



Northbank Enterprise Hub Pty Ltd

Northbank Enterprise Hub, Tomago

LGA: Port Stephens


Aboriginal Heritage Impact Assessment

July 2012

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Executive Summary

McCardle Cultural Heritage Pty Ltd (MCH) was commissioned by Northbank Enterprise Hub Pty Ltd to prepare a Due Diligence Archaeological Assessment for the proposed industrial subdivision of Lot 1001 DP 1127780 along Tomago Road, at Tomago. The proposed development is for an industrial subdivision and associated filling and earthworks, roads and services and is known as the Northbank Enterprise Hub

The study area, located approximately 6 kilometres south of Raymond Terrace and 8 kilometres west of Williamstown along the Tomago Road, Tomago includes Lot 1001 DP 1127780 and comprises approximately 239 hectares of land.

The study area is located within the Coastal Zone of the Hunter Valley, which is mapped as being within the Hunter Land System of alluvial terraces. The Coastal Zone also contains Pleistocene and Holocene stabilised and transgressive dunes consisting of steep and low dunes with extensive swamps and depressions and in between both dunal systems is the interbarrier depression.

The study area is situated on the interbarrier depression (Hunter River flood plain) with its northern boundary along a low dune at the interface of the interbarrier depression and the Inner Pleistocene dunes, also known as the interbarrier depression. The majority of the study area may be considered well resourced in terms of water availability and associated resources, it is situated on the flood plain within swamps/wetland areas (interbarrier depression) which would not have been suitable for occupation. The far north western portion of the study area consists of a low dune overlooking the interbarrier depression and hence may be considered suitable for occupation. However, it is the surrounding elevated Holocene and Pleistocene dunal system would have been more suitable for continued occupation.

The study area has been subject to past land uses including clearing and agricultural practices resulting in a low to moderately disturbed landscape. The northern dune has also had a house constructed and demolished. Additionally, natural disturbances such as flooding, erosion and bioturbation would also have impacted on the landscape resulting in a disturbed archaeological record.

Seventy known sites were identified by OEH AHIMS within a 8km radius of the study area with the most predominant being shell middens followed by artefacts, scarred trees, earth mounds, resource and gathering, ceremonial and burials. All of these sites are located along both the Holocene and Pleistocene dunes that overlook the interbarrier depression.

Traditionally, the ocean was an important source of food resources for the Worimi people. Additionally, the interbarrier depression was an important area for hunting, gathering and/or foraging as indicated by the prevalence of sites on the Holocene and Pleistocene dunes overlooking the depression. It is therefore predicted that there is a moderate potential for in situ archaeological sites within the dune in the north of the investigation area and a low potential in the remainder which is the interbarrier depression.

The survey revealed that vegetation was very dense with visibility being only .52%. The survey focused on areas of exposure, which were minimal, and included tracks and exposed areas.

Two shell middens and one associated PAD were identified in the north on the dune overlooking the interbarrier depression. The surface sites are exposed through disturbances including demolition of structures, tracks and erosion, are scattered and have no subsurface associations due to the levels of disturbances. The location of the sites and PAD as well as the visible site contents is consistent with the archaeology of both the local and regional areas.

Four previously identified sites (NB1, NB2, NB3, NB4) by Indigenous Outcomes (2010) have GPS coordinates that places them within the study area but are not registered with OEH. Upon further investigation including re-locating the sites with a surveyor and slashing the surrounding area to increase visibility, it was revealed that coordinates are situated within the interbarrier depression and no cultural materials were evident. This landform is considered highly unsuitable for occupation as it is part of the interbarrier depression. These un-registered sites are not archaeological or cultural sites and discussions between the archaeologist and Aboriginal representatives on site confirmed this.

Recommendations are as follows:

- 1) The persons responsible for the management of works on site 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 Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010, under the National Parks and Wildlife Act 1974;
- 2) The involvement of the registered Aboriginal stakeholders in the ongoing management of the Aboriginal cultural materials within the project study area (specifically the low dune) should be promoted and included in the Environmental Management Plan and/or the Aboriginal Heritage Management Plan;
- 3) A cultural awareness program should be included as part of the site induction program and developed with the registered Aboriginal stakeholders and form part of the Environmental Management Plan and/or the Aboriginal Heritage Management Plan;
- 4) If the identified TOM1/PAD1 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 works starting; and
- 5) If sites Tom/1 and/or Tom/2 will be harmed by any future development an AHIP for the collection of surface finds will be required prior to works starting.

Glossary

Activity area: a pattern of artefacts in a site indicating that a specific activity took place.

Aeolian deposits: sediments transported by wind (sand dunes, loess).

Alluvial: sediment mass that is deposited from transport by channelled stream flow or over-bank flow.

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.

Artefact: any object that is physically modified by humans.

Artefact scatter: a collection of artefacts scattered across the surface of the ground. Also referred to as open camp sites.

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.

B.C: abbreviation for the term Before Christ. In academic, historical and archaeological professions, this term is now generally replaced by Before Common Era (B.C.E).

B.C.E: Before Common Era. See B.C.

Bi-face: a stone artefact flaked on both faces.

Bipolar flake: stone artefacts produced by striking into an anvil with a hammer stone. These flakes usually display crushing at either end.

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.

B.P: Before Present, used in age determination instead of B.C or B.C.E. Present is academically defined as the year 1950 (the year the term was invented).

Bulb of percussion: a small, rounded protrusion on a flake resulting from the blow that separated the flake from its core or other flake.

Bulbar depression: a depression left on the core (where a flake's bulb of percussion was attached) when a blade or flake was struck off.

Ceremonial Sites: Included in the OEHS AHIMS database are sites which were associated with the spiritual beliefs and activities of Aboriginal people. They may be natural places in the landscape or places where structures were made as part of particular ceremonies. Structures include bora rings, stone arrangements etc.

Conjoin: a physical link between artefacts broken.

Contact site: a site that displays interaction between early colonists and Aboriginal Australians.

Context: the position and associations of an artefact, feature, or archaeological find in space and time. Noting where the artefact was found and what was around it assists archaeologists in determining chronology and interpreting function and significance. Loss of context removes the artefacts meaning and make sit more difficult to determine function.

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.

Cortex: the rough outer weathered surface of a rock, usually chemically altered and removed during knapping.

Cultural deposit: sediments and materials laid down by, or heavily modified by human activity.

Cultural Heritage Sensitivity: This term is used to denote not just the value of a place in the landscape to Aboriginal people, but also the vulnerability of the value. For instance, places with important spiritual values may be very sensitive because the rocks, pools or trees are easily damaged by the activities of others, or only a very few examples remain.

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).

Distal: the terminating end of a flake opposite the bulb.

Edge damage: the removal of small flakes, or crushing, from the edge of an artefact.

Elders: Older Aboriginal people in the local community for whom there is great respect because of their knowledge, dignity or communication skills. These people are not necessarily the descendents of traditional Aboriginal people from the area.

Exposure: an area of land surface where the ground surface is visible, usually as a result of thinner vegetation cover, erosion or human caused disturbances. In

archaeological surveys, the percentage of ground surface exposed is recorded and the used to calculate effective survey coverage.

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).

Fluvial deposit: sediments laid down by running water.

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 Grooves: Aboriginal people made a range of edge ground implements such as 'axes' and 'hatchets'. The sharp edge of these tools was maintained by grinding it on sandstone outcrops, most often in stream beds where pools of water were available to wet the grindstone. Spear shafts were also sometimes shaped by grinding. The grinding sites can be identified by elongated grooves in the sandstone surface in sets of 2 to more than 100. Some portable grindstones are also reported from Aboriginal sites.

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.

Isolated find: a single artefact not located with any other.

Knapping: the process of striking rocks causing them to fracture.

Microlith: small backed stone artefacts.

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.

Post-depositional: after deposition.

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

Salvage archaeology: archaeological research carried out to preserve or rescue sites, materials and data from areas threatened by man-made or natural disturbance.

Scarred tree: a tree that bears a scar or scars which are wounds formed from the deliberate removal of bark or wood by Aboriginal people and are usually an indicator of an activity area.

Scraper: stone tool made on a flake or core with steep retouch along one or more edges.

Stone arrangement: an arrangement of stones into a shape or pattern and often used for ceremonial purposes or place markers.

Spiritual Significance: the importance of a place in the landscape that is valued by Aboriginal people because it is part of their spiritual culture. Examples include places associated with totem species or places that are the subject of traditional cultural stories.

Stratified Archaeological Deposits: 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.

Surface collection: archaeological materials obtained from the ground surface.

Surface scatter: archaeological materials found distributed over the ground surface.

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.

Test excavation: excavation of small sections (a sample) of an area to determine the archaeological remains and significance.

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.

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

Abbreviations and Acronyms

ACHMP	Aboriginal Cultural Heritage Management Plan
AHIMS	Aboriginal Heritage Information Management System. Data base of recorded sites across NSW managed by OEH
OEH	Office of Environment and Heritage

OEH 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. Used to define an area of the landscape that is believed to contain subsurface archaeological deposits.
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 commissioned by Northbank Enterprise Hub Pty Ltd to prepare a Due Diligence Archaeological Assessment for the proposed industrial subdivision of Lot 1001 DP 1127780 along Tomago Road, at Tomago. This project is referred to as the Northbank Enterprise Hub.

The assessment has been undertaken to meet the NSW Office of Environment and Heritage (OEH) Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), the OEH Due Diligence Code of Practice for the protection of Aboriginal Objects in New South Wales and the Brief.

An additional component to this assessment was a request from the Department of Planning and Infrastructure (DoP&I) and the Environment Protection Agency (EPA) during the 2012 Adequacy Review to re-located four previously identified sites within the project area a second time. This was to make a final determination if they are archaeological or cultural sites (and to submit site cards if they are sites) as they had not been registered in 2010 when they were first identified and included in an assessment report (Indigenous Outcomes 2010).

1.2 PROPONENT DETAILS

Northbank Enterprise Hub Pty Ltd

1.3 STUDY AREA & HOW IT IS DEFINED

The study area is defined by the proponent and is located approximately 6 kilometres south of Raymond Terrace and 8 kilometres west of Williamtown along the Tomago Road, Tomago. The Northbank Enterprise Hub includes Lot 1001 DP 1127780 and comprises approximately 239 hectares of land. The location and extent of the study area is illustrated in *Figures 1.1 to 1.3*.

1.4 DESCRIPTION OF THE PROPOSED DEVELOPMENT

The proposed development is for an industrial subdivision and associated filling and earthworks, roads and services to be known as the Northbank Enterprise Hub.

The proposed development is for the following:

- To fill the majority of the site to the 1:100 year flood level (fill area approximately 3.7 million cubic metres);
- A subdivision of the land for future development purposes. The design of the subdivision is intended to provide flexibility for future occupants of the site (currently unknown);
- The provision of two (2) new intersections from Tomago Road and a new internal road network to access all allotments;

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

MCH:

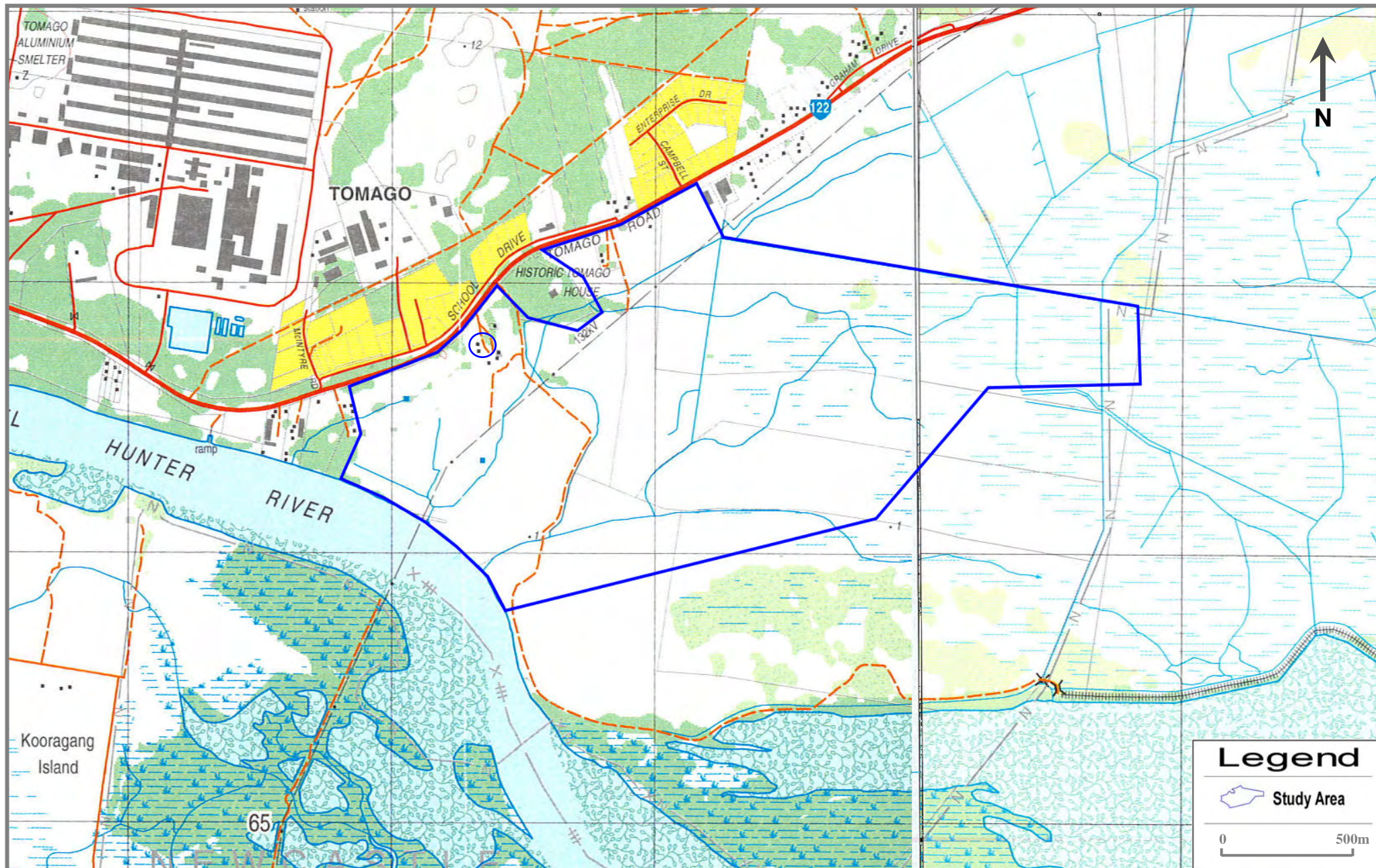


Figure 1.2 Local location of the study area

Source: 1:25 000 Topo Series: Beresfield & Williamtown

MCH:



Figure 1.3 Aerial location of the study area

Source: Google earth

- The provision of new servicing to the land including the relocation of existing power lines that traverse the site along a portion of the Tomago Road frontage;
- New drainage and water quality management infrastructure;
- The provision of a constructed wetland at the southern section of the site; and
- New landscaping throughout the site including public open space areas at the south western, north western (adjacent to Tomago house) and southern sections of the site.

At this time no specific use of the land is proposed and the future uses would be subject to separate future approval.

1.5 *DESCRIPTION OF IMPACTS*

The site is subject to inundation by regional floods from the Hunter River and as such filling of the site is necessary for development of the subdivision. The majority of the site will be filled to the 1:100 year flood level excluding a number of key areas including a heritage park, a significant area adjacent the Hunter River to be maintained for the purpose of flood way and as a riverside open space area. All material will be transported to the site via road (truck and dog). This is a process that will occur over a number of years and at different staging intervals as market demand for land dictates. It is not expected that filling of the site will occur in one go. Earthworks will result in appropriate finished surface levels directed to drainage channels created as a preference by filling rather than excavation in order to avoid acid sulphate soil exposure.

1.6 *PROJECT FRAMEWORK*

The EP&A Act establishes the statutory framework for planning and environmental assessment in New South Wales and the implementation of the EP&A Act is the responsibility of the Minister for Planning, statutory authorities and local councils. The EP&A Act contains three parts which impose requirements for planning approval:

- Part 3 relates to the preparation and making of Environmental Planning Instruments, including Local Environmental Plans (LEP) which zone land for particular purposes.
- Part 4 generally provides for the control of local development that requires development consent from the local Council.
- Part 5 provides for the control of 'activities' that do not require development consent and are undertaken or approved by a determining authority.

The applicable approval process is determined by reference to the relevant environmental planning instruments and other controls including local environmental plans (LEPs) and State Environmental Planning Policies (SEPPs). Pursuant to section 36 of the EP&A Act there is a general presumption that a SEPP prevails over a LEP in the event of an inconsistency.

The proposal has been designed to be integrated with the adjoining Northbank Enterprise Hub Pty Ltd Part 3A approved industrial subdivision (Project Approval 07_0086) to the north east.

1.7 *PURPOSE OF THE ARCHAEOLOGICAL ASSESSMENT*

The purpose of the assessment is to assess any archaeological constraints to support the subdivision and to provide opportunities and options to ensure any cultural materials present are protected.

1.8 *OBJECTIVES OF THE ASSESSMENT*

The objective of the assessment is to identify areas of indigenous cultural heritage value, to determine possible impacts on any indigenous cultural heritage identified (including potential subsurface evidence) and to develop management recommendations where appropriate.

The assessment employs a regional approach, taking into consideration both the landscape of the study area (landforms, water resources, soils, geology etc) and the regional archaeological patterning identified by past studies.

1.9 *PROJECT BRIEF/SCOPE OF WORKS*

The following tasks were carried out:

- a review of relevant statutory registers and inventories for indigenous cultural heritage including the NSW Office of Environment and Heritage (OEH) Aboriginal Heritage Information Management System (AHIMS) for known archaeological sites, the State Heritage Register, the Australian Heritage Database (includes data from the World Heritage List UNESCO, National Heritage List, Commonwealth Heritage List, Register of the National Estate) and the Port Stephens Local Environmental Plan;
- a review of local environmental information (topographic, geological, soil, geomorphological and vegetation descriptions) to determine the likelihood of archaeological sites and specific site types, prior and existing land uses and site disturbance that may effect site integrity;
- a review of previous cultural heritage investigations to determine the extent of archaeological investigations in the area and any archaeological patterns;
- the development of a predictive archaeological statement based on the data searches and literature review;
- identification of human and natural impacts in relation to known and recorded archaeological sites and predicted archaeological potential of the study area;
- consultation with the Aboriginal community as per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010);

- undertake a site inspection with the participation of the registered Aboriginal groups and to re-locate sites NB1, NB2, NB3 and NB4 as previously identified by Indigenous Outcomes (2010), and
- the development of mitigation and conservation measures.

1.10

STATUTORY CONTROLS

Land managers are required to consider the affects of their activities or proposed development on the environment under several pieces of legislation. Indigenous cultural heritage in NSW is protected and managed under both Commonwealth and State legislation. The appropriate legislation is summarised below.

- *New South Wales National Parks and Wildlife Act 1974, Amendment 2010*

The National Parks and Wildlife Act (1974), Amended 2010, administered by the OEH is the primary legislation for the protection of Aboriginal cultural heritage in New South Wales.

Part 6 of the Act provides protection for Aboriginal objects and declared Aboriginal places through the establishment of offences of ‘harm’ to these objects and places. Under the Act, it is an offence to knowingly harm or desecrate an Aboriginal object or Aboriginal place. If harm to an object or place is anticipated, an Aboriginal Heritage Impact Permit (AHIP) must be applied for and OEH may issue and AHIP under the s90 of the Act.

Previously, the NPW Act required two permits for the majority of activities and included one for test excavations (s87) and one for the activity itself (s90). The new provisions collapse these requirements into a single regulatory provision.

A permit is no longer required to undertake test excavations (providing the excavations are in accordance with the Code of Practice for Archaeological Investigations in NSW). Where an AHIP s90 is required, they can now be issued in relation to specific parcels of land, deal with multi stage developments, and there are clear provisions for variation, transfer, suspension and revocation.

Linked to the NPW Act (amendment 2010) are the Due Diligence Code of Practice and the Archaeological Code of Practice. The Due Diligence Code of Practice explains and provides guidance about what due diligence means. It also provides steps in which individuals or organisations that own, use or manage land can identify if Aboriginal objects are or likely to be there, determine if their activities will harm Aboriginal objects and determine if an AHIP is required. The code enables people to take reasonable steps or precautions to consider if Aboriginal objects may be present and avoid harm to them. If harm cannot be avoided, then an AHIP is required. The Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW assists in establishing the requirements for undertaking test excavations as part of an archaeological investigation without an AHIP and to establish the requirements that must be followed when undertaking an archaeological investigation in NSW where an AHIP application is likely to be made.

- *Environmental Planning and Assessment Act 1979, (EP&A Act, NSW)*

Consideration of potential impacts of a development on Aboriginal heritage is a key component of the environmental impact assessment process under the EP&A Act. In NSW the Environmental Planning and Assessment Act (EP&A Act) is the principal law overseeing the assessment and determination of development proposals which are considered under the different parts of the Act (DoP 2010) including Part 3, 4 and 5.

The standards of the OEH Due Diligence Code may be used or adapted by proponents to inform the initial assessment of the environmental impacts of an activity on Aboriginal heritage. An environmental assessment that meets all the requirements of the Due Diligence Code will satisfy the Due Diligence test.

- *The Heritage Act 1977 (NSW)*

The Heritage Act 1977 protects the natural and cultural history of NSW with emphasis on non-indigenous cultural heritage through protection provisions and the establishment of a Heritage Council. While Aboriginal heritage sites and objects are protected primarily by the NPW Act 1974, if an Aboriginal site, object or place is of great significance it can be protected by a heritage order issued by the Minister on the advice of the Heritage Council.

- *The Aboriginal and Torres Strait Islander Heritage Protection Act 1984, Amendment 1987 (Commonwealth)*

The Aboriginal and Torres Strait Islander Heritage Protection Act 1984 protects areas and/or objects which are of significance to Aboriginal people and which are under threat of destruction. A significant area or object is defined as one that is of particular importance to Aboriginal people according to Aboriginal tradition. The Act can, in certain circumstances override state and territory provisions, or it can be implemented in circumstances where state or territory provisions are lacking or are not enforced. The Act must be invoked by or on behalf of an Aboriginal or Torres Strait Islander or organisation.

- *The Australian Heritage Commission Act 1975 (Commonwealth)*

The Australian Heritage Commission Act 1975 established the Australian Heritage Commission, which assesses places to be included in the National Estate and maintains a register of these places, which are significant in terms of their association with particular community or social groups for social, cultural or spiritual reasons. The Act does not include specific protective clauses.

1.11

QUALIFICATIONS OF THE INVESTIGATOR

Penny McCardle: Principal Archaeologist & Forensic Anthropologist has 10 years experience in Indigenous archaeological assessments, excavation, research, reporting, analysis and consultation. Six years in skeletal identification, biological profiling and skeletal trauma identification.

- BA (Archaeology and Palaeoanthropology, 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
- Currently undertaking a PhD, University of Newcastle, 2012

1.12

REPORT STRUCTURE

The report includes *Chapter 1* which outlines the project, *Chapter 2* provides the consultation, *Chapter 3* presents the environmental context, *Chapter 4* presents ethno historic context, *Chapter 5* provides the archaeological background, *Chapter 6* provides the results of the fieldwork, analysis and discussion; *Chapter 7* presents the significance assessment, *Chapter 8* provides the development impact assessment, *Chapter 9* presents the mitigation strategies and *Chapter 10* presents the management recommendations.

As per the 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 *Annex 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.

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 OF PROJECT PROPOSAL & 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 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 22 August 2011. A reply was requested by the 5 September 2011 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
Office of Environment and heritage	7 groups
WLALC	no response
Port Stephens Council	no response
Registrar Aboriginal Land Rights Act 1983	no response
National Native Title Tribunal	NN4/12: Worimi Local Aboriginal Land Council v Minister for Lands for the State of New South Wales (No 2) NN5/2: Peter Hillig in his capacity as administrator of Worimi Local Aboriginal Land Council v Minister for Lands for the State of New South Wales NN05/7: Peter Hillig in his capacity as administrator of Worimi Local Aboriginal Land Council v Minister for Lands for the State of New South Wales NN06/5: Hillig as Administrator of Worimi Local Aboriginal Land Council v NSW Native Title Services Ltd
Native Title Services Corporation Limited	no response
Catchment Authority	no response

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.

Table 2.2 List of people/groups to contact

Maaiangal Aboriginal Heritage
Mur-Roo-Ma Inc
Nur-Run-Gee Pty Ltd
Worimi Aboriginal community Co-operative
Garrigal Aboriginal Community Inc
Do-Wa-Kee

MCH wrote to all parties identified in *Table 2.2* on 5 September 2011, and an advertisement was placed in the Port Stephens Examiner on 8 September 2011. The correspondence and advertisement included the following information:

- the name and contact details of the proponent;
- an overview of the proposed project including the location of the proposed project;
- a statement that the purpose of community consultation with Aboriginal people is to assist the proposed applicant in the preparation of an application

for an AHIP and to assist the Director General of OEH in his or her consideration and determination of the application should an AHIP be required;

- an invitation for 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 a process of community consultation;
- the closing date for the registration of interests (19 September 2011 for the letter and 22 September 2011 for the add);
- that unless otherwise specified that those who are registering their interest that their details will be provided to OEH and the LALC;
- that 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, and
- 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 parties are listed in *Table 2.3*.

Table 2.3 *List of registered parties*

Group	Contact
Mur-Roo-Ma Inc	Anthony Anderson
Nur-Run-Gee Pty Ltd	Lennie Anderson

2.2 *STAGE 2: PRESENTATION OF INFORMATION ABOUT THE PROPOSED PROJECT*

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

As the registered parties opted for an information packet to be forwarded to them instead of a meeting, the following information was provided to each party;

- an outline of the project details including the nature, scope and methodology, as well as any impacts;

- an outline of the impact assessment process;
- an outline of critical timelines and milestones for the completion of the assessment and delivery of reports;
- to clearly define agreed roles, functions and responsibilities of the OEH, proponent, the registered Aboriginal parties and the LALC,
- to allow for opportunities for the registered Aboriginal parties to identify, raise and discuss their cultural concerns, perspectives and assessment requirements (if any);
- requested the preferred option for the gathering of information about cultural significance (Stage 3): information packet with questions and options and/or a meeting;
- a written response to the methods and the preferred method of sharing traditional knowledge methods was due no later than 13 October 2011.

This pack also stipulated that consultation was not employment, and requested that in order to assist the proponent in the selection of field workers, that the groups provide information in relation to two of the criteria as set out in the Interim Community Consultation Requirements for Applicants (January 2005). This included:

- the ability to assist in communicating the results of the survey back to the stakeholders for the assessment of cultural significance and returning advice on their response to MCH (asked to provide details on their ability to discuss results of field work, ability to effectively represent the Aboriginal community and provide a cultural heritage report in an appropriate time frame)and
- experience in field work and in providing cultural heritage advice (asked to nominate at least two individuals who will be available and fit for work (physically able to undertake field work) and their relevant experience.

This pack also asked the registered groups to provide a CV and insurance details for MCH to pass onto the client.

2.3

STAGE 3: GATHERING INFORMATION ABOUT CULTURAL SIGNIFICANCE

The aim of this stage is to facilitate a process whereby the registered Aboriginal stakeholders can contribute to culturally appropriate information gathering and the research methodology, provide information that will enable the cultural significance of any Aboriginal objects and or/places within the proposed project area to be determined and have input into the development of any cultural heritage management options and mitigation measures.

In order to do this, 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 registered Aboriginal parties may be sensitive and MCH and the proponent will not share that information with all registered Aboriginal parties 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.

No traditional knowledge was provided the specific study area, however the whole Holocene, Pleistocene and interbarrier depression system was an important area for the Worimi people as it had numerous resources and suitable occupation, ceremonial and burial places throughout.

2.4

SURVEY

All groups were invited to participate in the survey on 9 November 2011. The survey areas were surveyed by representatives from the registered Aboriginal stakeholders and the archaeologist in accordance with the proposed methodology provided to the stakeholders for review and approved.

A second site visit was undertaken on 1 June 2012 in response to a request from DoP&I and EPA to re-locate previously identified sites by Indigenous Outcomes (2010) (NB1, NB2, NB3, NB4) a second time and to clarify if they sites. Representatives from the registered Aboriginal stakeholders and MCH archaeologist attended this second site visit.

During the surveys, the Aboriginal representatives were asked of their traditional knowledge and of any areas of cultural significance within the study area and if they felt comfortable in sharing that information. Discussions centred on places associated with ceremonial, spiritual, mythological beliefs, traditions and known sites that date from the pre-contact period. Sites or places with historical associations and/or 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) were discussed as well as sites or places of contemporary significance (apart from the above) which has acquired significance recently.

The Aboriginal stakeholder representatives 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, any information pertaining to sites or places of cultural significance associated with the historic or contemporary periods within the study area or surrounding area.

2.5

STAGE 4: REVIEW OF DRAFT CULTURAL HERITAGE ASSESSMENT

A copy of the DRAFT report was forwarded to all registered Aboriginal parties (those listed in Table 1.3) for their review and were asked to provide a written or verbal response no later than 15 December 2011. The registered stakeholders supported the assessment and recommendations.

Following the second site visit to answer DoP&I and EPA concerns regarding sites NB1, NB2, NB3 and NB4 previously identified by Indigenous Outcomes (2010), a revised DRAFT report was forwarded to all registered Aboriginal parties and were asked to provide a written or verbal response no later than 31 July 2012. The registered stakeholders supported the second assessment and recommendations.

3.1

INTRODUCTION

The nature and distribution of Aboriginal cultural materials in a landscape are strongly influenced by environmental factors such as topography, geology, landforms, climate, geomorphology, hydrology and the associated soils and vegetation (Hughes and Sullivan 1984). These factors influence the availability of plants, animals, water, raw materials, the location of suitable camping places, ceremonial grounds, burials, and suitable surfaces for the application of rock art. As site locations may differ between landforms due to differing environmental constraints that result in the physical manifestation of different spatial distributions and forms of archaeological evidence, these environmental factors are used in constructing predictive models of Aboriginal site locations.

Environmental factors also effect the degree to which cultural materials have survived in the face of both natural and human influences and affect the likelihood of sites being detected during ground surface survey. Site detection is dependent on a number of environmental factors including surface visibility (which is determined by the nature and extent of ground cover including grass and leaf litter etc) and the survival of the original land surface and associated cultural materials (by flood alluvium and slope wash materials). It is also dependant on the exposure of the original landscape and associated cultural materials (by water, sheet and gully erosion, ploughing, vehicle tracks etc), (Hughes and Sullivan 1984). Combined, these processes and activities are used in determining the likelihood of both surface and subsurface cultural materials surviving and being detected.

It is therefore necessary to have an understanding of the environmental factors, processes and activities, all of which affect site location, preservation, detection during surface survey and the likelihood of subsurface cultural materials being present. The environmental factors, processes and disturbances of the surrounding environment and specific study area are discussed below.

3.2

TOPOGRAPHY

The topographical context is important for identifying potential factors relating to past Aboriginal land use patterns. 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 study area is located within the Coastal Zone. This zone lies to the east of the region and is mapped as being within the Hunter Land System of alluvial terraces. The Coastal Zone also contains Pleistocene and Holocene stabilised and transgressive dunes consisting of steep and low dunes with extensive swamps and depressions.

The study area is situated within the interbarrier depression with the northern boundary at the interface of the interbarrier depression and the Inner Pleistocene

dunes. At the far north of the study area is a low dune and the remainder forms part of the flood plain/swamp/waterlogged landscape (Figure 3.1).

The flood plain/swamp/waterlogged interbarrier depression is not considered to be suitable for occupation, however, the low dune in the north west of the study area may be considered more suitable for occupation.

3.3

GEOLGY

The geology of a region is not only reflected in the environment (landforms, topography, geomorphology, vegetation, climate etc), it also influences past occupation and its manifestation in the archaeological record.

The nature of the surrounding and local geology along with the availability and distribution of stone materials has a number of implications for Aboriginal land use and archaeological implications. The implications for past Aboriginal land use mainly relate to location of stone resources or raw materials and their procurement for manufacturing and modification for stone tools. Evidence of stone extraction, and manufacture, can be predicted to be concentrated in the areas of stone availability. However, stone can be transported for manufacture and/or trading across the region.

The study area is located on Quaternary gravel, sand, silt, clay, and 'Waterloo rock, fresh and marine deposits (Newcastle Geological Sheet, 1966). There are no known local sources of raw material suitable for artefact manufacture in the study area or immediate surrounding area. Nobby's tuff was predominantly utilised by past Aboriginal societies in the area, with local sources present at Birubi Point and Nobby's Head (approximately 30 kilometres east).

3.4

GEOMORPHOLOGY

The study of the evolution of the landscape within the Hunter Valley demonstrates that certain land systems, landforms and soil types can be considered as having higher archaeological potential and research value.

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 study area is located in the far west of the Newcastle Bight sand barrier system, which is bounded in the east and south by the Hunter River and to the north by the bedrock hill slopes at Raymond Terrace (Thom *et al.*, 1992, Matthei 1995). The system incorporates both inner (Pleistocene: c. 1.8 million to 10 000 years ago) and outer (Holocene: 10 000 years ago to today) coastal barriers as well as the inter barrier system. Sediments include marine, estuarine aeolian and paludal deposits.

MCH:

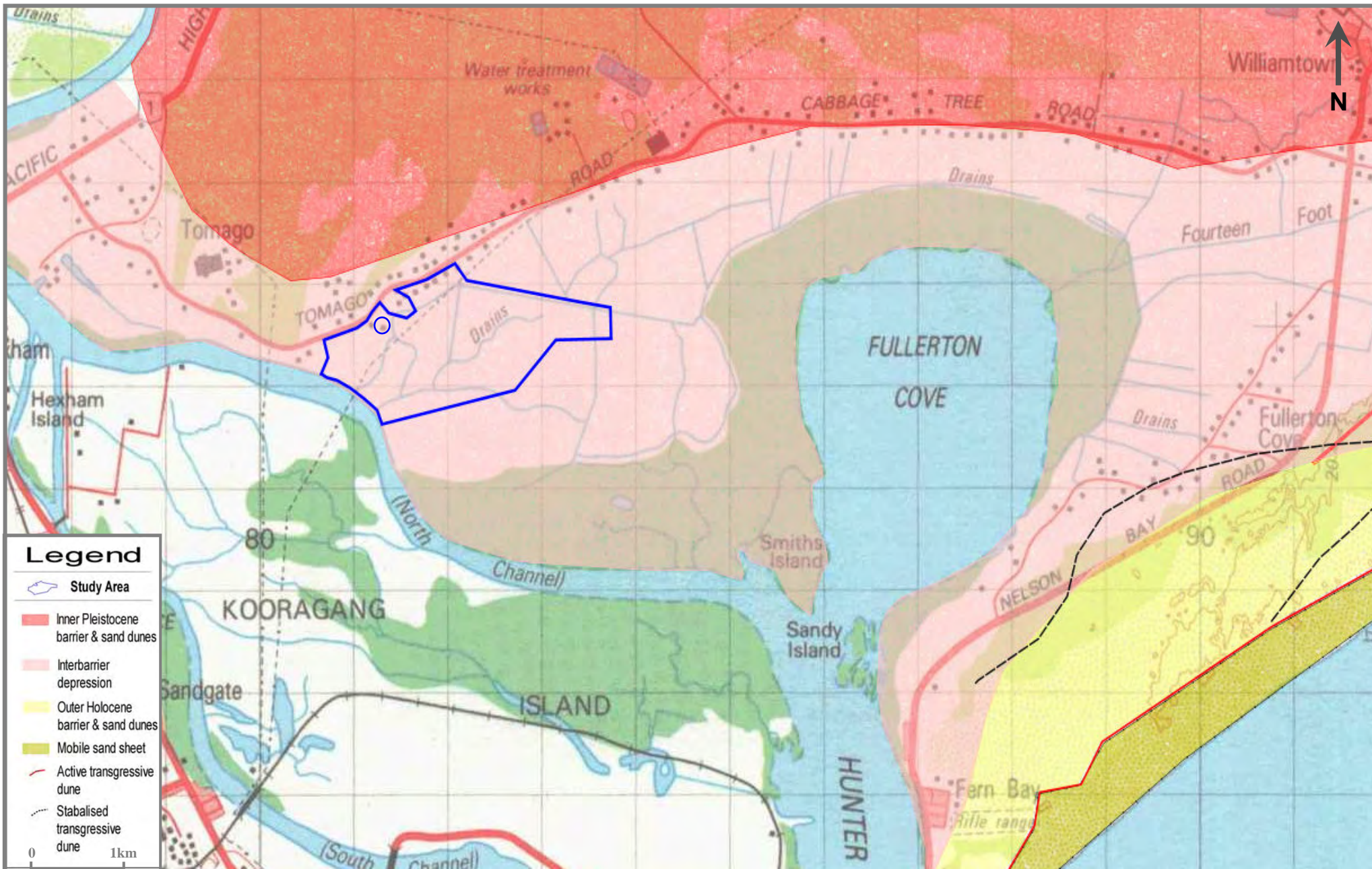


Figure 3.1 Landforms

Source: 1:100 000 Topo Series: Newcastle

Although there has been a long history of geomorphic study of the barrier systems in this region dating back to Thom (1965) and their evolution has been determined, it is important to note that in recent years the Pleistocene/Holocene coastal chronology has been substantially modified and therefore the conventional model of inner and outer barriers needs to be reconsidered. The conventional understanding of the geomorphic evolution of the coast in this region is that the inner Pleistocene barrier was deposited during the last Inter Glacial period of high sea level (approximately 120,000 years ago) and was later modified by wind erosion and the development of transgressive sand sheets and freshwater swamps on its western margin. The inner barrier blocked off several valleys to form extensive swamps including the former Grahamstown Swamp that is now beneath the artificial Grahamstown Lake.

At the height of the Last Glacial, sea level was at minus 120 metres AHD (Australian Height Datum), and the shoreline was about 30 kilometres seaward of its present position. At the end of the last Glacial (circa 18,000 years before present [BP]), the sea level rose rapidly sweeping shelf sand before it to form the parallel sets of beach ridges and swales of the outer Holocene barrier. It is usually accepted that sea level reached its present height about 6,000 years BP and that this date marks the beginning of Holocene sand accumulation. In addition to the beach ridges behind Stockton Bight there are three sets of transgressive dunes, two of which (landward) have been stabilised by natural vegetation, and the third (coastward) remains transgressive (Robson *et al.*, 1993: 7).

Between the inner and the outer barrier is a large inter-barrier depression that is followed by Tilligerry Creek and was originally an extensive lagoon. It is now filled with either estuarine or fresh water swamp deposits, mud and clay (Robson *et al* 1993: 7).

All of the barrier sands identified as the Tomago sand beds have been mined for heavy minerals in places and are also an important source of groundwater tapped by the Hunter Water Board. South of the site this barrier system is approximately five kilometres wide and reaches a maximum elevation of 40 metres ASL on some remnant dune ridges. Soil development in this sector is typically well-developed podsol profiles with thick bleached A₂-horizons and strong 'coffee rock' or iron pans. Details of the profile vary from crests to swales with iron pans dominant on the crest and organic pans dominant on the margin of the swamps.

The nearest outer barrier sands are found at Fullerton Cove and the outer barrier soils range from clean quartz sand with no profile development in the most recent transgressive dunes to weak to moderately developed podsol profiles that generally lack pans but show distinct colour shift from a bleached A₂-horizon to a bright coloured and weakly cemented B-horizon. The difference between the degree of soil development on inner and outer barrier sands can be attributed to the difference in age and the period of profile leaching.

Periods of active dune movement may either re-work and effectively destroy archaeological sites or bury older land surfaces and potentially preserve sites. Although there is a good potential for in-situ sites in stable dune areas (both in

Holocene and Pleistocene dunes), a range of other preservation factors including wind and water erosion, groundwater fluctuation and European disturbance may have influenced localised site patterning.

Young *et al.*, (1993) seriously questioned the conventional model of coastal barrier development and suggested an alternate interpretation with four important elements:

1. that the sea level was at its present height by 7,000 years BP and that it rose another two metres until about 1,500 years BP;
2. Holocene transgressive dune activity varies from place to place and was a consequence of climate variation rather than sea level change;
3. that there was a fall of 2°C in sea surface temperature after 3,000 years BP and this coincided with the onset of the present phase of barrier erosion; and
4. that there is evidence of the effects of at least three tsunamis on the NSW south coast in the last 3,000 years.

In later work, several of the same authors (Bryant *et al.*, 1997; Haworth *et al.*, 2002) confirmed that barrier formation on the NSW coast extended over 250,000 years with several phases of development and destruction. They also found evidence of remnants of the 'inner barrier' on the south coast with a peak phase of development at about 125,000 years BP when sea level was slightly higher than present. Their suggested explanation of the general absence of the inner barrier on the south coast is that such deposits were destroyed by tsunami, particularly one that occurred between 100,000-110,000 years BP.

Murray-Wallace (2002) provided additional support for a prolonged history of barrier development in reporting sea levels for the New South Wales coast at Oxygen isotope Stage 5 (last interglacial, 125,000 years BP) as being consistently about four metres above present sea level. This is within the range of sea levels reported in many other parts of Australia for the last eleven inter-glacials.

In applying these points to the Newcastle Barriers and to this site it should be noted that:

- the landward parts of the inner barrier may be substantially older than previously appreciated;
- that a mid-Holocene higher sea level could have an important influence on erosion and deposition of the outer barrier and on sediments and features in the Hunter estuary;
- that the ages of transgressive dune sheets need not be coincident from place to place; and
- that evidence of tsunamis may also occur on the north coast.

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 and burials.

The study area is situated on two soil landscapes. A small strip along the northern boundary consists of a variant landscape of Pleistocene sand sheets and the remainder is situated on the Bobs Farm soil landscape is situated on broad, flat, swampy, Holocene estuarine plains. It consists of an A horizon of black strongly pedal organic loam up to 30 centimetres in depth (pH 4.0 - 8.5) that overlays the B horizon of grey saturated plastic estuarine clay (pH 4.0 - 8.5) that is 20-80 centimetres in depth. Occasionally, this overlies >50 centimetres of saturated greyish yellow brown massive sandy clay loam. The boundaries between soils are sharp and total soil depth exceeds 300 centimetres (Matthei 1995:188 - 190).

3.6

CLIMATE

Climatic conditions would also have played a part in the occupation of an area whilst also impacting upon soils, vegetation and the preservation of the associated cultural materials and their context.

The climate of the area is typically warm with warm to hot and humid summers and cool to mild winters. In summer the average minimum temperature is 24°C and the average maximum is 29°C. In winter the average minimum temperature is 4°C and the average maximum is 18°C. During late autumn and winter the water storage capacity of soils is exceeded, resulting in prolonged runoff. Runoff and rain splash result in the occurrence of erosion and the associated movement of cultural materials.

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 the regional archaeological investigations carried out in the region where by such patterns are typically within 50 metres of a reliable water source.

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 study 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).

When assessing the relationship between sites and water sources it must be noted that the Australian continent has undergone significant environmental changes during the past 60,000 years that people have lived here and that Pleistocene sites (older than 10,000 years) would have been located in relation to Pleistocene water sources that may not exist today. As discussed above, the study area is situated in the interbarrier depression that was once the coastline and a lagoon.

The study area is situated along the eastern side of the Hunter River (6th order) and a number of 1st and 2nd order streams flow throughout the study area that flow into the Hunter River and form part of the flood plain. The study area is also surrounded by many swamp/wet lands. Thus whilst the majority of the study area may be considered well resourced in terms of water availability and associated resources, it is situated on the flood plain within the interbarrier depression of swamp/waterlogged, it is the northern low dune that would have been suitable for actual occupation and where evidence of past Aboriginal land use may be found.

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 preservation and detection of surface cultural materials from of past Aboriginal land uses are also influenced by flora and fauna.

European settlers extensively cleared the original native vegetation in the 1800's. Prior to clearing native vegetation would have included a mixture of wet and dry heath. The wet heath would have been dominated by Angophora's, swamp gums, paperbarks and a variety of understorey plants while the dry heath would have included bloodwoods and banksias with a bracken understorey (Matthei 1995). The drainage throughout the study area would have supported a range of faunal populations including kangaroo, wallaby, goanna, snakes and a variety of birds as well as fresh water and marine resources.

Presently, the site is predominantly covered in pasture grasses for livestock grazing. Freshwater wetland areas are located centrally within the study area and is adjacent to the RAMSAR Wetland on adjoining land. Areas of swamp oak forest are located at the north east and southern sections of the study area and two small pockets of swamp oak forest regeneration are located towards the

south. A small area of swamp mahogany paperbark swamp forest is located at the north western corner.

Typically, due to vegetation cover, most artefacts identified through surface inspection are identified when they are visible on exposures created by erosion or ground surface disturbances (Dean-Jones and Mitchell 1993; Kuskie and Kamminga 2000). The grass ground cover throughout the study area expected to result in limited visibility, hence reducing the detection of surface cultural materials.

3.9

PAST LAND USES AND DISTURBANCES

Based upon archaeological evidence, the occupation of Australia extends back some 40,000 years (Mulvaney and Kamminga 1999) whilst Aboriginal people have been present within the Hunter Valley for at least 20,000 years (Koettig 1987). Although the impact of past Aboriginal occupation on the natural landscape is thought to have been relatively minimal, it cannot simply be assumed that 20,000 years of land use have passed without affecting various environmental variables.

The practice of 'firestick farming' whereby the judicious setting of fires served to drive game from cover, provide protection and alter vegetation communities significantly influenced seed germination, thus increasing diversity within the floral community. Following European settlement of the Hunter Valley in the 1820s, the landscape has been subjected to a range of different modifactory activities including extensive logging and clearing, agricultural cultivation (ploughing), pastoral grazing, residential developments and mining (Turner 1985). The associated high degree of landscape disturbance has resulted in the alteration of large tracts of land and the cultural materials contained within these areas.

The specific study area has been cleared and primarily used for pastoral purposes (grazing), involving the wholesale clearance of native vegetation, the introduction of pasture grass, fences, tracks and the Tomago House family church is also located to the south west.

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.

As a sub-set of agricultural land use, ploughing typically disturbs the top 10-12 centimetres of topsoil (Koettig 1986b) depending on the method and machinery used during the process. Ploughing increases the occurrence of erosion and can also result in the direct horizontal and vertical movement of artefacts, thus causing artificial changes in artefact densities and distributions. In fact, studies

undertaken on artefact movement due to ploughing (e.g. Roper 1976; Odell and Cowan 1987) has shown that artefact move between one centimetre up to 18 metres laterally depending on the equipment used.

Ploughing may also interfere with other features and disrupt soil stratigraphy (Lewarch and O'Brien 1981). Ploughing activities are typically evidenced through 'ridges and furrows' however a lengthy cessation in ploughing activities dictates that these features may no longer be apparent on the surface.

Whilst the impacts of vehicular movements on sites have not been well documented, based on general observations it is expected that the creation of dirt tracks for vehicle access would result in the loss of vegetation and therefore will enhance erosion and the associated relocation of cultural materials.

3.10

NATURAL DISTURBANCES

It must be recognised that the disturbance of cultural materials can also be a result of natural processes. The patterns of deposition and erosion within a locality can influence the formation and/or destruction of archaeological sites. Within an environment where the rate of sediment accumulation is generally very high, artefacts deposited in such an environment will be buried shortly after being abandoned. Frequent and lengthy depositional events will also increase the likelihood of the presence of well-stratified cultural deposits (Waters 2000:538,540).

In a stable landscape with few episodes of deposition and minimal to moderate erosion, soils will form and cultural materials will remain on the surface until they are buried. Repeated and extended periods of stability will result in the compression of the archaeological record with multiple occupational episodes being located on one surface prior to burial (Waters 2000:538-539). Within the Hunter Valley duplex soils artefacts typically stay within the A horizon on the interface between the A and B horizons (Refer to *Section 2.4*).

If erosion occurs after cultural material is deposited, it will disturb or destroy sections of archaeological sites even if they were initially in a good state of preservation. The more frequent and severe the episodes of erosional events, the more likely it is that the archaeological record in that area will be disturbed or destroyed (Waters 2000:539; Waters and Kuehn 1996:484). Regional erosional events may entirely remove older sediments, soils and cultural deposits so that archaeological material or deposits of a certain time interval no longer exist within a region (Waters and Kuehn 1996:484-485).

The severe rain and flooding in recent times has had a significant impact of soils and cultural materials within the soils. MCH have noted that throughout the Hunter Valley previously recorded sites have been completely moved with nothing remaining or a significant reduction in artefacts numbers as well as erosion. Thus, the archaeological record had been greatly altered in some areas along with the soils and landscapes.

The role of bioturbation is another significant factor in the formation of the archaeological record. Post-depositional processes can disturb and destroy

artefacts and sites as well as preserve cultural materials. Redistribution and mixing of cultural deposits occurs as a result of burrowing and mounding by earthworms, ants and other species of burrowing animals. Artefacts can move downwards through root holes as well as through sorting and settling due to gravity. Translocation can also occur as a result of tree falls (Balek 2002:41-42; Peacock and Fant 2002:92). Depth of artefact burial and movement as a result of bioturbation corresponds to the limit of major biologic activity (Balek 2002:43). Artefacts may also be moved as a result of an oscillating water table causing alternate drying and wetting of sediments, and by percolating rainwater (Villa 1982:279).

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 have been known to completely destroy stratification within 450 years (Balek 2002:48). At sites in Africa, conjoined artefacts have been found over a metre apart within the soil profile. The vertical distribution of artefacts from reconstructed cores did not follow the order in which they were struck off (Cahen and Moeyersons 1977:813). These kinds of variations in the depths of conjoined artefacts can occur without any other visible trace of disturbance (Villa 1982:287).

However, bioturbation does not always destroy the stratigraphy of cultural deposits. In upland sites in America, temporally-distinct cultural horizons were found to move downwards through the soil as a layer within minimal mixing of artefacts (Balek 2002:48).

3.11

DISCUSSION

The regional environment provided resources, including raw materials, fauna, flora and water, that would have allowed for sustainable occupation of the area. Within the study area, the landforms of low lying flood plain (interbarrier depression) would have provided sufficient resources for any occupation of the northern low dune. It is the elevated dunes that rise above the depression and flood plains provide a good vantage point and have been proven to have been favoured for past occupation.

In relation to modern alterations to the landscape, the use of the majority of the study area for agricultural purposes can be expected to have had low to moderate impacts upon the archaeological record. European agricultural practices may have displaced cultural materials, however in less disturbed areas, it is likely that archaeological deposits may remain relatively intact. Vegetation cover across the study area is very dense consisting of grasses and reeds with scattered areas of trees. This will affect visibility and thereby reduce the potential for identifying archaeological evidence. Typically, due to vegetation cover, most artefacts identified through surface inspection are identified when they are visible on exposures created by erosion or ground surface disturbances (Kuskie and Kamminga 2000).

Unfortunately, due to European settlement and associated destruction of past Aboriginal communities, their culture, social structure, activities and beliefs, little information with regards to the early traditional way of life of past Aboriginal societies remains.

4.1

USING ETHNO-HISTORIC DATA

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 barrier 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.

4.2

WORIMI ETHNO-HISTORIC ACCOUNTS

Early ethnographic records of the Port Stephens area are limited. Port Stephens consists of the submerged estuary of the Myall and Karuah Rivers. The area was described by surveyor Charles Grimes in 1795 as inhabited by the Worimi Tribe, whom he described as “taller” and “stouter” than Aboriginal people of the Sydney area, utilising a completely different language (Dowd, undated; Port Stephens Council, 2009). Prior to contact with settlers, the Worimi people extended from Port Stephens to Forster/Tuncurry in the north and west out to Gloucester. The Worimi comprised a number of tribes who lived on the water's edge and utilised both land and sea resources in their daily lifestyles (Leon, 1998; Port Stephens, 2011). These tribes included the Garuagal, Maiangal, Gamipingal, Garrawerrigal, Buraigal, Warringal, Birroongal, Birrimbai, Yeerungal and Wallamba (Enright, 1900; Sokoloff; 1976, Leon, 1998).

Social organisation for the Worimi included aspects such as leadership, government, punishments, duels, fights, marriage, totemism and family structure, within a social system that had both spiritual and social significance. Leadership was based around leading men, being older and fully initiated, who acted as general advisers. Disputes between groups for such things as territorial infringement were settled through battles, enacted to satisfy honour rather than being matters of mortal combat. Marriages were arranged by both kindred and parents; a number of patrilineal totemic clans had a bearing on both kinship and marriage, ensuring that strict laws were maintained, preserving tribal strength and avoiding in-breeding (Sokoloff; 1976).

In 1830 Robert Dawson described the Worimi Tribe as utilising spears and shields, wearing belts of opossum fur, and using combs formed from the leg bones of kangaroos (Dawson, 1830: 115). Bark was described as an essential material used in the production of numerous items. Notches were cut into trees “large enough only [to] place the great toe in” to enable easy climbing to strip bark “in lengths from three to six feet” (Dawson, 1830: 19). This bark was used for covering huts; bark was also utilised for making string “as good as you can get in England, by twisting and rolling it in a curious manner with the palm of the hand on the thigh” to make nets, fishing lines and bags (Dawson, 1830: 67). Sally Wattle and Kurrajong tree barks were used in making string; fishing lines were waterproofed with the sap of the Bloodwood tree (Port Stephens Council, 2009).

The importance of the ocean as a source of food resource for the Worimi people in the Port Stephens area was noted in multiple sources, as were land resources for tools. Fish hooks, for example, were made from oyster and pearl shells and yellow gum from the Grass Tree was used in manufacture to affix the disparate elements together (Dawson, 1830: 67; Port Stephens Council, 2009). Spears were also used for fishing, made from the flowering stem of the Grass Tree or Gynea Lily, with prongs of ironbark used on the tips. Other hunting tools and weapons were also manufactured from plants, including Boomerangs, which were made from wild Myrtle (Sokoloff, 1975; Port Stephens Council, 2009).

As well as utilising plant resources in tool manufacture, many were also used as food resources. The Gynea Lily’s young flowering spikes were fire roasted and eaten after being soaked in water. Wild Cape Gooseberries grew on the nearby Cabbage Tree Island and were a highly prized food resource. Other items such as Fern root and daisy yam were a necessary supplement to diet, especially when there was a scarcity of the primary food resource of fish (Sokoloff, 1977; Port Stephens Council, 2009).

4.3

WORIMI ORAL TESTIMONY

Very little research has been conducted into mortuary practices and burials of the Port Stephens area that would enable one to predict where a burial or burial ground/cemetery may be located. However, Worimi oral testimony states that when a person passed away, the deceased were buried in places that overlooked a working area or campsite. Once the grass had covered the burial the deceased’s name was never mentioned again (provided with the permission Mr Lennie Anderson, Worimi LALC, pers. comm).

Burials also occur under or near middens. It is said that the deceased were placed for final internment in these areas to draw the spirits to an area of feasting and gathering and for protection. It is said that if an area contains a spirit or spirits, there is continuity in places of gathering (provided with the permission Mr Lennie Anderson, Worimi LALC, pers. comm).

A review of the archaeological literature of the coastal zone, and more specifically the Fullerton Cove area and the results of an OEH 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 study 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 study area.

5.1

OEH ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM

It must be noted that there are many limitation with an AHIMS search. Firstly site coordinates are not always correct due to errors and changing of computer systems at OEH over the years that failed to correctly translate old coordinate systems to new systems. Secondly, OEH will only provide up to 100 sites per search, thus limiting the search area surrounding the study area and enabling a more comprehensive analysis. Finally, few sites have been updated on the OEH 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 is unknown.

In addition to this, other limitations include the number of studies in the local area. Fewer studies suggests 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. 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). Thus the OEH AHIMS search is limited and provides a basis only that aids in predictive modelling.

The new 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 OEH AHIMS register has shown that 70 known Aboriginal sites are currently recorded within five kilometres of the study area. This includes 28 middens, 15 AFT (artefacts), 13 open camps, 4 PADs, 3 AFT, ETM (earth mound), SHL (shell), 2 isolated finds, 1 scarred tree, 1 AFT, BOM (non human bone and organic materials), 1 ETM, SHL, 1 ARG (Aboriginal resource and gathering), and 1 ACD (Aboriginal ceremonial and dreaming), AFT, BUR (burial), SHL. The AHIMs results are provided in *Annex B* and the location of sites is shown in *Figure 5.1*.

MCH:



Figure 5.1 Known sites

Source: 1:100 000 Topo Series: Newcastle

A number of the sites above were recorded in the course of archaeological assessments conducted within the local area and therefore can provide more specific insight into local archaeological patterning, however a number of reports were not available from OEH. Also it must be recognised that cultural heritage assessments, conducted in association with development activity, by their very nature adhere to a proscribed project area and thus may not give an entirely holistic representation. The relevant studies are reviewed below and their location shown in *Figure 5.2*.

Koettig (1987) undertook an assessment for a proposed area of sand quarrying located in the vicinity of Nelson Bay Road near Stockton. The proposed sand quarrying was to be undertaken by Hooker Resources Ltd and involved quarrying a section of sand crossing Outer Barrier dunes of Holocene age, in an area that would have been a resource rich zone in the past.

The topography of the study area was very gently undulating with the height between dune crest and wale averaging less than 20 metres. The dune ridges ran from southwest to northeast, were higher in the southern portion of the study area and were sometimes associated with swamps. There was little evidence of past disturbances with the area mostly untouched, with the exception of a transmission line that cut across the western portion of the study area and three tracks that ran approximately east to west across the dunes. Vegetation consisted of a range of communities and species, including: black butt, smooth-barked apple, banksia, swamp mahogany, melaleuca, swamp oak, broad leaved paperbark and the orchid *Pterostylis*. Many of the species could have been exploited by Aboriginal people in the past for a variety of uses.

A search of the NPWS sites register was undertaken prior to the survey, with 47 sites identified as previously recorded in the area, 45 of these being middens. Koettig commented in the report that the previously identified sites were poorly recorded, many containing no detail on the extent, depth, composition and content of the site. No predictive model was compiled for this report.

Survey of the study area included visual examination of the area focussing on examining exposures, and investigation with a Luebers probe along a ridgeline and in association with identifiable shell middens, to test for subsurface indication of shell and depth. The survey resulted in the identification and recording of 11 new sites, which are summarised in *Table 5.1*. No separate areas of PAD were noted in the survey results.

Table 5.1 *Summary of sites (Koettig 1987)*

Site Name	Site type	Landform	Distance to Water	Stream Order	Artefacts/ Features	Disturbance	Subsurface potential
NBR1	midden/ artefact scatter	dune top	not noted	Hunter River	shell midden, 40 artefacts	exposure/ track	not noted
NBR2	midden/ artefact scatter	dune top	not noted	Hunter River	shell midden/3 artefacts	track	depth below surface 15 to 20 cm

MCH:

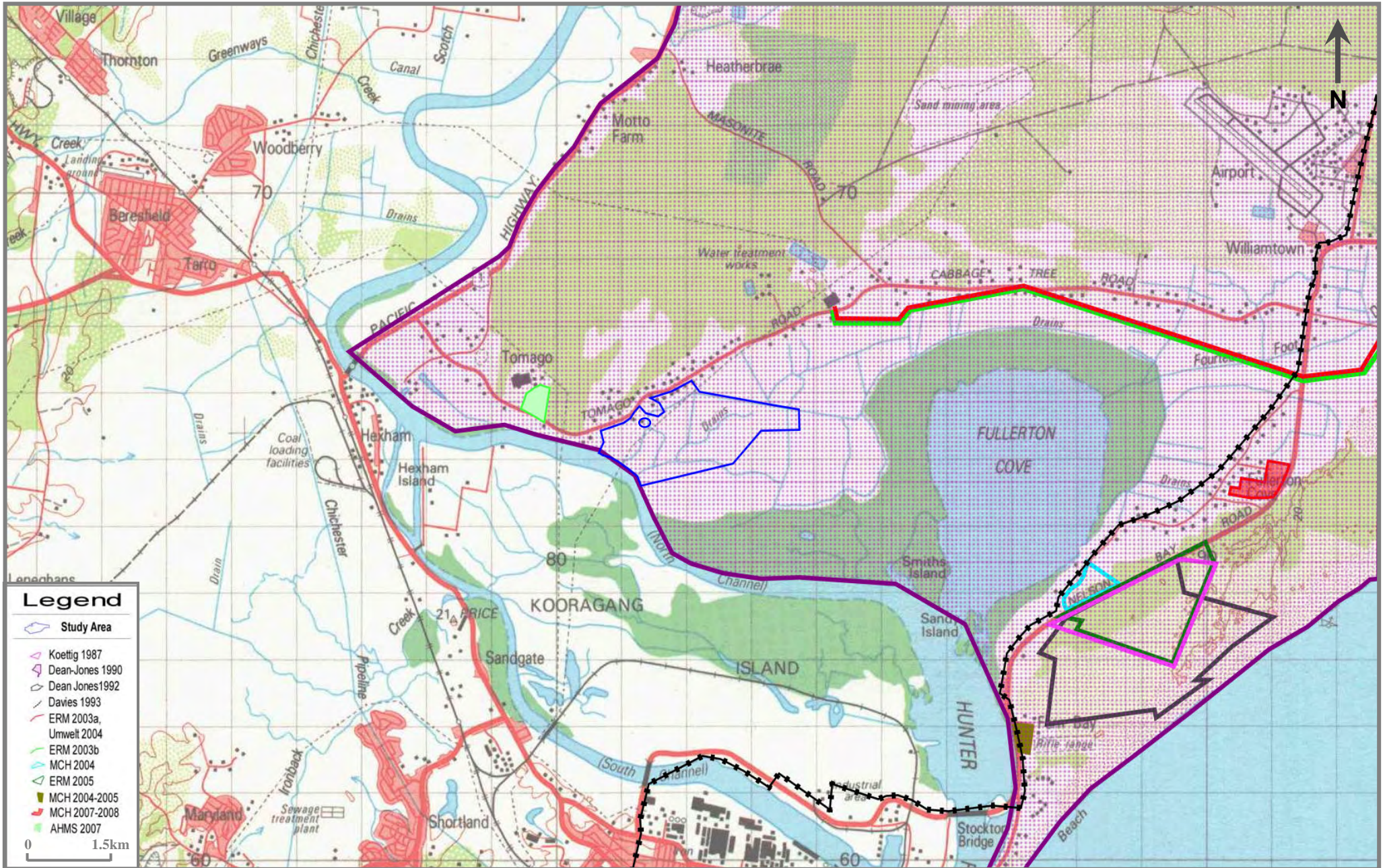


Figure 5.2 Previous studies

Source: 1:100 000 Topo Series: Newcastle

NBR3	midden	dune top	not noted	Hunter River	shell midden	track	depth below surface 10 to 15 cm
NBR4	artefact scatter	dune top	not noted	Hunter River	6 artefacts	track	not noted
NBR5	artefact scatter	slope	not noted	Hunter River	2 artefacts	track	not noted
NBR6	midden	dune top	not noted	Hunter River	shell midden	track	depth below surface <10 cm
NBR7	midden/ artefact scatter	dune top	not noted	Hunter River	shell midden/3 artefacts	track	not noted
NBR8	midden	dune top	not noted	Hunter River	shell midden	track	depth below surface to 25 cm
NBR9	midden	dune top	not noted	Hunter River	shell midden	track	not noted
NBR10	midden	dune top	not noted	Hunter River	shell midden	track/exposure	not noted
Isolated Find	isolated find	not noted	not noted	Hunter River	1 artefact	not noted	not noted

It was concluded that the survey results demonstrated a continuous distribution of midden and stone artefacts across the dune crests in the northern portion of the study area. It was further pointed out that the absence of sites located in the southern portion did not mean there were no sites there, since the area was not deeply disturbed enough to reveal subsurface deposits. It was further noted that there was a possibility that burials may have taken place in the dunes, as previously two had been found in Newcastle Bight and one on Broughton Island associated with midden deposits.

Due to the lack of exposure in some areas, lack of previous investigation and poor recording of past sites, it was determined to be impossible to establish the significance of the newly recorded sites. It was recommended that test excavations needed to be undertaken and resource extent determined in order to assess site representativeness, "and hence whether destruction of the sites is a valid alternative recommendation, or whether the site should be preserved". If destruction was determined to be a valid recommendation after significance was established, then an appropriate survey strategy would be developed accordingly.

Smith (1988) undertook an assessment of the Tomago to Karuah section of the proposed Tomago to Taree 132kV transmission line. The proposed route for the transmission line followed an existing transmission line easement. The purpose of the survey was to determine the location of any Aboriginal and Historic sites within the alignment that would be impacted by the proposed works. The

proposed works included clearing the easement, constructing vehicle tracks and erecting poles.

The topography of the study area was gently undulating and crossed several minor creeks and gully lines as well as three major creek lines, being Pipeclay, Twelve Mile and Reedy Creeks. Several swamps were also crossed, with outcrops across the study area including shale, mudstone, sandstone, tuff and coal. Vegetation across the study area largely consisted of open woodland and previous disturbance across the area included clearance, grazing, track construction/use and the initial transmission line construction.

A search of the NPWS sites register was undertaken along with a review of past reports relating to the study area and the results noted that very few archaeological surveys had been carried out in the area and there were no known sites previously recorded within the study area. Based on the results of reviewing past reports and examining sites recorded in the surrounding areas the following predictive model was compiled, stating that:

- midden sites were expected along Reedy and Twelve Mile Creeks;
- open sites were likely on dry flat landforms with site size largest in proximity to water, lessening in size and artefact density as distance to water increased;
- burials could occur in sand beds between Tomago and Medowie; and
- scarred trees and stone arrangements could occur anywhere along the proposed route that had not been impacted/destroyed by past clearance and construction.

The survey showed that the study area had visibility in the new proposed areas ranging from nil to 10%, but up to 40% in areas previously impacted by the existing transmission line. A total of 1km of the study area was not surveyed due to the land owner not giving access. All open ground was inspected for artefacts, sand banks were inspected for artefacts/burials and all mature trees were inspected for scars. A total of three previously unrecorded sites were identified during the survey; these sites are summarised in *Table 5.2*. No areas of PAD or historic archaeology sites were noted in the survey results.

Table 5.2 *Summary of sites (Smith 1988)*

Site Name	Site type	Landform	Distance to Water	Stream Order	Artefacts/ Features	Disturbance	Subsurface potential
TK1	artefact scatter	not noted	not noted	not noted	50+ artefacts	artefacts deposited as part of fill for track	No
TK2	artefact scatter	sandy knoll	10m	Telegraph Swamp	1000+ artefacts	bulldozing/ power poles/ erosion	Yes
Isolated Find	isolated find	slope	not noted	not noted	1 artefact	within existing transmission line easement	No

The locating of site TK2 supported the predictive model, as it was a large site located in close proximity to a water source. It was further stated that due to the low levels of ground surface visibility, sites could have been missed by the

survey team. TK1 and the isolated find were determined to be of minimal significance, but site TK2 was determined as of major archaeological significance due to its dense scatter of artefacts and further research potential due to in situ deposits.

Recommendations included the proposed access tracks around Telegraph Swamp avoid TK2, that site TK1 not be further impacted, that the construction team be made aware of the possibility of other sites being in the area and that work should stop if any were uncovered during the proposed works. Otherwise it was recommended that the proposed works proceed.

Dean-Jones' extensive archaeological survey of Newcastle Bight in 1990 has contributed significantly to our understanding of the archaeology of the region. She recorded 119 Aboriginal sites during the survey with an additional 40-50 middens noted, but not recorded due to time constraints.

The distribution of known sites prior to this study appeared to be clustered around the north eastern shoreline of Birubi Point, the mouth of Tilligerry Creek, near Salt Ash and the Hunter River estuary/Fern Bay area. This trend was thought to be a factor of archaeological studies being undertaken for specific development applications rather than a definitive picture of archaeological site distribution across the Newcastle Bight. Sites were commonly found in several geomorphic environments, including bedrock marine headlands, open estuarine shoreline, Pleistocene and Holocene dunes. Dean-Jones also found sites in these environments, however, distribution varied.

The majority of sites recorded by Dean-Jones were shell scatters (34.5%) followed by open artefact scatters (17.4%). Almost 74% of all sites comprised either estuarine or marine shell, although only 12% were classified as stratified deposits. Most sites were located in the seaward margins of active transgressive sand dunes/active blowouts (34 sites) or beach/fore dune or outer deflation basins (28 sites).

The survey's findings showed site distribution in some areas was much greater than previously thought with notable differences in the beach/deflation basin and transgressive dune system. Collectively, approximately 20% of all recorded sites were directly associated with Interbarrier depression wetlands. Most of these sites were on either Pleistocene transgressive dunes or Holocene transgressive dunes. Sites on the Holocene side of the Interbarrier depression contained large numbers of marine and freshwater shell species.

Dean-Jones (1992) also surveyed and conducted shovel testing across a large area at Fern Bay. The ground surface visibility was relatively good due to a recent bushfire that had removed much of the vegetation. The shovel test excavation was undertaken to determine the local geomorphology and its implications for the age and location of archaeological sites. Dean-Jones concluded that archaeological sites within the study area have a maximum age of 4500 BP. This is because aeolian re-working of the barrier surface (during the period of accretion) would have effectively destroyed all archaeological sites before 4500 BP.

Dean-Jones (1990) indicates that archaeological material is generally limited to the upper 50 centimetres of the dune soil profile. She also noted that there were several problems associated with the definitions of shell deposits during survey, noting that both anthropogenic and natural shell deposits were observed.

She suggests that the maximum age for occupation evidence on the outer stable transgressive dune is 1200 BP, which represents the period of time that this dune has been stable. Prior to 1200 BP this dune was actively mobile which means that archaeological material would have been re-worked and deflated or dispersed. The results indicate that archaeological evidence is concentrated on elevated ground, but not necessarily on the main or higher ridge, most sites were found within the inner (4000 BP) stable dune field. Archaeological evidence within the 1200 BP dune field is rare except along its seaward margin;

Dean-Jones also notes that there appears to be a relationship between site distribution and the presence of freshwater within the dune field, with evidence of occupation most common where elevated ground is separated by the swamp forest wetlands.

Sites in the study area include shell only, flaked stone only or both shell and flaked stone, however, it is not clear if the variations are due to surface visibility or to real differences in site types across the dunes. The distribution of shell species across the dune field suggests that shellfish were not transported across the barrier system. Sites with pipi (a marine species) are confined to the outer margin of the barrier and sites with *Pyrazus* and oyster (estuarine species) are distributed across the inner barrier. Shovel testing undertaken by Dean-Jones found that flaked stone occurred most commonly at a depth of 30 – 60 cm below the surface, and as deep as 90 cm at one site.

Dean-Jones (1992) conducted a further survey of a broad area. At the time of this survey, ground surface visibility was relatively good due to the removal of vegetation by recent bushfire activity. This project included shovel test excavation and a thorough discussion of the local geomorphology and its implications for the age and location of archaeological sites. Dean-Jones reached a number of pertinent conclusions:

- archaeological sites within the study area have a maximum age of 4500 BP. During the period of accretion, aeolian reworking would have effectively destroyed all archaeological sites deposited prior the first period of dune stabilization c.4500 BP;
- maximum age for occupation evidence on the seaward stable transgressive dune is 1200 BP. Prior to 1200 BP this dune was actively mobile which means that archaeological material would have been reworked and deflated or dispersed;
- archaeological evidence is concentrated on elevated ground, but not necessarily on the main or higher ridge;
- most sites are present within the inner (4500 BP) stable dune field. Archaeological evidence within the 1200 BP dune field is rare except along its seaward margin ;

- there appears to be a relationship between site distribution and the presence of freshwater within the dune field. Occupation evidence is most common where elevated ground is separated by the swamp forest wetlands;
- sites in the study area include shell only, flaked stone only or both shell and flaked stone. It is not clear whether the variations are due to surface visibility or to real differences in site types across the dunes;
- the distribution of shell species across the dune field suggests that shellfish were not transported across the barrier system. Sites with pipi (a marine species) are confined to the seaward margin of the barrier and sites with *Pyrazus* and oyster (estuarine species) are distributed across the landward dune formations;
- shovel testing found that flaked stone occurred most commonly at a depth of 30 – 60 cm below the surface, and as deep as 90 cm at one site;
- the four sites on the active transgressive dunes are sufficiently extensive and closely distributed to “be regarded as parts of a single complex and extensive site” and;
- there is not a direct association between sub-surface and surface deposits such that sub-surface deposits were often found to be relatively dense in areas where surface deposits were not notably concentrated. Therefore it is possible that the full extent of a potential archaeological deposit will not be detectable based solely on surface survey.

Davies (1993) undertook an assessment for ten proposed routes for Inter Exchange Network Optic Fibre Cables located between Gosford and Wauchope. It was proposed by Telecom Australia to install these cables via plough and ditch methods. Routes 1 and 2 were in the Gosford area, Routes 3 to 6 were in the Williamtown area, Routes 7 and 8 were in the Forster area, Route 9 in Gloucester and Route 10 in Wauchope. The proposed routes followed, wherever possible, existing utilities, easements and roads.

Route 1 was from Woy Wot (Ettalong Beach) to Wagstaff Point, following the course of an existing conduit adjacent to a dirt track. From there it was proposed that divers would jet the cable to the floor of the channel of Brisbane Water. The main topography crossed by this cable was beach and channel. The beach areas comprised Quaternary deposits of quartz sand with minor shell deposits at Ettalong Beach and lithic-quartz sandstone, shale, quartz and laminate at Wagstaff.

Route 2 was from Erina to Mt Elliott and followed existing roads and service corridors. In one section it crossed an overgrown/disused road area and crossed at Erina Creek where a bridge had once been located. Vegetation in the area had been altered from its original composition and contained mainly dry sclerophyll forest with a grassy understorey. A ridge crest area was included as part of this route.

Route 3 was from Mayfield to Stockton; Route 4 from Stockton to Williamtown; Route 5 from Williamtown to Medowie and Route 6 from Medowie to the Pacific Highway. These four routes were all within the Williamtown area, consisting of a large coastal embayment filled by Pleistocene and Holocene sandy deposits. Inner barrier transgressive dunes comprised the majority of the topography. The majority of the area had been cleared of vegetation apart from grasses, with the exception of the Medowie to Pacific Highway route which had a dry sclerophyll forest with a grassy understorey.

Route 7 was from Forster to Pacific Palms and Route 8 from Pacific Palms to Smiths Lake. Both of these routes were in the Forster area with a topography of dunes crossing Quaternary deposits of sand.

Route 9 was from Stratford to Waukivory in the Gloucester area, covering cleared land with vegetation consisting of open pastures of grasses with only the occasional tree. Route 10 was from Yarras to Ellenborough in the Wauchope area, mostly following the alignment of the old Oxley Highway in an area that was already heavily disturbed.

A review of past reports and searches of the NPWS sites register were compiled to inform the basis of a predictive model. This model predicted nine main site types that might have been encountered along the ten routes. These site types were: stone artefact scatters (open sites), shell middens, axe grinding grooves, quarries, scarred trees, Earthen circles, stone arrangements, rock engravings, burials, mythological sites and contact period sites. Multiple searches of the NPWS sites register were undertaken prior to the survey. No sites were located within the proposed corridors for Routes 1 or 2. No sites were located within the proposed Routes 3 to 6, but 14 sites were registered adjacent to some of these proposed routes. No sites were within Routes 7 and 8, although numerous sites were in the region surrounding them. No sites were located within Route 9 or Route 10, although Route 10 had once had a carved tree in its vicinity, but this appeared to have since been destroyed.

A survey by foot was conducted on all areas due to be affected by the proposed works. No sites or areas of PAD were identified along Routes 1, 2 and 3. Although no sites were within the bounds of Route 4 a total of three middens were recorded in close proximity to the route. No sites or areas of PAD were identified on Routes 5, 6, 7, 8, and 10. The predictive model was accurate in determining the site types within the areas of these routes, but what became apparent on the survey was the level of past disturbance that had impacted on these areas, meaning that sites like scarred and carved trees had been destroyed by vegetation clearance. The sites that were identified on the survey are summarised in *Table 5.3*.

Table 5.3 *Summary of site (Davies 1993)*

Site Name	Site type	Landform	Distance to Water	Stream Order	Artefacts /Features	Disturbance	Subsurface potential
Midden 1	midden	foreshore	not noted	Hunter River	shell	high (dissected by road)	Yes
Midden 2	midden	foreshore	not noted	Hunter River	shell	high (house, construction)	No

Midden 3	midden	foreshore	not noted	Hunter River	Shell	high (dissected by Fullerton Cove Rd)	Yes
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Since no archaeological material was identified on any of the routes (with the three shell middens encountered during the Route 4 survey being outside the impact area) it was recommended that the proposed works go ahead. It was recommended that no deviation from the surveyed areas take place during construction works and that if any archaeological material be discovered during works that they immediately cease and the appropriate authorities be notified.

Umwelt (Australia) Pty Ltd (2004) compiled a Research Design and Methodology report that related to five sites and four PADs identified by ERM in 2003 in relation to the Tomago to Tomaree Electricity Supply Upgrade project. In addition to the sites and areas of PAD, this report also referred to three areas along Nelson Bay Road which had mounds of shell material removed by the RTA during road works from 10 sites located in that area. The shell material removal was undertaken in consultation with Worimi Local Aboriginal Land Council and NPWS Aboriginal Sites Officers; these works resulted in the collection of very small amounts of shell material. All of the sites/PADs and shell mounds were located within the Outer Holocene Barrier System, situated between Tomago and Tomaree. The Research Design also extended to three sites and a PAD that had been previously investigated and salvaged, located within the Inner Pleistocene Barrier System at the western end of an easement that was due to be impacted by Stage 1 of the proposed project. It was proposed as part of Stage 2 to undertake conservation works to protect and conserve part of Site A3 (#38-4-0649) and Boyces Track 1, and to conserve all of Sites A4 (#38-4-0643), A5 (#38-4-0650) and A9 (#38-4-0664). Conservation works were further planned for the three areas where shell material was pushed into mounds on the southern side of Nelson Bay Road. Subsurface salvage was proposed for Sites A3 and Boyces Track 1 and subsurface investigations recommended for various pole locations throughout locations PAD3 and PAD4. The purpose of these investigations was cited as being to identify if artefactual material existed in these areas and what the Aboriginal and archaeological significance of that material (if any) might be.

The project area was within the Newcastle Bight Sand Barrier System, including an Inner Pleistocene Barrier System, an Outer Holocene Barrier System and an Interbarrier Depression. Inland dunes were noted to have been stabilised with vegetation, with coastal dunes remaining destabilised and transgressive. The Interbarrier Depression divided the barrier systems and at the time of the inspection was filled with estuarine and freshwater deposits. The geology of the area consisted of sands, silts and clays. To the southwest the Quaternary deposits were underlain by tuff, shale, conglomerate, sandstone, and coal. Vegetation in the areas of low gradient shoreline had been extensively cleared for cattle grazing and at the time of inspection were covered with couch grass, vegetation in the interbarrier depression area included stands of swamp oak, tea-tree, water ribbons, spike rush, sword-sedge and bulrush. The Outer Holocene dune system contained a Coastal Sand Apple-Blackbutt Forest with tea-tree, bracken fern, running postman, banksia, kangaroo grass, flax lily, native cherry and bungwall.

This report did not conduct an AHIMS search as the intention of the report was to provide a research design and methodology for an existing area containing known sites. The previously recorded sites whose research design and methodology were detailed in this report included the following: A3 #38-4-0469 (incorporating PAD2); A4 # 38-4-0643; A9 # 38-4-0664; A5 #38-4-0650; PAD3; Boyces Track 1; PAD4 (western end); PAD4 (eastern end); #38-4-0402; #38-4-0478; #38-4-0479; #38-4-0480; #38-4-0481; #38-4-0483; #38-4-0484; #38-4-0485; #38-4-0491; 38-4-0492; PAD5 and Stored Shell Material.

The research design attempted to focus on questions of interest to the Aboriginal community, aimed toward supporting oral history in relation to how Aboriginal people used the Pleistocene and Holocene Barrier Systems. The research design related to the broader research parameters of the entire salvage/investigation program, and asked such questions as what resources were available in the area, what resources were transported in and from where, how stone artefact/shellfish/faunal assemblages differed between the Inner Pleistocene Barrier System and the Outer Holocene Barrier System, what tasks were undertaken at the sites, were areas used at different times of the year, was heat treating taking place, were burials in either area and were Aboriginal people using the Inner Pleistocene Barrier System in the Tomago area earlier than the mid to late Holocene?

Methodology was tailored to each site location and included such works as implementing an access road atop the ground surface to avoid subsurface impacts, undertaking subsurface investigation in pole location areas excavated in squares either stratigraphically or in 5cm spits with all material sieved through a 2mm mesh. A full analysis of stone material was to be undertaken for any artefacts located during these works. Detailed site recordings were also to be undertaken and in areas where sites could be avoided they were in some cases to be fenced for protection. Surface collection and subsurface salvage were to be used as a consistent approach to numerous locations in the areas of impact. Protection of shell mounds was to be undertaken by covering them with mulch derived from the vegetation clearance and temporarily fenced for the period of pole emplacement.

Following the completion of the Stage 2 salvage and conservation works, it was proposed that DEC be informed and a single report be produced to cover the results of Stage 1, 2 and possibly 3 of the investigation and salvage work. As this report detailed the research design and methodology only, the results of these proposed works are included in a separate report.

ERM (2003a) undertook an identification of impacts in relation to known and recorded archaeological sites as part of an Environmental Impact Statement (EIS) for EnergyAustralia. This covered the proposed upgrading of electricity powerlines from Tomago to Tomaree and on the associated access road from Salt Ash to Tomaree. Proposed works included the construction of a new substation and two proposed feeder routes, easement clearance, removal of existing poles and feeders as well as the delivery and erection of the new ones. Various possible routes were considered for the EIS, but at the time of compiling the report the exact location of poles and access roads had not been determined.

Various vegetation communities were identified as occurring along the proposed routes, including such species as: apple-blackbutt, bitou bush, swamp mahogany, broad-leafed paperbark, sedges, swamp oak, salt water couch, melaleuca, casuarina, hokia, banksia, stunted red bloodwood, smooth-barked apple, kikuyu, grasses, purpletop, blackberry, fireweed, dock and bracken. The main water sources in the area were Tillegerry Creek and Fullerton Cove. Past land uses included clearing, agriculture, horse and cattle grazing and breeding, deer farms, hobby farms, mining and quarrying. The Tomaree National Park also stretched along the coastline from Tomaree Head, south to Anna Bay.

Based on a review of past studies in the area and a search of the NSW NPWS Aboriginal Sites Register a predictive model was compiled. It was predicted that campsites may occur in the area with hearths and/or artefact scatters containing stone and shell. Other site types predicted to possibly occur included scarred/carved trees, middens and burials. Scarred/carved trees were predicted to occur where clearing had not occurred. Although the presence of burials in the area could not be dismissed it was predicted that the likelihood of discovering any was minimal. The predictive model proved accurate as a mix of artefact scatter/isolated find and midden sites were located; no burials or scarred/carved trees were identified within the area.

Survey was conducted on foot and by vehicle, covering the proposed routes and areas to be impacted by the EnergyAustralia works. The survey was broken up into geomorphological land forms, consisting of Pleistocene Dunes, Inter barrier depression and the Holocene Dunes. A total of 10 previously unregistered sites were identified within the proposed construction area; site A5 out of these was listed as re-recorded on the survey as it had no site card registered. The sites that were identified on the survey are summarised in *Table 5.4*.

Table 5.4 *Summary of sites (ERM 2003a)*

Site Name	Site type	Landform	Distance to Water	Stream Order	Artefacts Features	Disturbance	Subsurface potential
38-4-0647 (A1)	artefact scatter/midden	dune slope	6m	swamp	29 artefacts & shell	Clearing, grazing and easement	moderate to high
38-4-0648 (A2)	artefact scatter/midden	dune slope	5m	swamp	3 artefacts & shell	cattle grazing and easement	moderate
38-4-0649 (A3)	artefact scatter/midden	Hill slope	not noted	not noted	artefacts and shell	easement, access track, path, grazing	moderate
38-4-0643 (A4)	artefact scatter/midden	dunecrest / dune slope	not noted	not noted	115 artefacts, shell, bone	easement and grazing	high
38-4-0650 (A5)	midden/artefact scatter	dune	600m	swamp /lagoon	artefacts, shell & shell pieces	driveway and power poles	high
38-4-0651 (A6)	midden	dune crest	not noted	not noted	various shells & shells pieces	access road, WWII tank traps	moderate
38-4-0652 (A7)	midden	dune crest	not noted	not noted	various shells & shells pieces	access road, WWII tank traps	moderate

38-4-0653 (A8)	midden	not noted	not noted	not noted	various shells & shells pieces	erosion	moderate
38-4-0664 (A9)	isolated find/midden	dune slope	not noted	not noted	Broken flake with use-wear & shell pieces	erosion, burnt tree	low to moderate
38-4-0676 (A10)	midden/artefact scatter	dune slope	6m	swamp	9 artefacts, shell, bone microliths,	Clearing, cattle grazing	moderate to high

In addition, 5 previously recorded sites, 38-4-0313, 38-4-0485, 38-4-0658, 38-4-0660 and 38-4-0661 were relocated and a number of areas of PAD were also identified (refer to *Table 5.5*).

Table 5.5 *Summary of PAD (ERM 2003a)*

Site Name	Area	Landform	Water source	Disturbance	Potential
PAD 1	not noted	Inner Pleistocene barrier system	not noted	not noted	high
PAD2	not noted	Holocene barrier system	not noted	not noted	moderate to high
PAD3	not noted	Holocene barrier system	not noted	not noted	low to moderate
PAD4	not noted	Holocene barrier system	not noted	not noted	moderate to high
PAD5	not noted	Holocene barrier system	not noted	not noted	moderate
PAD6	not noted	Inner Pleistocene barrier system	wetland area	not noted	high
PAD7	not noted	Inner Pleistocene barrier system	not noted	not noted	moderate

It was concluded that the proposed works would impact on a number of sites (38-4-0649, 38-4-0650, 38-4-0664) and all the identified PADs. Recommendations included mitigation measures to protect those sites that could be preserved from damage or destruction as a result of the proposed works. It was recommended that EnergyAustralia undertake test excavations on PADs 1 to 7 and that the following sites be fenced with a buffer zone: 38-4-0647, 38-4-0676, 38-4-0664 and 38-4-0643. It was also recommended that sites 38-4-0468 and 38-4-0649 be preserved by the most appropriate method (such as by covering the site with biodegradable netting, sand and grass). A partial consent to destroy permit was recommended for 38-4-0650. The following sites were recommended for both fencing and conservation through methods such as biodegradable netting, sand and grass coverings: 38-4-0659, 38-4-0660, 38-4-0661, 38-4-0313 and 38-4-0485. General recommendations were also made for contractors and workers to be made aware of the protection of sites and places and that work cease if any artefacts or relics be uncovered during the proposed works.

ERM (2003b) undertook an Indigenous Cultural Heritage Assessment for a proposed access road from Tomago to Salt Ash. The general route of the road was known at the time of investigation, but the exact location was subject to change necessitating that the survey include a number of alternative routes. The study area included areas from the existing Tomago substation and extended east

through the Pleistocene dunes, the Inter Barrier depression, the Holocene dunes and ended at Salt Ash. EnergyAustralia proposed to construct a 5m wide continuous road along the route, running to a length of approximately 16km. Access points from the road to each pole for substation line construction and maintenance were also required. Other proposed works included laying geotextile fabric, laying car and truck tyres, filling and capping with crushed rock/recycled concrete, depositing sand and spreading grass seed.

The proposed access road was predominantly placed through disturbed pasture grassland, containing kikuyu, couch, dock, blackberry, fireweed and purpletop. Other vegetation was noted in occasional patches and included: swamp oak, salt water couch, sedges, smooth-barked apple, blackbutt, red bloodwood, bracken fern and wallum banksia. Lantana was noted in some areas, and alligator weed infestations were noted in association with drainage lines. The main water sources were Tillegerry Creek and Fullerton Cove with a series of floodgates, tidal flaps, drains and levees occurring along the drainage network. Past disturbances included agriculture, horse and cattle grazing and breeding, deer farms, hobby farms and residential development.

A search was undertaken of the NPWS AHIMS register, showing 91 Aboriginal sites to have been registered within the Tomaree peninsula. These included 54 middens, 26 open campsites, five scarred trees, one burial, one shelter with art, one shelter with midden and three isolated finds. Seven middens and eight sites recorded by ERM in 2002 (not yet on the AHIMS register) were also taken into consideration. A predictive model was compiled based on previous heritage studies and the AHIMS results.

The predictive model stated that the site types most likely to occur throughout the Pleistocene and Holocene portions of the study area were campsites, scarred trees, middens and burials. The most likely types were middens and campsites; burials were considered unlikely and scarred trees were only possible in areas that had not been cleared. No sites were expected to be found in the interbarrier depression portion of the study area.

The total length of the proposed road was surveyed by foot, covering the length of 16km and out to a 50m width. A total of six sites were recorded on the survey, two of which (A2 and A4) were avoided on the final route for the proposed road. The predictive model proved accurate as the site types encountered were all artefact scatter/isolated find and midden sites. The sites that were identified are summarised in *Table 5.6*.

Table 5.6 *Summary of sites (ERM 2003b)*

Site Name	Site type	Landform	Distance to Water	Stream Order	Artefacts/ Features	Disturbance	Subsurface potential
38-4-0647 (A1)	artefact scatter/midden	dune slope	6m	swamp	29 artefacts, shells	clearing, grazing and easement	moderate to high
38-4-0648 (A2)	artefact scatter/midden	dune slope	5m	swamp	3 artefacts, shells	cattle grazing and easement	moderate
38-4-0649 (A3)	artefact scatter/midden	Hill slope	not noted	not noted	artefacts and shell	easement, access track, path, grazing	moderate

38-4-0643 (A4)	artefact scatter/midden	dune crest/dune slope	not noted	not noted	115 artefacts, shell, bone	easement and grazing	high
38-4-0664 (A9)	isolated find/midden	dune slope	not noted	not noted	artefact shell pieces	erosion, burnt tree	low to moderate
38-4-0676 (A10)	midden / artefact scatter	dune slope	6m	swamp	9 artefacts, shell, bone	clearing, cattle grazing	moderate to high

In addition, one PAD was also identified (refer to *Table 5.7*).

Table 5.7 *Summary of PAD (ERM 2003b)*

Site Name	Area	Landform	Water source	Disturbance	Potential
PAD 1	not noted	Inner Pleistocene barrier system	not noted	not noted	Yes

It was concluded that the proposed development would involve minimal changes to the current landscape. The proposed works would avoid sites A2 and A4; PAD1 and part of A3 and A9 would be impacted by construction and maintenance. Sites A1 and A10 were to be protected. Recommendations included subsurface testing in PAD1, fencing sites A1, A3, A4, A9 and A10 including a buffer for their protection. A partial consent to destroy was recommended to cover those areas of A3 and A9 that would be affected by construction. The general recommendations were made that staff and contractors be made aware of the protection of heritage and that all works cease if any artefact or relic be uncovered during the proposed works.

ERM (2005) undertook an assessment of Aboriginal heritage, involving archaeological excavations, of Lot 16, DP 258848, No. 85 Nelson Bay Road, Fern Bay. This report followed on from an interim report on excavations completed for NPWS in July 2001. The study area comprised of approximately 205 hectares of land adjacent to and to the east of Nelson Bay Road, midway between Stockton Beach and Fullerton Cove. At the time of inspection the land was comprised of areas zoned as Rural Agriculture, Residential and Environment Protection. The topography of the study area comprised of naturally stabilised dune systems with interdunal depressions. Past disturbances to the study area included four-wheel drive vehicle tracks, clearing and excavation work. Three main vegetation communities characterised the area, being apple-blackbutt forest, heath community with mahogany-paperbark forest and swamp sclerophyll forest.

The proposed development for the study area comprised of 950 residential lots, open space lots including formal park areas, a community nursery, community/recreational and commercial facilities, new public roads, fire trails, pedestrian trails and bushfire buffers. A Section 90 consent with salvage was issued by the Department of Environment and Conservation for archaeological sites within the approved subdivision footprint. As this report followed on from earlier reports by ERM (including a Statement of Environmental Effects in 2000) items such as a predictive model and AHIMS search results had already been covered in earlier works and were not included in this report. Mention is made in this report of a predictive model developed by Dean-Jones in 1992 stating that archaeological evidence was most likely to be concentrated on elevated ground in close proximity to freshwater within the inner stable dune.

The excavation methodology was outlined with a number of objectives, including working in partnership with WLALC, identifying the extent, nature and significance of archaeological deposits within the study area, ascertaining topographic locations of high archaeological sensitivity, testing known sites and undertaking post-excavation analysis. Test excavation was undertaken at Fern Bay during November and December 2000. The following known sites were tested for subsurface deposits during Phase 1 investigations:

- Fern Bay Estate Site 7 - auger testing did not locate any subsurface material;
- Fern Bay Site C - surface collection, augering and test pits uncovered intact A-horizon soils containing high densities of stone artefacts and shell;
- Fern Bat Estate Site 8 - surface collection, augering and test excavation revealed intact A-horizon soils containing low densities of stone artefacts and very low densities of shell;
- Fern Bay Estate Site 11 - test excavation and augering located no archaeological material on ground surfaces or from excavated deposits; and
- Fern Bay Estate Site 16 - artefacts had been located during past test pit excavation, but augering during these works did not locate any further archaeological material.

Phase 2 investigations involved augering along 10 transects. Archaeological material was uncovered in transects 6, 7, 9 and 10. The frequency of archaeological material detected by the auger excavations was low. In Phase 3 of investigations further test pits were excavated with locations based on the transect results from Phase 2. The site areas excavated included:

- Fern Bay Site D - 84 stone flakes, pieces and cores were recovered from nine spits;
- Fern Bay Site E - 355 shell fragments and 49 stone flakes, pieces and cores were recovered from nine spits; and
- Fern Bay Site F - No archaeological material was found during this excavation (only an isolated find was located during augering).

The new site areas that were identified and excavated as a result of these works are summarised in *Table 5.8*.

Table 5.8 *Summary of sites (ERM 2005)*

Site Name	Site type	Landform	Distance to Water	Stream Order	Artefacts /Features	Disturbance	Subsurface potential
Fern Bay Site D	artefact scatter	low ridge crest	not noted	not noted	84 artefacts	4WD track	results from excavation
Fern Bay Site E	artefact scatter/midden	low ridgeline	not noted	not noted	Shell, 49 artefacts	not noted	results from excavation
Fern Bay Site F	isolated find	not noted	not noted	not noted	1 artefact	not noted	results from excavation

During Phase 3 of works material was also collected from an overburden mound. It was concluded that the test excavations demonstrated that The Fern Bay study area contained a high density of Aboriginal sites, particularly on low ridgelines within the 4000 BP stable dune. Archaeological excavation revealed stone artefacts, shell middens and an Aboriginal hearth, providing information about the social, economic and cultural life of Aboriginal people who lived at Fern Bay prior to European settlement. It was recommended that for future work along the Stockton Bight area that low ridgeline landforms and areas on the margins of swamp forest within Holocene dune sequences be considered of high archaeological sensitivity. Where possible it was recommended that such areas be excluded from development or, if that is not possible, be subject to controlled archaeological excavation.

MCH (2004) undertook a preliminary assessment of land at Fullerton Cove for a rezoning application. The site had been extensively cleared and grazed in the past with current vegetation representing regrowth. Areas of cleared land exist beneath the power line that cuts across the site's central portion and in areas surrounding the residence and associated vehicle tracks. Vegetation consists largely of paperbark swamp in low lying-areas and mature *Angophora* in elevated locales.

The topography is typical of the Stockton Bight, with flat low lying areas approaching Fullerton Cove and level-topped, low relief dunes along the south-eastern portion of the study area giving way to swampy formations surrounding the water course. The creek passing through the study area is small but concentrated and supports a range of fauna particularly water birds.

A midden was located in the north-west corner of the study area situated on a slight rise overlooking the creek and is present in an area of disturbance associated with vehicle activity. Numerous fragments of shell and several pieces of flaked tuff are scattered across an exposed area measuring approximately 10 by 20 metres. Shell fragments consist predominantly of oyster with some cockle and whelk. At the south-western edge of the exposure, an intact soil profile has been truncated and a thin and limited lens of shell is apparent at a depth of approximately ten.

Small fragments of shell are also sparsely dispersed along a vehicle track that runs along the fence line from the above exposure and a small band of eroding deposit eroding out from the fence line. An additional shell scatter containing a tuff flake was also noted on the vehicle track along the northern extent of the study area. This track also contained a single tuff flake at another location. This artefactual material did not appear to be *in-situ* but had eroded from more elevated locations. The new site identified is summarised in *Table 5.9*.

Table 5.9 *Summary of sites (MCH 2004)*

Site Name	Site type	Landform	Distance to Water	Stream Order	Artefacts /Features	Disturbance	Subsurface potential
not noted	midden	low dune	10m	1 st	shell	clearing, track	low

The results of the site inspection, in conjunction with the predictive model established for the study area indicate that it is highly likely that middens and artefact scatters may be present within the study area. In particular, the level-topped dunes situated close to water resources have the greatest potential to contain concentrations of archaeological material. It was recommended that a full archaeological assessment of the study area be undertaken.

An assessment undertaken by AHMS (2007) was undertaken for the proposed development of a parcel of land at Tomago, NSW. The proposed development would include facilities for assembly, maintenance and aftermarket repair of specialised vehicles and accommodation for machinery and equipment used by extractive industries in the area. Administrative facilities and a training centre is also proposed. This investigation was to form the application for a major development pursuant to Part 3A of the Environmental Planning & Assessment Act 1979

The study area is situated on a Pleistocene dune and part of the Tomago coastal plain, which in turn is part of the Newcastle Bight system. The study area is dominated by a low gradient landform on undulating terrain. Modifications were made to the landscape during the construction of the Australchem facility, which had been a low crest with a simple slope falling to the south and west. The rest of the study area had been flat and likely to be seasonally waterlogged. The low-lying south-eastern corner of the study area contains a swamp which has been partially formed by the embankment of the adjacent Tomago Road. Prior to the formation of this modern swamp, it is likely that this area was once a tidal flat, estuarine swamp and freshwater swamp at different times in the past.

Original vegetation had been cleared in the centre of the study area as part of the construction of the Australchem facility, and in other parts for fire trails and tracks. Some remnant vegetation remains between these disturbed areas, and comprises dry heath communities on elevated ground, and wet heath plants on the low-lying terrain.

A search of the AHIMS database shows a total of 36 sites and four PAD within a 6km radius of the study area. The dominant site type is the artefact scatter (34), with one midden and one scarred tree. It is observed that this is typical for a Pleistocene barrier dune complex, and notes the absence of any Holocene middens. No sites were situated within the study area.

Based on previous archaeological investigations, the following predictive model was developed for the study area. Sites likely to occur within the study area include:

- Artefact scatters (“open camp sites”) across all landforms;
- Isolated finds anywhere within the study area;
- Middens, in undisturbed contexts, and
- Burials in aeolian sand deposits.

A survey was conducted across the study area, with four survey units devised based on the landforms. Particular attention was paid to areas of ground

exposure and erosion due to the higher visibility. Visibility across the study area varied according to landform, and was assessed between 0% in the closed depression, and 8% on the simple slope. Accordingly, the effective survey coverage varied between 0% in the closed depression to 4.8% on the simple slope.

No sites were recorded and two areas of the study area were assessed as having archaeological potential (Refer to *Table 5.10*).

Table 5.10 *Summary of sites (AHMS 2007)*

PAD	Landform	Distance to water	Water source	Size	Disturbance
1	flat	+200m	Hunter River	entire landform	clearing for fire trails
2	simple slope	+200m	Hunter River	entire landform	clearing

Both areas were assessed as having archaeological potential based on the landform and the relatively undisturbed nature of the area. The flat was assessed as having low-moderate potential, while the simple slope was assessed as having moderate to high potential. Recommendations therefore included avoiding impact to those areas, or if not feasible, to conduct a subsurface investigation of the area prior to any construction works.

MCH (2007-2008) undertook an assessment of land at Fullerton Cove for proposed sand extraction operations at Coxs Lane, Fullerton Cove. The study area is situated at the southern end of the Newcastle Bight sand barrier system and it is proposed that up to 750 000 m³ of sand be extracted from the site. The investigation employed a regional approach, detailing the archaeological and environmental background of the locality and identifying the regional and local archaeological patterning of the study area. The field survey showed that surface visibility varied across the study area. One large artefact scatter was identified (FCSE 1), however, the artefacts were not in-situ, due to previous mineral sand mining activities which had resulted in the artefacts being dispersed over a large area of the mine tailings. There was no intact stratigraphy as there was extensive displacement of the original sand and soils of the site. No Potential Archaeological Deposits were identified due the high level of disturbances in the survey area including land clearing, sand mining, and erosion. The new site identified is summarised in *Table 5.11*.

Table 5.11 *Summary of sites (MCH 2007-2008)*

Site Name	Site type	Landform	Distance to Water	Stream Order	Artefacts /Features	Disturbance	Subsurface potential
FCSE 1	midden	disturbed	100m	1 st	shell	mining	no

The scientific significance of Site FCSE 1 was evaluated and the site type is well represented both regionally and locally. Site integrity and research potential was poor, and site significance was low. Mitigation measures were discussed and it was agreed by all stakeholders that the most appropriate course of action is for collection of the artefacts (a s90 Consent to Destroy with Permit to Collect is not required for Part 3A projects) and that the collected artefacts should be repatriated to the site following a basic artefact analysis.

The following is a summary and discussion of previous investigations detailed in *Section 5.2*. Of the 70 sites recorded within a 5 kilometre radius of the study area, none contained sufficient information in associated reports to be able to determine their distance from water, the landform on which they were located and contents in order to establish archaeological/occupational patterns. In addition to this, it must be remembered, however, that there are various factors which will have skewed the results. These include but are not limited to:

- the landform on which a site area is observed is not necessarily its origin, for example, artefacts which would have originated on a crest may be located eroding down the slope;
- biases due to differential sampling of landforms based on decisions made by archaeologists and as a result of restrictions due to the locations of proposed development areas, levels of exposure on different landforms, and the variable level of reporting by archaeologists will affect the count of sites on each landform type. For example, the large percentage of sites found along creek lines may be, at least partially, representative of how many cultural heritage surveys focused on these landforms, and
- artefact counts can be skewed due to factors such as differing levels of fragmentation of material and levels of ground surface visibility. A very large number of sites/ artefacts were located on exposures with either no or very few artefacts visible away from the exposures.

Therefore the following summary provides merely an indication of what may be expected in terms of site location and distribution. Based on previous work it is also clear that the majority of sites contain stone artefacts. This is to be expected due to stone's high preservation qualities.

The local archaeology of the area can be summarised as follows:

- sites are generally within 50 metres of reliable water;
- sites are located on both the Holocene and Pleistocene dunes overlooking the interbarrier depression;
- sites are not usually found in the interbarrier depression;
- site types are typically shell middens with various shell species, stone tools and may also contain charcoal;
- artefact scatters, isolated finds, scarred trees, burials and ceremonial sites may also be found along the dunes;
- artefacts typically date to the Holocene;
- raw materials are tuff obtained locally and/or silcrete, chert or quartz that have been traded/transported from the Hunter Valley area;

- stone artefacts are typically flakes, flake pieces, broken flakes, cores and tools.

Variations between archaeologists' classifications of raw material types (for example tuff and indurated mudstone) will have an effect on the results of this count. Raw material type was not indicated in most reports and as such general comments are made. Again, this information is presented merely as an indication of what may be expected.

Due to differences in recording techniques it is difficult to determine how many of each artefact type is represented across the region though types include flakes, broken flakes, retouched flakes, multi-platform cores, single platform cores, bipolar cores, flaked pieces, 'waste' pieces, 'chips', debitage, 'geometric microliths', 'backed blades', 'bondi points', 'scrapers', 'eloueras', 'burrins', 'blades', 'hatchets', 'unifacial choppers', 'bifacial choppers', 'pebble tools', a 'slice', edge-ground axes, anvils, hammer stones and heat. 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. However, it is evident that flakes, broken flakes and flaked pieces are the most common artefact types recorded.

These findings are consistent with models developed for the area.

5.4

PREDICTIVE

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 area provide a good indication of site types and site patterning in the area. The research has shown that middens with stone implements, and middens with only shell are the most predominate site types. The most common site locations are the seaward margin of active transgressive dunes/active blowouts, Holocene and Pleistocene dunes overlooking the Interbarrier depression and areas near water sources. Predictions about site patterning for the three landforms are discussed.

Outer Pleistocene dunes:

There is a high potential for sites on this landform. Sites are predominantly middens (composed of either or both estuarine and marine shell species) and open camps, with a sparse scattering of cultural material along the ridgelines of the dunes and high density sites situated on low flat ridgelines immediately adjacent to wetlands. It is predicted that ridges on the margins with the interbarrier depression have high archaeological potential.

Interbarrier depression:

The interbarrier depression was an important area for foraging as indicated by the prevalence of sites on the margins of both the Pleistocene and Holocene dune systems overlooking the depression. Although these sites are close to the depression they are not located within it. Evidence of occupation within the depression is very limited and consists of a scattering of the remnants of midden

between Boyces Track and Uralla (Dean-Jones 1990). The interbarrier depression, once the coastal margin and estuarine swamp, is now covered with Holocene estuarine sand, mud and clay ranging in depth from one to ten metres (Robson *et al* 1992: 13-19). This area has also been extensively disturbed through ploughing, grazing, road construction and development. It is therefore predicted that there is a very low potential for archaeological sites in this landform.

Inner Holocene dunes:

There is a high potential for both middens (including estuarine shell species, especially rock oysters and mud whelk) and open camp sites on the inner landward margin of the Holocene dunes. These dunes are stable and the potential to contain stratified deposits dating back to 4,500 PB (Dean-Jones 1992). Such occupational sequences are often high density and up to one metre in depth. There is a space scattering of cultural material along the ridges of this landform and high density sites are present along the low flat ridgelines overlooking the wetland (interbarrier depression) area.

The study area is situated within the interbarrier depression. This was an important area for Aboriginal foraging as shown by the prevalence of sites on the margins of both the Holocene and Pleistocene dune systems overlooking the interbarrier depression. Although these sites are close to the depression, they are not located within the basin itself. The interbarrier depression, once the coastal margin and estuarine swamp, is now covered with Holocene estuarine sand, mud and clay ranging from one to ten metres in depth (Robson *et al* 1993:13-19) and the study area is situated within this area and the Hunter River flood plain. It is therefore predicted that there is a low to no potential for archaeological sites within this landform. The low lying dune in the north west of the study area has a low to moderate potential for cultural materials to be present as this area is slightly elevated overlooking the interbarrier depression.

The accuracy of these predictions would be largely determined by the degree of disturbance caused by tracks and a power line easement. Soil surface disturbance within the study area means that the extent and spread of surface archaeological material may not reflect sub-surface deposits (it may be more a reflection of differential disturbance and exposure).

The refinement of this predictive model will be dependent upon an investigation of the range of landforms and the occurrence of modern disturbances within the study area.

5.5

ARCHAEOLOGICAL POTENTIAL IN THE STUDY AREA

Based on archaeological sites registered in the region and the results of past archaeological studies, two sites types are likely to occur in the north western portion (low lying dune):

- Shell middens (moderate potential)

Middens result from seasonal camping and exploitation of oysters and freshwater mussels. Extended camping results in the deposition of a feature that is distinguishable from a natural shell layer. This includes the inclusion of burnt or

blackened shell, non-molluscan fauna, dis-articulated bivalves, charcoal, burnt wood, hearth stones, stone artefacts and stratification. Middens are usually found on the coast and on the shorelines of estuaries, lakes and inland rivers. Although sometimes identified on ridges, these middens tend to be less extensive than those close to the resource base. Smaller lenses of shell deposition also occur close to water.

- Artefact scatters (moderate potential)

Also described as open campsites, these deposits include archaeological remains such as stone artefacts, shell, and sometimes hearths. 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. Given the recording of numerous open camps in the area, there is a high likelihood that these sites will be present.

5.6 *HERITAGE REGISTER LISTINGS*

The State Heritage Register, the Australian Heritage Database (includes data from the World Heritage List UNESCO, National Heritage List, Commonwealth Heritage List, Register of the National Estate) and the Port Stephens Local Environmental Plan. However, not all indigenous places are listed, and the Heritage Commission is consulting with Traditional Owners to gradually include indigenous information. There are no indigenous heritage items listed on the Port Stephens Local Environment Plan.

5.7 *MODELS OF PAST ABORIGINAL LAND USE*

The main aim of this project is to attempt to define both the nature and extent of occupation across the area. As a result, the nature of the analysis will focus on both the landform units and sites. The purpose of this strategy is to highlight any variations between sites and associated assemblages, landforms and resources across the area treating assemblages as a continuous scatter of cultural material across the landscape.

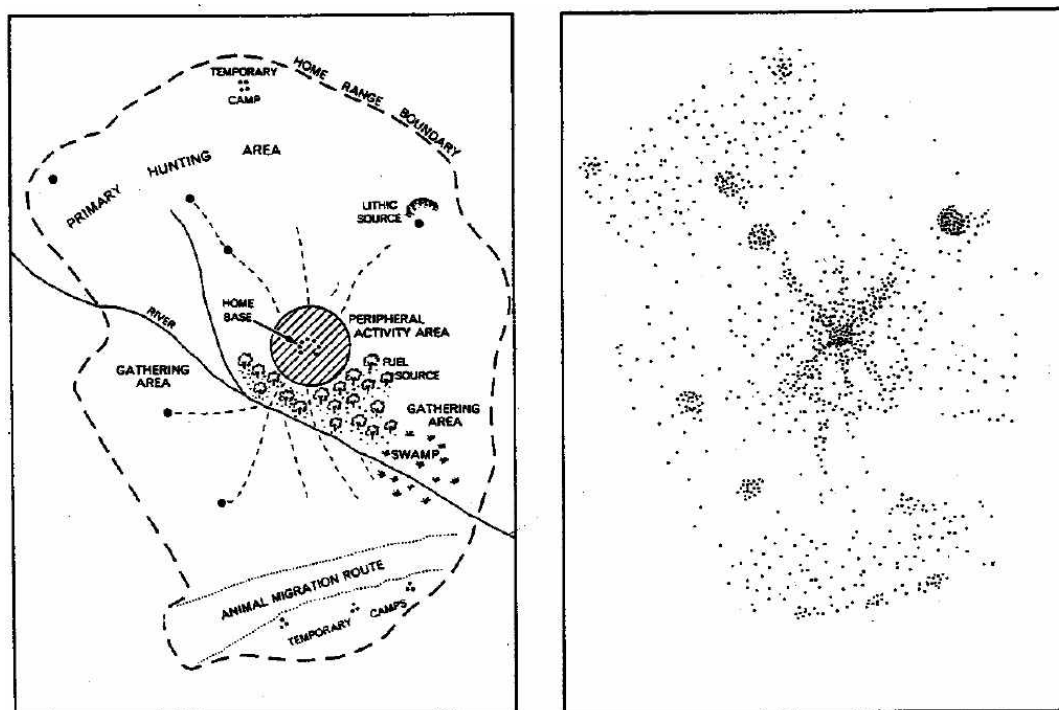
In doing this, it is possible to identify variation across the landscape, landforms and assemblages that correspond with variation in the general patterns of landscape use and occupation. Thus the nature of activities and occupation can be identified through the analysis of stone artefact distributions across a landscape.

A general model of forager settlement patterning in the archaeological record has been established by Foley (1981). This model distinguishes the residential 'home base' site with peripheral 'activity locations'. Basically, the home base is the focus of attention and many activities and the activity locations are situated away from the home base and are the focus of specific activities (such as tool manufacturing). This pattern is illustrated in *Figure 5.3*.

Home base sites generally occur in areas with good access to a wide range of resources (reliable water, raw materials etc). The degree of environmental reliability, such as reliable water and subsistence resources, may influence the rate of return to sites and hence the 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 occur within the foraging radius of a home base camp (approximately 10 km); (Renfrew and Bahn 1991). Based on the premise that these sites 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. 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.

Figure 5.3 Foley's model (left) and its manifestation in the archaeological record (right), (from Foley 1981).



6 RESULTS

6.1 METHODOLOGY

The survey areas were surveyed on foot by the archaeologist and registered Aboriginal stakeholder representatives in accordance with the proposed methodology provided to the stakeholders for review and approved. However, the majority of the study area was not surveyed due to the dense vegetation of grass and reeds and the area being waterlogged as it was clear that there was no visibility throughout the majority of the study area.

6.2 LANDFORMS

McDonald *et al* (1998) describes the categories of landform divisions. This is 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 *Chapter 2*, the study area includes two landforms: low dune at the north west and the remainder being flood plain.

6.3 SURVEY UNITS

For ease of management, the study area was included in one Survey Units (SUs) that was based on landforms (*Figure 6.1*).

SURVEY UNIT 1: INTERBARRIER DEPRESSION (FLOOD PLAIN)

This unit included the majority of the study area and includes the interbarrier depression flood plain area. This unit has been subject to previous clearing, tracks, regular flooding and water logging. Vegetation is predominantly dense pasture grass and reeds and few trees in some areas and exposures were low, all of which contributed to reduced ground surface visibility. Given the landform and its location as well as regular flooding, this unit has low to no potential for cultural materials to be present.

SURVEY UNIT 2: INTERBARRIER DEPRESSION (LOW DUNE)

This unit included the north western low lying dune that is located approximately 200 metres south of the Inner Pleistocene dunal system. This unit has been subject to previous clearing, housing construction and demolition, and tracks. Vegetation is predominantly dense pasture grass and reeds and few trees in some areas and exposures were low, all of which contributed to reduced

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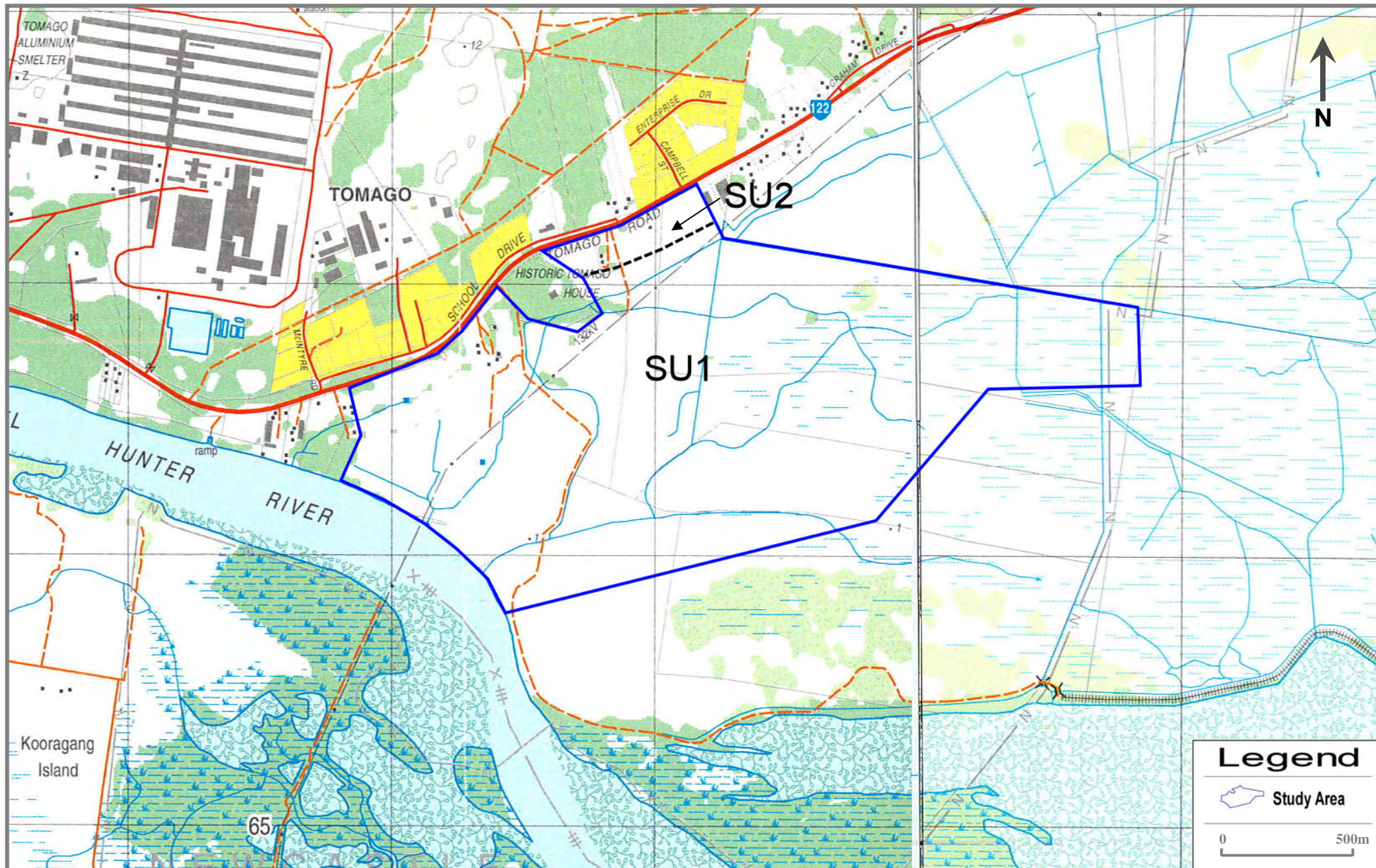


Figure 6.1 Survey Units

Source: 1:25 000 Topo Series: Beresfield & Williamtown

ground surface visibility. Given the landform and its location, this unit has low to moderate potential for cultural materials to be present.

6.4 EFFECTIVE COVERAGE

Effective coverage is an estimate of the amount of ground observed taking into account local constraints on site discovery such as vegetation and soil cover. 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 study 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 tree or 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 study 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, grading, 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 study area/subject site.	

As indicated in *Table 6.2*, the effective coverage for study area illustrates that overall effective coverage being .52% with grass and reeds being the limiting factor and erosion across the study area are minimal. The disturbances included clearing, fences, grazing, housing construction and demolition and tracks all of

which have impacted upon the landscape and associated cultural materials. As described in detail in *Chapter 3*, these disturbances result in the lateral and horizontal movement of materials. The disturbances and vegetation are shown in *Figure 6.2*.

Table 6.2 *Effective coverage*

SU	Landform	Area (m2)	Vis. %	Exp. %	Exposure type	Previous disturbances	Present disturbances	Limiting visibility factors	Effective coverage (m2)
1	flood plain	2,900,000	5%	10%	erosion, tracks, quarry	clearing, grazing	NA	grass, reeds	14,500
2	dune	30,000	10%	25%	erosion, tracks, quarry	clearing, grazing, house, tracks	NA	grass, reeds	750
Totals		2,930,000							15,250
Effective coverage %									0.52%

The level and nature of the effective survey coverage is considered satisfactory to provide an effective assessment of the Aboriginal sites identified and those potentially present within the investigation 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 view of the predictive modelling and the results obtained from the effective coverage, 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 identified sites and potential Aboriginal sites.

Landforms include flood plain and a dune. The dune is considered conducive to occupation as suggested by the predictive model and sites identified (See below). The most common landform for occupation in this study area is the dune which is comparable to the local and regional area.

6.5 *ARCHAEOLOGICAL SITES*

Sites were labelled according to the project title, e.g. Tom/1 where Tom represents Tomago, and 1 indicates the site number allocated consecutively.

6.5.1 *Definition of a Site*

A 'site' can be defined by various factors. For this study a 'site' was defined on the combination of the following inter-related factors:

- 1) landform;
- 2) exposure and visibility;
- 3) visible boundaries of artefacts; and
- 4) a feature identified by the Aboriginal community on the basis of their own cultural knowledge and significance.

MCH:



Figure 6.2 Examples of disturbances and vegetation cover

Source: Google earth

The 'site area' was defined as the area in which artefacts were observed on a landform, though it must be remembered that this may not represent an accurate picture of site size. Visibility of artefacts is affected by differences in vegetation cover and hence ground surface visibility, as well as the degree of natural and human-induced disturbance.

6.5.2 *Definition of site complex*

Site complex refers to sites that occur in groups. For example, complexes may consist of burial grounds and carved trees, artefact scatters that represent different stages of procurement and manufacture or artefact scatters and shell middens. Complexes may also consist of artefact scatters that are connected across a landscape with the scatters being either specific activity centres (such as tool manufacturing sites) or larger base camp areas (with more artefacts and a variety of artefacts).

6.5.3 *Mapping identified sites*

MCH use topographic maps with MGA system 1994 (unless they are new maps produced after 1999 that have used the MG94 system) and our hand held Global Positioning System (GPS) units use MGA.

It is important to note that the Global Positioning System is operated by the United States and is subject to changes that may affect the accuracy and performance of all GPS equipment. At present, the hand held unit operated by MCH have an estimated error of approximately 5-10 metres though this is also dependant on the number of satellites available and detected and other factors such as tree coverage/interference.

6.5.4 *Sites*

The results of the survey have included two sites located on the dune in the north west of the study area which have contributed to the knowledge base of the known Aboriginal resources and sites in the local area.

No sites were identified within the flood plain area. This is likely due to the fact that this portion of study area is situated in the interbarrier depression, which was the coastal margin and estuarine swamp, it is unlikely that the study area would have been occupied.

A total of two sites were identified within the investigation area on the dune to the north. These are discussed in detail below, summarised in *Table 6.3* and their location shown in *Figure 6.3*.

Tom/1: shell midden (E 381860 N 6367096)

This site is located along the dune in the north and along a first order stream and the visible extent is approximately 20 metres in length and 5 metres on the southern side of the creek. Exposed through creek bank erosion, this site includes pieces of pipi and oyster. Its extent is unknown as the surrounding area is covered in dense pasture grass. This site forms part of the PAD (See below).

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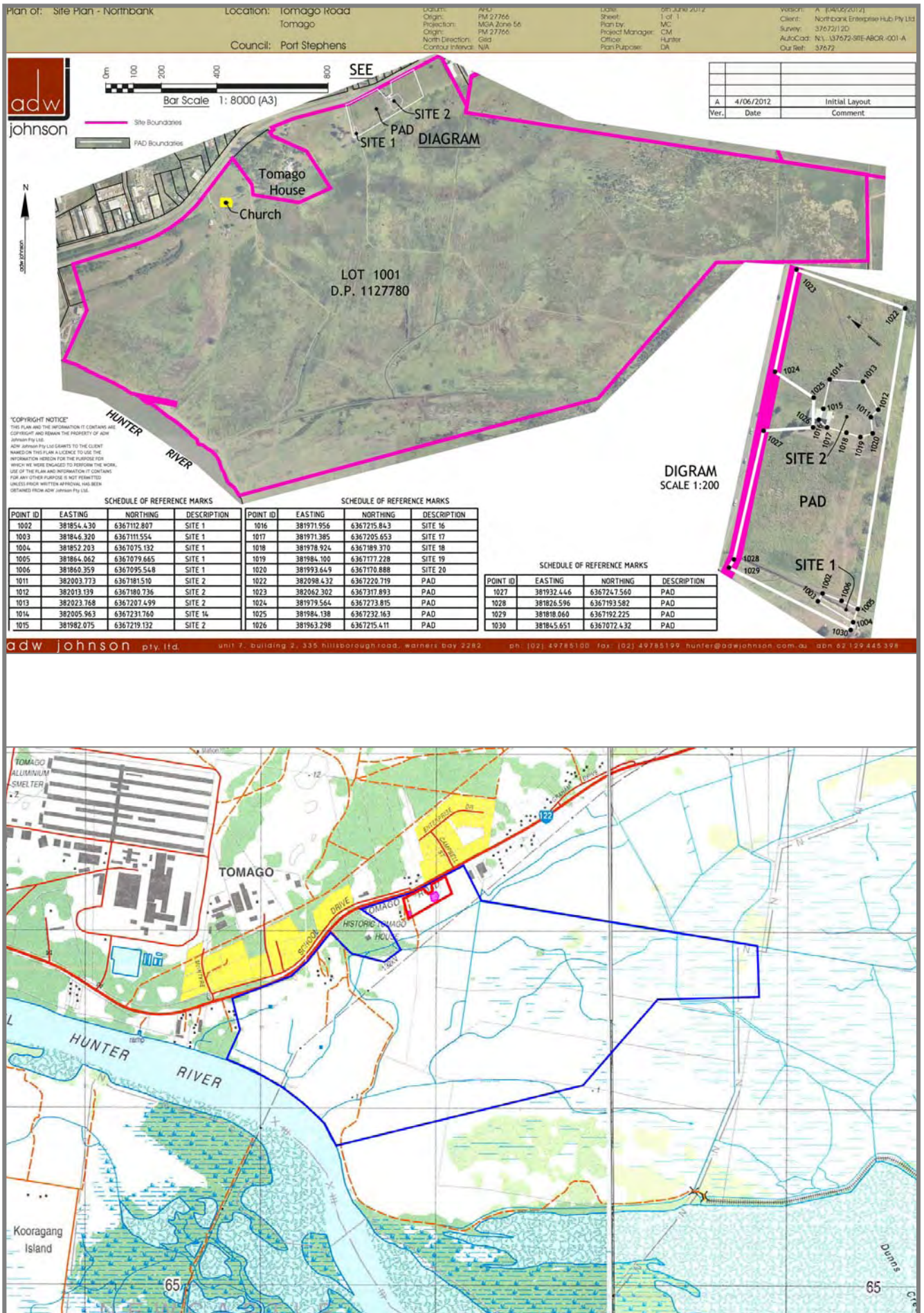


Figure 6.3 Sites Tom/1 and Tom/2 & TOM1/PAD1

Tom/2: shell midden (E 381984 N 6367199)

This site is located along the dune to the north. Exposed through house demolition, tracks and erosion, the visible extent of this site is spread over an area of approximately 10 metres in length and 20 metres in width. Containing large and small pieces of pipi and oyster as well as tuff artefacts, the surface material is highly disturbed through previous land uses. This site forms part of the PAD (See below).

Table 6.3 *Sites summary*

Site	Site type	Feature(s) /content	Survey unit	Landform	Distance from water	Stream order
Tom/1	shell midden	shell	2	dune	0m	1 st & interbarrier depression
Tom/2	shell midden	shell, artefacts	2	dune	0m	interbarrier depression

Re-locating NB1, NB2, NB3 and NB4:

Sites NB1, NB2, NB3 and NB4 previously identified by Indigenous Outcomes (2010), (Refer to *Figure 6.4*) were re-located with a surveyor. Each site was located one at a time and examined by the archaeologist and all Aboriginal stakeholders present. Then, the site area and approximately 2-3 metres surrounding the GPS coordinate was slashed and re inspected by the archaeologist and Aboriginal representatives on site.

As shown in *Figures 6.5* and *5.6*, all sites are situated within the swampy flood plain area and highly disturbed. The likelihood of sites being in this landform are very low. Discussions on site between the archaeologist and Aboriginal representatives is that these are not sites due to the location, levels of disturbances and the fact that camping would not have been possible in such an environment.

6.6

POTENTIAL ARCHAEOLOGICAL DEPOSIT (PAD)

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 a PAD.

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 the dunes overlooking the interbarrier depression and given that the north portion of the study area includes a low dune and is the only main elevated land in the study

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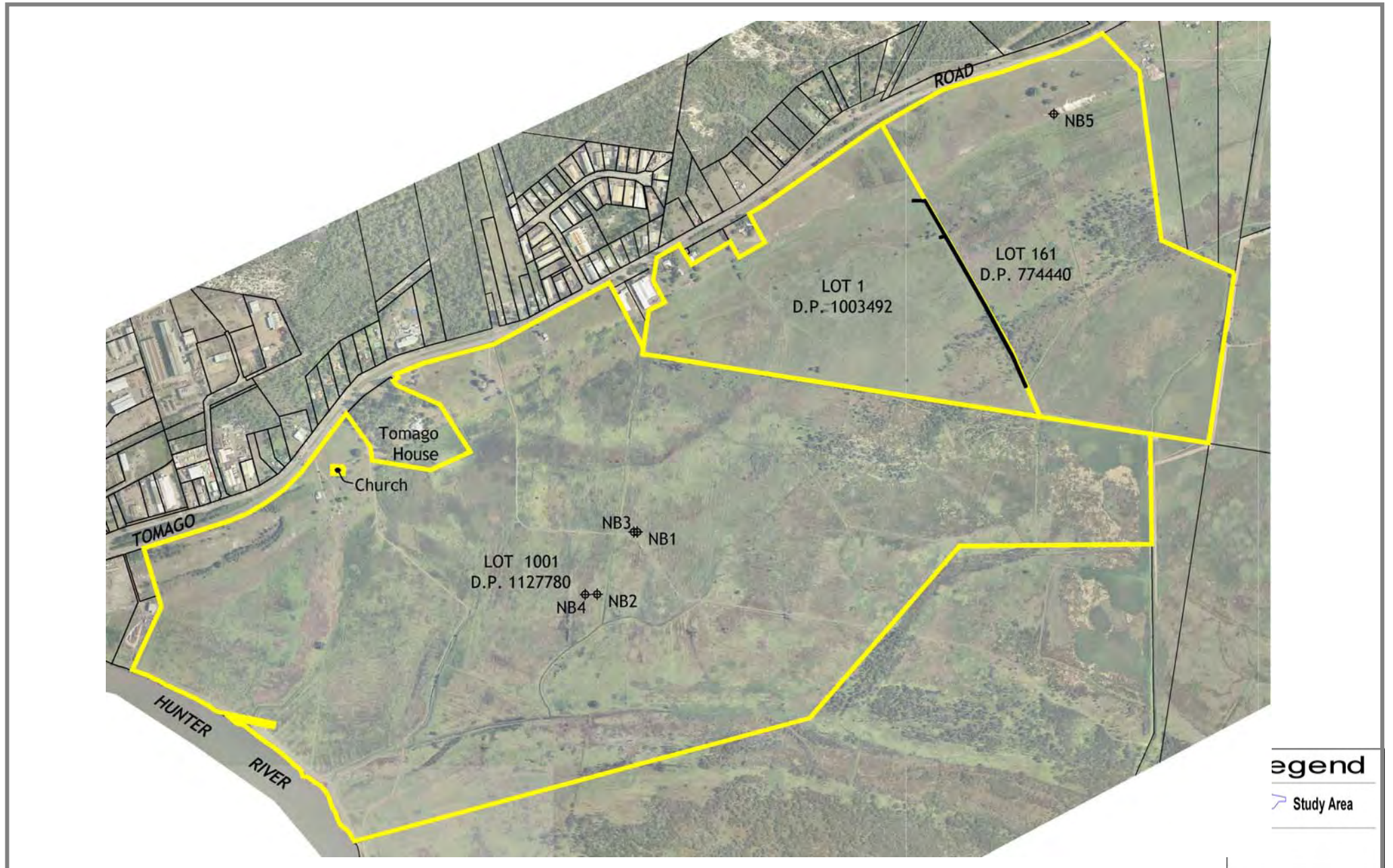


Figure 6.4 Previous sites

Source: Google earth

MCH:



NB 1 and NB2 facing north west (note location of sites in the flood plain)



NB 1 after slashing
(note the water logging)



NB 2 after slashing
(note the water logging)

Figure 6.5 Sites NB1 and NB2

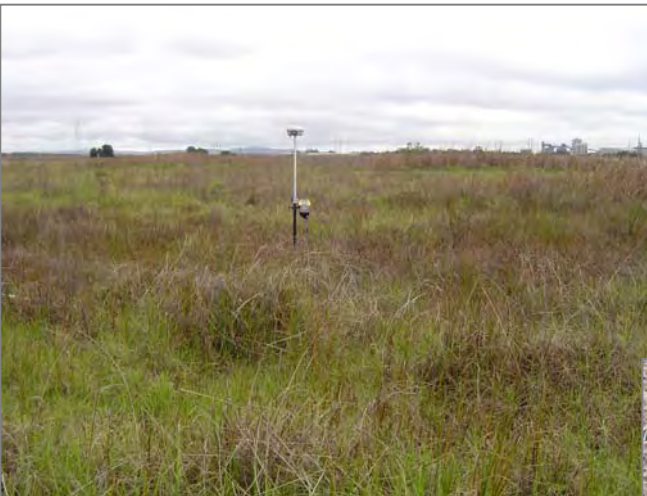
MCH:



NB 3 facing west (note location of sites in the flood plain)



NB 3 after slashing (note the water logging)



NB 3 facing west (note location of sites in the flood plain)



NB 4 after slashing (note the water logging)

Figure 6.6 Sites NB3 and NB4

area, it is likely that subsurface materials would have existed within the dune. One PAD has been identified and illustrated in *Figure 6.3* and described below.

6.6.1 *PAD1*

This PAD includes the north dune overlooking the flood plain. Included are the two surface sites (see above). Parts of this PAD have been subject to moderate disturbances such as the house construction and demolition, however, the majority appears to be relatively undisturbed.

Table 6.4 *PAD summary*

PAD number	Feature(s)	Survey unit	Landform
TOM1/PAD1	2 shell middens with artefacts	2	dune

6.7 *DISCUSSION*

The results of the investigation are discussed below in terms of site integrity, the nature of the evidence (lithic assemblage, spatial distribution, chronology), local and regional contexts, occupation models (interpretation) and predictive modelling.

6.7.1 *Integrity*

The integrity of the identified sites and the remainder of the investigation area can mainly be assessed only for surface integrity through the assessment 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 uses and their impacts as well as natural impacts (such as bioturbation, erosion etc) within the investigation area have been discussed in *Section 6.4* and are generally considered to be low to moderate. In particular, the north dune consists of grassy pastures that (subject to clearing, grazing) typically exhibit low levels of ground disturbance with higher levels of disturbances in specific locations within the dune such as the house construction. The remainder of the study area (flood plain) has been subject to clearing, grazing and is regularly flooded and subject to continued water logging.

Although without excavation it is difficult to determine post-depositional impacts, given the past disturbances in the location of the house (clearing, grazing, house, bioturbation) that location within the dune is expected to have moderate to high subsurface disturbances and hence low integrity. The remainder of the PAD however has been subject to clearing, grazing and bioturbation, all considered low impacts and as such integrity is expected to be moderate to high.

6.7.2 *Artefact assemblage*

Two shell middens were identified and the visible lithic assemblage is very limited (2 flakes). Based on the evidence to date the artefacts are comparable to

other assemblages throughout both the local and regional area. Both flakes were manufactured from tuff which is found at Birubi Point.

6.7.3 *Spatial distribution*

The distribution pattern of sites across a landscape has the potential to indicate a great deal about the interaction between people and the environment and the nature of social organisations. The first step in spatial analysis is to map the known sites of similar dates (if known), then add aerial and/or topographic information. The distribution can then be analysed for signs of patterns, clustering and relationships between larger and smaller sites. Once this detail is obtained, questions may be asked relating to a variety of factors such as sites in relation to distance from water, to landforms, site densities, site types etc.

However, the assumption that artefacts are spatially distributed as a result of patterned behaviour of past prehistoric societies so that the spatial structure is potentially informative about the nature in which the society was organised, may be problematic.

Distribution patterns must be viewed with caution due to post-depositional factors. For example, a slope may directly related to integrity as artefacts that originated on a steep slope are more likely to have been disturbed (moved down slope) due to gravity, erosion and water run off, thereby providing a disturbed site and a false representation of occupation patterning. Another example is artefacts located along a creek or creek bed is likely to have derived upstream and moved due to flooding/stream movement. Fewer disturbances are likely in locations such as flat areas, although this is also dependant on other disturbances, both human and natural. Sample size will also effect the distribution patterns as a smaller sample will provide limited information while a larger sample provides more data. Therefore the inferences made from the results are limited but can provide some general information.

Keeping in mind that it is unknown if the identification of sites are the result of increased surface exposures or either increased or decreased occupation activities is unknown, by far, the highest percentage of sites in the local area are located along the Holocene and Pleistocene dunal systems overlooking the interbarrier depression and other sources or reliable water. Thus while there is evidence of past occupation in the northern dune in the investigation area, there are more elevated Inner Pleistocene dunes within 200 metres of the study area and as such it is expected that the higher Pleistocene dunes would contain more and denser evidence of past occupation. Whereas the dune in the investigation area is significantly lower and whilst higher than the interbarrier depression, may have been subject to flooding at times, hence reducing the suitability for continued occupation.

The distribution of identified sites indicates that site location was focused on elevated landforms in close proximity to reliable water and the associated subsistence resources. The disturbed surface artefact locations and site densities is largely consistent with background discard, manuports and artefactual materials that are considered insufficient in number and/or association with other cultural materials to suggest areas of focused activity at any particular

location. The site numbers and artefact densities indicate a low-density utilisation of the locality. However, this is based on surface finds only and this may be clarified through subsurface investigations.

6.7.4 *Chronology*

Chronology is the science that deals with measuring time by regular divisions and that assigns to events to their proper dates. Holdaway et al. (1998: 3) identified four main difficulties applicable to recording surface sites. First, the lack of chronological control because of the absence of stratigraphy; second, the difficulty in determining site boundaries and features demarcated by a group of artefacts; third, identifying and interpreting artefacts in the field; and fourth, the problem of obtaining a representative sample from sites where there is uneven exposure or visibility.

In Australian archaeology, as in other parts of the world, stone artefacts contribute to developing a broad chronology for occupation, simply because they span the total period of occupation. In the absence of absolute dating techniques to establish chronology within the investigation area, relative dating may be applied. This includes using tool types that have been dated to specific period in Australian history.

Given that this investigation included a surface survey, there is no reliable means to obtain absolute dates. However, stone tool typology may be used. Artefact characteristics of what was formerly known as the 'Australian small tool and scraper tradition' occur within the investigation area. Artefacts such as backed artefacts have been reliably dated in rock shelters to around 5,000 years ago (Mulvaney and Kamminga 1999) and as such this specific artefacts (if not also the associated deposits) is inferred to date within the last 5,000 years.

6.7.5 *Interpretation & occupation model*

The inferences that can be made about the nature of occupation within the investigation area and the specific sites identified area are limited by the small sample size. However, consistent with the occupation model (Kuskie and Kamminga 2000), it is inferred from the evidence obtained during the survey that:

- Aboriginal people used and occupied the area but generally at a very low intensity within the last 5,000 years. Although occupation of the region extends back to at least 20,000 years ago, the environmental context would have been very different to the present over such an extended period of time;
- The surface evidence is consistent with transitory movement through the landscape and occasional and short-duration visits by small parties of hunters and/or gatherers for food procurement. However the surface evidence is disturbed and hence interpretation is used with caution;
- While these activities appear to have occurred more frequently on areas of high elevation (Holocene and Pleistocene dunal systems), rather than on areas of lower elevation (low dunes at the interface between the dunal

systems and the interbarrier depression), this may be a result of disturbances and exposures;

- Notwithstanding the points above, the low density of artefacts visible within the investigation area, the distribution of these artefacts and the topography of the area indicates that in the broader area focused occupation was more likely to have occurred outside of the investigation area and in association with those such contexts where more preferential circumstances existed for higher dunes overlooking the interbarrier depression; and
- The stone material tuff was predominantly used for stone-working activities, largely because of its local availability, and it may have been procured from local sources in a casual, opportunistic manner.

The survey results are consistent with, or do not contradict the general model of occupation.

6.7.6 *Regional & local context*

Although the results from this assessment are limited by the sample size, the evidence can be compared with other assessment and sites from the region (Refer to *Chapter 5*). The main purpose for this is to identify any differences or similarities with other assessments throughout the region (such as site patterning, site types, land form preference etc) in order to provide a framework to interpret and establish representativeness for the identified sites within the investigation area.

Several similarities have been recognised between the evidence within the investigation area and other assessments from the surrounding area. These are as follows:

- sites located on similar landforms (dune);
- prevalence of shell middens (pipi and oyster);
- similar raw materials used for tool manufacture (tuff);
- similar artefact types (flakes); and
- more sites and higher densities located on elevated dunes in close proximity to the interbarrier depression.

The interbarrier depression was not utilised for occupation as it was the coastal margin and estuarine swamp, providing an abundance of resources that would have allowed for occupation of the dunal systems along its edges. This fits with the predictive model.

6.7.7 *Reassessment of the predictive model*

In view of the survey results, the predictive model of site location can be reassessed for the investigation area.

The potential for bora/ceremonial, carved tree, scarred tree, rock engraving and stone arrangement sites to occur within the investigation remains assessed as very low or negligible.

No direct evidence of lithic procurement sites was identified, however the potential for casual, opportunistic procurement of stone, such as tuff from Buribi Point area cannot be discounted.

No evidence was encountered of burial sites, and although the potential for skeletal remains to occur within the investigation area is considered to be low, it cannot be discounted given that burials have been identified under shell middens in the local area.

Sites of traditional cultural significance (such as mythological sites) were not identified by the Aboriginal stakeholders or stakeholder representatives involved in the investigation. The registered Aboriginal stakeholders also did not disclose any specific knowledge of other cultural values/places (for example, historically known places or resource use areas).

Two shell middens were identified within the investigation area. There remains a high potential for additional evidence to occur in the areas currently obscured by vegetation. The artefact evidence may involve a broad range of artefact and stone types, but will predominantly comprise evidence associated with non-specific stone flaking of tuff and evidence of food consumption is expected to include pipi and oyster.

6.8

CONCLUSION

Sites provide valuable information about past occupation, use of the environment and its specific resources including diet, raw material transportation, stone tool manufacture, and movement of groups throughout the landscape. Therefore these results provide merely an indication of what may be expected in terms of site location and distribution

Proximity to the interbarrier depression (its reliable water and resources) was an important factor in past occupation of the area, with sites located on elevated dunes overlooking the depression. The immediate surrounding area contains no raw materials that are typically used in the manufacture of stone tools (tuff), and as such it can be assumed that any artefacts identified would be of materials transported from the source location (Buribi Point). Other raw materials identified in other sites in the local area include silcrete which is derived from further up the Hunter Valley and such artefacts would have been traded and/or transported from outside the local area.

The interbarrier depression has long been a source of reliable water and numerous resources that would have sustained continued occupation. It is also known that such locations also provided good vantage points. Evidence of continued occupation is found along the Inner Pleistocene and Holocene dunal systems overlooking the depression as well as dunes at the interface with these systems and the depression. The surface evidence obtained during the survey is consistent with the local area and further investigation of the PAD may reveal additional information for landforms at the interface of the elevated dunes and the interbarrier depression.

7 ASSESSMENT OF ARCHAEOLOGICAL SIGNIFICANCE

7.1 THE SIGNIFICANCE ASSESSMENT PROCESS

One of the key steps in the process of cultural heritage management is the assessment of significance. Not all sites are equally significant and not all are worthy of equal consideration and management (Sullivan and Bowdler 1984; Pearson and Sullivan 1995: 7).

The determination of significance can be a difficult process as the social and scientific context within which these decisions are made is subject to change (Sullivan and Bowdler 1984). This does not lessen the value of the heritage approach, but enriches both the process and the long-term outcomes for future generations as the reasons for, and objectives of, site conservation also change over time.

The assessment of significance of archaeological sites and resources is defined in most cases by what these entities can contribute to our understanding or knowledge of a place or site. In most cases, it is not possible to fully articulate or comprehend the extent of the archaeological resource at the outset, let alone its value. Therefore, the evaluation of the significance of archaeological material is based on the potential this resource has to contribute to our understanding of the past. Of importance is the type of information that can be revealed. In particular, site significance can be due to knowledge not available through other sources, and the contribution that it can make to our understanding of a place or a cultural landscape.

7.2 BASIS FOR EVALUATION

The significance of indigenous archaeological sites or cultural places can be assessed on the criteria of the Burra Charter, the Australian Heritage Commission Criteria of the National Estate, and the OEH guidelines that are derived from the former two.

The NSW NPWS Aboriginal Cultural Heritage Standards and Guidelines Kit (1997) emphasises two realms of significance assessment:

Aboriginal cultural significance

Archaeological (scientific) significance

The cultural significance of the sites or landscape will be assessed by the Aboriginal groups mentioned previously.

7.3 ARCHAEOLOGICAL (SCIENTIFIC) SIGNIFICANCE

Scientific significance is assessed according to the contents of a site, state of preservation, integrity of deposits, representativeness/rarity of the site type, and potential to answer research questions on past human behaviour (NPWS 1997).

For open campsites, evidence required to adequately assess significance includes information about the presence of sub-surface deposits, the integrity of these

deposits, the nature of site's contents and extent of the site. A review of information pertaining to previously recorded sites within the local area and region enables the rarity and representativeness of a site to be assessed.

High significance is usually attributed to sites that are so rare or unique that the loss of the site would affect our ability to understand an aspect of past Aboriginal use/occupation of an area. In some cases a site may be considered highly significant because its type is now rare due to destruction of the archaeological record through development. Medium significance can be attributed to sites that provide information on an established research question. Low significance is attributed to sites that cannot contribute new information about past Aboriginal use/occupation of an area. This may be due to site disturbance or the nature of the site's contents.

In order to clarify the significance assessment, the criteria used are explained below.

7.3.1 *Research potential*

Research potential refers to the potential for information gained from further investigations of the evidence to be used in answering current or future research questions. Research questions can relate to any number of issues concerning past human material culture and associated behaviour (including cultural, social, spiritual etc) and/or use of the environment. Several inter-related factors to take into consideration include the intactness or integrity of the site, the connectedness of the site to other sites, and the potential for a site to provide a chronology extending back in the past. Several questions are posed for each site or area containing evidence of past occupation:

- Can the evidence contribute information not available from any other resource?
- Can the evidence contribute information not available from any other location or environmental setting?
- Is this information relevant to questions of past human occupation (including cultural, social and/or spiritual behaviour) and/or environments or other subjects?

Assessing research potential therefore relies on comparisons with other evidence both within the local and regional context. The criteria used for assessing research potential include:

- potential to address specific local research questions;
- potential to address specific regional questions;
- potential to address general methodological and theoretical questions;
- potential sub-surface deposits; and
- potential to address future research questions.

The particular questions asked of the available evidence should be able to contribute information that is not available from other resources or evidence and are relevant to questions about past human societies and their material culture. Levels for defining research potential are as follows:

- | | |
|--------|---|
| High | Has the potential to provide new information not obtained from any other resource to answer current and/or future research questions. |
| Medium | Has the potential to contribute significant additional information to answer current and/or future research questions. |
| Low | Has no potential to contribute significant information to answer current or future research questions. |

7.3.2 *Representativeness and rarity*

Representativeness and rarity are assessed at a local, regional and national level (although assessing at a national level is difficult and commonly not possible due to a lack of national reports and available database). As the primary goal of cultural resource management is to afford the greatest protection to a representative sample of Aboriginal heritage throughout a region, this is an important criterion. The more unique or rare the evidence is, the greater its value as being representative within a regional context.

The main criteria used for assessing representativeness and rarity include:

- the extent to which the evidence occurs throughout the region;
- the extent to which this type of evidence is subject to existing and potential future impacts in the region;
- the integrity of the evidence compared to that at other locations within the region;
- whether the evidence represents a primary example of its type within the region; and
- whether the evidence has greater potential for educational purposes than at other similar locations within the region.

7.3.3 *Nature of the Evidence*

The nature of the evidence is related to representativeness and research potential. For example, the less common the type of evidence, the more likely it is to have representative value. The nature of the evidence is directly related to its potential to be used in addressing current and/or future research questions. Criteria used in assessing the nature of the evidence include:

- presence, range and frequency of artefacts;
- presence, range and frequency of artefact types; and

- presence and types of other features.

7.3.4 *Integrity*

The state of preservation and disturbances of the evidence (integrity) is also related to representativeness and research potential. The higher the integrity (well preserved and not disturbed) of the evidence, the greater the level of information that is likely to be obtained from further study. This translates to greater importance for the evidence within a local and regional context, as it may be a suitable example for preservation/conservation. The criteria used in assessing integrity include:

- horizontal spatial distribution of artefacts;
- vertical spatial distribution of artefacts;
- preservation of intact features such as hearths or knapping floors;
- preservation of site contents such as charcoal which may enable direct dating providing a reliable date of occupation of a given area;
- preservation of artefacts which may enable use-wear/residue analysis to determine tool use and possibly diet; and
- preservation of other cultural materials that may enable interpretation of the evidence in relation to cultural/social behaviour (e.g. burial types and associated mortuary practices may have been based on cultural, social, age, and/or gender distinctions).

Many of these criteria can only be obtained through controlled excavation. Generally high levels of ground disturbance (such as erosion, tracks, dams etc) limit the possibility that an area would unlikely contain intact spatial distributions, intact features, in situ charcoal et cetera.

Definitions for defining levels of site integrity and condition have been derived from Witter (1992) and HLA (2002) and are as follows:

Excellent	Disturbance, erosion or development is minimal.
Good	Relatively undisturbed deposits or partially disturbed with an obvious in situ deposit.
Fair	Some disturbance but the degree of disturbance is difficult to assess.
Poor	Clearly mostly destroyed or disturbed by erosion or development.
Very Poor	Sites totally disturbed or clearly not in situ.
Destroyed	A known site that is clearly no longer there.

7.4 EVALUATION

The following is an evaluation of the scientific significance of the individual archaeological sites identified within the study area. This does not apply to the sites as a cultural landscape as not all sites were surveyed by MCH. *Table 7.1* presents the significance assessment for the sites identified.

Table 7.1 Significance Assessment

Site	Site Type	Representativeness	Integrity	Res. Pot	Sci. Sig
Tom/1	shell midden	well represented	fair	low	low
Tom/2	shell midden	well represented	fair	low	low
Tom/PAD1	PAD	unknown	unknown	unknown	unknown

7.5 CULTURAL SIGNIFICANCE

While Aboriginal sites and places may have scientific significance, they also have cultural/social significance to the Aboriginal people from that area. Determining cultural/social significance can only be determined by the Aboriginal people from the area in which the sites and/or places were identified. Consultation with the Aboriginal community has been undertaken in order to document cultural/social significance and the registered groups will provide MCH with a letter/report.

The archaeological record is a non-renewable resource that is affected by many processes and activities. As outlined in *Chapter 2*, the various natural processes and human activities may impact on archaeological deposits through both site formation and taphonomic processes. *Chapter 4* describes the impacts within the study area, showing how these processes and activities have disturbed the landscape and associated cultural materials in varying degrees.

8.1

IMPACTS

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

8.2

IMPACTS

Detailed descriptions of the impacts are provided in *Section 1.5* and the results of the survey in *Chapter 6*. TOM1/PAD1 and sites Tom/1 and Tom/2 will be impacted on by the proposed development.

The OEH 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

Table 8.1 *Impact summary*

Site	Site type	Type of harm	Degree of harm	Consequence of harm	Representative	Integrity	Res. Pot	Sci. Sig
Tom/1	midden	direct	total	total loss	well represented	poor	low	low
Tom/2	midden	direct	total	total loss	well represented	poor	low	low
TOM1/PAD1	PAD	direct	total	total loss	unknown	unknown	unknown	unknown

The two disturbed sites (both shell middens) will be directly impacted by the development. Located on a low dune, these sites are well represented both locally and regionally and are highly disturbed with little to no research or scientific potential.

The PAD disturbances, integrity, presence and extent of subsurface cultural materials as well as their representativeness, research and scientific potential remains unknown.

8.3

CUMULATIVE IMPACTS

The cumulative impact to Aboriginal heritage in the area is limited given that:

- The net development footprint (i.e. the area of direct impact) is small and does not affect a high proportion of any particular landform present within the region;
- A comparable suite of landforms (low dunes) that are expected to, and do contain a similar archaeological resource occur in multiple contexts both within the local area and throughout the region;
- The identified surface sites have been subject to past land uses that have resulted in a disturbed surface landscape and as a consequence of these disturbances the representative value of the archaeological resource is lessened;
- The PAD appears to remain relatively undisturbed and in order to ensure any cultural materials that may be present are protected which is warranted, a subsurface testing program should be implemented;

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

MITIGATION AND MANAGEMENT STRATEGIES

Specific strategies, as outlined through the Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW and the Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW, (DECCW 10011a,b), are considered below for the management of identified sites and potential archaeological deposits within the study 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.

9.1

CONSERVATION/PROTECTION

The OEH 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 significance and are managed in a way that is consistent with the nature of peoples' attachment to them.

Sites Tom/1 and Tom/2 are disturbed with no site integrity remaining and as such conservation is not justified.

The PAD's integrity, level of disturbances and the presence and extent of cultural materials remains unknown and as such conservation is not justified at this time. This may change following further investigation.

9.2

FURTHER INVESTIGATION

An Aboriginal Heritage Impact Permit (AHIP) is no longer required to undertake test excavations (providing the excavations are in accordance with the Code of Practice for Archaeological Investigations in NSW).

Subsurface testing is appropriate when a Potential Archaeological Deposit (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. However, testing may only be undertaken as per the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2011) and discussions/consultation with the local Aboriginal community.

TOM1/PAD1 has been identified and requires a subsurface investigation program to determine if cultural materials are present, their extent, the nature of any site, integrity and significance.

This may be undertaken either under the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2011) or as part of an AHIP (see below). This would allow the identification of subsurface sites, their nature and extent, all of which would determine if salvage, partial salvage or conservation were required, or if no further archaeological works were required.

9.3 *AHIP*

If harm will occur to an Aboriginal object or Place, then an AHIP is required from the OEH.

An AHIP is required when a site is identified but its extent, the nature of its contents, level of integrity and/or its significance cannot be adequately assessed through a surface survey. In this case, 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 may be an appropriate strategy to further assess the site to determine its extent, nature, content, integrity and significance. The AHIP may also include surface collection of artefacts.

As sites Tom/1 and Tom/2 are highly disturbed and have no clear subsurface association, an AHIP will be required to collect the surface cultural materials.

9.4 *MONITORING*

An alternative strategy for areas where archaeological deposits are predicted to occur is to monitor development works for cultural materials, predominantly during the initial earth moving and soil removal works. This was the main strategy for managing the possible occurrence of Aboriginal skeletal remains.

However, with the legislative changes, due diligence process and AHIP restructuring, monitoring is not an option as if there is even a slight possibility of cultural materials being present this must be addressed through the due diligence process and Code of Practice.

9.5 *CULTURAL AWARENESS INDUCTION*

Part of the site induction should include an induction on the cultural heritage of the study area. All personnel on site must be inducted and as such are made aware of the cultural heritage across the study area. The induction package can be included in the Environmental Management Plan and/or Aboriginal Heritage Management Plan.

9.6

PROCEDURES FOR ONGOING ABORIGINAL CONSULTATION & INVOLVEMENT

Procedures should be in place for the continued consultation and involvement with the Aboriginal stakeholders. This procedure can be included in the Environmental Management Plan and/or the Aboriginal Heritage Management Plan.

10.1**GENERAL**

- 1) The persons responsible for the management of works on site 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 Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010, under the National Parks and Wildlife Act 1974;
- 2) The involvement of the registered Aboriginal stakeholders in the ongoing management of the Aboriginal cultural materials within the project study area (specifically the low dune) should be promoted and included in the Environmental Management Plan and/or the Aboriginal Heritage Management Plan; and
- 3) A cultural awareness program should be included as part of the site induction program and developed with the registered Aboriginal stakeholders and form part of the Environmental Management Plan and/or the Aboriginal Heritage Management Plan.

10.2**PAD& SITES**

- 4) If the identified TOM1/PAD1 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 works starting; and
- 5) If sites Tom/1 and/or Tom/2 will be harmed by any future development an AHIP for the surface collection will be required prior to works starting.

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ANNEX A

Community Consultation

Contact made	Date	Who contacted Whom	Contacts	Purpose	Phone conversation/ notes	Outcomes
1 st	22 August 2011	MCH contacted the required Government departments requesting a list of Aboriginal groups to contact	OEH, LALC, Registrar of Aboriginal Owners, Native Title Tribunal, NTSCORP Limited, local Council, Catchment Authority	Requirement under the OEH ACHCR's (2010)	Letter contained; details of the project area (location) and proponent details, request for assistance in identifying Aboriginal stakeholder groups or persons interested and to provide a list of these groups/ people no later than 5 September 2011	See attached
2 nd	26 August 2011	NNT contacted MCH		List of groups	Provided a response to the request for groups to consult. Four listed: NN4/12: Worimi Local Aboriginal Land Council v Minister for Lands for the State of New South Wales (No 2) NN5/2: Peter Hillig in his capacity as administrator of Worimi Local Aboriginal Land Council v Minister for Lands for the State of New South Wales NN05/7: Peter Hillig in his capacity as administrator of Worimi Local Aboriginal Land Council v Minister for Lands for the State of New South Wales NN06/5: Hillig as Administrator of Worimi Local Aboriginal Land Council v NSW Native Title Services Ltd	See attached
3 rd	29 August 2011	OEH contacted MCH		List of groups	Provided a response to the request for groups to consult. 7 groups were listed.	See attached
5 September 2011 Request for groups to consult with closed						
4 th	5 September	MCH contacted all groups listed in responses from Government departments listed above	See attached	Requirement under the OEH ACHCR's (2010)	Letter contained, proponent details, details of the project area (location), details of the proposed development, statement of the purpose of community consultation with Aboriginal people, statement that this is an invitation for 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 a process of community consultation, advised that, unless otherwise specified, your details will be provided to OEH and the LALC, that individuals must be nominated if a group or organisation registers, request for Aboriginal stakeholder groups or persons interested to register in writing to MCH no later than 19 September 2011, nominate your preferred option to receive the initial information. You may wish to have a non paid meeting and receive an information pack, or receive information packet through the mail, fax or e-mail.	See attached

Contact made	Date	Who contacted Whom	Contacts	Purpose	Phone conversation/ notes	Outcomes
5 th	8 September 2011	Add in the Port Stephens Examiner Newspaper placed by client.	NA	Requirement under the OEH ACHCR's (2010)	Add contained, proponent details, details of the project area (location), details of the proposed development, statement of the purpose of community consultation with Aboriginal people, statement that this is an invitation for 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 a process of community consultation, advised that, unless otherwise specified, your details will be provided to OEHand the LALC, that individuals must be nominated if a group or organization registers, request for Aboriginal stakeholder groups or persons interested to register in writing to MCH no later than 22 September 2011, nominate your preferred option to receive the initial information. You may wish to have a non paid meeting and receive an information pack, or receive information packet through the mail, fax or e-mail.	See attached
6 th	8 September 2011	Mur-roo-ma Inc (MRM) contacted MCH	Anthony Anderson (MRM) contacted Penny McCardle (MCH)	Registration letter	Anthony registered for the project	See attached
7 th	12 September 2011	Nur-run-ge (NRG) contacted MCH	Lennie Anderson (NRG) contacted Penny McCardle (MCH)	Registration letter	Lennie registered for the project	See attached
22 September 2011 Registration closed						
8 th	23 September 2011	MCH contacted all registered groups: sent an information pack for the project	See attached	Requirement under the OEH ACHCR's (2010) Posted Information package	Information package contained, cover letter, project overview, details of the project area and maps, roles and responsibilities of all parties, methods of gathering information on cultural knowledge and the archaeological assessment, defined consultation and employment, critical time lines and pro forma for response no later than 13 October 2011	See attached
9 th	27 September 2011	Mur-roo-ma Inc (MRM) contacted MCH	Anthony Anderson (MRM) contacted Penny McCardle (MCH)	Response to info pack	Anthony provided a response to the info pack: agreed to methods	See attached
10 th	27 September 2011	Nur-run-ge (NRG) contacted MCH	Leanne Anderson (NRG) contacted Penny McCardle (MCH)	Response to info pack	Leanne provided a response to the info pack: agreed to methods	See attached
13 October info pack response closed						
11 th	14 October 2011	MCH contacted all registered groups: sent an information pack for the project	See attached	survey	Penny sent an invitation to the survey to be undertaken 9-11 November 2011	See attached
12 th	14 October 2011	Nur-run-ge (NRG) contacted MCH	Lennie Anderson (NRG) contacted Penny McCardle (MCH)	Registration letter	Responded to survey invitation	See attached

Contact made	Date	Who contacted Whom	Contacts	Purpose	Phone conversation/ notes	Outcomes
13 th	17 October 2011	Mur-roo-ma Inc (MRM) contacted MCH	Anthony Anderson (MRM) contacted Penny McCardle (MCH)	Registration letter	Responded to survey invitation	See attached
9 November 2011 Survey						
14 th	17 November 2011	MCH contacted registered stakeholders	See attached	Draft report	Penny sent all stakeholders a copy of the draft report and requested their response no later than 15 December 2011	See attached
15 th	20 November 2011	Mur-roo-ma Inc (MRM) contacted MCH	Anthony Anderson (MRM) contacted Penny McCardle (MCH)	Draft report	Anthony provided their letter/report supporting the assessment and recommendations	See attached
16 th	30 November 2011	Nur-run-ge (NRG) contacted MCH	Lennie Anderson (NRG) contacted Penny McCardle (MCH)	Draft report	Lennie & Leanne provided their letter/report supporting the assessment and recommendations	See attached
17 th	2 December 2011	MCH contacted registered stakeholders	See attached	Final report	Penny sent all stakeholders a copy of the final report	See attached
18 th	19/3/2012	ADW Johnson contacted MCH	EPA had contacted ADFW Johnson with concerns regarding sites previously identified within the study area that were not registered. It was decided that MCH and the registered groups would go on site again to clarify if sites are present as their location is in the flood plain (interbarrier depression) which is considered highly unsuitable for past occupation. The site visit would also include a surveyor to ensure the correct locations are found and a whipper snipper would also be on site to slash the sites for better visibility			
19 th	22/5/2012	MCH contacted registered stakeholders	See attached	site visit	MCH rang and e-mailed registered groups to explain the EPA concerns and the need for a second site visit asking if 1 June was suitable	See attached
20 th	23/5/2012	Nur-run-ge (NRG) contacted MCH	Lennie Anderson (NRG) contacted Penny McCardle (MCH)	site visit	confirmed site visit for 1 June 2012	See attached
21 st	23/5/2012	MCH rang MRMN and WLALC	phone call	site visit	confirmed site visit for 1 June 2012	See attached
1 June 2012 site visit						
22 nd	4/7/2012	MCH contacted registered stakeholders	See attached	revised draft report	Penny sent all stakeholders a copy of the draft report and requested their response no later than 31 July 2012	See attached
23 rd	6/7/2012	Nur-run-ge (NRG) contacted MCH	Lennie Anderson (NRG) contacted Penny McCardle (MCH)	Draft report	Lennie provided a letter/report supporting the assessment and recommendations	See attached
24 th	9/7/2012	Mur-roo-ma Inc (MRM) contacted MCH	Anthony Anderson (MRM) contacted Penny McCardle (MCH)	Draft report	Anthony provided their letter/report supporting the assessment and recommendations	See attached

22 August 2011



*McCardle Cultural
Heritage Pty Ltd*

Office of the Registrar,
Aboriginal Land Rights Act 1983
PO Box 112
Glebe NSW 2037

PO Box 166
ADAMSTOWN NSW 2289
Mobile: 0412 702 396
Fax: 4952 5501
Email: mcheritage@iprimus.com.au

FAX: 9562 6350

MCH Reference: Indigenous Archaeological Assessment at Tomogo

Dear Sir/madam,

RE: INDIGENOUS ARCHAEOLOGICAL ASSESSMENT AT TOMOGO

In accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), I am contacting you in order to obtain assistance in identifying Aboriginal stakeholder groups or persons interested in the above project.

MCH have been commissioned by ADW Johnson to undertake an Aboriginal Archaeological assessment at Tomogo, Port Stephens LGA (see attached map). Could you please provide the contact details for any interested parties no later than 5 September 2011. **This project is urgent so a quicker response would be greatly appreciated.** Please note that no response by the specified date will result in the proponent proceeding with the consultation process.

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

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist
Forensic Anthropologist

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

22 August 2011



*McCardle Cultural
Heritage Pty Ltd*

Office of Environment & Heritage
Rosalie Neve
Locked Bag 914
COFFS HARBOUR NSW 2450

PO Box 166
ADAMSTOWN NSW 2289
Mobile: 0412 702 396
Fax: 4952 5501
Email: mcheritage@iprimus.com.au

Fax: 6651 6187

MCH Reference: Archaeological assessment at Tomogo

Dear Rosalie,

RE: INDIGENOUS ARCHAEOLOGICAL ASSESSMENT AT TOMOGO

In accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), I am contacting you in order to obtain assistance in identifying Aboriginal stakeholder groups or persons interested in the above project.

MCH have been commissioned by ADW Johnson to undertake an Aboriginal Archaeological assessment at Tomogo, Port Stephens LGA (see attached map). Could you please provide the contact details for any interested parties no later than 5 September 2011. **This project is urgent so a quicker response would be greatly appreciated.** Please note that no response by the specified date will result in the proponent proceeding with the consultation process.

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

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist
Forensic Anthropologist

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

22 August 2011



*McCardle Cultural
Heritage Pty Ltd*

Peter Schultz and George Tonna
NTSCORP Limited
PO Box 2105,
Strawberry Hills 2012

PO Box 166
ADAMSTOWN NSW 2289

Mobile: 0412 702 396
Fax: 4952 5501

Email: mcheritage@iprimus.com.au

FAX: 9310 4177

MCH Reference: Indigenous Archaeological Assessment at Tomogo

Dear Peter and Goerge,

RE: INDIGENOUS ARCHAEOLOGICAL ASSESSMENT AT TOMOGO

In accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), I am contacting you in order to obtain assistance in identifying Aboriginal stakeholder groups or persons interested in the above project.

MCH have been commissioned by ADW Johnson to undertake an Aboriginal Archaeological assessment at Tomogo, Port Stephens LGA (see attached map). Could you please provide the contact details for any interested parties no later than 5 September 2011. **This project is urgent so a quicker response would be greatly appreciated.** Please note that no response by the specified date will result in the proponent proceeding with the consultation process.

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

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist
Forensic Anthropologist

MCH:

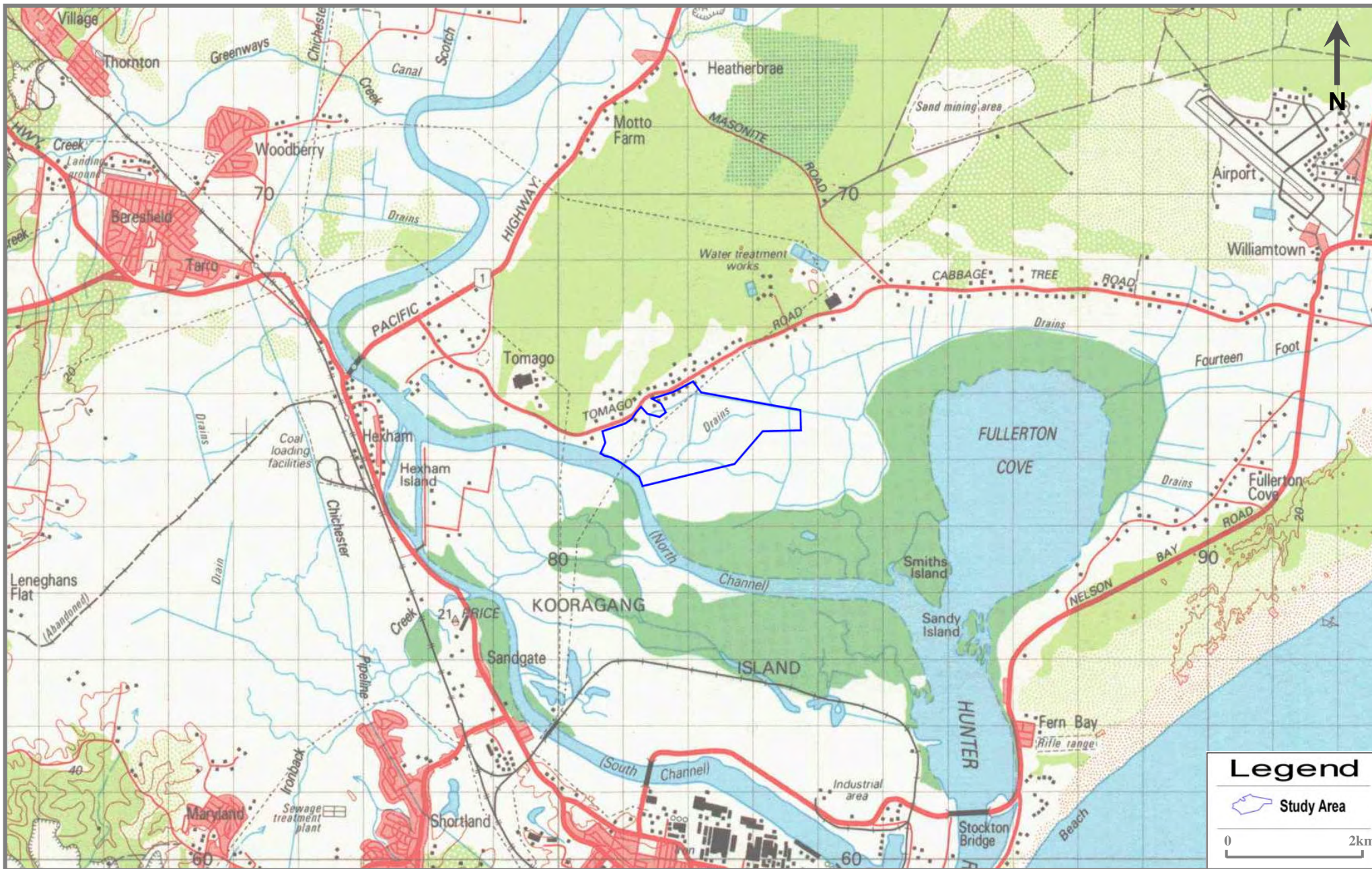


Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

22 August 2011



*McCardle Cultural
Heritage Pty Ltd*

Native Title Tribunal
Kimberley Wilson
GPO Box 9973
Sydney NSW 2001

PO Box 166
ADAMSTOWN NSW 2289
Mobile: 0412 702 396
Fax: 4952 5501
Email: mcheritage@iprimus.com.au

Fax: (02) 9233 5613
Email: kimberley.wilson@nntt.gov.au

MCH Reference: Indigenous Archaeological Assessment at Tomogo

Dear Sir/madam,

RE: INDIGENOUS ARCHAEOLOGICAL ASSESSMENT AT TOMOGO

In accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), I am contacting you in order to obtain assistance in identifying Aboriginal stakeholder groups or persons interested in the above project.

MCH have been commissioned by ADW Johnson to undertake an Aboriginal Archaeological assessment at Tomogo, Port Stephens LGA (see attached map). Could you please provide the contact details for any interested parties no later than 5 September 2011. **This project is urgent so a quicker response would be greatly appreciated.** Please note that no response by the specified date will result in the proponent proceeding with the consultation process.

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

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist
Forensic Anthropologist

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

22 August 2011



*McCardle Cultural
Heritage Pty Ltd*

Port Stephens
PO Box 42,
Raymond Terrance NSW 2324

Fax: 49 873 612

PO Box 166
ADAMSTOWN NSW 2289

Mobile: 0412 702 396
Fax: 4952 5501

Email: mcheritage@iprimus.com.au

MCH Reference: Indigenous Archaeological Assessment at Tomogo

Dear Sir/Madam,

RE: INDIGENOUS ARCHAEOLOGICAL ASSESSMENT AT TOMOGO

In accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), I am contacting you in order to obtain assistance in identifying Aboriginal stakeholder groups or persons interested in the above project.

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

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist
Forensic Anthropologist

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

22 August 2011



*McCardle Cultural
Heritage Pty Ltd*

WLALC
PO Box 56
Tanillba Bay NSW 2319

Fax: 4965 1799

PO Box 166
ADAMSTOWN NSW 2289
Mobile: 0412 702 396
Fax: 4952 5501
Email: mcheritage@iprimus.com.au

MCH Reference: Indigenous Archaeological Assessment at the Tomogo

Dear Sir/madam,

RE: INDIGENOUS ARCHAEOLOGICAL ASSESSMENT AT TOMOGO

In accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), I am contacting you in order to obtain assistance in identifying Aboriginal stakeholder groups or persons interested in the above project.

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Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist
Forensic Anthropologist

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

22 August 2011



*McCardle Cultural
Heritage Pty Ltd*

General Manager,
Hunter Central Rivers CMA
Private Bag 2010
Paterson NSW 2421

PO Box 166
ADAMSTOWN NSW 2289
Mobile: 0412 702 396
Fax: 4952 5501
Email: mcheritage@iprimus.com.au

Fax: 4930 1013

MCH Reference: Indigenous Archaeological Assessment at Tomogo

Dear Sir/Madam,

RE: INDIGENOUS ARCHAEOLOGICAL ASSESSMENT AT TOMOGO

In accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), I am contacting you in order to obtain assistance in identifying Aboriginal stakeholder groups or persons interested in the above project.

MCH have been commissioned by ADW Johnson to undertake an Aboriginal Archaeological assessment at Tomogo, Port Stephens LGA (see attached map). Could you please provide the contact details for any interested parties no later than 5 September 2011. **This project is urgent so a quicker response would be greatly appreciated.** Please note that no response by the specified date will result in the proponent proceeding with the consultation process.

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

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist
Forensic Anthropologist

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle



National
Native Title
Tribunal



26 August 2011

Penny McCardle
Principal Archaeologist
McCardle Cultural Heritage Pty Ltd
PO Box 166
Adamstown NSW 2289

South-East & Central Registry
Sydney Office

Level 25, 25 Bligh Street
Sydney NSW 2000
GPO Box 9973
Sydney NSW 2000
Telephone (02) 9227 4000
Facsimile (02) 9227 4030

Our Reference: 4436/11nt

Your Reference: Indigenous Archaeological Assessment at Tomago

Dear Ms McCardle

Native Title Search Results of Tomago within Port Stephens Council Local Government Area

Thank you for your letter of 22 August 2011.

My search on 23 August 2011 found:

Register Type	NNTT Reference Numbers
National Native Title Register	NN4/12, NN05/2, NN05/7, NN06/5
Register of Native Title Claims	Nil.
Unregistered Claimant applications	Nil.
Register of Indigenous Land Use Agreements	Nil.

I have included a NNTT Registers fact sheet to help you understand the search result.

Please note that 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 in the Federal Court may not appear on the Tribunal's databases.

If you need additional information please call me on 1800 640 501.

Yours sincerely



Nakari Thorpe
Senior Case Management Assistant

Telephone (02) 9227 4004

Facsimile (02) 9227 4030

Email Nakari.thorpe@nntt.gov.au

Encl



**NATIONAL NATIVE
TITLE TRIBUNAL**

Extract from the National Native Title Register

Federal Court Number: NSD1989/04

Federal Court Name: Worimi Local Aboriginal Land Council v Minister for Lands for the State of New South Wales (No 2)

Determining Body: Federal Court of Australia

Determination Date: 18/12/2008

Additional Information:
Not Applicable

Matters Determined:

THE COURT ORDERS THAT:

1. No native title exists in relation to NSW Department of Lands Certificate of Title folio identifier 576 in Deposited Plan 48823 and located in the Local Government Area of Port Stephens, Parish of Tomaree, County of Gloucester, State of New South Wales.

End of Entry



**NATIONAL NATIVE
TITLE TRIBUNAL**

Extract from the National Native Title Register

Federal Court Number: NSD12/05

Federal Court Name: Peter Hillig in his capacity as administrator of Worimi Local Aboriginal Land Council v Minister for Lands for the State of New South Wales

Determining Body: Federal Court of Australia

Determination Date: 28/11/2005

Additional Information:
Not Applicable

Matters Determined:

No native title exists in relation to New South Wales Department of Lands Certificate of Title folio identifier 220 of Deposited Plan 1049608 located in the Local Government Area of Port Stephens, Parish of Tomaree, County of Gloucester, State of New South Wales.

End of Entry



**NATIONAL NATIVE
TITLE TRIBUNAL**

Extract from the National Native Title Register

Federal Court Number: NSD396/05

Federal Court Name: Peter Hillig in his capacity as administrator of Worimi Local Aboriginal Land Council v Minister for Lands for the State of New South Wales

Determining Body: Federal Court of Australia

Determination Date: 28/11/2005

Additional Information:
Not Applicable

Matters Determined:

No native title exists in relation to New South Wales Department of Lands Certificate of Title folio identifiers 216 and 218 of Deposited Plan 1044608, located in the Local Government Area of Port Stephens, Parish of Tomaree, County of Gloucester, State of New South Wales.

End of Entry



**NATIONAL NATIVE
TITLE TRIBUNAL**

Extract from the National Native Title Register

Federal Court Number: NSD34/06

Federal Court Name: Hillig as Administrator of Worimi Local Aboriginal Land Council v
NSW Native Title Services Ltd

Determining Body: Federal Court of Australia

Determination Date: 01/09/2006

Additional Information:
Not Applicable

Matters Determined:

THE COURT ORDERS THAT:

1. No native title exists in relation to the property referred to as NSW Department of Lands Certificate of Title folio identifier 473 of Deposited Plan 728126 and located in the Local Government Area of Port Stephens, Parish of Tomaree, County of Gloucester, State of New South Wales.

End of Entry



Searching the NNTT Registers in New South Wales

Search service

On request the National Native Title Tribunal will search its public registers for you. A search may assist you in finding out whether any native title applications (claims), determinations or agreements exist over a particular area of land or water.

In New South Wales native title cannot exist on privately owned land including family homes or farms.

What information can a search provide?

A search can confirm whether any applications, agreements or determinations are registered in a local government area. Relevant information, including register extracts and application summaries, will be provided.

In NSW because we cannot search the registers in relation to individual parcels of land we search by local government area.

Most native title applications do not identify each parcel of land claimed. They have an external boundary and then identify the areas not claimed within the boundary by reference to types of land tenure e.g., freehold, agricultural leasehold, public works.

What if the search shows no current applications?

If there is no application covering the local government area this only indicates that at the time of the search either the Federal Court had not received any claims in relation to the local government area or the Tribunal had not yet been notified of any new native title claims.

It does not mean that native title does not exist in the area.

Native title may exist over an area of land or waters whether or not a claim for native title has been made.

Where the information is found

The information you are seeking is held in three registers and on an applications database.

National Native Title Register

The National Native Title Register contains determinations of native title by the High Court, Federal Court and other courts.

Register of Native Title Claims

The Register of Native Title Claims contains applications for native title that have passed a registration test.

Registered claims attract rights, including the right to negotiate about some types of proposed developments.

Register of Indigenous Land Use Agreements

The Register of Indigenous Land Use Agreements contains agreements made with people who hold or assert native title in an area.

The register identifies development activities that have been agreed by the parties.

Application summaries

An application summary contains a description of the location, content and status of a native title claim.

This information may be different to the information on the Register of Native Title Claims, e.g., because an amendment has not yet been tested.

How do you request a search?

A search request form is available on the Tribunal's web site at:
<http://www.nntt.gov.au/registers/search.html>
This form says how much searches cost.
Mail, fax or email your request to the Tribunal's Sydney registry, identifying the local government area/s you want searched.

Email: SydneySearch@nntt.gov.au

Fax: (02) 9227 4030

Address: GPO Box 9973, Sydney NSW 2001

Phone: (02) 9227 4000



Office of
Environment
& Heritage

Your reference:
Our reference: DOC11/38768
Contact: Rosalie Neve
Date: 29 August 2011

Ms Penny McCardle
McCardle Cultural Heritage
PO Box 166
ADAMSTOWN
NSW 2289

COPY

Dear Ms McCardle

RE: PROPOSED INDIGENOUS ARCHAEOLOGICAL ASSESSMENT AT TOMAGO, NSW

I refer to your correspondence, dated 22 August 2011, to the Office of Environment and Heritage (OEH) for your project located within Port Stephens LGA and described as proposed Indigenous archaeological assessment at Tomago, NSW.

Please find attached a list of known Aboriginal parties that OEH considers is likely to have an interest in your development. I note this is not necessarily an exhaustive list of all interested Aboriginal parties. Receipt of this list does not remove the requirement for a proponent/consultant to advertise the proposal in the local print media and contact other bodies and community groups seeking interested Aboriginal parties, in accordance with the 'Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010' (CRs)

OEH would also like to take this opportunity to remind the proponent or consultant of a number of key issues we have been encountering of late, and we'd ask your organisation to take note and ensure compliance please. These issues include:

- Please ensure the project documents the full consultation process in the Aboriginal cultural heritage assessment report or Aboriginal Heritage Impact Permit application and to include copies of all correspondence sent or received from all relevant stakeholders (including Aboriginal stakeholders and the agencies listed in section 4.1.2). *Omission of these records in the final report may cause delays in approval or require parts of the consultation process to be repeated if the evidence provided to OEH does not demonstrate that the consultation process has been fair, equitable and transparent.*
- *Unless OEH is provided with evidence that reasonable attempts have been made to contact the relevant parties associated with the CRs, then OEH will deem that the consultation process has not been complied with.*
- OEH considers *evidence of reasonable efforts* to contact relevant parties would include, but not be limited to, multiple forms of communication; faxes (with confirmation slips demonstrating successful transmission), an e-mail log, registered post details, copies of letters and a phone call log.

The Department of Environment, Climate Change and Water is now known as the Office of Environment and Heritage, Department of Premier and Cabinet

Locked Bag 914, Coffs Harbour NSW 2450
Federation House, Level 7, 24 Moonee Street
Coffs Harbour NSW
Tel: (02) 6651 5946 Fax: (02) 6651 6187
ABN 30 841 387 271
www.environment.nsw.gov.au

- *Please note Appendix A of the 2010 CRs contains a map illustrating the region of OEH to contact according to which local government area your project falls within. Full details of the consultation requirements and the relevant Fact Sheets can be located on our website at: <http://www.environment.nsw.gov.au/licences/consultation.htm>.*
- *If you encounter any changes to the contact details of interested Aboriginal parties, or become aware of additional parties, we encourage you to forward this information to OEH so we can update our records.*
- *Consultation must be fair, equitable and transparent. If the Aboriginal parties express concern or are opposed to parts or your entire project, OEH expects that evidence will be provided to demonstrate the efforts made to find common ground between the two perspectives.*

If you have any further questions regarding this matter, please contact me on (02) 6659 8221.

Yours sincerely



ROSALIE NEVE
Aboriginal Heritage Planning Officer
Environment Protection and Regulation Group
Office of Environment and Heritage
Department of Premier and Cabinet

Enclosure:

1. Maaiangal Aboriginal Heritage
Carol Ridgeway-Bissett
5 Ondine Close
NELSONS BAY NSW 2315
(02) 4984 3113
2. Mur-Roo-Ma Inc.
Anthony Anderson
7 Vardon Road
FERN BAY NSW 2295
(02) 4928 1910
murroomainc1@gmail.com
3. Nur-Run-Gee Pty Ltd
Lea Anderson
22 Popplewell Road
FERN BAY NSW 2295
goodman@kooee.com.au
4. Worimi Aboriginal Community Co-operative
Cheryl Hendry
17a Wahgunyah Road
NELSON BAY NSW 2315
(02) 4981 4559
5. Worimi Local Aboriginal Land Council
Andrew Smith
PO Box 56
TANILBA BAY NSW 2319
(02) 4965 1500
(02) 4965 1799
worimi@bigpond.com
6. Garrigal Aboriginal Community Inc.
Del Arnold
PO Box 182
GLOUCESTER NSW 2422
(02) 6658 8139
(02) 4994 7004
7. Do-Wa-Kee
Mick Leon
PO Box 22
TAREE NSW 2430
(02) 65527856
(02) 65527543
0449213802
m.leon@tide.org.au

BUSINESS OPPORTUNITIES

DEVELOPMENT OPPORTUNITY

STOCKTON
Expressions of interest are called for the development of land owned by Stockton RSL & Citizens Club via lease or sale. Located adjacent to the Club and in close proximity to Newcastle CBD and Newcastle Airport the available land is zoned Residential and may be suitable for a motel or apartment development (subject to Council approval). The approximate area of land available is 210m² with the lease or sale of either to be considered. Those interested should provide details of their proposals to the Club (PO BOX 33 Stockton NSW 2295) by 30 September 2011 (no extension of time unless the Club agrees in writing). Details of the available land and additional information can be obtained from:
Michele Sutherland (General Manager)
Phone: 02 4928 2333
Email: stocktonrsl@hunterlink.net.au

ESP

Elder St Practice, Lambton is extending! EXPRESSIONS OF INTEREST sought from **ALLIED HEALTH PROFESSIONALS** to share rooms in this dynamic General Practice. Ph: Dr. John Fluit on 0418 296 654

NELSON BAY premises for lease. 77 Victoria Pk. Currently trading as Nelson Bay Sports & Tackle. Approx 140m sq of retail business space. Outstanding position opposite Nelson Bay Marina. Current tenant retiring after 20yrs in business. Ph: 0428 651 769

SURF SCHOOL

50% SHARE. Mix great income with a great lifestyle. No direct competitors covering the whole Pt Stephens area. Be a part of an established business within one of NSW major tourism destinations. Business is ready to go with experienced partner. New/quality equipment with vehicle included. Owner wanting quick sale. Call 0423 931 119

BUS TOURS & TRAVEL

Advance Motor Home & Campervan Rentals
Bookings phone 4981 8583

HEALTH, BEAUTY & FITNESS

At Charlestown Thai Massage
● Traditional Thai
● Essential Oil
● Foot Reflexology
● Aromatherapy
OPEN 7 Days
10am to 8pm
185 Pacific Hwy
4943 0023
No Appointment Necessary

At Hamilton Thai Massage
\$70.00
ONE HOUR
Open 7 days 9am-8pm
56 Cleary St Ph: 4961 4839
Eftpos-Visa-Mastercard
hamiltonthaimassage.com.au

FREE
Haircut, Style and Colour (valued at \$500) by one of Australia's award winning Hair Artists. Must be avail 12th Sept (am and pm) Call 0410 558 842 to grab this opportunity
MASSAGE
Indian, Remedial, Swedish. Bookings 4956 4309 or 0410 640 695.

Newcastle Thai Massage
● Traditional Thai
● Essential Oil
● Foot Reflexology
● Aromatherapy
OPEN 7 Days
10am-8pm
78 Hannell St, Wickham
4962 1007
No Appointment Necessary

In Pain Like Me
The Pain Relief King
Distributor for N'cie.
Steve 0438 632 717

SERIOUS people needed to LOSE WEIGHT. Phone 0414 883 378 or text WEIGHT LOSS

HEALTH, BEAUTY & FITNESS

Warunee Thai Massage
Tradition Thai
Open 7 days 9am-9pm.
7 Cintra Cr, Raymond Tce
4987 4991 0434 37 8534

LOST AND FOUND

FOUND: A pair of glasses. Bi-focal. Found in Armadale Ave. Ph: 4981 2997

FOUND SOMETHING?
Advertise it FREE in our Lost and Found section That's right - maximum 4 lines FREE!
PHONE 131 696

FINANCE AND SHARES

CASH EXPRESS Cash Loans. Cheques Cashed, 1 hour approval. Shop 9, Gazebo Plaza, Raymond Terrace 9.30-4 Mon-Fri. 49832 464.
CASH loans - Fast! Up to \$5000. Bad credit considered. We don't need security! Ph: 1300 661 991
www.safefinance.com.au

Quick Fix Loan\$
Instant cash against your car, boat, truck, m/bike etc. Loan ok'd in mins. No credit/emp. checks. Business or personal 0434 971 010 7-days

PERSONAL

Christian Singles
Established 13 years. Any nice singles can join! FREE colour brochure! Ph 4955 5445

SINGLE male 55 would like to meet lady for friendship and outings. Phone 4982 3796 or 0437 281 988

PUBLIC ANNOUNCEMENTS

Annual General Meeting
10am on 13th November 2011 at the Hunter Region Botanic Gardens Ltd. Nominations for the positions of Directors of the Board close on Tuesday 4th October 2011. Nomination forms are available on request. Ph: 4987 1655

BOAT LICENCE

Marine radio, coxswain and deckhand training. Courses weekly. www.allhandsondeck.com.au Phone 0434 803 687

CATTLE IMPOUNDED
Impounded from Williamtown on 29 August 2011. 2 x Hereford Heifers, 2 x Hereford Bulls are being held at Port Stephens Animal Refuge, Cabbage Tree Rd Williamtown. Ph: 4965 0100. If not released by the owner by 12 Sept. will be disposed of in accordance with the Impounding Act.

Dr Tracy Larkman
No longer works at the Novocastrian Skin Cancer Clinic. All skin care is done at General Practice, Unit 1/42 Harrison Street, Cardiff. Ph: 4903 9000.

GOLF LESSONS
Greg Ramsey 0412 246 186
GUIDED Meditation Classes Daytime and Evenings Enquire Sue 0413 701 408

PUBLIC ANNOUNCEMENTS

KINDERMUSIK
18mths - 5 Years. Medowie. Enrolling now for Term 4. Phone for free trial class 0437 045 019
www.danismicstudio.com.au

MARKETS

This Sunday 11th September Tomaree Sports Complex
Everyone Welcome
Stall bookings essential
Stall Holders Wanted
"FREE parking in complex"
Enquiries:
4981 3565

NELSON BAY Golf Club Annual General Meeting Lady Members will be held at Nelson Bay Golf Club Tuesday 11th October 2011 at 9am. Nominations for Committee positions close with the Secretary 14 days prior to the meeting on 27th September 2011. Motions and General Business must be in writing closing with the Secretary 14 days prior to the meeting on 27th September 2011. Nine holes of golf will be played at the conclusion of the meeting.
Karen Flatt Secretary

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Mur-roo-ma Inc

9 Vardon Road Fern Bay
2295 N.S.W Australia

ABN : 978 077 194 84

Phone / Fax : 02 49281910

Mobile : 0402 82 74 82

E-mail : murroomainc1@gmail.com

To McCardle Cultural

Heritage Pty

8/9/2011

Re Proposed Project At Tomago

Thank you for the opportunity to have an input into this project.

Mur-roo-ma Inc would like to register their interest in the above project

We are local Worimi traditional owners with extensive Cultural Knowledge and 20 years experience in sites investigations of our local area

and would like to formally offer our services through our knowledge

holders Mr Anthony Anderson and Mrs Rebecca Young and to share our knowledge to create the best outcome for all concerned. Mur-roo-ma Inc has relevant insurances which can be forward if requested .

Please don't hesitate to contact me if you need any further information.

Contact Person

Anthony Anderson Mo 0402827482

E-mail murroomainc1@gmail.com

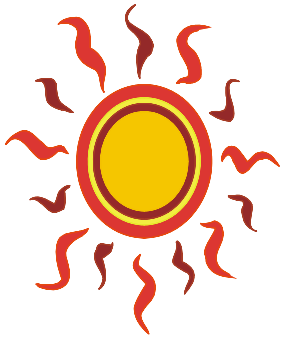
Kind regards

Anthony Anderson

Worimi Traditional Custodian

CEO of Mur-roo-ma Inc

Nur-Run-Gee Pty Ltd
ABN 37 096 307 701



**CULTURAL AND HERITAGE
CONSULTANT
LICENCED BUILDER**

22 Popplewell Road
Fern Bay 2295

Phone: 02 49 201578
Mobile: 0408 618 874 Leanne
Mobile: 0431 334 365 Lennie
Email:
goodman@kooe.com.au

McCardle Cultural and Heritage
Attention Penny McCardle
PO Box 166
Adamstown NSW 2289

12th September 2011

Dear Penny

Re: Proposed Project at Tomago

In regard to further information re the expression of interest for the Proposed project at Tomago.

As per 4.1.5 & 4.1.6 of the new consultation guidelines, Nur-Run-Gee P/L is happy for MCH to forward to DECCW and WLALC that our company is an interested party in this project **BUT** we expressively request that no additions beyond our company name to be released to the WLALC. To be clear no individual staff details are to be divulged to the WLALC under any circumstances. If the WLALC require further clarification they can contact Nur-Run-Gee P/L direct.

Nur-Run-Gee P/L nominates for ALL projects the 3 following staff members

Mr Lennie Anderson – Traditional Owner

WLALC member

Indigenous Archaeologist

DECCW trained Aboriginal Sites Officer

Senior First Aid Certificate

General Construction OHS Green Card

Mr Chris Collison - DECCW trained Aboriginal Sites Officer

Senior First Aid Certificate

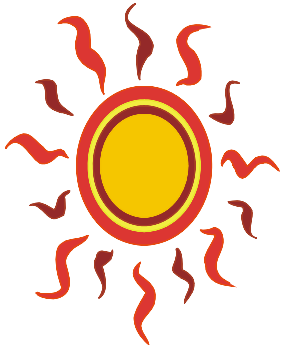
General Construction OHS Green Card

Leanne Anderson - DECCW trained Aboriginal Sites Officer

Senior First Aid Certificate

General Construction OHS Green Card

Nur-Run-Gee Pty Ltd
ABN 37 096 307 701



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Fern Bay 2295

Phone: 02 49 201578
Mobile: 0408 618 874 Leanne
Mobile: 0431 334 365 Lennie
Email:
goodman@kooe.com.au

McCardle Cultural and Heritage
Attention Penny McCardle
PO Box 166
Adamstown NSW 2289

12th September 2011

Dear Penny

Re: Proposed Project at Tomago

Nur-Run-Gee Pty Ltd wishes to be consulted about the proposed project at Tomago and wish to register their expression of interest.

We are an Indigenous company that can offer the services of Cultural and Heritage Consultants and qualified Indigenous sites/field officers with over 20 years experience. All staff have their Greencard qualifications and are fit and able to carry out field work.

Nur-Run-Gee Pty Ltd has relevant insurances which can be forwarded if requested along with staff qualifications.

Looking forward to hearing from you.

If you have any further enquiries please do not hesitate to contact us.

Yours Sincerely

Lennie Anderson

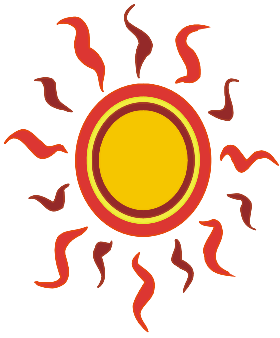
Worimi Traditional Owner

Indigenous Archaeologist

Director

Nur-Run-Gee Pty Ltd

Nur-Run-Gee Pty Ltd
ABN 37 096 307 701



**INDIGENOUS ARCHAEOLOGIST
CULTURAL AND HERITAGE
CONSULTANT
LICENCED BUILDER**

22 Popplewell Road
Fern Bay 2295

Phone: 02 49 201578
Mobile: 0408 618 874 Leanne
Mobile: 0431 334 365 Lennie
Email:
goodman@kootee.com.au

Networks Within The Worimi Community

MCH

Proposed Project at Tomago

Knowledge, Relationship and Association to the Local Country

- Nur-Run-Gee Pty Ltd works exclusively within the Worimi Traditional Boundaries
- Over 20 years field experience
- All staff are DECCW trained Aboriginal Sites Officers
- Nur-Run-Gee Pty Ltd can provide a Cultural and Heritage report if requested.

Networks Within Aboriginal Community and Ability to Represent the Community

- Native Title Claimant
- Registered Native Title Owners
- Members of Worimi Local Aboriginal Land Council

23 September 2011

Anthony Anderson
Mur-Roo-Ma Inc
7 Vardon Road
Fern Bay NSW 2295



*McCardle Cultural
Heritage Pty Ltd*

PO Box 166
ADAMSTOWN NSW 2289

Mobile: 0412 702 396
Fax: 4952 5501

Email: mcheritage@iprimus.com.au

MCH Reference: Information pack

Dear Anthony,

RE: NORTHBANK ENTERPRISE HUB AT TOMOGO INFORMATION PACK

I would like to thank you for registering your interest in this project. MCH sent a letter extending an invitation to register your interest and asking if you would prefer to have a meeting to discuss the project or have an information pack sent to you (as per the OEH Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010). MCH did not receive your preferred option and as such are sending you the information pack.

As per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), please find enclosed an information pack that details the project, the roles and responsibilities of all parties, details of the proposed methodologies and maps showing the location and extent of the study area.

In addition to this, the purpose of the information pack is also to ensure all parties have an understanding of the project, critical time lines, that cultural knowledge is obtained from the appropriate individuals, any issues or concerns can be addressed, the methods of survey are agreed upon and the new guidelines are met.

In line with the OEH requirements, we ask that you provide the required information **no later than 13 October 2011**. MCH have also included a selection of pro formes that ensure all the required information is obtained to meet the DECCW requirements. You may wish to utilise the forms attached for your convenience or use of your own forms are encouraged.

As stated in the OEH requirements, advertisement for this project and letter of invitation to register for this project, registration for this project is for Aboriginal people who hold cultural knowledge (passed down in the traditional manner) 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 a process of community consultation. To this end, as stated in the OEH requirements you must nominate the contact person(s) who hold the cultural knowledge and provide written confirmation and contact details of this person or persons whom you represent. If it is you that holds traditional knowledge, please provide the same details.

Please note that failure to provide the required information by the date provided will result in a missed opportunity for you or knowledge holders to contribute to your cultural heritage and the project will proceed.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

A handwritten signature in dark ink, appearing to read 'Penny McCardle', with a long horizontal flourish extending to the right.

Penny McCardle
Principal Archaeologist

As per the OEH Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), MCH would like to provide the following information in relation to the Archaeological investigation at Tomogo.

1 OVERVIEW

McCardle Cultural Heritage Pty Ltd (MCH) has been commissioned by ADW Johnson to prepare a Due Diligence Archaeological Assessment for the proposed industrial subdivision of Lot 1001 DP 1127780 along Tomogo Road, at Tomogo. This project is referred to as the Northbank Enterprise Hub.

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 value will be identified and appropriate management recommendations will be established through consultation with the registered Aboriginal parties.

1.1 STUDY AREA

The study area is defined by the proponent and is located approximately 6 kilometres south of Raymond Terrace and 8 kilometres west of Williamtown along the Tomago Road, Tomago. The Northbank Enterprise Hub includes Lot 1001 DP 1127780 and includes approximately 239 hectares of land. The location and extent of the study area is illustrated in *Figure 1.1*.

1.2 OUTLINE OF THE PROJECT

1.2.1 Project outline

The proposed development is for a subdivision and associated filling and earthworks, roads and services to be known as the Northbank Enterprise Hub.

The proposed development is for the following:

- To fill the majority of the site to the 1:100 year flood level (fill area approximately 3.7 million cubic metres);
- A subdivision of the land for future development purposes. The design of the subdivision is intended to provide flexibility for future occupants of the site (currently unknown);
- The provision of two (2) new intersections from Tomago Road and a new internal road network to access all allotments;
- The existing power lines that traverse the site along a portion of the Tomago Road frontage;
- The New drainage and water quality management infrastructure;
- The provision of a constructed wetland at the southern section of the site; and
- New landscaping throughout the site including public open space areas at the south western, north western (adjacent to Tomago house) and southern sections of the site.

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

At this time no specific use of the land is proposed and the future uses would be subject to separate future approval.

1.2.2 *Impacts*

The site is subject to inundation by regional floods from the Hunter River and as such filling of the site is necessary for development of the subdivision. The majority of the site will be filled to the 1:100 year flood level excluding a number of key areas including a heritage park, a significant area adjacent the Hunter River to be maintained for the purpose of flood way and as a riverside open space area. All material will be transported to the site via road (truck and dog). This is a process that will occur over a number of years and at different staging intervals as market demand for land dictates. It is not expected that filling of the site will occur in one go. Earthworks will result in appropriate finished surface levels directed to drainage channels created as a preference by filling rather than excavation in order to avoid acid sulphate soil exposure.

1.2.3 *Critical archaeological timelines*

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.

Table 1. Project schedule

Stages	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Stage 1: consultation										
Stage 2:survey										
Stage 3: reporting										
Stage 4: finalisation										

1.3 *METHODS OF INVESTIGATION*

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

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, it at

times it may be these organisations that 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).

In some cases the information provided may be sensitive and MCH and the proponent will not share that information with all registered Aboriginal parties or others without the express permission of the individual.

MCH and the proponent would like to develop and implement appropriate protocols for sourcing and holding cultural information. To this end, MCH and the proponent would like to extend an invitation to provide any cultural knowledge you have and any restrictions you would like to place on your information, as well as your preferred method of providing that information.

Archaeological assessment:

This entails an archaeological assessment of the proposed project area. It includes the gathering of both environmental and archaeological information to gain an understanding of the environment, disturbances and provide a predictive model for the proposed project area.

Following the completion of the survey, a report that includes detailed environmental and archaeological background, results, discussion, the cultural significance as determined by the registered Aboriginal parties and mitigation measures will be provided to all registered parties for their review. This will also include opportunities for the registered Aboriginal parties to provide feedback on any management or mitigation recommendations.

All registered parties will also be required to provide their own report/letter within a specified time and a copy of the final report will be provided to all parties.

1.3.1 *Survey methodology*

The entire study area will be surveyed on foot in transects of approximately 5-10 metres apart. This will ensure the entire study area has been covered and any evidence of past occupation, Potential Archaeological Deposits (PADs) and disturbances will be identified.

1.4 *ROLES, RESPONSIBILITIES AND FUNCTIONS OF PARTIES*

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

Office of Environment and Heritage (OEH), (formerly DECCW):

The Director General of OEH 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 OEH is responsible for ensuring the AHIP holder complies with those conditions. When considering an application under Part 6 of the NPW Act, the Director General 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 OEH is responsible for administering the regulatory functions under Part 6 of the NPW Act.

OEH expects that proponents and Aboriginal people should:

- be aware that Part 6 of the NPW Act establishes the Director General or delegate of OEH as the decision-maker
- recognise that the Director General's (or delegates) decisions may not be consistent with the views of the Aboriginal community and/or the proponent. However, OEH will take into account all relevant information it receives as part of its decision-making process.

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
- the need for culturally appropriate assessment findings relevant to their project.

Under these requirements, proponents should undertake the following:

- bring the registered Aboriginal parties 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 registered Aboriginal parties 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 OEH of consultation by including information relevant to the cultural perspectives, views, knowledge and advice provided by the registered Aboriginal parties
- accurately record and clearly articulate all consultation findings in the final cultural heritage assessment report

Registered Aboriginal parties:

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 OEH 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
- 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)
- need to work efficiently within the project's time and provide feedback in a timely manner

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.

1.5

CONSULTATION NOT EMPLOYMENT

The following is taken from DECCW (2010).

Consultation with registered Aboriginal parties involves obtaining the views of, and information from, Aboriginal parties and reporting on these. It should not 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 may reimburse Aboriginal people for any demonstrated reasonable out-of-pocket expenses directly incurred in order to participate in the consultation process. A demonstrated reasonable expense would include documented loss of wages caused by the need to take time from paid employment to participate in meetings.

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 (i.e. pay disputes) for Aboriginal people.

1.6

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. If you would like to be considered for 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, however paid participation is determined by the proponent.

1.7

FORMS

You will find a number of forms attached for your convenience. 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 all the questions and return to MCH no later than **13 October 2011**.

Forms attached:

- 1) Register of cultural knowledge holder
- 2) Cultural significance
- 3) Comments on proposed methodology
- 4) Field work selection criteria

COMMENTS ON PROPOSED METHODOLOGY

Tomogo

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 the appropriate box, sign and return to MCH (Fax: 4952 5501).

I, _____ (please insert your name) of _____ (please insert the name of your group), **agree to the methodology** outlined by MCH in relation to the proposed project.

Additional comments:

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 relation to the proposed

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: _____

CULTURAL SIGNIFICANCE

Tomogo

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 the appropriate box, sign and return to MCH, (Fax: 4952 5501).

As per the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), the proponent seeks information on the following:

1) are there Aboriginal objects of cultural value in the proposed project area?

2) Are there Aboriginal places of cultural value to the Aboriginal people in the area of the proposed project? This may include places of social, spiritual and cultural value, historic places with cultural significance, and potential places/areas of historic, social, spiritual and/or cultural significance.

3) Is there any other cultural information in relation to the proposed project area?

4) MCH and the proponent would like to develop and implement appropriate protocols for sourcing and holding cultural information. Please provide your preferred method of providing detailed information on the above (e.g. written, verbal, this form) and any restrictions you would like to place on your information.

REGISTER OF CULTURAL KNOWLEDGE HOLDER

Tomogo

MCH and the proponent would like to facilitate a process whereby all registered Aboriginal parties are provided the opportunity to contribute to culturally appropriate information gathering, provide information that will enable the cultural significance of Aboriginal sites/places on the project area to be determined, and have input into the development of any cultural heritage management options. To enable this to occur, it is necessary to consult with the cultural knowledge holder(s).

To this end, as per the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), you are required to provide details of the individual(s) who hold cultural knowledge (according to traditional lore) relevant to the project area. If your groups has no knowledge holders, this is important information too.

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 the appropriate box, sign and return to MCH, (Fax: 4952 5501).

Please fill in the following information for cultural knowledge holder(s). If there are more than three in your organisation please feel free to attach another sheet. If there are no knowledge holders in your group please send back blank.

Name: _____

Address: _____

Phone: _____ Mobile: _____

Fax: _____ E-mail: _____

Name: _____

Address: _____

Phone: _____ Mobile: _____

Fax: _____ E-mail: _____

Name: _____

Address: _____

Phone: _____ Mobile: _____

Fax: _____ E-mail: _____

ABORIGINAL COMMUNITY SELECTION CRITERIA FOR FIELDWORK

Tomogo

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 and return to MCH (Fax: 4952 5501).

Ability to assist in communicating the results of the fieldwork back to the registered Aboriginal parties for the assessment of cultural significance and returning advice on their response to MCH.

Please provide details on your ability to discuss results of field work, ability to effectively provide a cultural heritage report in an appropriate time frame.

Experience in field

Please nominate at least two individuals who will be available and fit for work (physically able to undertake field work) who may participate in the field work and their relevant experience (please attach CV's, certificates and references)

Name	
Experience	
Name	
Experience	

Price Per person (experienced person)

Hour	\$	inc GST & travel
Half day	\$	inc GST & travel
Full day	\$	inc GST & travel

Price Per person (inexperienced/trainee)

Hour	\$	inc GST & travel
Half day	\$	inc GST & travel
Full day	\$	inc GST & travel

Please note that the actual rate of pay for field work may or may not be your preferred rates, this is dependant on the set development budget.

Insurances

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

Failure to provide up to date Certificate of Currencies will prevent you participating in any fieldwork.

Occupational Health & Safety (OH&S)

All participants are required to comply with MCH and the proponents OH&S requirements. This includes high visibility clothing, hat, sunscreen and steel caped boots. You will be advised of any additional requirements.

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

23 September 2011



*McCardle Cultural
Heritage Pty Ltd*

PO Box 166
ADAMSTOWN NSW 2289

Mobile: 0412 702 396
Fax: 4952 5501

Email: mcheritage@iprimus.com.au

Lennie Anderson
Nur-Run-Gee Pty Ltd
22 Popplewell Road
Fern Bay NSW 2295

MCH Reference: Information pack

Dear Lennie,

RE: NORTHBANK ENTERPRISE HUB AT TOMOGO INFORMATION PACK

I would like to thank you for registering your interest in this project. MCH sent a letter extending an invitation to register your interest and asking if you would prefer to have a meeting to discuss the project or have an information pack sent to you (as per the OEH Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010). MCH did not receive your preferred option and as such are sending you the information pack.

As per the Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), please find enclosed an information pack that details the project, the roles and responsibilities of all parties, details of the proposed methodologies and maps showing the location and extent of the study area.

In addition to this, the purpose of the information pack is also to ensure all parties have an understanding of the project, critical time lines, that cultural knowledge is obtained from the appropriate individuals, any issues or concerns can be addressed, the methods of survey are agreed upon and the new guidelines are met.

In line with the OEH requirements, we ask that you provide the required information **no later than 13 October 2011**. MCH have also included a selection of pro formes that ensure all the required information is obtained to meet the DECCW requirements. You may wish to utilise the forms attached for your convenience or use of your own forms are encouraged.

As stated in the OEH requirements, advertisement for this project and letter of invitation to register for this project, registration for this project is for Aboriginal people who hold cultural knowledge (passed down in the traditional manner) 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 a process of community consultation. To this end, as stated in the OEH requirements you must nominate the contact person(s) who hold the cultural knowledge and provide written confirmation and contact details of this person or persons whom you represent. If it is you that holds traditional knowledge, please provide the same details.

Please note that failure to provide the required information by the date provided will result in a missed opportunity for you or knowledge holders to contribute to your cultural heritage and the project will proceed.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

A handwritten signature in dark ink, appearing to read 'Penny', with a long horizontal flourish extending to the right.

Penny McCardle
Principal Archaeologist

As per the OEH Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), MCH would like to provide the following information in relation to the Archaeological investigation at Tomogo.

1 OVERVIEW

McCardle Cultural Heritage Pty Ltd (MCH) has been commissioned by ADW Johnson to prepare a Due Diligence Archaeological Assessment for the proposed industrial subdivision of Lot 1001 DP 1127780 along Tomogo Road, at Tomogo. This project is referred to as the Northbank Enterprise Hub.

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 value will be identified and appropriate management recommendations will be established through consultation with the registered Aboriginal parties.

1.1 STUDY AREA

The study area is defined by the proponent and is located approximately 6 kilometres south of Raymond Terrace and 8 kilometres west of Williamtown along the Tomago Road, Tomago. The Northbank Enterprise Hub includes Lot 1001 DP 1127780 and includes approximately 239 hectares of land. The location and extent of the study area is illustrated in *Figure 1.1*.

1.2 OUTLINE OF THE PROJECT

1.2.1 Project outline

The proposed development is for a subdivision and associated filling and earthworks, roads and services to be known as the Northbank Enterprise Hub.

The proposed development is for the following:

- To fill the majority of the site to the 1:100 year flood level (fill area approximately 3.7 million cubic metres);
- A subdivision of the land for future development purposes. The design of the subdivision is intended to provide flexibility for future occupants of the site (currently unknown);
- The provision of two (2) new intersections from Tomago Road and a new internal road network to access all allotments;
- The existing power lines that traverse the site along a portion of the Tomago Road frontage;
- The New drainage and water quality management infrastructure;
- The provision of a constructed wetland at the southern section of the site; and
- New landscaping throughout the site including public open space areas at the south western, north western (adjacent to Tomago house) and southern sections of the site.

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

At this time no specific use of the land is proposed and the future uses would be subject to separate future approval.

1.2.2 *Impacts*

The site is subject to inundation by regional floods from the Hunter River and as such filling of the site is necessary for development of the subdivision. The majority of the site will be filled to the 1:100 year flood level excluding a number of key areas including a heritage park, a significant area adjacent the Hunter River to be maintained for the purpose of flood way and as a riverside open space area. All material will be transported to the site via road (truck and dog). This is a process that will occur over a number of years and at different staging intervals as market demand for land dictates. It is not expected that filling of the site will occur in one go. Earthworks will result in appropriate finished surface levels directed to drainage channels created as a preference by filling rather than excavation in order to avoid acid sulphate soil exposure.

1.2.3 *Critical archaeological timelines*

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.

Table 1. Project schedule

Stages	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Stage 1: consultation										
Stage 2:survey										
Stage 3: reporting										
Stage 4: finalisation										

1.3 *METHODS OF INVESTIGATION*

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

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, it at

times it may be these organisations that 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).

In some cases the information provided may be sensitive and MCH and the proponent will not share that information with all registered Aboriginal parties or others without the express permission of the individual.

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- 2) Cultural significance
- 3) Comments on proposed methodology
- 4) Field work selection criteria

COMMENTS ON PROPOSED METHODOLOGY

Tomogo

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I, _____ (please insert your name) of _____ (please insert the name of your group), **agree to the methodology** outlined by MCH in relation to the proposed project.

Additional comments:

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 relation to the proposed

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: _____

CULTURAL SIGNIFICANCE

Tomogo

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3) Is there any other cultural information in relation to the proposed project area?

4) MCH and the proponent would like to develop and implement appropriate protocols for sourcing and holding cultural information. Please provide your preferred method of providing detailed information on the above (e.g. written, verbal, this form) and any restrictions you would like to place on your information.

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To this end, as per the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), you are required to provide details of the individual(s) who hold cultural knowledge (according to traditional lore) relevant to the project area. If your groups has no knowledge holders, this is important information too.

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Please fill in the following information for cultural knowledge holder(s). If there are more than three in your organisation please feel free to attach another sheet. If there are no knowledge holders in your group please send back blank.

Name: _____

Address: _____

Phone: _____ Mobile: _____

Fax: _____ E-mail: _____

Name: _____

Address: _____

Phone: _____ Mobile: _____

Fax: _____ E-mail: _____

Name: _____

Address: _____

Phone: _____ Mobile: _____

Fax: _____ E-mail: _____

ABORIGINAL COMMUNITY SELECTION CRITERIA FOR FIELDWORK

Tomogo

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 and return to MCH (Fax: 4952 5501).

Ability to assist in communicating the results of the fieldwork back to the registered Aboriginal parties for the assessment of cultural significance and returning advice on their response to MCH.

Please provide details on your ability to discuss results of field work, ability to effectively provide a cultural heritage report in an appropriate time frame.

Experience in field

Please nominate at least two individuals who will be available and fit for work (physically able to undertake field work) who may participate in the field work and their relevant experience (please attach CV's, certificates and references)

Name	
Experience	
Name	
Experience	

Price Per person (experienced person)

Hour	\$	inc GST & travel
Half day	\$	inc GST & travel
Full day	\$	inc GST & travel

Price Per person (inexperienced/trainee)

Hour	\$	inc GST & travel
Half day	\$	inc GST & travel
Full day	\$	inc GST & travel

Please note that the actual rate of pay for field work may or may not be your preferred rates, this is dependant on the set development budget.

Insurances

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

Failure to provide up to date Certificate of Currencies will prevent you participating in any fieldwork.

Occupational Health & Safety (OH&S)

All participants are required to comply with MCH and the proponents OH&S requirements. This includes high visibility clothing, hat, sunscreen and steel caped boots. You will be advised of any additional requirements.

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

As per the OEH Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), MCH would like to provide the following information in relation to the Archaeological investigation at Tomogo.

1 OVERVIEW

McCardle Cultural Heritage Pty Ltd (MCH) has been commissioned by ADW Johnson to prepare a Due Diligence Archaeological Assessment for the proposed industrial subdivision of Lot 1001 DP 1127780 along Tomogo Road, at Tomogo. This project is referred to as the Northbank Enterprise Hub.

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 value will be identified and appropriate management recommendations will be established through consultation with the registered Aboriginal parties.

1.1 STUDY AREA

The study area is defined by the proponent and is located approximately 6 kilometres south of Raymond Terrace and 8 kilometres west of Williamtown along the Tomago Road, Tomago. The Northbank Enterprise Hub includes Lot 1001 DP 1127780 and includes approximately 239 hectares of land. The location and extent of the study area is illustrated in *Figure 1.1*.

1.2 OUTLINE OF THE PROJECT

1.2.1 Project outline

The proposed development is for a subdivision and associated filling and earthworks, roads and services to be known as the Northbank Enterprise Hub.

The proposed development is for the following:

- To fill the majority of the site to the 1:100 year flood level (fill area approximately 3.7 million cubic metres);
- A subdivision of the land for future development purposes. The design of the subdivision is intended to provide flexibility for future occupants of the site (currently unknown);
- The provision of two (2) new intersections from Tomago Road and a new internal road network to access all allotments;
- The existing power lines that traverse the site along a portion of the Tomago Road frontage;
- The New drainage and water quality management infrastructure;
- The provision of a constructed wetland at the southern section of the site; and
- New landscaping throughout the site including public open space areas at the south western, north western (adjacent to Tomago house) and southern sections of the site.

MCH:



Figure 1.1 Regional location of the study area

Source: 1:100 000 Topo Series: Newcastle

At this time no specific use of the land is proposed and the future uses would be subject to separate future approval.

1.2.2 *Impacts*

The site is subject to inundation by regional floods from the Hunter River and as such filling of the site is necessary for development of the subdivision. The majority of the site will be filled to the 1:100 year flood level excluding a number of key areas including a heritage park, a significant area adjacent the Hunter River to be maintained for the purpose of flood way and as a riverside open space area. All material will be transported to the site via road (truck and dog). This is a process that will occur over a number of years and at different staging intervals as market demand for land dictates. It is not expected that filling of the site will occur in one go. Earthworks will result in appropriate finished surface levels directed to drainage channels created as a preference by filling rather than excavation in order to avoid acid sulphate soil exposure.

1.2.3 *Critical archaeological timelines*

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.

Table 1. Project schedule

Stages	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Stage 1: consultation										
Stage 2:survey										
Stage 3: reporting										
Stage 4: finalisation										

1.3 *METHODS OF INVESTIGATION*

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

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, it at

times it may be these organisations that 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).

In some cases the information provided may be sensitive and MCH and the proponent will not share that information with all registered Aboriginal parties or others without the express permission of the individual.

MCH and the proponent would like to develop and implement appropriate protocols for sourcing and holding cultural information. To this end, MCH and the proponent would like to extend an invitation to provide any cultural knowledge you have and any restrictions you would like to place on your information, as well as your preferred method of providing that information.

Archaeological assessment:

This entails an archaeological assessment of the proposed project area. It includes the gathering of both environmental and archaeological information to gain an understanding of the environment, disturbances and provide a predictive model for the proposed project area.

Following the completion of the survey, a report that includes detailed environmental and archaeological background, results, discussion, the cultural significance as determined by the registered Aboriginal parties and mitigation measures will be provided to all registered parties for their review. This will also include opportunities for the registered Aboriginal parties to provide feedback on any management or mitigation recommendations.

All registered parties will also be required to provide their own report/letter within a specified time and a copy of the final report will be provided to all parties.

1.3.1 *Survey methodology*

The entire study area will be surveyed on foot in transects of approximately 5-10 metres apart. This will ensure the entire study area has been covered and any evidence of past occupation, Potential Archaeological Deposits (PADs) and disturbances will be identified.

1.4 *ROLES, RESPONSIBILITIES AND FUNCTIONS OF PARTIES*

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

Office of Environment and Heritage (OEH), (formerly DECCW):

The Director General of OEH 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 OEH is responsible for ensuring the AHIP holder complies with those conditions. When considering an application under Part 6 of the NPW Act, the Director General 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 OEH is responsible for administering the regulatory functions under Part 6 of the NPW Act.

OEH expects that proponents and Aboriginal people should:

- be aware that Part 6 of the NPW Act establishes the Director General or delegate of OEH as the decision-maker
- recognise that the Director General's (or delegates) decisions may not be consistent with the views of the Aboriginal community and/or the proponent. However, OEH will take into account all relevant information it receives as part of its decision-making process.

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
- the need for culturally appropriate assessment findings relevant to their project.

Under these requirements, proponents should undertake the following:

- bring the registered Aboriginal parties 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 registered Aboriginal parties 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 OEH of consultation by including information relevant to the cultural perspectives, views, knowledge and advice provided by the registered Aboriginal parties
- accurately record and clearly articulate all consultation findings in the final cultural heritage assessment report

Registered Aboriginal parties:

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 OEH 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
- 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)
- need to work efficiently within the project's time and provide feedback in a timely manner

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.

1.5

CONSULTATION NOT EMPLOYMENT

The following is taken from DECCW (2010).

Consultation with registered Aboriginal parties involves obtaining the views of, and information from, Aboriginal parties and reporting on these. It should not 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 may reimburse Aboriginal people for any demonstrated reasonable out-of-pocket expenses directly incurred in order to participate in the consultation process. A demonstrated reasonable expense would include documented loss of wages caused by the need to take time from paid employment to participate in meetings.

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 (i.e. pay disputes) for Aboriginal people.

1.6

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. If you would like to be considered for 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, however paid participation is determined by the proponent.

1.7

FORMS

You will find a number of forms attached for your convenience. 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 all the questions and return to MCH no later than **13 October 2011**.

Forms attached:

- 1) Register of cultural knowledge holder
- 2) Cultural significance
- 3) Comments on proposed methodology
- 4) Field work selection criteria

COMMENTS ON PROPOSED METHODOLOGY

Tomogo

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 the appropriate box, sign and return to MCH (Fax: 4952 5501).

I, _____ (*please insert your name*) of _____ (*please insert the name of your group*), **agree to the methodology** outlined by MCH in relation to the proposed project.

Additional comments:

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 relation to the proposed

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: _____

CULTURAL SIGNIFICANCE

Tomogo

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 the appropriate box, sign and return to MCH, (Fax: 4952 5501).

As per the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), the proponent seeks information on the following:

1) are there Aboriginal objects of cultural value in the proposed project area?

2) Are there Aboriginal places of cultural value to the Aboriginal people in the area of the proposed project? This may include places of social, spiritual and cultural value, historic places with cultural significance, and potential places/areas of historic, social, spiritual and/or cultural significance.

3) Is there any other cultural information in relation to the proposed project area?

4) MCH and the proponent would like to develop and implement appropriate protocols for sourcing and holding cultural information. Please provide your preferred method of providing detailed information on the above (e.g. written, verbal, this form) and any restrictions you would like to place on your information.

REGISTER OF CULTURAL KNOWLEDGE HOLDER

Tomogo

MCH and the proponent would like to facilitate a process whereby all registered Aboriginal parties are provided the opportunity to contribute to culturally appropriate information gathering, provide information that will enable the cultural significance of Aboriginal sites/places on the project area to be determined, and have input into the development of any cultural heritage management options. To enable this to occur, it is necessary to consult with the cultural knowledge holder(s).

To this end, as per the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), you are required to provide details of the individual(s) who hold cultural knowledge (according to traditional lore) relevant to the project area. If your groups has no knowledge holders, this is important information too.

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 the appropriate box, sign and return to MCH, (Fax: 4952 5501).

Please fill in the following information for cultural knowledge holder(s). If there are more than three in your organisation please feel free to attach another sheet. If there are no knowledge holders in your group please send back blank.

Name: _____

Address: _____

Phone: _____ Mobile: _____

Fax: _____ E-mail: _____

Name: _____

Address: _____

Phone: _____ Mobile: _____

Fax: _____ E-mail: _____

Name: _____

Address: _____

Phone: _____ Mobile: _____

Fax: _____ E-mail: _____

ABORIGINAL COMMUNITY SELECTION CRITERIA FOR FIELDWORK

Tomogo

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 and return to MCH (Fax: 4952 5501).

Ability to assist in communicating the results of the fieldwork back to the registered Aboriginal parties for the assessment of cultural significance and returning advice on their response to MCH.

Please provide details on your ability to discuss results of field work, ability to effectively provide a cultural heritage report in an appropriate time frame.

Experience in field

Please nominate at least two individuals who will be available and fit for work (physically able to undertake field work) who may participate in the field work and their relevant experience (please attach CV's, certificates and references)

Name	
Experience	
Name	
Experience	

Price Per person (experienced person)

Hour	\$	inc GST & travel
Half day	\$	inc GST & travel
Full day	\$	inc GST & travel

Price Per person (inexperienced/trainee)

Hour	\$	inc GST & travel
Half day	\$	inc GST & travel
Full day	\$	inc GST & travel

Please note that the actual rate of pay for field work may or may not be your preferred rates, this is dependant on the set development budget.

Insurances

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

Failure to provide up to date Certificate of Currencies will prevent you participating in any fieldwork.

Occupational Health & Safety (OH&S)

All participants are required to comply with MCH and the proponents OH&S requirements. This includes high visibility clothing, hat, sunscreen and steel caped boots. You will be advised of any additional requirements.

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

COMMENTS ON PROPOSED METHODOLOGY

Tomogo

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 the appropriate box, sign and return to MCH (Fax: 4952 5501).

I, Leanne Anderson (please insert your name) of Nur-Run-Cee (please insert the name of your group), agree to the methodology outlined by MCH in relation to the proposed project.

Additional comments:

Signed: W Anderson Date: 27/9/11

Position within organisation: Director

I, _____ (please insert your name) of _____ (please insert the name of your group), do not agree to the methodology outlined by MCH in relation to the proposed 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: _____

REGISTER OF CULTURAL KNOWLEDGE HOLDER

Tomogo

MCH and the proponent would like to facilitate a process whereby all registered Aboriginal parties are provided the opportunity to contribute to culturally appropriate information gathering, provide information that will enable the cultural significance of Aboriginal sites/places on the project area to be determined, and have input into the development of any cultural heritage management options. To enable this to occur, it is necessary to consult with the cultural knowledge holder(s).

To this end, as per the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), you are required to provide details of the individual(s) who hold cultural knowledge (according to traditional lore) relevant to the project area. If your groups has no knowledge holders, this is important information too.

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 the appropriate box, sign and return to MCH, (Fax: 4952 5501).

Please fill in the following information for cultural knowledge holder(s). If there are more than three in your organisation please feel free to attach another sheet. If there are no knowledge holders in your group please send back blank.

Name: Anthony Anderson
Address: 9 VIVRON RD FERNIBAY
Phone: 0249281910 Mobile: 0402827482
Fax: 0249281910 E-mail: marc@marcinc1@gmail.com

Name: Rebecca Young
Address: _____
Phone: AS ABOVE Mobile: _____
Fax: _____ E-mail: _____

Name: _____
Address: _____
Phone: _____ Mobile: _____
Fax: _____ E-mail: _____

ABORIGINAL COMMUNITY SELECTION CRITERIA FOR FIELDWORK

Tomogo

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 and return to MCH (Fax: 4952 5501).

<p>Ability to assist in communicating the results of the fieldwork back to the registered Aboriginal parties for the assessment of cultural significance and returning advice on their response to MCH.</p> <p>Please provide details on your ability to discuss results of field work, ability to effectively provide a cultural heritage report in an appropriate time frame.</p>
<p><i>Active Board member of LIAC</i></p>
<p><i>Worimi Traditional owner</i></p>
<p> </p>
<p> </p>
<p> </p>
<p> </p>
<p> </p>
<p> </p>

<p>Experience in field</p> <p>Please nominate at least two individuals who will be available and fit for work (physically able to undertake field work) who may participate in the field work and their relevant experience (please attach CV's, certificates and references)</p>	
Name	<i>Anthony Anderson</i>
Experience	<i>please refer to CV in package.</i>
Name	<i>Rebecca Young</i>
Experience	

COMMENTS ON PROPOSED METHODOLOGY

Tomogo

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 the appropriate box, sign and return to MCH (Fax: 4952 5501).

I, Anthony Anderson (please insert your name) of Murrooma Inc (please insert the name of your group), agree to the methodology outlined by MCH in relation to the proposed project.

Additional comments:

Signed: AJ Anderson

Date: 10-10-11

Position within organisation: CEO

I, _____ (please insert your name) of _____ (please insert the name of your group), do not agree to the methodology outlined by MCH in relation to the proposed

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: _____

CULTURAL SIGNIFICANCE

Tomogo

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 the appropriate box, sign and return to MCH, (Fax: 4952 5501).

As per the DECCW Aboriginal Cultural Heritage Consultation Requirements for Proponents (2010), the proponent seeks information on the following:

1) are there Aboriginal objects of cultural value in the proposed project area?

Will be discussed on site.

2) Are there Aboriginal places of cultural value to the Aboriginal people in the area of the proposed project? This may include places of social, spiritual and cultural value, historic places with cultural significance, and potential places/areas of historic, social, spiritual and/or cultural significance.

~~Yes~~ Yes - also will be discussed on site.

3) Is there any other cultural information in relation to the proposed project area?

will be discussed on site.

4) MCH and the proponent would like to develop and implement appropriate protocols for sourcing and holding cultural information. Please provide your preferred method of providing detailed information on the above (e.g. written, verbal, this form) and any restrictions you would like to place on your information.

Verbal.

Price Per person (experienced person)	
Hour	\$80.00 \$ 150 inc GST & travel
Half day	\$ 330 inc GST & travel
Full day	\$ 660 inc GST & travel
Price Per person (inexperienced/trainee)	
Hour	\$ inc GST & travel
Half day	\$ inc GST & travel
Full day	\$ inc GST & travel
Please note that the actual rate of pay for field work may or may not be your preferred rates, this is dependant on the set development budget.	

Insurances <i>refer to Package</i>	
Public Liability	Expiry date: (attach certificate of currency)
Worker Compensation	Expiry date: (attach certificate of currency)
Failure to provide up to date Certificate of Currencies will prevent you participating in any fieldwork.	

Occupational Health & Safety (OH&S)
All participants are required to comply with MCH and the proponents OH&S requirements. This includes high visibility clothing, hat, sunscreen and steel caped boots. You will be advised of any additional requirements.
Failure to comply will prevent you from participating in the field work.



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

Anthony Anderson
9 Vardon Road
FERN BAY NSW 2295

CENTENNIAL PLAZA, TOWER B
LEVEL 13, 280 ELIZABETH STREET
SURREY HILLS NSW 2010
P. 02 9219 0700 F. 02 9219 0770

Our reference: 04R/0215-1: AB

18th February 2005

Subject: Register of Aboriginal owners

Dear Anthony

re: **Aboriginal owner for Stockton Bight**

Thank you for your application to register as an Aboriginal owner. Your application has been successful. You have been registered as an Aboriginal owner for Stockton Bight. Your name was entered onto the register on **12th October 2004**.

Your details will be retained in the Office of the Registrar. These details will be used for future reference in relation to the Aboriginal ownership and joint management of land, which you are a registered Aboriginal owner of.

Please find attached a copy of your application form, statement of cultural association and genealogy.

Should you have any further inquiries about this, please do not hesitate to contact Rachel Lenehan, Adam Black or myself.

Yours truly,

Stephen Wright
Registrar

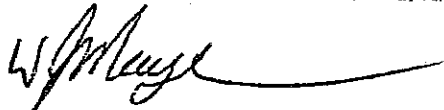
Aboriginal Land Rights Act 1983

THIS IS TO CERTIFY THAT ANTHONY ANDERSON

**HAS SATISFIED THE REQUIRED
COMPETENCIES IN ABORIGINAL SITE
IDENTIFICATION AND CONSERVATION**

MODULES COMPLETED

- HISTORY OF THE WORIMI
- CULTURAL AWARENESS
- COMMUNITY COMMUNITIES PRINCIPLES
- CONSULTATION PROTOCOLS.
- ABORIGINAL CULTURAL HERITAGE LEGISLATION
- ABORIGINAL SITE TYPES
- ABORIGINAL SITE CONTEXT
- ABORIGINAL HERITAGE INFORMATION MANAGEMENT SYSTEM (AHIMS)
- IDENTIFICATION OF ABORIGINAL MIDDENS
- IDENTIFICATION OF ABORIGINAL STONE ARTEFACTS
- IDENTIFICATION OF SCARRED TREES
- ABORIGINAL NATURAL RESOURCE USE
- ABORIGINAL SITE RECORDING



Warren Mayers J.P.
11th December 2003
Accredited Trainer

28th March 2005
20 Belagoy Street
Cobar
NSW 2835

To Whom It May Concern, Re Anthony Anderson

I have known Anthony Anderson since 2000 when I moved to Port Stephens as an Aboriginal Heritage Conservation Officer with the National Parks and Wildlife Service.

I have worked closely with Anthony over this time in his rolls with the Worimi Local Aboriginal Lands Council undertaking Aboriginal site surveys, community consultation and on Stockton Bight in his role as Head Worimi Ranger.

I have found Anthony to be a person of outstanding character who is very honest and reliable. Anthony undertakes whatever role asked of him in a diligent, timely and professional manner. He works well as a team member and has outstanding leadership skills.

Anthony is eager to learn new skills and undertakes training with a passion to learn and achieve. This I observed whilst Anthony was undertaking a 5 day Aboriginal Sites identification and Conservation workshop conducted by myself.

Anthony's honesty, work ethic, skills and commitment to his work would be an asset to any workplace. I would have no hesitation in recommending Anthony Anderson to any position he felt he could undertake.

I would be happy to provide a personal reference for Anthony Anderson at any time.

Yours Faithfully



Warren Mayers J.P.
Area Manager
Cobar Area National parks and Wildlife Service
02 68362692
0429 600074

Our Ref: 03/146 GMB:kd

19 March 2007

A.B.N. 94 000 861 110

**Consulting Surveyors
and Planners**

PO Box 726 Newcastle 2300
Tonella Commercial Centre
125 Bull Street Newcastle West
Telephone: (02) 4926 1388
Facsimile: (02) 4929 3475
www.monteathpowys.com.au

TO WHOM IT MAY CONCERN

Monteath & Powys Pty Limited has regularly engaged the services of Mur-Roo-Ma Incorporated over the past two (2) years to provide professional advice on Aboriginal heritage issues associated with the development of the Fern Bay Estate.

The Fern Bay Estate is being developed within an area of significance to the Aboriginal community. Mur-Roo-Ma Incorporated has provided excellent professional advice to address these issues.

I would have no hesitation in recommending the services of Mur-Roo-Ma Incorporated to anyone needing assistance on Aboriginal heritage issues.

Yours faithfully
MONTEATH & POWYS PTY LIMITED



Gregory Burnitt
Registered Surveyor
g.burnitt@monteathpowys.com.au



WORKCOVER NSW

STATEMENT OF OHS INDUCTION TRAINING

**OHS GENERAL INDUCTION
FOR CONSTRUCTION WORK IN NSW**

This is to certify that:

ANTHONY ANDERSON

(Full Name of Participant)

has completed the course in:

**OHS General Induction for
Construction Work in NSW**

on 26th MAY 2005
(Date of Training)

This certificate is valid for 30 days from the course date.

Trainer/Approved Provider Details:

Full Name of Trainer/Approved Provider Colin Wallace

Trainer Signature Colin Wallace Trainer Qualification Cert. IV Ass. & Workplace Train.

Trainer/Approved Provider Accreditation No. 1169

Note: Please ensure you present this certificate to your employer as proof of completion of training.



New South Wales

JUSTICE OF THE PEACE

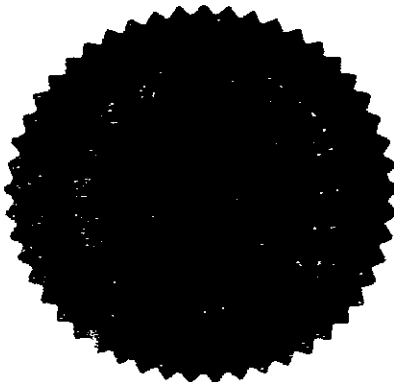
CERTIFICATE OF APPOINTMENT

**ANTHONY JOHN
ANDERSON**

*has been appointed by His Excellency the Governor,
with the advice of the Executive Council, pursuant to
the provisions of section 29 of the Imperial Acts
Application Act 1969, as a Justice of the Peace in and
for the State of New South Wales.*

Date of Appointment: 28 January 1998

Registration No: 9702554



A handwritten signature in cursive script, appearing to read "JW Shaw".

JW Shaw QC, MLC
ATTORNEY GENERAL

*The Oath of Allegiance and the Judicial Oath in the
Office of Justice of the Peace for the State of New
South Wales, have been sworn affirmed by the
abovementioned, before me on the 16th
day of June, 1998.*

Judge

Magistrate
(A. Railton)

A handwritten signature and some scribbles, possibly indicating the signature of the Magistrate or another official.

14 October 2011



*McCardle Cultural
Heritage Pty Ltd*

PO Box 166
ADAMSTOWN NSW 2289

Mobile: 0412 702 396
Fax: 4952 5501

Email: mcheritage@iprimus.com.au

Anthony Anderson
Mur-Roo-Ma Inc
7 Vardon Road
Fern Bay NSW 2295

MCH Reference: Survey Invitation paid

Dear Anthony,

RE: TOMAGO INVESTIGATION AREA

Thank you for registering your interest in the Indigenous archaeological assessment at Tomago.

ADW Johnson has received a number of applications and after careful consideration we would like to advise that your application for paid participation has been successful.

McCardle Cultural Heritage would like to organise the survey for the Tomago project for the 9-11 November 2011 starting at 8am on site (entrance to the Historic house). We anticipate work will be complete within 3 days, however, please be advised this time may change.

Payment

The rate of pay will be \$80.00 per actual hours worked by one representative of your group. This amount includes GST, travel and all other costs. Payment will be within 28 days of receipt of a correct invoice and your cultural heritage report.

Please note that payment rates have been determined by the proponent and are based on the project budget.

OH&S Requirements

Before commencement of work you must provide MCH with certificate of currencies for Workers Comp and Public Liability.

Field representatives participating in the survey will be required to 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.

Community Involvement

We will require from your group your cultural heritage report and invoice within 28 days of receiving the draft report from MCH.

ADW Johnson and MCH wishes reiterate its intent to positively engaging with the local Aboriginal community. In this spirit we have extended an invitation to other registered applicants to attend the survey.

If you accept the terms outlined in this letter please sign below and return to McCardle Cultural Heritage. **Participation in the program is dependant on the receipt of this signed letter and insurance details.**

Should you have any questions regarding these terms and conditions please contact Penny McCardle on 0412 702 396.

For more information about the project please contact Craig Marler, ADW Johnson on 4978 5100.

We look forward to working with you on this project,

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd



Penny McCardle
Principal Archaeologist
Forensic Anthropologist

I _____ of _____ agree to the
above terms of engagement for the Tomogo Project.

Signed: _____ Date _____

14 October 2011

Lennie Anderson
Nur-Run-Gee Pty Ltd
22 Popplewell Road
Fern Bay NSW 2295



*McCardle Cultural
Heritage Pty Ltd*

PO Box 166
ADAMSTOWN NSW 2289

Mobile: 0412 702 396

Fax: 4952 5501

Email: mcheritage@iprimus.com.au

MCH Reference: NRG invitation

Dear Lennie,

RE: TOMAGO INVESTIGATION AREA

Thank you for registering your interest in the Indigenous archaeological assessment at Tomago.

ADW Johnson has received a number of applications and after careful consideration we would like to advise that your application for paid participation has been successful.

McCardle Cultural Heritage would like to organise the survey for the Tomago project for the 9-11 November 2011 starting at 8am on site (entrance to the Historic house). We anticipate work will be complete within 3 days, however, please be advised this time may change.

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For more information about the project please contact Craig Marler, ADW Johnson on 4978 5100.

We look forward to working with you on this project,

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd



Penny McCardle
Principal Archaeologist
Forensic Anthropologist

I _____ of _____ agree to the
above terms of engagement for the Tomogo Project.

Signed: _____ Date _____

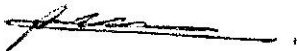
If you accept the terms outlined in this letter please sign below and return to McCardle Cultural Heritage. Participation in the program is dependant on the receipt of this signed letter and insurance details.

Should you have any questions regarding these terms and conditions please contact Penny McCardle on 0412 702 396.

For more information about the project please contact Craig Marler, ADW Johnson on 4978 5100.

We look forward to working with you on this project,


Yours sincerely,
for McCardle Cultural Heritage Pty Ltd



Penny McCardle
Principal Archaeologist
Forensic Anthropologist

I Leanne Anderson of Nur-Rin-Ciel agree to the

above terms of engagement for the Tomogo Project.

Signed:  Date 14/10/11

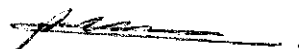
If you accept the terms outlined in this letter please sign below and return to McCardle Cultural Heritage. Participation in the program is dependant on the receipt of this signed letter and insurance details.

Should you have any questions regarding these terms and conditions please contact Penny McCardle on 0412 702 396.

For more information about the project please contact Craig Marler, ADW Johnson on 4978 5100.

We look forward to working with you on this project,

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd



Penny McCardle
Principal Archaeologist
Forensic Anthropologist

I ANTHONY ANDERSON of MURROOMA INC agree to the

above terms of engagement for the Tomogo Project.

Signed: Anthony Anderson Date 17/10/11

17 November 2011



*McCardle Cultural
Heritage Pty Ltd*

Lennie Anderson
Nur-Run-Gee Pty Ltd
22 Popplewell Road
Fern Bay NSW 2295

PO Box 166
ADAMSTOWN NSW 2289
Mobile: 0412 702 396
Fax: 4952 5501
Email: mcheritage@iprimus.com.au

MCH Reference: Draft report

Dear Lennie,

RE: TOMOGO

Please find attached a copy of the draft report for the above named project for your review.

Your cultural significance assessment and report/letter is important as the project will benefit from your knowledge and comments. MCH would like to opportunity to include the cultural significance in the report to ensure both the scientific and cultural components are included to provide a bigger picture of the cultural landscape.

Additionally, any concerns you may have are also important and we would like the opportunity to address any concerns you may have.

In line with the OEH requirements, we ask that you provide your comments, concerns and cultural significance report **no later than 15 December 2011. However, an earlier response would be greatly appreciated.**

If you do not wish to provide any comments, report or letters, please notify MCH as soon as possible (even just a quick phone call or txt message) to ensure we do not keep sending reminders and requests for your response as this is both time consuming and may become bothersome to you.

Please note that failure to provide the required information by the date provided will result in a missed opportunity for you or knowledge holders to contribute to your cultural heritage and the project will proceed.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

A handwritten signature in purple ink, appearing to read 'Penny McCardle'.

Penny McCardle
Principal Archaeologist

17 November 2011



*McCardle Cultural
Heritage Pty Ltd*

Anthony Anderson
Mur-Roo-Ma Inc
7 Vardon Road
Fern Bay NSW 2295

PO Box 166
ADAMSTOWN NSW 2289
Mobile: 0412 702 396
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MCH Reference: Draft report

Dear Anthony,

RE: TOMOGO

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In line with the OEH requirements, we ask that you provide your comments, concerns and cultural significance report **no later than 15 December 2011. However, an earlier response would be greatly appreciated.**

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Please note that failure to provide the required information by the date provided will result in a missed opportunity for you or knowledge holders to contribute to your cultural heritage and the project will proceed.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

A handwritten signature in purple ink, appearing to read 'Penny McCardle', with a long horizontal flourish extending to the right.

Penny McCardle
Principal Archaeologist



Mur-Roo-Ma Inc

9 Vardon Road Fern Bay
2295 N.S.W Australia

ABN : 978 077 194 84

Phone / Fax : 02 49281910

Mobile : 0402 82 74 82

E-mail : murroomainc1@gmail.com

To MCH

Attn Penny McCardle

20/11/2011

Our organisation Mur-roo-ma Inc has read and discussed the draft report for Northbank Tomago

We confirm the following:

1. Mur-roo-ma Inc fully understand and the contents of this report
2. That a representative of our organisation attended the site for the assessment on Wednesday 9th November 2011
3. We agree with the methodology used
4. We do endorse the recommendations in this report
5. That to the best of our knowledge all reasonable care and action has been taken to identify any Aboriginal Objects or potential on the land.

Comments

Mur-roo-ma Inc fully understands and agree with the recommendations put forward in the report and agree with the document in its entirety

All possible Aboriginal objects within the project area are of great value to our people as they are in all our lands.

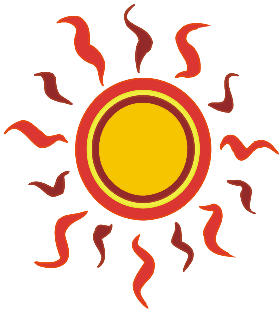
Due to poor visibility Mur-roo-ma Inc recommends another site inspection once vegetation has been cleared.

Anthony Anderson

CEO

Mur-roo-ma Inc

Nur-Run-Gee Pty Ltd
ABN 37 096 307 701



**CULTURAL AND HERITAGE
CONSULTANT
LICENCED BUILDER**

22 Popplewell Road
Fern Bay 2295

Phone: 02 49 201578
Mobile: 0408 618 874 Leanne
Mobile: 0431 334 365 Lennie
Email:
goodman@kooe.com.au

30th November-2011

Penny McCardle
Principal Archaeologist & Forensic Anthropologist
McCardle Cultural Heritage
PO Box 166
ADAMSTOWN NSW 2289

**Re; Indigenous Archaeological Due Diligence Assessment
ADW Johnson Northbank Enterprise Hub, Tomago**

Dear Penny

Thank you for the opportunity to comment on the draft report for the Indigenous Archaeological Due Diligence Assessment ADW Johnson Northbank Enterprise Hub, Tomago

After reading the draft report, Nur-Run-Gee P/L, agrees with and understands the recommendations that MCH have stated in the report and find that they are acceptable with the inclusion of - Aboriginal monitoring during initial earth works due to the poor visibility of the site during initial investigation.

Please do not hesitate to contact us if further information is required.

Yours Sincerely

Lennie and Leanne Anderson
Directors
Nur-Run-Gee Pty Ltd

2 December 2011



*McCardle Cultural
Heritage Pty Ltd*

Anthony Anderson
Mur-Roo-Ma Inc
7 Vardon Road
Fern Bay NSW 2295

PO Box 166
ADAMSTOWN NSW 2289
Mobile: 0412 702 396
Fax: 4952 5501
Email: mcheritage@iprimus.com.au

MCH Reference: Final report

Dear Anthony,

RE: TOMOGO

Please find enclosed a copy of the final report for the above named project.

Thank you for your time and input into the assessment and the proponent and I appreciate your quick responses throughout the assessment.

We look forward to working with you in the future.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist

2 December 2011



*McCardle Cultural
Heritage Pty Ltd*

Lennie Anderson
Nur-Run-Gee Pty Ltd
22 Popplewell Road
Fern Bay NSW 2295

PO Box 166
ADAMSTOWN NSW 2289
Mobile: 0412 702 396
Fax: 4952 5501
Email: mcheritage@iprimus.com.au

MCH Reference: Final report

Dear Lennie,

RE: TOMOGO

Please find enclosed a copy of the final report for the above named project.

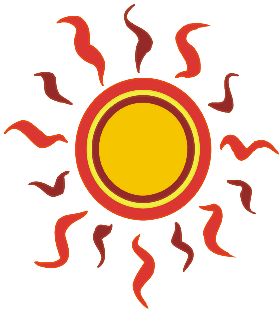
Thank you for your time and input into the assessment and the proponent and I appreciate your quick responses throughout the assessment.

We look forward to working with you in the future.

Yours sincerely,
for McCardle Cultural Heritage Pty Ltd

Penny McCardle
Principal Archaeologist

Nur-Run-Gee Pty Ltd
ABN 37 096 307 701



**CULTURAL AND HERITAGE
CONSULTANT
LICENCED BUILDER**

22 Popplewell Road
Fern Bay 2295

Phone: 02 49 201578
Mobile: 0408 618 874 Leanne
Mobile: 0431 334 365 Lennie
Email:
goodman@koee.com.au

7th July 2012

McCardle Cultural Heritage
Attention Penny McCardle
PO Box 166
Adamstown NSW 2289

**Re: Northbank Enterprise Hub Pty Ltd Northbank Enterprise Hub,
Tomago LGA: Port Stephens
Aboriginal Heritage Impact Assessment**

Dear Penny

Thank you for the opportunity to comment on the draft report for the Northbank Enterprise Hub Pty Ltd, Northbank Enterprise Hub, Tomago LGA: Port Stephens Aboriginal Heritage Impact Assessment.

After reading the draft report, Nur-Run-Gee P/L, agrees with and understands the recommendations and methodology that MCH have stated in the report and find that they are acceptable, particularly the recommendations on page 8.

Please do not hesitate to contact us if further information is required.

Yours Sincerely

Lennie Anderson
Director
Nur-Run-Gee Pty Ltd



Mur-Roo-Ma Inc

9 Vardon Road Fern Bay
2295 N.S.W Australia

ABN : 978 077 194 84

Phone / Fax : 02 49281910

Mobile : 0402 82 74 82

E-mail : murroomainc1@gmail.com

To MCH

Attn Penny McCardle

9/7/2012

Our organisation Mur-roo-ma Inc has read and discussed the draft report for
Northbank Enterprise Hub Tomago

We confirm the following:

1. Mur-roo-ma Inc fully understand and the contents of this report
2. That a representative of our organisation attended the site for the assessment on Friday 1st June 2012
3. We agree with the methodology used
4. We do endorse the recommendations in this report
5. That to the best of our knowledge all reasonable care and action has been taken to identify any Aboriginal Objects or potential on the land.

Comments

Mur-roo-ma Inc fully understands and agree with the recommendations put forward in the report and

After reviewing the Mitigation and Management for this project we agree with the document in its entirety

If the sites are to be impacted knowing what was retrieved on neighbouring project i strongly recommend

Monitoring

All possible Aboriginal objects within the project area are of great value to our people as they are in all our lands

Anthony Anderson

CEO

Mur-roo-ma Inc

ANNEX B

AHIMS Search Results

<u>site_id</u>	<u>site_name</u>	<u>context</u>	<u>zone</u>	<u>easting</u>	<u>northing</u>	<u>grid</u>	<u>primary</u>	<u>validity</u>	<u>permit</u>	<u>features</u>	<u>asrtypes</u>	<u>reports</u>	<u>state_archive_box</u>
38-3-0037	Tomago 1;TK1;	Open Site	56	385600	6369540	AGD	1173	Valid		AFT :-	Open Camp Site	1339	NRS/17798/1/251
38-4-0050	Moscheto Island;	Open Site	56	385457	6362659	AGD	1171	Valid		AFT :-	Open Camp Site		NRS/17798/1/253
38-4-0051	Moscheto Island;Newc	Open Site	56	387112	6362141	AGD	1171	Valid		AFT :-	Open Camp Site		NRS/17798/1/253
38-4-0065	Fullerton Cove	Open Site	56	386919	6362686	AGD	1171	Valid		AFT :-, ETM Midden			NRS/17798/1/253
38-4-0075	Tomago;	Open Site	56	379380	6366800	AGD	1173	Valid		TRE :-	Scarred Tree	533, 100499	NRS/17798/1/253
38-4-0126	NBR10;	Open Site	56	388500	6363950	AGD	1173	Valid	2026	AFT :-, ETM Midden		1269	NRS/17798/1/254
38-4-0128	NBR8;	Open Site	56	388300	6364750	AGD	1167	Valid	2026	AFT :-, ETM Midden		1269, 101086	NRS/17798/1/254
38-4-0131	NBR5;	Open Site	56	388920	6364080	AGD	1167	Valid		AFT :-	Open Camp Site	1269	NRS/17798/1/254
38-4-0132	NBR4;	Open Site	56	388740	6363680	AGD	1173	Valid	2026, 2355	AFT :-	Open Camp Site	1269, 101086	NRS/17798/1/254
38-4-0133	NBR3;	Open Site	56	388600	6363790	AGD	1173	Valid	2026	AFT :-, ETM Midden		1269, 101086	NRS/17798/1/254
38-4-0134	NBR2;	Open Site	56	388450	6363700	AGD	1173	Valid	2026	AFT :-, ETM Midden		1269, 101086	NRS/17798/1/254
38-4-0135	NBR1;	Open Site	56	388390	6363780	AGD	1173	Valid	2026	AFT :-, ETM Midden		1269, 101086	
38-4-0241	F C 1;Fullerton Cove;	Open Site	56	388600	6364800	AGD	1167	Valid		AFT :-	Open Camp Site	1845	NRS/17798/1/255
38-4-0242	T 1;	Open Site	56	383600	6368300	AGD	1167	Valid		AFT :-	Open Camp Site	1845	NRS/17798/1/255
38-4-0243	T 2;	Open Site	56	384400	6368700	AGD	1167	Valid		AFT :-	Open Camp Site	1845	NRS/17798/1/255
38-4-0244	T 3;	Open Site	56	383900	6368700	AGD	1167	Valid	3335	AFT :-	Open Camp Site	1845	NRS/17798/1/255
38-4-0245	T 4;	Open Site	56	384200	6368800	AGD	1167	Valid	3335	AFT :-	Open Camp Site	1845	NRS/17798/1/255
38-4-0246	T 5;Tomago	Open Site	56	384005	6369089	AGD	1167	Valid	3335	AFT : 1	Open Camp Site	1845, 100499	NRS/17798/1/255
38-4-0247	T 6;	Open Site	56	383900	6368800	AGD	1167	Valid	3335	AFT :-	Open Camp Site	1845	NRS/17798/1/255
38-4-0257	Fern Hill 1;	Open Site	56	387600	6362100	AGD	1167	Valid		AFT :-	Isolated Find	1845	NRS/17798/1/255
38-4-0333	Fullerton Cove Road;sil	Open Site	56	388000	6364100	AGD	1167	Valid		AFT :-, ETM Midden		2604	NRS/17798/1/257
38-4-0334	Fullerton Cove Road 2;	Open Site	56	388150	6364390	AGD	1167	Valid		AFT :-, ETM Midden		2604	NRS/17798/1/257
38-4-0359	Site 1	Open Site	56	388050	6363290	AGD	1167	Valid		AFT :-, ETM Midden		101086	NRS/17798/1/257
38-4-0414	Masonite Road;	Open Site	56	385250	6370900	AGD	1167	Valid	823	AFT :-	Open Camp Site		NRS/17798/1/257
38-4-0542	Site 2	Open Site	56	388290	6363790	AGD		Valid	2026	AFT :-, SHL None		2958, 101086	NRS/17798/1/261
38-4-0589	Fullerton 29	Open Site	56	388977	6362047	AGD	1167	Valid		SHL : 1	None		NRS/17798/1/261
38-4-0647	A1 - Tomaree/Tomago	Open Site	56	384559	6368108	AGD	1175	Partially	1797, 3382	AFT : 2, SHI None			NRS/17798/1/262
38-4-0648	A2 - Tomaree/Tomago	Open Site	56	384377	6368060	AGD	1175	Valid	1797	AFT : 1	None		NRS/17798/1/262
38-4-0676	Tomaree/Tomago A10	Open Site	56	384867	6368228	AGD	1175	Valid		AFT : 9, BO	None		NRS/17798/1/262
38-4-0679	PAD 1: Tomaree to Tor	Open Site	56	384500	6368200	AGD	1175	Partially	1807, 3382	PAD : 0	None	98386, 98387	NRS/17798/1/262
38-4-0681	PAD 3: Tomaree to Tor	Open Site	56	384400	6370500	AGD	1175	Valid	1882, 1883,	PAD : 0	None	98386, 98387,	NRS/17798/1/262
38-4-0698	Newcastle Golf Club 1	Open Site	56	387241	6362951	AGD	1167	Valid	1780	AFT : 20, St	None		
38-4-0699	Newcastle Golf Club 2	Open Site	56	386981	6362480	AGD	1175	Valid	1780	AFT : 20, St	None		
38-4-0700	Newcastle Golf Club 3	Open Site	56	387043	6362410	AGD	1175	Valid	1780	AFT : 20, St	None		
38-4-0701	Newcastle Golf Club 4	Open Site	56	387102	6362786	AGD	1175	Valid	1780	AFT : 20, St	None		

38-4-0702	Newcastle Golf Club 5	Open Site	56	386985	6362738	AGD	1175	Valid	1780	AFT : 20, St	None	
38-4-0703	Newcastle Golf Club 6	Open Site	56	387256	6362849	AGD	1175	Valid	1781	AFT : 20, St	None	
38-4-0704	Newcastle Golf Club 7	Open Site	56	387040	6362458	AGD	1175	Valid	1781	AFT : 20, St	None	
38-4-0705	Newcastle Golf Club 8	Open Site	56	387014	6362663	AGD	1175	Valid	1781	AFT : 20, St	None	
38-4-0723	Fullerton Cove Site 1	Open Site	56	387730	6364200	AGD	1167	Valid		AFT : 13, St	None	98868
38-4-0784	Fern Bay Site D	Open Site	56	388560	6363570	AGD	1175	Valid	2026	AFT : -	None	NRS/17798/1/263
38-4-0785	Fern Bay Site E	Open Site	56	388170	6363400	AGD		Valid	2026	AFT : -, SHL	None	NRS/17798/1/263
38-4-0786	Fern Bay Estate 7	Open Site	56	388400	6363670	AGD	1175	Valid	2026	AFT : -, ETM	None	NRS/17798/1/263
38-4-0787	Fern Bay Estate 9	Open Site	56	388790	6363344	AGD	1175	Valid	2026	AFT : -	None	NRS/17798/1/263
38-4-0788	Fern Bay Estate 10	Open Site	56	388950	6363900	AGD	1167	Valid	2355	ETM : -, SHI	None	
38-4-0789	Fern bay Estate 11	Open Site	56	388850	6363850	AGD	1167	Valid		AFT : -	None	
38-4-0790	Fern Bay Estate Site C	Open Site	56	388452	6363647	AGD	1175	Valid		AFT : -, ETM	None	NRS/17798/1/263
38-4-0791	Fern Bay Estate 8	Open Site	56	388750	6363700	AGD	1175	Valid		AFT : -, SHL	None	
38-4-0797	Fern Bay PAD	Open Site	56	387275	6362250	AGD	1167	Valid	2046	AFT : -, ETM	None	
38-4-0857	Fern Bay Estate 5	Open Site	56	388220	6363736	AGD	1167	Valid		AFT : 2	None	NRS/17798/1/263
38-4-0858		8 Open Site	56	388400	6363670	AGD	1167	Valid		SHL : 100	None	
38-4-0859	Fern Bay Site E	Open Site	56	388170	6363400	AGD	1167	Valid		SHL : 400	None	NRS/17798/1/263
38-4-0860	FERN Bay Site F	Open Site	56	388560	6363570	AGD	1167	Valid		STQ : 100	None	NRS/17798/1/263
38-4-0861	Fern Bay Estate 9	Open Site	56	388790	6363440	AGD	1167	Valid		SHL : 1	None	NRS/17798/1/263
38-4-0895	Fern Bay Complex	Open Site	56	387000	6362000	AGD	1167	Valid	3001	ACD : -, AF	None	NRS/17798/1/264
38-4-0953	Fern Bay Estate 6	Open Site	56	388370	6363836	AGD	1167	Valid		AFT : -	None	NRS/17798/1/265
38-4-0961	Tomago 1 (T1)	Open Site	56	382833	6367605	AGD	1175	Valid	2504	AFT : 42	None	100057
38-4-0962	Tomago 2 (T2)	Open Site	56	382779	6367583	AGD	1175	Valid		AFT : 3	None	100057
38-4-0963	Tomago 3 (T3)	Open Site	56	382703	6367533	AGD	1175	Valid		AFT : 4	None	100057
38-4-0964	Tomago 4 (T4)	Open Site	56	383419	6367848	AGD	1175	Valid		AFT : 2	None	100057
38-4-0965	Tomago 5 (T5)	Open Site	56	383419	6367848	AGD	1175	Valid		AFT : 1	None	100057
38-4-0966	Tomago 8 (T8)	Open Site	56	383428	6367863	AGD	1175	Valid	2504	AFT : 13	None	100057
38-4-0967	Tomago 7 (T7)	Open Site	56	383428	6367863	AGD	1175	Valid	2504	AFT : 47	None	100057
38-4-1073	Bay way Caravan Park	Open Site	56	387875	6363400	AGD	1175	Valid	3025	ARG : 50	None	
38-4-1139	Minmet Pad	Open Site	56	381100	6367000	GDA	1170	Valid	3026	PAD : -	None	
38-4-1140	Masonite Rd (Tomago)	Open Site	56	385250	6370900	GDA	1167	Valid		AFT : -	None	3572
38-4-1221	Grahamstown WTP 5/A	Open Site	56	383783	6369610	GDA	1175	Valid	3335	AFT : 2	None	
38-4-1293	RPS TAC AS1	Open Site	56	381593	6367382	GDA	1174	Valid		AFT : -	None	
38-4-1295	TOM 01 Artefact Scatte	Open Site	56	379370	6366770	GDA	1175	Valid		AFT : 6, SHI	None	
38-4-1296	AS 01 PAD	Open Site	56	379680	6366770	GDA	1175	Valid		PAD : 1	None	

number