



# Tweed Valley Hospital

## Aboriginal Cultural Heritage and Archaeological Report

Final

Prepared for NSW Health Infrastructure

11 October 2018

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*Cover photograph: 771 Cudgen Road, Cudgen*

## Executive summary

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Niche Environment and Heritage Pty Ltd (Niche) was commissioned NSW Health Infrastructure to prepare an Aboriginal Cultural Heritage Assessment (ACHA) for the proposed Tweed Valley Hospital, Tweed Shire, NSW. The assessment is required to inform the preparation of an Environmental Impact Statement for the State Significant Development under the NSW *State Environmental Planning Policy (State and Regional Development) 2011* and assess suitability of the site for the proposed land use.

The Tweed Valley Hospital will be a purpose built hospital which addresses the health services required to meet the needs of the growing population of the Tweed Byron region and incorporates proposed culturally appropriate spaces for the resident and local community.

The assessment included background archaeological and historical investigation, consultation with the Registered Aboriginal Parties (RAPs) and an archaeological survey with the participation of the RAPs.

The proposed activity should proceed with caution with the following recommendations:

### **Recommendation 1: Cultural Heritage Induction**

A cultural heritage induction should be provided to all contractors and staff who will be involved in works that involve ground surface disturbance/earthworks.

### **Recommendation 2: Aboriginal Objects – Stop work provision**

In the event that suspected Aboriginal objects are encountered during construction, all work in the area that may cause further impact must cease and the Office of Environment and Heritage (OEH) should be contacted.

### **Recommendation 3: Human remains – Stop work provision**

In the event that suspected human remains are encountered during construction, all work in the area that may cause further impact, must cease immediately.

- The location, including a 20 m curtilage, should be secured using barrier fencing to avoid further harm.
- The NSW Police must be contacted immediately.
- No further action is to be undertaken until the NSW Police provide written notification to the NSW Health Infrastructure.

If the skeletal remains are identified as Aboriginal, NSW Health Infrastructure or their agent must contact:

- the OEH's Enviroline on 131 555; and,
- representatives of the Registered Aboriginal Parties.

No works are to continue until the OEH provides written notification to NSW Health Infrastructure or their Agent.

### **Recommendation 4: Further Aboriginal cultural heritage works**

In the event that works causing ground disturbance are planned within the vegetated section of the Project Site (i.e. the section along the water and in the north), consultation with the RAPs and a further cultural heritage survey with representatives of the RAPs will be required.

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## Glossary and abbreviations

Term	Definition
Aboriginal cultural heritage	The tangible (objects) and intangible (dreaming stories, legends and places) cultural practices and traditions associated with past and present day Aboriginal communities.
ACHA	Aboriginal Cultural Heritage Assessment
Aboriginal object(s)	The legal definition for material Aboriginal cultural heritage under the NSW <i>National Parks and Wildlife Act 1974</i> .
Aboriginal stakeholders	Members of a local Aboriginal land council, registered holders of Native Title, Aboriginal groups or other Aboriginal people who may have an interest in the Project.
AHIP	Aboriginal Heritage Impact Permit
Archaeology	The scientific study of material traces of human history, particularly the relics and cultural remains of past human activities.
Archaeological deposit	Layer(s) of soil material containing archaeological remains.
Archaeological investigation	The process of assessing the archaeological potential of an impact area by a qualified archaeologist.
Archaeological site	An area that contains surface or sub-surface material evidence of past human activity in which material evidence (artefacts) of past activity is preserved.
Artefact	An object made by human agency (e.g. stone artefacts).
Assemblage	A group of stone artefacts found in close association with one another. Any group of items designated for analysis that exist in spatial and/or vertical context – without any assumptions of chronological or spatial relatedness.
Avoidance	A management strategy which protects Aboriginal sites within an impact area by avoiding them totally in development.
Catchment	The area from which a surface watercourse or a groundwater system derives its water.
Code of Practice	Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales
Cumulative impacts	Combination of individual effects of the same kind due to multiple actions from various sources over time.
DECCW	The Department of Conservation, Climate Change and Water, now the Office of Environment and Heritage
Development	The processes involved in preparing the Project Site for the development of the extension to the correctional facility, including associated infrastructure and access roads.
Drainage	Natural or artificial means for the interception and removal of surface or subsurface water.
EP&A Act	NSW Environmental Planning and Assessment Act 1979
Flake	A piece of stone detached from a core, displaying a bulb of percussion and striking platform.
Harm	With regard to Aboriginal objects this has the same meaning as the NSW <i>National Parks and Wildlife Act 1974</i> .
Impact	Influence or effect exerted by a project or other activity on the natural, built and community environment.
Impact area	An area that requires archaeological investigation and management assessment.
In situ	Latin words meaning ‘on the spot, undisturbed’.
Isolated artefact / find	A single artefact found in an isolated context.
Landscape character	The aggregate of built, natural and cultural aspects that make up an area and provide a sense of place. Includes all aspects of a tract of land – built, planted and natural topographical and ecological features.



Term	Definition
Land unit	An area of common landform, and frequently with common geology, soils and vegetation types, occurring repeatedly at similar points in the landscape over a defined region. It is a constituent part of a land system.
Landform	Any one of the various features that make up the surface of the earth.
LEP	Local Environmental Plan
TBLALC	Tweed Byron Local Aboriginal Land Council
Management plans	Conservation plans which identify short and long term management strategies for all known sites recorded within a (usually approved) Study area.
Methodology	The procedures used to undertake an archaeological investigation.
Mitigation	To address the problem of conflict between land use and site conservation.
NPW Act	National Parks and Wildlife Act 1974
NPW Regulation	National Parks and Wildlife Regulation 2009
OEH	Office of Environment and Heritage
Open camp site	An archaeological site situated within an open space (e.g. archaeological material located on a creek bank, in a forest, on a hill, etc.).
PAD	Potential archaeological deposit. A location considered to have a potential for subsurface archaeological material.
REF	Review of Environmental Factors
Site recording	The systematic process of collecting archaeological data for an archaeological investigation.
Site	A place where past human activity is identifiable.
Spit	A unit of archaeological excavation with an arbitrary assigned measurement of depth and extent.
Survey coverage	A graphic and statistical representation of how much of an impact area was actually surveyed and therefore assessed.

# 1. Introduction

---

## 1.1 Background

This report presents the findings of an Aboriginal Cultural Heritage Assessment (ACHA) of the proposed Tweed Valley Hospital site (hereafter referred to as the Project Site), at Lot 102 DP870722, 771 Cudgen Road, Cudgen, NSW (Figure 1). The assessment is required to inform the preparation of an Environmental Impact Statement for the State Significant Development of the Tweed Valley Hospital Project (The Project) under the *NSW State Environmental Planning Policy (State and Regional Development) 2011* and assess suitability of the site for the proposed land use.

The proponent of the project is NSW Health Infrastructure.

Niche Environment and Heritage (Niche) was commissioned by NSW Health Infrastructure to produce an Aboriginal Cultural Heritage Assessment Report (ACHAR). This Aboriginal Cultural Heritage Assessment (ACHA) is necessary to satisfy the requirements to conduct the works and manage Aboriginal sites and objects under the *National Parks and Wildlife Act 1974* (NPW Act) and *Environmental Planning and Assessment Act 1979* (EP&A Act) as part of the proposed development.

On the 13<sup>th</sup> June 2017, the NSW Government announced a new greenfield hospital development for the Tweed Valley community to address issues with the growing and changing population demographics in the Tweed- Byron Local Government Area (LGA). Following the announcement, a site selection process commenced and Project Site, 771 Cudgen Road, Cudgen was determined as the preferred outcome of the evaluation.

To ensure the site evaluation process abided by NSW Government codes of practice, an alternative site selection process was established with an objective to investigate a range of other sites nominated during the community consultation phase.

The outcome of this additional evaluation process was the confirmation of the Project Site (771 Cudgen Road, Cudgen) as the Site for the Tweed Valley Hospital. A master plan is being prepared for the Project Site and as part of project planning approvals requirements, Aboriginal cultural heritage is considered a key matter requiring the early assessment of likely constraints and obligations in the lead up to a State Significant Development application process.

For this project the Project Site is defined as all of the area proposed to be included in the proposed development footprint, inclusive of all internal roads, buildings, car parks, landscaping and ancillary sites required for the ongoing management of the proposed hospital.

## 1.2 Scope and Objectives

The objectives of the archaeological investigation are to identify whether Aboriginal sites, objects or places are present within the Project Site and if present determine whether these would be impacted by the proposed works and provide appropriate mitigation and management recommendations in accordance with the *National Parks and Wildlife Act 1974* (NSW). The assessment documents consultation with the local Aboriginal community, identifying any spiritual, traditional, historical or contemporary associations or attachments to Aboriginal sites or objects within the Project Site and/or to the Project Site itself. The results of the assessment are then used to outline recommended management measures in accordance with current best practice and informed by input from the Aboriginal community.

The ACHA Report has been prepared in accordance with (but not limited to) the following regulations and guidelines:

- Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (NSW Department of Environment and Conservation [DEC] 2005a)
- Aboriginal cultural heritage consultation requirements for proponents 2010 (ACHCRs) (NSW Department of Environment, Climate Change and Water [DECCW], 2010a);
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010b);
- Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW, 2010c);
- Guide to Investigating, assessing and reporting on Aboriginal cultural heritage in NSW (NSW Office of Environment and Heritage [OEH], 2011);
- The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (Australia International Council on Monuments and Sites [ICOMOS], 2013);
- Engage Early (Commonwealth Government, 2016); and
- NSW National Parks and Wildlife Regulation, 2009 (NPW Regulation).

The objectives of this report, in consideration of the requirements of the above guidelines and regulations, are as follows:

- Identify and describe Aboriginal objects and/or places located within the area of the Project Site.
- Identify and describe the sensitivity (in relation to cultural heritage) of different landforms present in the landscape affected by the Project.
- Identify and describe the cultural heritage values, including the significance of the Aboriginal objects that exist across the whole area that will be affected by the Project, and the significance of these values for the Aboriginal people who have a cultural association with the land.
- Describe how the requirements for consultation with Aboriginal people as specified in Clause 80C of the NPW Regulation have been met.
- Present the views of those Aboriginal people regarding the likely impact of the Project on their cultural heritage, including a copy of any submissions received and a response as necessary.
- Identify and describe the actual or likely harm posed to Aboriginal objects or declared Aboriginal places from the Project with references to the cultural heritage values identified.
- Provide a description of any practical measures that may be taken to protect and conserve those Aboriginal objects.
- Provide a description of any practical measures that may be taken to avoid or mitigate any actual or likely harm, alternatives to harm, or if this is not possible, to manage (minimise) the harm.
- Provide documentation of discussions with the Aboriginal stakeholders regarding commitments from the proponent related to social, economic and/or conservation gains to offset any loss of cultural heritage.

This report will form part of an EIS which will be assessed and determined in accordance with the *State Environmental Planning Policy (State and Regional Development) 2011*.

Drawn by: GT Project Manager: RY Project Number: 4380 Date: 30/07/2018 T:\spatial\projects\4380\4380\_TweedValleyHospital\Maps\report\ACHA\4380\_Figure\_1\_Location.mxd





## 2. Description of the Project Site

### 2.1 Project Site

The Project Site is located at Lot 102 DP870722, situated at 771 Cudgen Road, Cudgen, Tweed LGA. The site is located immediately to the west of Kingscliff and approximately 1 km from the coastal foreshore. The Project Site comprises an irregular shaped area bound by Cudgen Road and Turnock Street to the south and east, agricultural land to the west, and an unnamed swamp and drainage line to the north. Cudgen Creek is situated 500 m to the west of the site.

The Project Site is situated on a prominent position in the landscape with views to the north and west and comprised of an elevated and roughly level terrace that runs the along the southern boundary adjacent to Cudgen Road (Figure 2). The terrace slopes unevenly down onto a low-lying wetland bordering a swamp and heavily vegetated drainage system to the north and west of 771 Cudgen Road. The most northern section of 771 Cudgen Road is characterised by remnant sub-tropical rainforest.

### 2.2 Selection criteria for Project Site

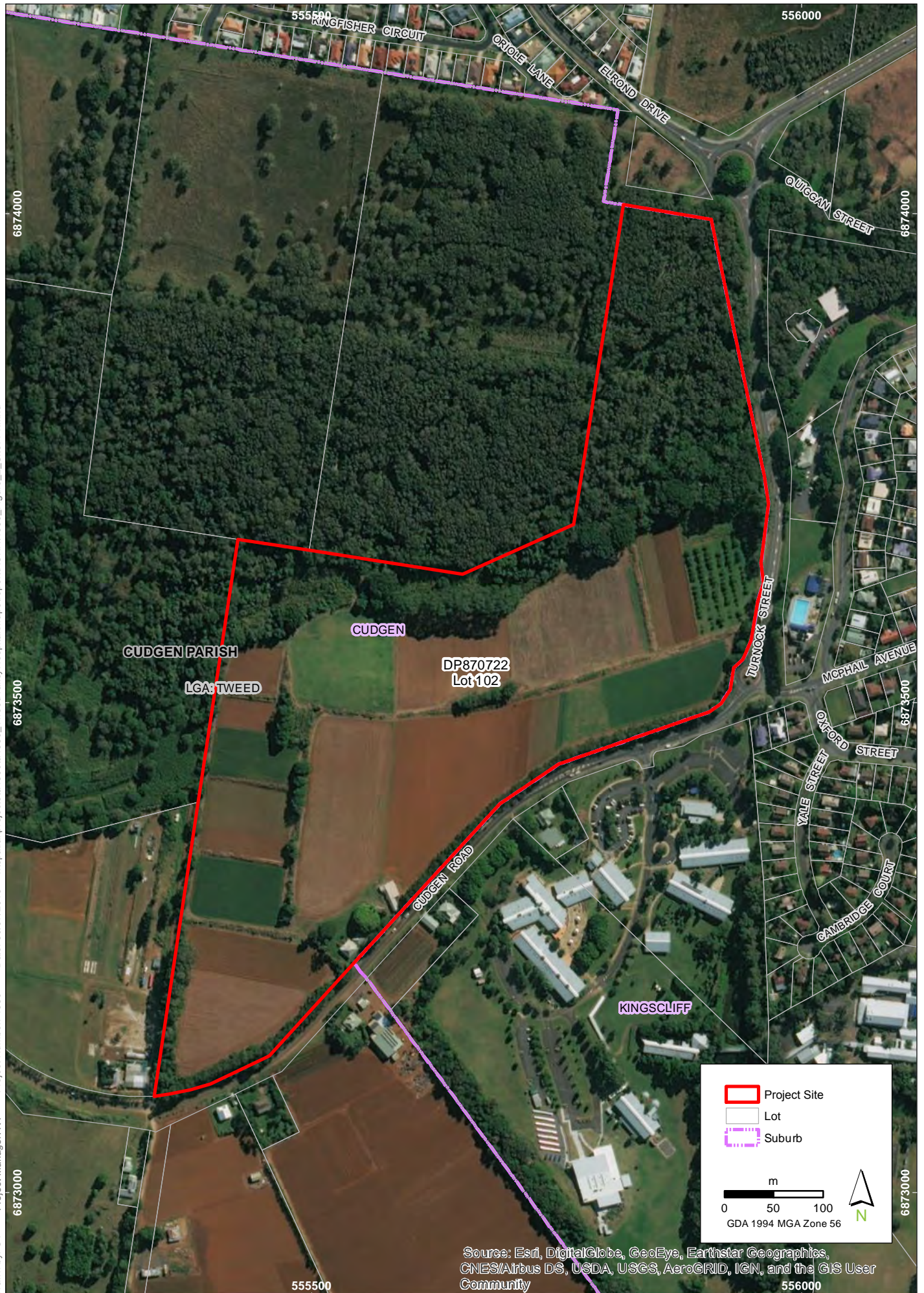
The site selection process identified the Project Site as the most suitable location for a major referral hospital serving the Tweed Valley and capable of achieving the best possible outcomes for patients, consumers and clinicians with regard to hospital design, amenity and future expansion based on the following criteria:

- Above flood levels – the site has 16 hectares of land above the Probable Maximum Flood (PMF) level with good street frontage and various access points.
- Existing road network – the site is located close to the M1 and adjacent to a major road (Tweed Coast Road).
- Easily accessible by the Tweed Valley community – the site is well located to service existing and future population centres across the Tweed Valley, providing timely access for the majority (approximately 70%) of the catchment in under 30 minutes and with an average peak travel time equivalent to the existing Tweed Hospital site.
- Public Transport – situated to take advantage of the existing public transport network.
- Proposed road network – the site will require a range of upgrades along Cudgen Road and at the Tweed Coast Road intersection. An extension of Turnock Street connecting it back to Tweed Coast Road is also planned.
- Flood Access – the site and its immediate access roads are above the PMF with good street frontage and various access points. There is alternative road access for the southern coastal population when the M1 and Tweed Coast Road are impacted by flooding. This will maintain access to acute hospital services for the population south of the Tweed River, with populations to the north able to access Robina Hospital within approximately 30 mins.
- Surrounding urban environment – the site is located on the outskirts of Kingscliff in close proximity to existing community facilities including the Kingscliff Community Health Centre, Kingscliff TAFE and retail and accommodation facilities in Kingscliff.
- Campus potential – the location opposite Kingscliff TAFE as well as the major population centre in Kingscliff provides an immediate opportunity to build on existing urban infrastructure and leverage education partnerships consistent with the aspiration of developing a health and education campus over time. The large size of the site allows for future hospital expansion as well as future planning for a broader health and education campus on the site.
- Planning considerations – the 23-ha site has mixed zoning including approximately 70% agricultural, 20% nature reserve and 10% residential. The site is located on the north eastern tip of the Cudgen Plateau that has been mapped as State Significant Farmland (SSF). The agricultural area of the site

represents approximately 0.13% of the total SSF mapped for the Far North Coast. A process will need to be undertaken to change the zoning of the site to permit development of the hospital and broader health and education campus over time.

- Impact on/of neighbouring properties – the site is well situated to take advantage of the existing public transport network, and active transport will be promoted including the provision of end of trip facilities. The master plan will position the hospital on the broad plateau towards the centre of the site, which is away from the short section of site frontage that has farming activities on the opposite side of the road. The master plan will maintain landscaping screening along the southern site road boundary to help provide an additional buffer.
- Healing Environment – the site sits on a north facing ridge, which maximises access to nature, light and provides panoramic views across the adjacent nature reserve, and out to the mountains and coast.
- Flooding consideration – the site has 16 ha of land above the PMF level and its immediate access roads are also above the PMF. The site is also opposite Kingscliff TAFE, a well-equipped evacuation centre identified in regional flood and disaster planning and used by nearly 600 people in the 2017 floods.
- Ecological considerations – the northern part of the site supports and is adjacent to mapped Coastal Wetlands under the Coastal Management SEPP. Some parts of the hospital campus may also abut/overlap mapped Proximity Area for Coastal Wetlands. Civil engineering review of the test fit master planning options indicate that the facility can be delivered with appropriate controls on the quality and quantity of surface and groundwater flows to the adjacent wetland. There is also the opportunity to improve stormwater runoff quality from current farming activities in terms of sediment impact.
- Koala Habitat Class 2A and broad-leaved paperbark have been identified in the northern part of the site and fall under the *Biodiversity and Conservation Act* (State Legislation). However ecological constraints are not present in the proposed location of the hospital development. Advisors have confirmed that based on the proposed footprint and associated impacts, this would not trigger a referral under the *Environmental Protection and Biodiversity Conservation (EPBC) Act* (Commonwealth Legislation). The mapped wildlife corridor is not directly impacted.
- Bushfire – buffers and Asset Protection Zones (APZ) have been considered during initial master planning to accommodate expansion and growth of the hospital. These buffers overlap with planned greenspace, amenity and future road access, as well as environmental buffers and can be used to enhance the healing environment and overall amenity of the campus.
- Land acquisition – the site is privately owned and was put forward by the landowner in response to the EOI process. The negotiation and site acquisition process will be undertaken in accordance with the *Land Acquisition (Just Terms Compensation) Act 1991*.
- Existing utilities – major utilities (including electricity, telecommunications, sewer, reticulated water supply and drainage infrastructure) are available in close proximity to the site.
- Enabling works – utilities connections and road upgrades to Cudgen Road from and including the intersection with Tweed Coast Road will be required.
- Potential Capital Cost – based on draft planning, assessment of the overall capital cost for developing the hospital on this site indicates that it is affordable within the allocated capital budget for the project.





## Project Site

Tweed Valley Hospital - Aboriginal Cultural Heritage Assessment

## FIGURE 2

Imagery: (c) DigitalGlobe 2016-07-01



### 3. Description of the Development Proposal

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#### 3.1 Proposed Activities

The project consists of:

- Delivery of a new Level 5 major referral hospital to provide the health services required to meet the needs of the growing population of the Tweed-Byron region, in conjunction with the other hospitals and community health centres across the region.
- Master planning for additional health, education, training and research facilities to support these health services, which will be developed with service partners over time. These areas will be used initially for construction site/ compound and at-grade car parking.
- Delivery of the supporting infrastructure required for the new hospital, including greenspace and other amenity spaces, campus roads and car parking, external road upgrades and connections, utilities connections, and other site infrastructure.

This ACHA assesses the disturbance areas associated with the proposed activities of the Project that have the potential to harm Aboriginal heritage sites.





ESSENTIAL ENERGY  
SWITCHING STATION

#### NOTES

LANDSCAPE INDICATIVE ONLY - REFER LANDSCAPE ZONAL PLAN L-MP-12

#### LEGEND

- SITE BOUNDARY
- MAXIMUM PLANNING ENVELOPE
- TREE TRUNK LINE
- APZ OFFSETS
- PROBABLE MAXIMUM FLOOD LEVEL
- INDICATIVE BUILDING ENTRIES



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CLIENT



PROJECT

**TWEED VALLEY HOSPITAL**  
**771 Cudgen Road, Cudgen**

DRAWING TITLE

**MASTERPLAN**  
**CONCEPT PLAN**

SCALE: 1:2500 @ A3 DATE: 19/09/2018 DRAWN BY: CE CHECKED: MH

PROJECT No: 10363 DRAWING No: AR-SKE-10-006 REVISION: 04

## 4. Investigators and Contributors

### 4.1 Research and reporting

The contributors to this archaeological report and their project roles are listed in Table 1.

**Table 1: Contributors-affiliations and roles**

Contributor	Affiliation	Role	Qualification / Experience
Rebecca Yit	Niche	Project Manager, Author	BA (Hons)
Clair Davey	Niche	Project Manager, Author, Field Assessment	BA(Hons) 8 years
Xavier Carah	Niche	Research, Author	PhD/ 3 years
Ross Jenkins	Niche	GIS, mapping	BSc, MSc, Grd Dip GIS, PhD
Jackie McDonald	Individual	Field Assistance, provision of cultural knowledge	
Paul Buxton	Individual	Field Assistance, provision of cultural knowledge	

### 4.2 Fieldwork

In addition to the representatives of the RAPs listed in Table 1, the individuals listed in Table 2 attended and/or supported the surveys and assessment in various capacities.

**Table 2: Aboriginal cultural heritage surveys and assessment – other participants or support personnel**

Name	Representing
Sue Follitt	TSA

## 5. Aboriginal Community Consultation Process

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In administering its statutory functions under Part 6 of the NSW *National Parks and Wildlife Act 1974*, the OEH requires that proponents consult with Aboriginal people about the Aboriginal cultural heritage values (cultural significance) of Aboriginal objects and/or places within any given development area; in accordance with Clause 80C of the NPW Regulation and the ACHCRs (DECCW, 2010a). Although state significant development that is authorised by a development consent granted under Division 4.1 of Part 4 of the EP&A Act is exempt from requiring an Aboriginal Heritage Impact Permit (AHIP) under section 90 of the NSW *National Parks and Wildlife Act 1974* and accordingly, from compliance with the consultation process in Clause 80C of the NPW Regulation, consultation with the Aboriginal community for this ACHA has nonetheless been undertaken in compliance with the requirements of these legislative instruments and the following guidelines:

- Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005);
- ACHCRs (DECCW 2010a);
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b);
- Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010c);
- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011);
- The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (Australia ICOMOS 2013);
- Engage Early (Commonwealth Government, 2016); and
- NSW National Parks and Wildlife Regulation, 2009 (NPW Regulation).

The OEH maintains that the objective of consultation with Aboriginal communities about the cultural heritage values of Aboriginal objects and places is to ensure that Aboriginal people have the opportunity to improve ACHA outcomes by:

- providing relevant information about the cultural significance and values of Aboriginal objects and/or places;
- influencing the design of the method used to assess cultural and scientific significance of Aboriginal objects and/or places;
- actively contributing to the development of cultural heritage management options and recommendations for any Aboriginal objects and/or places within the proposed Project Site; and
- commenting on draft assessment reports before they are submitted by the proponent to the OEH.



To assist proponents through the required consultation process, the DECCW (2010a) has prepared a guidance document, namely the ACHCRs. Consultation in the form outlined in the ACHCRs is a formal requirement where a proponent is aware that their development activity has the potential to harm Aboriginal objects and/or places. The OEH also recommends that these requirements be used when the certainty of harm is not yet established but a proponent has, through some formal development mechanism, been required to undertake a cultural heritage assessment to establish the potential harm their proposal may have on Aboriginal objects and places.

Consultation for this Project has been undertaken in accordance with the ACHCRs as these meet the fundamental tenants of the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC 2005), whilst also meeting current industry standards for community consultation.

The ACHCRs outline a four stage consultation process that includes detailed step by step guidance as to the aim of each stage, how it is to proceed and what actions are necessary for it to be successfully completed. The four stages are:

- Stage 1 – Notification of Project proposal and registration of interest.
- Stage 2 – Presentation of information about the proposed Project.
- Stage 3 – Gathering information about the cultural significance.
- Stage 4 – Review of draft cultural heritage assessment report.

The document also outlines the roles and responsibilities of the OEH, Aboriginal parties including Local and State Aboriginal Land Councils, and proponents throughout the consultation process. To meet the requirements of consultation it is expected that proponents will (DECCW 2010a):

- Bring the RAPs or their nominated representatives together and be responsible for ensuring appropriate administration and management of the consultation process.
- Consider the cultural perspectives, views, knowledge and advice of the RAPs involved in the consultation process in assessing cultural significance and developing any heritage management outcomes for Aboriginal objects and/or places.
- Provide evidence to the OEH of consultation by including information relevant to the cultural perspectives, views, knowledge and advice provided by the RAPs.
- Accurately record and clearly articulate all consultation findings in the final cultural heritage assessment report.
- Provide copies of the cultural heritage assessment report to the RAPs who have been consulted.

The consultation process undertaken for this Project to seek active involvement from relevant Aboriginal people followed the current NSW framework, namely, the ACHCRs and Clause 80C of the NPW Regulation. Section 1.3 of the ACHCRs describes the guiding principles of the document. The principles have been derived directly from the Australian Heritage Commission's *Ask First: A guide to respecting Indigenous heritage places and values* (Australian Heritage Commission 2002). Both documents share the aim of creating a system where free prior informed advice can be sought from the Aboriginal community.

The following sections outline the process and results of the consultation conducted during the preparation of this ACHA to ascertain and manage the Aboriginal cultural heritage values of the Project Site.



## 5.1 Stage 1 – Notifications and Registration

This stage of the consultation process is used to identify, notify and register any Aboriginal people or groups who may have a cultural interest in and/or possess cultural knowledge relevant to determining the cultural significance of Aboriginal objects or places within the Project Site.

The organisations contacted and the dates of correspondence are provided in Table 3:

**Table 3. List of Contacted Organisations for Step 1 of Consultation Process**

Name of Organisation	Date of Notification Sent	Date of Response Received
OEH – Coffs Harbour	5 July 2018	23 July 2018
Tweed Byron Local Aboriginal Land Council	16 July 2018	23 July 2018
National Native Title Tribunal	5 July 2018	17 July 2018
Native Title Services Corporation Limited	5 July 2018	-
Office of the Registrar, <i>Aboriginal Land Rights Act, 1983</i>	5 July 2018	16 July 2018
Tweed Shire Council	5 July 2018	-
North Coast Region Local Land Services	5 July 2018	-

As a result of the responses received, a total of 12 individuals and organisations were identified as potential knowledge holders for the Project Site. A full record of all correspondence received from and sent to the Aboriginal community and the abovementioned organisations is contained in Appendix 2, while copies of all relevant correspondence is provided in Appendix 1.

In accordance with Sections 4.1 and 4.2 of the consultation requirements outlined in the ACHCRs, all 12 individuals and organisations identified through the above correspondence were contacted in writing on 23 July 2018, and were invited to register an interest in the Project. Advertisements inviting the registration of Aboriginal persons or groups who hold cultural knowledge relevant to, or who have a right or interest in, determining the cultural heritage significance of Aboriginal object(s) and/or place(s) in the Project Site were published in the following newspaper (Appendix 1):

- *Tweed Daily* (18 July 2018);

As a result of the above consultation 11 individuals and organisations were registered as RAPs to the Project during the registration period (23 July – 6 August 2018). A copy of the list of the 11 RAPs, along with a copy of the written notifications and advertisements, were provided to the Coffs Harbour OEH Environment Protection and Regulation Group Office and the Tweed Byron Local Aboriginal Land Council (TBLALC) on 7 August 2018, in accordance with Section 4.1.6 of the ACHCRs. A list of RAPs is provided in Table 4.

**Table 4: Summary of Registered Aboriginal Parties for the Project**

Registered Aboriginal Parties (registered during the registration period 23 July – 6 August 2018)	
Name	Organisation
Maurice Gannon	Tweed Byron Local Aboriginal Land Council
Paul Buxton	Individual
Leweena Williams	Individual
Elih Gaangan Williams	Individual
Robert Appo	Community Development Officer , Tweed Shire Council
Ernie Williams	Individual

Registered Aboriginal Parties (registered during the registration period 23 July – 6 August 2018)	
Name	Organisation
Warren Phillips	Individual
Jackie McDonald	Individual
Jason McDonald	Individual
Ernie Jaawan Williams	Individual

A consultation log detailing all Aboriginal community consultation undertaken for the Project is provided in Appendix 2. A copy of relevant written correspondence sent and received is provided in Appendix 1.

## 5.2 Stages 2 and 3 – Gathering Information about Cultural Significance

### 5.2.1 Proposed Methodology

Information regarding the Project, a copy of the Proposed Methodology (Appendix 3) for review and comment and request for valid insurances was provided to the RAPs on 7 August 2018, in accordance with the ACHCRs (DECCW 2010a). A minimum of 28 days was allowed for RAPs to provide input in regards to the following aspects:

- the nature of the proposed methodology;
- any Aboriginal objects or places of cultural value within the Project Site, or issues of cultural significance;
- any restrictions or protocols considered necessary in relation to any information of sensitivity that may be provided; and
- any other factors considered to be relevant to the ACHA to be adopted into the information gathering process and assessment methodology.

The period for commenting on the proposed methodology closed on 6 September 2018.

### 5.2.2 Responses to Comments Received on Proposed Methodology

As described in Section 4.2.1, a copy of the proposed methodology was provided to all RAPs for their review and comment on 7 August 2018, with comments requested by 6 September 2018, allowing for a 28 day review period.

Comments raised in regards to the proposed methodology are listed in Table 5.

**Table 5. Responses from RAPs in regards to the proposed methodology**

Respondent	Date	Response
Robert Appo	13/08/2018	Thanks Xavier, much appreciated. I have had a look through the methodology and support this approach. I will be away on annual leave after this week for a couple of weeks but will be available via email. Cheers, Rob
Jason McDonald	04/09/2018	Hi Xavier,  Thank you for your email, I agree with the proposed methodology and all cultural information will be shared in person. Unfortunately I am unable to attend the site inspection Friday 7th September due to work commitments.  Thank you
Jackie McDonald	05/09/2018	Hi Cameron I have reviewed and agree with the proposed Methodology for the Tweed Valley Hospital. Regards Jackie McDonald

Respondent	Date	Response
Paul Buxton	05/09/2018	Hello Cameron, Xavier & Clair, I have reviewed and agree with the proposed Methodology for the Tweed Valley Hospital and I will be attending the meeting on Friday. Regards  Paul Buxton

There were no further responses received in regards to the proposed methodology in writing prior to the comment cut-off date.

### 5.2.3 Aboriginal Cultural Heritage Assessment Surveys

#### 5.2.3.1 Survey Engagement Application Process

All RAPs were invited to participate in the field survey. The invitation described the requirements that applicants need to satisfy for engagement in regards to fitness for work, insurances and personal protective equipment.

#### 5.2.3.2 Engagement for Surveys

Representatives from the following 11 RAPs were invited to participate in the conduct of the survey:

- Tweed Byron Local Aboriginal Land Council
- Robert Appo - Community Development Officer, Tweed Shire Council
- Jackie McDonald
- Paul Buxton
- Maurice Gannon
- Jason McDonald
- Leweena Williams
- Ernie Williams
- Ernie Jaawan Williams
- Elih Gaangan Williams
- Warren Philips

#### 5.2.3.3 Aboriginal Heritage Surveys

An Aboriginal cultural heritage survey was conducted on the following date:

- 7 September, 2018

Table 6 documents the representatives of the RAPs who attended the surveys.

**Table 6: Aboriginal Cultural Heritage Survey Attendance**

Representative	Registered Aboriginal Party
<b>7 September 2018</b>	
Jackie McDonald	Individual
Paul Buxton	Individual

### 5.3 Stage 4 – Review of Draft Report

A draft of this report (i.e. the draft ACHA) was provided to all RAPs for their review and comment on 12 September 2018 in accordance with Sections 4.3 and 4.4 of the ACHCRs (DECCW 2010a). RAPs were given 28 days to provide comment on the draft ACHA. The closing date for these comments was 9 October 2018. Comments on the draft ACHA are summarised in Table 7 below.

**Table 7: Comment made by RAPs in regards to the draft ACHA**

Representative Group	Comment	Niche Response
Jackie McDonald, Jason McDonald, Paul Buxton	<p>Hi Clair,</p> <p>Thank you for providing us with a copy of the Aboriginal Cultural Heritage &amp; Archaeological (ACHA) Report for the new proposed Tweed Valley Hospital. I am sorry for the delay in responding and appreciate your time on the phone today to clarify some things. I respond on behalf of my son Jason and my Brother, Paul. We have had a discussion about the draft ACHAR.</p> <p>In general, we are happy with the report, however, there are a couple of things that we respectfully submit to you for your consideration:</p> <p>1) We understand the draft ACHAR covers the immediate footprint of the proposed new hospital, where the survey was undertaken, however, we believe that a comment should be included to the effect that, should there be any additional works be carried out in the future, outside the current advertised hospital footprint, in areas that were not surveyed, that the Registered Aboriginal parties should be advised to determine whether a further survey in those areas is required.</p> <p>2) Page 28. 8.1 Ethnography and History</p> <p>I understand that the opening sentence could be an interpretation from information sourced from the Aboriginal Cultural Heritage Management Plan (ACHMP) for the Tweed Shire, in particular A2 on page 21 where it describes the languages spoken in and around the Tweed. It is definitely not a direct quote from the Tweed Shire ACHMP, nor is it implied that it is, however, for the sake of accuracy, I think the word 'Yugambah' should be removed. It doesn't necessarily follow that, although some of our old people spoke Yugambah on the Tweed, that the Tweed is their ancestral lands. My great Grandmother is a prime example of that, she is Yugambah and she married my great Grandfather from the Tweed and came to live here.</p> <p>3) A suggested opening phrase would be "The area of the Tweed Coast is known to have been the ancestral</p>	<p>Dear Jackie,</p> <p>Thank you for your response to the ACHAR and the time on the phone earlier today.</p> <p>In regards to your comments, please see responses in RED Text.</p> <p>1) We understand the draft ACHAR covers the immediate footprint of the proposed new hospital, where the survey was undertaken, however, we believe that a comment should be included to the effect that, should there be any additional works be carried out in the future, outside the current advertised hospital footprint, in areas that were not surveyed, that the Registered Aboriginal parties should be advised to determine whether a further survey in those areas is required.</p> <p>I have included the following recommendation:</p> <p>Recommendation 4: Further Aboriginal cultural heritage works</p> <p>In the event that works causing ground disturbance are planned within the vegetated section of the Project Site (i.e. the section along the water and in the north), consultation with the RAPs and a further cultural heritage survey with representatives of the RAPs will be required.</p> <p>2) Page 28. 8.1 Ethnography and History</p> <p>I understand that the opening sentence could be an interpretation from information sourced from the Aboriginal Cultural Heritage Management Plan (ACHMP) for the Tweed Shire, in particular A2 on page 21 where it describes the languages spoken in and around the Tweed. It is definitely not a direct quote from the Tweed Shire ACHMP, nor is it implied that it is, however, for the sake of accuracy, I think the word 'Yugambah' should be removed. It doesn't necessarily follow that, although some of our old people spoke Yugambah on the Tweed, that the</p>

Representative Group	Comment	Niche Response
	<p>lands of the Minyanbal people of the Bundjalung Nation”.</p> <p>4) Page 28 (and if Wollumbin is mentioned on any other pages) Wollumbin/Mt Warning has been gazetted its dual name for some years now, so I believe the more we promote the dual naming, the better, for educational purposes. I also believe that Boileau 2004 also refers to Wollumbin.</p> <p>5) Since the cultural mapping for the ACHMP was carried out for Tweed Shire Council, whether or not ‘Tweed Shire Council ACHMP 2017’ ought to be referenced, rather than Eisermann 2017 is a matter for you.</p> <p>Thank you for the opportunity to comment on the draft ACHAR.</p> <p>Kind regards</p> <p>Jackie McDonald, descendant of Kitty Sandy of the Tweed Valley</p>	<p>Tweed is their ancestral lands. My great Grandmother is a prime example of that, she is Yugambah and she married my great Grandfather from the Tweed and came to live here. Noted.</p> <p>I have removed reference to the Yugambah from this sentence.</p> <p>3) A suggested opening phrase would be “The area of the Tweed Coast is known to have been the ancestral lands of the Minyanbal people of the Bundjalung Nation”.</p> <p>Noted, I have included the opening phrase as you have suggested.</p> <p>4) Page 28 (and if Wollumbin is mentioned on any other pages) Wollumbin/Mt Warning has been gazetted its dual name for some years now, so I believe the more we promote the dual naming, the better, for educational purposes. I also believe that Boileau 2004 also refers to Wollumbin.</p> <p>Noted I have changed the references to Mt Warning to reflect the dual naming.</p> <p>5) Since the cultural mapping for the ACHMP was carried out for Tweed Shire Council, whether or not ‘Tweed Shire Council ACHMP 2017’ ought to be referenced, rather than Eisermann 2017 is a matter for you.</p> <p>Noted.</p> <p>I will arrange for a FINAL version to be sent to you via email and in hardcopy for your review.</p> <p>Again, thank you for your comments and feedback,</p> <p>Kind regards</p> <p>Clair</p>

All RAPs were provided with a printed copy of the main text of the draft ACHA, and an electronic copy of the full draft ACHA (including all supporting appendices). All RAPs were also advised if they wish to discuss anything within the report they could get in contact with Clair Davey (Niche) directly.

#### **5.3.4 Review of final report**

A copy of the final ACHA report will be made available by the DP&E to all RAPs during the public exhibition period for the Tweed Valley Hospital Project EIS. During this exhibition period all RAPs will have the opportunity to review and provide additional comment on the final ACHA report as well as any other part of the EIS (e.g. including the ecological and water assessments).



## 6. Heritage Register Searches

### 6.1 Commonwealth Registers

Under the EPBC Act two mechanisms have been created for the protection of heritage places of National or Commonwealth significance (<http://www.environment.gov.au/heritage/places/national/index.html>) – the National Heritage List (NHL) and the Commonwealth Heritage List (CHL). The NHL provides protection to places of cultural significance to the nation of Australia, while the CHL comprises natural, Aboriginal and historic heritage places owned and controlled by the Commonwealth. There are no management constraints associated with listing on the Register of the National Estate (RNE) unless the listed place is owned by a Commonwealth agency.

A search of the Australian Heritage Database was undertaken on 26 July 2018. There are no heritage listings relevant to the Project Site.

### 6.2 State Registers

#### 6.2.1 State Heritage Register

The *State Heritage Register* (SHR) holds items that have been assessed as being of State Significance to NSW. The *State Heritage Inventory* (SHI) contains items that are listed on Local Environmental Plans and/or on a State Government Agency's section 170 register (OEH website [www.heritage.nsw.gov.au/index.html](http://www.heritage.nsw.gov.au/index.html)). An assessment of heritage significance is required for items greater than 50 years in age. Items appearing on either the SHR or SHI have been granted a defined level of statutory protection under NSW legislation.

A search of the SHR was completed on 26 July 2018. There are no Aboriginal heritage sites listed on the SHR within the Project Site.

#### 6.2.2 Environmental Planning and Assessment Act Registers

Each Local Government Area is required to create and maintain a Local Environmental Plan that identifies and conserves Aboriginal and historic heritage items. These items are protected under the EP&A Act and the NSW *Heritage Act, 1977*.

##### 6.2.2.1 The Tweed Local Environmental Plan (LEP) 2014

A search of the Tweed Local Council LEP (2014) was undertaken on 26 July 2018. No Aboriginal heritage sites were listed in the LEP.

To promote awareness and added protection for Aboriginal Cultural Heritage within the Tweed LGA, the Tweed Shire Council commissioned and have subsequently adopted the Aboriginal Cultural Heritage Management Plan (ACHMP) in July 2018. A key component of the ACHMP was the development of a Landform Mapping and Predictive Modelling (LMPM) tool which highlights places with known and predicted Aboriginal cultural heritage. The predictive modelling framework is based on a range of criteria including but not necessarily limited to, previous archaeological assessment and the landscape context for the area (ACHMP 2018).

A search of the LMPM was conducted on 26 July 2018, identifying that most of the Project Site has been mapped as part of a larger area containing 'Predicted Aboriginal cultural heritage' (refer to Figure 4). For those areas nominated within this category, the ACHMP (2018: 96) recommends:

“...an appropriate level of assessment be undertaken and consultation completed with the Aboriginal community at the commencement of a site specific planning proposal or masterplan and prior to the lodgement of a planning proposal.”

### **6.2.3 National Parks and Wildlife Act Registers (AHIMS)**

A search of the AHIMS was conducted on 19<sup>th</sup> June 2018 (AHIMS Client ID 351986), revealing that no previously recorded sites have been identified within or in proximity to the current boundaries of 771 Cudgen Road. Consequently, proposed activity at 771 Cudgen Road would not impact on any registered Aboriginal sites. However 771 Cudgen Road is situated in a landscape setting comprising of an elevated terrace and slope, situated above a swamp and heavily vegetated drainage system. These landscape features are listed in the Due Diligence Code as signifying a strong likelihood that Aboriginal objects may be present:

- within 200m of waters, and
- located on a ridge top, ridge line or headland.

771 Cudgen Road represents a likely landscape for sites of past occupation with the potential for camp sites, a prominent position over the swamp and proximity to a wide variety of resource types.

Care should be taken when using the AHIMS database to reach conclusions about site prevalence or distribution. The distribution of registered sites does not reflect patterns of occupation, but rather is indicative of survey coverage and conditions.

## 7. Landscape context

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### 7.1 Overview

Consideration of the landscape is essential to the definition and interpretation of past Aboriginal land use across a landscape, and is a requirement of any Aboriginal archaeological and cultural heritage investigation (DECCW, 2010a: 8). The landscape may provide clues as to those areas of land that may have been more intensively used by Aboriginal people in the past due to the presence of resources such as water, stone, plants and animals; and other raw materials or landscape features associated with sustenance, shelter, tool manufacture and cultural activities.

The landscape provides the context within which the material remains of past Aboriginal occupation may be preserved and detected, due to the movement of soil through geomorphic processes such as erosion or its removal from the landscape through past land use and disturbance (DECCW, 2010a: 8). By considering these factors, an Aboriginal cultural heritage investigation may develop a sampling strategy for identifying any tangible Aboriginal heritage values.

### 7.2 Topography, landform and waterways

The Project Site is located within the North Coast Bioregion, which ranges from coastal sand dunes to steep slopes and gorges of the Great Escarpment. The dominant topographic characteristic within the Cudgen locality is a defined east west running ridge that links the Cudgen Plateau to the Kingscliff coast. The Project Site incorporates part of this ridgeline, affording views towards topographic features within the broader region. Together with the elevated ridgeline, the Project Site also includes the associated north facing slope and a section of adjacent low-lying wetland, formed as part of a larger interdunal swale that runs parallel to the Wommin Bay coastal foreshore. Other water sources include Cudgen Creek and its associated estuary situated approximately 700m south east of the Project Site.

### 7.3 Geology and soils

The ridgeline and slopes of the Project Site is characterised by tertiary volcanic soils associated with the Mt Warning/Wallumbin complex including red and brown friable loams (NSW OEH: Subregions of the North Coast Bioregion) as well as iron oxide sandstone, and haematite which is known as a source of red ochre for Aboriginal people in the area. Rock types include basalt of the Lamington Volcanic Series with minor occurrences of rhyolite and tuff. The lower lying sections of the Project Site are identified as Quaternary beach and sand dune deposits associated with the coastal interdunal unit and prone to waterlogging.

### 7.4 Vegetation

Vegetation mapping identified that the Project Site incorporates a narrow section of Melaleuca and Swamp She-oak forest associated with the wetland and interdunal landform. The Project Site also incorporates a section of subtropical rainforest, consisting of a high canopy with a medium to dense forest understory immediately west of Turnock Street. It should be noted that the majority of the Project Site has been cleared of vegetation, including the ridgeline and slopes and some of the low-lying ground adjacent to the wetland.

### 7.5 Recent land use activities

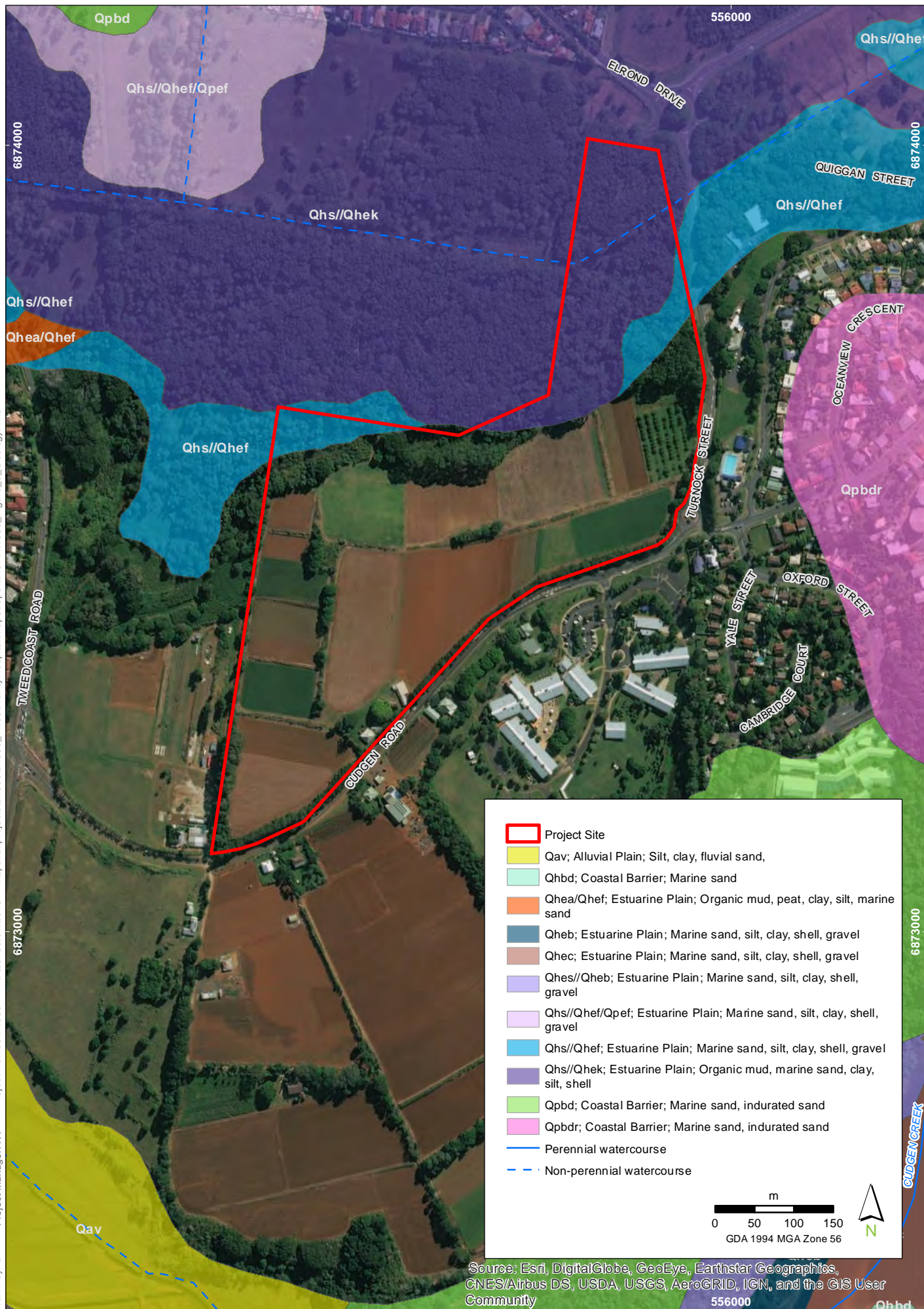
The majority of the Project Site has experienced extensive disturbance from land clearing activities from sugar cane cultivation in the 1870's to present day agricultural use. Much of the rock across the Project Site has been raked up and piled along the boundaries and across the property, forming minor anthropogenic

earthworks. As a result, much of the Project Site is described as moderately to highly disturbed, and therefore any artefact bearing soil deposits have been heavily disturbed.

## **7.6 Summary**

The extent of disturbance from previous and current farming activities, within much of the Project Site, mean it is unlikely that there will be undisturbed archaeological deposits related to Aboriginal occupation. This includes the elevated ridgeline and north facing slopes within the Project Site. The lower-lying areas adjacent to the wetland may be less disturbed and there exists some potential for subsurface archaeological deposits in these areas. Additionally, landscape features such as those commonly identified as places of importance to Aboriginal people are noted within and adjacent to the Project Site. There is the potential for intangible cultural heritage values to exist.





## Geomorphology and hydrology in the local area

Tweed Valley Hospital - Aboriginal Cultural Heritage Assessment

**FIGURE 4**

Imagery: (c) DigitalGlobe 2016-07-01



## 8. Aboriginal Archaeological Context

### 8.1 Ethnography and History

The area of the Tweed Coast is known to have been the ancestral lands of the Minyanbal people of the Bundjalung Nation (Jackie McDonald *pers comms*). Aboriginal oral tradition tells the dreaming story that three brothers came to the land, giving lore and custom and forming the tribes known today (Tweed Regional Museum in Eisermann 2017). The language group for people of the Tweed is known as Ngandowal, referring to people who say “Ngando” for the word *who* or *somebody* (Tweed Regional Museum in Eisermann 2017).

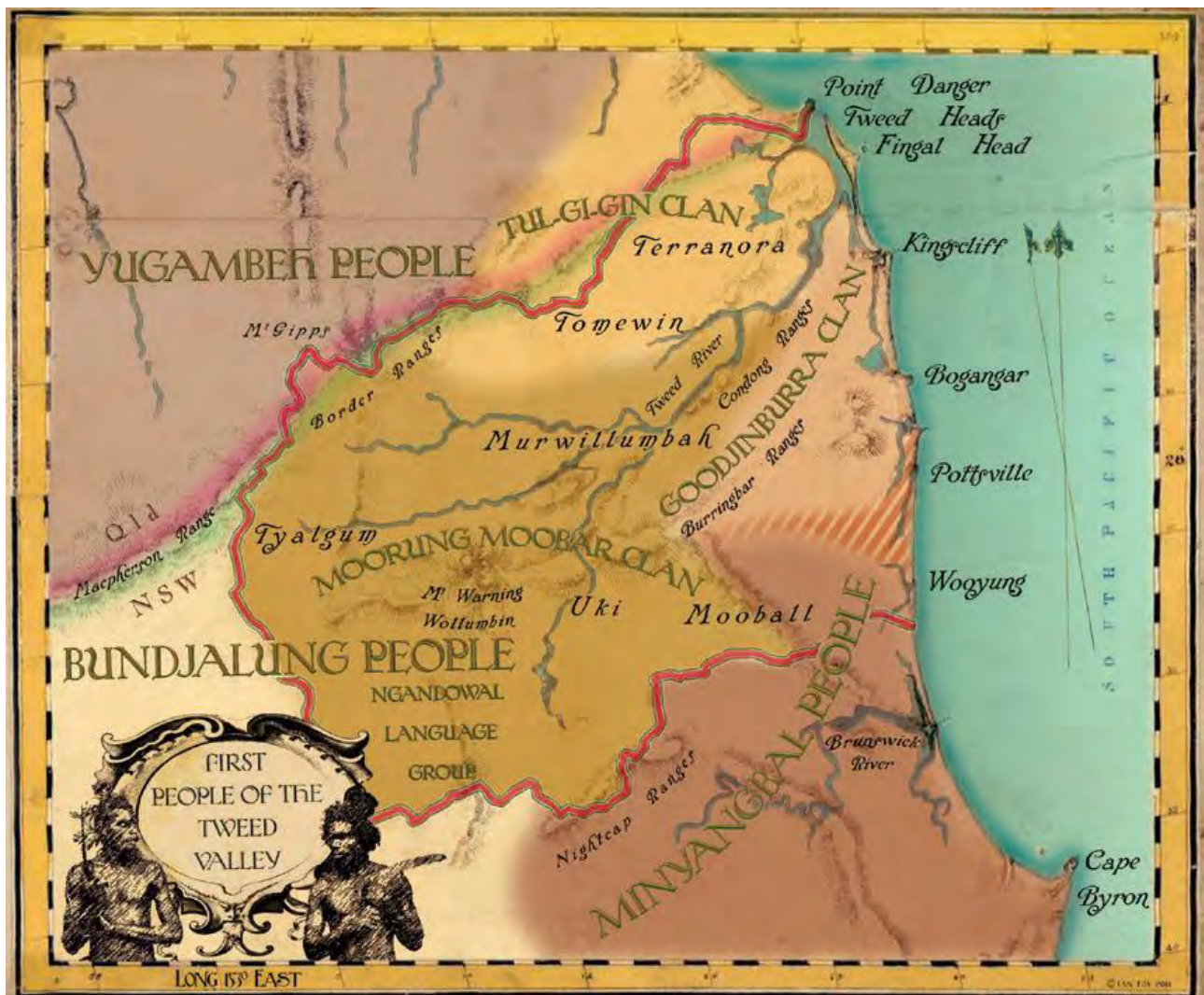


Plate 1. Map of the First People of the Tweed Valley Source [Tweed Valley Museum](#)

Mount Warning, also known as Wollumbin is recorded to have high significance to local Aboriginal people (Boileau 2004; Tweed Regional Museum in Eisermann 2017). The area was rich in natural resources including plants and animals that Aboriginal people hunted and collected. Fire was used as a management tool and hunting aid that assisted Aboriginal people in maintaining their ancestral lands and customs. The regions numerous pathways, ceremonial and meeting grounds and campsites provides evidence of the use and importance of this place. Ethnographic records for the earliest years of European contact are relatively sparse however numerous names and boundary maps have been produced, which is testament to the

range of population groups and the fluidity of Aboriginal social groups and patterns of land use (Boileau 2004:20).

Early researchers in the area documented that contact between the Tweed clans extended south to Ballina and north to southern Moreton Bay (Piper 2001:12) as part of social gatherings (Davies 2004:14). Gatherings often coincided with Bunya nut harvesting, with trade documented from Tweed groups who returned from the harvest with Brigalow Spears (Davies 2004:14). Food resources in the region were abundant (Tindale 1974:127) with people living relatively sedentary lifestyles in villages and camp sites, exploiting the local marine environments (Davies 2004:14). Huts in these villages were large, with reports of some being 30 feet long and six feet high (Davies 2004:14). In the land near Cudgen, there was a hill that was an important source of ochre (Boileau 2004:20).

An early account of Aboriginal life was made by the Uniacke and Oxley team as they travelled up the Tweed River:

*On the right bank of the river were standing one man and several women and children, all perfectly naked. They did not appear so timid as the Indians usually are, but remained quietly while we landed to search for fresh water, the river being still brackish. The man was curiously scarified all over the body, the flesh being raised as thick as my finger all over his breasts. He talked loudly for some time, using much gesticulation, and frequently pointing to the other side of the river, where we had observed a number of native huts. We could not however obtain from him any information with regard to the object of our search; so after giving him some biscuit, which he tasted and instantly spat out again, we left him, and as it was now late, proceeded towards the vessel, resolving the next day to return and follow the river as far as circumstances would allow. We saw no weapons of any description among these people, with the exception of a stone hatchet hanging at the back of one of the women, which was of wretchedly rude formation ... In the mean time a number of natives, amounting to about 200, collected on the shore opposite the vessel, and we could perceive with the glass that they had all spears. They continued quietly watching us till they saw the square-sail hoisted and vessel under way, when they set up a loud shout, and continued dancing and shouting while we were within hearing (Uniacke 1825 in Boileau 2004).*

Uniacke also described the landscape as:

*The country on either side was very hilly, and richly wooded, and the view altogether beautiful beyond description ... the soil seemed rich, and the timber evidently improved in size and quality. The scenery here exceeded anything I had previously seen in Australia – extending for miles along a deep rich valley, clothed with magnificent trees, the beautiful uniformity of which was only interrupted by the turns and windings of the river, which here and there appeared like small lakes, while in the back ground, Mount Warning (the highest land in New South Wales) reared its barren and singularly shaped peak, forming a striking contrast with the richness of the intermediate country (Uniacke 1825 in Eisermann 2017)*

The increase in European occupation led to more detailed descriptions of Aboriginal land use. The Commissioner for Crown Lands reported to the Colonial Secretary in 1884 that:

*The aborigines of the Sea Coast are probably the most numerous, a Distinct Tribe occupying every Island and inlet of the Sea from the River Tweed to the Namabulla or Wide Bay River, ... Having more ample means of subsistence, they are consequently less migratory in their habits ... The next most numerous class of aborigines are those inhabiting the Dividing Range and the Eastern branch of it ... they are very numerous and are divided into numerous small tribes, principally occupying the heads of small creeks*

*and rivers ... the third class are those occupying the banks of the Rivers and Creeks, they are in general named after the locality they principally inhabit ... The whole number of aborigines in this district cannot be put much under five thousand ... (in Boileau 2004)*

Estimates of populations suggest that up to 5000 people occupied the Tweed Region, with large groups observed by early ethnographers including Bray (1901) who observed 600 people camping on the Wollumbin Plain west of Murwillimbah, and Uniacke (1825) who saw around 200 men brandishing spears on the banks of the Tweed River at Fingal Head. People were able to exploit coastal, estuarine, riverine, subtropical rainforest and swamps within a relatively small area resulting in an abundant food supply (Bonhomme Craib and Associates 2004:3-1).

Diet varied greatly between coast and inland groups, with a late nineteenth century description of inland diet being that 'for game they had opossums, many varieties of kangaroo and wallaby, snakes, bandicoots, porcupine and flying foxes, together with any birds they could get and a good deal of fish in summer and large mussels from the lagoon. Another account describes the consumption of birds, fish, forest fruits, berries, nuts and honey, with carpet snake a particular luxury. Both these descriptions of the inland diet reflect the major ecological zones: the fresh water streams, rainforests and wet sclerophyll forests'. Coastal groups subsisted on scrub turkey, fish, crabs, oysters and paddymelon (Boileau 2004:24-25). The bungwall fern that grows in freshwater streams was also an important food resource. They were processed by pounding with bevelled pounders then roasted (Bonhomme Craib and Associates 2004:3-1). Other plant species used by Aboriginal people included roots of Gynea Lily, Milkmaids, Yams, Fig, Native Guava, Pigeon Berry, Rough Tree Fern, Apple berry, Lance Leaf Geebung, Lillipilli, wild grapes, wild cherries, Moreton Bay Chestnut, Bush Nuts and Bunya Nuts (Davies 2004:15).

Hunting equipment was made of stone with wood and vegetable fibres, which means that very little of the wide variety of material culture items would have survived other than the durable stone artefacts. Despite a difference in diet between inland and coastal groups, it appears that their material culture was similar (Davies 2004:16). Equipment included stone axes, spears, fishing nets, bags, clubs, boomerangs, shields, tomahawks, digging sticks, watertight containers and canoes. Different spear types have been recorded, including heavy hardwood with fire hardened tips or lightweight reed type spears (Boileau 2004:26-27). Ainsworth (1987:34) describes the types of nets used being:

*In catching fish they used what they called a 'tow row' – that is a finely meshed net attached to a stick of bamboo bent in the shape of bow about eight feet across between the two ends. This gave a bag effect to the net and with a tow row in each hand the blacks could surround the fish schools in narrow and shallow waters and catch them by the hundreds. The cordage of these nets, which were very strong and beautifully woven was made from the inside fibre of the stinging tree and from the bark of the currajong. They used a similar net in hunting. This was made of the same fibre in long sections of four feet in width. These sections when joined together for the purposes of the chase would extend sometimes to a half-mile in length. Where game was plentiful in the forest or scrub the blacks would run the net after the manner of a fence in the shape of a semi circle. Then the whole tribe with the dogs would beat up the neighbourhood for a mile or two and drive all game – everything – towards the open end of the enveloping net. (Ainsworth 1987 in Davies 2004:16).*

Ceremonial traditions included Bora ceremony as described by Bray (1902) in around 1870:

*This ceremony was visited by all the tribes within about forty miles, travelling a few miles a day to the spot where the Boorl was held. The complex was a tworing earth complex, which may take three to four weeks to construct. When all is complete, a party of men ... the oldest single man from each tribe*



*numbering from 50 to 150, called Chim-ming-o-re-gun, come marching up ... all fully armed, their heads coloured with feathers and dingoes tails. Toward morning the initiates (Tabboo) are introduced to the ring. At a given signal the initiates are seized by a relation ... and passed down the tunnel to a smaller ring. When they arrive, the Chim-ming-o-re-gun are standing round the ring, with torches and firesticks, two of their number on stumps in the centre. At the first approach of day the initiates and the Chim-ming-o-re-gun leave the ring and go away into the bush where they remain for six to eight weeks. During this time they are made to do all the work and they are constantly lectured as to what they must do now they are men. (Bray 1902 in Boileau 2004:29).*

In summary, the ethnographic record indicates that for the most part, resources were abundant, people formed semi sedentary villages and trade and exchange flourished. Unfortunately, a large portion of the materials used by the Tweed Coast inhabitants was perishable, which means that places that were more frequently used such as midden sites, stone artefacts or stone arrangements, bone including burials and fragments of cooking fires are all that survives. Many of these places have already been impacted directly or indirectly by development activities within the Tweed region.

## 8.2 Local Archaeological Investigations

There has been one previous assessment within the Project Site completed by Niche (2018).

A search of the AHIMS was conducted on 19<sup>th</sup> June 2018 (AHIMS Client ID 351986), revealing that no previously recorded sites have been identified within or in proximity to the current boundaries of 771 Cudgen Road. Consequently, proposed activity at 771 Cudgen Road would not impact on any registered Aboriginal sites. However 771 Cudgen Road is situated in a landscape setting comprising of an elevated terrace and slope, situated above a swamp and heavily vegetated drainage system. These landscape features are listed in the Due Diligence Code as signifying a strong likelihood that Aboriginal objects may be present:

- within 200m of waters, and
- located on a ridge top, ridge line or headland.

771 Cudgen Road represents a likely landscape for sites of past occupation with the potential for camp sites, a prominent position over the swamp and proximity to a wide variety of resource types.

A brief site visit was undertaken on the 15<sup>th</sup> June 2018 to better understand local conditions and the possible constraints associated with 771 Cudgen Road. Plates 2-5 show the environment, level of previous disturbance and remnant vegetation within 771 Cudgen Road. The visual inspection noted varied levels of surface and ground disturbance across the 771 Cudgen Road with the elevated sections of the landscape including the terrace and associated slope subject to extensive disturbance from vegetation clearing and agricultural activities such as ploughing, planting of trees and other farming related activities.

Identifying the extent of disturbance is important because where activities are proposed in an area where the ground has been disturbed, it is generally unlikely that any evidence of Aboriginal cultural heritage will remain. The extent of disturbance along the southern, eastern and western boundaries indicates low potential for intact soil profiles and low potential for Aboriginal objects in these areas (Plates 2 and 3).

The low-lying areas adjacent to the wetland and remnant vegetation appeared to be less disturbed and there may be potential for intact subsurface archaeological deposits within these areas (Plate 4).

The presence of remnant vegetation suggests greater potential for undisturbed contexts which may preserve traces of Aboriginal occupation (Plate 5). Visual inspection noted no visible signs of high level

disturbance, with this area appearing largely intact. There is therefore potential for Aboriginal objects including within archaeological deposits in this area.

Landscape features such as those features commonly identified as places of importance to Aboriginal people were noted within and adjacent to the Project Site, including the swamp and remnant vegetation. Some residual intangible cultural heritage may still exist within 771 Cudgen Road that may not result in a physical trace or indicator of their existence in the landscape. It should be noted that intangible Aboriginal cultural heritage values can only be ascertained through consultation with the Aboriginal representatives for the area.



**Plate 2. Looking north east across 771 Cudgen Road along the Cudgen Road southern boundary and towards Turnock Street eastern boundary. Note extensive ploughing and farming activities.**



**Plate 3. View looking south west from Turnock Street eastern boundary.**



**Plate 4. View south west across 771 Cudgen Road looking upslope over crops and ploughed land. Note north west facing slopes leading down towards the swamp and drainage system and low-lying ground.**



**Plate 5. View west, along the northern boundary of 771 Cudgen Road, towards an area of remnant sub-tropical vegetation in the northern extension of the 771 Cudgen Road.**

### 8.2.1 Summary of Local Archaeological Studies

A search of the AHIMS register also identified several archaeological investigations relevant to the Project Site. A summary of these assessments is provided in Table 8.

**Table 8. Summary of local Archaeological Studies**

Assessment author and year	Description of assessment
Everick (2012)	Extensive work by Everick Pty Ltd (among others) at Kings Forest, approximately 3km southwest from the current Project Site is important in examining the local area in a broader Aboriginal cultural heritage context. A total of 17 Aboriginal sites comprising of midden, artefact scatter complexes and isolated finds were recorded within the Kings Forest area. These sites were situated across a number of landscape features including highly modified interdunal swales, low slopes associated with a small ridge and wetland surrounding Cudgen Lake and Cudgen Creek. Given the large area under examination, the archaeological finding when combined with the Aboriginal cultural heritage values were viewed as part of the broader Aboriginal cultural landscape for the Tweed.
Everick (2010)	Cultural Heritage Assessment of Lot 490 Kingscliff Resort, Kingscliff an unpublished report: This assessment was completed prior to the development of ecotourism facilities at this location. It reviewed archaeological findings in a local context, noting the presence of artefact scatters in and around the Cudgen and Kingscliff coastal streams and adjacent low lands and made predictive statements regarding site types for the area. The study found that earlier sand mining in the area had caused extensive disturbance to any potential insitu archaeological deposits in the interdunal system and as a result no Aboriginal sites, or areas of archaeological potential were identified. Ground surface visibility across the area was noted as generally poor.
Davies (2004)	Aboriginal Cultural Heritage Assessment: 355 Cudgen Road, Cudgen an unpublished report: The purpose of this assessment was to undertake a review and field survey to identify if any Aboriginal cultural heritage values existed within the proposed development zone. This assessment included a comprehensive review of the archaeological material of the area at the time, as well as the Aboriginal history of the region. Given the close proximity of this assessment to the current Project Site, this report has been used in developing site prevalence predictions for the current assessment.
Piper (2001)	Archaeological Assessment: Lots 26C / 26D DPP10715 and Part Lot 4 CP 727425 Cudgen, an unpublished report: This assessment reported on the results of an archaeological assessment of Lots immediately to the north of the Project Site, within the area identified as wetland and interdunal coastal zone. No Aboriginal sites or areas of archaeological potential were identified during the assessment and the landforms within the area were concluded as not being of a type that would be archaeologically sensitive. Given the close proximity to the current Project Site, Piper's report was used in developing site prevalence predictions for the current assessment.
Piper (2000)	Archaeological Assessment at Lot 2, Crescent Street, Cudgen an unpublished report: This assessment examined an area of low lying alluvial floodplain, northwest of the current Project Site, identifying a campsite with a low density artefact scatter composed of flakes, scrapers, cores and retouched flakes. The site was noted as highly disturbed but considered significant given that the site represents the only occurrence of a camp sites with artefacts to be identified on the Tweed River flood plain (Piper 2009-29-30).

### 8.3 Regional Archaeological Studies

The beach and intertidal areas around Brisbane and the Gold Coast, to the western parts of the Border Ranges is one of the best studied coastal regions. There have been thousands of shell middens found in the intertidal regions including on islands, headlands, estuaries and beaches (Boileau 2004:18). Aboriginal occupation of the local region is documented to have been from at least 10,000 years to the present, although a radio carbon date from Wallen Wallen Creek at the nearby Stradbroke Island demonstrates occupation of the wider region from 22,000 years ago (Neal and Stock 1986). Dates of around 10,000 years ago have also been recorded from Bushrangers Cave, a rock shelter site in the Tweed and Numinbah valleys (Bonhomme Craib and Associates 2004:3-3; Hall 1986; Piper 2001:11) situated on an ancient Aboriginal



pathway leading from the northern end of the Tweed Valley (Boileau 2004:18). The long record in bone suggests that diet, including wallaby, possum, turkey egg, fish and other animals did not change throughout the ten thousand years of occupation (Hall 1986). This also suggests that local environments that supported the animals was stable.

Walters et al (1987) undertook archaeological excavations of a shell midden on Hope Island on the Gold Coast. This was dated to 4,500 years ago and provides evidence of coastal exploitation for food. Most coastal dates are around this age or younger. This is likely a result of changing sea levels over time resulting in the inundation of older coastal sites that may be hundreds of meters off the current shoreline (Bonhomme Craib and Associates 2004:3-3).

To the south of the Project Site at the Clarence River estuary, excavations have identified shellfish based economies dated to between 4,000 – 1, 000 years ago (McBryde 1982). Contemporaneous assemblages from further inland on the Clarence River indicating an exclusive exploitation of wallaby, kangaroo, possum, bandicoot and some freshwater animals such as fish, tortoise and molluscs being the main source of food (McBryde 1974). It is possible that these sites indicate the seasonal use of the landscape, with marine environments being targeted in summer and inland sites during the rest of the year, or could indicate more sedentary groups carrying out trade and exchange (Davies 2004:22).

The first archaeological excavation in the Tweed Region was at Terranora. Here was a midden site approximately 65 m x 11 m and 40 cm deep. Burials were also found at the location and moved to the Tweed River Aborigines memorial (Barz 1982, Piper 1994 in Bonhomme Craib and Associates 2004 3-3). Locally, a shell midden on the Tweed River was radio carbon dated to between 4700 – 4200 years BP (Appleton 1993:34) demonstrating both reliance on marine resources and occupation during the Holocene period. A similar midden site was excavated at Sextons Hill near the Tweed River. It contained oyster, whelk, cockleshell, paddymelon, snapper and bream bones and artefacts such as bone points, ochre and stone artefacts (Appleton 1993:49 in Bonhomme Craib and Associates 2004).

Piper in 1991 undertook a pedestrian survey of the Tweed River downstream of Barneys Point Bridge Terranora Creek, Terranora Broadwater, Cobaki Creek and Cobaki Broadwater. He identified fourteen middens, eight of which were extensive, well preserved and contained stratified deposits (Bonhomme Craib and Associates 2004:3-4). Similar surveys along Tallebudgera Creek have identified shell middens, scarred trees and artefact scatters.

Another midden was recorded by Lilley in 1985 on the Cobaki Broadwater foreshore and later listed on the Register of the National Estate for its cultural heritage significance. It represented one of the few remaining camping sites on the Gold Coast/Tweed region (Bonhomme Craib and Associates 2004:3.4). A later inspection by Hall reported that the site had been subject to disturbance by sand mining which had reduced the overall significance of the site.

In summary, the vast majority of sites within the Tweed Region are shell middens, with some stone artefact scatters either occurring on their own or in context with midden deposits. Scarred trees and stone arrangements are less frequently encountered, likely due to intensive logging and land clearing activities that have transformed the landscape since European contact.

## 8.4 Synthesis and Predictive Model

In summary, the most probable archaeological site types that may be found in the area include middens, open sites, consisting of artefact scatters or less frequently, scarred trees. The extent of disturbance from previous and current farming activities, within much of the Project Site, mean it is unlikely that there will be

undisturbed archaeological deposits related to Aboriginal occupation. This includes the elevated ridgeline and north facing slopes within the Project Site. The lower-lying areas adjacent to the wetland may be less disturbed and there exists some potential for subsurface archaeological deposits in these areas. Additionally, landscape features such as those commonly identified as places of importance to Aboriginal people are noted within and adjacent to the Project Site. There is the potential for intangible cultural heritage values to exist.

This predictive model has been developed based on a review of the landscape context, ethnographic data and the archaeological context. The following criteria have been used to determine the archaeological potential (both surface and subsurface deposits) of the Project Site:

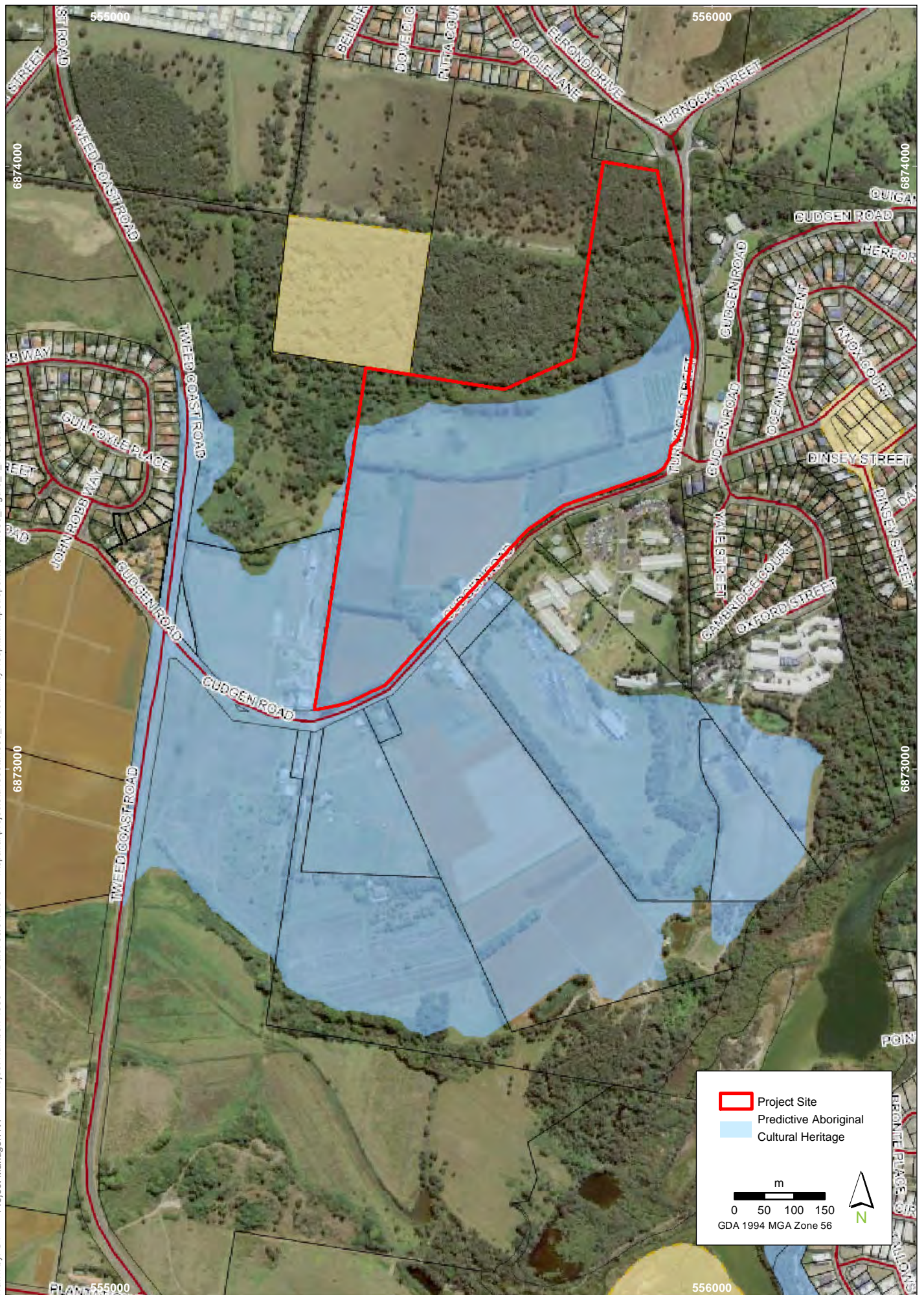
- Stream order to identify potential site types and locations (proximity to water).
- Patterns of Aboriginal land use and occupation of the region, to identify those landscape areas where material is likely to have been deposited.
- Distribution of known Aboriginal sites within the Project Site and broader region, to identify the landforms known to contain archaeological materials (and patterning of those materials).
- Geomorphic evolution of the Project Site, to identify those natural processes that may have affected the Aboriginal archaeological resource.
- Terrain integrity of the Project Site, considering the impact of post-contact land use history on the survival of potential Aboriginal sites.
- Likely detection of Aboriginal archaeological materials within the Project Site, considering the nature of the resource (surface/ subsurface materials) and ground surface visibility constraints.

As previously mentioned, landform and geomorphic processes have been used to predict areas of archaeological potential. By using a similar model for this project a comparison to previous projects in the surrounding areas can be attempted.

- Artefacts made from knapped or chipped stones scatters or isolated artefacts would be the most likely site type to occur within the Study Area, being most common on or in proximity to water-related landforms such as flood plains, alluvial terraces and gentle slopes <100 m from natural watercourses.
- Midden sites which are the most common site type within the wider area are unlikely to exist due to recent land use history.
- Ceremonial sites are unlikely to occur due to recent land use history.
- Stone arrangements are very rare but do occur in the much broader region. There is limited chance of these occurring in the Study Area due to the level of surface disturbance from past land use.
- The geological characteristics of the Study Area are not consistent with those required for rock shelters. As such, closed sites (such as rock shelters with potential for art, artefacts and/or PADs) are unlikely to occur within the Study Area.
- Limited potential for bedrock exposure consequently reduces the potential for sites such as axe grinding grooves or quarries
- Scarred trees exhibit scars caused by the removal of bark or wood. There is almost nil possibility for scarred trees to occur within the Study Area due to the extensive clearing and agricultural activities that have occurred since European colonisation.
- No post-contact sites with shared significance by Aboriginal and European people are known to be located within the Study Area.
- Aboriginal places are places of cultural significance to Aboriginal people. No Aboriginal places have been declared within the Project Site (July 2018) or listed on AHIMS (<http://www.environment.nsw.gov.au/conservation/AboriginalPlacesNSW.html>).



- Burials are rare but do occur in the wider region and are associated with sandy soils and rockshelters. Burials are unlikely to occur in the Study Area due to the lack of suitable contexts, absence of rockshelters, and historic surface disturbance.
- Subsurface artefact distribution will not necessarily be bound by “sites” but rather by landscape features that are likely to hold intact archaeological deposits.



Tweed Shire Council ACHMP: Predictive Aboriginal Cultural Heritage

Tweed Valley Hospital - Aboriginal Cultural Heritage Assessment

**FIGURE 5**

Imagery: (c) LPI 2012



## 9. Survey Methodology

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### 9.1 Survey Sampling Strategy

A proposed methodology for the Project ACHA was developed by Niche. A copy of the proposed methodology is available in Appendix 1. The Proposed Methodology follows the:

- Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (DEC 2005);
- ACHCRs (DECCW 2010a);
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010b); and
- Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011).

As part of the development of the Proposed Methodology, a targeted sampling strategy for an archaeological survey of the Project Site was developed.

The field surveys for the assessment concentrated on:

- Areas within the Project Site that would be disturbed by surface infrastructure including buildings, internal roadways, and carparks, as well as areas designated for hydrological and landscaping/gardening works.
- Areas which retain higher archaeological potential within the Project Site.

### 9.2 Survey methods

The following methods were used to identify archaeological resources, heritage values and significant cultural themes for the Project Site:

- Aboriginal community input – this was sought via the consultation process, participation in archaeological fieldwork and other correspondence.
- Archaeological research, including landscape characterisation and field survey.

The above methods and activities have been ongoing throughout the assessment project, and have continuously informed each other.

## 10. Aboriginal Heritage Survey Results

### 10.1 Archaeological and cultural heritage survey

This investigation was conducted by Clair Davey of Niche and Jackie McDonald and Paul Buxton on 7 September 2018. Sue Folliott (TSA) was also in attendance during the initial part of the assessment to provide information about the proposed works and the project generally.

The survey methodology is outlined below. The survey was undertaken through survey transects of the Project Site (survey units).

- Representative photographs were taken of all survey units and landforms where they were thought to be informative to the overall Aboriginal archaeological report.
- A handheld GPS unit was used to record all transects and appropriate site data for the survey. The following information was recorded for each survey unit:
  - Land surface, visibility and vegetation types.
  - Exposure, defined as an estimate of the area which has a likelihood of revealing buried artefacts or deposits. It is the percentage of land for which erosion and exposure was sufficient to reveal archaeological evidence on the surface of the ground, i.e. exposure refers to what reveals (Burke and Smith 2004:78-80).
  - Archaeological visibility, defined as the amount of bare ground on the exposures which might reveal artefacts or other archaeological materials, i.e. visibility refers to what conceals (Burke and Smith 2004:78-80).
  - Effective survey coverage area (the area of the survey unit multiplied by the visibility percentage and exposure percentage, given either in square metres or hectares).

### 10.2 Survey Coverage

The field assessment survey was undertaken as a pedestrian survey within the Project Site. The survey focussed on all areas of the Project Site including the agricultural fields, the creek bank and the vegetation to the north of the Project Site. The survey participants were spaced approximately 5-10 meters apart for more effective coverage.

**Table 9: Survey coverage data.**

Transect ID	Landform	Area (sq. m)	Visibility	Exposure	Effective coverage area (sq. m)	Effective coverage %
1-4	Elevated crop land	8,524	80-100%	80-100%	8,524	100
5-12	Elevated Crop Land	19,982	60-80%	60-80%	15,985.60	80
13	Creek banks – eastern side	1km linear length	10-20%	10%	100 m linear length	10
14-18	Elevated crop land	16,911	80-100%	80-100%	16,911	100
19-24	Southern crop land	7,576	90-100%	90-100%	7,576	100

Transect ID	Landform	Area (sq. m)	Visibility	Exposure	Effective coverage area (sq. m)	Effective coverage %
25	Southern crop land and access track	450 m linear length	30-40%	10%	180 m linear length	40





Survey effort

Tweed Valley Hospital - Aboriginal Cultural Heritage Assessment

**FIGURE 6**

Imagery: (c) DigitalGlobe 2016-07-01



## 10.3 Survey Results

### 10.3.1 Transect 1 -4

Transect 1-4 was in the northern part of the Project Site. Bound by Cudgen Road and Turnock Street, this area is a fallow sweet potato cropland situated on the elevated portion of the site. To the east are slash pines between the cropland and the road, to the west is some more trees along an anthropogenic terrace (Plate 6). The Ground Surface Visibility (GSV) was good (around 80-100%) across most of the area. Most of the ground surface was exposed, having been recently ploughed to retrieve crops. Towards the south, some weeds and sweet potato crops had emerged, reducing GSV to 40-50% (Plate 7). The soil was reddish brown, with many rock (basalt) inclusions, some of which have been impacted by machinery causing breakage. There were remains of the crop within the sediment. Due to recent ploughing, the sediment was loosely compacted, and ploughed into rows.



**Plate 6: A typical representation of the exposure and GSV within the Project Site (facing west). Trees mark the location of the terrace.**



**Plate 7. Facing south, variability in GSV and exposures can be seen in this picture. Slash pines and trees to left of frame are on Cudgen Road.**



### 10.3.2 Transect 5-12

Transect 5-12 was in the central part of the Project Site. Bound by Cudgen Road to the east, this area is a fallow sweet potato cropland and is positioned on the highest elevation of the Project Site. To the east are slash pines between the cropland and the road, to the west is some more trees along an anthropogenic terrace. GSV was good (around 80-100%) across most of the area. Most of the ground surface was exposed, having been recently ploughed to retrieve crops. The soil was reddish brown, with many rock (basalt) inclusions, some of which have been impacted by machinery causing breakage. There were remains of the crop within the sediment. Due to recent ploughing, the sediment was loosely compacted, and ploughed into rows.

### 10.3.3 Transect 13

Transect 13 originated at the crest of the elevation and followed an access track down to the edge of the wetlands. The transect then followed the edge of the wetlands along its length. GSV was poor (10-20%) across the access track used for the inspection but good (40-50%) in nearby cropland. There were infrequent exposures. The soil was reddish brown and compacted.



**Plate 8. Towards southern end of creek facing south.**





**Plate 9. Creek to right of frame (facing south) – note thick vegetation.**





**Plate 10. Towards northern end of creek in Project Site facing north.**

#### 10.3.4 Transect 14 - 18

Transect 14-18 was in the central part of the Project Site. Bound by Cudgen Road to the east, this area is a fallow sweet potato cropland. To the east are slash pines between the cropland and the road (Plate 11), to the west is further croplands on the slope towards the creek. GSV was good (around 80-100%) across most of the area. Most of the ground surface was exposed, having been recently ploughed to retrieve crops. The soil was reddish brown, with many rock (basalt) inclusions, some of which have been impacted by machinery causing breakage. There were remains of the crop within the sediment. Due to recent ploughing, the sediment was loosely compacted, and ploughed into rows.



**Plate 11: Photo facing towards north – row of trees in right of frame indicates Cudgen Road.**





**Plate 12. Facing towards west – note ground sloping towards creek.**

### **10.3.5 Transect 19-24**

Transect 19 -24 was in the southern part of the Project Site. Bound by Cudgen Road to the east, this area is a sweet potato cropland – partly fallow. To the east are slash pines between the cropland and the road, to the west is further croplands on the slope towards the creek. GSV was good (around 80-100%) across most of the area. Most of the ground surface was exposed, having been recently ploughed to retrieve crops, but there were some crops in the western part of the area that obscured the ground surface (Plate 13). The soil was reddish brown, with many rock (basalt) inclusions, some of which have been impacted by machinery causing breakage. There were remains of the crop within the sediment. Due to recent ploughing, the sediment was loosely compacted, and ploughed into rows.





**Plate 13. Active crop land, fallow area to rear of frame (facing south). Slash pines on left of frame indicates Cudgen Road.**



**Plate 14. Standing adjacent to Cudgen Road facing south in fallow part of cropland**





**Plate 15. Standing adjacent to Cudgen Road facing north.**

### **10.3.6 Transect 25**

Transect 25 followed a track along some fallow croplands situated on a slope (from north to south). GSV was moderate on the track (30-40%) and slightly improved in the adjacent croplands (60-80%) (Plate 16). There were few exposures on the track which was compacted reddish brown soil and around 50-60% of the crop land was exposed. The soil was reddish brown, with many rock (basalt) inclusions, some of which have been impacted by machinery causing breakage. There were remains of the crop within the sediment. An earthen bund wall was on the southern side of the track, likely built up through earthmoving to prepare and maintain the agricultural fields.



**Plate 16. Access track with bund wall to left of frame. Note sloping field, elevated area is to the north.**





**Plate 17. Facing towards north – note GSV and exposures.**



**Plate 18. Facing towards east, line of pines indicates Cudgen Road.**

## 11. Analysis and discussion

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Niche has carried out a detailed and staged investigation to assess the potential for any Aboriginal archaeological resource that might exist within the boundaries of the Project Site and undertaken consultation with RAPS to understand its cultural heritage significance.

The investigation included a review of previous archaeological work in the surrounding area and an archaeological surface survey of the Project Site.

The surface survey results have demonstrated the following:

- Visibility/exposure was good to very good across the Project Site.
- The Project Site has been significantly disturbed across almost its entirety, as evidenced by numerous crop fields, access tracks, bund walls, and irrigation infrastructure.
- The soil and sediments are unlikely to contain any sub surface deposits of archaeological material due to the degree and duration of previous disturbance (cropping).

Based on the results of the surface survey and due diligence assessment previously undertaken by Niche, we conclude that the Project Site has low archaeological potential, for the following reasons:

- No sites of Aboriginal cultural heritage were identified on the surface of the ground during the survey.
- The amount of and duration of cropping activities across the Project Site would have greatly disturbed any sites that may have existed here in the past.
- The type of cropping (sweet potato) involves stripping back of the topsoil which over time would have greatly reduced the amount of soil and increased the impacts to underlying sediments.

The results of the archaeological investigation reflect the patterns of occupation and site distribution observed in the wider area, that permanent and ephemeral water sources were more utilised as camp sites and that areas away from water were used in a transitory nature. On the basis of the results of our investigation Niche has concluded the following:

- Any evidence of past Aboriginal land use has been detrimentally impacted by cropping activities.
- The Project Site has extremely low potential to contain intact archaeological deposits.



## 12. Cultural Heritage Values and Significance Assessment

### 12.1 The Burra Charter

The Burra Charter (Australia ICOMOS 1999) defines the basic principles and procedures to be observed in the conservation of important places. It provides the primary framework within which decisions about the management of heritage sites in Australia should be made. The Burra Charter defines cultural significance as being derived from the following values:

**Table 10: Scientific values as outlined by the Burra Charter**

Value type	Description
Aesthetic	Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric; the smells and sounds associated with the place and its use.
Historic	Aesthetic value includes aspects of sensory perception for which criteria can and should be stated. Such criteria may include consideration of the form, scale, colour, texture and material of the fabric; the smells and sounds associated with the place and its use.
Scientific	The scientific or research value of a place will depend upon the importance of the data involved, on its rarity, quality or representativeness, and on the degree to which the place may contribute further substantial information.
Social	Social value embraces the qualities for which a place has become a focus of spiritual, political, national or other cultural sentiment to a majority or minority group.

### 12.2 Other approaches

The categorisation into aesthetic, historic, scientific and social values is one approach to understanding the concept of cultural significance. However, more precise categories may be developed as understanding of a particular place increases.

The NSW Aboriginal cultural heritage regulatory framework supports the significance assessment of Aboriginal archaeological sites and provides guidelines for this ACHA within the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011). The *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011) outlines two main themes in the overall Aboriginal cultural heritage significance assessment process, namely, the identification of the cultural/social significance of Aboriginal objects and/or places to Aboriginal people and the identification of the scientific (archaeological) significance to the scientific/research community. These themes encapsulate those aspects of the Burra Charter that are of particular relevance to Aboriginal objects and places.

The Guidelines specify that information about scientific values will be gathered through archaeological investigation carried out according to the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b). The *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010b) itself does not specify criteria for assessment of Aboriginal objects, but rather suggests to “identify the archaeological values and assess their significance.” The assessment must be supportable and the assessment criteria must reflect best practice assessment processes as set out in the Burra Charter.



Notwithstanding the circularity of this advice, the scientific values described in the Burra Charter (Section 11.1) were considered further by the then NSW National Parks and Wildlife Service in their *Aboriginal Cultural Heritage Standards and Guidelines Kit* (DEC 1997).

In lieu of specific criteria, the advice from the *Aboriginal Cultural Heritage Standards and Guidelines Kit* (DEC 1997) is summarised and paraphrased below to provide guidance to the assessment of scientific values.

**Table 11: Criteria for Assessing Scientific Significance**

Scientific value	Description
Research potential	It is the potential to elucidate past behaviour which gives significance under this criterion rather than the potential to yield collections of artefacts. Matters considered under this criterion include – the intactness of a site, the potential for the site to build a chronology and the connectedness of the site to other sites in the archaeological landscape.
Representativeness	As a criterion, representativeness is only meaningful in relation to a conservation objective. Presumably all sites are representative of those in their class or they would not be in that class. What is at issue is the extent to which a class of sites is conserved and whether the particular site being assessed should be conserved in order to ensure that we retain a representative sample of the archaeological record as a whole. The conservation objective which underwrites the ‘representativeness’ criteria is that such a sample should be conserved.
Rarity	<p>This criterion cannot easily be separated from that of representativeness. If a site is ‘distinctive’ then it will, by definition, be part of the variability which a representative sample would represent. The criteria might best be approached as one which exists within the criteria of representativeness, giving a particular weighting to certain classes of site. The main requirement for being able to assess rarity will be to know what is common and what is unusual in the site record but also the way that archaeology confers prestige on certain sites because of their ability to provide certain information.</p> <p>The criterion of rarity may be assessed at a range of levels: local, regional, state, national, and global.</p>
Educational Potential	Heritage sites and areas should be conserved and managed in relation to their value to people. It is assumed that archaeologists have the ability to speak of the value of sites to members of their own profession. Where archaeologists or others carrying out assessments are speaking for the educational value of sites to the public, the onus is on them to go to the public for an assessment of this value, or to reputable studies which have canvassed public demand for education. The danger, otherwise, is that archaeologists would be projecting their values onto a public which is itself given no voice on the matter.
Aesthetics	<p>Archaeologists are not expected to include an assessment of aesthetic significance along with their assessment of scientific significance. In relation to heritage places, aesthetic significance is generally taken to mean the visual beauty of the place. Aesthetic value is not inherent in a place, but arises in the sensory response people have to it.</p> <p>Although the guidelines provide no expectation for archaeologists to consider aesthetic values it is often the case that a site’s or a landscape’s aesthetic is a significant contributory value to significance. Examples of archaeological sites that may have high aesthetic values would be rock art sites, or sites located in</p>

Scientific value	Description
	environments that evoke strong sensory responses. For this reason we consider it appropriate to include aesthetic values as part of the significance assessments for the sites identified during this assessment.

Educational potential and aesthetic values are not considered to be criteria against which scientific values and significance can be assessed. Aesthetic values should be considered as a distinct category (rather than a criterion that contributes to scientific value) in accordance with the Burra Charter and the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011). Educational potential is considered to be a criterion that contributes to social value, rather than scientific value, and hence this is considered below in the overall cultural significance assessment.

## 12.3 Assessment of cultural significance

The *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011: 18) requires that a “clear description of the heritage values present across the area of the proposed activity” be presented, and be articulated back to the information collected during the assessment process, in particular to any submissions received from RAPs. The *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011: 18) advises that “the assessment of values is a discussion of what is significant and why”. The purpose of the statement of significance is to create a comprehensive assessment of values and significance by considering and stating the values identified under each of the value categories defined by the Burra Charter, namely, social values, historic values, scientific values, and aesthetic values. The *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011:10) states:

*The assessment and justification in the statement of significance must discuss whether any value meets the following criteria (NSW Heritage Office 2001):*

- *does the Project Site have a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons? – social value*
- *is the Project Site important to the cultural or natural history of the local area and/or region and/or state? – historic value*
- *does the Project Site have potential to yield information that will contribute to an understanding of the cultural or natural history of the local area and/or region and/or state? – scientific (archaeological) value*
- *is the Project Site important in demonstrating aesthetic characteristics in the local area and/or region and/or state? – aesthetic value.*

### 12.3.1 Grading Values and Significance

The following gradations, where a site or zone satisfies at least one criterion, have been applied to provide a measure of the values/significance for Aboriginal objects identified within the Project Site, and to provide an overall assessment of the significance of each of the zones used that define the Project Site.

**Table 12: Grades of values and significance**

Grade of value	Description of grade
<b>Low</b>	The site or object contains only a single or limited number of features, and has no potential to meaningfully inform our understanding of the past beyond what it contributes through its current recording (i.e. no or low research potential). The site or object is a representative but unexceptional example of the most common class of sites or objects in the region. Many more similar examples can be confidently predicted to occur within the Project Site, and in the region.

Grade of value	Description of grade
<b>Moderate</b>	The site or object derives value because it contains features, both archaeological and contextual, which through further investigation may contribute to our understanding of the local past. These features include, but are not limited to: the relationship with landscape features or other Aboriginal archaeological sites or areas of identified heritage importance; diagnostic archaeological or landscape features that inform a chronology; and a relatively large assemblage of stone artefacts. The presence of a diverse artefact and feature assemblage, and connectedness with landscape features and other notable sites provide relatively higher representative and rarity values than sites of low significance.
<b>High</b>	The site or object has value because it contains archaeological and/or contextual features which through further investigation may significantly contribute to our understanding of the past, both locally and on a regional scale. These features include, but are not limited to: Aboriginal ancestral remains; the site's relationship with landscape features or other Aboriginal archaeological sites or areas of identified heritage importance; diagnostic archaeological or landscape features that inform a chronology; and a very large assemblage of stone artefacts associated with other features such as oven remains or shell midden. Such sites will be relatively rare, and will be representative of a limited number of similar sites that make up this class; hence they derive high representative and rarity values.

## 12.4 Statement of Significance

Statements of significance for the Project Site are presented in the following sub-sections. These statements of significance have been prepared in consideration of comments received from the RAPs during the consultation process, including those comments relating to the cultural significance of all sites and the interrelationships between the cultural and spiritual values with the natural landscape. All comments received from RAPs are considered in Section 5.3.

### 12.4.2 Social Value

The Project Site is of social significance to the Aboriginal community as it is nearby to a significant site as told by one of the survey participants.

### 12.4.3 Aesthetic Value

The Project Site has aesthetic values due to its prominent position on an elevated landform with views in an almost 360 degree arc. The wetlands at the western margin of the Project Site was also acknowledged as having aesthetic values which will be increased by planned pest culling.

### 12.4.4 Historic Value

The Project Site contains no identified historic values relating to Aboriginal heritage.

### 12.4.5 Scientific (Archaeological) Value

The Project Site has low archaeological values due to the degree and duration of cropping activities which has impacted on the surface and subsurface deposits across the majority of the area.



## 13. Impact assessment

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### 13.1 Overview of Potential Impacts

The *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011) requires that both direct and indirect harm to Aboriginal objects and Aboriginal places be considered. Generally direct harm refers to occasions where an activity physically impacts a site or objects and therefore affects the heritage values possessed by the site or objects. Indirect harm is usually taken to mean harm stemming from secondary consequences of the activity, and may affect sites or objects as an indirect consequence of the activity. Examples of such indirect harm are increased visitors to a site, or increased erosion in an area as a result of an activity.

As described in Section 10.3, no Aboriginal heritage sites were identified within the Project Site. Therefore, the proposed Project will not impact on any sites of Aboriginal heritage.

## 14. Management and mitigation measures

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### 14.2 Conservation Principles and Management Framework

The two founding principles behind the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011:12) are ecologically sustainable development and intergenerational equity. These principles hold that “the present generation should make every effort to ensure the health, diversity and productivity of the environment – which includes cultural heritage – is available for the benefit of future generations”.

The strong emphasis, as in the Burra Charter, is to quantify and understand the heritage values of a place, a site, or an object and exhaust avenues of avoiding harm to those values. If harm cannot be avoided then there must be consideration and implementation of strategies to minimise harm (OEH 2011:13).

It follows that the hierarchy for consideration in regards to management strategies available fall into four general categories, in order of preference from a conservation perspective:

- avoidance and *in-situ* conservation;
- partial avoidance and partial *in-situ* conservation (includes partial harm);
- harm caused with mitigating circumstances such as collection or salvage; and
- unmitigated harm.

The four general categories (described above) have been considered in the following subsections.

The management and mitigation measures have been prepared in consideration of comments received from the RAPs during the consultation process. All comments received from the RAPs are considered in Section 5.3.

## 15. Recommendations

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As identified during the site inspection for the proposed hospital infrastructure, there are no Aboriginal cultural heritage objects, places or features situated within the Project Site. The proposed development, which involves the construction of internal roads, hospital buildings, carparks and other ancillary sites required for the hospital precinct will not impact on any Aboriginal cultural heritage values.

No further assessment is required.

Works may proceed based on the following recommendations:

### **Recommendation 1: Cultural Heritage Induction**

A cultural heritage induction should be provided to all contractors and staff who will be involved in works that involve ground surface disturbance/earthworks.

### **Recommendation 2: Aboriginal Objects – Stop work provision**

In the event that suspected Aboriginal objects are encountered during construction, all work in the area that may cause further impact must cease and the Office of Environment and Heritage (OEH) should be contacted.

### **Recommendation 3: Human remains – Stop work provision**

In the event that suspected human remains are encountered during construction, all work in the area that may cause further impact, must cease immediately.

- The location, including a 20 m curtilage, should be secured using barrier fencing to avoid further harm.
- The NSW Police must be contacted immediately.
- No further action is to be undertaken until the NSW Police provide written notification to the NSW Health Infrastructure.

If the skeletal remains are identified as Aboriginal, NSW Health Infrastructure or their agent must contact:

- the OEH's Enviroline on 131 555; and,
- representatives of the Registered Aboriginal Parties.

No works are to continue until the OEH provides written notification to NSW Health Infrastructure or their Agent.

### **Recommendation 4: Further Aboriginal cultural heritage works**

In the event that works causing ground disturbance are planned within the vegetated section of the Project Site (i.e. the section along the water and in the north), consultation with the RAPs and a further cultural heritage survey with representatives of the RAPs will be required.



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