archaeological assessment is vital, as development does not occur within a vacuum, but within a wider cultural landscape, and this must be considered during any archaeological assessment in order to develop appropriate mitigation and management recommendations.

A number of reports were identified from background research and the AHIMS database and are detailed in Table 2.

Table 2: Previous heritage assessments undertaken by archaeological consultants in the region

Consultant	Date	Sites Identified/Salvaged	Region
Koettig, M	1982	6669 artefacts salvaged from two sites (C-AB2 & C-AB1)	Collector, NSW
Koettig, M	1983	650 artefacts salvaged.	Goulburn, NSW
Lance, A	1984	1 isolated find identified	Sooley Dam, Wollondilly River, NSW
Stone, T	1986	2 artefact scatters identified	Yass, NSW
Lance and Koettig	1986	Aboriginal Resources Planning Study	Goulburn Area
Silcox, R	1988	3 artefacts scatters identified	Chatsbury, NSW
Fuller, N	1989	17 artefact scatters & 5 isolated finds identified	Goulburn Area
Patton, R	1990	15,257 artefacts salvaged	Goulburn, NSW
Silcox, R	1991	97 artefacts salvaged	Goulburn, NSW
Williams, D	1992	Relocation of 53 artefacts previously recorded by Koettig in 1983.	Goulburn to Campbelltown, NSW
Silcox, R	1993	4 artefacts salvaged	Breadalbane, NSW
Effenberger, S	1994	2 isolated finds identified	Goulburn Racecourse
Silcox, R	1995	2 artefact scatters	Goulburn, NSW
Stuart, I	1995	2 artefact scatters, 2 isolated finds	Goulburn, NSW
Kuskie, P	1996	1 artefact scatter, 1 isolated find	Goulburn, NSW
JMcDCHM	1997	2154 artefacts salvaged	Crookwell, NSW
NOHC	2000	No Aboriginal sites or areas with PAD recorded	Goulburn. NSW
Dominic Steele	2003	1 scarred tree, 2 possible scarred tree and an Isolated find identified	Goulburn, NSW
NOHC	2003	1 artefact scatter identified	Run O Waters, Goulburn, NSW
Dibden, J	2004	A large amount of artefact scatters identified.	Greenwich Park, Goulburn, NSW
Biosis	2004	7 artefact scatters & 8 isolated finds identified	Tarago, NSW

Consultant	Date	Sites Identified/Salvaged	Region
OzArk E&HM	2004	6 artefact sites and 1 scarred tree identified	Taralga, NSW
Dibden, J	2005	4 artefact sites identified	Cullerin, NSW
Austral Archaeology Pty Ltd	2005	No artefacts recovered from salvage excavations	Gunning, NSW
Saunders, P	2007	12 artefact scatters and 2 isolated finds identified	Parkesbourne, NSW
Austral Archaeology Pty Ltd	2007	2 artefact scatters, 3 isolated finds and 6 PAD areas identified	Capitol Wind Farm, Lake George, NSW
Austral Archaeology Pty Ltd	2007	348 artefacts recovered from salvage excavations	Capitol Wind Farm, Lake George, NSW
Dibden, J	2008	116 artefact scatters identified	Yass Valley Wind Farm, Yass, NSW
Anderson Environmental Consultants	2010	10 artefact sites identified	Crookwell, NSW
Dibden, J	2012	13 artefact scatters identified	Rye Park Wind Farm, Yass, NSW
Dibden, J	2013	14 artefacts scatters identified	Bango Wind Farm, Bango, NSW
Dibden, J	2015	3 artefact scatters identified	Collector Wind Farm, Collector, NSW
ERM	2021	7 artefact sites identified	Crookwell, NSW

Most sites comprised low density artefact concentrations.

4.1.1 Previous Heritage Assessments

Apart from the Aboriginal archaeological due diligence completed by Apex Archaeology in 2019, there does not appear to have been any Aboriginal archaeological or cultural heritage assessments undertaken within the Laggan area. There are no reports on the Aboriginal Heritage Information Management System (AHIMS), and none were identified during the background research. Therefore, this section focused on the wider area and assessments that were undertaken within the Pejar Local Aboriginal Land Council boundary, and also within the Upper Lachlan Shire LGA. These were concentrated in the Crookwell/Goulburn area, between approximately 16 and 46km to the south east and south west of the area.

Koettig 1983

Koettig was engaged to undertake an archaeological assessment of a proposed highway by-pass of Goulburn. A total of twenty two surface concentrations were identified, with all being situated within 200m of watercourses. A variety of landforms were included in the study and many contained archaeological evidence, including 54% being located on slopes, 23% on ridges and 23% on creek or river flats.

Most sites comprised low density concentrations, but one site, known as G17, was located on a low sandbar on the east of the Mulwaree River near the confluence of Gundary Creek and contained a high density concentration with a stratified deposit. A total of 650 artefacts were recovered during test excavation, and a subsequent excavation by Paton in 1990, an additional 15,000 artefacts were recovered. Less than 1% of these were formal tool types, with 85% being formed on quartz and the remainder on silcrete.

LANCE 1984

Lance undertook a survey in advance off the construction of a proposed pipeline between Sooley Dam and Rossi Weir on the Wollondilly River to the north of Goulburn. A single quartz flake was identified near Sooley Creek.

DALLAS 1985

Dallas was engaged to undertake an archaeological survey of the Cullerin Range Bypass between Beadalbane and Gunning, over 31km. Seven artefact concentrations were identified, with six located to the east of the Cullerin Range. A survey of a realignment of the route was required and was undertaken by Koettig and Silcox in 1985, and a total of seven additional sites were recorded. It was considered that these sites represented a continuous artefact distribution rather than separate sites. The additional sites were located on elevated ground close to a creekline, and all were of low artefact densities.

KOETTIG 1986

Koettig undertook an excavation of one of the sites (CR14) on the Goulburn Bypass route. This site was located on a small knoll above a creekline. A high density artefact concentration, comprising mostly quartz items was recovered, although it was noted that densities varied considerable across the site. Silcrete was also identified and it was noted that both direct percussion and bipolar flaking techniques had been utilised within the assemblage.

LANCE AND KOETTIG 1986

Lance and Koettig were engaged to prepare an Aboriginal Resources Planning Study on behalf of the City of Goulburn. This considered a range of data, including ethnographic, environmental, archaeological and sampled field surveys, which was compiled to create an Aboriginal site location model for the Goulburn region. It concluded that four broad landform zones were located within the area, including major watercourses, undulating hills and plains, hill tops and built-up areas, and an archaeological sensitivity and site significance rating was assigned to each.

In general, the most common site type within the Goulburn area was considered to be artefact concentrations within undulating hills and plains, generally on basal slopes adjacent to watercourses.

SILCOX 1988

Silcox undertook an assessment at a reopened slate quarry located at Chatsbury. During the site inspection, three surface concentrations were identified. Quartz was the predominant raw material, and silcrete, chert, acid volcanic and 'other' were also represented. All sites were within 50m of the Tarlo River, on the lower slopes. The landform was represented by prominent rounded, moderately to steeply sloping hills and sloping valley floors. The sites were located in proximity to the confluence of the Tarlo River and Kings Creek. A number of areas of archaeological potential were identified and test excavation was recommended.

Test excavations were completed by Silcox in 1989 with only five artefacts recovered from two locations near the river. The artefacts were all identified at the uphill end of one location. It was considered that the absence of archaeological material was due to an absence of past Aboriginal activity on the sites.

FULLER 1989

Fuller was commissioned to undertake an archaeological investigation of the locations of Aboriginal sites within the Goulburn area, testing Lance and Koettig's 1986 predictive model. A total of seventeen artefact concentrations and five isolated finds were identified during the survey. Most sites were low density concentrations of fewer than 10 items, although one site more than 100 artefacts were identified, with over 1,000 identified at another area measuring 1km^2. The assessment generally concurred with Lance and Koettig's assessment in 1986.

SILCOX 1991

Silcox undertook an archaeological survey and test excavation program in advance of a proposed storm water flow detention pond in Goulburn, next to the Wollondilly River. The area examined comprised an elevated surface overlooking a floodplain area. No artefacts were identified during the site inspection and this was considered to relate to the thick grass cover present, reducing ground visibility. The archaeological test excavations recovered 97 artefacts from 30 test pits, which was considered to represent a low density artefact concentration of predominantly quartz material.

WILLIAMS 1992

Williams was engaged to survey a proposed Optus cable route between Goulburn and Campbelltown, and subsequently undertook test excavations within a site previously identified by Koettig adjacent to the Mulwaree River, known as G17. No artefacts were identified on the western side of the river, but some were recovered during the test excavations at G17, as well as the identification of surface artefacts. Additionally, 53 of the original 191 artefacts identified at site G19/20 were relocated.

AASC 1993

Australian Archaeological Survey Consultants were commissioned to undertake an archaeological survey of approximately 5km of proposed Telstra optical fibre cable between Goulburn and 'The Forrest'. A total of three very low density artefact

concentrations, four isolated finds and a possible scarred tree were identified during the inspection.

Silcox 1993a

Silcox conducted archaeological test excavations along a proposed access road for an ironstone mine near Breadalbane. No surface sites had been previously identified, but two areas of archaeological potential were recorded. The excavation focussed on a gentle slope and a flattish saddle at the end of a ridge, with a total of four artefacts recovered from 57 pits on the gentle slope, and none from the saddle area.

Effenberger 1994

Effenberger conducted a survey of the new Goulburn racecourse, an area of 93 ha, and located two isolated finds.

Silcox 1995

Silcox prepared an assessment in advance of a proposed power line and Telstra radio base at Sunnyside, 14km south west of Goulburn. Two artefact concentrations and one isolated find were located, with one concentration estimated to contain at least 2,500 artefacts on a low, broad ridge spur approximately 3.7km west of the Mulwaree River and 100m from a tributary. The other artefact concentration comprised four artefacts within a 50m area near the tributary.

Stuart 1995

Stuart undertook a survey in advavce of the construction of effluent irrigation areas to the east of Goulburn, near the Wollondilly River. Two low density artefact concentrations and two isolated finds were identified, with both assessed as falling within the high potential zone as identified by Lance and Koettig (1986).

Kuskie 1996

Kuskie was engaged to undertake an assessment of a rural residential development on Lots 2-4 DP835933, just south west of the Goulburn township. One small artefact scatter and 1 isolated find were recorded. The scatter was located in the middle of a lower slope, 150m east of a minor drainage line, and consisted of two silcrete flakes.

McDonald and Garling 1997

McDonald and Garling 1997 undertook an excavation for a proposed windfarm at Crookwell. A total of 2,154 stone artefacts were retrieved, primarily in the top 20 cm of soil. The artefacts were made form silcrete, quartz and chalcedony. There were also backed blades. The site was located on a secondary spur with a westerly aspect and was situated at ca. 1 km from Middle Creek.

Navin Officer Heritage Consultants 2000

Navin Officer were commissioned to prepare an archaeological assessment in advance of the proposed raising of Sooley Dam, to the north west of Goulburn. An area of low hills and gently undulating land on both sides of creeks was surveyed as

this would be inundated when the dam wall was raised. The area was considered to be of low archaeological potential with no sites identified.

Dominic Steele Consulting Archaeology 2003

Dominic Steele Consulting Archaeology prepared an assessment for the proposed Goulburn Sewerage Augmentation works, alogn Ross Street, Gorman Road and parts of Kenmore Hosptiatl. The study area was located on flat and/or undulating land overlooking the Wollondilly River and was considered to be highly disturbed. One scarred tree, two possible scarred trees, and one quartz flake were identified during the survey. The proposed works were considered unlikely to impact on Aboriginal cultural material.

Navin Officer Heritage Consultants 2003

NOHC were engaged to undertake a survey in advance of the proposed Pictura Tourist Complex on Run of Waters Creek, located to the south of Goulburn. The study area was identified as being located on a broad low gradient ridge, adjoining low to moderate gradient mid and upper slopes, with a lower order tributary stream passing through the area. One artefact concentration of two artefacts was identified at a distance of over 700m from the watercourse, on a broad, low gradient spur top.

JMcD CHM 2003

Jo McDonald Cultural Heritage Management Pty Ltd (2003) completed a survey for the proposed Gunning Wind Farm, on the Cullerin Range. Much of the proposed development was focussed on range crests. Four artefact concentrations were identified along with three isolated finds, with one of the concentrations considered to represent a quartz quarry where blocky quartz outcropped. Most artefacts were formed on quartz, although quartzite, silcrete and red agate were also recorded. Steep hill tops within the study area were considered to have low archaeological potential, while conversely elevated contexts in close proximity to water were considered to have higher archaeological sensitivity.

Dibden 2004a and 2004b

Dibden was engaged to assess the proposed Greenwich Park subdivision located ot the north west of Goulburn. A number of artefact concentrations were identified on spur crests, spur side slopes and drainage depression within the study area, although were considered to be of low densities.

Biosis 2004

Biosis were commissioned to prepare an assessment for the proposed Woodlawn Wind Farm at Tarago, on the site of the former Woodlawn open cut mine to the west of Tarago. The impact areas were identified as being located along the spine of a steep ridge of the Turallo Range. A total of fifteen artefact sites, including eight isolated finds, were recorded within the study area and the low artefact density was considered to be representative of archaeological sites within the region. Artefacts were scattered along a range of landform elements, including crests, slopes and drainage depressions, with no significant patterning identifiable in relation to

landform. A range of raw materials were identified in the assemblage, including rhyolite, quartz, silcrete, volcanics and tuff, and overall the development area was considered to be of low archaeological potential.

OzArk Environment & Heritage Management P/L 2004

OzArk were engaged to assess the proposed Taralga Wind Farm, located to the east of Taralga. A range of landforms were included in the study area, including ridge crest, slopes and drainage depressions. A total of six artefact sites and one scarred tree were identified, with rhyolite, quartz, silcrete and volcanics, and were generally located near water.

Dibden 2006a

Dibden undertook an archaeological assessment in advance of the proposed Cullerin Wind Farm, located to the east of Gunning, generally along the high ridge crest of Cullerin Range. Given environmental factors such as exposure to high winds, low biodiversity and lack of reliable drinking water, the area was considered to have low potential for Aboriginal habitation and thus to have low archaeological sensitivity. Four low density artefact concentrations were identified and it was considered that artefact densities would be low across the impact area.

Saunders 2007

Saunders was engaged to undertake a survey of two proposed subdivision sites at Parkesbourne. One study area at Pomeroy Road comprised long, low gradient basal slopes adjacent to the Wollondilly River and was considered to have high archaeological sensitivity. The study area at Gurrundah Road comprised low gradient basal spur slopes, flats and drainage lines within a sheltered valley context. This area was also considered to have high archaeological sensitivity. A total of twelve artefact concentrations were identified within the study area, with most items formed from silcrete, followed by quartz. Chert, volcanics and quartzite were also identified in the assemblage.

Anderson Environmental Consultants (AEC) 2010

AEC undertook an ACHA for a proposed wind farm in the Crookwell vicinity. A total of ten new sites were identified. The finds were all on the surface and consisted of either isolated stone artefacts or small stone artefact scatters, except for one scatter that had 41 artefacts. The artefacts were mainly flakes and cores made from a variety of stone material including, quartz, silcrete and quartzite. The area was considered extensively disturbed by farming and clearing and the potential for sub-surface material was assessed as low to moderate, which the Pejar LALC agreed with.

Environmental Resources Management Australia (ERM) 2021

ERM undertook a supplementary ACHA for a proposed wind farm in the Crookwell vicinity. The assessment included investigations of additional areas that had not been included in two previous ACHAs. A pedestrian survey was undertaken with a number of representatives from the registered Aboriginal parties and seven

additional Aboriginal heritage sites and an associated area of potential archaeological deposit (PAD) were identified. All the sites were isolated stone artefacts, or small scatters (< 7) of stone artefacts. All the sites, with the exception of one, were considered to be of low cultural and scientific significance due to their low numbers.

The sites were outside the project design area and would not have been impacted by the proposed works. It was recommended that the works could continue as proposed as the sites would not be impacted. However, if this was to change and the sites would be impacted then a test excavation would be required.

SUMMARY

In summary, it appears that Laggan has either not been subjected to previous archaeological investigations, or these reports are unavailable on AHIMS, or are not publicly available. The only Aboriginal archaeological assessment that could be taken into consideration for the study area and its immediate surrounds is the one completed by Apex Archaeology in 2019 that did not identify any archaeological material. The closest Aboriginal archaeological and heritage investigations that have been completed were further south in the Crookwell area. These were all stone artefacts that were found that were either isolated finds or in scatters.

4.2 AHIMS RESULTS

An initial extensive search covering a 5km by 5 km was conducted on 16 October 2019 for the Aboriginal due diligence assessment. No sites were identified within the search area. An updated search encompassing the same area to see if any new sites have been recorded during the intervening time period was undertaken. No new sites were identified on the updated search undertaken in November 2022. A copy of the search results is appended in Appendix F.

4.3 PREDICTIVE MODEL

4.3.1 REGIONAL SITE PATTERNING

In general, the dominant site types identified within the Southern Highlands region include rock shelters with archaeological deposit (including middens), rock shelters with art, pictographs (rock engravings), artefact concentrations in open contexts, grinding grooves and open middens (Attenbrow 2010). The nature and extent of individual sites is closely related to the environmental context in which they are found – for example, rockshelters are found within sandstone escarpments, while middens are generally located close to water bodies including marine, estuarine and freshwater contexts, and grinding grooves are found on flat sandstone platforms in close proximity to water sources.

In 1986, Kohen developed site location patterning predictions based on a study of archaeological investigations undertaken to date on the Cumberland Plain. Proximity to water was an important consideration in site patterning, with 65% of

open artefact scatters located within 100m of permanent fresh water sources (Kohen 1986), and only 8% of sites located more than 500m from a permanent water source. He argued that sites increased in size, in complexity and in density with increasing proximity to water, especially permanent waterways such as creeks and rivers. This predictive model is considered likely to apply to much, if not all, of NSW.

Further investigations within the Cumberland Plain have identified that Kohen's work was limited by his reliance on available surface evidence. McDonald (1997) undertook further investigations within the Cumberland Plain and identified that 28% of sites excavated had no surface expressions of artefacts prior to their excavation, with the ratio of surface to excavated artefacts being 1:25, and the nature and extent of the excavated sites could not be determined on the basis of surface expressions of artefacts alone. In summary, she found that a lack of surface evidence does not constitute a reliable estimate for subsurface archaeological potential (McDonald 1997).

These results demonstrate how test excavations can assist in the identification of the nature and extent of subsurface archaeological deposits within NSW.

4.3.2 Predictive Modelling

Based on the results of previous archaeological investigations within the wider region, a number of predictions regarding Aboriginal use of the area can be made. These predictions focus on the nature, extent and integrity of the remaining evidence.

The landscape characteristics of the area influence the prediction of the nature of potential sites within the landscape itself. Disturbance is the predominant factor determining whether or not artefacts are likely to be identified within a landscape.

Surface sites are likely to have been impacted by pedestrian activity, vegetation clearance, the construction of water drainage and structures within the area over the historic period. Natural actions such as erosion and bioturbation are likely to have also impacted not only the surface, but also at least the upper levels of subsurface archaeological deposits. Whilst these actions may impact the integrity of stratigraphy within the deposit, this does not necessarily mean associated archaeological objects will also be disturbed.

In general, Aboriginal use of an area is based on a number of factors, such as:

- Proximity to permanent water sources – generally permanent or areas of repeat habitation are located within approximately 200m of permanent water;
- Proximity to ephemeral water sources – generally sites near ephemeral water sources were utilised for one-off occupation;
- Ease of travel – ridgelines were often utilised for travel during subsistence activities; and

- The local relief – flatter, more level areas were more likely to be utilised for long term or repeat habitation sites than areas of greater relief, especially if the slopes are at a distance from water.

Stone Artefacts

Stone artefacts can be identified on the ground surface or within subsurface deposits. Generally, artefact concentrations are representative of debris from knapping activities, which includes flakes, flake fragments, cores, and pieces likely to have been knapped but with no or inconclusive diagnostic features, referred to as flaked pieces. Modified artefacts can also be identified, including backed artefacts, scrapers, or edge ground axes, although these are generally a smaller proportion of the artefact assemblage. During excavation, very small debris (~3-5mm) can be identified within sieved material, and is referred to as debitage. This is indicative of *in situ* knapping activities.

As the detection of stone artefacts relies on surface visibility, factors such as vegetation cover can prevent their identification. Conversely, areas of exposure can assist in their identification. Stone artefacts have not previously identified within the current study area during a previous assessment, and none have been recorded in the surrounding area.

Quarry and Procurement

Exposures of stone which can be exploited for the production of lithics are referred to as quarries or procurement sites. Quarries generally have evidence of extraction visible, while procurement sites can be inferred through the presence of artefactual material made from raw material sources present within the area.

Eroding quartz pieces have been noted to be within the study area. It is unlikely that quarrying of material occurred as in most cases material was prolific on the surface due to natural float/exposure and ploughzone impacts.

Middens

Middens are concentrations of shell, and may also contain stone artefacts, bone and sometimes human burials. These sites are generally recorded along coastal areas. Middens are formed through the exploitation of locally available species by humans for resources, and accumulation of the shell material within a specific location. Middens can range in size from small, discrete deposits, to deposits covering a large area.

Generally, middens reflect the species available in the local area. In estuarine regions, estuarine species will dominate the composition of the midden, while around headlands, rock platform species tend to dominate. There are no middens recorded the study area and it is considered unlikely that any would be present within the current study area.

Burials

Aboriginal people across Australia utilised a range of burial forms, which depended on the customs of the individual tribes. Common burial practices included inhumation, cremation, desiccation and exposure. Burials are known to occur within sandy contexts in the wider region. These are generally found within coastal Holocene sand bodies, and generally are not identified during field survey as there is usually minimal surface expression of this type of site.

To date, there are no records of burials being identified within the specific study area are the surrounds, but this does not preclude burials from occurring; however, the study area is considered unlikely to have been utilised for inhumations by Aboriginal people in the past due to the underlying soils.

Rock Shelters

Rock shelters are formed by rock overhangs which would have provided shelter to Aboriginal people in the past. Often, evidence of this occupation can be found in the form of art and/or artefacts. Shell, midden material, grinding grooves, pictographs (rock engravings), artworks including stencils and paintings, and potential archaeological deposits (PAD) are common features of rock shelter sites.

The underlying geology does not map as sandstone and no outcrops were observed during the previous archaeological assessment undertaken by Apex Archaeology in 2019. It is considered unlikely that this site type will occur with the study area.

Grinding Grooves

Grinding grooves are formed on sandstone exposures through the creation and maintenance of ground edge tools, such as axes and spears. Usually, stone was ground to form a sharp edge, although bone and shell were also ground to create sharp points.

Generally, fine grained sandstone was favoured for these maintenance activities, and the presence of a water source nearby or overflowing the sandstone was also favoured. Grinding grooves range from individual examples through to hundreds of grooves within an area, sometimes arranged in a specific pattern. Horizontal sandstone was generally preferred, although there are examples of vertical grooves.

The underlying geology does not map as sandstone and no outcrops were observed during the previous archaeological assessment undertaken by Apex Archaeology in 2019. It is considered unlikely that this site type will occur with the study area.

Scarred and Carved Trees

Scarred and carved trees are created during the removal of back from a tree for a range of reasons, both domestic and ceremonial. This type of site can be identified within areas containing trees of the correct species and appropriate age. Deliberately scarred trees can be difficult to differentiate from naturally occurring damage to trees, and specific criteria must be considered when assessing a scar for a cultural origin.

Given the level of historical land clearing within the study area and surrounds, the likelihood of culturally scarred trees remaining within the study areas is considered low. Although there may have been potential for this site type to occur in the northern section and scattered areas within the southern section, none were identified in the previous undertaken by Apex Archaeology in 2019.

Ceremonial Sites

Specific places were used for ritual and ceremonial purposes, including initiation and burial practices. Secret rituals were also undertaken at specific places by specific individuals, such as at water holes and by clever men.

The landscape itself was also considered to hold significance to Aboriginal people, and the understanding of this is referred to as a sacred geography. This includes natural features which were associated with spirits or creation beings. The meaning attributed to the landscape provided Aboriginal people with legitimacy regarding their role as guardians of the places which had been created by the spiritual ancestors (Boot 2002).

There may be areas within Laggan that are sacred to the original inhabitants. However, there are no known recorded areas within the study area, but this does not preclude these values from existing within this location.

Contact Sites

Contact sites contain evidence of Aboriginal occupation concurrent with initial colonisers in an area. This could include evidence such as flaked artefacts formed on glass, or burials containing non-Aboriginal grave goods. Often Aboriginal camps would form around newly built towns, allowing for employment (or exploitation) of the Aboriginal people by the colonists, and also for trade to exist between the two communities. Contact sites can also occur around Aboriginal mission sites, where Aboriginal children were taken from their families to raise in the European manner. Families often camped around the mission boundaries to try to catch a glimpse of their children.

There is no known evidence of initial contact between Aboriginal people and colonists within the study area, although it may have been possible. The probability of evidence of contact sites occurring within the study area is considered low.

5.0 Field Work

5.1 Sampling Strategy

A sampling strategy was developed and provided to the Registered Aboriginal Parties (RAPs) as part of the consultation process completed for the ACHA. The strategy included assessment of all landforms within the study area that have the potential to be impacted by the proposed development. Areas considered likely to have archaeological potential were closely scrutinised, although the entire study area was considered.

The sampling strategy included assessment of the entirety of the study area due to the nature of the development proposal, in order to provide an accurate assessment of the study area in relation to the proposed impacts.

5.2 Site Inspection

A site survey was undertaken on 26 August 2022 by Leigh Bate, Archaeologist with Apex Archaeology and Christopher McAlister Jr sites officer from Pejar Local Aboriginal Land Council.

5.3 Survey Coverage

The survey was conducted on foot for the purposes of discovering Aboriginal objects within the study area, including areas considered to have potential for subsurface objects to be present. The survey was undertaken in accordance with the sampling strategy prepared for the project.

The study area was surveyed in one pedestrian transect (Table 3 & Figure 7) for the entire property across two landform elements by the two survey participants. Each participant was responsible for inspecting a 2m wide portion of the transect walked. This meant that on each pass an area covering 4m would be observed for archaeological material.

Table 3: Survey units

Unit name	Landform Element	Number of participants	Total Length
ATU 1	Gentle Simple Slope/Moderate Slope	2	4070m

During the survey completed by Apex Archaeology the study area was inspected for Aboriginal archaeological evidence. An assessment of landform element and slope was made for the study area, with the results presented in Table 6.

Table 4: Survey area results

Survey Area #	Landform Element	Slope	Vegetation	Detection Limiting Factors	Ground Disturbance
ATU 1	Gentle Simple Slope/Moderate Slope	Gentle >1.45°-5.45°	Cleared (grass, crop)	vegetation/leaf litter/grass	Moderate to High

The total survey coverage (meaning the areas physically inspected for archaeological evidence) was approximately 16,280m^2. The total area of the development impact is approximately 362,200m^2. A range of factors were considered and recorded during the survey, including the surface visibility (percentage of bare ground within a survey unit); archaeological visibility (amount of bare ground within an area in which artefacts could be expected to be identified if present); exposure type (A or B soil horizon) and calculations of how effective the survey coverage was. The results of the survey coverage are presented in Table 5.

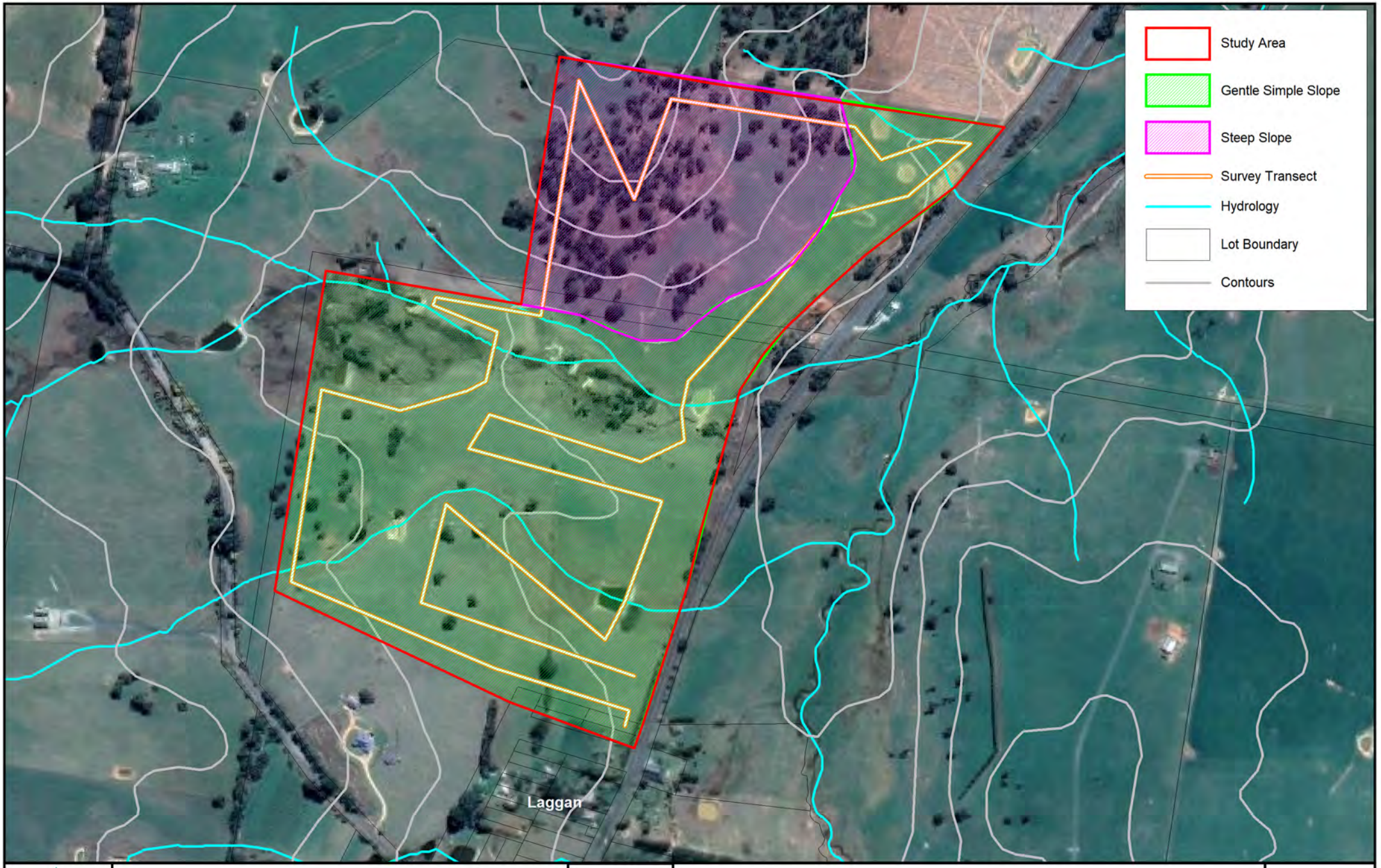
Table 5: Survey coverage results

Survey Area #	Total Area Surveyed (m²)	Surface Visibility (%)	Arch Vis (%)	Exposure Type (A/B)	Effective Coverage (m²)	% Total Effective Survey Coverage of Context
ATU 1	16,280	30	5	A	244.2	1.5

Surface visibility across the study areas was low due to surface vegetation such as exotic grasses, leaf litter and weeds and crops. Total effective survey coverage for the entire study area was 0.06(Table 6).

Table 6: Total effective survey coverage results

Survey Area #	Total Area of Study Area (m²)	Total Area Surveyed (m²)	Surface Visibility (%)	Arch Vis (%)	Exposure Type (A/B)	Effective Coverage (m²)	% Effective Survey Coverage of Context (Total Area)
ATU1	362,200	16,280	30	5	A	244.2	0.06



PO Box 236
NOWRA
NEW SOUTH WALES 2541

0 250 500
meters

Projection:
MGA Zone 55 (GDA 94)
Base Map:
Six Maps Topo
FINAL - Version 1

Figure 7: Survey units and survey transect within study area.

N

5.4 Survey Results

The area has clearly been disturbed by past land use practices. The entirety has been farmed for over 100 years with significant landscape modification relating to the damming of drainage lines and vegetation clearance throughout the site.

Ground surface visibility (GSV) was low to moderate due to the farming practices throughout the study area. GSV was rated at 30% overall. Poor quality quartz raw material was located throughout the entire area and had been impacted by farming practices throughout the entirety of the area.

Plate 5: Looking west from the southern boundary of the site.

Plate 6: Looking west along the southern boundary (quartz fragments scattered throughout area).

Plate 7: Looking north across the drainage lines and modified dams within the central portion of the site.

Plate 8: Looking north across the access track through the central portion of the site.

Plate 9: Looking north up slope along the western boundary of the site.

Plate 10: Quartz cobbles and evidence of quartz float due to farming practices. Top north west corner of the site.

Plate 11: Looking south along the eastern boundary of the study area (Telstra services run through the length of the site along the eastern boundary).

5.5 Discussion

No areas of potential archaeological deposits were identified during the assessment. No Aboriginal cultural material was identified during the survey. The assessment of the landform concluded that it was unconducive to long term occupation by Aboriginal people in the past, with the slope meaning the site was unlikely to have been utilised in order to create archaeological deposits, or to retain any such should they exist.

6.0 Scientific Values and Significance Assessment

6.1 Introduction

The *Aboriginal cultural heritage consultation requirements for proponents 2010* acknowledge that:

- Aboriginal people have the right to maintain their culture, language, knowledge and identity
- Aboriginal people have the right to directly participate in matters that may affect their heritage
- Aboriginal people are the primary determinants of the cultural significance of their heritage

Undertaking consultation with Aboriginal people ensures that potential harm to Aboriginal objects and places from proposed developments is identified and mitigation measures developed early in the planning process.

6.2 Archaeological Significance

Archaeological or scientific significance relates to the value of archaeological objects or sites as they are able to inform research questions considered important to the archaeological community, which includes Aboriginal people, heritage consultants and academic researchers. The value of this type of significance is determined on how the objects and sites can provide information regarding how people in the past lived their lives. The criteria for archaeological significance assessment generally reflect the criteria of the ICOMOS Burra Charter.

6.3 Criteria

Archaeological significance is assessed based on the archaeological or scientific values of an area. These values can be defined as the importance of the area relating to several criteria. Criteria used for determining the archaeological significance of an area are as follows:

- **Research potential:** Can the site contribute to an understanding of the area/region and/or the state's natural and cultural history? Is the site able to provide information that no other site or resource is able to do?
- **Representativeness:** is the site representative of this type of site? Is there variability both inside and outside the study area? Are similar site types conserved?
- **Rarity:** is the subject area a rare site type? Does it contain rare archaeological material or demonstrate cultural activities that no other site can demonstrate? Is this type of site in danger of being lost?
- **Integrity/Intactness:** Has the site been subject to significant disturbance? Is the site likely to contain deposits which may possess intact stratigraphy?

Further, an assessment of the grade of significance is made, based on how well the item fulfils the assessment criteria. The Heritage Branch of the Department of Planning (now Heritage NSW) 2009 guideline *Assessing Significance for Historical Archaeological Sites and 'Relics'* defines the grading of significance as follows:

Table 7: Grading of significance, from Heritage Branch 2009

Grading	Justification
Exceptional	Rare or outstanding item of local or State significance. High degree of intactness. Item can be interpreted relatively easily.
High	High degree of original fabric. Demonstrates a key element of the item's significance. Alterations do not detract from significance.
Moderate	Altered or modified elements. Elements with little heritage value but which contribute to the overall significance of the item.
Little	Alterations detract from significance. Difficult to interpret.
Intrusive	Damaging to the item's heritage significance.

Whilst this was developed for the assessment of significance of historical items, the criteria are applicable to archaeological significance assessments as well. It is important to note that the below assessment is specific to Aboriginal cultural heritage and does not consider the non-Aboriginal significance of the site.

6.4 Significance Assessment

Research Potential

The study area is not considered to possess research potential, based on the results of the background research and site survey. Therefore, the study area does not meet this criterion.

Representativeness

No archaeological material was identified within the study area and it has been heavily disturbed by previous land use activities. As such, is not considered representative of the Laggan area as it was prior to European settlement.

Overall, the study area is not considered a good representative example of this site type due to its disturbance and unlikelihood of artefacts being present.

Rarity

The study area does not contain Aboriginal archaeological evidence. Therefore, the study area does not meet this criterion.

Integrity/Intactness

The site has been subject to intense disturbance and is not considered to be intact, nor to have integrity.

6.5 Statement of Archaeological Significance

The study area for Peelwood Road, Laggan is not considered to have archaeological significance based on its lack of research potential, representativeness, rarity and integrity. No stone artefacts were observed during the survey, nor were any culturally modified trees. The potential for the site to contribute a greater understanding of the archaeological record is therefore limited.

7.0 Impact Assessment

7.1 Proposed Development

This report has been prepared to inform a Planning Proposal for the site, which seeks the following amendments to the Upper Lachlan Shire LEP:

- Rezone Lot 2 DP 1233492 (part) from RU2 Rural Landscape zone to RU5 Village zone and reduce the minimum lot size from 80ha to 4,000m2 to enable the development of dwelling houses.
- Lot 2 DP 1233492 (part) and Lot 1 DP 239858 from RU2 Rural Landscape zone to RU4 Rural Small Holdings zone.
- Lot 2 DP 1233492 (part) and Lot 1 DP 239858 to reduce the minimum lot size from 80ha to 1ha (part), 2ha (part), and 5ha (part) to enable agricultural small holdings to be created.

This assessment is being undertaken at the planning proposal stage to ensure any Aboriginal cultural or archaeological constraints are identified during the initial planning of the site, so appropriate management and mitigation strategies can be developed and implemented if the project is approved. In the event the proposal is approved, subsequent civil works and residential development would likely occur which would have potential to impact on any Aboriginal cultural objects which may be present within the site.

7.2 Potential Impact

No surface artefacts were identified within the study area during the site inspection, and therefore the proposed development will not impact any surface artefacts. The site is not considered to have potential for further subsurface deposits due to the historical and contemporary disturbance across the site, and therefore it is not considered likely that the proposed works would impact any Aboriginal heritage values within the site.

8.0 Management, Mitigation and Recommendations

8.1 Guiding Principles

Wherever possible and practicable, it is preferred to avoid impact to Aboriginal archaeological sites. In situations where conservation is not possible or practicable, mitigation measures must be implemented.

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance, 2013 (The Burra Charter) provides guidance for the management of culturally sensitive places. The Burra Charter is predominantly focussed on places of built heritage significance, but the principles are applicable to other places of significance as well.

The first guiding principle for management of culturally significant sites states that "places of cultural significance should be conserved" (Article 2.1). A cautious approach should be adopted, whereby only "as much as necessary but as little as possible" (Article 3.1) should be changed or impacted.

Mitigation measures depend on the significance assessment for the site. Cultural significance of sites should also be considered in consultation with the Aboriginal community during community consultation.

8.2 Harm Avoidance or Mitigation

The study area does not contain any previously registered Aboriginal sites and none were found during the investigation. As such, no harm avoidance and mitigation measures for this site are necessary.

8.3 Mitigation Measures

No mitigation measures are proposed as there is no Aboriginal archaeological evidence to mitigate.

Consultation with the Aboriginal community has been undertaken for this project in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010*. The Aboriginal community will be afforded an opportunity to provide feedback regarding the proposed development and its potential impact on Aboriginal cultural heritage, and their views, where shared, have been incorporated into the final ACHA.

9.0 Recommendations

The following recommendations are made on the basis of:

- The statutory requirements of the NP&W Act 1974;
- The requirements of Heritage NSW and the Upper Shire Lachlan Council;
- The results of the cultural and archaeological assessment;
- An assessment of the likely impacts of the proposed development; and
- The interests of the registered Aboriginal stakeholders and the cultural heritage record.

It was found that:

- There were no previously registered sites within the study area.
- No surface artefacts were identified during the survey.
- No areas considered to have potential for subsurface archaeological deposits were identified within the study area.
- The area was considered to be disturbed throughout due to historical clearance and land use practices.
- The site is not considered to contain potential for Aboriginal cultural material to be present.

Recommendation 1: No Further Archaeological Assessment Required

This report details the archaeological potential of the site, which has been assessed as negligible. No further archaeological assessment is required for the site. No application for an Aboriginal Heritage Impact Permit (AHIP) is necessary, as no Aboriginal heritage sites would be impacted by the proposed works.

Recommendation 2: Development Boundaries

The proposed development works must be contained within the assessed boundaries for this project. If there is any alteration to the boundaries of the proposed development to include areas not assessed as part of this archaeological investigation, further investigation of those areas should be completed to assist in managing Aboriginal objects and places which may be present in an appropriate manner.

Recommendation 3: Stop Work Provision

Should unanticipated Aboriginal archaeological material be encountered during site works, all work must cease in the vicinity of the find and an archaeologist contacted to make an assessment of the find and to advise on the course of action to be taken. Further archaeological assessment and Aboriginal community consultation may be required prior to the recommencement of works. Any objects confirmed to be Aboriginal in origin must be reported to Heritage NSW.

In the unlikely event that suspected human remains are identified during construction works, all activity in the vicinity of the find must cease immediately and the find protected from harm or damage. The NSW Police must be notified immediately. If the finds are confirmed to be human and of Aboriginal origin, further assessment by an archaeologist experienced in the assessment of human remains and consultation with both Heritage NSW and the RAPs for the project would be required.

RECOMMENDATION 4: REPORTING

One digital copy of this report should be forwarded to the AHIMS registrar for inclusion on the AHIMS database.

One copy of this report should be forwarded to each of the registered Aboriginal stakeholders for the project.

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APPENDIX A: AHIMS SEARCHES

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 22085

Client Service ID : 732835

Apex Archaeology

PO BOX 236

Nowra New South Wales 2541

Attention: Leigh Bate

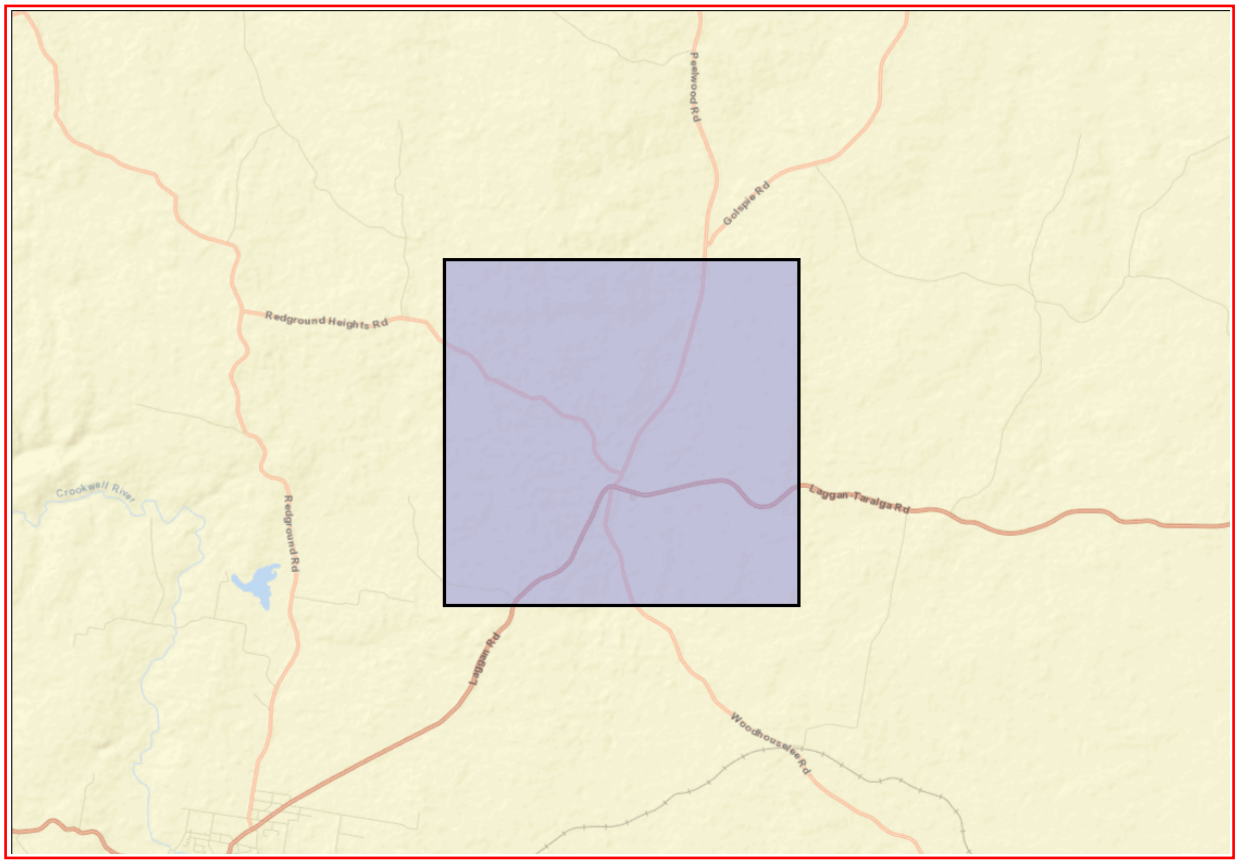
Email: leigh@apexarchaeology.com.au

Date: 16 November 2022

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 55, Eastings : 730101.0 - 735113.0, Northings : 6188414.0 - 6193403.0 with a Buffer of 0 meters, conducted by Leigh Bate on 16 November 2022.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
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Email: ahims@environment.nsw.gov.au
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