Monteath & Powys

M

60 New England HIghway, Lochinvar

LGA: Maitland City Council

Aboriginal Cultural Heritage Assessment (ACHA)

26 August 2024

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McCARDLE
CULTURAL HERITAGE

Report No: J202454 ACHA	
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EXECUTIVE SUMMARY

McCardle Cultural Heritage Pty Ltd have been engaged by Monteath & Powys to prepare an Aboriginal Cultural Heritage Assessment (ACHA), and an Aboriginal Heritage Impact Permit (AHIP), if required, for the proposed Staged residential development at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, the paper road north of Lot 2 DP1299958, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar.

The underlying geology of the project area is Permian Lochinvar Formation of the Dalwood group that consists of basalt, siltstone and sandstone. The presence of basalt within the geology of the project area, indicates that stone materials suitable for manufacturing stone artefacts may occur in various locations throughout the project area. The project area includes very gentle slopes dissected by a 3rd order creek through its centre. In terms of fresh water availability, Lochinvar Creek (4th order) is located approximately 100 metres east of the southern end of the project area. A 3rd order creek runs north through the centre of the project area and joins Lochinvar Creek approximately 400 meters to the north. The project area has been cleared and mainly utilised for pastoral activities, such as grazing. The clearance of native vegetation, introduction of pasture grass, ploughing for pasture grasses, and construction of the road have all potentially affected any cultural materials present in the area.

A search of the AHIMS register has identified 57 Aboriginal sites recorded within two kilometres of the project area and include 45 artefact sites (AFT), 10 PADs and 2 AFT/PAD sites. There are no AHIMS sites in the project area. A number of assessments have been undertaken throughout the Lochinvar area and of particular relevance are the Assessments and test excavations undertaken in the eastern adjoining land. The findings of these investigations indicate that the land to the east of the project area had undergone various forms of human activity, such as land clearing, ploughing, and grazing. As a result, the deposits in this area are shallow and have been disturbed. Although artefacts have been discovered, their precise location of origin is unclear due to the disturbance, or redistribution of artefacts due to these land uses. A notable exception to this pattern was observed in a specific area where two creeks converge, located south of the current project area and within 50 metres of the 3rd order creek.

Based on the AHIMS results, local and regional archaeological investigations as well as the environmental context, given that fresh water was necessary for survival and a 3rd order creek flows through the project area following heavy rain, the project area has been used for hunting and gathering opportunities rather than large-scale long-term camping. Evidence of such past Aboriginal land uses manifest in the archaeological record as low-density artefact scatters and isolated finds. However, any evidence of past Aboriginal land uses may also have been impacted by past European land uses (clearing, ploughing, grazing).

The project area, consisting of two main landforms, was divided into two survey units (SU) that were based on landform elements that included the creek, and the slopes further divided into eastern and western slopes. The western slope of the project area and also includes Cantwell Road (up to 10m both sides of the road). The road itself was bitumen for about three-quarters of its length, transitioning to a grass-covered access road. An electric power easement runs along the eastern side of the road. Immediately east of Cantwell Road is an open paddock that featured a gently sloping terrain, almost flat terrain. During the inspection, the area was observed to be waterlogged and excessively muddy. Evidence of previous ploughing was found, (eroded ridges and furrows). However, it was difficult to determine the extent of ploughing near the 3rd order creek due to the disturbed condition of the ground caused by cattle and the muddy terrain. The ploughed areas were significantly disturbed by cattle prints, resulting in exposures throughout

the paddock. In addition, there were vehicle tracks and geotechnical test trenches. The vegetation in the paddock mainly consists of pasture grass, with few trees lining the creek.

The eastern slope of the project area (Survey Unit 2), at the time of inspection, was extremely muddy with cattle prints throughout. Evidence of previous ploughing was observed, with eroded ridges and furrows further disturbed by hoofed animals and the muddy environment. The entire survey unit was being utilised for grazing purposes. The closest visible evidence of ploughing was a ridge and furrow located approximately 30 metres away from the creek's edge. Additionally, the slope showed vehicular and excavator tracks due to geotechnical test trenching. This slope extended to the 3rd order creek, transitioning into a nearly flat elevated landform that oversaw the deep creek. The vegetation consisted predominantly of pasture grass, with only a few trees present along the creek.

Survey Unit 3 included the 3rd order creek and up to 5 metres in width along its banks. This SU has been previously cleared and the southern end subject to clearing and stabilisation works. The western side of the creek, consisting of pasture grass with a small pocket of new growth trees, has a highly disturbed surface from cattle resulting in any ridges and furrows from previous plunging has been obliterated. The eastern side of the creek, also vegetated with pasture grass, showed no evidence of ploughing with the closest visible eroded ridges and furrow being approximately 30 metres from the bank of the eastern side of the creek. The eastern side of the creek exhibited significant erosion with the creek walls collapsing in some sections. Exposures were moderate and included erosion and cattle prints and there were sections along the creek with old building materials in the creek bed or alongside it on the eastern side

The 3rd order creek and a 5-metre-wide area along its banks, had undergone previous clearing. The southern end of the creek had also undergone stabilization works. On the western side of the creek, the land was mainly covered in pasture grass with a small area of new growth trees. However, the surface on this side was highly disturbed due to cattle activities, resulting in the elimination of any previously visible plough ridges and furrows. On the eastern side of the creek, which was also covered in pasture grass, there was no evidence of ploughing with the nearest visible eroded ridges and furrows approximately 30 meters away from the edge of the creek. The eastern side of the creek experienced significant erosion, with sections of the creek walls collapsing. Moderate exposure was observed, including erosion and cattle prints.

No sites were detected during the survey due to extensive impacts from past land uses (clearing, ploughing, grazing) and the prevailing muddy conditions during the survey period. However, one PAD was identified. The PAD encompasses the length of the 3rd order creek within the project area, with a potential extension beyond the current project boundary to the north and south. It spans up to 30 meters on both sides of the creek from the creek banks. The width of the PAD is determined by the visually evident eroded ridges and furrows on the eastern side of the creek. Although these features are not visually apparent at this distance on the western side, it is inferred that the distances would remain consistent.

As no sites were identified during the survey and the majority of the project area has been disturbed through complete clearing, ploughing and grazing, there are no impacts on the archaeological record. However, a PAD has been identified along the creek and as it remains unknown if this PAD contains subsurface cultural materials, the impacts on the PAD remain unknown at this time.

The following recommendations are provided:

1) The persons responsible for the management of onsite works will ensure that all staff, contractors and others involved in construction and maintenance related activities are made aware of the statutory legislation protecting sites and places of significance. Of

particular importance is the National Parks and Wildlife Regulation 2019, under the National Parks and Wildlife Act 1974;

2) With the exception of the identified PAD, works may proceed in the remainder of the project area with the following adhered to:

    i. An Unexpected Finds Procedure for cultural materials and human remains (Appendix C) will be implemented during all works, and

    ii. Should any Aboriginal objects be uncovered during works, all work will cease in that location immediately, the Unexpected Finds Procedure followed and the Environmental Line contacted.

3) If the identified PAD will be impacted upon by any future development an archaeological subsurface investigation will be required in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW prior to any works being undertaken at the PAD location.

GLOSSARY

Aboriginal Cultural Heritage Values: traditional values of Aboriginal people, handed down in spiritual beliefs, stories and community practices and may include local plant and animal species, places that are important and ways of showing respect for other people.

Aboriginal Place: are locations that have been recognised by the Minister (and gazetted under the *National Parks and Wildlife Act 1974*) as having special cultural significance to the Aboriginal community. An Aboriginal Place may or may not include archaeological materials.

Aboriginal Site: an Aboriginal site is the location of one or more Aboriginal archaeological objects, including flaked stone artefacts, midden shell, grinding grooves, archaeological deposits, scarred trees etc.

Artefact: any object that is physically modified by humans.

Assemblage: a collection of artefacts associated by a particular place or time, assumed generated by a single group of people, and can comprise different artefact types.

Axe: a stone-headed axe usually having two ground surfaces that meet at a bevel.

Backed artefact: a stone tool where the margin of a flake is retouched at a steep angle and that margin is opposite a sharp edge.

Background scatter: a term used to describe low density scatter of isolated finds that are distributed across the landscape without any obvious focal point.

Blade: a flake that is at least twice as long as it is wide.

Bondi point: a small asymmetrical backed artefact with a point at one end and backing retouch.

Core: a chunk of stone from which flakes are removed and will have one or more negative flake scars but no positive flake scars. The core itself can be shaped into a tool or used as a source of flakes to be formed into tools.

Debitage: small pieces of stone debris that break off during the manufacturing of stone tools. These are usually considered waste and are the by-product of production (also referred to as flake piece).

Flake: any piece of stone struck off a core and has a number of characteristics including ring cracks showing where the hammer hit the core and a bulb of percussion. May be used as a tool with no further working, may be retouched or serve as a platform for further reduction.

Flaked piece/waste flake: an unmodified and unused flake, usually the by-product of tool manufacture or core preparation (also referred to as debitage).

Formation processes: human caused (land uses etc) or natural processes (geological, animal, plant growth etc) by which an archaeological site is modified during or after occupation and abandonment. These processes have a large effect on the provenience of artefacts or features.

Grinding stone: an abrasive stone used to abrade another artefact or to process food.

Hammer stone: a stone that has been used to strike a core to remove a flake, often causing pitting or other wear on the stone's surface.

Harm: is defined as an act that may destroy, deface or damage an Aboriginal object or place. In relation to an object, this means the movement or removal of an object from the land in which it has been situated

Holocene: the post-glacial period, beginning about 10,000 B.P.

In situ: archaeological items are said to be "in situ" when they are found in the location where they were last deposited.

Pleistocene: the latest major geological epoch, colloquially known as the "Ice Age" due to the multiple expansion and retreat of glaciers. Ca. 3.000, 000-10,000 years B.P.

Retouched flake: a flake that has been flaked again in a manner that modified the edge for the purpose of resharpening that edge.

Stratified Archaeological Deposits: Aboriginal archaeological objects may be observed in soil deposits and within rock shelters or caves. Where layers can be detected within the soil or sediments, which are attributable to separate depositional events in the past, the deposit is said to be stratified. The integrity of sediments and soils are usually affected by 200 years of European settlement and activities such as land clearing, cultivation and construction of industrial, commercial and residential developments.

Taphonomy: the study of processes which have affected organic materials such as bone after death; it also involves the microscopic analysis of tooth-marks or cut marks to assess the effects of butchery or scavenging activities.

Traditional Aboriginal Owners: Aboriginal people who are listed in the Register of Aboriginal owners pursuant to Division 3 of the *Aboriginal Land Register Act (1983)*. The Registrar must give priority to registering Aboriginal people for lands listed in Schedule 14 of the *National Parks and Wildlife Act 1974* or land subject to a claim under 36A of the *Aboriginal Land Rights Act 1983*.

Traditional Knowledge: Information about the roles, responsibilities and practices set out in the cultural beliefs of the Aboriginal community. Only certain individuals have traditional knowledge and different aspects of traditional knowledge may be known by different people, e.g., information about men's initiation sites and practices, women's sites, special pathways, proper responsibilities of people fishing or gathering food for the community, ways of sharing and looking after others, etc.

Typology: the systematic organization of artefacts into types on the basis of shared attributes.

Use wear: the wear displayed on an artefact as a result of use.

ACRONYMS

ACHA	Aboriginal Cultural Heritage Assessment
ACHMP	Aboriginal Cultural Heritage Management Plan
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit

AHIMS SITE ACRONYMS

ACD	Aboriginal ceremonial and dreaming
AFT	Artefact (stone, bone, shell, glass, ceramic and metal)
ARG	Aboriginal resource and gathering
ART	Art (pigment or engraving)
BOM	Non-human bone and organic material
BUR	Burial
CFT	Conflict site
CMR	Ceremonial ring (stone or earth)
ETM	Earth mound
FSH	Fish trap
GDG	Grinding groove
HAB	Habitation structure
HTH	Hearth
OCQ	Ochre quarry
PAD	Potential archaeological Deposit
SHL	Shell
STA	Stone arrangement
STQ	Stone quarry
TRE	Modified tree (carved or scarred)
WTR	Water hole

1 INTRODUCTION

1.1 INTRODUCTION

McCardle Cultural Heritage Pty Ltd (MCH) has been engaged by Monteath & Powys to prepare an Aboriginal Cultural Heritage Assessment (ACHA), and an Aboriginal Heritage Impact Permit (AHIP), if required, for the proposed Staged residential development located at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, the paper road north of Lot 2 DP1299958, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar.

The assessment has been undertaken to meet the Heritage NSWs' Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (DECCW 2010), the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011), the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b), Councils' requirements and the brief.

1.2 PROPONENT DETAILS

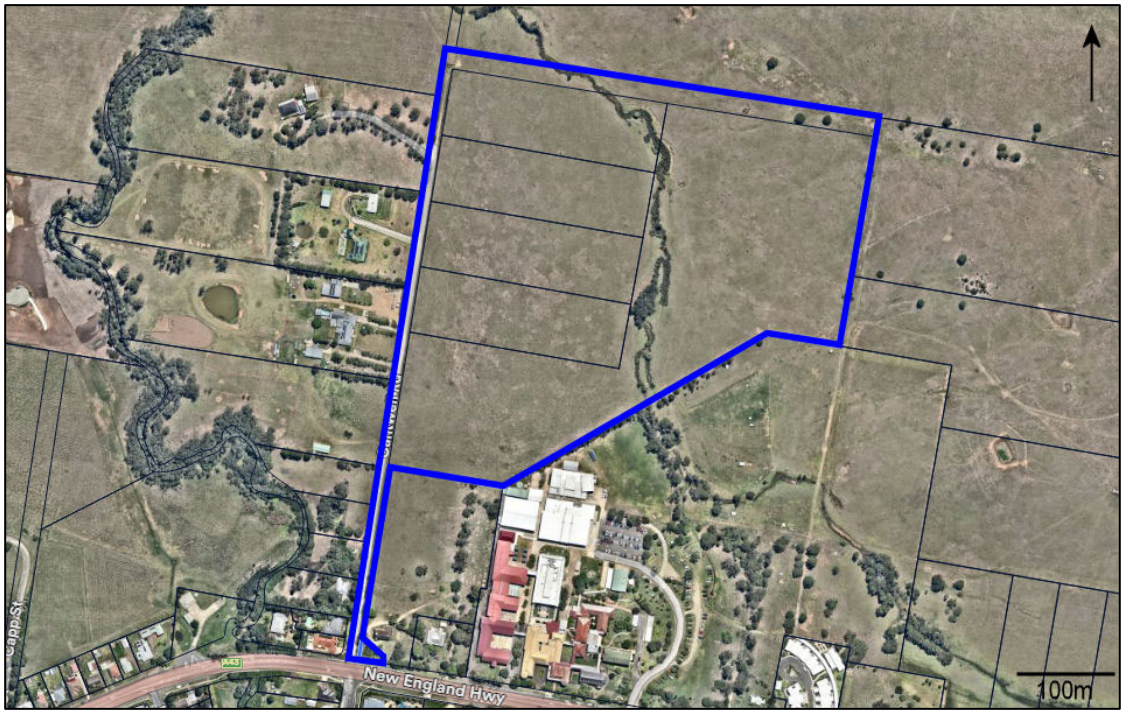
The Trustee of the Roman Catholic Church for the Diocese of Maitland Newcastle

1.3 THE PROJECT AREA

The project area is defined by the proponent and is located at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, the paper road north of Lot 2 DP1299958, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar. The location and extent of the project area is illustrated in Figures 1.1 and 1.2.

Figure 1.1 Location of the project area

Figure 1.2 Aerial photograph of the project area (Nearmap March 2024)



1.4 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The project will include the subdivision of the project area into residential lots, roads, basins and associated infrastructure and utilities. Works typically associated with residential developments include clearing and demolition of existing structures, site remediation, bulk earthworks including construction of dwellings and roads, services reticulation: WW, PW, NBN, electrical and gas and landscaping.

1.5 PURPOSE OF THE ARCHAEOLOGICAL ASSESSMENT

The purpose of the assessment is to assess any archaeological constraints for the proposal and to provide opportunities and options to ensure any cultural materials present are protected through appropriate mitigation and management.

1.6 OBJECTIVE OF THE ASSESSMENT

The objective of the assessment is to identify areas of Aboriginal cultural heritage value, to determine possible impacts on any Aboriginal cultural heritage identified (including potential subsurface evidence) and to develop management recommendations where appropriate. The assessment employs a regional approach, taking into consideration the landscape of the project area (landforms, water resources, soils, geology etc), the regional archaeological patterning identified by past studies, natural processes (e.g., erosion) as well as land uses and associated impacts across the landscape and any associated cultural that may be present.

1.7 PROJECT BRIEF/SCOPE OF WORK

The following tasks were carried out:

- a review of relevant statutory registers and inventories for indigenous cultural heritage including the Aboriginal Heritage Information Management System (AHIMS) for known archaeological sites, the State Heritage Register, the National Heritage List, the Commonwealth Heritage List, the National Trust Heritage Register and the relevant Local Environmental Plan;
- a review of local environmental information (e.g., topographic, geological, soil, geomorphological, vegetation, hydrology) to determine the likelihood of archaeological sites and specific site types that may be present, prior and existing land uses and associated impacts and site disturbance that may affect site integrity;
- a review of previous investigations to determine the extent of archaeological investigations in the area and identify any archaeological patterns;
- the development of a predictive archaeological model based on the data searches and literature review;
- identification of human and natural impacts in relation to the known and any new archaeological sites and archaeological potential within the project area;
- consultation with the Registered Aboriginal Parties (RAPs) as per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010);
- undertake a site inspection with the participation of the RAPs, and
- the development of mitigation and conservation measures in consultation with the RAPs.

1.8 LEGISLATIVE CONTEXT

The following overview of the legislative framework, is provided solely for information purposes for the client, and should not be interpreted as legal advice. MCH will not be liable for any actions taken by any person, body or group as a result of this general overview and MCH recommends that specific legal advice be obtained from a qualified legal practitioner prior to any action being taken as a result of the general summary below.

Land managers are required to consider the effects of their activities or proposed development on the environment under several pieces of legislation. Although there are a number of Acts and regulations protecting Aboriginal heritage, including places, sites and objects, within NSW, the three main ones include:

- National Parks and Wildlife Act (1974, as amended)
- National Parks and Wildlife Regulation (2019)
- Environmental Planning and Assessment Act (1979)

1.8.1 NATIONAL PARKS AND WILDLIFE ACT (1974)

The National Parks and Wildlife Act (1974) is the primary legislation for the protection of Aboriginal cultural heritage in New South Wales. The NPW Act protects Aboriginal heritage (places, sites and objects) within NSW and the protection of Aboriginal heritage is outlined in s86 of the Act, as follows:

- "A person must not harm or desecrate an object that the person knows is an Aboriginal object" s86(1)

- "A person must not harm an Aboriginal object" s86(2)
- "A person must not harm or desecrate an Aboriginal place" s86(4)

Penalties apply for harming an Aboriginal object, site or place. The penalty for knowingly harming an Aboriginal object (s86[1]) and/or an Aboriginal place (s86[4]) is up to $550,000 for an individual and/or imprisonment for 2 years; and in the case of a corporation the penalty is up to $1.1 million. The penalty for a strict liability offence (s86[2]) is up to $110,000 for an individual and $220,000 for a corporation.

Harm under the National Parks and Wildlife Act (1974, as amended) is defined as any act that; destroys defaces or damages the object, moves the object from the land on which it has been situated, causes or permits the object to be harmed. However, it is a defence from prosecution if the proponent can demonstrate that;

1) harm was authorised under an Aboriginal Heritage Impact Permit (AHIP) (and the permit was properly followed), or
2) the proponent exercised due diligence in respect to Aboriginal heritage.

The 'due diligence' defence (s87[2]), states that if a person or company has applied due diligence to determine that no Aboriginal object, site or place was likely to be harmed as a result of the activities proposed for the Project Area, then liability from prosecution under the NPW Act 1974 will be removed or mitigated if it later transpires that an Aboriginal object, site or place was harmed. If any Aboriginal objects are identified during the activity, then works should cease in that area and Heritage NSW, Department of Premier & Cabinet notified (DECCW 2010:13). The due diligence defence does not allow for continuing harm or as defence to s.86(1) or (4).

1.8.2 NATIONAL PARKS AND WILDLIFE REGULATION (2019)

The National Parks and Wildlife Regulation 2019 provides a framework for undertaking activities and exercising due diligence in respect to Aboriginal heritage. The Regulation (2019) recognises various due diligence codes of practice, including the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW, but it also outlines procedures for Aboriginal Heritage Impact Permit (AHIP) applications and Aboriginal Cultural Heritage Consultation Requirements (ACHCRs); amongst other regulatory processes.

1.8.3 ENVIRONMENTAL PLANNING & ASSESSMENT ACT 1979 (EP&A ACT)

The EP&A Act establishes the statutory framework for urban and regional planning in NSW, detailing how development is assessed in accordance with those laws and providing the approval pathways for development. The Minister for Planning and Public Spaces is the minister responsible for the EP&A Act, and is supported by State government authorities and local councils in its implementation. The EP&A Act comprises three key Parts to guide development and planning processes. These parts are summarised below:

- Part 3 of the EP&A Act serves a strategic planning function, dealing with the preparation of local and regional strategic plans, the making of environmental planning instruments (EPI) (that is, State Environmental Planning Policies (SEPP) and Local Environmental Plans (LEP), and the preparation of Development Control Plans (DCP).
- Part 4 of the EP&A Act establishes the assessment framework for development that requires consent, containing provisions for local development, regionally significant development (RSD), designated development and State significant development (SSD). The consent authority for determining development applications made under Part 4 is

typically the local council; however, for more larger scale, contentious or environmentally sensitive projects the consent authority may be the Minister for Planning or a planning panel.

- Part 5 of the EP&A Act deals with the environmental assessment of infrastructure projects (or 'activities') that do not require development consent. Whilst development consent is not required, activities under Part 5 are still required to undergo environmental assessment by a determining authority (usually a public authority) to determine whether a proposed activity will have a significant impact. Part 5 activities are typically supported by a Review of Environmental Factors (REF); however, in circumstances where a significant impact is determined or a proposed activity is classified as State Significant Infrastructure (SSI) and critical SSI, an Environmental Impact Statement (EIS) is required. For SSI and critical SSI, the Minister has the authority for issuing approval.

The applicable approval pathway for development under Part 4 and Part 5 is determined by reference to the relevant EPIs, that are established under Part 3. It is noted that there are several other Parts of the EP&A Act pertaining to certification, infrastructure contributions, reviews and appeal rights, and implementation and enforcement of the Act; however, these are less critical in terms of the assessment and management of Aboriginal heritage, and as such, not covered above.

1.9 QUALIFICATIONS OF THE INVESTIGATOR

Dr. Penny McCardle: Principal Archaeologist & Forensic Anthropologist has 23 years experience in Indigenous archaeological assessments, excavation, research, reporting, analysis and consultation and 20 years in skeletal identification, biological profiling and skeletal trauma identification for NPWS, NSW Police and the NSW Department of Forensic Medicine.

- BA (Archaeology and Palaeoanthropology): Indigenous archaeology, University of New England 1999
- Hons (Archaeology and Palaeoanthropology): Physical Anthropology, University of New England 2001
- Forensic Anthropology Course, University of New England 2003
- Armed Forces Institute of Pathology Forensic Anthropology Course, Ashburn, VA 2008
- Analysis of Bone trauma and Pseudo-Trauma in Suspected Violent Death Course, Erie College, Pennsylvania, 2009
- Documenting Scenes of War and Human Rights Violations. Institute for International Criminal Investigations, 2018
- PhD, University of Newcastle, 2019

1.10 REPORT STRUCTURE

The report includes Section 1 which outlines the project, Section 2 provides the consultation, Section 3 presents the environmental context, Section 4 presents ethno historic context, Section 5 provides the archaeological background, Section 6 provides the results of the fieldwork, analysis and discussion; Section 7 presents the development impact assessment, Section 8 presents the mitigation strategies and Section 9 presents the management recommendations.

2 CONSULTATION

As per the Heritage NSWs' Aboriginal Cultural Heritage Consultation Requirements for Proponents (April 2010), MCH followed the four stages of consultation as set out below. All correspondences for each stage are provided in Appendix A.

In relation to cultural significance, MCH recognises and supports the indigenous system of knowledge. That is, that knowledge is not 'open' in the sense that everyone has access and an equal right to it. Knowledge is not always definitive (in the sense that there is only one right answer) and knowledge is often restricted. As access to this knowledge is power, it must be controlled by people with the appropriate qualifications (usually based on age seniority, but may be based on other factors). Thus, it is important to obtain information from the correct people: those that hold the appropriate knowledge of those sites and/or areas relevant to the project. It is noted that only the Aboriginal community can identify and determine the accepted knowledge holder(s) may be not archaeologists or proponents. If knowledge is shared, that information must be used correctly and per the wishes of the knowledge holder.

Whilst an archaeologist may view this information as data, a custodian may view this information as highly sensitive, secret/sacred information and may place restrictions on its use. Thus, it is important for MCH to engage in affective and long-term consultation to ensure knowledge is shared and managed in a suitable manner that will allow for the appropriate management of that site/area. MCH also know that archaeologists do not have the capability nor the right to adjudicate on the spirituality of a particular location or site as this is the exclusive right of the traditional owners who have the cultural and hereditary association with the land of their own ancestors. For these reasons, consultation forms an integral component of all projects and this information is sought from the registered stakeholders to be included in the report in the appropriate manner that is stipulated by those with the information.

2.1 STAGE 1: NOTIFICATION & REGISTRATION OF INTEREST

The aim of this stage is to identify, notify and register Aboriginal people and/or groups who hold cultural knowledge that is relevant to the project area, and who can determine the cultural significance of any Aboriginal objects and/or places within the proposed project area. In order to do this, the sources identified by Heritage NSW, Department of Premier & Cabinet (OEH 2010:10) and listed in Table 2.1, to provide the names of people who may hold cultural knowledge that is relevant to determining the significance of Aboriginal objects and/or places were contacted by letter on 30th April 2024 and it was stipulated that if no response was received, the project and consultation will proceed. Information included in the correspondence to the sources listed in Table 2.1 included the name and contact details of the proponent, an overview of the proposed project including the location and a map showing the location.

Table 2.1 Sources contacted

Organisations contacted	Response
Heritage NSW	55 groups
Mindaribba LALC	no response
Maitland City Council	no response
Registrar Aboriginal Land Rights Act 1983	2 groups
National Native Title Tribunal	freehold
Native Title Services Corporation Limited	no response
Hunter Local Land Services	no response

Following this, MCH compiled a list of people/groups to contact (Refer to Appendix A). As per the Aboriginal cultural heritage consultation requirements for proponents (April 2010), archaeologists and proponents must write to all those groups provided asking if they would like to register their interest in the project. Unfortunately, some Government departments written to requesting a list of groups to consult with do not differentiate groups from different traditional boundaries and provide an exhaustive list of groups from across the region including those outside their traditional boundaries.

MCH wrote to all parties identified by the various departments on 14th May 2024, and an advertisement was placed in the Maitland Mercury on 10 May 2024. The correspondence and advertisement included the required information as per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (April 2010) and requested to nominate the preferred option for the presentation of information about the proposed project: an information packet or a meeting and information packet (Refer to Stage 2). The Registered Aboriginal Parties (RAPs) are listed in Table 2.2.

Table 2.2 Registered Aboriginal Parties

RAP	Contact
A1 Indigenous Services	Carolyn Hickey
Yarrawalk Pty Ltd	Scott Franks
Widescope Indigenous Group	Steven Hickey

2.2 STAGE 2: PRESENTATION OF INFORMATION

The aim of this stage is to provide the RAPs with information regarding the scope of the proposed project and the Indigenous cultural heritage assessment process.

As the RAPs did not provide their preferred method of receiving information, an information packet was sent to all RAPs and included the required information as per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (April 2010) and a written response to the proposed methods was due no later than 27th June 2024.

The information pack also stipulated that consultation was not employment, and requested that in order to assist the proponent in the engagement of field workers, that the groups provide information that will assist in the selection of field staff who may be paid on a contractual basis.

This included, but was not limited to, experience in field work and in providing cultural heritage advice and their relevant experience; and to provide a CV and insurance details.

The information pack also noted that failure to provide the required information by the date required (28 days) will result in a missed opportunity for the RAPs to contribute to their cultural heritage and the project will proceed.

2.3 STAGE 3:GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

The aim of this stage is to facilitate a process whereby the RAPs may contribute to culturally appropriate information gathering and the research methodology, provide information that will enable the identification of the cultural significance of any Aboriginal objects and or/places within the proposed project area, and have input into the development of any cultural heritage management and mitigation measures. In order to do his, included in the information pack sent for Stage 2, was information pertaining to the gathering of cultural knowledge. This included the following information;

- MCH noted that information provided by RAPs may be sensitive and MCH and the proponent will not share that information with all RAPs or others without the express permission of the individual. MCH and the proponent extended an invitation to develop and implement appropriate protocols for sourcing and holding cultural information including any restrictions to place on information, as well as the preferred method of providing information;
- request for traditional/cultural knowledge or information associated with ceremonial, spiritual, mythological beliefs, traditions and known sites from the pre-contact period;
- request for traditional/cultural knowledge or information regarding sites or places with historical associations and/or cultural significance which date from the post-contact period and that are remembered by people today (e.g., plant and animal resource use areas, known camp sites); and
- request for traditional/cultural knowledge or information in relation to any sites or places of contemporary cultural significance (apart from the above) which has acquired significance recently.

During this process, the RAPs did not disclose any specific traditional/cultural knowledge or information of sites or places associated with spiritual, mythological, ceremonies or beliefs from the pre contact period, historicc and, or, contemportay periods, within the project area or surrounding area. However, it must be noted that traditional/cultural knowledge and/or information regarding sites and/or places of cultural significance may exist that were not divulged to MCH by those consulted.

2.4 SURVEY

All RAPs were invited to participate in the survey on 11th July 2024. Mr Jason Brown (Mindaribba LALC) attended the survey. The project area was surveyed by Mr Jason Brown and the archaeologist in accordance with the proposed methodology provided to the stakeholders for review.

During the survey, Mr Jason Brown stated that the area was significant and that a number of sites have been located in the local area, and in particular, along the creek but south of the project area and identified through test excavations.

2.5 STAGE 4: REVIEW OF DRAFT CULTURAL HERITAGE ASSESSMENT

Copies of the draft report and proposed draft test excavation methodology were forwarded to all RAPs for their review and were asked to provide a written or verbal response no later than 26th August 2024). A1 Indigenous Services sent a response stating they support the report, recommendations and test excavation methods.

All RAPs were provided a copy of the final report and all documentation regarding the consultation process is provided in Appendix A.

3 LANDSCAPE AND ENVIRONMENTAL CONTEXT

3.1 INTRODUCTION

Understanding and documenting the contextual relationship between archaeological sites and the surrounding terrain is crucial in landscape archaeological studies across the globe (De Reu et al., 2011; De Smedt et al., 2013; Turrero et al., 2013). Additionally, the presence and distribution of Aboriginal cultural materials in a landscape are greatly influenced by environmental factors such as topography, geology, landforms, climate, geomorphology, hydrology, soils, and vegetation (Hughes and Sullivan 1984).

These environmental factors play a significant role in determining the availability of resources like plants, animals, water, and raw materials. They also influence the selection of suitable locations for activities like camping, ceremonies, burials, and the creation of rock art. Given the variation in site locations across different landforms resulting from unique environmental constraints, it is possible to construct predictive models of Aboriginal site locations. These models are based on the assumption that the environment offered both limitations and opportunities, which influenced the behaviour of Aboriginal communities in terms of site selection and utilization. By incorporating these environmental factors, researchers aim to gain insights into the spatial distribution and forms of archaeological evidence present within different landscapes.

The degree to which cultural materials have survived in the face of natural and human impacts is influenced by environmental factors. These factors also affect the likelihood of detecting sites during ground surface surveys. Site detection relies on various environmental considerations, such as surface visibility determined by the presence of ground cover like grass and leaf litter. Furthermore, the preservation of the original land surface and associated cultural materials is influenced by factors like flood alluvium and erosion. Human impacts, including activities like Aboriginal fire stick farming, clearing, logging, agriculture, construction, and mining, also play a role in exposing the original landscape and associated cultural materials. These processes and activities collectively impact the likelihood of surface and subsurface cultural materials surviving and being detected. Therefore, comprehending the environmental factors, processes, and activities that affect site location, preservation, and detection is crucial during surface surveys, as well as determining the potential presence of in situ subsurface cultural materials. Below, the environmental factors, processes, and disturbances relevant to the surrounding environment and the specific project area are discussed.

3.2 GEOLOGY

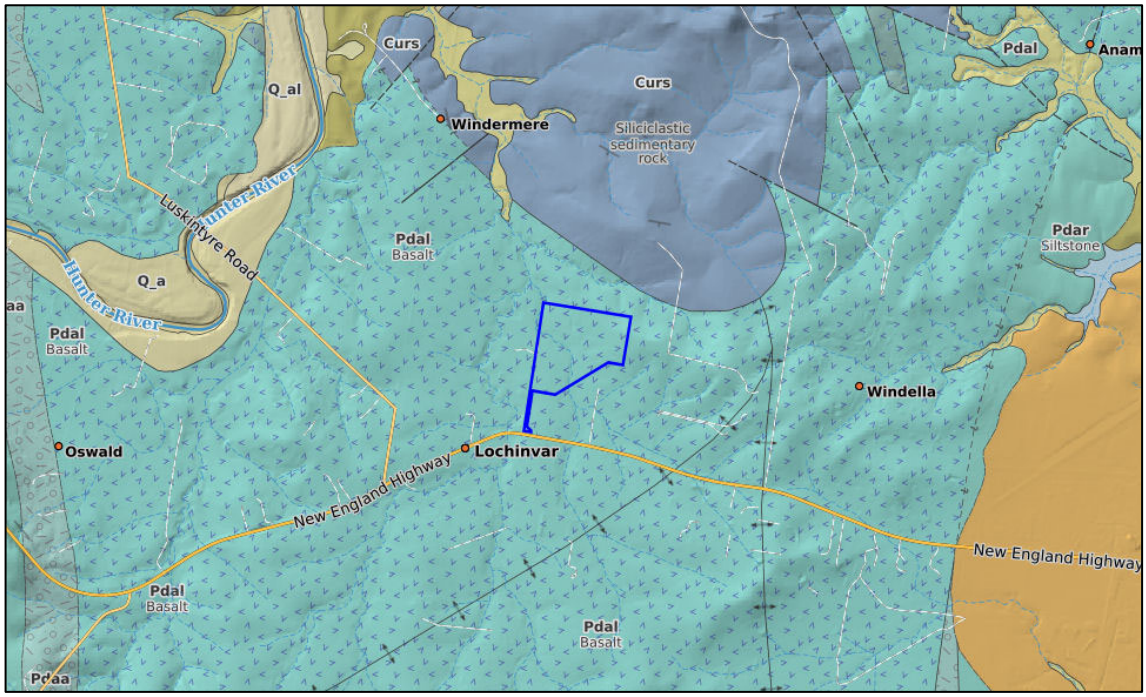
The underlying regional geology plays a major role in the structure of the surrounding environment (e.g., landforms, topography, geomorphology, vegetation, climate, hydrology etc), and also influences patterns of past occupation and their manifestation in the archaeological record. This is primarily relevant to past Aboriginal land use in regard to the location of stone resources or raw materials and their procurement for the manufacturing and modification of stone tools.

The processes of sedimentation, uplift, ongoing physical and chemical weathering, re-deposition and volcanic activity have resulted in the formation of a complex landscape in the regional area that incorporates diversity in topography, vegetation and wildlife. For its Aboriginal inhabitants, these processes have resulted in the presence of caves and ledges suitable for shelter/occupation and the application of rock art, deposits of raw materials essential to the manufacture of stone tools as well as locations that provide the rocky creek bed outcrops utilised in the production of ground-edge implements.

The Hunter Valley consists of four major geological provinces: the New England Geosyncline in the northeast, the Sydney Basin in the centre and south, the Great Artesian Basin in the northwest, and the eastern Australian Tertiary Volcanic Province in the north and west (Hughes 1984). The Central Lowlands are situated on the Sydney Basin, on Permian rocks that are folded and consist of shales, tuffs, sandstone, mudstones, and conglomerate, with some lava beds in the basal portion, and contain the extensive coal measures that are mined throughout the region. Generally, the Permian rocks are only moderately resistant, consequently forming the lowlands.

As indicated on the NSW Seamless Geology mapping (Figure 3.1), The underlying geology of the project area is Permian Lochinvar Formation of the Dalwood group that consists of basalt, siltstone and sandstone. The presence of basalt within the geology of the project area, indicates that stone materials suitable for manufacturing stone artefacts may occur in various locations throughout the project area.

Figure 3.1 Geology of the project area (NSW Seamless Geology)



3.3 TOPOGRAPHY

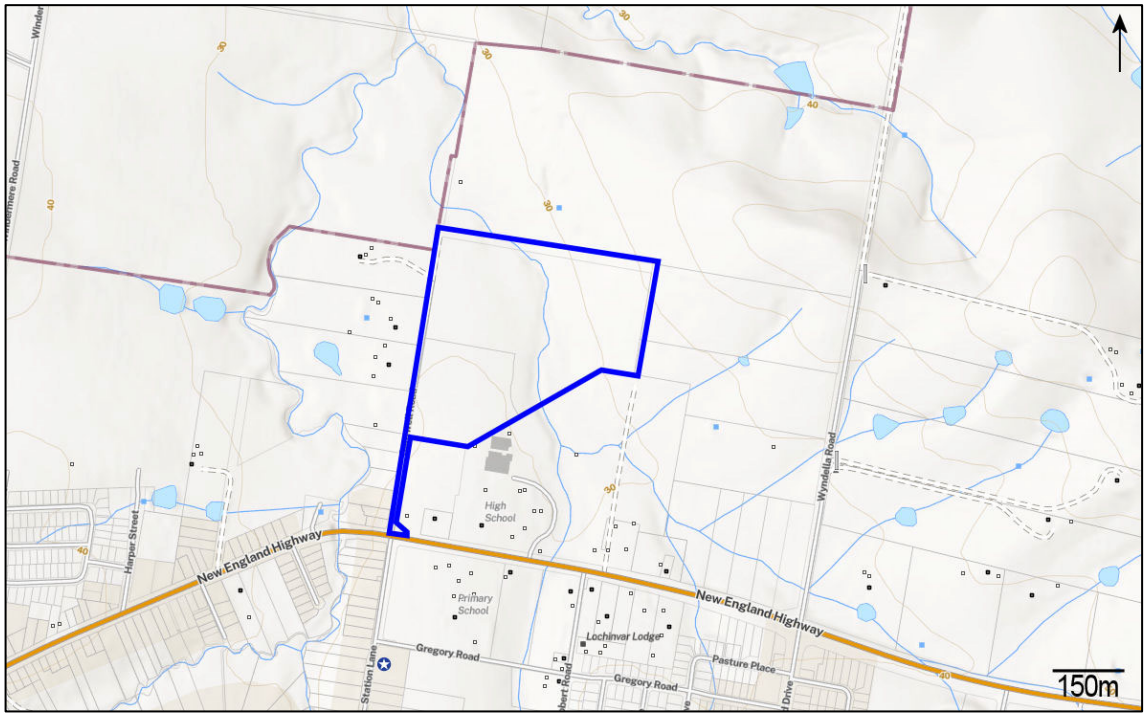
The topographical context is important to identify potential factors relating to past Aboriginal land use patterns and is largely determined by the geology and is important to identify potential factors relating to past Aboriginal land use patterns as not all landforms are suitable camping locations. Story et al (1963) divided the Hunter Valley into eight main sub-regions including the Southern Mountains, Central Goulburn Valley, Merriwa Plateau, Liverpool and Mt Royal Ranges, Barrington tops, North-Eastern Mountains, Central lowlands and the Coastal Zone.

The project area is located within the Central Lowlands, (a broad lowland belt of lowlands approximately 15 kilometres wide) which lies at the centre of the region extending from Murrurundi to Newcastle. It is bounded on all sides by steep rugged country except in the far west where the Cassilis Gate provides access to the interior. To the south is dissected plateau country; to the north and west are the Liverpool Range and Barrington Uplands. This area contains much alluvial land consisting of open undulating grassland and level alluvial plains.

Formerly rural, open cut mining has developed throughout on a large scale, especially around Singleton and Muswellbrook.

The eastern half of the project area consists of a south western facing slope that slopes down to the west and south-west into a 3rd order creek located in the central portion of the site. The western half of the project area is relatively flat, sloping slightly to the east into the creek (Refer to Figure 3.2). The presence of gentle slopes in the project area, if appropriate for camping (i.e., not excessively steep), overlooking a semi-reliable water source, may have been a suitable location for past Aboriginal land use, specifically small-scale camping and hunting and gathering activities.

Figure 3.2 Topographic map of the project area (SIX Maps)



3.4 GEOMORPHOLOGY

Geomorphology is the study of landscapes, their evolution and the processes operating within earth systems. Cultural remains are part of these systems, having being deposited on, and in part, resulting from interactions within landscapes of the past. An understanding of geomorphological patterning and alterations is therefore essential in assess and interpreting the archaeological record.

The geomorphology of the Hunter Valley is complex and is summarised below based upon studies undertaken by Galloway (1963) and Hughes (1984). The Hunter Valley contains a variety of landforms ranging from rugged mountains to plains and varying in elevation from sea level to over 1500 metres (AHD). It is surrounded on all sides by mountainous terrain with the exception of the western portion where a low rise divides it from the Darling River drainage area and the south eastern zone where it is bounded by the Pacific Ocean.

Four major elements are distinguished in the drainage pattern. The western half of the valley is drained by the Goulburn River and its tributaries that flow east to Denman. The north-eastern part is drained by the upper Hunter River, which flows southwest to unite with the Goulburn River at Denman. The combined rivers then flow east-south-east as the lower Hunter River,

opening to the ocean at Newcastle. The Williams and Paterson Rivers drain the high country of the Barrington Tops in the east and join the Hunter River near its mouth. The watershed of the Goulburn River coincides with the Great Dividing Range, where it swings west in a vast loop.

The CSIRO (Story et al 1963) conducted a study of the Hunter Region and classified the landforms into nine sub-regions (Mt Royal Range, Liverpool Ranges, Northeast Mountains, Barrington Tops, Merriwa Plateau, Central Goulburn Valley, Southern Mountains, Central Lowlands and the Coastal Zone). The project area lies within the Central Lowlands, which is a belt of lowlands developed on the weak sedimentary rocks that extend from Murrurundi to Newcastle.

The soils throughout the region reflect the influence of a range of factors including the parent geological material, topography, climate, organisms and length of formation time. Differences between these elements are reflected in variation in soil types across the Hunter Valley. Texture contrast soils mantle the undulating to hilly landscapes on Permian and Carboniferous rocks and the older alluvial terraces and valley fills. The two major groups of texture contrast soils include solonetzic and podzolic soils. These soils consist of an upper soil Horizon A and underlying B (referred to as duplex soils). The upper A unit consists of grey to buff silts and sand with gravels, is usually no greater than one metre in depth (usually shallower), has a weakly developed soil profile and is typically discontinuous, especially along hill slopes. The underlying B unit consists of brown-red gravel rich clays with evidence of deep weathering and strongly contrasting horizons.

Unit A and Unit B are interpreted as being Holocene and Pleistocene in age respectively. Within the region, sites tend to occur on or within soil Horizon A or are often present at the interface of the A and B horizons. Within the A horizon the lowermost (in terms of vertical positioning) artefact assemblages tend to contain artefacts that are typically attributed to the mid-Holocene, as characterised by an increase in the number of backed artefacts. Given the lack of detailed information regarding artefact sequences and chronologies in the Hunter Valley, this assumption should not be accepted without question. However, on geomorphological grounds, A horizon soils in this context are generally considered as dating to the mid-late Holocene (Dean-Jones and Mitchell 1993:76).

In contrast, the underlying weathered nature of the clayey B-horizon indicates that its parent material is much older. Evidence of earlier occupation of the region was identified at Warkworth West (AMBS 2002) where a limited artefact assemblage is present within deposit older than 14,000 years. It is also suggested that materials from Fal Brook and Carrington date to the Pleistocene period (Koettig 1987). The B-horizon parent material in hill slope formations is typically composed of weathered, in-situ bedrock whereas soils along the valley floors are generally alluvial or colluvial in origin.

The archaeological importance of foot slopes and valley floors with soils of this type is enhanced by the fact that the interaction between alluvial and colluvial deposition can result in the formation of sealed deposits. However, landforms of this type are also prone to erosion which may broadly reveal previously buried archaeological evidence. Extensive sheet and gully erosion occurs throughout the area, potentially resulting in artefacts that were originally deposited on or within the A-horizon being exposed as highly visible lag. Thus, although erosion greatly increases the visibility of artefacts, it also disturbs and damages them.

Similarly, the impacts of bioturbation upon the archaeological record must also be addressed. Focussed studies regarding bioturbation have primarily been conducted outside Australia (e.g., Armour-Chelu and Andrews 1994; Fowler et al 2004; Peacock and Fant 2002). Therefore, whilst the subsequent findings are broadly applicable within the Australian context, further research is certainly warranted. In general, it appears that, within duplex soils, the burrowing activities of

fauna including earthworms can often cause the lateral and horizontal movement of artefacts through the soil profile, eventually resulting in the formation of a stone layer at the interface of the A and B horizons. The other important element to address is the differential movement of artefacts according to size/weight. In this respect, bioturbation has the potential to artificially conflate and separate artefacts according to size grouping as opposed to depositional context (Fowler et al 2004; Armour-Chelu and Andrews 1994).

As duplex soils are the dominant soil type within the Hunter Valley, the inherent properties of these soils must be taken into consideration in regard to the likelihood of site detection (through exposure by erosion), the stratigraphic context and age of sites, potential site location in relation to past use of the landscape and landscape instability. Certain land systems and types of deposit are however, considered to have greater potential to contain stratified and/or older archaeological sites. This does not imply that older sites are intrinsically more significant than more recent sites, rather, the more important issue in scientific terms is the level of integrity within the site. In broad terms, windblown sand sheets/dunes (such as those at Warkworth), alluvial fan deposits and foot slopes with the potential to have colluvial deposits should be considered as archaeologically sensitive landforms (refer to Dean-Jones and Mitchell 1993; Hughes 1984).

3.5 SOILS

The nature of the surrounding soil landscape also has implications for Aboriginal land use and site preservation, mainly relating to supporting vegetation and the preservation of organic materials, the location and age of cultural materials.

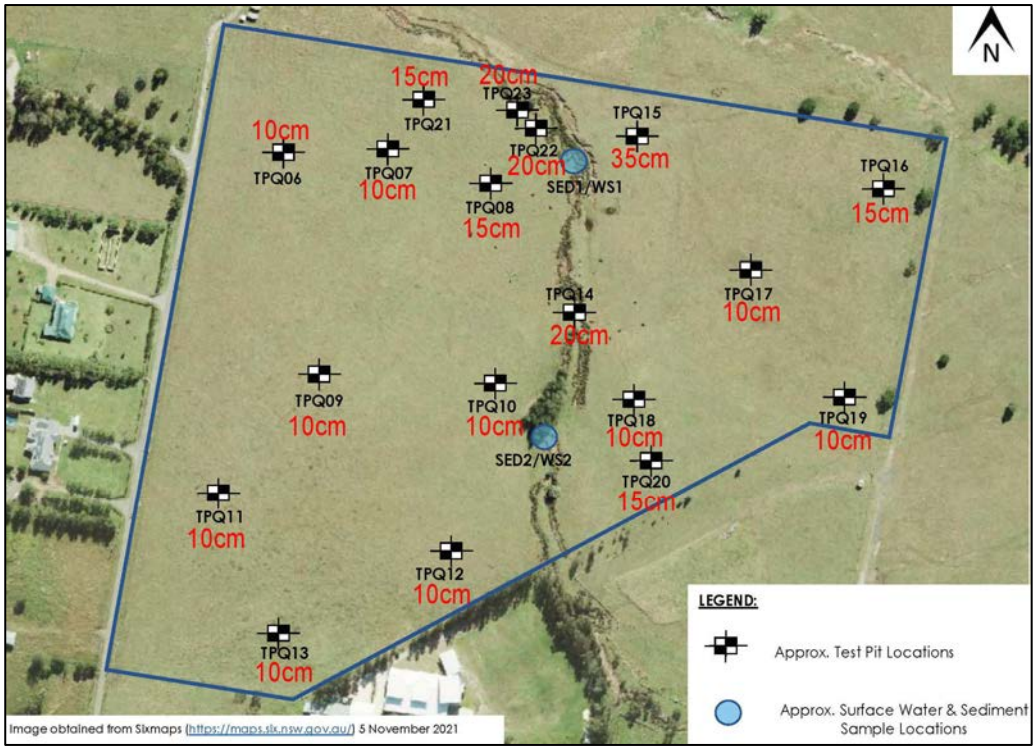
Past human actions impact the soil record, as seen through changes in soil characteristics, changes to sedimentation, and the presence of archaeological features and artefacts preserved within modern soils. Soil and sediment conditions control what survives in the burial environment, what decomposes, and consequently influence all archaeological sites, artefacts, and biological remains. Soils have formed under the continuous influence of people, up to the present day, when most land is actively managed for agriculture, pastoral, forestry, extraction or construction.

Soils may also be impacted on by natural agencies. The deposit of alluvial and aeolian sediments and colluvium movement of fine sediments (including artefacts) results in the movement and burying of archaeological materials. The increased movement in soils by this erosion is likely to impact upon cultural materials through the post-depositional movement of materials, specifically small portable materials such as stone tools, contained within the soil profiles.

The Lochinvar Soil Landscape includes topsoils (A horizon) on the gentle slopes consisting of dark brown silty clay loam (up to 40 centimetres in depth). This overlies a subsoil with a clear change to brown medium clay (B horizon). The steeper areas have topsoils that are brown to brownish black light sandy clay loam to silty clay loam and sometimes an A2 horizon is present and is a bleached bright brown sandy loam. This topsoil is up to 35 centimetres in depth and overlies a B horizon that consists of a change to brown sand to medium clay (Kovac and Lawrie 1991:258-259). On the mid to lower slopes the top soils are dark brown loam and are up to 20 centimetres in depth and a thin layer of bleached A2 may be present. This overlays a subsoil with a clear change to yellowish brown light clay B horizon.

Geotechnical investigations of the project area (Qualtest 2024) identified that the majority of the project area consists of 10cm of pale grey to pale brown, fine grained sandy clay topsoils (A horizon) that overlay pale grey to pale grey clays (B horizon). There are a few locations where the A horizon is deeper. The location of the geotechnical test pit along with the depth of the A horizon are shown in Figure 3.3.

Figure 3.3 Geotechnical test pit locations and depth of the A horizon (in red)



The A horizon of the Soil Landscapes of the project area are generally 10cm, with some deeper area (a maximum of 35cm) and soil deflation and erosion expose rather than bury former land surfaces on which stone artefacts may have been present. In addition to this, land uses such as clearing and ploughing (Refer to Section 3.9) also disturb the top 30cm of soils and contribute further to erosion. The result of these factors further deflates and erode the topsoils leaving shallow soils across the project area.

3.6 CLIMATE

Climatic conditions would also have played a part in past occupation of an area as well as impacted upon the soils and vegetation and associated cultural materials. The climatic zone as defined by Kovac and Lawrie (1991) and is characterised by temperatures ranging from an average minimum of below 5°C to an average maximum of 28°C. Winter rainfall levels are somewhat variable and generally average 30 millimetres per month. Summer rainfalls are more stable at approximately 55-60 millimetres per month, giving a mean annual rainfall of 740 millimetres. During summer, the increased rainfall rate and reduced ground cover is reflected in a proportionately higher risk of erosion.

3.7 WATERWAYS

One of the major environmental factors influencing human behaviour is water as it is essential for survival and as such people will not travel far from reliable water sources. In those situations where people did travel far from reliable water, this indicates a different behaviour such as travelling to obtain rare or prized resources and/or trade. Proximity to water not only influences the number of sites likely to be found but also artefact densities. The highest number of sites and the highest density are usually found in close proximity to water and usually on an elevated landform. This assertion is undisputedly supported by both the regional and local archaeological,

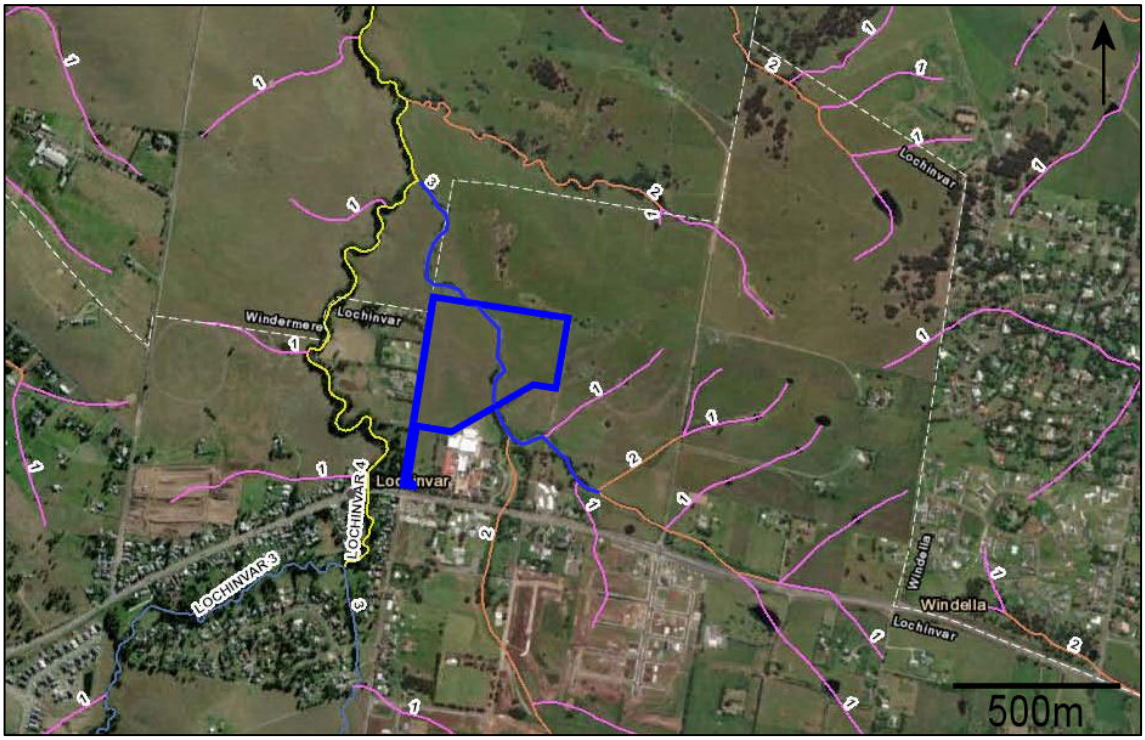
where by such patterns have been identified and sites are typically within 50 metres of a reliable water source in the valley landforms and up to 100 metres in the sandstone country.

The main types of water sources include permanent (rivers and soaks), semi-permanent (large streams, swamps and billabongs), ephemeral (small stream and creeks) and underground (artesian). Stream order assessment is one way of determining the reliability of streams as a water source. Stream order is determined by applying the Strahler method to 1:25 000 topographic maps. Based on the climatic analysis, the project area will typically experience comparatively reliable rainfalls under normal conditions and thus it is assumed that any streams above a third order classification will constitute a relatively permanent water source.

The Strahler method dictates that upper tributaries do not exhibit flow permanence and are defined as first order streams. When two first order streams meet, they form a second order stream. Where two-second order streams converge, a third order stream is formed and so on. When a stream of lower order joins a stream of higher order, the downstream section of the stream will retain the order of the higher order upstream section (Anon 2003; Wheeling Jesuit University 2002).

In terms of fresh water availability, as illustrated in Figure 3.4, Lochinvar Creek (4th order) is located approximately 60 metres east of the southern end of the project area (its closest point to the project area). A 3rd order creek flows north through the centre of the project area and continues north where it joins Lochinvar Creek (4th order) approximately 400 metres north of the project area.

Figure 3.4 Stream orders in the project area and surrounding area



The presence of fresh water in the project area after heavy rainfall, is significant due to its vital role in sustaining life and its historical importance in Aboriginal land use and site selection, along with suitable landforms (i.e. gentle slopes overlooking the creek). Its presence in the project area suggests that it may have provided fresh water along with subsistence and medicinal resources

following heavy rain. Consequently, this would have supported small-scale camping, hunting, and gathering activities en route to Lochinvar Creek. Lochinvar Creek, with its greater volume of fresh water would have been capable of accommodating larger groups of people, outside the project area.

3.8 FLORA AND FAUNA

The availability of flora and associated water sources affect fauna resources, all of which are primary factors influencing patterns of past Aboriginal land use and occupation. The assessment of flora has two factors that assist in an assessment including a guide to the range of plant resources used for food and medicine and to manufacture objects including nets, string bags, shields and canoes which would have been available to Indigenous people in the past. The second is what it may imply about current and past land uses and to affect survey conditions such as visibility, access and disturbances. The project area has been completely cleared of all vegetation. The drainage throughout the project area would have supported a limited range of faunal populations including kangaroo, wallaby, goanna, reptiles and a variety of birds. A wider variety of resources would have been available in areas to the east and south where more reliable water would have been available.

3.9 LANDUSES AND DISTURBANCES

Heritage NSW (DECCW 2010) defines disturbed lands as land that has been the subject of human activity that has changed the lands' surface and, or the subsurface, these changes being changes that remain clear and observable. Examples may include ploughing, construction works (roads, tracks, fire trails, dams, fences, clearing, utilities and infrastructure). This definition is based on the types of disturbances classified in The Australian Soil and Land Survey Field Handbook (CSIRO 2010). Table 3.1 presents the CSIRO's scale that classifies and measures the levels of disturbances. This scale aids in determining the extent of disturbance within the project area and its potential impact on cultural artifacts. Extensive research and experiments have been conducted worldwide, examining the effects of these disturbances on various landforms and the objects found within them (see below).

Table 3.1 Land use scale (CSIRO 2010)

Minor disturbance		Moderate disturbance		Major disturbance	
Cleared and/or grazed at some time, but apparently never ploughed		Cleared and/or grazed at some time, with ploughing also attested		Severe disturbance to natural soil profiles; complete-to-near complete topsoil loss/disturbance	
0	No effective disturbance; natural	3	Extensive clearing (e.g., poisoning and ringbarking	6	Cultivation: grain fed
1	No effective disturbance other than grazed by hoofed animals	4	Complete clearing: pasture native or improved, but never cultivated	7	Cultivation: irrigated, past and present

2	Limited clearing (e.g., selected logging)	5	Complete clearing: pasture native or improved, cultivated at some stage	8	Highly disturbed: e.g., quarry, road works, mining, landfill, urban

Archaeological evidence suggests that Australia has been occupied for about 60,000 years. While it is believed that past Aboriginal occupation had minimal impact on the natural landscape, we cannot assume that 60,000 years of land use did not affect environmental factors. The practice of 'firestick farming', which involved controlled fires to drive game, provide protection, and alter vegetation communities, had a significant impact on seed germination and increased floral diversity.

Since European settlement in the 1820s, the region's landscape has undergone various forms of modification, including extensive logging and clearing, agricultural cultivation, pastoral grazing, residential development, and mining (Turner 1985). These activities have significantly disturbed the landscape, resulting in the alteration of large areas of land and the cultural materials within them. Unfortunately, there is no NSW historical imagery available. However, one historic aerial image was found at the University of Newcastle Living Memories catalogue (Box C3031). As show in the 1966 aerial photograph (Figure 3.4), the project area has been completely cleared and as with the surrounding landscape, likely been subject to at least one major ploughing event for improved pasture for grazing and the construction of Cantwell Road along the western side of the project area.

Figure 3.5 1966 aerial photograph of the project area

Analysis of aerial photography from Nearmap between the years 2010 and 2024 highlights a noticeable lack of human disturbances in the northern portion of the project area. However, it is evident in the 2017 aerial photograph (Figure 3.5), that there has been significant excavation and grading activity along the southern fence line, resulting in a wide section of disturbance.

Figure 3.6 2017 aerial photograph of the project area

Early vegetation clearing practices involved uprooting trees through chaining, which often resulted in the disturbance or destruction of any cultural materials present in the vicinity of or beneath the trees and vegetation (Wood, 1982). Another approach was manual timber harvesting using axes and hand saws, where only selected trees suitable for timber were felled (selective logging). However, starting from the 1950s, there was a significant increase in mechanization in the logging industry, leading to widespread adoption of clear-felling. This method involved removing the best logs for processing while bulldozing and burning almost every other tree, resulting in significant landscape impacts.

Farming and agricultural activities also disturbed the landscape. Although pastoralism is a comparatively low impact activity, it does result in disturbances due to vegetation clearance and the trampling and compaction of grazed areas. These factors accelerate the natural processes of sheet and gully erosion, which in turn can cause the horizontal and lateral displacement of artefacts. Furthermore, grazing by hoofed animals can affect the archaeological record due to the displacement and breakage of artefacts resulting from trampling (Yorston et al 1990). Pastoral land uses are also closely linked to alterations in the landscape due to the construction of dams, fence lines and associated structures.

Ploughing, a common practice in agricultural land use, involves disturbing the topsoil layer typically to a depth of 10-30 centimetres. Various methods and machinery are employed in this process, leading to different degrees of soil disturbance (Koettig 1986a, personal observation). Archaeologists have conducted research on the impact of ploughing on the archaeological record, highlighting the increased occurrence of erosion and displacement, or redistribution, of artefacts in both horizontal and vertical directions. These effects result in artificial changes in artefact densities and spatial distributions (Roper 1976; Odell and Cowan 1987). Studies on how ploughing affects the movement of artefacts have shown that artefacts can move laterally anywhere from one centimetre to 18 meters, depending on the equipment and horizontal movement involved (Roper 1976; Odell and Cowan 1987). Ploughing can also disrupt other features and soil stratigraphy, resulting in a disturbed deposit. The extent of this disturbance depends on the depth of the soils and can lead to the loss of site integrity. Ploughing activities

can be identified by the presence of "ridges and furrows" on the surface, but if ploughing has been discontinued for a long period, these features may no longer be visible.

Excavation works required for developments, including but not limited to business, residential, industrial, aviation, works depos, mining, dams and associated infrastructure and utilities, require excavation, cut and fill methods. Remediation works also result in additional impacts and typically involve the removal of soils. These direct impacts to the land and associated cultural materials that may be present are easy to see and understand. Any form of construction or resource exploitation that involves the removal of, relocation of or compaction or soils sediments or minerals, requires the modification of the topography, thus displacing and/or destroying any cultural materials that may have been present (Wood 1982).

In terms of everyday land uses, vehicular movements on sites have been well documented and based on several experiments (DeBloois, Green and Wylie 1974, Gallagher 1978), have shown that vehicle movements over an archaeological site are extremely destructive to the site through compaction and movement, thus altering the spatial relationship and location of the artefacts. Based on general observations it is expected that the creation of dirt tracks for vehicle access would also result in the loss of vegetation and therefore will enhance erosion and the associated relocation of cultural materials. As fence construction require the removal of soils for the post holes, this would also have resulted in the disturbance and possible destruction of any cultural materials. All of which result in loss of vegetation and erosion to some extent.

3.10 NATURAL DISTURBANCES

Natural processes can affect the disturbance of cultural materials. Deposition and erosion patterns in a locality can influence the formation and destruction of archaeological sites. In environments with high sediment accumulation rates, artifacts are quickly buried after abandonment. Frequent depositional events can lead to well-stratified cultural deposits. (Waters 2000:538,540)

In a stable landscape with limited deposition and moderate erosion, soils will form and cultural materials will remain on the surface until burial. Extended periods of stability will compress the archaeological record, with multiple occupational episodes found on one surface prior to burial. Artefacts in duplex soils are typically located within the A horizon at the A and B horizon interface. (Waters 2000:538-539).

If erosion occurs after cultural material is deposited, it can significantly disrupt or destroy archaeological sites, regardless of their initial state of preservation. The frequency and severity of erosional events directly impact the level of disturbance or destruction. Repeated and severe episodes can lead to complete removal of older sediments, soils, and cultural deposits, resulting in the loss of archaeological material within a region. (Waters 2000:539; Waters and Kuehn 1996:484).

Bioturbation plays a crucial role in the formation of the archaeological record, impacting the preservation, redistribution, and mixing of cultural materials. Earthworms, ants, and other burrowing animals can disturb and relocate artifacts through their activities. Artefacts may also be displaced through root holes, settling by gravity, or translocation caused by tree falls (Balek 2002:41-42; Peacock and Fant 2002:92). The depth of artifact burial and movement due to bioturbation is limited by the extent of biological activity (Balek 2002:43).

Burrowing and mounding activities by animals and insects can lead to the burial and movement of artifacts, disrupting the stratigraphic integrity. Size-sorting occurs, with smaller artifacts being moved upwards and deposited in mounds, while larger artifacts move downward due to gravity

and burrowing activities. This can create concentrations of artifacts that may be mistaken for cultural layers (Balek 2002:46). The rate of artifact burial through burrowing and mounding can be significant, up to 2.7 meters in 5000 years. (Balek 2002:45, 46)

Experiments to assess the degree that bioturbation can affect material have been undertaken. In abandoned cultivated fields in South Carolina, Michie (summarised in Balek 2002:42-43) found that over a 100-year period 35% of shell fragments that had been previously used to fertilise the fields were found between 15 and 60 centimetres below the surface, inferred to be as a result of bioturbation and gravity.

Earthworms can disrupt soil stratification within approximately 450 years (Balek 2002:48). The impact on cultural materials varies based on the species of earthworm present (Armour-Chelu and Andrews 1994; Canti 2003; Fowler et al. 2004; Stein 1983). Different earthworm species exhibit distinct behaviours, with some dwelling deep in soils and moving vertically, while others reside in the top layers and move horizontally (Fowler et al. 2004:453). Earthworms can excavate up to six meters under favourable conditions (Stein 1983:278), altering soil horizons through burrowing and consumption of organic matter (Fowler et al. 2004:457, 461; Stein 2003:139).

Earthworms can impact cultural deposits by altering artefact concentrations and stratigraphy, displacing artefacts during burrowing, burying artefacts through faecal deposition, and blurring natural and cultural boundaries. They may also consume and destroy organic remains. In Australia, earthworm species typically require neutral pH levels around 7 and are intolerant of pH levels below 4.5 (Stein 1983:280).

3.11 DISCUSSION

The project area is situated in an environment characterised by limited resources. Due to the absence of a consistent, permanent freshwater supply, it would not have been a favourable location for long-term camping. However, it is plausible that after heavy rainfall, the 3rd order creek running through the project area could have temporarily provided fresh water for small groups of people or individuals engaged in hunting and gathering activities, while they journeyed towards more reliable freshwater sources. The gentle slopes adjacent to the creek's banks would have potentially offered suitable terrain for camping. Therefore, it can be inferred that the local environment in the project area was conducive to small groups of people or individuals undertaking hunting and gathering activities possibly with some camping along the creek, particularly following periods of intense rainfall.

However, the project area has undergone extensive and complete land clearance, ploughing, and grazing, all of which have had detrimental effects on the soils and any cultural materials present in the deposits. The methods of clearing have been well-documented as destructive, disrupting the integrity of the soils and any cultural materials present. Ploughing activities are likely to have further exacerbated the situation by redistributing these materials both vertically and horizontally within the soils, scattering them over distances ranging from 1cm to 18 meters. The presence of grazing animals is also known to contributed to the movement of materials within the soils. Moreover, natural factors such as erosion and the subsequent downslope movement of soils and objects contained within them, as well as the transport of materials along water courses during periods of heavy rain and flooding, would have further impacted the project area along the 3rd order creek.

Considering the environmental context of the project area, it is reasonable to expect that the areas along the 3rd order creek may contain the most evidence of past Aboriginal land use. However, it is important to acknowledge that the evidence is likely to have been disturbed to some extent due to previous land uses.

4 CULTURAL CONTEXT

Although ethnographic accounts do not consider or discuss Aboriginal relationships to the land and its significance, they do provide insights into some past Aboriginal activities, some of which leave evidence in the landscape (tangible sites) and can be confirmed through archaeological investigations. Intangible sites, such as mythological, storytelling etc., cannot be confirmed by archaeological investigations and are rarely recorded by early explores and such traditional knowledge is vital in understanding the cultural landscape.

Anthropologists and ethnographers have attempted to piece together a picture of past Aboriginal societies throughout the Hunter Valley. Although providing a glimpse into the past, one must be aware that information obtained on cultural and social practices were commonly biased and generally obtained from informants including white settlers, bureaucrats, officials and explorers. Problems encountered with such sources are well documented (e.g., Barwick 1984; L'Oste-Brown et al 1998). There is little information about who collected information or their skills. There were language barriers and interpretation issues, and the degree of interest and attitudes towards Aboriginal people varied in light of the violent settlement history. Access to view certain ceremonies was limited. Cultural practices (such as initiation ceremonies and burial practices) were commonly only viewed once by an informant who would then interpret what he saw based on his own understanding and then generalise about those practices.

4.1 WONNARUAH COUNTRY

Brayshaw (1987) examined early ethnographic literature relating to the Aboriginal occupation and European settlement of the Hunter Valley in order to determine the manner in which past Aboriginal communities adapted to their environment, the extent to which they utilised the available resources, and to assess the comparability of the described material culture with the archaeological evidence.

In relation to the limitations inherent within the ethno-historic documentation, Brayshaw (1987) notes that the early records of settlers, explorers and surveyors provide the only picture of past Aboriginal life in the Hunter Valley, as it was prior to the impact of contact and white settlement and therefore worthy of consideration. Dawson (1830; in Brayshaw 1987) and Fawcett (1898; in Brayshaw 1987) suggest that fire was used to deter Europeans, to attract game for hunting and to signal to other tribes for both hunting and ceremonial purposes. It is also commonly known that firestick farming was used to modify the environment throughout Australia (Mulvaney and Kamminga 1999). Floral resources were also utilised in many ways with bark been widely used as huts or 'gunyahs', canoes, string, baskets, drinking containers and in burial practices. Vegetable and bark fibres were also used for fishing lines, nets and sewing. Wood was used for clubs, yam sticks, boomerangs, spears, spear throwers and hatchets, and both wood and bark were used to make shields (Paterson 1801; Barrallier 1802). Shells were used as scrapers to sharpen spears (later replaced by glass) and ground into shape for fishhooks (Caswell 1841 and Gunson 1974, both in Brayshaw 1987:67). Although there are no apparent ethnographic reference to stone being used as tools, physical evidence indicates stone was utilised at as tools. Kangaroo bones were made into awls and used to repair canoes and in sewing possum and kangaroo skins for clothing (Boswell 1890; Fawcett 1898 in Brayshaw 1987). Dawson (1830:115-116) notes that kangaroo bone also functioned as a comb. Dietary staples included a variety of plant foods, shellfish and other animal foods (Grant 1803:161; Wood 1972:44). Animal foods may have included kangaroos, wallabies, echidna, emus, possums, birds, goannas, snakes and honey from native trees. The occurrence of these resources would have depended largely on seasonality and geographic location. Little is known of past ritual life, as access to these rites was restricted.

5 ARCHAEOLOGICAL CONTEXT

A review of the archaeological literature of the region, and more specifically the local area and the results of an AHIMS search provide essential contextual information for the current assessment. Thus, it is possible to obtain a broader picture of the wider cultural landscape highlighting the range of site types throughout the region, frequency and distribution patterns and the presence of any sites within the project area. It is then possible to use the archaeological context in combination with the review of environmental conditions to establish an archaeological predictive model for the project area.

5.1 REGIONAL ARCHAEOLOGICAL CONTEXT

The definition of site curtilages in NSW are guided by the requirements for site registration in the AHIMS database, leading to geographically discrete sites as individual entities, existing in isolation. Such an approach is understandable, as it grows from the need to define sites as per legislatively guided parameters. This is further reinforced by the geographically focussed work of consultant archaeologists, limiting their analysis to a specific geographically constrained area based on individual project specifications. While this is the common practice for recording individual sites, it is important to contextualise them within a broader archaeological and cultural landscape that links them together. In this way assemblages may be understood as a continuous scatter of cultural material across the landscape and the nature of activities and occupation can be identified through the analysis of artefact distributions across a landscape.

The majority of archaeological surveys and excavations throughout the region have been undertaken in relation to environmental assessments for the coal mining and power industries of the Hunter Valley. A review of the most relevant investigations (Dyall 1979, 1980; Davidson et al 1993; Dean-Jones and Mitchell 1993; Koettig and Hughes 1984; McDonald 1997; Haglund 1999; Kuskie 2000; HLA-Envirosciences 2002; AMBS 2002; MCH 2004a, b) illustrates consistency in site type and location across the region as well as a possible bias in the results due to a focus on specific landforms. The corpus of recorded sites is described and assessed qualitatively in MCH (2004b) and these findings are summarised and supplemented below.

Based on the available information it is possible to identify a number of trends in site location and patterning within the region. Open campsites are by far the most common site type with isolated finds also comparatively well represented. A variety of other site types have been identified in far lower concentrations and include grinding grooves, scarred trees, rock shelters, shelters with art and burials. The high representation of sites containing stone artefacts is to be expected due to the durability of stone in comparison to other raw materials. In relation to stone artefact raw materials, it is important to note that there is a potential for discrepancies in the way in which archaeologists classify lithic materials. This will consequently affect the proportional representation of raw materials within the recorded assemblages. However, as a whole mudstone is the most common lithic artefactual material found in the region, followed by silcrete. Chert, tuff, quartz, quartzite, petrified wood, porcellanite, hornfels, porphyry, basalt, limestone, sandstone, rhyolite, basalt, European glass and other non-specific lithic types also occur in smaller quantities. Variation in the classificatory definitions employed by archaeologists will again significantly influence the range of artefact types identified within a project area. Due to differences in recording techniques, it is difficult to determine how many of each artefact type is represented across the region. Due to variations in both the amount of data that is included in reports, and the terms different archaeologists used to describe artefact types, it is not practicable to provide a count of the different artefact types.

For example, the distinction between a waste flake, a debitage flake and a flaked piece may be heavily subject to the perspective of the recorder. Thus, it is not productive to attempt to quantify the proportionate representation of artefact types identified in previous studies. That said, based on the information collated from previous regional studies (refer to MCH 2004b) it is apparent that the most common artefact types are flakes, flake fragments and flaked pieces. Cores, edge ground axes, millstones, grindstones, hammer stones and backed artefacts including backed blades, bondi points, geometric microliths and eloueras also occur though in lower frequencies. In general, the stone artefact assemblage in the area has been relatively dated to what was previously known as the Small Tool Tradition (10,000 years BP). On the basis of stone tool technology, the overwhelming majority of Aboriginal open sites within the region are attributed to the Holocene period. However, at Glennies Creek, north of Singleton, based on radiocarbon dated charcoal and geomorphological evidence it is suggested that artefacts found in the B-horizon may have been deposited between 10,000 and 13,000 BP (Koettig 1986a, 1986b).

An analysis of sites according to the number of artefacts present, the distance from water and the landform type may allow for the identification of a number of trends. However, that there are various factors influencing these results, including, but not limited to:

- the fact that the landform on which a site area is observed may not necessarily be its origin, for example, artefacts from a crest may be relocated by erosion such that they are recorded further down a slope;
- effects of biased sampling of landforms due to decisions made by archaeologists as a result of development area boundaries, levels of exposure on different landforms and variable recording by archaeologists. For example, the large percentage of sites found along creek lines may be (at least partially), a result of the biased focus of many cultural heritage surveys towards this landform; and
- artefact counts can be skewed due to factors such as the differing fragmentation levels of discrete stone types and levels of ground surface visibility. Typically, a very large number of sites/artefacts are located on exposures and yet no, or very few artefacts are visible away from these exposures.

When assessing sites in terms of distance to water, in the Hunter Valley there is a clear pattern of past land uses whereby the majority of high-density sites are situated within 50 metres of reliable fresh water (high order) and reduce in both numbers and densities with a decrease in stream order. Thus, it is apparent that open campsites/isolated finds are most concentrated in number and size within 50 metres of reliable fresh water.

As is to be expected, the majority of sites within 50 metres of water are present on elevated landforms in association with creek lines whilst slopes and crest/ridge formations are also common site locations. The frequent presence of sites on crest/ridges and slopes is also noticeable for sites located over 50 metres from water. Due to the importance of water in the grinding process, it is not surprising that sites of this type are situated close to water.

5.1.1 SUMMARY OF REGIONAL ARCHAEOLOGICAL PATTERNING

Within the region, a broad range of site types are represented including isolated artefacts, open campsites, grinding grooves, stone quarries and shell middens. A wide range of landforms have been sampled and it is evident that site distribution is closely linked to topography and hydrology, with site increase in numbers and densities with higher order creeks which reduce in number and size with a decrease in stream order. Sites are also typically located within 50 metres of a fresh water source. Previous archaeological investigations conducted within the region have

produced a significant volume of information in relation to the distribution and nature of archaeological material within this region. These previous assessments have identified a number of trends that can be identified as follows:

- a wide variety of site types are represented in the project area with open campsites and isolated artefacts by far the most common;
- lithic artefacts are primarily manufactured from mudstone and silcrete with a variety of other raw materials also utilised but in smaller proportions;
- sites in proximity to ephemeral water sources or located in the vicinity of headwaters of upper tributaries (1st order streams) have a sparse distribution and density and contain little more than a background scatter;
- sites located in the vicinity of the upper reaches of minor tributaries (2nd order streams) also have a relatively sparse distribution and density and may represent evidence of localised one-off behaviour;
- sites located in the vicinity of the lower reaches of tributaries (3rd order creeks) have an increased distribution and density and contain evidence that may represent repeated occupation or concentration of activity;
- sites located in the vicinity of major tributaries (4th and 5th order streams/rivers) have the highest distribution and densities. These sites tend to be extensive and complex in landscapes with permanent and reliable water and contain evidence representative of concentrated activity;
- sites located within close vicinity at the confluence of any order stream may be a focus of activity and may contain a relatively higher artefact distribution and density; and
- sites are typically disturbed through past and present land uses.

5.2 HERITAGE REGISTER LISTINGS

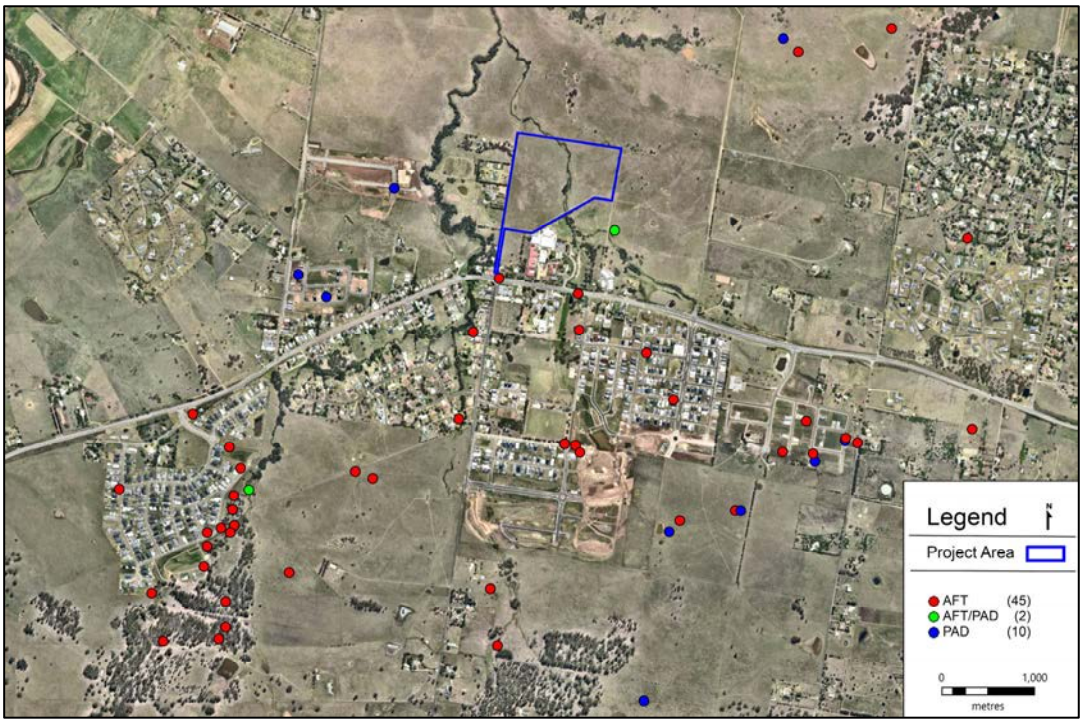
The State Heritage Register, the National Heritage List, the Commonwealth Heritage List, the National Trust Heritage Register and the relevant Local Environmental Plan have no Aboriginal objects, sites or places listed.

5.3 ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM

MCH note that there are many limitations with an AHIMS search. Firstly, site coordinates are not always correct due to errors and changing of computer systems over the years that failed to correctly translate old coordinate systems to new systems. Secondly, AHIMS will only provide up to 110 sites per search, thus limiting the search area surrounding the project area and enabling a more comprehensive analysis and finally, few sites have been updated on the AHIMS register to notify if they have been subject to a s87 or s90 and as such what sites remain in the local area and what sites have been destroyed, to assist in determining the cumulative impacts, is unknown. Additionally, terminology for site names including (amongst many) an 'artefact' site encompasses stone, bone, shell, glass, ceramic and/or metal and combines both open camps and isolated finds into the one site name. Unfortunately, this greatly hinders in the predictive modelling as different sites types grouped under one name provided inaccurate data.

A search of the AHIMS register has identified 57 known Aboriginal sites recorded within two kilometres of the project area and include 45 artefact sites (AFT), 10 PADs and 2 AFT/PAD sites. There are no AHIMS site sin the project area. The AHIMs results are provided in Appendix B and the location of sites is shown in Figure 5.1.

Figure 5.1 Approximate location of AHIMS sites (MGA 2020)



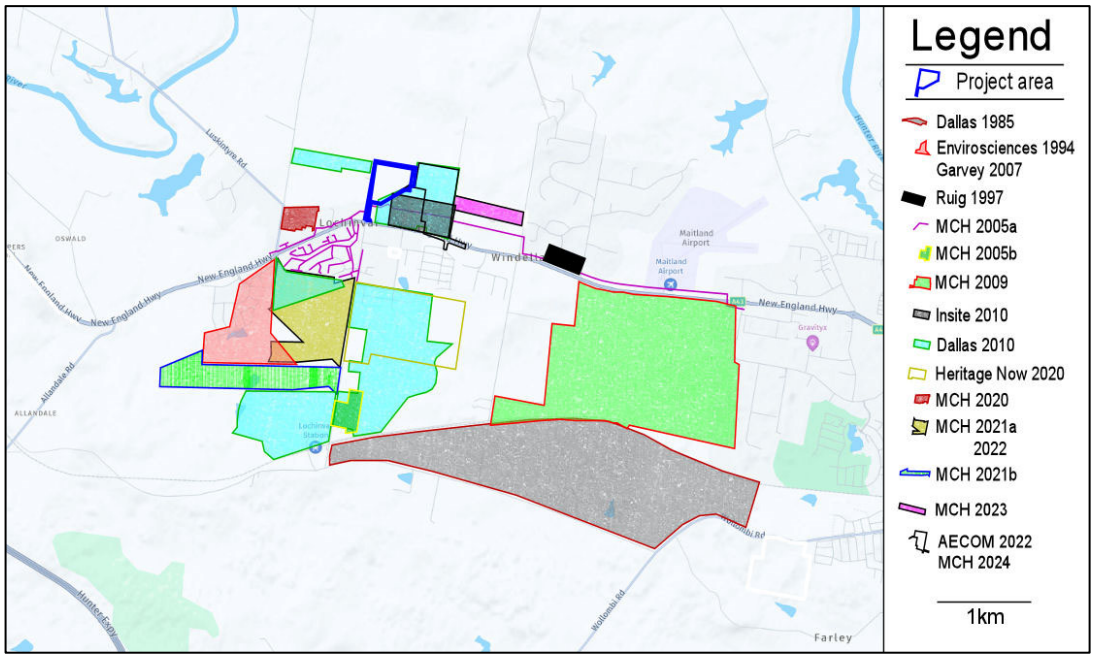
5.4 LOCAL ARCHAEOLOGICAL CONTEXT

The definition of site curtilages in New South Wales (NSW) is determined by the requirements for site registration in the AHIMS database. This approach treats individual sites as geographically isolated entities due to the need to adhere to legislative parameters. Consultant archaeologists further contribute to this isolation by restricting their analysis to specific geographically defined areas based on project specifications. While this practice is common for recording individual sites, it is important to consider them within a broader archaeological and cultural context that links them together. By analysing the distribution of artifacts across a landscape, assemblages can be understood as a continuous scatter of cultural material, enabling the identification of activities and occupation patterns.

Limitations in the use of examining previous local assessment include the number of studies in the local area. Fewer studies suggest that sites have not been recorded, ground surface visibility also hinders site identification and the geomorphology of the majority of NSW soils and high levels of erosion have proven to disturb sites and site contents, and the extent of those disturbances is unknown (i.e., we do not know if a site identified at the base of an eroded slope derived from the upper crest, was washed along the bottom etc: thus, altering our predictive modelling in an unknown way).

All archaeological surveys throughout the local area have been undertaken in relation to environmental assessments for developments. The most relevant investigations indicate differing results and observations based on surface visibility and exposure, alterations to the landscape (including mining, industrial and residential development), proximity to water sources and geomorphology. The reports available from AHIMS are discussed below and their location illustrated in Figure 5.2.

Figure 5.2 Approximate location of previous assessments



Enviros ciences Pty Ltd. 1994. An Archaeological Survey of a Proposed Subdivision at Saint Helena's Lochinvar Hunter Valley NSW.

Enviros ciences (1994) undertook an assessment for a proposed subdivision at St Helens near Lochinvar. The study area was an undulating lowland with Lochinvar Creek running north-north across the project area and a tributary in the south eastern corner. It was noted that the creeks were quite eroded exposing a brown/grey clay loam overlaying a yellowish-brown gravelly clay. Two sites were identified. Loch 1 was an isolated artefact (chert flake) located on a track next to a gate in a fence. Loch 2 (an historical site) was a low mound about 6 metres long and 1.5 metres wide comprising various pieces of concrete, stone and hand-made bricks. The report notes that the isolated artefact is of low scientific and cultural significance and it was recommended that a consent to destroy be sought.

Dallas, M. 1985. Report on Archaeological Investigations at Farley Downs, NSW.

Dallas (1985) undertook an archaeological study of a section of land to be rezoned from non-Urban and developed as a rural residential subdivision. The investigation area was situated 2km west of Farley near Maitland, between Old North Road, the Great Northern Railway, Wollombi Road and the unformed reservation of Winders Lane. The investigation area consisted of six 40 hectare lots and was being used for grazing land at the time of inspection. Landforms across the investigation area included gently undulating land with some steeper slopes in the eastern section and a subdued but distinct ridge that ran from east to west forming a natural watershed for creeks to the north and south. Creeks in the area were intermittent with flat gradients and

wide cross sections. At the time of inspection, a creek in the southern section of the investigation area was noted as consisting of a series of small ponds, with the creek having been drained in several places. The investigation area had been subject to widespread vegetation clearance with the majority of the area devoted to grasslands for grazing and some ground cover couch; however, some areas were noted to include *Eucaluptus maculatta, E. Fibrosa, E. Mollucana, Angophora, Melaleuca, Acacia, Hakea, Leptospernum,* as well as ironbark and grey box regrowth. A search of the NPWS sites register identified six previously recorded sites within the project area that were identified by Dyall. Dallas noted that review of previous reports identified that Dyall did not locate and/or record all surface artefact occurrences and did not present systematic sampling or survey strategy. The six previously identified sites were revisited with additional recording undertaken where material additional to the original recording was identified. No predictive model was included in this report. Of the six previously recorded sites, four were devoid of visible artefactual remains with little or no likelihood of subsurface materials. The other two artefact scatter sites were re located and situated along a creek bank/creek bed. Both were highly disturbed with no potential for in situ cultural materials. Summarised in the table below, these sites were assessed as having no archaeological significance.

Table 5.1 Summary of sites (Dallas 1985)

Site	Site type	Landform	Distance to water	Stream order	Artefacts/ features	Disturbance	Subsurface potential
37-6-0117	artefact scatter	creek bank/creek bed	0m	not noted	3 edge scrapers, 3 flaking cores, 17 waste flakes of quartzite, chert and volcanic	dam construction/ cattle trampling/ erosion	no
37-6-0115	artefact scatter	creek bank/creek bed	0m	not noted	1 red silcrete flake: additional to original recording	cattle trampling/ erosion	no

Dallas recommended that no further investigation of the six previously recorded sites was warranted and that a Consent to Destroy permit be sought for sites 37-6-0117 and 37-6-0115. Dallas also recommended that should further artefacts be encountered during the proposed works that works cease and the Regional Archaeologist of NPWS be notified immediately.

Ruig, J. L. 1997. Test Excavations on Penn Park, Lochinvar, NSW.

Ruig (1997) undertook a series of test excavations on Portion 62 at Penn Park in Lochinvar, NSW. The excavations were carried out under NPWS permit SZ 135, issued 20 April 1997. The test excavations were recommended following an archaeological survey carried out in July 1996 due to the proposal to develop land as a rural residential subdivision. Test excavations were recommended along the creek line of the surveyed area in Portion 62 of the study area, located in the southeast portion of the Penn Park property. Information regarding the survey, topographic data and the location's vegetation were not included in this report, as they had been detailed in the previous survey report. A total of 44 test trenches were excavated, totalling 11 square metres, covering both sides of the creek. Transects were laid out over 50 metres parallel to either side of the creek at a distance of 10 metres either side of the creek channel. One low density artefact scatter was identified (Penn Park 1) found along the creek bank and consisted of 1 mudstone flake piece and one mudstone flake. There was no further potential for subsurface deposits. The excavated archaeological deposit was assessed as having low scientific and educational

significance. Based on the test excavation results it was recommended that no further archaeological investigation be undertaken and that a Consent to Destroy permit be applied for regarding the Penn Park 1 site. The excavated material from this site was to be forwarded to the Australian Museum in Sydney for curation within their repository.

McCardle Cultural Heritage Pty Ltd (MCH). 2005a. Proposed Lochinvar sewerage scheme. Archaeological test excavation.

McCardle Cultural Heritage (MCH 2005a) undertook archaeological test excavation at three PAD locations (PAD 2, 3, and 5) of the five previously identified by Austral (2005) for the proposed Lochinvar Sewerage Scheme. MCH undertook a re-assessment of the study area and identified PADs, and concluded that the PAD 2, 3 and 5 required test excavations should the proposed development impact upon them.

PAD2 was considered to have potential for archaeological deposits on the benching slopes on the northern side of the creek. The southern side and the creek flats themselves had been subjected to considerable disturbance in the form of erosion and agricultural activities including fencing, gates and dumping. MCH determined that PAD3 was likely to contain cultural materials. In particular, the foot slopes at the east of PAD3 and close to the confluence of the two creeks were considered to have a high likelihood of deposits due to the nature of the colluvial-alluvial interface that can occur within this environmental setting.

PAD5 was situated in close proximity to a creek confluence and was predominantly flat. The Austral report referred to the likelihood that the confluence would become a wetland during times of heavy rainfall however, during the brief field inspection, it was noted that the creek was incised into the banks and that the surrounding land was more elevated. Following consultation with the Aboriginal community, the PAD was therefore extended to encompass the confluence area and this area is considered to be the portion of PAD5 most likely to contain concentrated evidence of human activity.

PADs 2 and 3 were first excavated using a backhoe in 10cm spits (to 15-20cm). The geomorphological analysis determined the geomorphology of each pit and surrounding area was flood plain and it was determined that to continue excavation was inappropriate due to flooding and the area being unlikely to have been suitable for past Aboriginal land uses and excavations ceased at these locations. Excavation for PAD 5 continued down to 15cm to the B horizon (clays) and ceased. All excavation identified highly disturbed deposits through clearing and ploughing and only two artefacts were identified from PAD 5 (one silcrete and one mudstone flake – Site Lochinvar 1). MCH recommended that no further archaeological works were required and a s90 would be required for Lochinvar 1.

McCardle Cultural Heritage Pty Ltd (MCH). 2005b. 414 Station Lane, Lochinvar. Preliminary Indigenous Archaeological Assessment.

MCH (2005b) undertook an assessment of 414 Station Lane, Lochinvar. Consisting of Permian conglomerates, mudstone shale and tuff, the project area included the Lochinvar Soil Landscape. In terms of fresh water availability, two first order drainage lines were present that flowed into a second order stream towards the north of the study area. The closest permanent reliable water source was the Hunter River that was located approximately 2.5 kilometres to the north-west. The second most reliable water source is Lochinvar creek that is situated approximately 1.5 kilometres to the north. The study area was initially cleared for agricultural purposes and further clearance and landscape alterations occurred in association with agricultural practices. A search

of AHIMS identified 71 known Aboriginal sites recorded within five kilometres surrounding the project area and included 44 artefact, 18 open camp, four axe grinding grooves, one isolated find and four PADs. The survey identified that overall, the study area was disturbed with clearing and past cultivation occurring throughout, dams constructed as well as fencing, tracks and dwellings. Natural disturbances included sheet wash and gullying and the area was currently used for horses. No sites or PADs were identified.

Garvey (2007) compiled inputs from South East Archaeology Pty Ltd and HLA-Envirosciences to provide support for a permit application. The permit was intended to cover site impacts to be caused by a proposed subdivision at St Helenas in Lochinvar, NSW. Past investigations had occurred in 1994 and 2004, the results of which were referenced to support the application. The Thornton Land Company proposed to develop the Lochinvar Section 90 application area for a French provincial themed residential village, incorporating French architecture and a village square. The proposal included such impacts as a commercial centre, incorporating shops, commercial premises, sports centre, day spa, town hall, church, markets and outdoor entertainment facilities, an artist's colony, 190 individually themed residential dwellings (to be sold as a built product), a 35-room hotel, guest house and 42 tourist accommodation units. The application contained appended details for relevant sites including 37-6-1423, 37-6-1424, 37-6-1425, 37-6-1426, 37-6-1427, 37-6-1428, 37-6-1429, 37-6-1430, 37-6-1431, 37-6-1432 and 37-6-1433. Two sites (Loch 1 and L10/A) were proposed to be impacted – the other sites were proposed to be avoided, protected and conserved. The purpose of this document was to apply for a permit application. No further information or recommendations were included.

McCardle Cultural Heritage (MCH) 2009. West Rutherford Indigenous Archaeological Assessment.

McCardle Cultural Heritage (MCH) (2009) undertook an archaeological assessment for land proposed for rezoning and eventual development at West Rutherford, NSW. The topography of the study area was gently sloping and contained sections of Stony Creek and an unnamed tributary, along with smaller drainage lines. Drainage flowed generally south-east towards Wentworth Swamp, which was located approximately two kilometres from the study area. The study area was located on deposits of Permian sandstone, siltstone, mudstone, shale, conglomerate, tuff, basalt and erratics of the Dalwood Group (part of the Maitland Group). The B-horizon soils in hillslopes were typically composed of weathered, in-situ bedrock, while soils along the valley floors were generally alluvial or colluvial in origin.

Topsoils were often absent on side slopes due to sheet wash and the B horizon was often exposed. The A2 horizon was a dark brown to brownish black sandy clay loam to clay loam; the B horizon consisted of a dull yellowish brown to brown sticky clay loam. Vegetation had undergone extensive clearance in the past in order to develop the area for stock grazing purposes. Prior to the extensive clearance it is likely to have supported tall open forest with spotted gum, broad-leaved ironbark and slaty red gum with grey box. This vegetation is likely to have supported resource species such as kangaroo, wallaby, goanna, marsupial mice, snakes, possum, koala and birds. It was assessed that the study area would have been well resourced for water as well as floral and faunal species. A search of the NPWS register identified 97 registered Aboriginal sites within five kilometres of the study area. These included 63 artefact sites, 24 open camps, four grinding grooves, four Potential Archaeological Deposits (PADs) and two isolated artefacts. Two of these sites (AHIMS #37-6-1221 and #37-6-1222) were located within the bounds of the study area.

It was predicted that common site locations would include along reliable watercourses, on gentle slopes, hilltops and ridges. Artefact density was predicted to be highest within 50 metres of watercourses and on elevated landforms over 100 metres from water. Sites were predicted to contain assemblages dating from the mid to late Holocene, disturbed by past natural (erosion) and human (clearing, improved pastures) disturbances. The site types predicted as most likely to occur within the study area were artefacts scatters and isolated artefacts. A total of ten new sites and three PADs were identified and are summarised in Tables 5.2 and 5.3. MCH recommended that sites REA2, REA3 and/or REA4 will be impacted by development a s90 permit is required, if sites REA1 and REA5 to REA10 will be impacted by development a s87 permit is required and if PADs 1 to 3 will be impacted by development a s87 permit is required.

5.2 Summary of sites (MCH 2009)

Site	Site type	Landform	Distance to water	Stream order	Artefacts /features	Disturbance	Subsurface potential
REA1	artefact scatter	bank	15m	Stoney Creek	20+	erosion	high
REA2	artefact scatter	modified	not provided	unnamed creek	2	clearing, cattle & dam	low
REA3	isolated artefact	slope	not provided	unnamed creek	1	ant nest	low
REA4	isolated artefact	modified	not provided	unnamed creek	1	clearing, cattle & dam	low
REA5	artefact scatter	bank	not provided	Stoney Creek	16+	minimally disturbed	high
REA6	artefact scatter	bank	not provided	Stoney Creek	4	minimally disturbed	high
REA7	artefact scatter	bank	not provided	Stoney Creek	2	minimally disturbed	high
REA8	artefact scatter	bank	not provided	Stoney Creek	3	minimally disturbed	high
REA9	isolated artefact	bank	not provided	Stoney Creek	1	minimally disturbed	high
REA10	artefact scatter	bank	not provided	Stoney Creek	3	minimally disturbed	high

Table 5.3 Summary of PADs (MCH 2009)

PAD name	Landform	PAD area	Disturbance
PAD 1	creek banks/channel	>100m wide, length not specified	water flow
PAD 2	creek banks/channel	>100m wide, length not specified	water flow, clearing, grazing & fencing
PAD 3	creek banks/channel	>4m wide, length not specified	water flow & motorbike track

Insite Heritage. 2010. Aboriginal archaeological assessment. Proposed aged care facility Lochinvar, NSW.

Insite Heritage (2010) undertook an assessment across Lots 2-7 DP747391 for the proposed construction of an aged care facility which represents the southern portion of the project area. The project area included undulating rises that consisted of the Lochinvar Soil Landscape. The project area was traversed by Lochinvar Creek that flowed northwards into the Hunter River approximately 3 kilometres north of the project area. The project area had been cleared and utilised for pastoral activities. A search of the AHIMS was conducted for a 100km² area surrounding the project area that identified 83 previously recorded sites within the search area. Approximately 70% of these sites were recorded as artefact scatters – open campsites, with 20% recorded as isolated finds. Other recorded site types in the area included Axe Grinding Grooves (5%) and areas of PAD (Potential Archaeological Deposit, 5%. Dominant raw material types recorded were silcrete and mudstone with some tuff and quartz. No AHIMS were located in the project area.

The survey was divided into 4 survey units based on landforms. SU1 included the gentle slopes down to Lochinvar Creek. Cleared of trees, vegetation consisted of heavy grass cover across the open paddock. Some disturbance included stock trails, vehicular track, a dam and an excavated drainage channel. Two minor drainage depressions cutting across paddock were present but were barely discernible. Insite noted that sub-surface deposits were likely to be present on basal slopes above Lochinvar Creek.

SU2 consisted of the drainage depressions – low lying section of paddock between two minor watercourses (1st order) flowing into Lochinvar Creek (3rd order). This area was very heavily grassed, <1% SV and Insite noted that sediment deposition occurred along Lochinvar Creek. Whilst the slightly elevated bench between depressions may have potential for sub-surface material, potential for subsurface deposits was considered more likely to be on higher areas on slopes to north and south.

SU3 included that gentle slope falling down to Lochinvar Creek. Cleared of native trees, there was some replanting along road verge. This SU consisted of very heavy grass cover (improved pasture) with no distinct exposures. SU4 included gentle slopes and Insite identified that the area around school and convent had been modified significantly. Car-parks had been paved and surrounding landscape grassed and maintained as lawn. A garden patch adjacent to a creek appears to have been worked over for some time and no artefacts were located although visibility limited to worked areas. Insite found that sub-surface deposits are highly likely to be present on basal slopes particularly in vicinity of confluence of streams.

One site was identified (LCC1 – AHIMS 37-6-2228) that consisted of four loci as follows:

- Loci 1 (L1) – located on a gentle slope (basal). Isolated artefact (silcrete flake) in an exposure of 30m x 30m
- Loci 2 (L2) – located on a gentle slope (basal). Three artefacts (mudstone and silcrete flakes and a flake piece) were identified along drainage trench that was cut down slope exposing an area of 50m x 2m to a depth of 50cm.
- Loci 3 (L3) – located on a gentle slope (basal) above confluence of minor watercourses. Seven artefacts located in an area of 40m x 15m consisting of four mudstone flakes and three mudstone flake pieces
- Loci 4 (L4) – located on a gentle slope (mid). Four artefacts located in an exposure around a dam (50m x 5m) and included three mudstone flakes and one mudstone core

Areas considered highly likely to contain subsurface archaeological material, were identified across the study area. These areas were identified on the basal slopes adjacent to Lochinvar Creek,

in the vicinity of tributary confluences and in association with the four loci of artefacts located in the northern portion of the study area. The PAD identified (37-6-2228) was delineated in consideration of the results of the MCH (2005) excavation results which found minimal artefacts in the low-lying high clay soils close to the confluence. Insite Heritage (2010) found that the occupation areas between the confluences of Lochinvar Creek were on the more elevated well drained land with artefact numbers diminishing as the soils become increasingly clayey. Insite noted that this was possibly because the creek lines have become more incised in the last 100 years therefore the areas adjacent to the existing creek lines were too low lying for occupation areas. A recommendation was made to undertake archaeological test excavation of the PAD prior to impacts.

Umwelt. 2016. Outcomes of Completed Salvage Works for a Water and Sewer main at Lochinvar inaccordance with AHIP C0001860.

Umwelt (2016) undertook salvage works for a water and sewer main at Lochinvar in accordance with AHIP C0001860 for Aboriginal objects contained within the boundaries of a proposed new water main, duplication of a sewer main and construction of anew regional waste water pumping station in Lochinvar. The salvage allowed for community collection of 10 AHIMS sites and excavation specified areas of archaeological sensitivity. The purpose of these works was to obtain a representative artefact assemblage from which further information could be derived.

Of the 10 sites subject to community collection, only one site was located and 29 artefacts collected from that site. Artefacts collected were comparable to site both locally and regionally and consisted of flakes, broken flakes, few cores and few retouched artefacts, all manufactured from silcrete and mudstone.

The area of archaeological sensitivity was approximately 350 metres in length and associated with the main channel of Lochinvar Creek. The area of archaeological sensitivity for the sewer main was approximately 1100 metres in length comprising 200-metres associated with the main channel of Lochinvar Creek, 550-metres associated with a tributary channel of Lochinvar Creek and 275-metres within the Cantwell Road Reserve.

Test pits within the 200-metre section bordering the main channel of Lochinvar Creek were spaced at 20-metre intervals either side of the creek but not within the current channel, former channel or any area of noted disturbance. Test pits within the 550-metre section bordering the tributary channel of Lochinvar Creek were spaced at 40-metre intervals on either side of the tributary but not within the current channel, former channel or any area of noted disturbance. Test pits were not excavated within the road reserve. The excavation within the trench alignment included an initial testing stage of 1 square metre test pits and expansion around the initial test pits was only triggered if 10 or more artefacts were uncovered.

A total of 15 test pits were excavated along the water main alignment, resulting in the recovery of 34 artefacts, with the highest number of artefacts in any one pit was 7. A total of 42 pits were excavated along the sewer main alignment, of which 19 were located within the area of the approved variation and 23 were located along the initial main alignment, resulting in the recovery of 49 and 371 artefacts respectively for a combined total of 420 artefacts. Of the 65 test pits, only two pits with more than 10 artefacts were identified. The two test pits included Sewer 1 with 13 artefacts and Sewer Variation 7 with 92 artefacts. No further artefacts were recovered from expanded excavations at Sewer 1 during the excavation expansion whilst an additional 269 artefacts were recovered from the expansion of Sewer Variation 7. Artefacts recovered during the test excavation were also comparable to site both locally and regionally and consisted of flakes (41%), broken flakes (33%) and flake pieces (20%), all manufactured from silcrete (67%),

mudstone (30%) and the remainder of other raw materials. Umwelt noted that the high percentage of broken flakes and flaked pieces potentially reflects the high level of disturbance noted during excavations (including evidence of former cultivation), which have resulted in increased rates of breakage and damage.

The test excavation also identified a highly disturbed landscape with the soil profiles in the majority of excavations had been substantially disturbed by historical land use, as evidenced by the existence rubbish such as metals, glass and ceramic material. The majority of the test pits were also shallow, and where deeper soil profiles were present, the upper portion of these comprised relatively flood deposit that did not contain artefacts.

In relation to test pit Sewer variation 7 and expansions test pits, 371 artefacts (82%) of the sub-surface assemblage were recovered from this location. The soil profile in this area was the same to those in other areas but was slightly deeper. This area was located close to the confluence of two tributaries of Lochinvar Creek, however other test pits (such as Sewer Variation 8) were located in a similar context but did not contain comparable numbers of artefacts. In reviewing the assemblage from the Test Pit Sewer Variation 7 area, it is noted that much of the assemblage comprised a fairly distinctive pink and white silcrete. While the number of artefacts is relatively high, there were no artefacts exhibiting usewear or retouch. The assemblage contained 8 silcrete cores, of which all except two were of the pink and white silcrete, and on that basis, Umwelt suggested that the high number of artefacts (compared to other portions of the AHIP area) was indicative of the reduction of a particular piece (or pieces) of the same silcrete at this location and that many of the artefacts were 'debitage' from the knapping process. In the absence of retouched artefacts and formal tool types, nothing further could be determined regarding the techniques or intent of artefact manufacture at this location.

In 2016, Umwelt completed an archaeological salvage program at Lochinvar consisting of a surface collection and excavation program as part of the conditions of AHIP #C0001860, which was obtained by Hunter Water Corporation on 19 May 2016. Surface collection was completed across eight AHIMS sites to be impacted by the works. The collected assemblage contained silcrete (n=26) and mudstone (n=3) stone artefacts, the majority of which were cores (n=12) and flaked pieces (n=9). Low artefact numbers were attributed to ongoing impacts of modern land usage and sheetwash erosion. Following surface collection, archaeological test excavation was completed over 14 days along the proposed pipeline alignment.

In total 57 x 1 m² test pits were excavated as part of the work, 15 along the water main line and 42 along the sewer main line. Along the water main line 34 artefacts were recovered with 420 recovered along the sewer main line. Excavation consisted of 1 metre square test pits with expansion triggered by the presence of 10+ artefacts, from which only two pits triggered expansion: Sewer 1 (13 artefacts) and Sewer Variation 7 (92 artefacts). Within the current Project area this consisted of the excavation of the seven 1 m² test pits resulting in the recovery of four Aboriginal objects from two test pits (TPs 11 and 13). Of the total 454 artefacts in the broader assemblage, 80% were found in Sewer Variation 7 (371 artefacts) at the maximum depth across the development area of 41 cm. Umwelt suggests that this anomaly was likely a knapping site with 8 silcrete cores present of similar colour (pink/white) to other artefacts. The two most prevalent raw materials were silcrete (67%) and mudstone (30%), with complete flakes and other flake debris making up 94% of the assemblage. Of note is the lack of cortical surfaces on the stone artefacts (96%) those artefacts where cortex was present, exhibited a pebbled surface likely sourced from the Hunter River (mudstone) and the Thornton area (silcrete). The results of this salvage assembly were assessed as being consistent with the broader Hunter Valley stone artefact assemblage.

Heritage Now. 2020. Aboriginal Cultural Heritage Assessment Report Lot 310, DP 1034974 Lochinvar, NSW.

Heritage Now (2020) completed a cultural heritage assessment of a study area located 10 kilometres to the west of Maitland, at 44 Christopher Road, Lochinvar. The study area was proposed for residential development. The topography of the study area consisted of low-lying relatively flat cleared pastoral land. The underlying geology consisted of the Lochinvar Formation of the Dalwood Group, dating to the Permian Era, containing sandstone, siltstone, shale, tuff, basalt and volcanics. The Hunter River was located 2.5 kilometres from the study area at its closest point. A third order stream crossed the southwestern corner and a second order stream crossed the eastern corner of the study area, both tributaries of Lochinvar Creek. A search of the AHIMS register identified one previously recorded site within the study area, being artefact scatter 37-6-3830 (consisting of two artefacts). A total of 66 sites were identified in a search centred on the study area, comprising of 39 artefact scatters, 23 isolated artefacts and four areas of Potential Archaeological Deposit (PAD). It was predicted that surface expressions of artefacts could be present within the study area, most likely associated with Lochinvar Creek and its associated wetlands and tributaries. Ground surface visibility during the survey average 15% and all areas of exposure were targeted for inspection. No sites or PADs were defined and the previously identified site in the project area was confirmed as an artefact scatter (37-6-3830). Heritage Now recommended that an AHIP for 37-6-3830 should be applied for, and that community collection of the artefacts was to be undertaken.

McCardle Cultural Heritage Pty Ltd (MCH). 2020. 26 Windermere Road, Lochinvar. Aboriginal cultural heritage assessment.

MCH (2020) undertook an assessment of 26 Windermere Road, Lochinvar. The project area is located within the Central Lowlands and consisted of a gentle east facing slope with one 1st drainage channel. The underlying geology of the project area is the Permian Lochinvar Formation of the Dalwood Group geological formation consisting of siltstone, sandstone, basic lava and tuff. The project area is situated on the Lochinvar Soil Landscape. One 1st order drainage channel is located in the north-eastern corner of the project area. This flows east where is meets Lochinvar Creek (3rd order) approximately 300 metres from the project area. The Hunter River is located approximately 1.4 kilometres north west of the project area. In terms of fresh water availability, the project area was not well resourced and would not have enabled sustained camping but may have supported more transitory activities such as hunting and gathering and travel to more reliable fresh water sources outside the project area.

In terms of land uses and impacted to the landscape and cultural materials that may be present, the project area has been cleared and primarily used for pastoral (grazing) and agricultural (ploughing), involving the wholesale clearance of native vegetation, the introduction of pasture grass, the construction of dams in the north eastern corner, housing and sheds in the south western corner, fencing, numerous tracks and associated infrastructure (water, electricity, telephone), all of which may have displaced cultural materials at those locations.

A search of the AHIMS register has shown that 44 known Aboriginal sites are currently recorded within a two-kilometre radius of the project area and include 38 artefact sites, four PADs and two artefact and PAD sites. Two previously identified PADs had been located in the project area. However, due to their distance from reliable water and resources, and with no explanation as to why these locations were identified as PADs, the PADs identifications are in question and were reassessed during this assessment.

The project area, was divided into 2 survey units (SU) that were based on landform elements. The 1st order drainage line (180m x 5m) located in the north east of the project area had been previously cleared, cultivated and grazed, the far north eastern end of the drainage channel is dammed. Visibility was low to moderate and exposures high (clearing, cultivation, erosion, dam). The remainder of the project area (slope) had also been previously cleared, ploughed and grazed. Additionally, a house, sheds, established garden and associated infrastructure and utilities were located in the south western corner. Vegetation included grass with very few tees and visibility was low end exposures moderate to high (clearing, cultivation, erosion, tracks). The overall effective coverage for project area illustrates that overall effective coverage being 28.52% with grass being the limiting factor.

The previously recorded PADs were located and reassessed. 37-6-2963 (PAD 1) and 37-6-2964 (PAD 2) were recorded as being located on a ridge in an undulating plain that had been previously cleared, grazed and established urban uses. The PADs are actually located on a gentle slope and been subjected to previous large-scale clearing, cultivation, grazing and erosion. Being located over 300 metres from Lochinvar Creek, the only water source close by, it is highly unlikely that the area would have been favoured for camping. The area may have been utilised for transitory activities on the way to fresh water sources such as hunting and gathering which manifests in the archaeological record as a background scatter of discarded artefacts, which, in this case, would have been displaced by past land uses. These are not PADs and AHIMS was updated. No sites or PADs were identified.

McCardle Cultural Heritage Pty Ltd (MCH). 2021a. 51, 134, 146 Station Lane, Lochinvar. Due diligence assessment.

MCH (2021a) undertook a due diligence assessment for 51, 134, 146 Station Lane, Lochinvar. Consisting of the Lochinvar geological formation of siltstone, sandstone, basic lava and tuff, two 1st order creeks are located in the eastern side of the project area and converge to form a 2nd order roughly in the middle along the eastern border that converges with a 3rd order unnamed creek in the north eastern section of the project area. Lochinvar Creek (3rd order) is located in and out of the project area along the western border of the project area. Additional 1st and 2nd order creeks are located outside the project area to the east and west and the Hunter River (6th order) is located 1.5 kilometres to the north of the project area. Being located in between two semi reliable water sources (along the east and western borders) and the Hunter River located 1.5 kilometres to the north, the project area was likely utilised for small scale hunting parties as more reliable water would have been required for larger groups of people. European settlers extensively cleared the original native vegetation in the 1800's and since then the investigation area has been subject to continued clearing and grazing. There are numerous tracks and access roads to residential houses and sheds, six dams and fencing, all of which would have disturbed any cultural materials that may have been present at those locations.

An AHIMS search identified 75 Aboriginal sites are recorded within three kilometres of the project area and included 69 artefact sites, four PADs and two Artefact with PAD sites. Three previously identified sites were located in the project area and included two artefact scatters (one with an area of potential archaeological sensitivity) and one isolated artefact.

When 37-6-2223 (low density artefact scatter) was first recorded in 2009, this site consisted of 11 artefacts at six locations along the creek. Artefacts included flakes and cores manufactured from

tuff, mudstone and quartzite. In addition, the banks of the creek appeared to have retain some original topsoil and had been assessed as retaining subsurface archaeological potential.

37-6-2225, a low-density artefact scatter, also recorded in 2009, was located on a slope and included three artefacts located (mudstone flake piece, tuff flake, chert flake piece) located in an exposure and trampled ground around adjacent to a small horse enclosure and the third artefact located approximately 50m west along an exposed foot track.

The isolated stone artefact, 37-6-2217) (recorded in 2009) was located in a paddock about 80m to the east of 37-6-2225 and no further artefacts were located. Located on moderately sloping ground and are not expected to have been used intensively in the past.

The project area was divided into three survey units. SU 1, consisting of the crest through the centre of the project area and the partial crest in the south, had been previously cleared and grazed. A residential house is located at the southern and northern ends of the large crest along with the associated infrastructure and utilities. Visibility was excellent due to drought conditioned reducing vegetation cover (pasture grasses with scattering of trees) at 80% and exposures were moderate (sheet wash, erosion) at 60%. The slopes throughout the project area (SU 2), consisted of pasture grass with few trees. This area had been previously cleared and utilised for grazing. Including four dams, tracks, access roads and fencing, visibility was good at 80% due to drought conditions and associated reduced grass cover. Exposures were moderate (70%) due to erosion, tracks and dams. SU3 unit included all drainage lines and the two 3rd order creeks (one in the east and Lochinvar Creek in the west). Previously cleared, these areas consisted of pasture grass and trees along Lochinvar Creek. Erosion, including sheet wash and creek bank erosion was present and visibility was good at 70% and exposures high at 80%.

This assessment relocated the area of sensitivity but no artefacts were identified at 37-6-2223. Vegetation included pasture grasses and scatterings of trees along the creek banks. Visibility was excellent due to drought conditions (80%). The site had been subject to irregular local flooding, erosion and grazing since 2009 (11 years), thus it is not surprising the artefacts are no longer present. Whilst the site itself is of low scientific significance, the significance of the area of potential archaeological significance remains unknown. 37-6-2225 consisted of pasture grass with visibility being excellent due to drought conditions (60%). The area contained a small shed currently housing calves, fences are present and a sewer line. The previously recorded artefacts were not relocated and this is not surprising as 11 years of sheet wash and grazing have occurred at this site. Due to the erosion, there is very little of the A horizon remaining and as such the presence of subsurface cultural materials is low to zero. This site is of low scientific significance. The isolated stone artefact, 37-6-2217, was not relocated and this is not surprising as 11 years of sheet wash and grazing have occurred at this site. Due to the erosion, there is very little of the A horizon remaining and as such the presence of subsurface cultural materials is low to zero. This site is of low scientific significance.

An additional are of potential archaeological sensitivity was identified. This area included the eastern 3rd order creek on the eastern side. The western side of the creek consisted of slopes and unsuitable for camping. This PAD commenced north of the confluence with a 2nd order creek and continued north to the border of the project area and extends east to the border of the project area. Being a very low slope (almost flat) elevated landform overlooking the 3rd order creek, this area would have supported small numbers of people for short periods of time during times of heavy rain and as some topsoils remain, there is a potential for subsurface cultural materials. The archaeological significance of this area remains unknown.

McCardle Cultural Heritage Pty Ltd (MCH). 2021b. 146 Station Lane, Lochinvar. Due diligence assessment.

MCH (2012b) undertook an archaeological due diligence assessment at 146 Station Lane, Lochinvar. Consisting of the Lochinvar geological formation of siltstone, sandstone, basic lava and tuff, the project area consisted of slopes and a small crest was located along the southern border of the project area. The project area was dissected north-south by two 2nd order creeks located roughly through the centre of the project area that flow north into a 3rd order Lochinvar Creek outside the project area and the Hunter River (6th order) is located 1.5 kilometres to the north.

A search of the AHIMS register indicated there were 75 known Aboriginal sites recorded within three kilometres of the project area and included 69 artefact sites, four PADs and two artefacts with PAD sites. Four previously identified sites were located in the project area and include three isolated finds and one low density artefact scatter, all of which had been subject to AHIMS Permits 2421 and 3035. Unfortunately, the Permits were not available from AHIMS and AHIMS had not been updated to reflect the impact the Permits had on the sites.

The project area, consisting of three landforms, was divided into three survey units (SU) that were based on landform elements (crest, slopes, creeks). Consisting of the crest along the southern border that extended north, this area had been previously cleared, ploughed and grazed. Visibility was low due to grass cover at 10% and exposures were moderate (ploughing, grazing, sheet wash, erosion) at 60%. Consisting of the slopes throughout the project area, this landform consisted of pasture grass with new growth open bushland through the centre and western portion. This area had been previously cleared, ploughed and utilised for grazing. Including, tracks, access roads, power easement and fencing, visibility was moderate at 40% due to grass and vegetation hindering visibility and exposures were moderate (70%) due to erosion, tracks and power easements. The third survey unit included the two creeks that flow through the centre of the project up to 50 metres both sides. Previously cleared, both creeks included large dams at their centres and significant creek bank erosion due to flooding events. Visibility was good at 70% and exposures high at 90%.

The previously recorded sites were not relocated and is likely due to the significant flooding event in 2007 and 2016. Additionally, as the sites had been subject to a Permit (AHIMS #2421 and 3035), but the Permits are unavailable and AHIMS has not been updated, it was unknown if this site was destroyed under the previous permits. AHIMS was updated to this site being destroyed due to natural processes. Two PADs were identified and include the two creeks in the project area including Lochinvar Creek (Station Street PAD 1) and the un-named 3rd order creek (Station Street PAD 2) in the west of the project area. A number of sites were previously identified within 50 meters of Lochinvar Creek and being low slopes (almost flat) elevated landform overlooking the creeks, these locations would have supported small numbers of people for short periods of time during times of heavy rain and as some topsoils remain, there is a potential for subsurface cultural materials to remain. Both PADs extend up to 50 metres both sides of the creeks.

McCardle Cultural Heritage Pty Ltd (MCH). 2022. 51, 134, 146 Station Lane, Lochinvar. Aboriginal Cultural Heritage Assessment – Archaeological test excavation

MCH (2022) undertook a test excavation for the project located at 51, 134, 146 Station Lane, Lochinvar (previously subject to a due diligence assessment). The test excavation methods consisted of a 15m x 15m systematic grid system across the PADs. Test pits were 50cm x 50cm and were excavated to the B horizon. A total of 21 test pits were completed in PAD1, 27 on the western side of the PAD associated with 37-6-2223 and 56 on the eastern side of this PAD.

Disturbances across PAD1 were consistent across the site and included wholesale clearing, evidence of previous agricultural activity, mixed soils, various densities of small, medium and large rocks throughout and some rubbish. The B horizon was mixed with the lower sections of the A horizon, with no sharp change to the B horizon. A moderate amount of insect bioturbation was noted throughout the deposit and was consistent across the site and included curl grubs, worms, spiders and beetles. No sites were identified in this PAD.

The disturbances in the western side of the PAD associated with 37-6-2223 included wholesale clearing with evidence of previous agricultural activity. Natural surface drainage and topsoil erosion from sheet wash had occurred across the site. The B horizon was mixed with the lower sections of the A horizon, with no sharp change to the B horizon. A moderate amount of insect bioturbation was noted throughout the deposit and was consistent across the site and included curl grubs, worms, spiders and beetles. One isolated flake was identified on the western side of the creek.

The eastern side of the creek was significantly disturbed and included wholesale clearing with evidence of previous agricultural activity with the B horizon being the surface with little to no A horizon remaining across the PAD area. Natural surface drainage and topsoil erosion from sheet wash had occurred across the site. A moderate amount of insect bioturbation was noted was consistent across the site and included worms and ants. One isolated flake piece was identified on the eastern side of the creek.

The two lithic items include a silcrete flake and a mudstone flake piece, both of which represent debris from stone knapping representing non-specific flaking associated with hunting and gathering or travel.

The results of the test excavation identified a highly disturbed landscape and whilst it is possible that the site may represent at least two episodes of occupation over a period of time, (one isolated artefact on either side of the creek) it is not possible to clarify this. The location of PAD along a creek line and associated resources, renders this location favourable for opportunistic hunting and gathering opportunities following heavy rain.

Although two isolated artefacts were recovered during the test excavation, the project area was highly disturbed through previous clearing, ploughing, grazing, sheet wash and flooding, resulting in no site integrity remaining or potential for in situ deposits, the artefacts were representative of opportunistic hunting and gathering activities, there was limited to no potential for additional artefacts to be present in the project area. A project based AHIP that includes AHIMS site 37-6-2223 was recommended prior to works.

AECOM. 2022. Aboriginal archaeological due diligence assessment for proposed residential development of Lots 2,3,4,5,6,9 DP65706 and Lots 12,13 DP1219648, Lochinvar, NSW.

AECOM (2022) undertook an archaeological due diligence of an area adjoining the eastern side of the current project area. AECOM identified that the sites and PAD were recorded by Insite Heritage in 2010 as part of Aboriginal heritage assessment for a proposed aged care facility. Insite Heritage recorded a total of 15 stone artefacts across four separate "loci"(i.e., clusters) designated as L1, L2, L3 and L4. Three spatially discrete PADs, one encompassing L1 through L4, were also identified associated with slopes and flats adjacent to Lochinvar Creek.

AECOM also identified that part of the project area was subject to AHIP permit #C0001860. The AHIP was issued to Hunter Water Corporation in 2016 for a period of ten years to allow impacts to Aboriginal site LCC1 and PAD (37-6-2228) from the construction of a sewer pipeline.

Conditions 7-10 of the AHIP allowed for salvage excavations to be completed along the pipeline prior to impacts. The conditioned excavation works were carried out by Umwelt. It is noted that AHIP is valid until May 2026 and that all works within the boundary of the AHIP must be completed in accordance with the AHIP conditions.

The survey confirmed that one AHIMS site was present within the project area: LCC1 and PAD (37-6-2228) and consisted of surface artefacts at four discrete loci, two of which were located within the project area, as well as three PADs, two of which were within the project area (in whole or part). The survey also identified five artefacts, all of which were associated with previous recorded AHIMS site LCC1 and PAD (37-6-2228) Loci 4. Areas of subsurface archaeological sensitivity were identified within the project area were associated with the tributaries of Lochinvar Creek and these areas have been previously mapped as PADs associated with AHIMS site LCC1 and PAD (37-6-2228).

AECOM recommended that archaeological survey and a program of subsurface testing focused on the two areas of PAD associated with 37-6-2228 should be undertaken in accordance with Heritage NSW's Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010a) and Heritage NSW's Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010c). A Section 90 AHIP would be required to permit impacts to Aboriginal site LCC1 and PAD (#37-6-2228) and any additional sites identified during further archaeological investigations. Additionally, that any new AHIP application must exclude the boundary of AHIP #C0001860 to avoid overlapping AHIP boundaries.

McCardle Cultural Heritage Pty Ltd (MCH). 2023. 34 Wyndella Road, Lochinvar. Archaeological due diligence assessment.

McCardle Cultural Heritage Pty Ltd (MCH) completed an Archaeological Due Diligence Assessment for the proposed development of 34 Wyndella Road, Lochinvar. Consisting of the Permian Dalwood Group of the Lochinvar geological formation of siltstone, sandstone, basic lava and tuff, the project area consists of the Lochinvar Soil Landscape that consist of an upper soil Horizon A and underlying B. In terms of fresh water sources, the project area was located over 300 metres from an un-named 3rd order creek and the closest reliable fresh water source Lochinvar Creek (4th order) located over one kilometre to the west of the project area. Three 1st order drainage depressions are located in the project area (one along the western boundary, one through the centre and another in between these two). The project area had been completely cleared and primarily used for pastoral purposes (grazing), involving at least one ploughing event for improved pasture grass, the construction of two dams, an access road along the southern border that leads to the residential house and associated utilities (water, electricity, telephone). These landuses were expected to have had moderate to high impacts upon the archaeological record at those locations.

A search of the AHIMS register identified 51 known Aboriginal sites recorded within two kilometres of the project area and include 39 artefact sites, 6 PADs and 2 artefacts with PAD sites. Additionally, 4 previously recorded PADs have been re-assessed as not being sites. There were no registered sites or Aboriginal Places within the project area. Considering the AHIMS results, local and regional archaeological investigations as well as the environmental context, given that fresh water was necessary for survival and the project area was located over one kilometre from a 4th order creek (Lochinvar Creek) and over 300 metres form a 3rd order creek, the absence reliable of fresh water indicated the project area and immediate surrounds may have been used no more than hunting and gathering opportunities rather that large-scale long-term camping.

The project area, consisting of simple slopes dissected by drainage lines, was surveyed as one survey and clarified that the project area had been previously cleared, there was evidence of ploughing (eroded ridges and furrows). Additionally, the residential house and the associated infrastructure (established gardens, sewer) and utilities (electricity, telephone) were located in the eastern part of the project area. A built-up access road was along the southern boundary to the hose. Two dams were located in the project area and cattle were present. Vegetation consisted predominantly of pasture grass with the only trees associated with the house. Erosion was significant with exposed bedrock in some locations and hoof prints from grazing cattle throughout. No sites or PADs were identified in the project area and as such there are no impacts to the archaeological record MCH recommended that an Unexpected Finds Procedure be implemented during all works.

McCardle Cultural Heritage Pty Ltd (MCH). 2024a & b. Lochinvar residential subdivision. Aboriginal Cultural Heritage Assessment – Archaeological test excavation

MCH (2024a and b) undertook an archaeological test excavation following on from the AECOM 2022 assessment (see above). The project area was characterised by the Permian Dalwood Group, specifically the Lochinvar geological formation consisting of siltstone, sandstone, basic lava, and tuff. The presence of tuff suggests the possible presence of stone materials suitable for manufacturing stone artifacts throughout the project area. The project area included a slope, two drainage lines, and a creek in the southern part.

The northern portion of the project area consisted of the Rothbury soil landscape, while the rest was the Lochinvar soil landscape. Both landscapes consist of an upper soil Horizon A and underlying B. Sites tend to occur on or within the interface of horizons A and B. The project area had two 2nd order creeks, one in the north and one in the south, flowing west and forming a 3rd order along the far western boundary. The Hunter River, a 6th order river, was approximately 1.8 kilometres west of the project area.

The project area had been cleared and primarily used for pastoral purposes, including grazing and ploughing for improved pasture grasses. This involved the wholesale clearance of native vegetation, introduction of pasture grass, construction of dams, fencing, tracks, and structures. These land uses range from low to high impact on the landscape and deposits. Significant natural impacts, such as extreme flooding, have led to erosion, material displacement, and burial.

A search of the AHIMS register identified 53 known Aboriginal sites within five kilometres of the project area and included 43 artefact sites, five PADs, two artefact and PAD sites and two that were not sites. One site was identified in the project area (LCC1 – AHIMS 37-6-2228), which consisted of the following four loci:

- Loci 1 (L1) is located on a gentle slope. Isolated artefact (silcrete flake) in an exposure of 30m x 30m
- Loci 2 (L2) was located on a gentle slope. Three artefacts (mudstone and silcrete flakes and a flake piece) were identified along the drainage trench that was cut down slope exposing an area of 50m x 2m to a depth of 50cm.
- Loci 3 (L3) is located on a gentle slope above the confluence of the minor watercourses. Seven artefacts located in an area of 40m x 15m consisting of four mudstone flakes and three mudstone flake pieces
- Loci 4 (L4) is located on a gentle slope. Four artefacts located in an exposure around a dam (50m x 5m) and included three mudstone flakes and one mudstone core

The site in question was accompanied by a PAD located on the lower slopes adjacent to Lochinvar Creek. It was situated near the confluence of various tributaries and is associated with four areas containing artefacts. Given the environmental, cultural, and archaeological context, it was possible that additional artefacts may be discovered, or that previous artefacts had been disturbed as a result of recent major flooding events, which may have exposed, covered, or washed them away. It was likely that low-to-medium-density artefact scatterings were present in close proximity to water sources. The intermittent nature of the drainage lines and creeks suggested that they were used opportunistically for hunting and gathering, rather than for extensive camping,

The project area was divided into two survey units, namely slopes and creeks. Survey unit 1, which encompassed the majority of the project area, consisted of a south-facing slope surrounded by fencing. The slope had been previously cleared and ploughed, resulting in evident erosion in the form of ridges and furrows. Two dams were located in the mid-section, and an additional dam was found in the southern section. Currently, the area is used for cattle grazing, as indicated by deep hoof prints throughout. Vegetation primarily consists of pasture grass, with limited tree coverage, leading to reduced visibility of the ground surface. Exposures in this survey unit include tracks, erosion, and the dams. The road reserves of the New England Highway and Wyndella Road were also part of this survey unit.

Survey unit 2 focused on the 2nd order creek located in the southern portion of the project area, along with a 10-meter buffer on both sides. The creek had been previously cleared, resulting in a grassy vegetation cover. Evidence of previous ploughing was observed through eroded ridges and furrows, and grazing activity was evident from deep hoof prints. Visibility and exposures in this survey unit were low. The survey successfully located and re-assessed 37-6-2228 (L1, L4, and associated PAD) within the project area.

- Loci 1 (L1) – was originally located on a gentle slope. Isolated artefact (silcrete flake) in an exposure of 30m x 30m. The site was not relocated during the assessment. This is not unusual given the length of time since first recorded and impacts to the landscape (grazing, erosion). Additionally, the visibility at the site was 3%.
- Loci 4 (L4) – was originally located on a gentle slope (mid). Four artefacts located in an exposure around a dam (50m x 5m) and included three mudstone flakes and one mudstone core. This site was located during the survey. Located on the dam wall, only one mudstone flake was found on the western side of the dam on top of the wall. This is not unusual given the length of time since first being recorded and the erosion down the dam walls. Visibility on the dam wall was excellent (70%) and exposure 100%

The PAD (37-6-2228) was delineated based on previous excavation findings in the Lochinvar area. Artefacts were found to be minimal in the low-lying high-clay soils near water sources, while occupation areas were located on elevated, well-drained land. It was determined that the low-lying areas adjacent to the existing creek lines were unsuitable for occupation due to increased incision in the last century. Therefore, the previously identified PAD remained unchanged.

Loci 1 and Loci 4 of AHIS site 37-6-2228 were found to be highly disturbed with no in situ subsurface potential. They were deemed to have low scientific significance, and their cultural significance was not assessed. The nature of the identified PAD remained unknown and as such, an archaeological test excavation was recommended.

A total of 20 pits were excavated (and no artefacts were present). The test excavation identified evidence of past land uses with clay of the B horizon mixed throughout the A horizon with eroded plough ridges and furrows on both the surface and subsurface. There was no evidence of stratigraphy and the evidence indicated the area has been subject to clearing, ploughing and

grazing, and as such is identified as a disturbed deposit with little likelihood of in situ deposits. As the nature of the PAD was identified, test excavations did not poroceed northward.

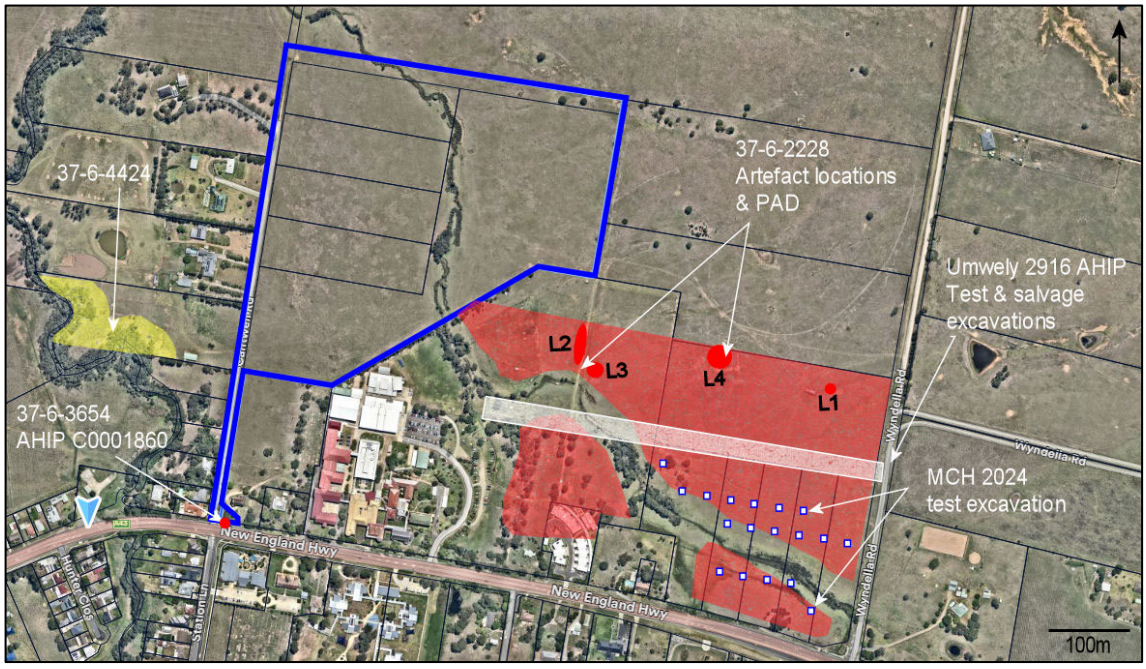
The evidence gathered across the project area suggested that it was likely used for more transitory activities such as hunting and gathering, rather than long-term camping. As a result, artefacts associated with these activities are scattered throughout the landscape, making it difficult to predict their specific locations. Additionally, the land uses of clearing, ploughing, grazing, and dam construction have been known to redistribute or destroy archaeological sites, further complicating the prediction of hunting and gathering activity locations.

Impacts to the known archaeological record (loci 1 and Loci 4 of AHINMS site 37-6-2228) are low and MCH recommended that if Loci 1 and Loci 4 of AHIMS site 37-6-2228 will be harmed by any future development an AHIP will be required prior to works at those locations; that any new AHIP application must exclude the boundary of AHIP #C0001860 to avoid overlapping AHIP boundaries. Lochinvar Developments Pty Ltd should seek written approval from AHIP holder Hunter Water Corporation to complete works within the boundary of AHIP #C0001860 which expires on 19th May 2026, and that an Aboriginal Site Impact Recording Form (ASIRF) will be completed following an AHIP.

5.5 SITES IN CLOSE PROXIMITY TO THE PROJECT AREA

As discussed above, a number of assessments have been undertaken throughout the Lochinvar area. Of particular relevance are the Assessments undertaken in the adjoining land (Insite Heritage 2020, MCH 2005a, Umwelt 2016, AECOM 2022, MCH 2024a, b). Figure 5.3 illustrates the extent of 37-6-2228 PAD and the Loci of artefacts originally identified by Insite Heritage (2020), test excavations and salvage undertaken by Umwelt (2016, 2018) and test excavations undertaken by MCH (2024b).

Figure 5.3 Location of Sites, test excavation and salvage locations close to the project area



The findings of these investigations indicate that the land to the east of the project area has undergone various forms of human activity, such as land clearing, ploughing, and grazing. As a

result, the deposits in this area are shallow and have been disturbed. Although artefacts have been discovered, their precise location of origin is unclear due to the disturbance, or redistribution of artefacts due to these land uses. However, an exception to this pattern appears to an area immediately north of where two water courses converge, specifically identified as Test Pit 7 by Umwelt. Within a distance of 50 meters from the 3rd order creek, on a flat landform overlooking the creek, the highest concentration of artefacts was found.

Based on the analysis of the environmental context, cultural context and archaeological evidence obtained to date in the vicinity of the project area, it is highly likely that the previously identified PAD, although reduced in the eastern parcels of land, that evidence of past Aboriginal land uses may extend along the 3rd order creek within the project area.

37-6-3654 (Cantwell Rd 1) was an isolated artefact (broken backed artefact manufactured from mudstone). The artefact was located within a gravel exposure on the grassed verge of the New England Highway adjacent to the intersection with Cantwell Rd. The site was highly disturbed as a result of the construction of the New England Highway, maintenance of the adjacent powerline and ongoing mowing of the road verge. This site was subject to a s90 CTD (AHIP # C0001860).

37-6-4424 (Cantwell Rd AFT – 01) is an artefact scatter located within 50 metres of Lochinvar Creek. Located on exposed clay (B horizon), the site was located on a terrace. The majority of the artefacts were mudstone (7), followed by silcrete and one fine grained siliceous material. A total of nine artefact were visible and consisted of flakes or broken flakes and two large mudstone cores. Additionally, two possible black glass artefacts were identified at this location. Based on the nature of the evidence and the fact that all artefacts were located within the creek terrace, it was concluded that the creek terrace was a PAD. The PAD measured 120m x 120m and although confined to the project are boundaries at the time oof the assessment, this PAD likely extends further.

5.6 LOCAL & REGIONAL CHARACTER OF ABORIGINAL LAND USE & ITS MATERIAL TRACES

The following is a summary of the previous investigations detailed in Section 5.3 and 5.4. It must be remembered, however, that there are various factors which will have skewed the results discussed in Section 5.3. Therefore, the summary provides an indication of what may be expected in terms of site location and distribution.

- the majority of high-density sites are located on elevated landforms within 50 metres of a reliable fresh water source with a drop of site number and densities with a decrease in stream order;
- the likelihood of finding sites of any size increases with proximity to fresh water sources and the likelihood of finding large artefact scatters also increases markedly with proximity to reliable high order water sources;
- the main site types are artefact scatters and isolated finds;
- mudstone, silcrete and tuff are by far the most common raw material types represented at sites in the region. Quartz and chert are the next most frequently in artefact assemblages followed by volcanic materials, porphyry and petrified wood. Siltstone, rhyolite and porcellanite are relatively rare;
- flakes, broken flakes and flaked pieces are the most common artefact types recorded;
- the stone artefacts are usually relatively dated to within the last 5,000 years;

- grinding grooves may be located along or near water sources;
- the likelihood of finding scarred trees is dependent on the level of clearing in an area;
- the vast majority of artefactual material in the region was observed on exposures with good to excellent ground surface visibility; and
- the majority of sites will be subject to disturbances including human and natural.

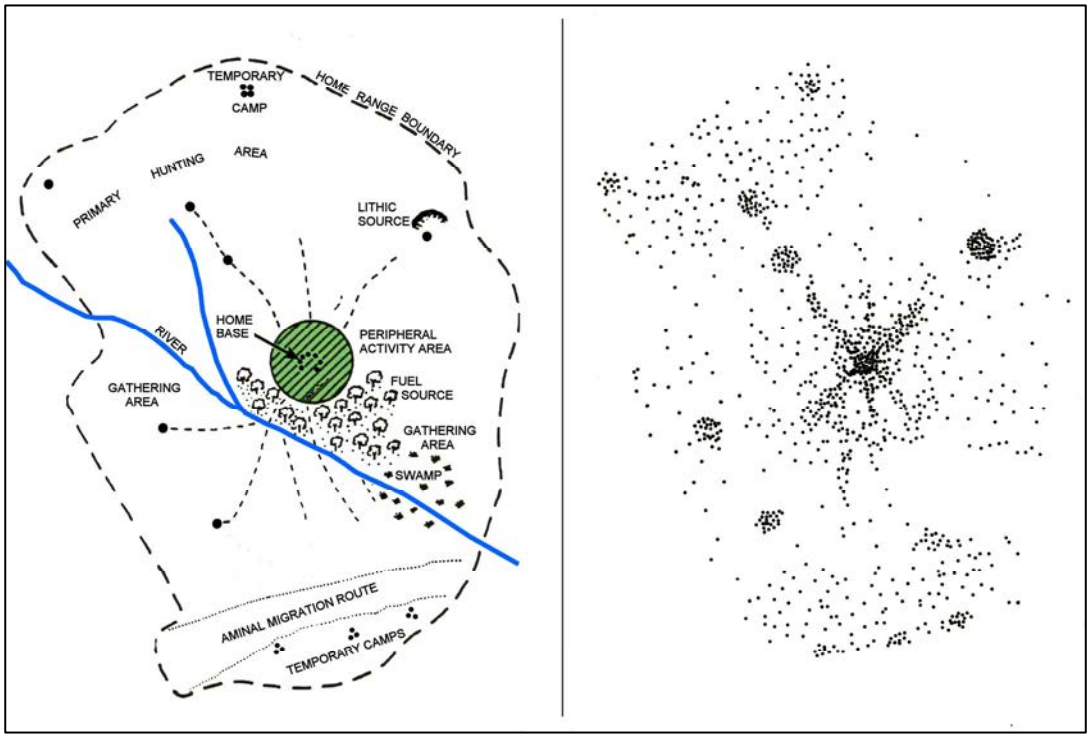
These findings are consistent with models developed for the local area.

5.7 MODELS OF PAST ABORIGINAL LAND USE

The objective of this assessment is to define the nature and extent of occupation in the area by analysing landform units and sites. The focus will be on identifying variations between sites, assemblages, landforms, and resources, treating assemblages as a continuous scatter of cultural material. By examining stone artifact distributions, we aim to pinpoint variations in land use, activities, and occupation patterns across the landscape.

A general model of forager settlement patterning in the archaeological record has been established by Foley (1981). This model outlines forager settlement patterning, defining a residential "home base" site and peripheral "activity locations". The home base serves as the primary hub for various activities, while activity locations are situated away from the home base and cater to specific tasks like tool manufacturing. This pattern is illustrated in Figure 5.4.

Figure 5.4 Foley's model (L) and its manifestation in the archaeological record (R), (Foley 1981).



Home base sites are typically located in areas with reliable access to essential resources like water and raw materials, influencing the rate of return and complexity of evidence. Home base sites generally show a greater diversity of artefacts and raw material types (which represent a greater array of activities performed at the site and immediate area). Activity locations, on the other hand,

occur within the foraging radius of a home base camp (approximately 10 km); (Renfrew and Bahn 1991).

Based on the premise that the activity locations outside the home base, served as a focus of a specific activity, they will show a low diversity in artefacts and are not likely to contain features reflecting a base camp (such as hearths). However, it is also possible that the location of certain activities cannot be predicted or identified, adding to the increased dispersal of cultural material across the landscape. For example, if people were opting to carry stone tools during hunting and gathering journeys throughout the area (rather than manufacturing tools at task locations), an increased number of used tools should be recovered from low-density and dispersed assemblages across the landscape.

5.7.1 MODEL OF OCCUPATION FOR THE HUNTER VALLEY

Work throughout NSW has aimed to understand the nature of Aboriginal occupation and determine the nature of land use. This theme often aims to identify and explain archaeological patterning in site type, content and distribution. General theories have been developed outlining the relationship between land use patterns and the resulting archaeological evidence. A number of models developed for the region have been reviewed (McBryde 1976; Koettig 1994; Dean-Jones and Mitchell 1993; Rich 1995; Kuskie and Kamminga 2000; McDonald and White 2010). All models state that the primary requirements for repeated, concentrated or permanent occupation is access to reliable fresh water. Brief and possible repeated occupation may be represented in areas that have unreliable access to ephemeral water sources, however, these areas will not contain high archaeological evidence or potential (Goodwin 1999).

Kuskie and Kamminga (2000) developed a model of occupation strategies based on ethnographic research. The model makes a general set of predictions for the region that is consistent with other studies (e.g., Nelson 1991) and distinguishes between short-term or extended long-term occupation and makes some predictions about the likely location of different foraging and settlement activities. Combining this information with a general review of assemblage contents from a sample of excavated sites within the region, a baseline of settlement activities may be determined (Barton 2001).

The model offers various archaeological expectations that can be empirically tested. For example, the presence of features requiring a considerable labour investment such as stone-lined ovens or heat-treatment pits are likely to occur at places where occupation occurred for extended periods of time. The presence of grindstones is also a reliable indicator of low mobility and extended occupation as seed grinding demands significant time and effort. Ethnographic evidence shows that seed grinding typically requires a full day to yield sufficient energy returns (Cane 1989; Edwards and O'Connell 1995).

In contexts of high group mobility and shifting campsites, artefact assemblages are not expected to contain elements such as grindstones, heat-treatment pits, ovens and the diversity of implements frequently discarded at places of extended occupation. Rather, activities may be unpredictably located, leading to low-density background scattering of discarded artefacts across the landscape. If individuals carry and maintain stone tools for multiple tasks rather than making new ones, the proportion of used tools to unworn flakes in these assemblages is likely to be high.

Table 5.1, adapted from Kuskie and Kamminga (2000), utilises the analysis of lithic assemblages to identify specific activity areas and may be utilised for this assessment. Excavated materials were used for this analysis due to their higher level of preservation and reduced disturbances, removal, and breakages.

Table 5.4 Site descriptions (Kuskie & Kamminga 2000).

Occupation pattern	Activity location	Proximity to water	Proximity to food	Archaeological expectations
Transitory movement	all landscape zones	not important	not important	• assemblages of low density & diversity • evidence of tool maintenance & repair • evidence for stone knapping
Hunting &/or gathering without camping	all landscape zones	not important	near food resources	• assemblages of low density & diversity • evidence of tool maintenance & repair • evidence for stone knapping • high frequency of used tools
Camping by small groups	associated with permanent & temporary water	near (within 100m)	near food resources	• assemblages of moderate density & diversity • evidence of tool maintenance & repair • evidence for stone knapping & hearths
Nuclear family base camp	level or gently undulating ground	near reliable source (within 50m)	near food resources	• assemblages of high density &diversity • evidence of tool maintenance & repair & casual knapping • evidence for stone knapping • heat treatment pits, stone lined ovens • grindstones
Community base camp	level or gently undulating ground	near reliable source (within 50m)	near food resources	• assemblages of high density & diversity • evidence of tool maintenance & repair & casual knapping • evidence for stone knapping • heat treatment pits, stone lined ovens • grindstones & ochre • large area >100sqm with isolated camp sites

5.8 PREDICTIVE MODEL FOR THE PROJECT AREA

Due to issues surrounding ground surface visibility and the fact that the distribution of surface archaeological material does not necessarily reflect that of sub-surface deposits, it is essential to establish a predictive model.

Previous archaeological studies undertaken throughout the region, the AHIMS register and the environmental context provide a good indication of site types and site patterning in the area. This research has shown that occupation sites (artefact scatters and isolated finds) are the most frequently recorded site type and are commonly located along or adjacent to watercourses, and on relatively flat to gently sloping topography in close proximity to reliable fresh water. Sites with higher artefact densities are similarly concentrated within fifty metres of higher order watercourses with site numbers and site densities decreasing with a reduction of stream order and distance form a water source. Within the local area, previous assessments within a similar environmental context indicate that, within a well-watered context, there is high potential for archaeological material to be present on level, typically well-elevated landforms that provide ready access to low-lying waterlogged areas and the associated resources.

Based on the AHIMS results, local and regional archaeological investigations as well as the environmental context, given that fresh water was necessary for survival and a 3rd order creek flowing through the project area following heavy rain, the project area have been used for no more than hunting and gathering opportunities rather that large-scale long-term camping.

Evidence of such past Aboriginal land uses manifest in the archaeological record as low-density artefact scatters and isolated finds, both of which have been located in the adjoining property, especially along the 3rd order creek.

Land uses have impacted the investigation area, most noticeably from complete clearing, the introduction of pasture grass, ploughing for pasture grasses, and construction of the road. If evidence of past Aboriginal land uses were present in the project area, it may have been disturbed and re-distributed across the project area with the potential for higher density artefact scatters, remaining relatively undisturbed, in close proximity to the 3rd order creek.

5.9 ARCHAEOLOGICAL POTENTIAL IN THE PROJECT AREA

Based on archaeological sites registered in the region and the results of past archaeological studies, two site types are likely to occur throughout the project area:

- **Artefact scatters**

Also described as open campsites, artefact scatters have been defined at two or more stone artefacts within 50 metres of each other and will include archaeological remains such as stone artefacts and may be found in association with hunting and gathering activities (manifests in the archaeological record as lo-density discarded artefacts across the landscape) or camping where other evidence may be present such as shell, hearths, stone lined fire places and/or heat treatment pits. These sites are usually identified as surface scatters of artefacts in areas where ground surface visibility is increased due to lack of vegetation and land uses. Erosion, agricultural activities (such as ploughing, grazing), construction and mining activities and access ways can also expose surface campsites. Artefact scatters may represent evidence of;

- Large camp sites, where everyday activities such as habitation, maintenance of stone or wooden tools, manufacturing of such tools, management of raw materials, preparation and consumption of food and storage of tools has occurred;
- Medium/small camp sites, where activities such as minimal tool manufacturing occurred;
- Hunting and/or gathering events;
- Other events spatially separated from a camp site, or
- Transitory movement through the landscape.

Artefact scatters are a common site type in the locality and the broader region. There is potential for artefact scatters to occur within the project area in areas close to the 3rd order creek. There is also the potential for such sites to be impacted on through past land uses.

- **Isolated finds**

Isolated artefacts are usually identified in areas where ground surface visibility is increased due to lack of vegetation and land uses. Erosion, agricultural activities (such as ploughing), construction and mining activities and access ways can also expose surface artefacts. Isolated finds may represent evidence of;

- Hunting and/or gathering events; or
- Transitory movement through the landscape.

Isolated finds are a common site type in the locality and the broader region. There is potential for isolated artefacts to occur across the project area and across all landforms. There is also the potential for such sites to be impacted on through land uses.

6 RESULTS

6.1 METHODOLOGY

The survey area was surveyed on foot by the archaeologist and registered Aboriginal stakeholder representatives in accordance with the proposed methodology provided to the stakeholders for review. The survey included transects at approximately 10 metres apart walked in an north/south direction across the project area and focused on areas of high ground surface visibility and exposures (erosional features, creek banks, tracks, cleared areas).

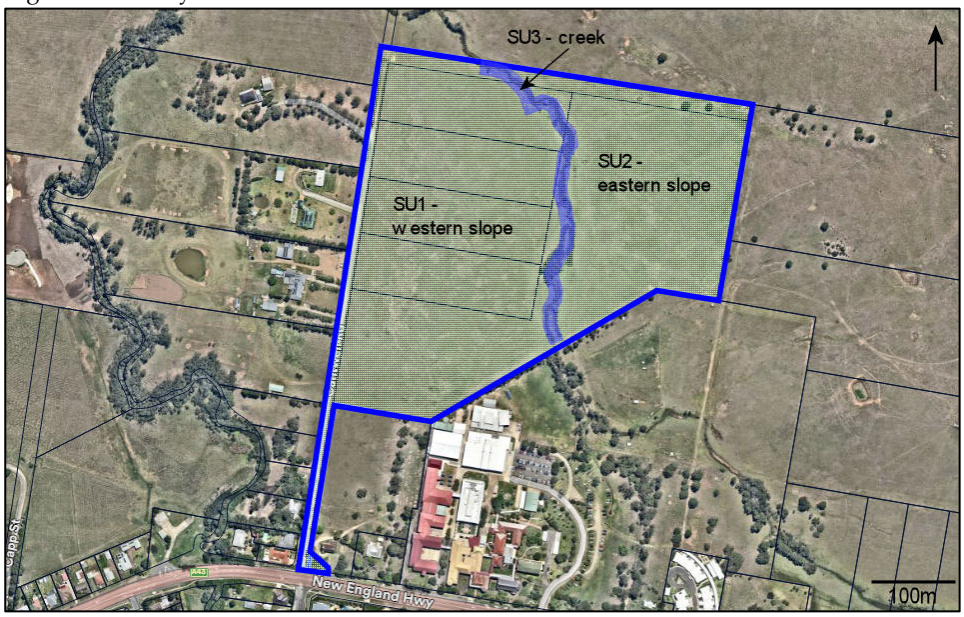
6.2 LANDFORMS

McDonald et al (1998) describes the categories of landform divisions that consists of a two layered division involving treating the landscape as a series of "mosaics". The mosaics are described as two distinct sizes: the larger categories are referred to as landform patterns and the smaller being landform elements within these patterns. Landform patterns are large-scale landscape units, and landform elements are the individual features contained within these broader landscape patterns. There are forty landform pattern units and over seventy landform elements. However, of all the landform element units, ten are morphological types. For archaeological investigations they divide the landscape into standardised elements that can be used for comparative purposes and predictive modelling. As outlined in Section 3, the project area includes three landforms: then western half of the project area includes a very gentle, almost flat slope, the eastern side consists of a very gently south western facing slope, and both slopes dissected through the middle by a 3rd order creek.

6.3 SURVEY UNITS

The project area, consisting of two main landforms, was divided into two survey units (SU) that were based on landform elements (following McDonald et al 1984) that included the creek, and the slopes further divided into eastern and western slopes. The locations of the SUs are marked on Figure 6.1 and are summarised below.

Figure 6.1 Survey Units



Survey Unit 1: western slopes

This survey unit included the western slope of the project area and also includes Cantwell Road (up to 10m both sides of the road) and the intersection of Cantwell and New England Highway. Cantwell Road was bitumen approximately three quarters along its length then transferred into a filled access road covered in grass. A power easement was located along the eastern side of the road. The open paddock (immediately east of Cantwell Rd), consisted of a slope was very gently and almost flat. At the time of inspection, the area was waterlogged and extremely muddy. Previous ploughing was observed, evidenced by eroded ridges and furrows. However, the extent of the ploughing in relation to its proximity to the 3rd order creek is indeterminable due to the disturbed nature of the SU due to a combination of cattle prints and muddy ground. The ploughed areas have been significantly disturbed by cattle prints, resulting in numerous exposures throughout the paddock. Other exposures included tracks by vehicles and an excavator for geotechnical test trenches that were also present. This almost flat area extended to the 3rd order creek as an elevated landform overlooking the deep creek. Vegetation was pasture grass with few trees along the creek. Examples of SU2 are provided in Figures 6.1 to 6.7.

Figure 6.2 Southern end of Cantwell Rd, facing north

Figure 6.3 Northern end of Cantwell Rd, facing south

Figure 6.4 Middle of SU1, facing north

Figure 6.5 Middle of SU1, facing south

Figure 6.6 Example of exposures in SU1 (cattle prints)

Figure 6.7 Example of exposures, excavator tracks and geotechnical trench in the background

Survey Unit 2: eastern slopes

This survey unit included the eastern slope of the project area. This western facing gentle slope, at the time of inspection, was extremely muddy with cattle prints throughout. There was evidence of previous ploughing (eroded ridged and furrows further disturbed by hoofed animals and muddy environment) with the entire survey unit being used for grazing. The closest evidence of ploughing that was visible was a ridge and furrow approximately 30 metres from the edge of the creek. Exposures included the cattle prints throughout and tracks by vehicles and an excavator for geotechnical test trenches that were also present. This slope extended to the 3rd order creek where is became an almost flat elevated landform overlooking the deep creek. Vegetation was pasture grass with few trees along the creek. Examples of SU2 are provided in Figures 6.8 to 6.11.

Figure 6.8 North eastern corner of SU2, facing south west

Figure 6.9 North eastern corner of SU2, facing west to the 3rd order creek

Figure 6.10 Example of exposures in SU2, cattle prints

Figure 6.11 Example of exposures in SU2, geotechnical trench

Survey Unit 3: 3rd order creek

This survey unit included the 3rd order creek and up to 5 metres in width along its banks. This SU has been previously cleared and the southern end subject to clearing and stabilisation works. The western side of the creek, consisting of pasture grass with a small pocket of new growth trees, has a highly disturbed surface from cattle resulting in any ridges and furrows from previous plunging has been obliterated. The eastern side of the creek, also vegetated with pasture grass, showed no evidence of ploughing with the closest visible eroded ridges and furrow being approximately 30 metres form the bank of the eastern side of the creek. The eastern side of the creek exhibited significant erosion with the creek walls collapsing in some sections. Exposures were moderate and included erosion and cattle prints and there were sections along the creek with old building materials in the creek bed or alongside it on the eastern side. Examples of SU1 are provided in Figures 6.12 to 6.21.

Figure 6.12 Southern end of SU3, facing east

Figure 6.13 Western side of the creek, southern end facing north

Figure 6.14 Western side of the creek, mid-section facing north

Figure 6.15 Western side of the creek, northern end facing north

Figure 6.16 Eastern side of the creek, northern end facing south

Figure 6.17 Eastern side of the creek, northern end showing creek bank collapse

Figure 6.18 Eastern side of the creek, mid-section showing the closes visible ridges and furrows (30m from bank)

Figure 6.19 Eastern side of the creek, mid-section showing building materials

Figure 6.20 Eastern side of the creek, southern section facing south

Figure 6.21 Eastern side of the creek, southern end facing south

6.4 EFFECTIVE COVERAGE & DISTURBANCES

To determine the effectiveness of an archaeological survey, the visibility and exposure conditions for each survey unit is calculated to provide an effective coverage amount. Effective coverage is an estimate of the amount of ground observed considering local constraints on site discovery such as vegetation and leaf litter and erosion. There are two components to determining the effective coverage: visibility and exposure.

Visibility is the amount of bare ground on the exposures which may reveal artefacts or other cultural materials, or visibility refers to 'what conceals'. Visibility is hampered by vegetation, plant or leaf litter, loose sand, stony ground or introduced materials (such as rubbish). On its own, visibility is not a reliable factor in determining the detectability of subsurface cultural materials (DECCW 2010/783:39).

The second component in establishing effective coverage is exposure. Exposure refers to "what reveals". It estimates the area with a likelihood of revealing subsurface cultural materials rather

than just an observation of the amount of bare ground. Exposure is the percentage of land for which erosion and exposure is sufficient to reveal cultural materials on the surface (DECCW 2010/783:37). The effective coverage for the project area was determined for both visibility and exposure ratings and Table 6.1 details the visibility rating system used.

Table 6.1 Ground surface visibility rating

Description	**GSV rating %**
Very Poor – heavy vegetation, scrub foliage or debris cover, dense trees of scrub cover. Soil surface of the ground very difficult to see.	0-9%
Poor – moderate level of vegetation, scrub, and / or tree cover. Some small patches of soil surface visible in the form of animal tracks, erosion, scalds, blowouts etc, in isolated patches. Soil surface visible in random patches.	10-29%
Fair – moderate levels of vegetation, scrub and / or tree cover. Moderate sized patches of soil surface visible, possibly associated with animal, stock tracks, unsealed walking tracks, erosion, blow outs etc, soil surface visible as moderate to small patches, across a larger section of the project area.	30-49%
Good – moderate to low level of vegetation, tree or scrub cover. Greater amount of areas of soil surface visible in the form of erosion, scalds, blowouts, recent ploughing, grading or clearing.	50-59%
Very Good – low levels of vegetation / scrub cover. Higher incidence of soil surface visible due to recent or past land-use practices such as ploughing, mining etc.	60-79%
Excellent – very low to non-existent levels of vegetation/scrub cover. High incidence of soil surface visible due to past or recent land use practices, such as ploughing, grading, mining etc.	80-100%
Note: this process is purely subjective and can vary between field specialists, however, consistency is achieved by the same field specialist providing the assessment for the one project area/subject site.	

As indicated in Table 6.2, the overall effective coverage is 17.23% with grass being the limiting factor and erosion across the project area being high. The disturbances included clearing, previous ploughing, cattle grazing, fencing and geotechnical excavation test trenches, all of which have impacted upon the landscape and associated cultural materials through redistribution throughout the majority of the project area. The sections of the project area that appear to remain undisturbed by ploughing, which effects up 30 cm in depth, are along the creek.

Table 6.2 Effective coverage for the investigation area

SU	Landform	Area (m2)	Vis. %	Exp. %	Exposure type	Previous disturbances	Present disturbances	Limiting visibility factors	Effective coverage (m2)
1	western slope	97,000	45%	45%	erosion, vehicle tracks, cattle	clearing, ploughing, grazing, road	erosion, cattle	vegetation	19,643
2	eastern slope	62,000	35%	35%	erosion, vehicle tracks, cattle	clearing, ploughing, grazing	erosion, cattle	vegetation	7,595
3	creek	5,000	45%	45%	erosion, cattle	clearing, ploughing, grazing	erosion, cattle	vegetation	1,013
Totals		**164,000**							**28,250**
								Effective coverage %	**17.23%**

The level and nature of the effective survey coverage is considered satisfactory to provide an effective assessment of the project area. The coverage was comprehensive for obtrusive site types (e.g., grinding grooves and scarred trees) but somewhat limited for the less obtrusive surface stone artefact sites by surface visibility constraints that included vegetation cover and minimal exposures.

In relation to land uses and the associated impacts on the landscape and any cultural materials that may have been present, the project area has been subject to complete clearing of native vegetation and replaced with pasture grass involving at least one ploughing event across the entire project area up to approximately 30 metres from the creek banks. The project area has also been utilised for grazing and the creek has undergone clearing and stabilisation works at its southern end. Other minor impacts include rubbish dumping in the creek and natural impacts derive from erosion. As indicated in Table 6.3, these disturbances range from moderate to high.

Table 6.3 Land use scale (CSIRO 2010) and land uses in the project area

Minor disturbance		Project area	Moderate disturbance		Project area	Major disturbance		Project area
0	No effective disturbance; natural		3	Extensive clearing (e.g., poisoning and ringbarking		6	Cultivation: grain fed	
1	No effective disturbance other than grazed by hoofed animals		4	Complete clearing: pasture native or improved, but never cultivated		7	Cultivation: irrigated, past and present	
2	Limited clearing (e.g., selected logging)		5	Complete clearing: pasture native or improved, cultivated at some stage	complete, except 30m width both side of the creek	8	Highly disturbed: e.g., quarry, road works, mining, landfill, urban	southern end of creek only

In view of the predictive modelling and the results obtained from the effective coverage and disturbance rating, it is concluded that the survey provides a valid basis for determining the probable impacts of the proposal and formulating recommendations for the management of the project area.

6.5 ARCHAEOLOGICAL SITES

No sites were identified during the survey and this is due to the significantly high impacts from previous land uses across the majority of the project area (clearing, ploughing, grazing) as well as the muddy environment at the time of the survey.

6.6 POTENTIAL ARCHAEOLOGICAL DEPOSIT/ SENSITIVITY

The terms "potential archaeological deposit (PAD)" and "area(s) of archaeological sensitivity" are used to describe areas that are likely to contain sub-surface cultural deposits. These sensitive landforms or areas are identified based upon the results of fieldwork, the knowledge gained from previous studies in or around the subject area and the resultant predictive models. Any or all of these attributes may be used in combination to define an area of potential archaeological sensitivity.

The likelihood of a landscape having been used by past Aboriginal societies and hence containing archaeologically sensitive areas is primarily based on the availability of local natural resources for subsistence, artefact manufacture and ceremonial purposes. The likelihood of surface and subsurface cultural materials surviving in the landscape is primarily based on past land uses and preservation factors.

Given the known extent and content of sites typically situated along semi reliable creeks such as the 3rd order on the project area, and given that artefacts have been identified in close proximity to this particular creek in neighbouring properties, this area is identified as a PAD.

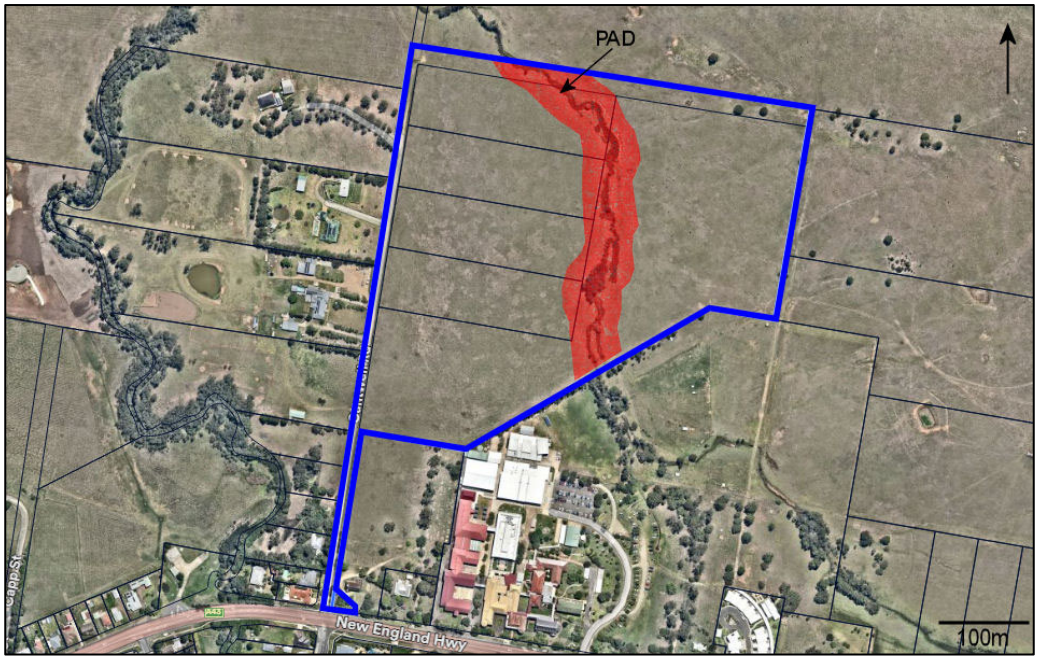
6.6.1 PAD1

This PAD includes the length of the 3rd order creek located in the project area (it is noted that the PAD likely extends north and south outside the current project area). The PAD is up to 30 metres in width on both sides of the creek from the creek banks. This distance from the creek banks is based in the visually evident eroded ridged and furrows identified on the eastern side of the creek. Although these were not evident at this distance on the western side of the creek, it is inferred the distances would remain consistent.

Extensive research has provided compelling evidence, as documented in various experiments and local test excavations (see Section 3 and Section 5), that ploughing activities have the capacity to disrupt subsurface materials up to a depth of 30cm. Evidence in the immediate surrounding landscape, including adjoining paddocks to the current project area (e.g. Umwelt 2016, MCH 2024), have identified highly disturbed landscapes when ploughed with artefacts redistributed across the landscape with no discern able patterns remining. The exception to this appears to be areas closer to creeks where the ploughing appears not to have occurred, or is reduced.

As the extent of the PAD is based on visual observations of eroded ridged and furrows, and it is assumed that areas along the 3rd order creek and with 30 metres both sides, this assumption requires further investigation. Further investigations in the form of test excavation will identify any subsurface sites that may be present, the nature and extends of any sites present, as well as the nature of the deposits (disturbances). The location and extent of the PAD are depicted in Figure 6.22.

Figure 6.22 Location and extent of the identified PAD



6.7 DISCUSSION

Considering the environmental, cultural and archaeological contexts of the regional and local area, the distribution of archaeological sites may be identified and thus effectively protected, manage lands, and conserve areas where required and appropriate.

As no sites have been identified, the results of the investigation are discussed below in terms of overall site integrity, local and regional contexts, and predictive modeling.

6.7.1 INTEGRITY

The integrity of an area can be assessed only for surface integrity through the consideration of past and present land uses and their impacts. Subsurface integrity can only be assessed through controlled excavation that allows for the examination of both the horizontal and vertical distribution of cultural materials (caused by natural and/or human impacts) and by conjoining artefacts.

Land use activities, such as complete clearing, ploughing, and grazing, along with natural impacts like bioturbation, erosion, and flooding, have been extensively discussed in Sections 3 and 6. These activities and natural disruptions are considered to have a significant impact on the majority of the project area. In-depth research, supported by various experiments and local test excavations detailed in Sections 3 and 5, has provided compelling evidence that ploughing activities can disturb subsurface materials up to a depth of 30cm. As a result of such disturbances across the project area, the integrity of the land is compromised, leading to the disturbance/redistribution or destruction of any archaeological sites that may have existed.

There is a potential exception to the aforementioned observation, particularly concerning the section of the 3rd order creek. Visual indicators in the form of ridges and furrows, located approximately 30 meters from the eastern edges of the creek, suggest that this area has been exempted from ploughing activities. As a result, it is probable that in situ deposits may still be

present in this specific region. However, without conducting additional investigations such as test excavations, it is challenging to definitively ascertain whether ploughing or post-depositional impacts have indeed affected this particular stretch along the creek.

6.8 INTERPRETATION & OCCUPATION MODEL

Given the fact that no sites identified, it is not possible to discuss site interpretation or occupation models.

6.9 REGIONAL & LOCAL CONTEXT

Given the fact that no sites identified, it is not feasible to provide an analysis of the regional or local archaeological contexts. However, it is important to note that the project area has been affected by previous land activities, resulting in disturbances. Additionally, a PAD has identified a presence along the 3rd order creek.

6.10 REASSESSMENT OF THE PREDICTIVE MODEL

Due to the absence of any identified sites and the significantly disturbed nature of the project area, it is not feasible to conduct a reassessment of the predictive mode. However, it is established that the project area has been subject to prior land uses resulting in disturbance, and a PAD has been identified along the 3rd order creek.

6.11 CONCLUSION

Archaeological sites play a crucial role in providing valuable insights into past human activities, particularly in relation to occupation patterns, utilisation of the environment, and resource exploitation. These sites offer information on various aspects such as diet, transportation of raw materials, stone tool manufacturing, and movements of human groups across the landscape. Previous regional research conducted on a broad scale has indicated the significance of proximity to water bodies in determining past occupation patterns. A notable reduction in the number of sites is observed as one moves away from water sources. The most frequently documented type of sites includes artefact scatters and isolated findings. These sites are commonly situated along or near watercourses, as well as on flat elevated areas in close proximity to reliable freshwater sources. Sites with higher concentrations of artefacts tend to be concentrated within a distance of fifty meters from watercourses. Whilst in the wider landscape, a background scatter of artefacts can be found, representing activities such as hunting, gathering, and travel.

The project area features a third-order creek running through its centre, with nearly flat landforms on both sides overlooking the creek. This topography suggests a favourable environment for camping and access to freshwater following heavy rainfall. Such conditions would have supported the presence of small groups of people for short periods of time. Evidence in the archaeological record of such past Aboriginal land use include low-density artefact scatters, potentially indicating tool-making and maintenance activities, as well as evidence of cooking areas (hearths). Notably, these sites are typically observed within 50 meters of water sources.

Based on the visible evidence of eroded ridges and furrows of past ploughing activities, the project area has been ploughed up to approximately 30 meters from the creek. It is anticipated that the areas along both sides of the creek, within this 30-meter range, may contain undisturbed evidence of past Aboriginal land use, and hence, have been identified as a PAD.

7 ASSESSMENT OF IMPACTS

The archaeological record is a non-renewable resource that is affected by many processes and activities. As outlined in Section 3 and 6, the various natural processes and human activities would have impacted on archaeological deposits through both site formation and taphonomic processes. Section 6 describes the impacts within the project area, showing how these processes and activities have disturbed the landscape and associated cultural materials in varying degrees.

7.1 IMPACTS

Detailed descriptions of the impacts are provided in Section 1.5 and the results of the survey in Section 6. The Heritage NSW, Department of Premier & Cabinet Code of practice for the archaeological investigation of Aboriginal objects in New South Wales (2010:21) describes impacts to be rated as follows:

1) Type of harm: is either direct, indirect or none

2) Degree of harm is defined as either total, partial or none

3) Consequence of harm is defined as either total loss, partial loss, or no loss of value

As no sites were identified during the survey and the majority of the project area has been disturbed through complete clearing, ploughing and grazing, there are no impacts on the archaeological record.

However, a PAD has been identified along the creek and as it remains unknown if this PAD contains subsurface cultural materials, the impacts on the PAD remain unknown at this time.

Mitigation measures to minimise these impacts are outlined in the following chapter.

8 MITIGATION AND MANAGEMENT STRATEGIES

Specific strategies, as outlined through the Heritage NSW, Department of Premier & Cabinet: Code of practice for archaeological investigation of Aboriginal objects in New South Wales (DECCW 2010b) and the Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011) are considered below for the management of the identified site within the project area.

One of the most important considerations in selecting the most suitable and appropriate strategy is the recognition that Aboriginal cultural heritage is very important to the local Aboriginal community. Decisions about the management of sites and potential archaeological deposits should be made in consultation with the appropriate local Aboriginal community.

8.1 CONSERVATION/PROTECTION

Heritage NSW, Department of Premier & Cabinet is responsible for the conservation/protection of Indigenous sites and they therefore require good reason for any impact on an indigenous site. Conservation is the first avenue and is suitable for all sites, especially those considered high archaeological significance and/or cultural significance. Conservation includes the processes of looking after an indigenous site or place so as to retain its cultural and scientific significance and are managed in a way that is consistent with the nature of peoples' attachment to them.

As no sites have been identified and the project area is highly disturbed through previous clearing, ploughing and grazing across the majority of the project area, conservation/protection is not required.

At present, as the identified PAD has not undergone any additional investigations, there is insufficient information available to ascertain the presence, nature, or extent of cultural materials within the PAD. As a result, there is no immediate need for conservation or protection measures to be implemented for the PAD.

8.2 FURTHER INVESTIGATION

With the exception of shell middens and burials, an Aboriginal Heritage Impact Permit (AHIP) is not required to undertake test excavations (providing the excavations are in accordance with the Code of Practice for Archaeological Investigations in NSW and consultation with the RAPs). Subsurface testing is appropriate when a PAD has been identified, and it can be demonstrated that sub-surface Aboriginal objects with potential conservation value have a high probability of being present, and that the area cannot be substantially avoided by the proposed activity.

As a PAD has been identified in the project area, further investigations are required along the PAD to determine the presence or absence of archaeological sites, their nature and extent if present, as well as any disturbance or impacts to any sites that may be present.

8.3 AHIP

If harm will occur to an Aboriginal object or Place, then an AHIP is sought from Heritage NSW, Department of Premier & Cabinet as a defence to that harm. If a systematic excavation of the known site could provide benefits and information for the Aboriginal community and/or archaeological study of past Aboriginal occupation, a salvage program, and, or community collection, may be an appropriate strategy to enable the salvage of cultural objects.

As no sites have been identified within the project area, an AHIP is not required.

9 RECOMMENDATIONS

9.1 GENERAL

1) The persons responsible for the management of onsite works will ensure that all staff, contractors and others involved in construction and maintenance related activities are made aware of the statutory legislation protecting sites and places of significance. Of particular importance is the National Parks and Wildlife Regulation 2019, under the National Parks and Wildlife Act 1974;

2) With the exception of the identified PAD, works may proceed in the remainder of the project area with the following adhered to:

   iii. An Unexpected Finds Procedure for cultural materials and human remains (Appendix C) will be implemented during all works, and

   iv. Should any Aboriginal objects be uncovered during works, all work will cease in that location immediately, the Unexpected Finds Procedure followed and the Environmental Line contacted.

9.2 PAD

3) If the identified PAD will be impacted upon by any future development an archaeological subsurface investigation will be required in accordance with the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW prior to any works being undertaken at the PAD location.

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APPENDIX A

Aboriginal Stakeholder Consultation

Date	Consultation type	Heritage NSW requirement	Consult stage	RAP/Agency	Contact person	Description
30/4/24	Letter/email	4.1.2	1	MCH contacted Heritage NSW		Letter to identify Aboriginal parties. Requested response no later C.O.B. 13/5/24
30/4/24	Letter/email	4.1.2	1	MCH contacted the Local Aboriginal Land Council (LALC)		Letter to identify Aboriginal parties. Requested response no later C.O.B. 13/5/24
30/4/24	Letter/email	4.1.2	1	MCH contacted Registrar of Aboriginal Owners (RAO)		Letter to identify Aboriginal parties. Requested response no later C.O.B. 13/5/24
30/4/24	Letter/email	4.1.2	1	MCH contacted Maitland City Council		Letter to identify Aboriginal parties. Requested response no later C.O.B. 13/5/24
30/4/24	Letter/email	4.1.2	1	MCH contacted Native Title Tribunal (NNTT)		Letter to identify Aboriginal parties. Requested response no later C.O.B. 13/5/24
30/4/24	Letter/email	4.1.2	1	MCH contacted NTSCORP Ltd		Letter to identify Aboriginal parties. Requested response no later C.O.B. 13/5/24
30/4/24	Letter/email	4.1.2	1	MCH contacted Hunter Local Land Services		Letter to identify Aboriginal parties. Requested response no later C.O.B. 13/5/24
30/4/24	Letter/email	4.1.2	1	NNTT		Freehold
1/5/24	Letter/email	4.1.2	1	Heritage NSW		Identified Aboriginal parties: 55
2/5/24	Letter/email	4.1.2	1	RAO		Identified Aboriginal parties: 2
NA		4.1.2	1	LALC		No response
NA		4.1.2	1	Council		No response
NA		4.1.2	1	NTSCORP	Do not provide lists of possible stakeholders	
NA		4.1.2	1	Local Land Services	Do not provide lists of possible stakeholders	
13 May 2024 C.O.B. Request for groups to consult with closed						
10/5/24	Public notice	4.1.3	1	All registered Aboriginal parties (RAPs)		Public notice in Maitland Mercury and requested registration no later than 24/5/2024.
14/5/24	Letter & email	4.1.3, 4.1.4, 4.1.5, 4.2.1	1	All RAPs	those provided from sources above	Formal letter to identified RAPs requesting registration of interest in the project, project outline, maps and asking for the preferred method to receive information (meeting/mail/email). Required registration by C.O.B. 28/5/2024
14/5/24	email	4.1.7, 4.1.8	1	Yarrawalk	Scott Franks	Registered for the project
14/5/24	email	4.1.7, 4.1.8	1	Widescope Indigenous group	Steven hickey	Registered for the project
22/5/24	email	4.1.7, 4.1.8	1	A1 Indigenous Services	Carolyn Hickey	Registered for the project

Date	Consultation type	Heritage NSW requirement	Consult stage	RAP/Agency	Contact person	Description
28th May 2024 C.O.B. Registration for project closed						
30/4/24	Email & letter	1; s 4.1.6		Heritage NSW		Letter notifying Heritage NSW of RAPs
30/4/24	Email & letter	1; s 4.1.6		LALC		Letter notifying LALC of RAPs
30/4/24	Letter	4.2.1, 4.2.2, 4.2.3, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7	2 & 3	All RAPs		Formal letter and information packet sent to identified RAPs. Information packet included project outline, project area, critical timelines, impacts, brief cultural, environmental and archaeological context, proposed methods of investigation, proposed methods of gathering cultural knowledge, and maps. A response the proposed methodology was required registration by C.O.B. 27/6 2024
23/6/24	E-mail & letter	4.2.1, 4.2.2, 4.2.3, 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6, 4.3.7	2 & 3	A1 Indigenous Services	Carolyn Hickey	Responded to the information packet and supported the methods
27th June 2024 C.O.B. Response to information packet closed						
28/6/24	Letter/email		3	All RAPs		All RAPs sent a letter of invitation to attend and participate in the survey
11th July 2024 Survey						
29/7/24	Email	4.3.5; 4.3.6; 4.3.7 4.4.1; 4.4.2; 4.4.3	3 & 4	All RAPs		Draft report and draft test excavation methodology sent to all RAPs for review
4/8/24	Email	4.3.5; 4.3.6; 4.3.7 4.4.1; 4.4.2; 4.4.3	3 & 4	A1 Indigenous Services	Carolyn Hickey	Supported the draft report, recommendations and draft test excavation methods
26th August 2024 C.O.B. Response to Draft Report Closed						
27/8/24		4..4.4; 4.4.5	4	All RAPs		Final report sent to all RAPs
27tyh August 2024 C.O.B. Assessment Complete						

penny@mcheritage.com.au

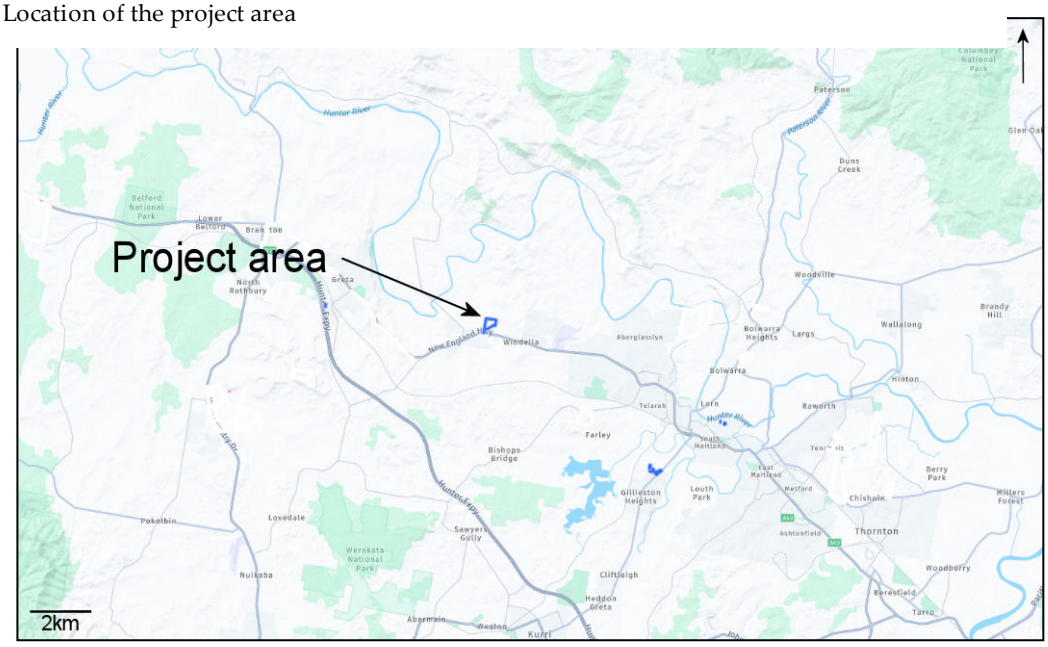
From: penny@mcheritage.com.au
Sent: Tuesday, 30 April 2024 10:57 AM
To: 'notifications@ntscorp.com.au'; 'heritagemailbox@environment.nsw.gov.au'; 'admin.hunter@lls.nsw.gov.au'; 'admin@mindaribbalalc.org'; 'info@maitland.nsw.gov.au'; 'aboriginalowners@oralra.nsw.gov.au'
Subject: List of RAPs

RE: Written notification of project proposal and registration of interest as required under Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 1)– Proposed subdvision at Lochinvar

McCardle Cultural Heritage (MCH) have been engaged by Monteath & Powys on behalf of the Proponent (Trustee of the Roman Catholic Church for the Diocese of Maitland – Newcastle; 841 Hunter Street, Newcastle West, NSW 2302) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) and prepare an Aboriginal Heritage Impact Permit (AHIP) application if required for a proposed subdivision at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar, Maitland City Council Local Government Area (LGA).

As per the Heritage NSW - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, (Stage 1, s4.1.1 to 4.1.2), MCH and the proponent are seeking community consultation with indigenous knowledge holders relevant to the project area who can determine the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Location of the project area



To comply with the Heritage NSW - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, specifically Stage 1 (s4.1.2), we are notifying you of our proposal and requesting information on any Aboriginal groups or individuals known to your organization who may have an interest in the investigation area and hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Please provide the names and contact details of any Aboriginal people/organisations within 14 working days by emailing penny@mcheritagecom.au. Please note that in order to adhere to time constraints, and the minimal time requirements as stated in the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, the absence of a response by the prescribed timeline, will be taken by the proponent as your indication that your organisation is not aware of any such interested parties.

Should you wish to discuss this matter, please do not hesitate to contact me on 0412 702 396.

Kind regards,

Dr. Penny McCardle
Principal & Forensic Archaeologist
Forensic Anthropologist

M
McCARDLE
CULTURAL HERITAGE

PO Box 166,
Adamstown 2289 NSW
P: 0412 702 396
mcheritage.com.au

penny@mcheritage.com.au

From: penny@mcheritage.com.au
Sent: Tuesday, 30 April 2024 10:58 AM
To: GeospatialSearch@NNTT.gov.au
Subject: Search
Attachments: GeospatialSearch2023.pdf

RE: Written notification of project proposal and registration of interest as required under Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 1)– Proposed subdvision at Lochinvar

McCardle Cultural Heritage (MCH) have been engaged by Monteath & Powys on behalf of the Proponent (Trustee of the Roman Catholic Church for the Diocese of Maitland – Newcastle; 841 Hunter Street, Newcastle West, NSW 2302) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) and prepare an Aboriginal Heritage Impact Permit (AHIP) application if required for a proposed subdivision at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar, Maitland City Council Local Government Area (LGA).

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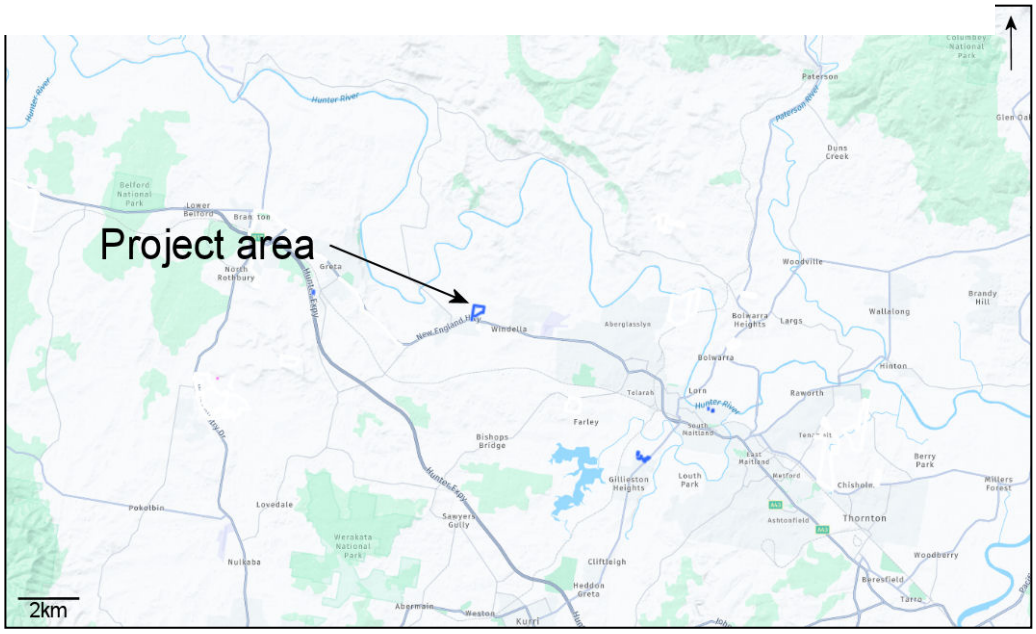

To comply with the Heritage NSW - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, specifically Stage 1 (s4.1.2), we are notifying you of our proposal and requesting information on any Aboriginal groups or individuals known to your organization who may have an interest in the investigation area and hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

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Should you wish to discuss this matter, please do not hesitate to contact me on 0412 702 396.

Kind regards,

Dr. Penny McCardle
Principal & Forensic Archaeologist
Forensic Anthropologist

M
McCARDLE
CULTURAL HERITAGE

PO Box 166,
Adamstown 2289 NSW
P: 0412 702 396
mcheritage.com.au

Request for Spatial Search of Tribunal Registers

National Native Title Tribunal

1: Your details

Your name:	Penny McCadle		
Your company:	McCadle Cultural Heritage Pty Ltd		
E-mail address:	penny@mcheritage.com.au	Phone:	0412 702 396
Your reference:	60 New England Highway, Lochinvar	Your state:	NSW
☑	*I have read and acknowledge the terms and conditions on the previous page.*		

2: Areas to be searched

Jurisdiction to be searched:	NSW	Tenure to be searched:	Land parcel

Parcel or tenement identifiers (add up to 20 separate identifiers). **Please see previous page for parcel identifiers.**

Parcel 1:	Lot 1 and 2 in DP1299958	Parcel 2:	Lot 2 DP1214402
Parcel 3:		Parcel 4:	
Parcel 5:		Parcel 6:	
Parcel 7:		Parcel 8:	
Parcel 9:		Parcel 10:	
Parcel 11:		Parcel 12:	
Parcel 13:		Parcel 14:	
Parcel 15:		Parcel 16:	
Parcel 17:		Parcel 18:	
Parcel 19:		Parcel 20:	

If your search area is not a parcel or mining or petroleum tenement, you can enter other tenure or administrative regions here (e.g. local government area, townsite or county). Please provide as much detail as you can.

E-mail the completed form to GeospatialSearch@NNTT.gov.au

penny@mcheritage.com.au

To: Geospatial Search Requests
Subject: RE: SR24/755 - Search [SEC=OFFICIAL]

From: Geospatial Search Requests <GeospatialSearch@NNTT.gov.au>
Sent: Tuesday, 30 April 2024 2:08 PM
To: penny@mcheritage.com.au
Subject: RE: SR24/755 - Search [SEC=OFFICIAL]

OFFICIAL

Your ref: *60 New England Highway, Lochinvar* **Our ref:** *SR24/755*

Dear Penny McCardle

Thank you for your search request, please find your results below. We have provided results for those parcels bounded by Cantwell Road, Wyndella Road and the New England Highway. Parcels 1//DP1299958 and 2//DP1299958 were not found in our current copy of the NSW cadastre.

Search Results
The results provided are based on the information you supplied and are derived from a search of the following Tribunal databases:

- Schedule of Native Title Determination Applications
- Register of Native Title Claims
- Native Title Determinations
- Indigenous Land Use Agreements (Registered and notified)

Results for overlapping native title matters in NSW:

Feature ID	Tenure	Cadastre Data As At	Feature Area SqKm	Overlapping Native Title Feature				
1//DP1214402	FREEHOLD	8/03/2024	0.0033	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
1//DP164806	FREEHOLD	8/03/2024	0.0010	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
1//DP65706	FREEHOLD	8/03/2024	0.3439	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
1//DP741330	FREEHOLD	8/03/2024	0.0080	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
11//DP1219648	FREEHOLD	8/03/2024	0.1431	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%

12//DP1219648	FREEHOLD	8/03/2024	0.0506	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
13//DP1219648	FREEHOLD	8/03/2024	0.0418	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
14//DP1219648	FREEHOLD	8/03/2024	0.0064	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
2//DP1214402	FREEHOLD	8/03/2024	0.0206	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
2//DP747391	FREEHOLD	8/03/2024	0.0166	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
2//DP818314	FREEHOLD	8/03/2024	0.0851	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
3//DP747391	FREEHOLD	8/03/2024	0.0107	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
35//DP975690	FREEHOLD	8/03/2024	0.0153	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
36//DP975690	FREEHOLD	8/03/2024	0.0156	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
37//DP975690	FREEHOLD	8/03/2024	0.0156	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
38//DP975690	FREEHOLD	8/03/2024	0.0162	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
4//DP747391	FREEHOLD	8/03/2024	0.0111	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
5//DP747391	FREEHOLD	8/03/2024	0.0111	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
6//DP747391	FREEHOLD	8/03/2024	0.0115	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**
				No overlap			-	0.00%
9//DP747391	FREEHOLD	8/03/2024	0.0716	**NNTT File Number**	**Name**	**Category**	**Overlap Area SqKm**	**% Selected Feature**

				No overlap			-	0.00%

These items not found in NNTT Cadastre data in NSW:

Parcel ID
1//DP1299958
2//DP1299958

For more information about the Tribunal's registers or to search the registers yourself and obtain copies of relevant register extracts, please visit our website.

Information on native title claims and freehold land can also be found on the Tribunal's website here: Native title claims and freehold land .

Please note: There may be a delay between a native title determination application being lodged in the Federal Court and its transfer to the Tribunal. As a result, some native title determination applications recently filed with the Federal Court may not appear on the Tribunal's databases.

The search results are based on analysis against external boundaries of applications only. Native title applications commonly contain exclusions clauses which remove areas from within the external boundary. To determine whether the areas described are in fact subject to claim, you need to refer to the "Area covered by claim" section of the relevant Register Extract or Schedule Extract and any maps attached.

Search results and the existence of native title
Please note that the enclosed information from the Register of Native Title Claims and/or the Schedule of Applications is **not** confirmation of the existence of native title in this area. This cannot be confirmed until the Federal Court makes a determination that native title does or does not exist in relation to the area. Such determinations are registered on the National Native Title Register.

The Tribunal accepts no liability for reliance placed on enclosed information
The enclosed information has been provided in good faith. Use of this information is at your sole risk. The National Native Title Tribunal makes no representation, either express or implied, as to the accuracy or suitability of the information enclosed for any particular purpose and accepts no liability for use of the information or reliance placed on it.

If you have any further queries, please do not hesitate to contact us via GeospatialSearch@NNTT.gov.au

Regards,

Geospatial Searches
National Native Title Tribunal | Perth
Email: GeospatialSearch@nntt.gov.au **| www.nntt.gov.au**

National Native Title Tribunal

I acknowledge the traditional custodians of the lands where we live, learn and work.

A Reconciled Future

LIST OF ABORIGINAL STAKEHOLDERS FOR THE DEPARTMENT OF PLANNING AND ENVIRONMENT (DPE) HELD BY DPE FOR THE PURPOSES OF THE OEH ABORIGINAL CULTURAL HERITAGE CONSULTATION REQUIREMENTS FOR PROPONENTS 2010

The purpose of this letter is to assist you as the proposed applicant in undertaking Aboriginal community consultation in accordance with the relevant legislation and guidelines.

The consultation process involves getting the views of, and information from, Aboriginal people and reporting on these. It is not to be confused with other field assessment processes involved in preparing a proposal and an application. Consultation does not include the employment of Aboriginal people to assist in field assessment and/or site monitoring. Aboriginal people may provide services to proponents through a contractual arrangement however, this is separate from consultation. The proponent is not obliged to employ those Aboriginal people registered for consultation. Consultation as per these requirements will continue irrespective of potential or actual employment opportunities for Aboriginal people.

In accordance with Clause 60 (10) of the National Parks and Wildlife Regulation 2019, where an agreement of the kind listed below specifies or identifies a modified or alternative consultation process for the purposes of Part 6 of the National Parks and Wildlife Act 1974, the applicant is to undertake consultation in accordance with the modified or alternative process. The applicable agreements are:

a) a registered Indigenous Land Use Agreement under the Native Title Act 1993 of the Commonwealth entered into between an Aboriginal community and the State,

b) a lease entered into under Part 4A of the Act,

c) an agreement entered into by the Secretary and a board of management reserved under Part4A of the Act that has the consent of Aboriginal owner board members for the land concerned,

d) an agreement entered into between an Aboriginal community and the Department of Planning, Industry and the Environment.

Where you believe your application is wholly or partially located within an area subject to any of the above agreements, please provide further correspondence (including mapping, if required) detailing the applicable agreement and its relationship to the application area to heritagemailbox@environment.nsw.gov.au. Heritage NSW will respond with further advice.

Where the above does not apply, please proceed with consultation in accordance with the Clause 60 (1-9) of the National Parks and Wildlife Regulation 2019 and Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (the “Consultation Requirements”). A copy of the Consultation Requirements can be found on the OEH website at: http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf.

Under the Consultation Requirements, a proponent is required to provide Aboriginal people who may hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places as relevant to the proposed project area, with an opportunity to be involved in consultation. Section 3.3.1 of the Consultation Requirements states that Aboriginal people who can provide this information are, based on Aboriginal lore and custom, the traditional owners or custodians of the land that is the subject o the proposed project.

The Consultation Requirements also state that:

Traditional owners or custodians with appropriate cultural heritage knowledge to inform decision making who seek to register their interest as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and custom

- recognise their responsibilities and obligations to protect and conserve their culture and heritage and care for their traditional lands or Country
- have the trust of their community, knowledge and understanding of their culture, and permission to speak about it.

This list is provided to proponents in accordance with Clause 60(2)(a)(i) of the National Parks and Wildlife Regulation 2019 and section 4.1.2 of the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010.

The stakeholders identified on this list may have an interest in the proposed project area and may hold knowledge relevant to determining the cultural significance of Aboriginal objects and/or places.

How to use this list

- Contact the organisations/individuals who have indicated an interest in the relevant LGA/s and invite them to register an interest in your project.
- Do not reproduce the attached list in publicly available reports and other documents. Your report should only contain the names of the organisations and individuals who you have invited to register an interest in your project and those who have registered as stakeholders for your project.
- Note that the provision of this Aboriginal stakeholder list does not override a proponent's requirement to also advertise in the local newspaper and to seek from other sources the names of any other Aboriginal people who may hold cultural knowledge as required under clause 60 (2) of the National Parks and Wildlife Regulation 2019.
- Please refer to Clause 60 of the National Parks and Wildlife Regulation 2019 and the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 for further information on the requirements of the consultation process.
- If contact details of stakeholders are found to be incorrect or outdated, please contact heritagemailbox@environment.nsw.gov.au.

Last updated April 2024

Our reference: Doc24/328654

60 New England Highway, Lochinvar (Lot 2 in DP818314 and Lot 35, 36, 37 and 38 in DP975690)

Aboriginal Stakeholders –Maitland Local Government Area.

A1 Indigenous Services	Carolyn Hickey	cazadirect@live.com	-	0411 650 057	-	10 Marie Pitt Place, Glenmore Park, NSW, 2745	-
Aboriginal Native Title Consultants	Christine Paul	christinepaul737@gmail.com	-	0484 327 664	-	68 Tindale Street Muswellbrook NSW 2333	-
AGA Services	Ashley, Gregory & Adam Sampson	aga.services@hotmail.com	-	AS: 0401 958 050 Donna Sampson 0403 765 018	-	22 Ibis Parade WOODBERRY NSW 2322	-
Aliera French Trading	Aliera French	alierafrenchtrading@outlook.com	-	0421 299 963	-	17 Kalinda St BLACKSMITHS NSW 2281	-
Arwarbukarl Cultural Resource Association, Miromaa Aboriginal Language and Technology Centre	Darren McKenny	contact@acra.org.au	(02) 4940 9100	-	-	840 Hunter St NEWCASTLE WEST NSW 2302	-
Awabakal & Guringai Pty Ltd	Tracey Howie & Kerrie Brauer	tracey@guringai.com.au kerrie@awabakal.com.au	-	KB: 0412 866 357 TH: 0404 182 049	-	PO Box 122 RUTHERFORD NSW 2320 NSW 2259	-
Awabakal Descendants Traditional Owners	Peter Leven	peterleven@y7mail.com	-	0405 149 684	-	PO Box 137 BUDGEWOI NSW 2262	-
Awabakal Traditional Owners Aboriginal Corporation	Kerrie Brauer	Kerrie@awabakal.com.au	-	0412 866 357	-	PO Box 122 RUTHERFORD NSW 2320	-

Cacatua Culture Consultants	Donna & George Sampson	cacatua4service@tpg.com.au	-	0403 765 019 0434 877 016	-	22 Ibis Parade WOODBERRY NSW 2322	-
Corroboree Aboriginal Corporation	Marilyn Carroll-Johnson	corroboreecorp@outlook.com	(02) 8824 324	0415 911 159	-	PO BOX 344 LITHGOW NSW 2790	-
Crimson-Rosie	Jeffery Matthews	-	(02) 6543 4791	-	-	6 Eucalypt Avenue, Muswellbrook NSW 2333	-
Culturally Aware	Tracey Skene	tracey@marrung-pa.com.au	-	0474 106 537	#NAME?	7 Crawford Place MILFIELD NSW 2325	
D F T V Enterprises	Derrick Vale	deckavale@hotmail.com	-	0401 162 998 0422 876 047 0438 812 197	-	5 Mountbatten Close RUTHERFORD NSW 2320	-
Deslee Talbott Consultants	Deslee Matthews	m-desley@hotmail.com	-	0431 205 336	-	Unit 2 / 19 South Street GUNNEDAH NSW 2380	-
Didge Ngunawal Clan	Lillie Carroll ; Paul Boyd	didgengunawalclan@yahoo.com.au	-	0426 823 944 ; 0450 616 404	-	33 Carlyle Crescent Cambridge Gardens NSW 2747	-
Gidawaa Walang & Barkuma Neighbourhood Centre Inc.	Craig Horne Debbie Dacey-Sullivan	gidawaa.walang@hotmail.com	(02) 4937 1094	0432 336 163	-	76 Lang Street, Kurri Kurri NSW 2327	-
Glen Morris	-	mischelle.morris@outlook.com	(02) 6543 3008	-	-	12 Bell Street Muswellbrook NSW 2333	-

Gomery Cultural Consultants	David Horton	daveyhorton69@gmail.com	-	0458 532 707	-	22 Cabernet Street Muswellbrook 2333 NSW	-
Hunter Traditional Owner	Paulette Ryan	hto.paulette@gmail.com	-	0431 109 001	-	165 Susan Street SCONE NSW 2337	-
Hunter Valley Cultural Surveying	Luke Hickey	Microlith99@gmail.com	-	0435 911 820	-	165 Susan Street SCONE NSW 2337	-
Hunters & Collectors	Tania Matthews	Tamatthews10@hotmail.com	-	0407 348 384	-	Unit 1/19 South Street Gunnedah NSW 2320	-
Indigenous Learning	Craig Archibald	indiglearning@gmail.com	-	0467 229 507 0455 550 549	-	2 Victoria Street BELLBIRD HEIGHTS NSW 2325	-
Jarban & Mugrebea	Les Atkinson	Les.atkinson@hotmail.com	-	0466 316 069	-	65/ 601Fishery Point Road Bonnells Bay NSW 2264	-
Jumbunna Traffic Management Group Pty Ltd	Norm Archibald	normarch60@gmail.com	-	0413 718 149	-	44 Billabong Dr Cameron Park 2285	-
Kauma Pondee Inc.	Jill Green	kaumapondee@live.com.au	-	0434 210 190	-	Unit 6/1 Central Street LAMBTON NSW 2305	-
Kawul Pty Ltd trading as Wonn1 Sites	Arthur Fletcher	Wonn1sites@gmail.com	(02) 4954 7751	0402 146 193	-	619 Main Road GLENDALE NSW 2285	-
Kevin Duncan	Kevin Duncan	kevin.duncan@bigpond.com	(02) 4392 9346	0431 224 099	-	95 Moala Parade HARMHAVEN NSW 2263	-
Lower Hunter Aboriginal Incorporated	David Ahoy	lowerhunterai@gmail.com	-	0421 329 520	-	5 Killara Drive CARDIFF SOUTH NSW 2285	-

Lower Hunter Wonnarua Cultural Services	Lea-Anne Ball	lhwcs.lea@gmail.com	-	0472 698 659	-	712 Maitland Street KURRI KURRI NSW 2327	-
Lower Wonnaruah Tribal Consultancy Pty Ltd	Barry Anderson	-	(02) 6574 5303	0417 403 153	-	156 The Inlet Road BULGA NSW 2330	-
Mayaroo	Tracey White	rara02@bigpond.com	-	0438 909 797	-	PO Box 168 KURRI KURRI NSW 2327	-
Mindaribba Local Aboriginal Land Council	CEO	ceo@mindaribbalalc.org	(02) 4934 8511	-	-	1A Chelmsford Drive METFORD NSW 2323	-
Murra Bidgee Mullangari Aboriginal Corporation	Darleen Johnson ; Ryan Johnson	murrabidgeemullangari@yahoo.com.au	-	0490 051 102 0475 565 517 0497 983 332	-	PO Box 3035 Rouse Hill NSW 2155	-
Myland Cultural & Heritage Group	Warren Schillings	warren@yarnteen.com.au	-	0431 392 554	-	30 Taurus Street ELERMORE VALE NSW 2287	-
Renee Sales	Renee Sales	darkinoong@gmail.com	-	0413 608 477	-	858 Lower Kangaroo Creek Coutts Crossing NSW 2460	-
Steve Talbott	Steve Talbott	talbo.minda@hotmail.com	-	0456 664 883	-	73 Kiah Road GILLIESTON HEIGHTS NSW 2321	-
The Men's Shack Indigenous Corporations	Rod Hickey	rod.hickey@hotmail.com	-	0403 655 284	-	33 Gardner Circuit Singleton Heights NSW 2330	-

Thomas Dahlstrom Offers ACH value by using 3D Laser and Drone technology	Thomas Dahlstrom	gamila_roi@yahoo.com.au	-	0403 529 119 Offers ACH value by using 3D Laser and Drone technology	-	1-122 Glebe Point Road Glebe NSW 2037	-
Scott Franks on the behalf od the Wonnarua PBC Yarrawalk Pty Ltd	Scott Franks	scott@tocomwall.com.au scott@yarrawalk.com.au	-	0404 171 544	-	Po box 145, Miranda NSW 1490	-
Ungooroo Aboriginal Corporation	Alan Paget	admin@ungooroo.com.au	(02) 6571 5111	-	-	PO Box 3095 SINGLETON NSW 2330	-
Wallagan Cultural Services	Maree Waugh	wallangan@outlook.com	-	0439 813 078	-	PO Box 40 CESSNOCK NSW 2325	-
Warragil Cultural Services	Aaron Slater (Manager)	Warragil_c.s@hotmail.com	-	0481 280 067 0422231989	-	33 Gardner Circuit Singleton NSW 2566.	-
WATTAKA Pty Ltd	Des Hickey	deshickey@bigpond.com	(02) 6573 3786	0432 977 178	-	4 Kennedy Street SINGLETON NSW 2330	-

Widescope Indigenous Group	Steven Hickey; Donna Hickey	Widescope.group@live.com	-	SH: 0425 230 693 DH: 0425 232 056	-	73 Russell Street, Emu Plains, NSW 2750	-
Wonnarua Culture Heritage	Gordon Griffiths	-	(02) 4934 6437	0401 028 807	-	19 O'Donnell Crescent METFORD NSW 2323	-
Wonnarua Elders Council	Richard Edwards	-	(02) 6543 4791	-	-	PO Box 844 CESSNOCK NSW 2325	-
Wonnarua Nation Aboriginal Corporation	Laurie Perry	l.perry@optusnet.com.au	(02) 6571 5419	0412 593 020	-	254 John St SINGLETON NSW 2330	-
Worimi Local Aboriginal Land Council	CEO	andrew@worimi.org.au	(02) 4965 1500	-	-	2163 Nelson Bay Road WILLIAMTOWN NSW 2318	-
Wurrumay Pty Ltd	Kerrie Slater; Vicky Slater	wurrumay31@outlook.com	-	0421 077 521	-	89 Pyramid Street, Emu Plains NSW 2750	-
Yinarr Cultural Services	Kathleen Steward Kinchela	yinarculturalservices@bigpond.com dontminemeay@gmail.com	-	0475 436 589	-	Lot 5 Westwood Estate MERRIWA NSW 2329	-
Girragirra Murun Aboriginal Corporation	Diana Astin	girragirramurun@yahoo.com		0433837512		PO Box 148 Wellington NSW 2820 PO box 981 Ulladulla NSW 2539	
Wingarra Wilay Aboriginal Corporation	Raymond Moon	wingarrawilay@yahoo.com		0450087707		PO Box Wellington NSW 2820	

Gali Heritage Consultants	**Helen Slater**	**Helens27@outlook.com**		**0431 232 560**		**7 Sutton Place Minto NWS 2566.**	
Long Gully Cultural Services	**Ethan Trewlynn**	**Ethan3trewlynn@gmail.com**		**0401424853**		**57 Brooker Street Colyton NSW 2760**	
Guthers Aboriginal Corporation	**Trystan Treloar**	**guthersic@gmail.com**		**0450 514 076**		**7 Grazier Crescent Werrington Downs/847**	

OFFICE OF THE REGISTRAR
ABORIGINAL LAND RIGHTS ACT 1983 (NSW)

02 May 2024

By email: penny@mcheritage.com.au

Dr. Penny McCardle
McCardle Cultural Heritage
PO Box 166
ADAMSTOWN NSW 2289

Dear Penny,

Request - Search for Registered Aboriginal Owners – Proponents 2010 (Stage 1)– Proposed subdvision at Lochinvar

We refer to your email dated 30 April 2024 seeking the identification of Aboriginal organisations and people who may have an interest in the proposed subdivision at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar, Maitland City Council Local Government Area (LGA).

Under Section 170 of the Aboriginal Land Rights Act 1983 (NSW), the Office of the Registrar is required to maintain the Register of Aboriginal Owners (RAO) for New South Wales. The works you are proposing, and location are in proximity to an area for which there are registered Aboriginal Owners: Worimi Conservation Lands.

We suggest you contact the Joint Management Coordinator for the Worimi Conservation Lands, Nadine Russell (to ascertain whether the Boards of Management are interested in the project).

- Email: nadine.russell@environment.nsw.gov.au
- Ph: 02 4984 8221
- M: 0484 643 337

We also suggest you contact Mindaribba Local Aboriginal Land Council on the details provided below, as the study and development areas are within or immediately adjacent to the LALC boundaries, and they may wish to participate.

Mindaribba Local Aboriginal Land Council
- A: PO Box 401, EAST MAITLAND NSW 2323
- T: 02 4015 7000
- E: ceo@mindaribbalalc.org

Yours sincerely

Rachel Rewiri
Project Officer
Office of the Registrar, Aboriginal Land Rights Act 1983

Notification of project proposal and registration of interest under Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 1) – Proposed subdivision at 20 and 20A Cantwell Road, and 60 New England Highway, Lochinvar

McCardle Cultural Heritage (MCH) have been engaged by Monteath & Powys on behalf of the Proponent (The Trustees of the Roman Catholic Church for the Diocese of Maitland – Newcastle; 841 Hunter Street, Newcastle West, NSW 2302) to prepare an Aboriginal Cultural Heritage Assessment (ACHA) and Section 90 Aboriginal Heritage Impact Permit (AHIP) application, if required, for the proposed development at 20 and 20A Cantwell Road, and 60 New England Highway, Lochinvar (Lot 1 and 2 in DP1299958 and Lot 2 in DP1214402).

The purpose of community consultation with Aboriginal people is to assist the proposed applicant in the preparation of the AHIP application if required and to assist Heritage NSW, Department of Planning and Environment in their consideration and determination of the application should an AHIP be required. In compliance with the Heritage NSW policy - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, MCH would like to extend an invitation to Aboriginal people who hold cultural knowledge relevant to the proposed project area and who can determine the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in the consultation process for this project. Written registrations must be forwarded to MCH (P.O. Box 166 Adamstown, NSW, 2289; penny@mcheritage.com.au no later than C.O.B. 24 May 2024.

All registered parties will then be contacted to discuss the project in compliance with Heritage NSW policy. If you register your interest in this project, please also nominate your preferred option to receive the initial information. You may wish to attend a non-paid meeting and receive an information pack, or receive an information packet through the mail or e-mail. Any parties who register are advised that, unless otherwise requested, their details will be forward to Heritage NSW and the relevant LALC within 28 days of the closing date of registration and in compliance with Heritage NSW policy.

AW7396875

NEWS

A food truck at a previous Maitland Taste. Picture supplied

Enjoy a treat for the tastebuds

GET set to celebrate the best food, wine and produce the region has to offer at Maitland Taste.

On from Friday, May 17 to Sunday, May 19, The Levee will transform into a culinary wonderland, offering an array of gourmet delights, live entertainment and family friendly activities.

Maitland City Council events coordinator Adam Franks said the event showcases locally sourced produce, skilled chefs and artisanal creations.

This year's program will feature two new themed pop up eateries: Coffin Lane will be transformed into the Boydell's Bubbles Bar as part of a collaboration with Boydell's wines, and Dransfield Lane will transform into the Dransfield Diner, featuring a retro diner style makeover filled with classic milk bar food vendors and sweet treats.

The weekend will be filled with live music, entertainment, market stalls, live cooking demonstrations on the Kitchen Stage, gardening and permaculture tips on the Garden Stage and the addition of a 'long lunch' experience at Acacia Dining.

penny@mcheritage.com.au

From: penny@mcheritage.com.au
Sent: Tuesday, 14 May 2024 11:02 AM
To: 'Cazadirect@live.com'; 'christinepaul737@gmail.com'; 'aga.services@hotmail.com'; 'alierafrenchtrading@outlook.com'; 'contact@acra.org.au'; 'tracey@guringai.com.au'; 'kerrie@awabakal.com.au'; 'awabakal.to@gmail.com'; 'Kerrie@awabakal.com.au'; 'cacatua4service@tpg.com.au'; 'corroboreecorp@bigpond.com'; 'tracey@marrung-pa.com.au'; 'deckavale@hotmail.com'; 'm-desley@hotmail.com'; 'didgengunawalclan@yahoo.com.au'; 'gidawaa.walang@hotmail.com'; 'mischelle.morris@outlook.com'; 'leannekirkman1964@gmail.com'; 'hto.paulette@gmail.com'; 'Microlith99@gmail.com'; 'Tamatthews10@hotmail.com'; 'indiglearning@gmail.com'; 'Les.atkinson@hotmail.com'; 'normarch60@gmail.com'; 'kaumapondee@live.com.au'; 'Wonn1sites@gmail.com'; 'kevin.duncan@bigpond.com'; 'lowerhunterai@gmail.com'; 'lhwcs.lea@gmail.com'; 'rara02@bigpond.com'; 'ceo@mindaribbalalc.org'; 'murrabidgeemullangari@yahoo.com.au'; 'warren@yarnteen.com.au'; 'darkinoong@gmail.com'; 'gomeroi.namoi@outlook.com'; 'rod.hickey@hotmail.com'; 'gamila_roi@yahoo.com.au'; 'scott@yarrawalk.com.au'; 'admin@ungooroo.com.au'; 'wallangan@outlook.com'; 'warragil_c.s@hotmail.com'; 'deshickey@bigpond.com'; 'Widescope.group@live.com'; 'gordon.griffithsbra@yahoo.com.au'; 'l.perry@optusnet.com.au'; 'andrew@worimi.org.au'; 'nadine.russell@environment.nsw.gov.au'; 'Wurrumay@hotmail.com'; 'yinarculturalservices@bigpond.com'; 'dontminemeay@gmail.com'; 'girragirramurun@yahoo.com'; 'wingarrawilay@yahoo.com'; 'Helens27@outlook.com'; 'Ethan3trewlynn@gmail.com'; 'guthersic@gmail.com'
Subject: Proposed subdivision at Lochinvar

Dear «First_Name»,

RE: Written notification of project proposal and registration of interest as required under Heritage NSW Aboriginal Cultural heritage Consultation Requirements for Proponents 2010 (Stage 1)– Proposed subdivision at Lochinvar

McCardle Cultural Heritage (MCH) have been engaged by Monteath & Powys on behalf of the Proponent (Trustee of the Roman Catholic Church for the Diocese of Maitland – Newcastle; 841 Hunter Street, Newcastle West, NSW 2302) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) and prepare an Aboriginal Heritage Impact Permit (AHIP) application if required for a proposed subdivision at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar, Maitland City Council Local Government Area (LGA).

As per the Heritage NSW policy - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, Stage 1 (s1.3 to 4.1.8), MCH and the proponent are seeking community consultation with indigenous knowledge holders relevant to the project area who can determine the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Location of the project area


Project area
2km
Hunter River
Paterson
Duns Creek
Belford National Park
Lower Belford
Branxton
North Rothbury
Greta
Windella
Aberglasslyn
Woodville
Bolwarra Heights
Largs
Wallalong
Brandy Hill
Bolwarra
Hinton
Telarah
Lorn
Rawworth
Farley
Bishops Bridge
Gillieston Heights
Louth Park
East Maitland
Berry Park
Millers Forest
Chisholm
Thornton
Ashtonfield
Pokolbin
Lovedale
Sawyers Gully
Werakata National Park
Nulkaba
Cliftleigh
Heddon Greta
Woodberry
Beresfield
Tarro
Abermain
Weston
Kurri

The purpose of community consultation with Aboriginal people is to assist the proposed applicant in the preparation of an application for an AHIP (if required) and to assist Heritage NSW in their consideration and determination of the application should an AHIP be required.

This is an invitation for **Aboriginal people who hold cultural knowledge relevant to the proposed project area (registration is not to be based on where an individual or company works across NSW)** and who can determine the significance of Aboriginal object(s) and/or place(s) in the area of the proposed project to register an interest in a process of community consultation. As per the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (s 4.1.5, 4.1.7 and 4.1.8), you are advised of the following:

- unless otherwise specified, if you register your interest, your details will be provided to Heritage NSW and the LALC;
- the LALC's who hold cultural knowledge relevant to the proposed project area that is relevant to determining the significance of Aboriginal objects and/or places within the proposed project area who wish to register, must do so as an Aboriginal organisation not an individual;
- where an Aboriginal organisation representing Aboriginal people, who hold cultural knowledge relevant to the proposed project area and that is relevant to determining the significance of Aboriginal objects and/or places within the proposed project area who wish to register, must nominate a contact person and provide written confirmation and contact details of this person or persons.

MCH understands it is the Indigenous custom to elect knowledge holders and it is traditionally the Indigenous people who are nominated who speak for country. Unfortunately, some RAPs and Government Departments have placed the onus of identifying traditional knowledge holders onto proponents and archaeologists. In order to do this, MCH are guided by the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010) which provides guidelines to identify traditional knowledge holders. Should you wish to register your interest in this project, please register in writing no later than C.O.B. 28th May 2024 to:

Dr. Penny McCardle
McCardle Cultural Heritage
PO Box 166
Adamstown, NSW, 2289

If you register your interest in this project, please also nominate your preferred option to receive the project information. You may wish to have a non-paid meeting and receive an information pack, or receive information packet through the mail or e-mail. If a preferred method is not nominated, all information will be forward by mail or e-mail.

Please note that in order to adhere to time constraints, the absence of a response by the prescribed timeline, will be taken by the proponent as your indication that your organisation does not wish to register for this project.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the Heritage NSW requirements, please ensure that any items that you or your group deem confidential are either stated at the beginning of a conversation or stamped/written on each piece of paper communicate.

Kind regards,

Dr. Penny McCardle
Principal & Forensic Archaeologist
Forensic Anthropologist

McCARDLE
CULTURAL HERITAGE

PO Box 166,
Adamstown 2289 NSW
P: 0412 702 396
mcheritage.com.au

From: Scott Franks
To: penny@mcheritage.com.au
Subject: Re: Proposed subdivision at Lochinvar
Date: Tuesday, 14 May 2024 11:06:28 AM
Attachments: image004.png
image006.png

Please Register our interest

Regards
Scott Franks
Registered native title claimant PCWP
Yarrawalk PTY Limited
Scott@yarrwalk.com.au
Ph: 0404171544

On 14 May 2024, at 11:02 AM, penny@mcheritage.com.au wrote:

Dear «First_Name»,

RE: Written notification of project proposal and registration of interest as required under Heritage NSW Aboriginal Cultural heritage Consultation Requirements for Proponents 2010 (Stage 1)– Proposed subdivision at Lochinvar

McCardle Cultural Heritage (MCH) have been engaged by Monteath & Powys on behalf of the Proponent (Trustee of the Roman Catholic Church for the Diocese of Maitland – Newcastle; 841 Hunter Street, Newcastle West, NSW 2302) to undertake an Aboriginal Cultural Heritage Assessment (ACHA) and prepare an Aboriginal Heritage Impact Permit (AHIP) application if required for a proposed subdivision at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar, Maitland City Council Local Government Area (LGA).

As per the Heritage NSW policy - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010, Stage 1 (s1.3 to 4.1.8), MCH and the proponent are seeking community consultation with indigenous knowledge holders relevant to the project area who can determine the cultural significance of Aboriginal objects and/or places in the area of the proposed project.
<!--[if !vml]-->

<image006.png>

penny@mcheritage.com.au

From: WIDESCOPE . <widescope.group@live.com>
Sent: Tuesday, 14 May 2024 6:35 PM
To: penny@mcheritage.com.au
Subject: RE: Proposed subdivision at Lochinvar

Hi Penny,

Please register Steven Hickey for the project, thanks

Regards
Donna and Steven Hickey
Widescope Indigenous Group

+61425232056 | 73 Russell Street, Emu Plains, NSW 2750
Email:widescope.group@live.com

From: penny@mcheritage.com.au <penny@mcheritage.com.au>
Sent: Tuesday, May 14, 2024 11:01:48 AM
To: Cazadirect@live.com <Cazadirect@live.com>; christinepaul737@gmail.com <christinepaul737@gmail.com>; aga.services@hotmail.com <aga.services@hotmail.com>; alierafrenchtrading@outlook.com <alierafrenchtrading@outlook.com>; contact@acra.org.au <contact@acra.org.au>; tracey@guringai.com.au <tracey@guringai.com.au>; kerrie@awabakal.com.au <kerrie@awabakal.com.au>; awabakal.to@gmail.com <awabakal.to@gmail.com>; Kerrie@awabakal.com.au <Kerrie@awabakal.com.au>; cacatua4service@tpg.com.au <cacatua4service@tpg.com.au>; corroboreecorp@bigpond.com <corroboreecorp@bigpond.com>; tracey@marrung-pa.com.au <tracey@marrung-pa.com.au>; deckavale@hotmail.com <deckavale@hotmail.com>; m-desley@hotmail.com <m-desley@hotmail.com>; didgengunawalclan@yahoo.com.au <didgengunawalclan@yahoo.com.au>; gidawaa.walang@hotmail.com <gidawaa.walang@hotmail.com>; mischelle.morris@outlook.com <mischelle.morris@outlook.com>; leannekirkman1964@gmail.com <leannekirkman1964@gmail.com>; hto.paulette@gmail.com <hto.paulette@gmail.com>; Microlith99@gmail.com <Microlith99@gmail.com>; Tamatthews10@hotmail.com <Tamatthews10@hotmail.com>; indiglearning@gmail.com <indiglearning@gmail.com>; Les.atkinson@hotmail.com <Les.atkinson@hotmail.com>; normarch60@gmail.com <normarch60@gmail.com>; kaumapondee@live.com.au <kaumapondee@live.com.au>; Wonn1sites@gmail.com <Wonn1sites@gmail.com>; kevin.duncan@bigpond.com <kevin.duncan@bigpond.com>; lowerhunterai@gmail.com <lowerhunterai@gmail.com>; lhwcs.lea@gmail.com <lhwcs.lea@gmail.com>; rara02@bigpond.com <rara02@bigpond.com>; ceo@mindaribbalalc.org <ceo@mindaribbalalc.org>; murrabidgeemullangari@yahoo.com.au <murrabidgeemullangari@yahoo.com.au>; warren@yarnteen.com.au <warren@yarnteen.com.au>; darkinoong@gmail.com <darkinoong@gmail.com>; gomeroi.namoi@outlook.com <gomeroi.namoi@outlook.com>; rod.hickey@hotmail.com <rod.hickey@hotmail.com>; gamila_roi@yahoo.com.au <gamila_roi@yahoo.com.au>; scott@yarrawalk.com.au <scott@yarrawalk.com.au>; admin@ungooroo.com.au <admin@ungooroo.com.au>; wallangan@outlook.com <wallangan@outlook.com>; warragil_c.s@hotmail.com <warragil_c.s@hotmail.com>; deshickey@bigpond.com <deshickey@bigpond.com>; Widescope.group@live.com <Widescope.group@live.com>; gordon.griffithsbra@yahoo.com.au <gordon.griffithsbra@yahoo.com.au>; l.perry@optusnet.com.au <l.perry@optusnet.com.au>; andrew@worimi.org.au <andrew@worimi.org.au>; nadine.russell@environment.nsw.gov.au <nadine.russell@environment.nsw.gov.au>; Wurrumay@hotmail.com <Wurrumay@hotmail.com>; yinarculturalservices@bigpond.com <yinarculturalservices@bigpond.com>; dontminemeay@gmail.com <dontminemeay@gmail.com>; girragirramurun@yahoo.com <girragirramurun@yahoo.com>; wingarrawilay@yahoo.com <wingarrawilay@yahoo.com>; Helens27@outlook.com <Helens27@outlook.com>; Ethan3trewlynn@gmail.com <Ethan3trewlynn@gmail.com>; guthersic@gmail.com

penny@mcheritage.com.au

From: Carolyn .H <cazadirect@live.com>
Sent: Wednesday, 22 May 2024 9:08 AM
To: penny@mcheritage.com.au
Subject: Re: Proposed subdivision at Lochinvar
Attachments: A1.WC.2025.pdf; A1.PL.2025.pdf

Contact: **Carolyn Hickey**
Mobile: **0411650057**
Email: **Cazadirect@live.com**
Address: **10 Marie Pitt Place, Glenmore Park, NSW 2745**
ABN: **: 20 616 970 327**

Hi,
Thank you for your email, I would like to register in being involved in all levels of consultation for this project.
Including, Meetings, Reports, Sharing Cultural Information, and available Field Work.

About Carolyn Hickey
I am a traditional owner with over 25 years experience in helping preserve Aboriginal cultural heritage on projects.
I hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and values that exist in the project area.

I have attached A1 Indigenous Services Insurances.

A1 INDIGENOUS SERVICES, Represents over 100 Indigenous Locals

When Selecting Groups for Engagement;
Please consider that **A1 INDIGENOUS SERVICES** is a member of the **NSW INDIGENOUS CHAMBER OF COMMERCE.**
We carry the NSWICC Assured logo showing that **A1 Indigenous Services** has met National Policy requirements as upheld by the First Australians Chamber of Commerce and Industry (FACCI) for being identified as a **100% First Nations Owned Indigenous Business** That has demonstrate compliance with Government and Industry Regulators.

I agree to my details being supplied to OEH and the LALC
Please feel free to contact me on details supplied

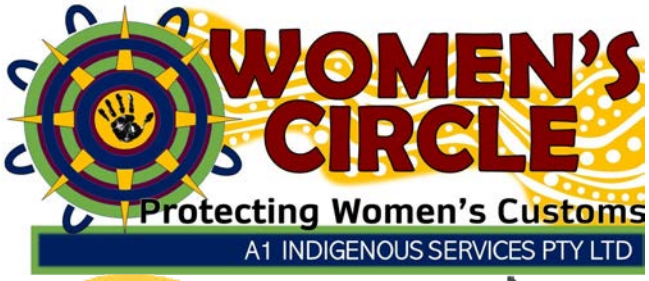
Kind Regards,
Carolyn Hickey

A1 INDIGENOUS SERVICES is now a member of the NSW INDIGENOUS CHAMBER OF COMMERCE

A business or enterprise carrying the NSWICC Assured logo has met National Policy requirements as upheld by the First Australians Chamber of Commerce and Industry (FACCI) for being identified as a First Nations Business Owner or Entrepreneur and the business must demonstrate compliance with Government and Industry Regulators.

(Certificate attached) A certificate confirms that the Enterprise listed above has met all requirements of the NSWICC's Assured Program , operating as a100% Aboriginal Owned, Operated and Controlled Business. The NSW Indigenous Chamber of Commerce (NSWICC) is the Peak body for Aboriginal Business in New South Wales and a member of the First Australians Chamber of Commerce and Industry (FACCI)

A1 Indigenous Services is 100%, Indigenous Owned Australian Company
which offers a range of services to the construction industry.
It is our mission to commit to an innovative approach to a better future for Indigenous employment and community.
While improving ways to close the gap in Aboriginal participation in the construction Industry.
Building strength in aboriginal communities and our Indigenous labour force.



McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
penny@mcheritage.com.au
P: 0412 702 396

mcheritage.com.au

30 April 2024

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

Dear Sir/madam,

RE: Written notification of project proposal and registration of interest as required under Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (s4.1.6): provision of Registered Aboriginal Parties (RAPs): Proposed subdvision at Lochinvar

In compliance with the Heritage NSW policy - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 1; s 4.1.6), please find attached records of Registered Aboriginal Parties (RAPs) for the above-named project.

Also, in compliance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 1: s 4.1.3 and 4.1.6), please also find attached a copy of the public notification placed in the Maitland Mercury newspaper.

If you have any questions or would like any additional information please don't hesitate to contact me on 0412 702 396 or via e-mail at penny@mcheritage.com.au.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

Registered Aboriginal Parties

Company	Contact
A1 Indigenous Services	Carolyn Hickey
Yarrawalk Pty Ltd	Scott Franks
Widescope Indigenous Group	Steven Hickey

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
penny@mcheritage.com.au
P: 0412 702 396

mcheritage.com.au

30 April 2024

Mindaribba Local Aboriginal Land Council
admin@mindaribbalalc.org

Dear Sir/madam,

RE: Written notification of project proposal and registration of interest as required under Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (s4.1.6): provision of Registered Aboriginal Parties (RAPs): Proposed subdvision Lochinvar

In compliance with the Heritage NSW - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 1; s 4.1.6), please find attached records of Registered Aboriginal Parties (RAPs) for the above-named project.

Also, in compliance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 1: s 4.1.3 and 4.1.6), please also find attached a copy of the public notification placed in the Maitland Mercury newspaper.

If you have any questions or would like any additional information please don't hesitate to contact me on 0412 702 396 or via e-mail at penny@mcheritage.com.au.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

Registered Aboriginal Parties

Company	Contact
A1 Indigenous Services	Carolyn Hickey
Yarrawalk Pty Ltd	Scott Franks
Widescope Indigenous Group	Steven Hickey

penny@mcheritage.com.au

From: penny@mcheritage.com.au
Sent: Thursday, 30 May 2024 8:01 AM
Cc: 'Cazadirect@live.com'; 'scott@yarrawalk.com.au'; 'Widescope.group@live.com'
Subject: Proposed subdivision at Lochinvar - info pack
Attachments: ACHAR Info Pack.pdf

Dear all,

RE: Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 2 & 3) – Presentation of information about the proposed project and request for comment on the proposed methods of investigation – Proposed subdivision at Lochinvar

McCardle Cultural Heritage (MCH) would like to thank you for registering your interest in this project. We previously offered the option for a meeting or an information pack, but did not receive your preference. As a result, we are providing the information packet via email/post.

To comply with the cultural heritage consultation requirements outlined in the Heritage NSW policy, an Aboriginal Cultural Heritage Assessment Information Packet has been enclosed. This packet contains detailed information about the proposed project, including maps, impact assessment process, cultural, environmental, and archaeological contexts, site-specific predictive model, proposed methodology, roles and responsibilities, and an opportunity for feedback on cultural concerns and assessment requirements.

MCH requests your input on the proposed methodology for the heritage assessment, any information on any Aboriginal objects or culturally significant places in the investigation area, along with any known issues of cultural significance you are aware of. Please specify any protocols or restrictions you wish to apply to the information shared and please consider any other relevant factors for the assessment.

Please make your written submission to MCH by close of business 27th June 2024. The absence of a response by the requested timeline will be taken as your indication that your organisation has no comments regarding the above.

The proponent intends to engage a number of RAPs (relative to the scale and nature of the investigations) to participate in the field work. If you wish to be considered for paid participation in the field investigations please review and complete the Aboriginal stakeholder site officer application form attached to the information packet provided. Aboriginal representatives will be selected by the proponent based upon merits of the applications received with respect to the selection criteria. Late application will not be accepted by the proponent.

The number of individuals engaged and the duration of their involvement will be at the sole discretion of the proponent and communicated to MCH. Successful applicants will be notified by MCH and all RAPs are invited to join field investigations, irrespective of remuneration, and contingent upon meeting Occupational Health and Safety and operational requirements.

Please note that regardless of participation in the field investigations, RAPs will be consulted in accordance with the Heritage NSW policy - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 for the remainder of the assessment.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the Heritage NSW requirements, please ensure confidential information is clearly indicated at the start of a conversation or noted on each written communication.

MCH looks forward to your response and working with you on this project. Please do not hesitate to contact myself on 0412 702 396 should you have any questions.

Kind regards,

Dr. Penny McCardle
Principal & Forensic Archaeologist
Forensic Anthropologist

McCARDLE
CULTURAL HERITAGE

PO Box 166,
Adamstown 2289 NSW
P: 0412 702 396
mcheritage.com.au

60 New England HIghway, Lochinvar

LGA: Maitland City Council

Aboriginal Cultural Heritage Assessment Information Packet

29 May 2024

McCARDLE CULTURAL HERITAGE PTY LTD

ACN 104 590 141 • ABN 89 104 590 141

PO Box 166, Adamstown, NSW 2289
Mobile: 0412 702 396 • Email: penny@mcheritage.com.au

McCARDLE
CULTURAL HERITAGE

Report No: J202454 Info Pack	
Approved by:	Penny McCardle
Position:	Director
Signed:	
Date:	29 May 2024

CONTENTS

LIST OF TABLES

LIST OF FIGURES

GLOSSARY

Aboriginal Cultural Heritage Values: traditional values of Aboriginal people, handed down in spiritual beliefs, stories and community practices and may include local plant and animal species, places that are important and ways of showing respect for other people.

Aboriginal Place: are locations that have been recognised by the Minister for Climate Change and the Environment (and gazetted under the *National Parks and Wildlife Act 1974*) as having special cultural significance to the Aboriginal community. An Aboriginal Place may or may not include archaeological materials.

Aboriginal Site: an Aboriginal site is the location of one or more Aboriginal archaeological objects, including flaked stone artefacts, midden shell, grinding grooves, archaeological deposits, scarred trees etc.

Harm: is defined as an act that may destroy, deface or damage an Aboriginal object or place. In relation to an object, this means the movement or removal of an object from the land in which it has been situated

Traditional Aboriginal Owners: Aboriginal people who are listed in the Register of Aboriginal owners pursuant to Division 3 of the *Aboriginal Land Register Act (1983)*. The Registrar must give priority to registering Aboriginal people for lands listed in Schedule 14 of the *National Parks and Wildlife Act 1974* or land subject to a claim under 36A of the *Aboriginal Land Rights Act 1983*.

Traditional Knowledge: Information about the roles, responsibilities and practices set out in the cultural beliefs of the Aboriginal community. Only certain individuals have traditional knowledge and different aspects of traditional knowledge may be known by different people, e.g., information about men's initiation sites and practices, women's sites, special pathways, proper responsibilities of people fishing or gathering food for the community, ways of sharing and looking after others, etc.

1 INTRODUCTION

McCardle Cultural Heritage Pty Ltd have been engaged by Monteath & Powys to prepare an Aboriginal Cultural Heritage Assessment (ACHA), and an Aboriginal Heritage Impact Permit (AHIP), if required, for the proposed Staged residential development at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar.

The assessment will determine the potential impacts upon the indigenous cultural heritage within the development area. It is intended that any areas of indigenous cultural heritage and archaeological values will be identified and appropriate management recommendations will be established through consultation with the Registered Aboriginal Parties (RAPs).

In compliance with the Heritage NSW, Department of Premier & Cabinet policy - Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 2, s4.21 to 4.2.4 and Stage 3 s4.3.1 to 4.3.7), this Aboriginal Cultural Heritage Information Packet provides information about the proposed project including, but not limited to, details of the proposed the project including maps, an outline of the assessment process, summary of the environmental, cultural and archaeological contexts, a predictive model, the proposed methodology, the roles and responsibilities of all parties, and provides an opportunity for you to identify and raise any cultural concerns, perspectives and assessment requirements you may have.

The assessment has been undertaken to meet the Heritage NSW, Department of Premier & Cabinet Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010a, the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW 2011, the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales 2010b, and the brief.

1.1 CONSULTATION

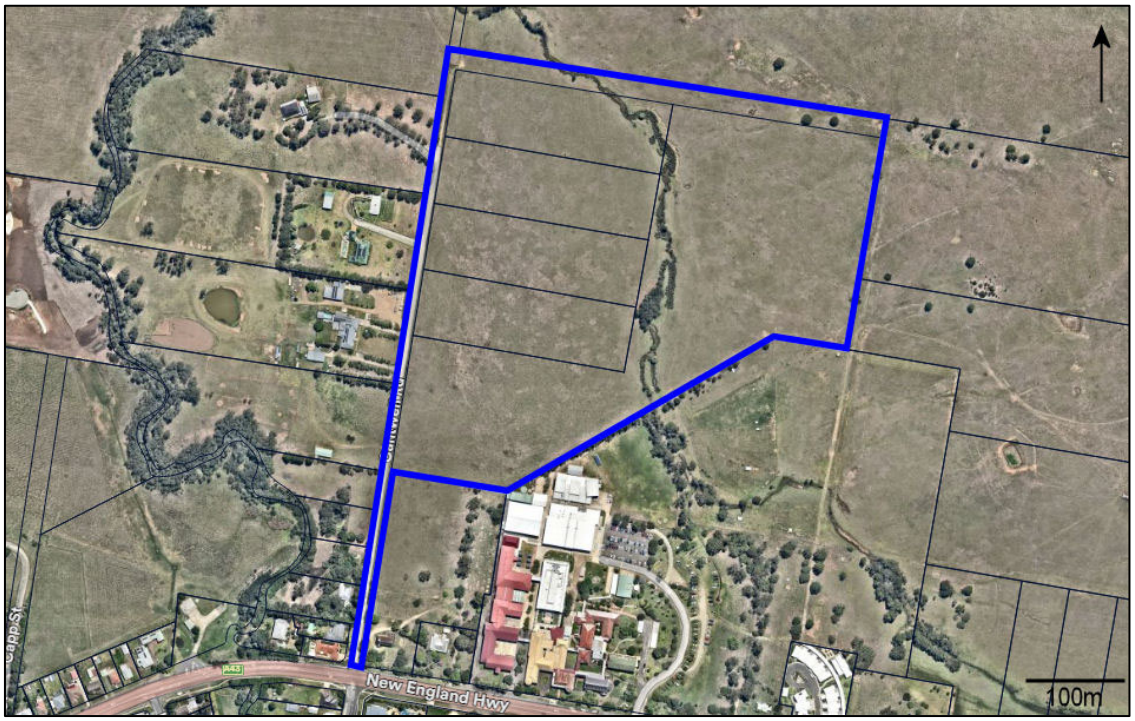
Consultation will be undertaken as per the Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 and will be detailed in the ACHA.

1.2 PROJECT AREA

The project area is defined by the proponent and is located at Lot 1 and 2 in DP1299958, known as 20 and 20A Cantwell Road, Lochinvar, respectively, and road widening proposed for Cantwell Road within Lot 2 DP1214402, known as 60 New England Highway, Lochinvar. The location and extent of the project area is illustrated in Figures 1.1 and 1.2.

Figure 1.1 Location of the project area

Figure 1.2 Aerial photograph of the project area



1.3 PROJECT OUTLINE AND IMPACTS

The project will include the subdivision of the project area into residential lots, roads, basins and associated infrastructure and utilities. Works typically associated with residential developments include clearing and demolition of existing structures, site remediation, bulk earthworks including construction of dwellings and roads, services reticulation: WW, PW, NBN, electrical and gas and landscaping.

1.4 CRITICAL DEVELOPMENT TIME LINES

The proponent wishes to commence works as soon as possible but also acknowledges the need to undertake cultural heritage and archaeological investigations on the site. Ideally these would be undertaken prior to any works commencing on the site, however, it would be possible to stage the development to exclude areas identified for investigation until the investigations are complete.

1.5 CRITICAL ARCHAEOLOGICAL TIMELINE

The following Table indicates the timelines critical for the archaeological assessment. However, please note that consultation may be increased or decreased depending on response times and knowledge sharing.

1.1 Archaeological timeline

	Week														
Stages	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
Stage 1: consultation	Gov. letters		RAP letters		Information pack				2 weeks' notice for survey & survey			Draft report review			
Stage 2: gathering of knowledge															
Stage 2: contextual research															
Stage 3: survey															
Stage 4: reporting															
Stage 5: finalisation															

2 ENVIRONMENTAL CONTEXT

The environmental context provides an understanding of the landscape and environmental factors as well as potential resources that may have been available in the past. The land uses also assists in an understanding of potential impacts they would have had on the landscape and associated cultural materials. This information is utilised with the archaeological context in order to ascertain a reliable predictive model of not only sit location and site type, but also the likelihood of survivability within that landscape.

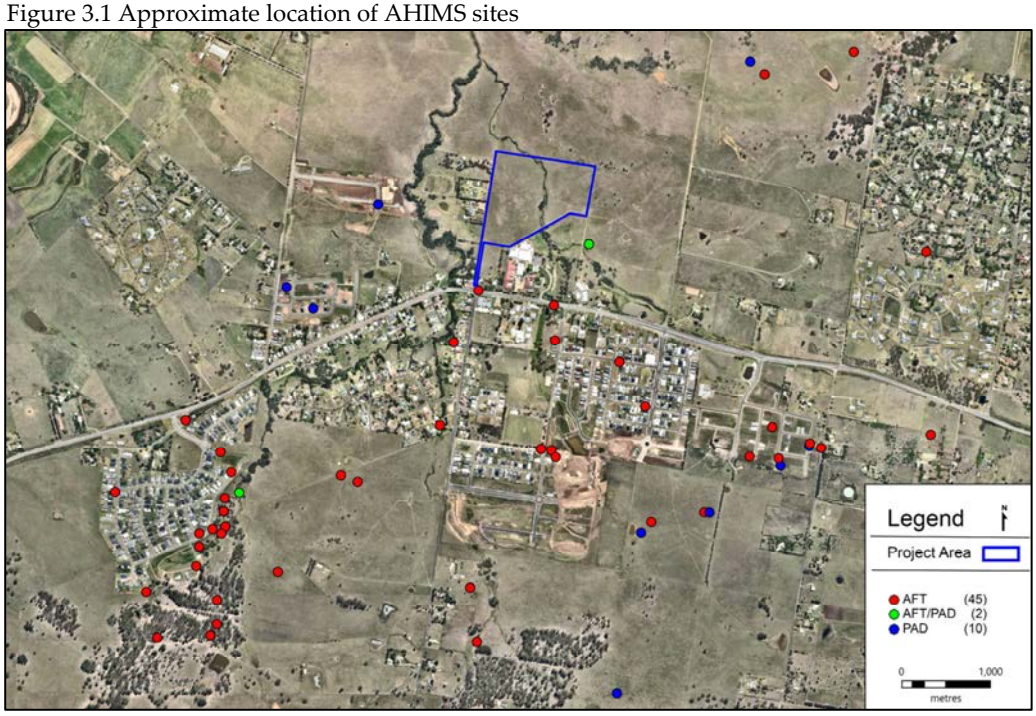
The underlying geology of the project area is Permian Lochinvar Formation of the Dalwood group that consists of basalt, siltstone and sandstone. The presence of basalt within the geology of the project area, indicates that stone materials suitable for manufacturing stone artefacts may occur in various locations throughout the project area. The project area includes very gentle slopes dissected by a 3rd order creek through its centre. In terms of fresh water availability, Lochinvar Creek (4th order) is located approximately 60 metres east of the southern end of the project area. A 3rd order creek runs north through the centre of the project area and joins Lochinvar Creek approximately 400 meters to the north. The project area has been cleared and mainly utilised for pastoral activities, such as grazing. The clearance of native vegetation, introduction of pasture grass, ploughing for pasture grasses, and construction of the road have all potentially affected any cultural materials present in the area.

3 ARCHAEOLOGICAL CONTEXT

The archaeological background provides context to the project area and wider cultural landscape in which the project area is situated. It identifies known sites, their landform location and proximity to subsistence resources. It also provides the nature and extent of known sites as well as their distribution across the landscape, thereby enabling a site-specific predictive model to be developed.

A search of the AHIMS register has identified 57 Aboriginal sites recorded within two kilometres of the project area and include 45 artefact sites (AFT), 10 PADs and 2 AFT/PAD sites. There are no AHIMS sites in the project area. A number of assessments have been undertake4n throughout the Lochinvar area and of particular relevance are the Assessments and test excavations undertaken in the eastern adjoining land. The findings of these investigations indicate that the land to the east of the project area had undergone various forms of human activity, such as land clearing, ploughing, and grazing. As a result, the deposits in this area are shallow and have been disturbed. Although artefacts have been discovered, their precise location of origin is unclear due to the disturbance, or redistribution of artefacts due to these land uses. A notable exception to this pattern was observed in a specific area where two creeks converge, located south of the current project area and within 50 metres of the 3rd order creek.

Figure 3.1 Approximate location of AHIMS sites



Researching both the regional and local archaeological contexts, the following archaeological patterning is evident:

- the majority of sites are located on elevated landforms (very gently inclined slopes, terraces, flats) within 50 metres of a reliable water source with a drop in site number and densities from 50 metres of water;
- sites in proximity to ephemeral water sources or located in the vicinity of headwaters of upper tributaries (1st order streams) have a sparse distribution and density and contain little more than a background scatter of discarded artefacts;
- sites located in the vicinity of the upper reaches of minor tributaries (2nd order streams) also have a relatively sparse distribution and density and may represent evidence of localised one-off behaviour;
- sites located in the vicinity of the lower reaches of tributaries (3rd order creeks) have an increased distribution and density and contain evidence that may represent repeated occupation or concentration of activity;
- sites located in the vicinity of major tributaries (4th and 5th order streams/rivers) have the highest distribution and densities. These sites tend to be extensive and complex in landscapes with permanent and reliable water and contain evidence representative of concentrated activity; and
- sites located within close vicinity at the confluence of any order stream may be a focus of activity and may contain a relatively higher artefact distribution and density.
- the data suggests that elevated landforms in close proximity to water sources were the preferred location for camping which manifests in the archaeological record as low to high density open camp sites (depends on the reliability of the water source) that may include a variety of artefact types, raw materials, heat treatment, grind stones, oven pits, hearths etc;
- the data also indicates that all landforms and unreliable water sources were utilised for transitory activities such as traveling and, or, hunting and gathering which manifests in the archaeological record as a background scatter of very low density discarded artefacts;

- a wide variety of site types are represented in the project area with open campsites and isolated artefacts by far the most common;
- lithic artefacts are primarily manufactured from mudstone and silcrete with a variety of other raw materials also utilised but in smaller proportions;
- flakes, broken flakes and flaked pieces are the most common artefact types recorded;
- the stone artefacts are usually relatively dated to within the last 5,000 years;
- the vast majority of artefactual material in the region was observed on exposures with good to excellent ground surface visibility, and
- the majority of sites have been subject to disturbances including human and natural

3.1.1 PREDICTIVE MODEL

Based on the AHIMS results, local and regional archaeological investigations as well as the environmental context, given that fresh water was necessary for survival and a 3rd order creek flows through the project area following heavy rain, the project area have been used for hunting and gathering opportunities rather that large-scale long-term camping. Evidence of such past Aboriginal land uses manifest in the archaeological record as low-density artefact scatters and isolated finds. However, any evidence of past Aboriginal land uses may also have been impacted by past European land uses (clearing, ploughing, grazing).

Just as the environmental context and the results of the regional and local archaeological contexts have assisted in formulating a predictive model, the predictive modeling has assisted in formulating the field investigation methodology (Sections 4 and 5).

4 METHODS OF INVESTIGATION

There are two methods of investigation including the gathering of cultural significance knowledge and archaeological assessment. These are outlined below.

4.1 GATHERING OF INFORMATION OF CULTURAL SIGNIFICANCE

MCH and the proponent understand that unlike the written word, Aboriginal cultural knowledge is not static, but responds to change through absorbing new information and adapting to its implications. Aboriginal cultural knowledge is handed down through oral tradition (song, story, art, language and dance) from generation to generation, and preserves the relationship to the land (DECCW 2010).

Specific details and parts of cultural knowledge are usually held and maintained by individuals or within particular family groups. Although the broader community may be aware of the general features of that knowledge, it is not a common practice within Aboriginal society for detailed cultural knowledge to be known in the broader community or within Aboriginal community organisations. However, at times these organisations may defer to particular individuals or family groups as being the knowledge-holders of particular sets of cultural knowledge about places or the environment (DECCW 2010).

All responses to the information packet will be considered in the final methods which will adapt accordingly. Any other changes to the methods may occur on site in order adapt to unforeseen field conditions.

4.1.1 PROPOSED METHODS: GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

The aim of gathering of cultural knowledge and understanding any cultural significance in relation to the project rea and its surrounds is to facilitate a process whereby RAPs can;

a) Contribute culturally appropriate information
b) Contribute to the proposed methodology
c) Provide information that will enable the cultural significance of Aboriginal objects and/or places within the project area to be determined.

4.1.2 IDENTIFYING KNOWLEDGE HOLDERS

The aim is to identify Traditional Owners/traditional knowledge holders who have knowledge that is relevant to the project area so that any potential effects of the project or activity on the Indigenous cultural heritage values of objects and/or places can be identified.

It also aims to identify Indigenous people who may not necessarily be Traditional Owners/traditional knowledge holders but who do have interests in the area so that any effects of the project or activity on the Indigenous heritage values of objects and/or places, such as mission stations and historic buildings, will be identified.

MCH understands it is the Indigenous custom to elect knowledge holders and it is traditionally the Indigenous people who nominate who speak for country. Unfortunately, some RAPs and Government Departments have placed the onus of identifying traditional knowledge holders onto proponents and archaeologists. In order to do this, MCH are guided by the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010) which provides guidelines to identify traditional knowledge holders. Knowledge holders are defined as follows:

a) Traditional knowledge holder of specific, detailed knowledge passed directly by a traditional knowledge holder in a traditional manner
b) Traditional knowledge holder of general knowledge passed directly by a traditional knowledge holder in a traditional manner

c) Knowledge holder of recent information obtained through other means (such as, but not limited to, ethnographic sources, internet searches, assessment reports, personal experience etc).

Knowledge holders have been initially identified through the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 1 (S. 4.1.1 to 4.1.2) that seeks to identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Additionally, knowledge holders were sought to be identified through the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 1 (S. 4.1.3 to 4.1.8) that sought to identify, notify and register Aboriginal people who identify as knowledge holders (using the above defined knowledge holder criteria) who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project.

Native Title Claimant Groups/individuals are acknowledged as knowledge holders due to the requirements through the Native Title Registration process. Native Title Claimant groups/individuals are also asked to further define the knowledge holder using the above defined knowledge holder criteria.

This process ensures consistent consultation for all RAPs and adheres to the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010).

4.1.3 IDENTIFYING CULTURAL SIGNIFICANCE

Cultural significance is embodied in the place—in its fabric, setting, use, associations and meanings. It may exist in: objects at the place or associated with it; in other places that have some relationship to the place; and in the activities and traditional and customary practices that may occur at the place or that are dependent on the place. A place may be of cultural significance if it satisfies one or more of these criteria. Satisfying more criteria does not mean a place is necessarily more significant.

Only Aboriginal people who are descendants of the people from the traditional lands in which the project is situated can identify the cultural significance of their own cultural heritage.

The cultural significance of a place is assessed by analysing evidence gathered through the physical investigation of the place, research and consultation for this project in line with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Code of Practice for Archaeological Investigations of Aboriginal Objects in New South Wales (DECCW 2010) and the ICOMS Burra Charter (2013). Part of the process is to evaluate its qualities against a set of criteria that are established for this purpose. The criteria used include those set out by the Burra Charter (see below).

4.1.4 VALUES AND QUESTIONS TO CONSIDER

The following values and questions are derived from the Burra Charter (2913) to facilitate your consideration when providing information on the cultural significance of any Aboriginal objects(s) and/or place(s). The criteria discussed below are a means to assess cultural significance in order to meet the Government Departmental requirements. MCH understands that the method of assessing cultural significance presented may not be culturally appropriate and considered offensive to some; it is not intended to be so.

There are five terms or values, which are listed alphabetically in the Burra Charter, and are often included in Australian heritage legislation. Criteria are also used to help define cultural and natural significance, and there is now a nationally agreed set of heritage assessment criteria and each of these criteria may have tangible and intangible aspects and it is essential that both are acknowledged.

The five criteria include Aesthetic value, Historic value, Scientific value, Social value and Spiritual value. These are discussed below along with some questions for consideration when you consider reporting on the cultural significance.

AESTHETIC SIGNIFICANCE

Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. It is how we respond to visual and non-visual aspects such as sounds, smells and other factors that can have a strong impact on your thoughts, feelings and attitudes. It may also include consideration of the form, scale, colour, texture and material and its beauty (Australia ICOMOS 2013). When considering the aesthetic value and significance of a site and/or PAD, some questions to consider may include:

- Does the object or place have special compositional or uncommonly attractive qualities involving combinations of colour, textures, spaces, massing, detail, movement, unity, sounds, scents?
- Is the object or place distinctive within the setting or a prominent visual landmark?
- Does the object or place have qualities which are inspirational or which evoke strong feelings or special meanings?
- Is the object or place symbolic for its aesthetic qualities: for example, does it inspire artistic or cultural response, is it represented in art, photography, literature, folk art, folk lore, mythology or other imagery or cultural arts?
- Does the object or place display particular aesthetic characteristics of an identified style or fashion?
- Does the object or place show a high degree of creative or technical achievement?

HISTORIC SIGNIFICANCE

The historic value encompasses all aspects of history. For example, it may include the history of aesthetics, art, science, society and spirituality. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment (Australia ICOMOS 2013). When considering the historic value and significance of a site and/or PAD, some questions to consider may include:

- Is the object or place associated with an important event or theme in your history?
- Is the object or place important in showing patterns in the development of your history locally, in a region, or on a state-wide, or national or global basis?
- Does the object or place show a high degree of creative or technical achievement for a particular period?
- Is the object or place associated with a particular person or cultural group important in the history of the local area, state, nationally or globally?

SCIENTIFIC SIGNIFICANCE

The scientific value refers to the information content of a place and its ability to reveal more about an aspect of the past through examination or investigation of the place, including the use of archaeological techniques. The relative scientific value of a place is likely to depend on the importance of the information or data involved, on its rarity, quality or representativeness, and its potential to contribute further important information about the place itself or a type or class of place or to address important research questions (Australia ICOMOS 2013). Whilst the scientific value and significance will be discussed in detail in the Archaeological Heritage Impact Assessment report, it is important to consider this value when

assessing the cultural values and significance of an object and/or place. When considering the scientific value and significance of a site and/or PAD, you may consider:

- Would further investigation of the place have the potential to reveal substantial new information and new understandings about people, places, processes or practices which are not available from other sources?

SOCIAL VALUE

Social value refers to the associations a place has for a particular community or cultural group and the cultural or social meaning it has for that community or cultural group (Australia ICOMOS 2013). When considering the social value and significance of a site and/or PAD, some questions to consider may include:

- Is the object or place important as a local marker or symbol?
- Is the object or place important as part of your community identity or the identity of another particular cultural group?
- Is the object or place important to you, your community or other cultural group because of associations and meanings developed from long use and association?

SPIRITUAL VALUE

Spiritual value embraces the intangible values and meanings embodied in or evoked by a place which gives importance to the spiritual identity, or traditional knowledge, art and practices of a cultural group. Spiritual value may also be reflected in the intensity of aesthetic and emotional responses or community associations, and be expressed through cultural practices and related places (Australia ICOMOS 2013). The qualities of the place may inspire a strong and/or spontaneous emotional or metaphysical response in people, expanding their understanding of their place, purpose and obligations in the world, particularly in relation to the spiritual realm (Australia ICOMOS 2013). When considering the spiritual value and significance of a site and/or PAD, some questions to consider may include:

- Does the object or place contribute to the spiritual identity or belief system of you, your community or another cultural group?
- Is the place a repository of knowledge, traditional art or lore related to spiritual practice for you, your community or another a cultural group?
- Is the object or place important in maintaining the spiritual health and wellbeing of you, your community people or another culture or group?
- Do the physical attributes of the object or place play a role in recalling or awakening an understanding of an individual or a group's relationship with the spiritual realm?
- Do the spiritual values of the object or place find expression in Awabakal cultural practices or human-made structures, or inspire creative works?

4.1.5 PROVIDING YOUR KKNOWLEDGE AND CULTURAL SIGNIFICANCE INFORMATION

It is difficult to provide options that will ensure every individual's needs are met. In light of this, the following proposed options are provided are in no way the only options available. If you have alternative ways of providing your knowledge and cultural significance information, please notify MCH to ensure we can facilitate your requirements where appropriate.

It is acknowledged and understood that the methods and options discussed are not traditional customs and some may take offence. MCH sincerely apologise for any offence taken as none is intended.

1) Discussion in the field during the field work
2) Written documentation (letter, e-mail)
3) Meeting to discuss and/or provide written documentation
4) Formal interview with specific questions/answers and/or discussions
5) Phone conversation
6) Internet video conversation
7) Using the attached form/questioner

4.2 ARCHAEOLOGICAL INVESTIGATION METHODS

4.2.1 OBJECTIVES

The objective of the investigation is to determine whether surface and, or, subsurface cultural material exists in the areas identified as having archaeological potential. The detection of surface material will drive the management recommendations and mitigation measures to ensure that any significant cultural resources are identified and protected where possible or is subject to minimal impact by the proposed development.

4.2.2 ABORIGINAL CULTURAL HERITAGE ASSESSMENT METHODOLOGY & REPORT

Overall, the ACHA will include, but not limited to, the following;

- Project background, including project description, detailed maps, legislative context, qualifications of the investigator
- Consultation outlining the process as per the Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010
- Landscape context including, landforms, soils, geology, geomorphology, water sources, fauna and flora, history of land use and impacts and, natural impacts
- Archaeological context including review of previous regional and local work in the area, AHIMS search, summary and discussion of the local and regional character of Aboriginal land use and its material traces, occupation model and site-specific predictive model
- Results that will include the field work results (see below for proposed methodology), detailed descriptions of landforms (survey units), vegetation cover, exposures, land uses and disturbances, site(s) and PAD(s). It will also include any analysis and discussion
- An assessment of scientific values and significance assessment
- An impact assessment
- Management and mitigation measures
- Recommendations
- References
- Appendices will include the AHIMS results and community consultation log and communications

4.2.3 PROPOSED SURVEY METHODOLOGY

The survey methodology is in accordance with the Heritage NSW, Department of Premier & Cabinet policy - Code of Practice for Archaeological Investigations of Aboriginal Objects in New South Wales 2010, Section 2.2. This proposed methodology is subject to variation due to unforeseen field conditions/constraints.

- Survey units identified based on landforms

- Transects will be via foot with the survey team spaced at 5-10 metres apart across the investigation area
- Ground surface visibility recorded for each survey unit and given a % rating of vegetation cover
- Exposures recorded for each survey unit given a % rating of exposure and exposure type
- Using the effective coverage and exposure information, calculate the effective survey coverage for each survey unit and the entire investigation area
- Disturbances recorded for each survey unit
- Take representative photographs of survey units
- All sites and/or PADs recorded in each survey unit and accurately mapped

Sites and their boundaries will be defined as;

- The spatial extent of the visible objects or direct evidence of their location
- Obvious physical boundaries where present such as, but not limited to, mound sites, middens, ceremonial grounds, disturbances (i.e., road, building)
- Identification by the Aboriginal community on the basis of cultural information

All sites and PADs will include, but not limited to, the following:

- Site type and content
- Survey unit (landform)
- Distance from water sources
- Vegetation cover (if any)
- Exposure (if any)
- Disturbances (if any)
- GPS co-ordinates
- Identified site boundaries
- Potential for in situ deposits
- Photographs (with a metric scale)

4.3 FORMS

You will find forms attached for your connivance. However, if you prefer to use your own, please feel free to do so. Please ensure that these are either filled out in full or your own forms/letters answer the questions and return to MCH no later than 27th June 2024.

5 ROLES, RESPONSIBILITIES AND FUNCTIONS OF PARTIES

The roles, responsibilities and functions of all parties are outlined below and is taken from DECCW (2010).

5.1 HERITAGE NSW, DEPARTMENT OF PREMIER AND CABINET

The Chief Executive of Heritage NSW, Department of Premier & Cabinet is the decision-maker who decides to grant or refuse an Aboriginal Heritage Impact Permit (AHIP) application. If an AHIP is issued, conditions are usually attached and Heritage NSW, Department of Premier & Cabinet is responsible for ensuring the AHIP holder complies with those conditions. When considering an application under Part 6 of the NPW Act, the Chief Executive will review the information provided by proponents in line with its internal policies and procedures to assess potential or actual harm to Aboriginal objects or places (DECCW, 2009).

The Environment Protection and Regulation Group (EPRG) of Heritage NSW, Department of Premier & Cabinet is responsible for administering the regulatory functions under Part 6 of the NPW Act. Heritage NSW, Department of Premier & Cabinet expects that proponents and Aboriginal people should:

- be aware that Part 6 of the NPW Act establishes the Chief Executive or delegate of Heritage NSW, Department of Premier & Cabinet as the decision-maker; and
- recognise that the Chief Executive's (or delegates) decisions may not be consistent with the views of the Aboriginal community and/or the proponent. However, Heritage NSW, Department of Premier & Cabinet will consider all relevant information it receives as part of its decision-making process.

5.2 PROPONENT

All proponents operate within a commercial environment which includes:

- strict financial and management issues, priorities and deadlines;
- the need to gain community support in order to secure any necessary approval/consent/ licence/permit to operate;
- the need for clearer processes and certainty of outcomes;
- the need for suitable access to land for the purpose of their development project;
- the need to work efficiently within the project's time, quality and cost planning and management parameters; and
- the need for culturally appropriate assessment findings relevant to their project.

Under these requirements, proponents should undertake the following:

- bring the RAPs or their nominated representatives together and be responsible for ensuring appropriate administration and management of the consultation process;
- consider the cultural perspectives, views, knowledge and advice of the RAPs involved in the consultation process in assessing cultural significance and developing any heritage management outcomes for Aboriginal object(s) and/or place(s);
- provide evidence to Heritage NSW, Department of Premier & Cabinet of consultation by including information relevant to the cultural perspectives, views, knowledge and advice provided by the registered Aboriginal parties; and
- accurately record and clearly articulate all consultation findings in the final ACHA report.

5.3 REGISTERED ABORIGINAL STAKEHOLDERS

The interests and obligations of Aboriginal people relate to the protection of Aboriginal cultural heritage. It is only Aboriginal people who can determine who is accepted by their community as being authorised to speak for Country and its associated cultural heritage. Where there is a dispute about who speaks for Country, it is appropriate for Aboriginal people, not Heritage NSW, Department of Premier & Cabinet or the proponent, to resolve this dispute in a timely manner to enable effective consultation to proceed.

Aboriginal people who can provide information about cultural significance are, based on Aboriginal lore and customs, the traditional owners or custodians of the land that is the subject of the proposed project area. Traditional owners or custodians with appropriate cultural heritage knowledge necessary to make informed decisions who wish to register as an Aboriginal party are those people who:

- continue to maintain a deep respect for their ancestral belief system, traditional lore and customs;
- recognise their responsibilities of their community, knowledge and obligations to protect and conserve their culture and heritage and to care for their traditional lands or country; and
- have the trust of their community, knowledge and understanding of their culture and permission to speak about it.

The registered Aboriginal parties should undertake the following;

- ensure the appropriate cultural knowledge holder is providing the appropriate information;
- uphold and respect the traditional rights, obligations and responsibilities of Aboriginal people within their own boundaries and not to infringe in other areas or Aboriginal people outside their own boundaries;
- consider and provide the proponent the cultural perspectives, views, knowledge and advice during the consultation process, assessing cultural significance and developing any heritage management outcomes for Aboriginal object(s) and/or place(s); and
- need to work efficiently within the project's time and provide feedback in a timely manner.

5.4 LOCAL ABORIGINAL LAND COUNCILS

The NSW Aboriginal Land Council (NSWALC) and Local Aboriginal Land Councils (LALCs) have statutory functions relevant to the protection of Aboriginal culture and heritage under the NSW Aboriginal Land Rights Act 1983. These requirements do not extend the role of NSWALC and LALCs in the significance assessment process. That is, these requirements do not provide NSWALC and/or LALCs any additional or specific decision-making role in the assessment of significance of Aboriginal object(s) and/or place(s) that are subject to an AHIP application under Part 6 of the NPW Act.

LALCs may choose to register an interest to be involved in the consultation process, or may assist registered Aboriginal parties to participate in the consultation process established by these requirements. In order to ensure effective consultation and the subsequent informed heritage assessment, LALCs are encouraged to identify and make contact with Aboriginal people who hold cultural knowledge in their area.

5.5 EMPLOYMENT

The proponent may engage a number of Aboriginal representatives from the registered parties (based on the size and nature of the project) to participate and assist in the fieldwork component of this project. Renumeration for any fieldwork is not part of the consultation process and MCH do not get involved in any such issues. However, please note that any renumeration offered by the proponent for any field work component of the assessment may be based on a number of factors, including but not limited to, the overall

project budget, job description, receipt of CVs and insurance certificate of currencies, and will be above the industry standard rate of pay for the specific work.

If you would like to be considered for paid field work, please answer the selection criteria attached and ensure you attach certificates of currency for the relevant insurances, CV(s), any certificates and references. MCH will then pass this information onto the proponent for their consideration to make the selection for fieldwork participants should they wish to do so. MCH will ensure all Aboriginal parties are invited to participate in fieldwork regardless of renumeration. Paid participation is determined by the proponent not MCH.

5.6 FORMS

You will find forms attached for your connivance. However, if you prefer to use your own, please feel free to do so. Please ensure that these are either filled out in full or your own forms/letters answer the questions and return to MCH no later than 27th June 2024.

Appendix A

MCH would like to clearly state that, should you wish to provide feedback in another form, you are encouraged to do so. You are under no obligation to complete the current form.

However, should you wish to use this form, please complete, sign and return to MCH using one of the following;

E-mail: penny@mcheritage.com.au

Postal address: MCH

PO Box 166

Adamstown, NSW 2289

ABORIGINAL STAKEHOLDER SITE OFFICER APPLICATION

Position description (site officers are selected by the proponent and based on the information provided by you (CV, experience, reference check, insurances, rates).

A site officer must demonstrate that they have satisfactorily participated in previous archaeological fieldwork with an archaeologist. A trainee site officer does not need to demonstrate previous archaeological experience. Site officers must be able to:

- undertake direction from the project archaeologist
- work in a range of climates wearing the required PPE
- work in teams with a wide range of people
- identify a broad range of Aboriginal objects across the landscape

To qualify as a site officer, appropriate training in identifying Aboriginal objects must have been undertaken (such as the NPWS sites awareness training course, or other relevant secondary or tertiary studies) or equivalent knowledge or experience must be demonstrated. The duties of the site officer under the direction of the project archaeologist may include, but not limited to:

- walking the project area
- meeting general and site-specific Occupational Health and Safety requirements

Selection criteria

The proponent will offer positions based on the following key selection criteria:

- an individual's ability to undertake the tasks specified above
- an individual's availability to undertake the activity (physically able to undertake field work)
- an individual's experience in undertaking similar activities. Applications may be subject to a reference check
- individuals with demonstrated cultural knowledge relevant to the local area
- individuals who can demonstrate they can communicate the results of the field work back to their managers and RAPs
- in addition to a consideration of the key selection criteria, the Proponent may give preference to applicants who live locally

The proponent is under no obligation to offer site officer positions based on an individual's association with a cultural group or area. The proponent makes no guarantee that registered parties will be engaged to undertake archaeological field activities. The number of site officer positions available will be based on need as described in the archaeological methodology. However, MCH will ensure all registered stakeholders are invited to participate in the fieldwork regardless of engagement arrangements between the stakeholder(s) and the proponent. Applicants will be notified whether they have been successful or unsuccessful in their application for renumeration for fieldwork.

Engagement & Payment

The Proponent selects and has final approval on who will be engaged as a site officer. Successful applicants will be engaged to provide the services through a written contract that will be provided at a later date. The proponent will only engage Service Providers with NSW workers compensation insurance, public liability insurance, and comprehensive motor vehicle insurance or third-party property damage insurance. Engagement of the Service Provider will be a rate that may be based on a number of factors, including but not limited to, the overall project budget, job description, receipt of CVs and insurance certificate of currencies, offered rates of the RAPs and will be above the industry standard rate of pay for the specific work.

The quoted rate is the rate to be paid by the Proponent to the Service Provider - not to the individual site officer/trainee site officer. Payment will only be made for the provision of the services (actual hours worked), not for the time spent travelling to and from site, and there is no daily or half daily rate. Payment will be made upon the receipt of a cultural heritage report and receipt of your response to the draft report.

ABORIGINAL SITE OFFICER APPLICATION FORM

Lochinvar

An Aboriginal site officer application form must be filled out for each individual seeking engagement as a site officer.

Name of organisation (if relevant)	
Name	
Contact number	
Mailing address	
Email address	
Position applied for	Site officer ☐ Trainee Site Officer ☐
Please list any formal qualifications or relevant experience to the position applied for (attach documentation as required)	
Please list any previous archaeological, sites, survey, excavation or other relevant experience (attach additional sheets)	
Please provide the contact details of at least one archaeologist who can be contacted as a referee	

INSURANCES

Public Liability	Expiry date:	(attach certificate of currency)
Worker Compensation	Expiry date:	(attach certificate of currency)
Comprehensive Motor Vehicle	Expiry date:	(attach certificate of currency)

Failure to provide up to date Certificate of Currencies will prevent you participating in any fieldwork. MCH may have received copies previously, however, they must be provided for each project.

FINANCIAL (do not fill out GST column if you are not registered for GST)

Hourly rate	Excluding GST	Including GST	Other Information
$	$	$	

OCCUPATIONAL HEALTH & SAFETY (OH&S)

All participants are required to comply with MCH and the proponents OH&S requirements, including PPE requirements (long pants, long sleeved shirt, high visibility clothing, hat, sunscreen and steel caped boots). You will be advised of any additional requirements. All fieldworkers will arrive on time at the meeting location and stay for the duration of the fieldwork. All fieldworkers will need to bring lunch, snacks and drinking water.

This also includes appropriate and acceptable behaviour at all times and be fit and ready for work (including being alcohol, drug and fatigue free).

Failure to comply will prevent you from participating in the field work.

COMMENTS ON PROPOSED METHODOLOGY

Lochinvar

I, _____ (*please insert your name*) of _____ (*please insert the name of your group*), **agree to the methodology** outlined by MCH in the information packet for the above-named project.

_____

_____

Signed: _____ Date: _____

Position within organisation: _____

I, _____ (*please insert your name*) of _____ (*please insert the name of your group*), **do not agree to the methodology** outlined by MCH in in the information packet for the above-named project for the following reasons (*please explain your reasons for disagreeing):*

_____

_____

I would like to suggest the following (please provide your reasoning):

_____

_____

Signed: _____ Date: _____

Position within organisation: _____

PROVIDING KNOWLEDGE ABOUT CULTURAL SIGNIFICANCE

Lochinvar

Company Name):_____

Contact:_____

Postal address:_____

_____

Mobile No:_____

E-Mail:_____

Date:_____

I would like to provide knowledge about cultural significance using the following method(s). Please tick your preferred method(s):

1) Discussion in the field during field work
2) Written documentation (letter, e-mail)
3) Meeting to discuss and/or provide written documentation
4) Formal interview with specific questions/answers and/or discussions
5) Phone conversation
6) Internet video conversation
7) Using the attached form/questioner

Other: Please provide details:

_____

_____

_____

_____

A1 INDIGENOUS SERVICES
Contact: Carolyn Hickey
M: 0411650057
E: Cazadirect@live.com
A: 10 Marie Pitt Place,
Glenmore Park, NSW 2745
ABN: : 20 616 970 327

Hi Penny.

1.Cultural connection:
About the founder Carolyn Hickey
I am a Traditional Owner and Custodian with over 25 years experience in helping preserve Aboriginal cultural heritage on projects.
I hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and values that exist in the project area. Among my peers I am considered a leader and a strong positive voice within my indigenous community.

2.Representing your community members:
A1 INDIGENOUS SERVICES PTY LTD Represents over 100 Indigenous Locals

When Selecting Groups for Engagement;
Please consider that A1 INDIGENOUS SERVICES PTY LTD is a member of the NSW INDIGENOUS CHAMBER OF COMMERCE.
We carry the NSWICC Assured logo showing that A1 Indigenous Services has met National Policy requirements as upheld by the First Australians Chamber of Commerce and Industry (FACCI) for being identified as a 100% First Nations Owned Indigenous Business That has demonstrated compliance with Government and Industry Regulators.

3.<u>Previous experience:</u>
Northern Road Stage 5 & 6/ TFNSW
-Warragamba Dam Project
-Western Sydney Airport
-Badgerys Creek
-Elizabeth Drive/ Artefact
-Bridge Street/ Artefact
-Central Station/ Artefact
-Parramatta River
-Tenth Avenue Austral
-M12/ TFNSW
-Box Hill/ Extent
-Trinity Grammar School
-Elizabeth Drive/Artefact
-Transport M12
-Muswellbrook Bypass
-Singleton Bypass
-Muswellbrook Solar farm
-Muswellbrook mine
-Heatherbrae Hunter River School
-Cessnock / Gillieston Heights
-M1/Raymond Terrence
-Hunter High school
-APA New England Hwy
-M1 New England Highway
Many more

A1 INDIGENOUS SERVICES
Contact: Carolyn Hickey
M: 0411650057
E: Cazadirect@live.com
A: 10 Marie Pitt Place,
Glenmore Park, NSW 2745
ABN: : 20 616 970 327

10/12/2023

Archaeologist who can be contacted as a referee.

+ DOMINIC STEELE / Principal Archaeologist
0411 884 232

+ SARAH MANE / Archaeologist
0415 293 874

+ RYAN DESIC / Principal Archaeologist
0411 329 712

I have attached A1 Indigenous Services Insurances

Kind Regards
Carolyn Hickey
Managing Director

ABORIGINAL SITE OFFICER APPLICATION FORM

Lochinvar

An Aboriginal site officer application form must be filled out for each individual seeking engagement as a site officer.

Name of organisation (if relevant)	A1 INDIGENOUS SERVICES
Name	CAROLYN HICKEY
Contact number	0411650057
Mailing address	10 MARIE PITT PL, GLENMORE PARK, NSW 2745
Email address	cazadirect@live.com
Position applied for	Site officer ☑ Trainee Site Officer ☐
Please list any formal qualifications or relevant experience to the position applied for (attach documentation as required)	I am a traditional owner with over 25 years experience in helping preserve Aboriginal cultural heritage on projects. I hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and values that exist in the project area.
Please list any previous archaeological, sites, survey, excavation or other relevant experience (attach additional sheets)	ATTACHED
Please provide the contact details of at least one archaeologist who can be contacted as a referee	DOMINIC STEELE 0411884232 / Sarah Mane Archaeologist 0415293874 / RYAN DESIC Principal Archaeologist 0411 329 712

INSURANCES

Public Liability	Expiry date:	(attach certificate of currency)
Worker Compensation	Expiry date:	(attach certificate of currency)
Comprehensive Motor Vehicle	Expiry date:	(attach certificate of currency)

Failure to provide up to date Certificate of Currencies will prevent you participating in any fieldwork. MCH may have received copies previously, however, they must be provided for each project.

FINANCIAL (do not fill out GST column if you are not registered for GST)

Hourly rate	Excluding GST	Including GST	Other Information
$	$ 113.64	$ 125.00	

OCCUPATIONAL HEALTH & SAFETY (OH&S)

All participants are required to comply with MCH and the proponents OH&S requirements, including PPE requirements (long pants, long sleeved shirt, high visibility clothing, hat, sunscreen and steel caped boots). You will be advised of any additional requirements. All fieldworkers will arrive on time at the meeting location and stay for the duration of the fieldwork. All fieldworkers will need to bring lunch, snacks and drinking water.

This also includes appropriate and acceptable behaviour at all times and be fit and ready for work (including being alcohol, drug and fatigue free).

Failure to comply will prevent you from participating in the field work.

COMMENTS ON PROPOSED METHODOLOGY

Lochinvar

I, CAROLYN HICKEY (*please insert your name*) of A1 INDIGENOUS SERVICES (*please insert the name of your group*), **agree to the methodology** outlined by MCH in the information packet for the above-named project.

_____

_____

Signed: _____ Date: 23/6/24

Position within organisation: _____

I, _____ (*please insert your name*) of _____ (*please insert the name of your group*), **do not agree to the methodology** outlined by MCH in in the information packet for the above-named project for the following reasons (*please explain your reasons for disagreeing):*

_____

_____

I would like to suggest the following (please provide your reasoning):

_____

_____

Signed: _____ Date: _____

Position within organisation: _____

PROVIDING KNOWLEDGE ABOUT CULTURAL SIGNIFICANCE

Lochinvar

Company Name): A1 INDIGENOUS SERVICES

Contact: CAROLYN HICKEY

Postal address: 10 MARIE PITT PL, GLENMORE PARK, NSW 2745

Mobile No: 0411650057

E-Mail: cazadirect@live.com

Date: 23/.6/24

I would like to provide knowledge about cultural significance using the following method(s). Please tick your preferred method(s):

1) Discussion in the field during field work ✓
2) Written documentation (letter, e-mail) ✓
3) Meeting to discuss and/or provide written documentation ✓
4) Formal interview with specific questions/answers and/or discussions ✓
5) Phone conversation ✓
6) Internet video conversation ✓
7) Using the attached form/questioner ✓

Other: Please provide details:

MCCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
penny@mcheritage.com.au
P: 0412 702 396

mcheritage.com.au

28 June 2024

A1 Indigenous Services
Carolyn HIckey
Cazadirect@live.com

Dear Carolyn,

RE: Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 3) –Survey invitation and letter of engagement- Proposed subdvision at Lochinvar

The proponent (Trustee of the Roman Catholic Church for the Diocese of Maitland) has received a number of applications and after careful consideration has selected whom they wish to engage in a paid capacity. The proponent and MCH would like to advise that your application for paid participation has been successful. MCH would like to organise the survey for the above-named project for the 11th July 2024 starting at 9am at the entrance to 60 New England Hwy, Lochinvar. We anticipate work will be complete within half a day, however, please be advised this time may change.

As part of the assessment process the proponent require an appropriate person from your organisation to participate in the survey of the study area to identify known or potential cultural heritage features. A cultural heritage report must be prepared following the survey and receipt of the draft archaeological report within the required 28 days review period. The cultural heritage report will identify known or potential Aboriginal objects or places and/or any other cultural heritage matters that may be affected by the project.

Trustee of the Roman Catholic Church for the Diocese of Maitland and MCH wishes to reiterate our intent to positively engaging with the local Aboriginal community. In this spirit an invitation has been extended to all registered applicants to attend the survey. If you accept the terms outlined in the Letter of Engagement (attached) please sign the Letter of Engagement and return to MCH. Participation in the program is dependent on the receipt of the Letter of Engagement and insurance certificate of currencies (Workers Comp, Public Liability and Comprehensive Motor vehicle).

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the Heritage NSW requirements, please ensure that any items that you or your group deem confidential are made apparent to your field representative prior to field work to ensure that information remains confidential if required. Failure to disclose that information is confidential may result in the information being included in the report.

Should you have any questions regarding these terms and conditions or the project please contact myself on 0412 702 396.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

Aboriginal Site Officer/Trainee Site Officer

Letter of Engagement

Trustee of the Roman Catholic Church for the Diocese of Maitland wishes to engage «Company» (Service Provider) to provide one Site Officer to undertake an archaeological survey of the proposed development at 60 New England Highway, Lochinvar.

The proponent and Service Provider agree to the terms and conditions of the engagement as follows:

Services
The Service Provider will engage one Site Officer to undertake the following:

- Survey (walking) of the project area
- a cultural heritage report and invoice within 28 days of receiving the draft report from MCH

Fees
The proponent has determined the rate of pay based on the overall project budget, job description, RAP rates and responses to the info pack. The proponent will pay the following Fees to the Service Provider for Services:

- $125 (inclusive of GST per person per hour for work undertaken by a Site Officer (inclusive of travel)

Payment will be within 28 days of receipt of a correct invoice and cultural heritage report. Invoices are to be provided at the end of the month.

Invoices are to be addressed to:
Trustee of the Roman Catholic Church for the Diocese of Maitland
C/o- MCH
penny@mcheritage.com.au

Time sheets
The Service provider must ensure that the Site Officers sign a time sheet at the start and finish of each day the Services are provided. Fees will not be paid unless time sheets for each Site Officer has been completed. The archaeologist will have a time sheet that may be used.

Work performance
The Service Provider must ensure that the Site Officers are fit for work, undertake the Services in a timely manner, with reasonable care, skill and professionalism and in accordance with all applicable laws and any reasonable directions or requirements made by the proponent and/or MCH.

Absences
All field staff must call MCH the evening before work to notify their absence for the following day and organise for a replacement. If no notice is provided, that staff members place in the field team will be suspended until MCH are notified they will be back at work. It is the responsibility of the Service Provider to organise a replacement site officer from the list of persons provided to MCH at the start of the project.

Proponent and MCH property
All materials and equipment provided by MCH or the proponent during the term of engagement remain the property of MCH or the proponent and must be returned upon completion of the Services or termination of the agreement.

Confidentially
All information provided by MCH or the proponent to the Service Provider and/or Site Officer in relation to the services or the business or operations of the proponent and MCH are confidential. The Service Provider will ensure the Site Officer keep such information confidential at all times (including after the completion of the Services) and must not disclose it to any other person without the prior written consent from the proponent and/or MCH.

OH&S Requirements
Before commencement of work, you must provide MCH with certificate of currencies for Workers Comp, Public Liability and Comprehensive Motor Vehicle insurances. Field representatives participating in the field work will be required to wear PPE including steel cap boots, long pants and long shirt (hi-visibility) with appropriate sun protection including a hat. It is recommended that participants bring adequate amounts of food and water for the day. If field staff attend the site without the required PPE, they will not be permitted on site or to participate in the field work. It is the responsibility of the Service Provider to ensure all field staff are made aware of this.

Bullying, harassment and unacceptable behaviour
All field staff are required to treat others with dignity, courtesy and respect at all times. Behaviours that are unacceptable and may be against the law, include (but not limited to) discrimination, bullying, sexual harassment, racial and religious vilification are unacceptable and are covered by federal and state legislation, abusive language and threats in any form. Field staff found to have engaged in such conduct will be asked to leave the site immediately and their manager contacted. Failure to leave the site may result in the local Police being contacted. It is the responsibility of the Service Provider to ensure all field staff are made aware of this.

Early termination
The proponent reserves the right to terminate this agreement at any time by giving 1-week written notice to the Service Provider. If the proponent terminates this agreement under this clause, then, subject to satisfactory performance of the Services, the proponent will pay the Service provider a proportionate part of the Fee according to the amount or proportion of Services supplied up to the date of termination.

No subcontracting
The Service Provider must not subcontract the provision of the Services without the proponent's prior written consent.

Insurances
The Service Provider must provide certificates of currency for Workers Comp, Public Liability and Comprehensive Motor Vehicle insurances prior to the Services being provided.

Indemnity and release
The Service Provider undertakes the Services at its sole risk and the proponent and MCH will not be liable for any loss, damage, injury or death sustained by any person as a result of the Services being provided. The Service provider indemnifies and releases the proponent and MCH against any loss the proponent or MCH suffers or any claims made against the proponent or MCH by any person arising out of the provisions of the Services except to the extent that any loss or claims arise from any negligence by the proponent or MCH.

Variations
No changes to these terms can be made without the prior written agreement with the proponent.

Exclusion of other terms
This letter contains the sole agreement of the parties and all other terms are excluded.

If you agree that the contents of this letter correctly set out the terms of engagement between the proponent and your organisation then please sign two copies, keep one for yourself, and return the other signed copy to MCH within 10 days.

Acceptance (60 New England Hwy, Lochinvar)

Signed by «Company»
I/we agree to the terms set out in this letter and acknowledge that it forms a binding legal contract. **I/we declare that I/we are authorised to sign this letter on behalf of «Company».** **Please provide your ABN:**

Signature of Witness	**Signature of authorised person**
Print name of Witness	**Print name of authorised person**
	Print title and position of authorised person
Date:	**Date:**

Penny McCardle

From: Penny McCardle <mcheritage@iprimus.com.au>
Sent: Friday, 28 June 2024 2:28 PM
To: 'scott@yarrawalk.com.au'
Subject: Lochinvar

28 June 2024

Yarrawalk Pty Ltd
Scott Franks
scott@yarrawalk.com.au

Dear Scott,

RE: Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 3) –Survey invitation – Proposed subdvision at Lochinvar

The proponent thoroughly evaluates all responses submitted by the RAPs in relation to the information packets. This includes reviewing CVs, references, experience, insurance details, and proposed rates of pay. Such careful consideration enables the proponent to make an informed decision when it comes to selecting participants who will receive renumeration for their participation in the survey.

Regrettably, your group did not provide any response to the information pack, thereby leaving the proponent without any knowledge or information about your group, experience, or qualifications. Consequently, the proponent is unable to offer your group renumeration for participation in the survey.

If your group is still interested in participating in the survey on an unpaid basis, or if you would like to stay updated on the progress of the survey, please contact Penny McCardle. Please note that if you intend to participate in the site survey then:

- Before commencement you must notify MCH for access arrangements and notification and provide MCH with a Certificate of Currency for Workers Compensation, Public Liability and Comprehensive Motor Vehicle insurances. MCH will also provide you with our OH&S requirements for field staff and request that you ensure all field staff participating in the project have read and understood the document fully prior to going out on site; and

- All field participants must wear covered shoes, long pants and long shirt (hi-visibility) with appropriate sun protection including hat. It is recommended that participants bring adequate amounts of food and water for the day.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the Heritage NSW requirements, please ensure that any items that you or your group deem confidential are made apparent to your field representative prior to field work to ensure that information remains confidential if required. Failure to disclose that information is confidential may result in the information being included in the report.

Following the completion of the field work, a draft copy of the assessment will be made available to you for comment. Should you have any further questions, please do not hesitate to contact Penny McCardle on 0412 702 396.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

Penny McCardle

From: Penny McCardle <mcheritage@iprimus.com.au>
Sent: Friday, 28 June 2024 2:28 PM
To: 'Widescope.group@live.com'
Subject: Lochinvar

28 June 2024

Widescope Indigenous Group
Steven Hickey
Widescope.group@live.com

Dear Steven,

RE: Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 3) –Survey invitation – Proposed subdvision at Lochinvar

The proponent thoroughly evaluates all responses submitted by the RAPs in relation to the information packets. This includes reviewing CVs, references, experience, insurance details, and proposed rates of pay. Such careful consideration enables the proponent to make an informed decision when it comes to selecting participants who will receive renumeration for their participation in the survey.

Regrettably, your group did not provide any response to the information pack, thereby leaving the proponent without any knowledge or information about your group, experience, or qualifications. Consequently, the proponent is unable to offer your group renumeration for participation in the survey.

If your group is still interested in participating in the survey on an unpaid basis, or if you would like to stay updated on the progress of the survey, please contact Penny McCardle. Please note that if you intend to participate in the site survey then:

- Before commencement you must notify MCH for access arrangements and notification and provide MCH with a Certificate of Currency for Workers Compensation, Public Liability and Comprehensive Motor Vehicle insurances. MCH will also provide you with our OH&S requirements for field staff and request that you ensure all field staff participating in the project have read and understood the document fully prior to going out on site; and

- All field participants must wear covered shoes, long pants and long shirt (hi-visibility) with appropriate sun protection including hat. It is recommended that participants bring adequate amounts of food and water for the day.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the Heritage NSW requirements, please ensure that any items that you or your group deem confidential are made apparent to your field representative prior to field work to ensure that information remains confidential if required. Failure to disclose that information is confidential may result in the information being included in the report.

Following the completion of the field work, a draft copy of the assessment will be made available to you for comment. Should you have any further questions, please do not hesitate to contact Penny McCardle on 0412 702 396.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

penny@mcheritage.com.au

From: penny@mcheritage.com.au
Sent: Monday, 29 July 2024 3:55 PM
To: 'Cazadirect@live.com'; 'scott@yarrawalk.com.au'; 'Widescope.group@live.com'
Subject: Lochinvar draft report
Attachments: 60 New England HIghway, Lochinvar DRAFT 29 7 2024.pdf; 60 New England Highway proposed test excavation methodology.doc

Dear All ,

RE: Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 3 & 4 – Review of Draft Cultural Heritage Assessment - Proposed subdvision at Lochinvar

Please find enclosed a copy of the draft Aboriginal Cultural Heritage Assessment (ACHA) for the above-named project for your review.

The ACHA includes information provided by the knowledge holders and is included with their permission. As required by the Heritage NSW - Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 3 (S. 4.3.5; 4.3.6; 4.3.7) and Stage 4 (S. 4.4.1; 4.4.2; 4.4.3) and based on the information provided by knowledge holders throughout the project, the cultural significance will be included in the final report.

MCH would like to provide further opportunity to provide your further input and request your comments on the draft ACHA. Additionally, any concerns you may have, are also important, and we would like to provide another opportunity to address any concerns you may have.

As outlined in the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 4 (S. 4.4.3) MCH would appreciate your input and your comments on the draft report, proposed test excavation methodology no later than C.O.B. 26th August 2024.

As all communications, including phone calls, faxes, letters, and e-mails must be included in the consultation component of the report as per the Heritage NSW requirements, please ensure that if any response to the draft report is deemed confidential that this is either stated at the beginning of a conversation or stamped/written on each piece of paper communicate.

Please note that in order to adhere to time constraints, the absence of a response by the requested timeline, will be taken by the proponent as your indication that your organisation has no comments.

Kind regards,

Dr. Penny McCardle
Principal & Forensic Archaeologist
Forensic Anthropologist

M
McCARDLE
CULTURAL HERITAGE

PO Box 166,
Adamstown 2289 NSW
P: 0412 702 396
mcheritage.com.au

penny@mcheritage.com.au

From: Carolyn .H <cazadirect@live.com>
Sent: Sunday, 4 August 2024 7:43 PM
To: penny@mcheritage.com.au
Subject: Re: Lochinvar draft report
Attachments: A1.WC.2025.pdf; A1.PL.2025.pdf

Contact: **Carolyn Hickey**
Mobile: **0411650057**
Email: **Cazadirect@live.com**
ABN: **: 20 616 970 327**

Hi,
I have reviewed the document and support the Information and Methodology.
I Would like to be included in all Meetings, Reports, Sharing Cultural Information, and Field Work.

About Carolyn Hickey
I am a Traditional Owner and Custodian with over 25 years experience in helping preserve Aboriginal cultural heritage on projects.
I hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and values that exist in the project area.

I have attached A1 Indigenous Services Insurances.

A1 INDIGENOUS SERVICES, Represents over 100 Indigenous Locals

When Selecting Groups for Engagement;
Please consider that **A1 INDIGENOUS SERVICES** is a member of the **NSW INDIGENOUS CHAMBER OF COMMERCE.**
We carry the NSWICC Assured logo showing that **A1 Indigenous Services** has met National Policy requirements as upheld by the First Australians Chamber of Commerce and Industry (FACCI) for being identified as a **100% First Nations Owned Indigenous Business** That has demonstrate compliance with Government and Industry Regulators.

I agree to my details being supplied to OEH and the LALC
Please feel free to contact me on details supplied

Kind Regards,
Carolyn Hickey

A1 INDIGENOUS SERVICES is now a member of the NSW INDIGENOUS CHAMBER OF COMMERCE

A business or enterprise carrying the NSWICC Assured logo has met National Policy requirements as upheld by the First Australians Chamber of Commerce and Industry (FACCI) for

being identified as a First Nations Business Owner or Entrepreneur and the business must demonstrate compliance with Government and Industry Regulators.
(Certificate attached) A certificate confirms that the Enterprise listed above has met all requirements of the NSWICC's Assured Program , operating as a100% Aboriginal Owned, Operated and Controlled Business. The NSW Indigenous Chamber of Commerce (NSWICC) is the Peak body for Aboriginal Business in New South Wales and a member of the First Australians Chamber of Commerce and Industry (FACCI)

A1 Indigenous Services is 100%, Indigenous Owned Australian Company
which offers a range of services to the construction industry.
It is our mission to commit to an innovative approach to a better future for Indigenous employment and community.
While improving ways to close the gap in Aboriginal participation in the construction Industry.
Building strength in aboriginal communities and our Indigenous labour force.

McCARDLE
CULTURAL HERITAGE

PO Box 166
Adamstown 2289 NSW
penny@mcheritage.com.au
P: 0412 702 396

mcheritage.com.au

27 August 2024

Via enail

Dear All,

RE: Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Stage 4 –Final Cultural Heritage Assessment - Proposed subdvision at Lochinvar

MCH and Trustee of the Roman Catholic Church for the Diocese of Maitland (Proponent) would like to take this opportunity to thank you for your involvement in the above-named project. Your time and input have been instrumental throughout the project

As outlined in the Heritage NSW Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Stage 4 (S. 4.4.5), please find attached a copy of the final report for your records.

We look forward to continue working with you in the future.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Dr. Penny McCardle
Principal Archaeologist
Forensic Anthropologist

APPENDIX B

AHIMS search results

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : Lochinvar

Client Service ID : 887178

Penny Mccardle

Po Box 166

Adamstown New South Wales 2289

Attention: Penny Mccardle

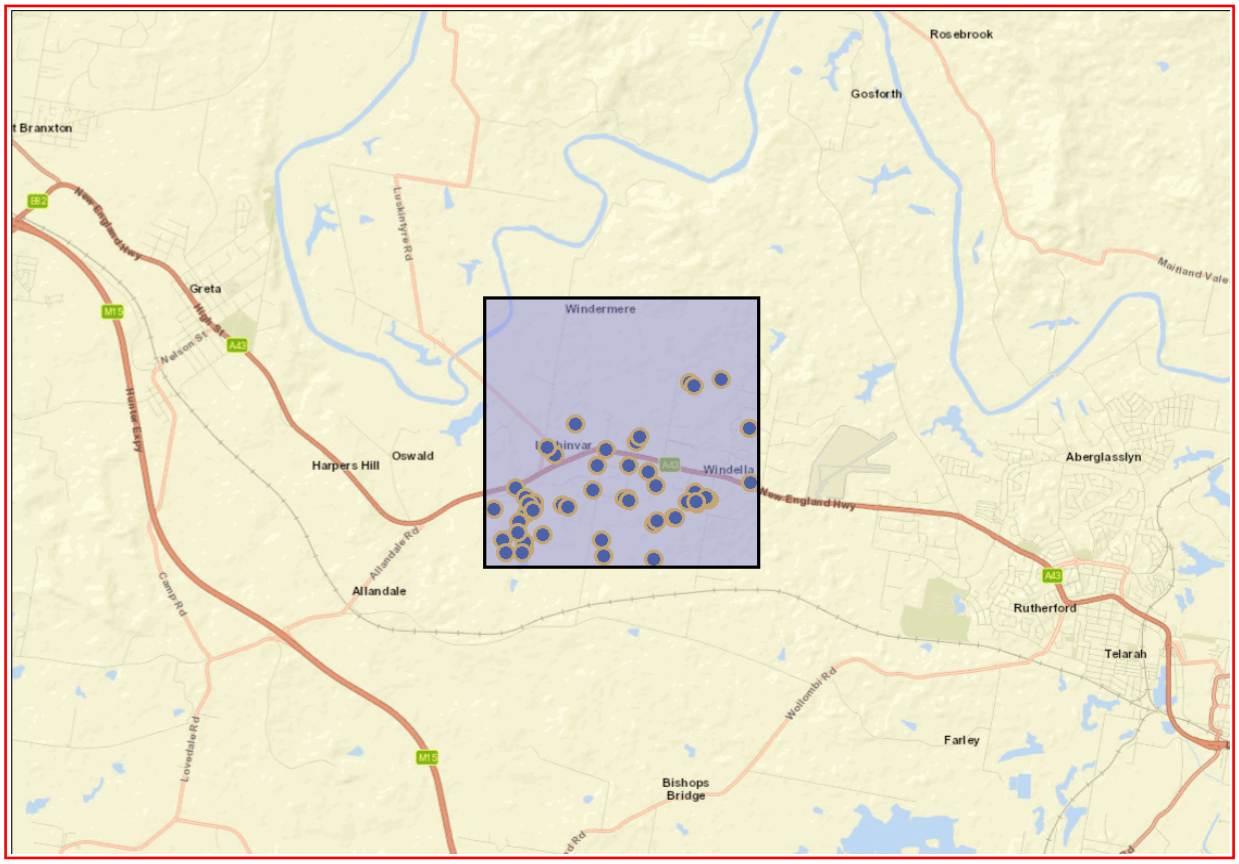
Email: penny@mcheritage.com.au

Date: 26 April 2024

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 56, Eastings : 353400.0 - 357400.0, Northings : 6379300.0 - 6383300.0 with a Buffer of 0 meters, conducted by Penny Mccardle on 26 April 2024.

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:

57	**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
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Lochinvar

Client Service ID : 887178

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
37-6-2861	Christopher Road Site 1	GDA	56	355504	6380299	Open site	Destroyed	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited - Individual users,Mr.Kirwan Williams,Mr.Giles Har					**Permits**	3963,4080	
37-6-1123	ISF 2 Rutherford	AGD	56	357200	6381200	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mary Dallas Consulting Archaeologists (MDCA)					**Permits**		
37-6-1827	East Lochinvar Site 9	GDA	56	356502	6380405	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Mr.Giles (dup ID#12832) Hamm,RPS AAP Consulting Pty Ltd - York Street Sydney ,					**Permits**	4482	
37-6-1423	Lochinvar 4?A	GDA	56	353990	6379510	Open site	Destroyed	Artefact : 1		100792
	Contact	**Recorders**	Mr.Peter Kuskie,MCH - McCardle Cultural Heritage Pty Ltd,Ms.Penny Mccardle					**Permits**	2421,3053	
37-6-1431	Lochinvar 22/A	GDA	56	354026	6380081	Open site	Destroyed	Artefact : -		100792,104572
	Contact Searle	**Recorders**	Mrs.Angela Besant,South East Archaeology,Insite Heritage Pty Ltd					**Permits**	2421,3053,4168	
37-6-2862	Christopher Road Site 2	GDA	56	355456	6380305	Open site	Partially Destroyed	Artefact : 1		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited - Individual users,Mr.Kirwan Williams,Mr.Giles Har					**Permits**	3963,4080	
37-6-3862	St Helena 1	GDA	56	353530	6380110	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Mrs.Angela Besant,Mrs.Angela Besant,Insite Heritage Pty Ltd,Insite Heritage Pty Lt					**Permits**		
37-6-2214	Christopher Road 2	GDA	56	355457	6380305	Open site	Partially Destroyed	Artefact : 6		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited - Individual users,Mr.Paul Irish,Ms.Mary Dallas,Mr.					**Permits**	3963	
37-6-0989	Penn Park 1	AGD	56	357220	6380370	Open site	Valid	Artefact : -		4102
	Contact	**Recorders**	Jim Ring					**Permits**	2279	
37-6-1835	East Lochinvar Site 1	GDA	56	355811	6380701	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Giles (dup ID#12832) Hamm					**Permits**	4704	
37-6-2963	26 Windemere Rd Site 1 (PAD 1)	GDA	56	354426	6380945	Open site	Not a Site	Potential Archaeological Deposit (PAD) : -		
	Contact Mindaribba Local Aboriginal L	**Recorders**	Archaeological Risk Assessment Services (ARAS),Ms.Penny Mccardle					**Permits**		
37-6-4191	Airds of lochinvar PAD 3	GDA	56	355909	6379924	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Archaeological Risk Assessment Services (ARAS),Mr.Giles Hamm					**Permits**		
33-6-0040	HN-SL-PAD 01	GDA	56	355135	6379677	Open site	Not a Site	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Heritage Now - Belmont,Heritage Now - Belmont,Ms.Lara Donohoe,Ms.Lara Donoh					**Permits**		
37-6-1427	Lochinvar 20/B	GDA	56	353990	6379620	Open site	Destroyed	Artefact : 1		100792
	Contact Searle	**Recorders**	Mr.Peter Kuskie,MCH - McCardle Cultural Heritage Pty Ltd,Ms.Penny Mccardle					**Permits**	2421,3053	
37-6-1429	Lochinvar 21/B	AGD	56	353970	6379940	Open site	Valid	Artefact : 1		100792,104572
	Contact Searle	**Recorders**	Mr.Peter Kuskie					**Permits**	2421,3053	

Report generated by AHIMS Web Service on 26/04/2024 for Penny Mccardle for the following area at Datum :GDA, Zone : 56, Eastings : 353400.0 - 357400.0, Northings : 6379300.0 - 6383300.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 57

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
37-6-2220	St Helena OC1	AGD	56	354028	6379951	Open site	Valid	Artefact : 2		
	Contact	**Recorders**	Mr.Paul Irish,Ms.Mary Dallas					**Permits**		
37-6-4247	HN-SL-A08	GDA	56	355135	6379676	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Heritage Now - Belmont,Ms.Lara Donohoe					**Permits**		
37-6-4370	Lochinvar ISF2	GDA	56	356872	6382111	Open site	Valid	Artefact : -		
	Contact	**Recorders**	GML Heritage Pty Ltd - Surry Hills,Mr.Jacob (GML) Kiefel					**Permits**		
37-6-3810	Lochinvar Water Pump Station 2	GDA	56	353848	6380436	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited - Individual users,Ms.Alison Lamond					**Permits**		
37-6-1824	East Lochinvar Site 6	GDA	56	356724	6380310	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited - Individual users,Mr.Giles (dup ID#12832) Hamm,					**Permits**	3963	
37-6-1832	East Lochinvar Site 4	GDA	56	355955	6379972	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Mr.Giles (dup ID#12832) Hamm,RPS AAP Consulting Pty Ltd - York Street Sydney ,					**Permits**	4482	
37-6-2223	LOC1	GDA	56	354091	6380106	Open site	Destroyed	Potential Archaeological Deposit (PAD) : -, Artefact : 11		104572
	Contact	**Recorders**	Umwelt (Australia) Pty Limited - Individual users,MCH - McCardle Cultural Heritag					**Permits**	3963,4168	
37-6-2225	LOC4	GDA	56	354551	6380185	Open site	Destroyed	Artefact : 3		
	Contact	**Recorders**	MCH - McCardle Cultural Heritage Pty Ltd,Mr.Paul Irish,Ms.Penny Mccardle,Ms.Mar					**Permits**	3963	
37-6-3861	St Helena IF	GDA	56	353670	6379657	Open site	Valid	Artefact : -		104572
	Contact	**Recorders**	Mrs.Angela Besant,Insite Heritage Pty Ltd					**Permits**		
37-6-3864	St Helena 3	GDA	56	354265	6379745	Open site	Destroyed	Artefact : -		104572
	Contact	**Recorders**	Mrs.Angela Besant,Mrs.Angela Besant,Insite Heritage Pty Ltd,Insite Heritage Pty Lt					**Permits**		
37-6-0670	Loch-1 (St Helena)	GDA	56	354006	6380291	Open site	Destroyed	Artefact : -	Isolated Find	2985,100792,102646,104572
	Contact	**Recorders**	Iain Stuart,Mrs.Angela Besant,Insite Heritage Pty Ltd					**Permits**	2183,2421,3053,4168	
37-6-1831	East Lochinvar Site 3	GDA	56	355955	6379972	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Mr.Giles (dup ID#12832) Hamm,RPS AAP Consulting Pty Ltd - York Street Sydney ,					**Permits**	4482	
37-6-4189	Airds of lochinvar PAD1	GDA	56	356670	6380319	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Archaeological Risk Assessment Services (ARAS),Mr.Giles Hamm					**Permits**		
37-6-1428	Lochinvar 21/A	AGD	56	354020	6380020	Open site	Valid	Artefact : 1		100792,104572
	Contact Searle	**Recorders**	Mr.Peter Kuskie					**Permits**	2421,3053	
37-6-1432	Lochinvar 22/B	AGD	56	353910	6379860	Open site	Valid	Artefact : 3		100792,104572
	Contact S Scanlon	**Recorders**	South East Archaeology					**Permits**	2421,3053	
37-6-2221	Station Lane OC1	GDA	56	355061	6380792	Open site	Valid	Artefact : 1		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Lochinvar

Client Service ID : 887178

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Mr.Paul Irish,Ms.Mary Dallas					**Permits**		
37-6-1607	Lochinvar 1	AGD	56	355515	6380960	Open site	Valid	Artefact : 2		99841
	Contact Searle	**Recorders**	Ms.Penny Mccardle					**Permits**	2456,3963	
37-6-2863	Christopher Road Site 3	GDA	56	354999	6380414	Open site	Valid	Artefact : 1		
	Contact	**Recorders**	Mr.Giles Hamm					**Permits**	3963,4080	
37-6-2228	LCC1 and PAD	GDA	56	355673	6381234	Open site	Partially Destroyed	Artefact : 15, Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Mrs.Angela Besant,Umwelt (Australia) Pty Limited - Individual users,Mr.Kirwan Wi					**Permits**	3936,3963,4694,4697	
37-6-1426	Lochinvar 20/A	GDA	56	353960	6379460	Open site	Destroyed	Artefact : 1		100792
	Contact Searle	**Recorders**	Mr.Peter Kuskie,MCH - McCardle Cultural Heritage Pty Ltd,Ms.Penny Mccardle					**Permits**	2421	
37-6-2218	PAD 1 Lochinvar URA	AGD	56	355800	6379200	Open site	Not a Site	Potential Archaeological Deposit (PAD) : 1		
	Contact	**Recorders**	Mr.Paul Irish,Ms.Mary Dallas,RPS AAP Consulting Pty Ltd - York Street Sydney					**Permits**		
37-6-1828	East Lochinvar Site 10	GDA	56	356400	6380271	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Mr.Giles (dup ID#12832) Hamm,RPS AAP Consulting Pty Ltd - York Street Sydney ,					**Permits**	3963,4482	
37-6-1834	East Lochinvar Site 5	GDA	56	356195	6380016	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Mr.Giles (dup ID#12832) Hamm,RPS AAP Consulting Pty Ltd - York Street Sydney ,					**Permits**	4482	
37-6-4190	Airds of lochinvar PAD 2	GDA	56	356540	6380229	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Archaeological Risk Assessment Services (ARAS),Mr.Giles Hamm					**Permits**		
37-6-4192	Airds of lochinvar PAD 4	GDA	56	356219	6380015	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	Archaeological Risk Assessment Services (ARAS),Mr.Giles Hamm					**Permits**		
37-6-4231	HN-SL-A07	GDA	56	355166	6379431	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Heritage Now - Belmont,Ms.Lara Donohoe					**Permits**		
37-6-1425	Lochinvar 10/A	GDA	56	353910	6379920	Open site	Destroyed	Artefact : 1		100792,104572
	Contact Searle	**Recorders**	Mr.Peter Kuskie,Mrs.Angela Besant,Insite Heritage Pty Ltd					**Permits**	2421,3053,4168	
37-6-2213	Christopher Road 1	GDA	56	355520	6380800	Open site	Destroyed	Artefact : 2		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited - Individual users,Mr.Giles (dup ID#12832) Hamm,					**Permits**	3963	
37-6-2217	LIF3	GDA	56	354627	6380156	Open site	Destroyed	Artefact : 1		
	Contact	**Recorders**	MCH - McCardle Cultural Heritage Pty Ltd,Mr.Paul Irish,Ms.Penny Mccardle,Ms.Mar					**Permits**	3963	
37-6-2219	PAD 2 Lochinvar URA	GDA	56	354720	6381415	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : 1		

Report generated by AHIMS Web Service on 26/04/2024 for Penny Mccardle for the following area at Datum :GDA, Zone : 56, Eastings : 353400.0 - 357400.0, Northings : 6379300.0 - 6383300.0 with a Buffer of 0 meters.. Number of Aboriginal sites and Aboriginal objects found is 57

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Lochinvar

Client Service ID : 887178

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
	Contact	**Recorders**	Niche Environment and Heritage,Mr.Paul Irish,Ms.Mary Dallas,Miss.Kate Morris					**Permits**		
37-6-3830	SITE 11 LOT 310 LOCHINVAR	GDA	56	355523	6380268	Open site	Valid	Artefact : 1		104406,104715
	Contact	**Recorders**	Mr.Giles Hamm					**Permits**	4693	
37-6-4371	Lochinvar PAD 1	GDA	56	356403	6382067	Open site	Valid	Potential Archaeological Deposit (PAD) : -		
	Contact	**Recorders**	GML Heritage Pty Ltd - Surry Hills,Mr.Jacob (GML) Kiefel					**Permits**		
37-6-3863	St Helena 2	GDA	56	354055	6380200	Open site	Destroyed	Artefact : -		104572
	Contact	**Recorders**	Mrs.Angela Besant,Mrs.Angela Besant,Insite Heritage Pty Ltd,Insite Heritage Pty Lt					**Permits**		
37-6-1825	East Lochinvar Site 7	GDA	56	356673	6380330	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Mr.Giles (dup ID#12832) Hamm,RPS AAP Consulting Pty Ltd - York Street Sydney ,					**Permits**	4482	
37-6-1826	East Lochinvar Site 8	GDA	56	356532	6380262	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Mr.Giles (dup ID#12832) Hamm,RPS AAP Consulting Pty Ltd - York Street Sydney ,					**Permits**	3963,4482	
37-6-1830	East Lochinvar Site 2	GDA	56	355928	6380499	Open site	Valid	Artefact : -		
	Contact	**Recorders**	Mr.Giles (dup ID#12832) Hamm					**Permits**	4704	
37-6-2964	26 Windemere Rd Site 2 (PAD 2)	GDA	56	354305	6381044	Open site	Not a Site	Potential Archaeological Deposit (PAD) : -		
	Contact Mindaribba Local Aboriginal L	**Recorders**	Archaeological Risk Assessment Services (ARAS),Ms.Penny Mccardle					**Permits**		
37-6-1424	Lochinvar 4/B	GDA	56	353720	6379450	Open site	Destroyed	Artefact : 7		100792
	Contact Searle	**Recorders**	Mr.Peter Kuskie,MCH - McCardle Cultural Heritage Pty Ltd,Ms.Penny Mccardle					**Permits**	2421,3053	
37-6-1430	Lochinvar 21/C	AGD	56	354010	6379920	Open site	Valid	Artefact : -		100792,104572
	Contact Searle	**Recorders**	Mr.Peter Kuskie					**Permits**	2421,3053	
37-6-1433	Lochinvar 22/C	GDA	56	353896	6379771	Open site	Destroyed	Artefact : 19		100792,104572
	Contact S Scanlon	**Recorders**	Mrs.Angela Besant,South East Archaeology,Insite Heritage Pty Ltd					**Permits**	2421,3053	
37-6-3654	Cantwell Rd 1	GDA	56	355173	6381028	Open site	Destroyed	Artefact : -		
	Contact	**Recorders**	Umwelt (Australia) Pty Limited - Individual users,Umwelt (Australia) Pty Limited -					**Permits**		
37-6-4368	Lochinvar ISF1	GDA	56	356468	6382010	Open site	Valid	Artefact : -		
	Contact	**Recorders**	GML Heritage Pty Ltd - Surry Hills,Mr.Jacob (GML) Kiefel					**Permits**		

**** Site Status**

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

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

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

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

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APPENDIX C

Unexpected finds procedure

Unexpected finds procedures

Unexpected find protocols have been developed to provide procedures for unexpected finds including Aboriginal objects and the discovery of human remains. These protocols must be followed throughout all stages of the development.

Unexpected Aboriginal objects

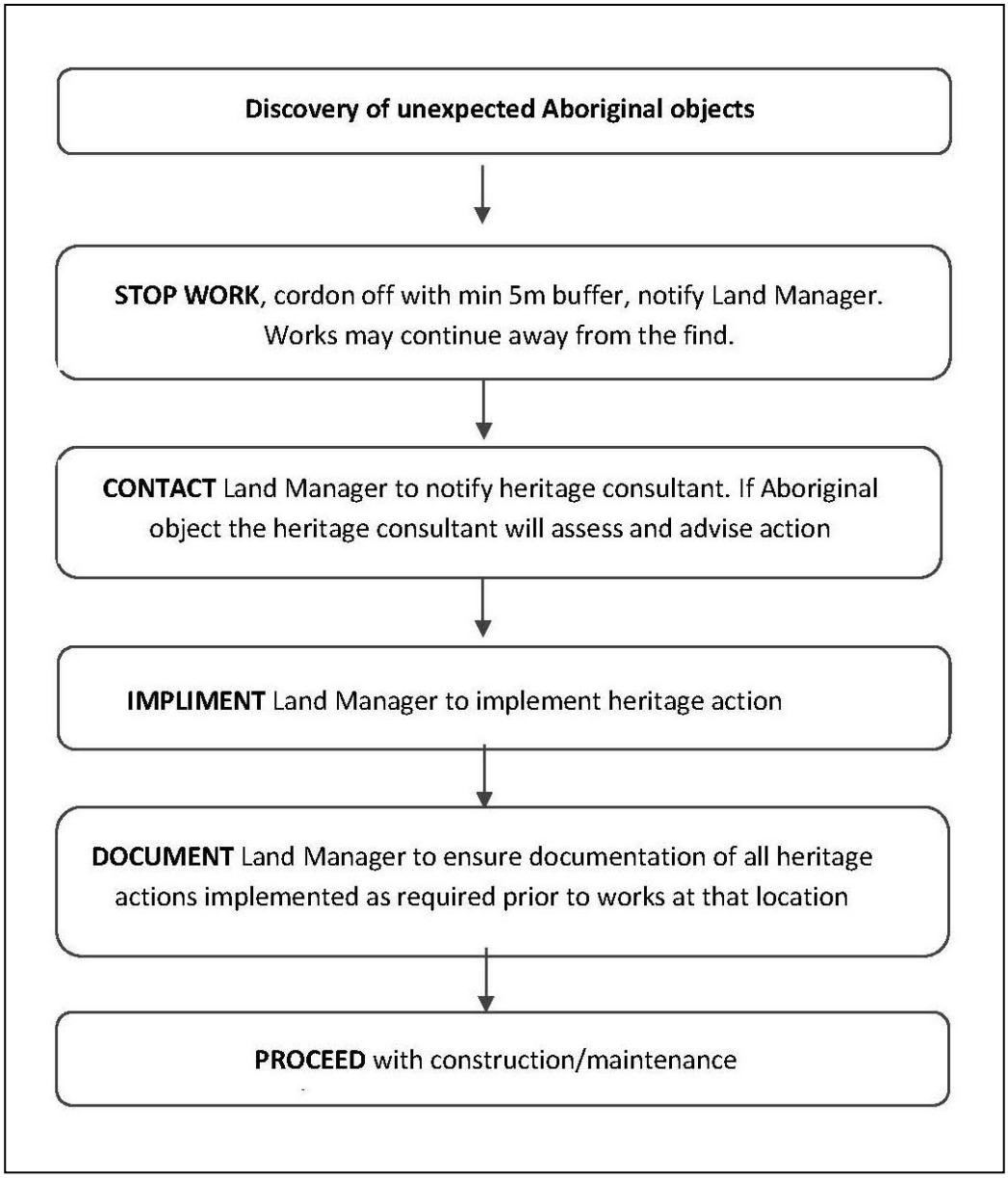
Should unexpected Aboriginal objects be uncovered during any stage of the development, Figure 1 illustrates the protocols. Unexpected Aboriginal objects may include, but not limited to, isolated artefacts, artefact scatters, scarred trees, hearths and shell middens (descriptions of such objects are provided).

Work must stop immediately in that location, the objects cordoned off with at least a 5m perimeter surrounding the object(s) with high visibility fencing/barrier and the Land Manager notified immediately. The Land Manager will then contact the heritage consultant who will assess the object(s) and recommend appropriate mitigation measures, inlcuding contacting the Environmental Line if required. The Land Manager is to implement all reasonable mitigation measures recommended by the heritage consultant and in accordance with Heritage NSW regulations and the NSW NPW Act.

If additional works are required, such as an Aboriginal Cultural Heritage Assessment (ACHA) with or without test excavations) or an Aboriginal Heritage Impact Permit (AHIP) (with collection or salvage excavations), the Land Manager is to arrange for the heritage consultant to undertake those works in accordance with all Heritage NSW requirements, procedures and Code of Practice. The methodology for undertaking additional works will be dependant on a number of factors including, but not limited to, site/object type and disturbances. Due to the unknown nature of unexpected objects, methodologies for further investigations (if required) of unexpected Aboriginal objects will be determined during consultation with Heritage NSW.

Provided these heritage unexpected finds protocols have been followed, construction/ maintenance works in that location may proceed.

Figure 1. Unexpected finds protocol flow chart



Discovery of human remains

Human skeletal remains are of the highest significance and importance to Aboriginal people, and all care, respect and dignity will be extended by all parties should human remains be uncovered.

If human remains or unidentified bone are uncovered during any stage of the development and maintenance activities, the appropriate State legislation will be followed. All human remains fall under the *Coroners Act 2009* in the first instance. If they are identified as Aboriginal and older than 100 years old, they will fall under the *NSW NPWS Act 1974* (as amended). If they are identified as Aboriginal and 100 years or less, they will remain under Police derestriction under the *Coroners Act 2009*. Figure 2 outlines the required protocols should human remains be uncovered.

Should any human remains or unidentifiable bone be found, work is to stop in that area immediately and an area of 15m cordoned off surrounding the remains/bone in high visibility fencing. The Land Manager is to be notified immediately.

The Land Manager will contact the heritage consultant and local NSW Police immediately, who will then contact the NSW Forensic Services who will determine if they are:

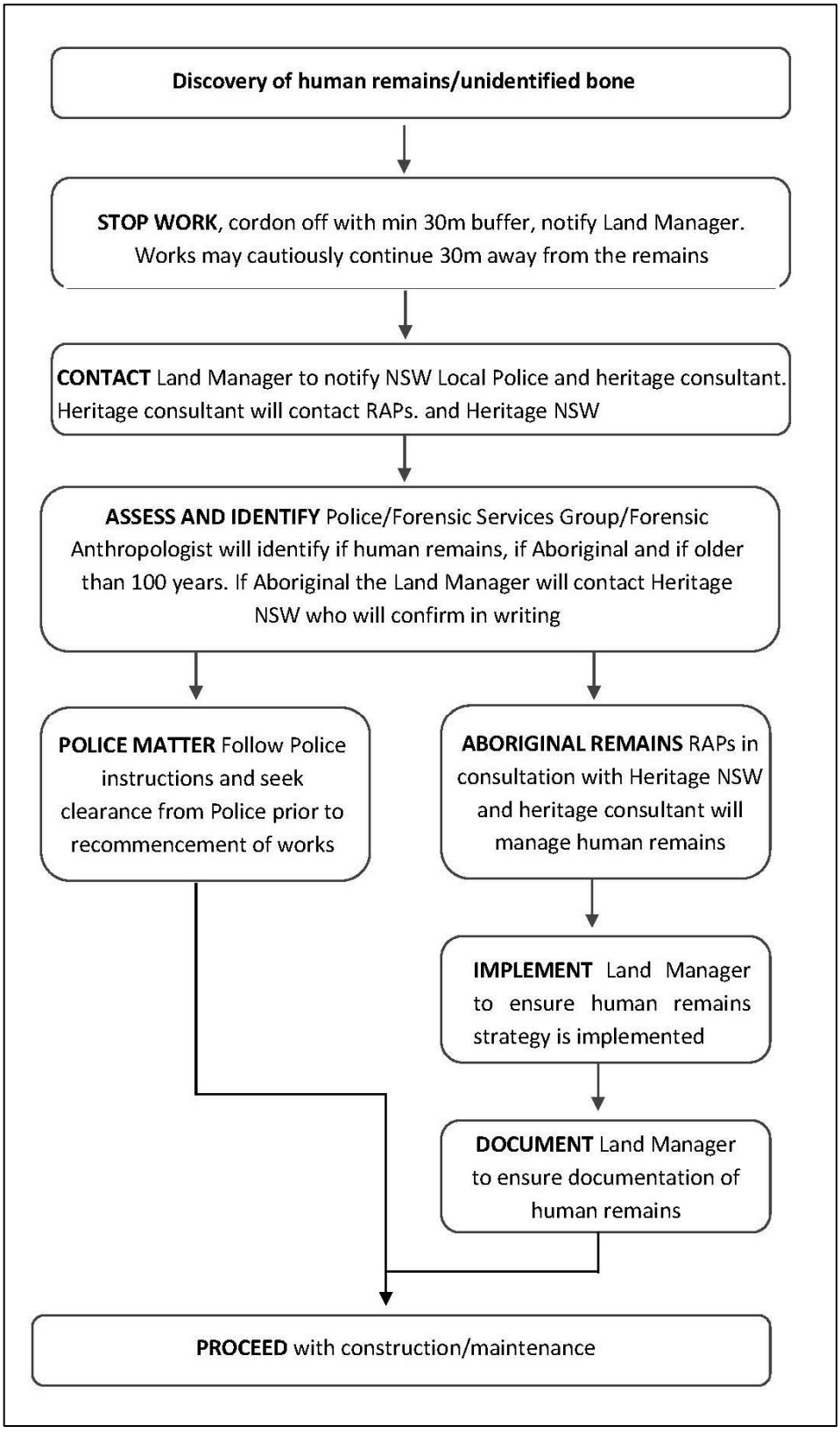
1) Human;
2) Aboriginal or non-Aboriginal;
3) If Aboriginal, determine antiquity (older or younger than 100 years)

If it is determined the remains are Aboriginal and older than 100 years old, the Police will notify the Land Manager who must contact the Environmnetal Line and Heritage NSW immediately. Heritage NSW, in consultation with the relevant Aboriginal community and the heritage consultant will develop a human remains management strategy and the Land Manager is to ensure this strategy is implemented. The Land Manager must also document the human remains management strategy and the heritage consultant will provide a letter of clearance prior to any works recommencing at that location.

If the remains are determined to be a Police matter, Police instructions will be followed and clearance to recommence works should be sought from the Police.

Provided the human skeletal protocols have been followed and documented, and a clearance letter from the heritage consultant has been obtained, construction/maintenance works may proceed in that location.

Figure 2 Human remains protocol flow chart



Verification of all Aboriginal objects (sites)

All potential Aboriginal sites will be verified by the heritage consultant in the first instance, and Heritage NSW if required.

The purpose of the verification process is to determine whether or not the objects in question are in fact Aboriginal objects to ensure appropriate management measures be implemented.

The verification process will include the following provisions:

1. A heritage consultant may assess the scientific status of the Aboriginal object (site) and provide evidence and justification for significance;
2. If it is an Aboriginal object the Environmental Line will be contacted and the site reported;
3. An AHIMS site card will be completed for each Aboriginal object (site); and
4. Management recommendations specific to each Aboriginal object (site), will be determined by Heritage NSW.

Surface Artefact scatters

Also described as open campsites, artefact scatters and open sites, these deposits have been defined at two or more stone artefacts within 50 or 200 metres of each other and may include archaeological remains such as stone artefacts, shell, and sometimes hearths, stone lined fire places and heat treatment pits. These sites are usually identified as surface scatters of artefacts in areas where ground surface visibility is increased due to lack of vegetation. Erosion, agricultural activities (such as ploughing) and access ways can also expose surface campsites. Artefact scatters may represent evidence of;

- Camp sites, where everyday activities such as habitation, maintenance of stone or wooden tools, manufacturing of such tools, management of raw materials, preparation and consumption of food and storage of tools has occurred;
- Hunting and/or gathering events;
- Other events spatially separated from a camp site, or
- Transitory movement through the landscape.

If a potential artefact scatter has been identified, the Unexpected Finds Protocol must be followed immediately.

Examples of artefact scatters (MCH)

Surface Isolated finds

Isolated artefacts are usually identified in areas where ground surface visibility is increased due to lack of vegetation. Erosion, agricultural activities (such as ploughing) and access ways can also expose surface artefacts. Isolated finds may represent evidence of;

- Hunting and/or gathering events; or
- Transitory movement through the landscape.

If a potential isolated find has been identified, the Unexpected Finds Protocol must be followed immediately.

Examples of isolated artefacts (MCH)