ADDITIONAL CROSSING OF THE CLARENCE RIVER AT GRAFTON

Appendix H – Technical Paper: Aboriginal heritage assessment

AUGUST 2014

Acknowledgements

Biosis Pty Ltd gratefully acknowledges the contributions of the following people and organisations (listed alphabetically) in preparing this report:

Aboriginal Community Groups

- Crystal Skinner – CEO Grafton Ngerrie Local Aboriginal Land Council
- Brett Duroux - Grafton Ngerrie Local Aboriginal Land Council
- Shirley Duroux - Grafton Ngerrie Local Aboriginal Land Council
- Aileen Roberts - Grafton Ngerrie Local Aboriginal Land Council

Government Departments

- Office of Environment and Heritage
- National Native Title Tribunal

Client

- Adam Cameron - Roads and Maritime Services
- Vicky Sisson - Arup
- Javier Valderrama – Arup
- Toby Heys - Arup

Biosis

- Alexander Beben, project management, field director and technical oversight
- Shoshanna Grounds, technical reviewer
- Ana Jakovljevic for assistance in the field
- James Shepherd for mapping
- Sally Koehler for internal quality assurance review

Abbreviations

Abbreviation	Meaning
ACHAR	Aboriginal Cultural Heritage Assessment Report
AGD	Australian Geodetic Datum
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
c.	Circa
cm	Centimetre
DEC	Department of Environment and Conservation
DECC	Department of Environment and Climate Change
DECCW	Department of Environment, Climate Change and Water
DGR's	Director Generals Environmental Assessment Requirements
PI	Planning and Infrastructure
EIS	Environmental impact statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
ICOMOS	International Council on Monuments and Sites
km	Kilometre
LALC	Local Aboriginal Land Council
LGA	Local Government Authority
m	Metres
NPWS	National Parks and Wildlife Service
NSW	New South Wales
OEH	Office of Environment and Heritage
RAPs	Registered Aboriginal Parties

Abbreviation	Meaning
Roads and Maritime	Roads and Maritime Services
RTA	Roads and Traffic Authority (now Roads and Maritime)
SSI	State Significant Infrastructure

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Executive summary

Roads and Maritime Services (Roads and Maritime) is seeking approval for an additional crossing of the Clarence River at Grafton (Figure 1) to address short-term and long-term transport needs. Arup (on behalf of Roads and Maritime) has engaged Biosis Pty Ltd to undertake an Aboriginal cultural heritage assessment of the study area. The project involves:

- Building a new bridge about 70 m downstream of the existing bridge (which would be retained)
- Upgrading parts of the road network in Grafton and South Grafton to connect the new bridge to the existing road network.
- The project would also include ancillary works, structures and facilities required for the purposes of the project.

This Aboriginal Cultural Heritage Assessment Report (ACHAR) documents the assessment of Aboriginal cultural values for the project area. This ACHAR has been undertaken to inform the environmental impact statement (EIS) for the project and to address Director General's Environmental Assessment Requirements (DGRs) issued by Planning and Infrastructure. An archaeological assessment of the project area including desktop assessment, pedestrian survey and sub surface test excavations was undertaken, however no Aboriginal cultural material has been identified in the project area. Details of the archaeological investigations are provided in an Archaeological Assessment which has been prepared as an appendix to this ACHAR.

Consultation with the Aboriginal community has been undertaken by Roads and Maritime throughout the development of the proposed project to determine the cultural heritage values and identify potential impacts in accordance with the OEH guideline *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005) This consultation has been undertaken in accordance with the *Roads and Maritime Services procedure for Aboriginal cultural heritage consultation and investigation* (2011) and addresses the DGR's to demonstrate effective consultation with Aboriginal communities.

One registered Aboriginal party was identified for the project: the Grafton Ngerrie Local Aboriginal Land Council. The Grafton Ngerrie Local Aboriginal Land Council considered the project area to have a high level of cultural significance due to the presence of the Golden Eel dreaming and ceremonial site. Specific information has not been provided about this significant site due to its sensitive nature. Consultation with the Grafton Ngerrie Local Aboriginal Land Council has focussed on identifying the significance of this site in broad terms. The consultation process has similarly focused upon the identification of potential impacts to cultural heritage values with the objective to avoid or minimise these potential impacts where possible. As a result of consultation, major impacts to the Golden Eel site have been avoided through modification of the project design.

Management Recommendations

The recommendations resulting from the consultation process are provided below.

Management strategies were developed based on the Aboriginal cultural significance of heritage relevant to the project area and have been influenced by:

1. Predicted impacts to Aboriginal cultural heritage;
2. The planning approvals framework;
3. Current best conservation practise, widely considered to include:

a. Ethos of the Australia ICOMOS Burra Charter; and

b. The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010).

Prior to any works occurring within the project area, the following actions are recommended:

Recommendation 1: Avoid harm to Golden Eel dreaming site

The bridge constructed on current proposed alignment is acceptable, but there should be no further encroachment towards the Golden Eel dreaming site. Detailed design and construction stages are to avoid further encroachment towards the Golden Eel dreaming site.

Recommendation 2: Consultation with Aboriginal community

Consultation with the Aboriginal community should continue as an identified group within the overall community consultation strategy for the project.

Recommendation 3: Aboriginal Cultural Heritage Induction

The project site induction will incorporate Aboriginal culture awareness training for all relevant staff and contractors. This induction will include information about the Aboriginal culture and history of the locality, the location of sites and items that require protection, heritage management measures and protocols, and legal obligations. This training will be developed in consultation with the Grafton Ngerrie Local Aboriginal Land Council and provided prior to commencing work on-site.

Recommendation 4: Known Aboriginal Objects and Places

Aboriginal sites located in close proximity to the project construction work zone will be designated 'no-go' areas which would be clearly identified and appropriately fenced to prevent access or damage during construction.

Recommendation 5: Discovery of Unanticipated Aboriginal Cultural Material and Human Remains

In the event that unexpected Aboriginal cultural material or skeletal remains are encountered, the Roads and Maritime *Standard Management Procedure for Unexpected Archaeological Finds* (2012) should be implemented.

Recommendation 6: Interpretive Strategy for Tangible and Intangible Aboriginal Heritage

An interpretive strategy must be formulated in conjunction with the local Aboriginal community. This would highlight salient sites and features within the landscape in a manner that respectfully enhances and protects these values.

1. Introduction

1.1. Project background

Roads and Maritime Services (Roads and Maritime) is seeking approval for an additional crossing of the Clarence River at Grafton (Figure 1) to address short-term and long-term transport needs. Arup (on behalf of Roads and Maritime) has engaged Biosis Pty Ltd to undertake an Aboriginal cultural heritage assessment of the project area. The project involves:

- Building a new bridge about 70 m downstream of the existing bridge (which would be retained)
- Upgrading parts of the road network in Grafton and South Grafton to connect the new bridge to the existing road network.
- The project would also include ancillary works, structures and facilities required for the purposes of the project.

The Grafton Bridge project will be assessed against Part 5.1 of the *Environmental Planning and Assessment Act 1979* NSW (EP&A Act) as a State Significant Infrastructure (SSI) project.

This Aboriginal Cultural Heritage Assessment Report (ACHAR) documents the assessment of Aboriginal cultural values for the project area. This ACHAR has been undertaken to inform the environmental impact statement (EIS) for the project and to address Director General's Environmental Assessment Requirements (DGRs) issued by Planning and Infrastructure. An archaeological assessment of the project area including desktop assessment, pedestrian survey and sub surface test excavations was undertaken, however no Aboriginal cultural material has been identified in the project area. Details of the archaeological investigations are provided in an Archaeological Assessment which has been prepared as an appendix to this ACHAR.

Consultation with the Aboriginal community has been undertaken by Roads and Maritime throughout the development of the proposed project to determine the cultural heritage values and identify potential impacts in accordance with the OEH guideline *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005). This consultation has been undertaken in accordance with the *Roads and Maritime Services procedure for Aboriginal cultural heritage consultation and investigation* (2011) and addresses the DGR's to demonstrate effective consultation with Aboriginal communities.

1.2. Study area and project area

This report refers to the study area and the project area. The study area covers all areas of Grafton and South Grafton in the Clarence Valley Council, local government area (LGA), that have been considered for all project options for this and previous heritage reports for the project. The study area is located on the NSW Mid North Coast, about 610 km north of Sydney (Figure 1 and Figure 2).

The project area (Figure 2) encompasses the discrete project footprint based on the April 2014 design that includes all works during operation and construction, including:

- Operational road boundary
- Permanent ancillary elements such as operational detention basin and pump station in Grafton
- Construction work zone, which includes temporary facilities such as South Grafton ancillary site, Pound Street ancillary site and the jetty for barge launching

Flood mitigation works construction zone, which includes temporary stockpile areas.

1.3. The project

The main components of the Grafton Bridge project are:

- Construction of a new bridge over the Clarence River about 70 metres downstream (east) of the existing road and rail bridge, comprising two traffic lanes
- Construction of a new road to link the new bridge with Iolanthe Street in South Grafton
- Construction of a new road to link the new bridge with Pound Street in Grafton
- An approach viaduct, about 58 metres long, on the South Grafton side of the Clarence River and 29 metres long on the Grafton side.
- Upgrades to the road network in South Grafton to connect the new bridge to the existing road network, including:

– Widening Iolanthe Street to four lanes

– Widening the Gwydir Highway to four lanes between Bent Street and the Pacific Highway

– Realigning the existing Pacific Highway to join Iolanthe Street near Through Street

– Providing a new roundabout at the intersection of the Pacific Highway and Gwydir Highway

– Providing a new roundabout at the intersection of Through Street and Iolanthe Street

– Limiting Spring Street and the Old Pacific Highway to left in and left out only where they meet Iolanthe Street

– Realigning Butters Lane

- Upgrades to the road network in Grafton to connect the new bridge to the existing road network, including:

– Widening Pound Street to four lanes between Villiers Street and the approach to the new bridge

– Providing traffic signals at the intersection at Pound Street and Clarence Street

– Closing Kent Street where it is crossed by the bridge approach road

– Realigning and lowering Greaves Street beneath the new bridge

– Realigning Bridge Street to join directly to the southern part of Pound Street (east of the new bridge approach). There would be no direct connection between Pound Street south and the new bridge approach

– Widening Clarence Street to provide formal car park spaces

– Minor modifications to the existing Dobie Street and Villiers Street roundabout.

- Replacement of the existing three span concrete arch rail viaduct which crosses Pound Street in Grafton with a single span steel truss bridge
- Construction of a pedestrian and cycle path to provide connectivity between Grafton, South Grafton and the new bridge
- Provision of two signalised pedestrian crossings in South Grafton to improve safety for pedestrians crossing Iolanthe Street and Gwydir Highway
- Construction of new pedestrian links to connect the new bridge with the existing bridge
- Provision of designated car park spaces in Pound Street and Clarence Street, including some off street parking, to maintain a similar number of existing car park spaces currently available in those two street

- Flood mitigation works, which include raising the height of sections of the existing levee upstream from the new bridge in Grafton and South Grafton
- Construction of a stormwater detention basin and pump station in Grafton to manage local flooding
- Public utilities adjustment
- Ancillary facilities required for the construction of the project, including some or all of the following: site compounds, concrete batching plant, pre-cast facilities, and stockpile areas for materials and temporary storage of spoil and mulch.

The main elements of the project are shown in Figure 3, including the construction footprint of the project.

1.4. Study requirements

The Grafton Bridge project will be assessed against Part 5.1 of the *Environmental Planning and Assessment Act 1979* NSW (EP&A Act) as a State Significant Infrastructure (SSI) project. Relevant legislation and planning instruments that will inform this assessment include:

- State Environmental Planning Policy (State and Regional Development) 2011
- Environmental Planning and Assessment Regulation 2000
- National Parks and Wildlife Act 1974 (NSW)
- National Parks and Wildlife Amendment Act 2010 (NSW)
- Clarence Valley Local Environmental Plan 2011.

Director General Environmental Assessment Requirement's (DGR's) for the project were issued on the 3 October 2013 (SSI Application 13-6103) and detail requirements for an environmental impact statement (EIS). The DGR's identified heritage as a key issue for the EIS to address and presented the following requirements specific to Aboriginal heritage investigations (iv-v):

Table 1: Director General Environmental Assessment Requirement's

DGR Requirement	Addressed
An assessment of impacts to Aboriginal heritage (including cultural and archaeological significance), in particular impacts to Aboriginal objects and potential archaeological deposits (PAD), should be assessed. Where impacts are identified, the assessment shall:	
Outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the measures) generally consistent with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005);	See Section 6.
Be undertaken by a suitably qualified heritage consultant(s);	See Section 1.5
Demonstrate effective consultation with Aboriginal communities in determining and assessing impacts and developing and selecting options and mitigation measures (including the final proposed measures);	See Section 4

DGR Requirement	Addressed
Assess and document the archaeological and cultural significance of cultural heritage values of affected sites; and	See Section 5 and Appendix 5 – Archaeological Assessment
Develop an appropriate assessment methodology, including research design, in consultation with the Department and the Office of Environment and Heritage, to guide physical archaeological test excavations of the sites and areas of PAD identified in a manner that establishes the full spatial extent and significance of any archaeological evidence across each site/area of PAD, and include the results of these excavations.	See Appendix 4

In accordance with DGRs, this ACHAR assesses and documents the cultural significance of Aboriginal heritage within the project area; documents consultation with Aboriginal stakeholders; assesses potential impacts to Aboriginal cultural heritage values; outlines mitigation and management measures. Archaeological test excavation strategies and methodology are also detailed in this report. Details of Aboriginal heritage archaeological values, archaeological assessment methodologies and results are detailed in the Archaeological Assessment (Appendix 5).

1.5. Investigators and contributors

The roles, previous experience and qualifications of the Biosis project team involved in the preparation of this ACHAR are described below in Table 2.

Table 2: Investigators and contributors

Melanie Thomson	BSc(Hons)	12 years experience
Melanie has over 12 years experience as an archaeologist, with application to cultural heritage management for various projects throughout Queensland, New South Wales and Victoria. Melanie has acquired extensive experience working as a consulting archaeologist for Biosis over the past five years as both a project archaeologist and project manager. During this time, she has developed skills in both Aboriginal and historical archaeological research, survey, excavation, monitoring, and reporting. She also has technical skills to undertake the analysis of Aboriginal stone tools and historical artefacts. Melanie specialises in assessing the Social Value of Cultural Landscapes in association with Aboriginal and Historical sites. Melanie has authored and / or co-authored over 180 consultant reports.		Project Roles • Technical Review. • Project Methodology.
Alexander Beben	**MA, BA (Hons)**	**7 years experience**
Alexander Beben is a Senior Archaeologist with Biosis in the Wollongong office. Alex has seven years archaeological experience and has conducted over 80 heritage projects across Australia and internationally in the UK and Italy. Alex has primarily undertaken projects on the east coast in New South Wales and Victoria and has a detailed understanding of the heritage values within the Illawarra, Sydney Basin, Cumberland Plain, Hunter Valley and rural areas such as Northern, Central West and Southern NSW. He has extensive experience in the successful completion of Aboriginal and Historical assessments, archaeological surveys, excavations, permits and management plans. He has operated as the heritage consultant within large multidisciplinary teams tasked with delivering Environmental Impact Assessments (EIAs) under the NSW *Environmental Planning and Assessment Act* 1979 (EP&A Act) and Commonwealth projects under the *Environment Protection and Biodiversity Act 1999* (EPBC Act).		Project Roles • Lead cultural heritage advisor. • Archaeological survey leader. • Archaeological excavation leader. • Aboriginal community consultation. • Preparation of the report. • Technical Review.
Asher Ford	**BA (Hons)**	**6 years experience**
Asher is a Consultant Archaeologist with Biosis. Asher has over six years experience as a consultant archaeologist, with application to cultural heritage management for various projects throughout Victoria, New South Wales and South Australia. His skills include Aboriginal and non-Aboriginal archaeological assessments, Aboriginal and historical site recording, survey, sub surface testing and excavation, project research, geographic information systems (GIS), graphics and report writing. Asher has technical experience in recording artefact scatters, scarred trees, middens, axe grinding grooves, rock shelters, art sites and stone features across a range of Australian environments including the Victorian Western Volcanic Plains, Gippsland, Victorian High Country, Murray River, the NSW Southern Tablelands, Cumberland Plains, Illawarra region, Hunter Valley, and the Woomera Prohibited Area. Asher has authored and / or co-authored over 30 consultant reports.		Project Roles • Project Methodology. • Preparation of the report.

Melanie Thomson	BSc(Hons)	12 years experience
Ana Jakovljevic	BA (PostGrad Dip)	6 years experience
Ana Jakovljevic has over 6 years experience as an archaeologist that includes archaeological surveys and excavations, documentation and analysis of cultural material and cultural heritage site assessments. Her skills also include site significance assessments and preparing cultural heritage management plans. Ana also has extensive experience during the construction phase of projects implementing recommendations set out as cultural heritage requirements. Working extensively on monitoring programs, Ana has developed excellent technical skills in baseline recording and impact assessments of Aboriginal shelter and grinding grooves sites. She has also worked on, and has extensive technical skills in, shell midden excavations and analysis. Ana has also authored and co-authored numerous cultural heritage assessment reports, archaeological reports and due diligence assessments.		Project Roles • Archaeological excavation. • Archaeological survey.

1.6. Assessment objectives

The main objectives of this assessment are to:

- Identify and consult with any registered Aboriginal stakeholders
- Conduct additional background research in order to recognise any identifiable trends in site distribution and location
- Search statutory and non-statutory registers and planning instruments to identify listed Aboriginal cultural heritage sites within the project area
- Highlight environmental information considered relevant to past Aboriginal occupation of the locality and associated land use and the identification and integrity/preservation of Aboriginal sites
- Summarise past Aboriginal occupation in the locality of the study area using ethnohistory and the archaeological record
- Formulate a model to broadly predict the type and character of Aboriginal sites likely to exist throughout the study area, their location, frequency and integrity
- Conduct a field survey and archaeological excavation of the project area to locate unrecorded or previously recorded Aboriginal sites and to further assess the archaeological potential of the project area
- Assess the significance of any known Aboriginal sites in consultation with the Aboriginal community
- Identify the impacts of the proposed project on any known or potential Aboriginal sites within the project area
- Recommend strategies for the management of Aboriginal cultural heritage within the context of the proposed project.

1.7. Restricted and confidential information

Some of the Aboriginal places described in this report include values and information that are culturally sensitive to the Aboriginal community in Grafton and the wider Aboriginal community. As such, restricted cultural information in relation to these places is **not** discussed in this report. The level of information presented in this report for these places is aimed at providing sufficient detail to appropriately communicate the cultural values and significance of

these places. Attachment 2 in the Archaeological Assessment contains AHIMS information which is confidential and not to be made public.

1.8. Limitations

It should be noted that due to the nature of the project, a proportion of the project area was not accessible and/or not yet identified through earlier design in order to undertake surveys, namely some of the indicative ancillary site locations associated with flood mitigation works and large portions of the flood mitigation works (Figure 1). Flood mitigation works have not been surveyed on the basis that these works would be expected to impact on soil surfaces of existing flood levee structures only and thus present a very low risk of harm to Aboriginal heritage. An Aboriginal risk assessment for the ancillary stockpile sites has been undertaken through an AHIMS search by the project team only, as directed by Roads and Maritime. The Aboriginal risk assessment has concluded that the ancillary stockpile sites have a low potential for impacts to Aboriginal heritage and no further assessment of these areas has been undertaken.

1.9. Aboriginal cultural heritage values definitions

1.9.1. General description

According to Allen and O'Connell (2003), Aboriginal people have inhabited the Australian continent for the last 50,000 years, and the NSW area, according to Bowler *et al* (2003), for over 42,000 years. These dates are subject to continued revision as further evidence of Aboriginal cultural heritage is discovered and as more research of this evidence is conducted.

Aboriginal cultural heritage broadly refers to things that relate to Aboriginal culture and hold cultural meaning and significance to Aboriginal people (DECCW 2010: 3). There is an understanding in Aboriginal culture that everything is interconnected. In essence Aboriginal cultural heritage can be viewed as potentially encompassing any part of the physical and/or mental landscape, that is, 'Country' (DECCW 2010: iii).

Aboriginal people's interpretation of cultural value is based on their "traditions, observance, lore, customs, beliefs and history" (DECCW 2010: 3). The things associated with Aboriginal cultural heritage are continually / actively being defined by Aboriginal people (also see DEC 2005: 1; DECCW 2010: 3). These things can be associated with traditional, historical or contemporary Aboriginal culture (also see DEC 2005: 1, 3; DECCW 2010: 3).

1.9.2. Tangible Aboriginal cultural heritage

Three categories of tangible Aboriginal cultural heritage may be defined:

- Things that have been observably modified by Aboriginal people;
- Things that may have been modified by Aboriginal people but no discernible traces of that activity remain; and/or
- Things never physically modified by Aboriginal people (but associated with Dreamtime Ancestors who shaped those things).

1.9.3. Intangible Aboriginal cultural heritage

Examples of intangible Aboriginal cultural heritage would include memories of stories and 'ways of doing', which would include language and ceremonies (DECCW 2010: 3).

1.9.4. Statutory

Currently Aboriginal cultural heritage, as statutorily defined by the *National Parks and Wildlife Act 1974*, consists of objects and places.

Aboriginal objects are defined as:

> "*any deposit, object or material evidence…relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains*"

Aboriginal places are defined as a place that is or was of special Aboriginal cultural significance. Places are declared under section 84 of the *NPW Act 1974*.

1.9.5. Values

Aboriginal cultural heritage is broadly valued by Aboriginal people as it is used to define their identity as both individuals and as part of a group (also see DEC 2005: 1, 3; DECCW 2010: iii). More specifically it is used:

- To provide a:
  - "connection and sense of belonging to Country" (DECCW 2010: iii)
  - Link between the present and the past (DECCW 2010: iii)
- As a learning tool to teach Aboriginal culture to younger Aboriginal generations and the general public (DECCW 2010: 3)
- As further evidence of Aboriginal occupation prior to European settlement for people who do not understand the magnitude to which Aboriginal people occupied the continent (see also DECCW 2010: 3).

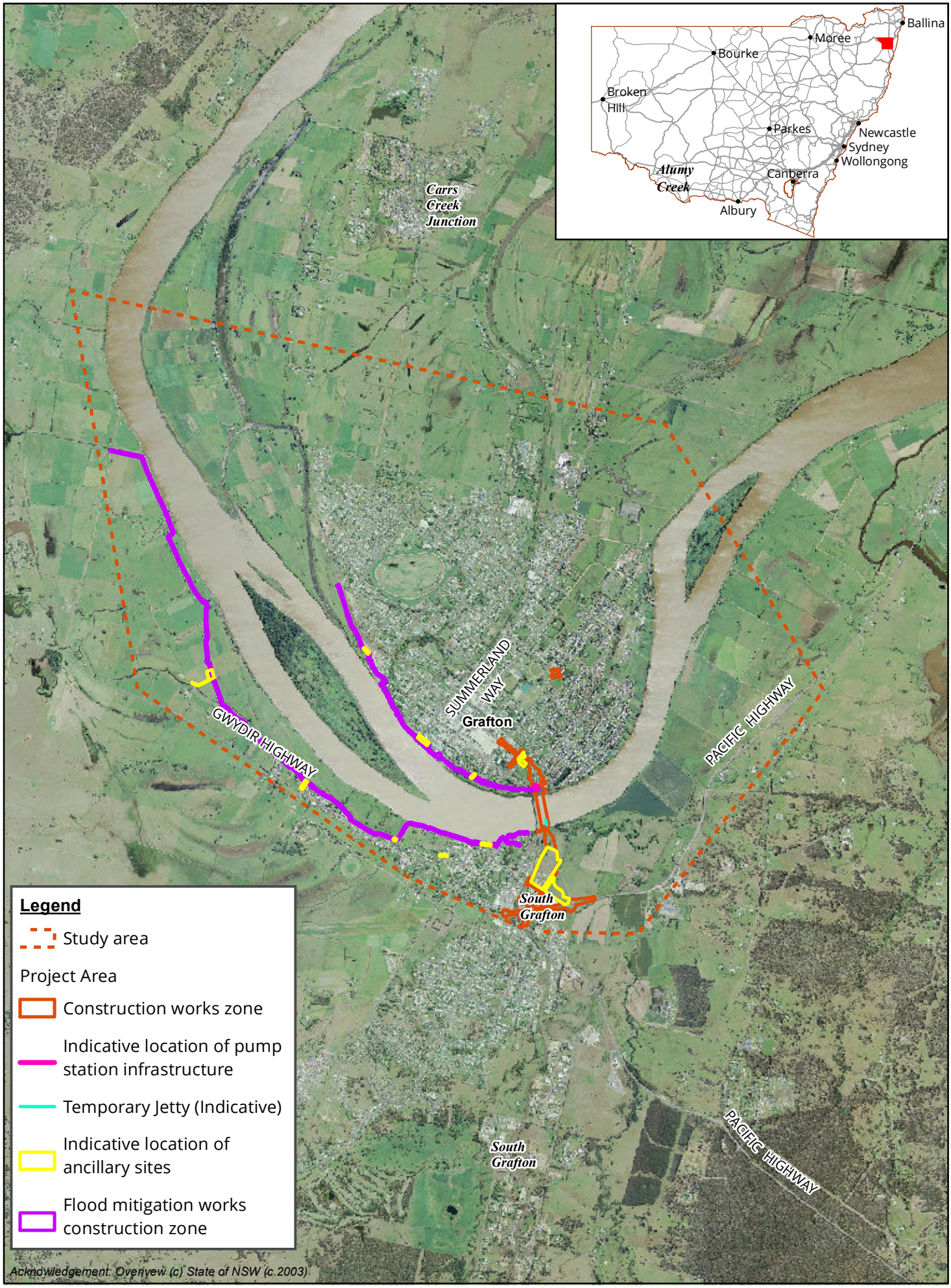

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Figure 1: Location of the project area in a regional context

Matter: 16256
Date: 06 May 2014,
Checked by: ASF, Drawn by: JMS, Last edited by: jshepherd
Location:P:\16200s\16256\Mapping\

0 500 1,000 1,500 2,000
Metres
N
Scale 1:50,000 @ A4, GDA 1994 MGA Zone 55

Figure 2: Aerial of the project area

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Acknowledgements: Imagery provided by Arup

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16256_F2_20140430

0 80 160 240 320 400
Metres
Scale 1:8,000 @ A3
Coordinate System: GDA 1994 MGA Zone 56
N

Grafton

Prince Street

Villiers Street

Fry Street

Fitzroy Street

Clarence River

Susan Island

South Grafton

Gwydir Highway

Bent Street

Pacific Highway

Legend

- Current works design

Project Area

- Construction works zone
- Indicative location of pump station infrastructure
- Temporary Jetty (Indicative)
- Indicative location of ancillary sites
- Flood mitigation works construction zone

Figure 3: The project

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Acknowledgements: Imagery provided by Arup

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Metres
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Coordinate System: GDA 1994 MGA Zone 56

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2. Study area context

This section discusses the study area in regards to its landscape, environmental and Aboriginal cultural heritage context. This section should be read in conjunction with the Archaeological Assessment attached in Appendix 5.

2.1. Topography and hydrology

Grafton lies at the south-eastern end of the geological feature known as the Clarence-Moreton Sedimentary Basin, which covers 16,000 km^2 of north-eastern NSW. Across this basin there has been widespread fluvial and lacustrine to paludal deposition. This deposition is recorded in the grey siltstone, thick banded coal horizons and fine to medium grained lithic sandstone. Although the sediments are non-marine in origin, the quartz dominated sandstone of the Clarence-Moreton Basin is similar to the Sydney Basin sandstones, which have numerous outcrops and overhang formations present (NSW Trade and Investment Website).

In the south-east of the Clarence-Moreton Basin (where Grafton lies), an overlying layer of the erodible Grafton Formation remains, creating an undulating land surface. The Grafton Formation is a fluvial to lacustrine claystone and sandstone unit. This formation overlies the coarser Kangaroo Creek Sandstones which are comprised of sandstone, siltstone, claystone and conglomerate. Both the Grafton and Kangaroo Creek geological units are Mesozoic sediments comprised largely of sandstone and sandstone derivatives (NPWS 2006).

The geological processes that have contributed to the formation of the Grafton area have been largely the weathering of materials flowing down the Clarence River and deposited following flooding events to create the Clarence-Richmond alluvial floodplains. Landforms associated with the Clarence - Richmond alluvial plains include wide valleys, channels, floodplains, terraces and estuaries of the Clarence and Richmond rivers and other coastal streams on Quaternary alluvium, which have a general elevation of 0 m to 50 m Australian Height Datum (AHD), with a local relief of 15 m. The alluvium in the Clarence River at Grafton is estimated to be about 40 m thick (Department of Primary Industries 1970). These alluvial soils (structure loams) are characterised as being deep brown earths and structured brown clays on floodplains. These soils are fertile having a high organic content and are generally not considered to have high erosion potential.

Soils within the Grafton and South Grafton area have been substantially disturbed through sub-urban, agricultural and industrial land uses. Severe floods in the 1940s and 1950s prompted the development of an extensive levee and drainage network to mitigate the effects of major flooding events. The levee system was completed in the 1970s with levees present on both sides of the Clarence River and extending across the floodplains in South Grafton.

Less disturbed portions of the Grafton and South Grafton area where topsoils remain at least partially intact include isolated patches of native vegetation that is typical of the floodplains of the lower Clarence.

2.1.1. Hydrology

The Clarence River catchment, covering an area of 22,700 km^2 is located in the Northern Rivers region of NSW (Department of Primary Industries Office of Water Website). The catchment extends from the NSW/Queensland border and Richmond Range in the north to the Doughboy Range/Dorrigo Plateau in the south and drains east from the Great Dividing Range to the river entrance adjacent to the townships of Yamba and Iluka. It is characterised by upper tableland areas which fall away to a relatively large, flat coastal floodplain. Grafton and South Grafton are located within the upper reaches of the floodplain.

The Grafton and South Grafton areas have a history of droughts and floods. Since 1839 the Clarence River has experienced 78 moderate to major floods, the most recent flood events occurring in 2013 when the river reached

levels of 8.09 m AHD in January, 6.28 m AHD in February and 3.65 m AHD in March respectively at the Prince Street gauge in Grafton (Clarence Valley Council Website).

The flooding behavior of the Lower Clarence River floodplain in terms of peak flood levels and duration of inundation is dominated by the flow originating from upstream of Grafton. This is due to the size of the catchment upstream relative to its various downstream tributary catchments. The upstream flow typically contributes 80 – 90% of the total volume of floodwaters that enters the lower floodplains during main river flood events. Clarence River floods typically occur from low rainfall intensity events that last several days or even weeks.

Grafton has experienced frequent and significant flooding in the past. Levee bank construction and drainage improvement works have been progressively undertaken since around 1890 to help reduce the impact of flooding. These works commenced with the construction of minor levees along low sections of the riverbank. It was not until the 1960s that a major program of levee construction at Grafton and South Grafton was initiated. Since that time, additional levee banks have been gradually constructed, or the height of existing levees increased, to further reduce the frequency of flooding. Today, Grafton is protected by natural high ground, the elevated railway embankment and a series of seven levees that surround the town.

The Grafton and South Grafton levees begin to overtop when flood levels are at, or close to, 8 m on the Prince Street gauge, which translates to about a 20-year average recurrence interval (ARI) flood event. Following overtopping, significant areas of Grafton and South Grafton are inundated by floodwater. Cyclical flooding events have the potential to impact on the survival of Aboriginal archaeological features. Strong floodwater movement can scour the river banks and terraces, effectively removing stone artefacts from in situ. It can also result in the deposition of flood sediments that bury and preserve archaeological material.

2.2. Landscape resources

The geology of the immediate Grafton and South Grafton area does not suggest the likelihood of readily available raw material sources. Some stone types suitable for tool manufacture, such as quartz, are available in the local area as river bed outcrops or river pebbles.

The pre-contact vegetation communities supported numerous plant species utilised by Aboriginal people for a wide range of purposes. Certain plants provided important food sources (yams and roots) and/ or medicines, while others provided toxins which might be used to stupefy fish in waterholes. Sabine (1970: II: 21) notes that plant derived poisons used in fishing include Duboisine from the Corkwood Tree, a poison extracted from an unspecified weed and a poison made from pounding the leaves of a tree called “Cutiga”.

Plants were used to manufacture a wide range of items including personal decorations, clothing, tools, art (pigment fixatives), watercraft, traps and shelter. Certain plants also featured in local mythologies, and some were considered sacred and/or had ritual uses.

Wood, bark, fibres, and resin are all examples of useful materials derived from plants. For example: wood could be used to manufacture items such as boomerangs, clubs, digging sticks, weapons, shields or containers; bark could also be used to manufacture clothing, canoes, or dishes; fibres could be used to manufacture string, fishing nets, baskets, traps, or mats; and resin could be used as an adhesive in tool manufacture and decoration, or to seal leaks in canoes (Sabine 1970).

The plant species discussed previously would have supported a range of fauna also used by local Aboriginal inhabitants. Animals were not only used for food, but also contributed to several cultural aspects of Aboriginal life; they provided materials for tool technologies, played a role in local mythologies, and some were considered sacred or had ritual significance.

Reptiles, mammals, birds, insects, fish, molluscs, and amphibians would have all been exploited for food. The Clarence River and its floodplain would have supported the major food sources exploited by Aboriginal people,

including; a variety of fish, molluscs, tortoises, turtles, eels, and crayfish. Waterbirds flocking on the floodplains such as ibis, geese, ducks, swans, shags, darters and cormorants were harvested by the Aboriginals for meat, eggs and feathers (Sabine 1970). Macropods, possums and emu also found in the area were used for meat and skins.

Aboriginal technologies also made use of materials sourced from animals. Skins could be used as clothing, such as macropod and possum skin cloaks; bone points (awls) and sinews were used for sewing. Animal teeth, bones, and sinews were used in tool manufacture; and animal products, such as feathers and teeth were used as personal decoration (Sabine 1970).

2.3. European land use history

The land within and surrounding the Grafton and South Grafton area has undergone extensive modification. From the beginning of non-Aboriginal settlement in the 1830s, vegetation was cleared rapidly, followed by pastoral land activity and the steady growth of the urban environment.

The northern side of the Clarence River is mostly urban streets, residential and commercial development and some parkland. To the south, developed urban areas occur to the west of the existing bridge and open farm lands with associated houses and roads dominate the landscape to the east. The alluvial nature of the floodplain soils to the south and the impact of agriculture and urban development have reduced the likelihood of some types of evidence of Aboriginal occupation remaining intact.

3. Aboriginal cultural heritage context

Please note that names and photos of deceased Aboriginal persons have been removed from the public version of this report.

3.1. Ethnohistory

Our knowledge of the social organisation of Aboriginal people prior to European contact is, to a large extent, reliant on documents written by early European arrivals recording their impressions. By the time colonial diarists, missionaries and proto-anthropologists began making detailed records of Aboriginal people in the late 19th Century, pre-European Aboriginal groups had been broken up and reconfigured by European settlement activity. The inherent bias of the class and cultures of these authors necessarily affect such documents. They were also often describing a culture that they did not fully understand – a culture that was in a heightened state of disruption given the arrival of settlers and disease. Early written records and images can, however, be used in conjunction with archaeological information in order to gain a picture of Aboriginal life in the region. Oral histories from members of the Aboriginal community also provide valuable information. The following information relating to Aboriginal people of the Grafton region is based on such early detailed records.

At the time of non-Aboriginal arrival in Grafton, the area to the north of the Clarence River was within Bundjalung lands. The Yaegl tribe occupied lands on the coast. The Clarence River and Grafton are within the area previously inhabited by the Gumbainggir people. These people also inhabited the steep terrain of the escarpment zone located south of Grafton, where other sites and evidence of occupation have been found (Witter 2000).

The first interaction between the Aboriginal inhabitants of the Grafton region and the incoming European settlers came in 1825 in the form of an escaped convict Richard Craig, who would later inform the colonial government of the Clarence River and drive the first sheep into the area (McKay, 1938). Conflict between the Aboriginal population and the incoming settlers followed soon after initial European settlement. Killings were carried out by both communities and stock was speared to drive them off land. One man, Coutts (a squatter), was tried for poisoning Aboriginal people with arsenic laced flour but was acquitted (NSW Heritage Office 1996). Violence, displacement and disease reduced the number of Aboriginal people in the area. In 1882 a protector of Aborigines was appointed (Northern Star, 1882) and nine reserves were subsequently created to house the remaining Aboriginal population. By 1891 it was reported that the police had brought ‘peace’ to the region.

Following European settlement many Aboriginal people found employment in European industry as stockmen, cane strippers and fishermen (NSW Heritage Office 1996). Traditional hunting and bush skills continued to be practiced by many Aboriginal people (Plate 1) and were complemented by adaptions of European technologies such as shown in the construction of the timber hut shown in Plate 2. Interactions with traditional social groups also continued to be important with records of Clarence River Aborigines travelling to Casino in the c. 1880s to corroboree and fight with Richmond River and Queensland tribes (Northern Star, 1940). These connections and rivalries would continue into the 21st Century through well attended football matches between Clarence River, Cabbage Tree Island and Richmond River Aboriginal groups (Northern Star, 1931).

A community of Aboriginal people remains in Grafton to this day, many of them with strong spiritual links to the original inhabitants and important knowledge of their past ways of life.

Plate 1: Aborigines spear fishing in river at Grafton in 1895 (Source: George Washington Wilson and Co. 1935)

Plate 2: Aboriginal hut and family in Grafton District 1895 (Source: George Washington Wilson and Co. 1895)

3.2. Aboriginal heritage located in the project area

The archaeological assessment identified one Aboriginal site within the project area:

- Golden Eel Site (12-6-0326).

In addition there is one Aboriginal sites recorded in close proximity to the project area:

- Alipou Creek AS 1

The Archaeological Assessment attached in Appendix 5 provides details for Aboriginal sites identified during the archaeological assessment and shown on Figure 4. A brief description of each site is provided below.

Golden Eel site (12-6-0326) ceremonial and dreaming

The Clarence River Golden Eel site (Plate 3 and 4) is a culturally significant site, with a general restriction applying to access to the site card.

Plate 3: Looking across the Clarence River, to the southern banks near Alipou Creek, where part of the Golden Eel site story is linked

Plate 4: The Clarence River, identified as being created during The Dreamtime

Co-ordinates for this site have been provided by OEH, however the extent of the site has not been specified. On the basis of information provided in the field by Aboriginal representatives the entirety of the Clarence River and Alipou Creek has been identified as an Aboriginal site associated with the Golden Eel dreaming story. It is known that the Golden Eel site and the formation of the Clarence River are considered to be of high cultural significance to the local Aboriginal people. In her book, *Singing the Coast*, Somerville discusses with Tony Perkins the importance of the "Golden" dreaming stories to the Gumbaynggir Aboriginal people:

> *"Each of the different clan groups in Gumbaynggir country had different major storylines and associated miirlarl* (sacred or special places) *and where these storylines meet up are the most powerful places of all."*
>
> *"Tony explained: 'The three main golden spirits that belong to Aboriginal people is that Golden Eel, that Golden Dog, and down at Nambucca way they got that Golden Kangaroo'."*
>
> *"We've got, you know, the Golden Kangaroo and if you go up, between here and Grafton and Grafton does have the Golden Dog Hotel there and they also have the Golden Eel up at the bridge at Grafton there, so they're the three sites, the Waanyji Miirlarl in Coramba, Buurrga* (Eel) *Miirlalrl at Grafton and Nunguu Miirlarl here, special places…"* (Sommerville, 2010, p. 215).

While there are discrete Aboriginal archaeological sites located in proximity to the Clarence River and Alipou Creek, the Golden Eel site is related specifically to the topographical features of the waterways themselves. Aboriginal representatives have indicated that the integrity and setting of the Clarence River and Alipou Creek is important to the overall cultural values of the Golden Eel site.

Alipou Creek AS 1 artefact scatter.

Two Aboriginal sandstone artefacts were identified in an exposure at the base of trees near the entrance to Lot 457 Iolanthe St, South Grafton, and designated Alipou Creek AS 1 (Plate 5 and Plate 6). Both artefacts from Alipou Creek AS 1 are sandstone river cobbles, with one being a modified river cobble most likely used for as a chopping tool (also referred to as a nuclear tool) and the other a grinding stone. The retouched cobble has been classified as a Bungwal basher as defined by Jo Kamminga (1978), a tool type ethnographically associated with preparing and processing fern roots for cooking. The grinding stone has pronounced indentation on the dorsal surface and limited wear on ventral side. Both of these artefacts are located 50 m south of Alipou creek and 150m east of the development footprint.

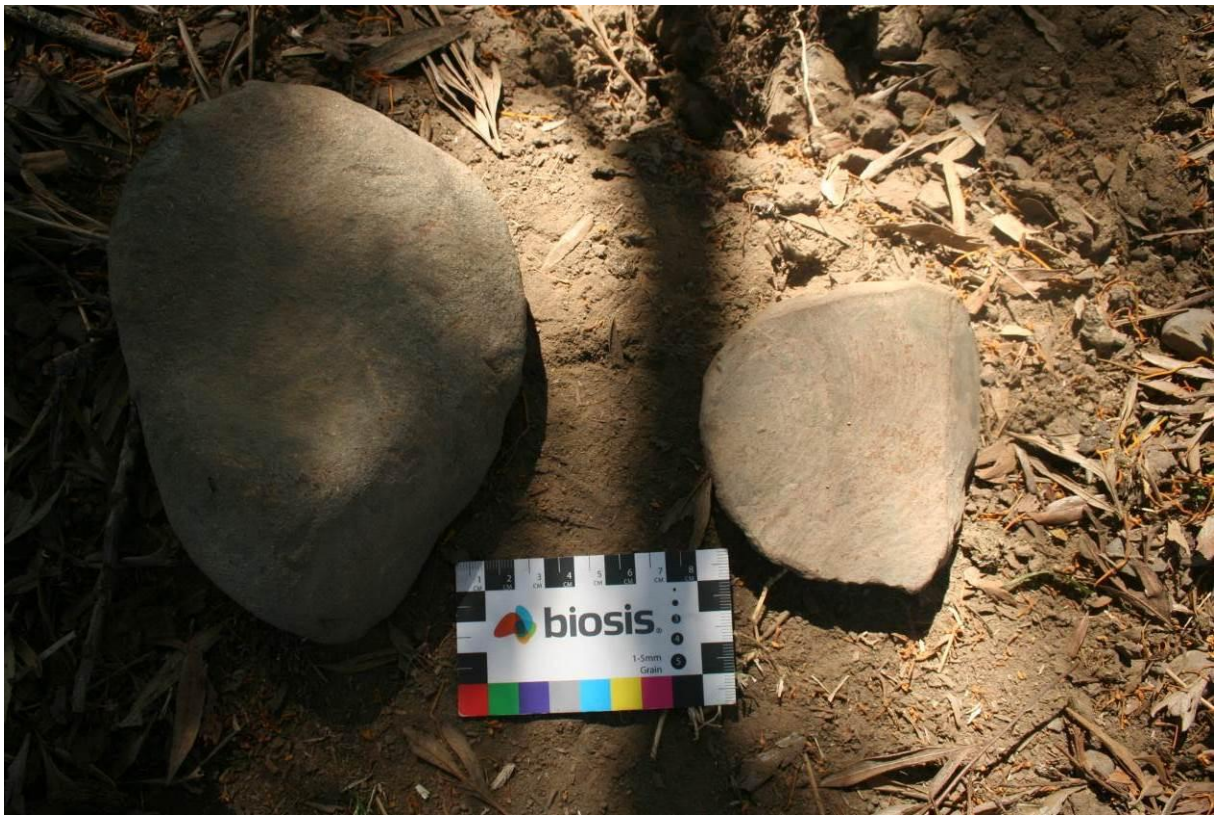

Plate 5. Grinding stones from Alipou Creek AS 1.

Plate 6. Looking northwest at Alipou Creek AS 1 (circled in red and facing northeast).

3.3. Interpretation of past Aboriginal land use

McBryde (1974) has argued that wide-ranging population movements of Aboriginal people on a seasonal basis would have occurred as part of annual migration between the coast and the tableland foothills. As such it would be expected that a range of seasonal sites across resource zones were visited in the local region. One of these key resource zones would have been the Clarence River. It is an important natural feature for Aboriginal people as it supported an abundance of resources integral to their lifestyles and cultural practices. The river is also the subject of several dreaming stories, the ones publicly available relate to the creation of the river, which also extends to Alipou Creek. The river has mythological values and this aspect of significance may have no additional tangible features beyond physical presence.

It should also be considered that the river may have cultural significance in the demarcation of space and place. The river creates a tangible barrier to accessing the opposite bank and the river islands, and this demarcation may have significance in the social organisation and cultural practices of local Aboriginal populations. Both Susan and Elizabeth islands (respectively west and east of the existing Grafton Bridge) are of significance to local Aboriginal people and are listed as gendered ceremonial places.

Although Aboriginal people would have frequented the local area particularly along the Clarence River, no Aboriginal archaeological places have been recorded within the proposed project footprint. This is largely a result of the significant disturbance from urban, industrial and infrastructure construction that has occurred in the areas likely to have been frequented by Aboriginal people, particularly the Clarence River, since European settlement. Archaeological investigations have identified sparse cultural material, including scarred trees and lithic assemblages in alluvial flood plains subject to minimal disturbance surrounding the Clarence River. Stone tools and cultural scars at Alipou Creek AS 1, Alipou SCT 1 (12-6-0401) and Alipou SCT 2 (12-6-0402), do indicate that Aboriginal people were utilising local flora resources for food and as raw materials for making implements.

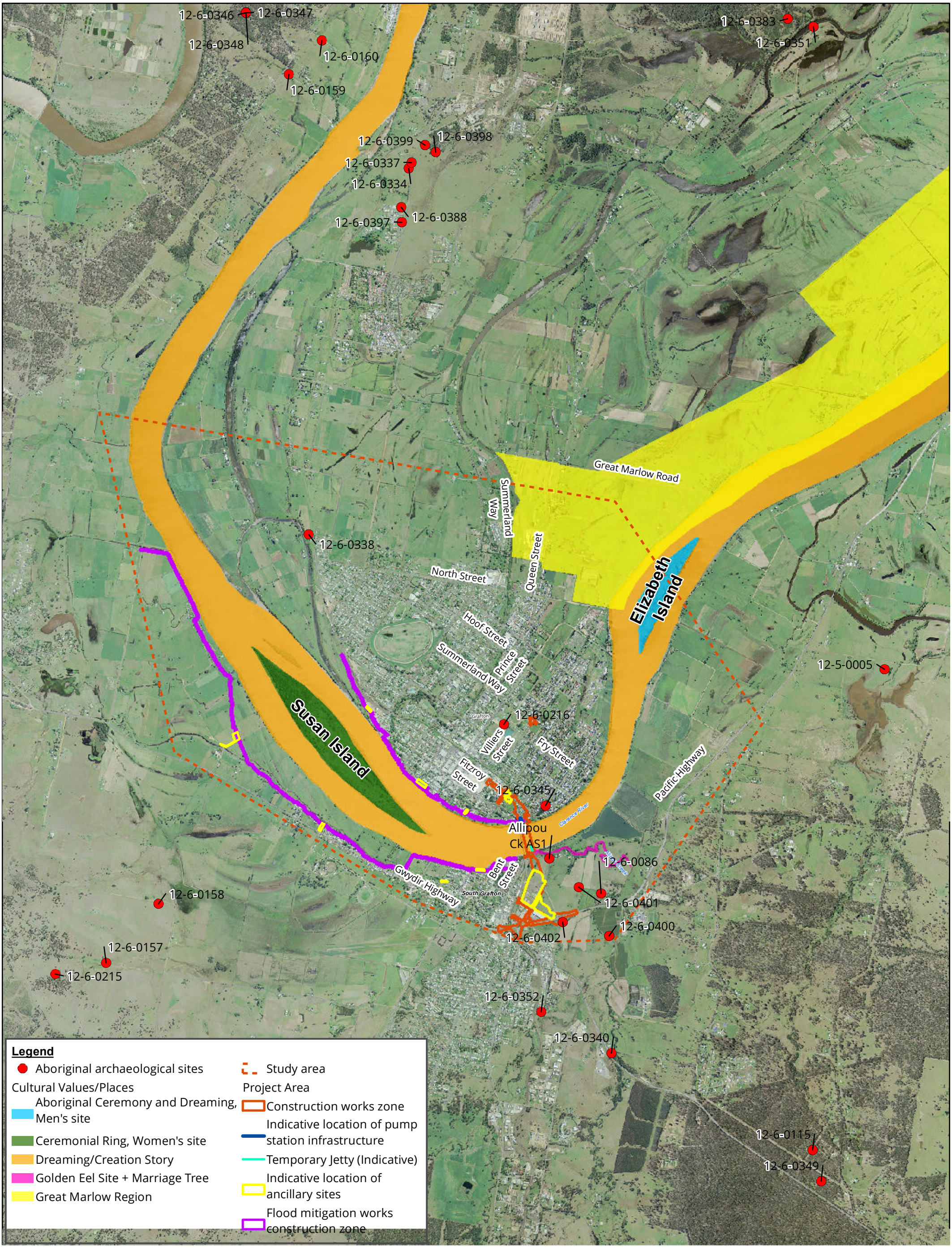

Figure 4: Aboriginal sites location in the project area

Biosis Pty Ltd

Ballarat, Brisbane, Canberra, Melbourne, Sydney, Wangaratta & Wollongong

Acknowledgements: Imagery provided by Arup

Matter: 16256
Date: 06 May 2014,
Checked by: ASF, Drawn by: JMS, Last edited by: jshepherd
Location:P:\16200s\16256\Mapping\16256_ACHA_F4_AboriginalSites_20140211

0 400 800 1,200 1,600 2,000
Metres
Scale 1:40,000 @ A3
Coordinate System: GDA 1994 MGA Zone 56
N

4. Aboriginal community consultation

Consultation with the Aboriginal community has been undertaken by Roads and Maritime throughout the development of the proposed project to determine the cultural heritage values and identify potential impacts. This consultation has been undertaken in accordance with internal Roads and Maritime protocols and addresses the Director-General's requirement to demonstrate effective consultation with Aboriginal communities. Aboriginal consultation that have been followed include:

- *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005)
- *RTA procedure for Aboriginal cultural heritage consultation and investigation* (RTA 2008) (PACHCI), after November 2011, the 2008 procedure was updated and consultation subsequently followed the updated PACHCI process.

The *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010) has also been considered as part of consultation requirements.

The *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005) identify that consultation with Aboriginal communities is critical to determining Aboriginal cultural heritage values and understanding their significance. Formal consultation with Aboriginal communities was initiated in January 2011 under the *RTA procedure for Aboriginal cultural heritage consultation and investigation* (RTA 2008). Consultation actions after November 2011 have complied with the requirements of the *Roads and Maritime Services procedures for Aboriginal cultural heritage consultation and investigation* (Roads and Maritime 2011).

A consultation log of all communications with registered Aboriginal parties is provided in Appendix 1.

To initiate Aboriginal community consultation, Roads and Maritime commenced Stage 3 of the PACHCI process outlined in the *RTA procedure for Aboriginal cultural heritage consultation and investigation* (RTA 2008).

4.1. Notification, identification and registration of stakeholders

The first step of Stage 3 of the PACHCI process is to notify, identify and register relevant stakeholders to be consulted. Notifications to agencies, identified potential Aboriginal stakeholders and public notices were originally undertaken in March 2010 and then reissued between December 2010 to January 2011. Copies of public notices are provided in Appendix 1, copies of responses from agencies in Appendix 2 and copies of responses from registered Aboriginal parties in Appendix 3.

Initial Action 1. Notification of agencies

Notification letters were sent to following agencies and organisations to determine the relevant knowledge holders within the Grafton and South Grafton area between the 8 and 10 March 2010:

- Department of Aboriginal Affairs
- Grafton Ngerrie Local Aboriginal Land Council
- Department of Planning - Heritage Branch (now part of OEH
- The Native Title Service of NSW
- NSW Aboriginal Land Council

- National Native Title Tribunal
- Department of Environment Climate Change and Water (DECCW now OEH)
- Clarence Valley Council.

Grafton Ngerrie Local Aboriginal Land Council responded on the 15 March 2010 to register their interest in being consulted in regards to the Project.

DECCW responded on the 25 March 2010 and advised that the following three Aboriginal stakeholder groups could be potentially concerned with the project:

- Durahrwa Training and Development Aboriginal Corporation
- Grafton Ngerrie Local Aboriginal Land Council
- Burra Waj Ad.

Initial Action 2. Public notice

A public notice was placed in *The Daily Examiner* on the 1 March 2010. The notice invited Aboriginal people who hold relevant knowledge of the region to register with Roads and Maritime by the 23 March 2010. An Aboriginal person (as an individual stakeholder) contacted Roads and Maritime on the 7 March 2010 and indicated his interested in being consulted for the project.

Reissue Action 1. Notification of agencies

Notification letters were sent to the following agencies and organisations to determine the relevant knowledge holders within the Grafton and South Grafton on the 22 December 2010:

- Department of Aboriginal Affairs
- The Grafton Ngerrie Local Aboriginal Land Council
- The Heritage Branch, Department of Planning (now part of OEH)
- The Native Title Service of NSW
- The NSW Aboriginal Land Council
- The Registrar of the National Native Tribunal
- The Department of Climate Change & Water (DECCW now OEH)
- The Clarence Valley Council
- Catchment Management Authority.

In addition the following Aboriginal stakeholders were also notified of the project:

- Burra Waj Ad
- Individual Aboriginal stakeholder.

The NSW Aboriginal land Council responded on the 10 January 2010 and identified that the Grafton Ngerrie Local Aboriginal Land Council should be consulted.

DECCW responded on the 6 January 2011 and advised that the following four Aboriginal stakeholder groups could be potentially concerned with the project:

- Jana Ngalee Local Aboriginal Land Council

- Durahrwa Training and Development Aboriginal Corporation
- Burra Waj Ad
- Grafton Ngerrie Local Aboriginal Land Council.

The Office of the Registrar Aboriginal Land Rights Act 1983 (NSW) responded on the 14 January 2011 and did not identify any Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act* 1983 (NSW). There are no native title claims in the project area under the *Commonwealth Native Title Act* 1993. It was recommended that the Grafton Ngerrie Local Aboriginal Land Council be contacted.

Following responses from agencies, additional invitations for consultation were sent on the 14 January 2011 to:

- Jana Ngalee Local Aboriginal Land Council
- Durahrwa Training and Development Aboriginal Corporation.

No response was received from either the Jana Ngalee Local Aboriginal Land Council or the Durahrwa Training and Development Aboriginal Corporation.

Reissue Action 2. Public notice

A public notice in *The Daily Examiner* on the 22 January 2011. The notice invited Aboriginal people who hold relevant knowledge of the region to register with Roads and Maritime by the 14 February 2011. No responses were received to these notices.

Action 3. Registration

Only two responses were received from Aboriginal stakeholders wishing to register for consultation, these were:

- Grafton Ngerrie Local Aboriginal Land Council
- Individual Aboriginal stakeholder.

Following attempted correspondence with the individual Aboriginal stakeholder in December 2010, Roads and Maritime was advised that he had recently passed away. As such, the Grafton Ngerrie Local Aboriginal Land Council is the only registered Aboriginal party for the project.

4.2. Presentation of project information and gathering information of cultural significance.

4.2.1. Preliminary route options report

Consultation with the Grafton Ngerrie Local Aboriginal Land Council was undertaken throughout the preparation of the *Preliminary Route Options Report Technical Paper: Aboriginal Heritage* (Biosis, 2011) with a series of meetings held on 10 May 2011, 28 June 2011 and 1 July 2011 at the Grafton Ngerrie Local Aboriginal Land Council offices to identify relevant knowledge holders and determine the extent of Aboriginal cultural constraints on the proposed preliminary route options. Brett Duroux representing the Grafton Ngerrie Local Aboriginal Land Council participated in the preliminary route options field surveys. Mr Duroux provided local and cultural knowledge of the immediate Grafton area. Discussions of what would constitute potential direct and indirect impact to cultural values were undertaken with both Brett Duroux and Graham Purcell (Roads and Maritime Northern Region Aboriginal cultural heritage advisor).

Aboriginal Focus Group meeting 10 May 2011

An Aboriginal focus group meeting was held at the Grafton Ngerrie Local Aboriginal Land Council offices in Grafton on Tuesday 10 May 2011 to discuss the best way to identify Aboriginal cultural constraints on the proposed route options and relevant knowledge holders.

The meeting was attended by:

- Wesley Fernando and Rod Duroux, Grafton Ngerrie Local Aboriginal Land Council
- Graham Purcell, Chris Clark and Simon Millichamp, Roads and Maritime
- Peter Rand, Arup
- Samantha Higgs, Biosis.

Meeting outcomes

It was determined at the meeting that a workshop should be held at the Grafton Ngerrie Local Aboriginal Land Council office with relevant knowledge holders to investigate the extent of several Aboriginal cultural sites, particularly:

- The Golden Eel site
- Elizabeth Island
- Susan Island.

Wesley Fernando would contact the OEH AHIMS registrar to obtain copies of restricted site cards relating to these sites prior to the workshop.

Aboriginal Focus Group workshop 28 June 2011

An Aboriginal focus group workshop was held at the Grafton Ngerrie Local Aboriginal Land Council offices in Grafton on Tuesday 28 June 2011 to identify relevant knowledge holders and further determine the extent of Aboriginal cultural constraints on the proposed route options.

The meeting was attended by:

- Wesley Fernando, Brett Tibbett and David “Bunny” Daley, Grafton NgerrieLocal Aboriginal Land Council
- Graham Purcell, Chris Clark and Simon Millichamp, Roads and Maritime
- Kathryn Nation, Arup
- Samantha Higgs and Paul Howard, Biosis.

Workshop outcomes

Several areas were identified as culturally significant and requiring further consultation to determine constraints. Grafton Ngerrie Local Aboriginal Land Council indicated it would consult with community members regarding the cultural significance and constraints to route options of the following areas:

- Elizabeth Island
- Alipou Creek
- Swan Creek.

Grafton Ngerrie Local Aboriginal Land Council indicated that they would provide a report on the cultural constraints, but this has not been provided.

It was indicated at the workshop that Elizabeth Island may be important to men as well as, or instead of, women.

Susan Island is not impacted by any of the route options and would not require further investigation.

The restricted site cards for sites 12-6-0326 and 12-6-0327 could not be obtained in time for the workshop.

Grafton Ngerrie Local Aboriginal Land Council Meeting 1 July 2011

A meeting was held at the Grafton Ngerrie Local Aboriginal Land Council offices in Grafton on Friday 1 July 2011 to discuss options set out by the wider community for the additional crossing of the Clarence River in Grafton and in particular the areas around Alipou Creek, Elizabeth Island and Great Marlow.

The meeting was attended by:

- Wesley Fernando, Brett Tibbett and David “Bunny” Daley, Grafton Ngerrie Local Aboriginal Land Council
- Graham Purcell, Chris Clark and Simon Millichamp, Roads and Maritime.

Meeting outcomes

The following is a summary of the meetings outcomes as provided in a letter from Wesley Fernando, Grafton Ngerrie Local Aboriginal Land Council. A copy of the letter in full is attached in Appendix 3.

Elizabeth Island is a sacred Aboriginal men’s site with high significance to the Aboriginal community. No disturbance should occur on any part of the Island. Any of the preliminary route options that impact on Elizabeth Island should be removed from the list of options.

Alipou Creek is the resting place of the Golden Eel which is of great significance to all of the neighbouring tribal groups. There are many scarred trees and a marriage tree in the area that can not be impacted on. The community feel strongly that Alipou Creek should not be directly impacted. The community is willing to discuss potential impacts on the area between Alipou Creek and the existing bridge once the alignment options are narrowed down and plans refined.

Great Marlow is an area that Aboriginal people commonly used to travel through and that contains many areas of high significance. Any route options considered in this area will need to be assessed by Land Council Site Officers before an accurate assessment can be given.

All development activities will impact on Aboriginal places and objects of cultural significance, as traditional Aboriginal people were nomadic moving through their country. All country is significant, in addition to this our spirituality is entwined throughout the landscape, therefore it is impossible for a development not to impact on Aboriginal culture and heritage.

Grafton Ngerrie Local Aboriginal Land Council comments on *Preliminary Route Options Report, Technical Paper: Aboriginal Heritage* (Biosis, 2011)

An email with comments following community review of the (Biosis, 2011) report, that was received from Wesley Fernando, Chief executive officer Grafton Ngerrie Local Aboriginal Land Council is attached at Appendix 3.

The Grafton Ngerrie Local Aboriginal Land Council expressed concern about the level of detail provided on the location of Aboriginal artefacts and places in the report. It was agreed following discussion that a public and private version of the report would be produced. Figure 3 of the 2011 report and precise location details for Aboriginal artefacts and places will be removed from the public report.

Grafton Ngerrie Local Aboriginal Land Council indicated they would like to assess low impact areas such as buildings and roads if these are to be disturbed in any way, as the Aboriginal community was not afforded the chance to assess these areas when they were initially developed. Due to the high significance of the area it is highly likely sites would be present.

Grafton Ngerrie Local Aboriginal Land Council also asked that the following statement be added to the report.

“It is the Grafton Ngerrie Land Councils opinion that all developments will impact on Aboriginal Culture and Heritage as all country whether it has been developed or not it is of significance to Aboriginal people and we must be afforded the opportunity to be fully involved in all aspects of the development and construction of the additional crossing of the Clarence river at Grafton.”

4.2.2. Route options development report

Consultation with the Grafton Ngerrie Local Aboriginal Land Council was undertaken throughout the preparation of the *Route Options Development Report Technical Paper: Aboriginal Heritage* (Biosis, 2012) with a meeting held on 10 November 2011 at the Grafton Ngerrie Local Aboriginal Land Council offices. The assessment included a targeted field survey of the six route options, conducted in February and April 2012. The field surveys were undertaken with Brett Duroux and Rod Duroux from Grafton Ngerrie Local Aboriginal Land Council.

Grafton Ngerrie Local Aboriginal Land Council Meeting 10 November 2011

A meeting was held at the Grafton Ngerrie Local Aboriginal Land Council offices in Grafton on Thursday 10 November 2011 to discuss the impacts of the 25 preliminary route options for the additional crossing of the Clarence River at Grafton on areas of Aboriginal cultural significance.

The meeting was attended by:

- Wesley Fernando, Brett Duroux and Rod Duroux, Grafton Ngerrie Local Aboriginal Land Council
- Chris Clark and Simon Millichamp, Roads and Maritime.

Meeting outcomes

The group reviewed the preliminary options within each of the five strategic corridors (one containing two route options) and discussed the potential impacts and issues of each option. The group provided indicative scoring for Aboriginal heritage values for each of the route options on a corridor by corridor basis, and provided reasoning for the scoring. Grafton Ngerrie Local Aboriginal Land Council raised concerns over the initial alignment of Option C (now the preferred option), due to the proximity of the proposed bridge to Alipou Creek and the Golden Eel site in South Grafton. These concerns were considered and addressed by modifying the alignment.

4.2.3. Aboriginal cultural heritage assessment.

Grafton Ngerrie Local Aboriginal Land Council Meeting 17 January 2013

A meeting was held at the Grafton Ngerrie Local Aboriginal Land Council offices in Grafton on 17 January 2013 to discuss a modified Option C route, which had been identified as the preferred option.

The meeting was attended by:

- Crystal Skinner and Brett Tibbett, Grafton Ngerrie Local Aboriginal Land Council
- Chris Clark and Vicky Sisson, Roads and Maritime.

Meeting outcomes

The adoption of a modified Option C route was discussed. Preliminary strategies to protect the Golden Eel site during construction were raised as well as interpretative signage and managing culturally sensitive information appropriately. Roads and Maritime was requested to provide maps for the January Elders Council.

Grafton Ngerrie Local Aboriginal Land Council Meeting 30 April 2013

A meeting was held at the Grafton Ngerrie Local Aboriginal Land Council offices in Grafton on 30 April 2013 to discuss the preferred route.

The meeting was attended by:

- Crystal Skinner, Grafton Ngerrie Local Aboriginal Land Council
- Adam Cameron, Roads and Maritime.

Meeting outcomes

The preferred route option was discussed at the January 2013 internal Grafton Ngerrie Local Aboriginal Land Council meeting. While some members of the land council were concerned about potential impacts on the Golden Eel site, overall there was a feeling that the Grafton Ngerrie Local Aboriginal Land Council could work with the modified version of Option C and still protect the mouth of the Alipou Creek which had significant associations with Golden Eel site. Options for mitigating impacts from both construction and early geotechnical works were discussed, including fencing off the area around the mouth of Alipou Creek to avoid possible disturbances. Further, the possibility of a plaque/seating area that would signify the importance of the area to the local Aboriginal dreamtime stories was proposed.

A pedestrian proof fence was subsequently erected by Roads and Maritime to separate the project area and Alipou Creek to avoid potential impacts from either construction or site investigations.

Project Methodology

A meeting was held at the Grafton Ngerrie Local Aboriginal Land Council offices in Grafton on 17 July 2013 and 17 September 2013 to discuss the Project Methodology Pack (provided to Grafton Ngerrie Local Aboriginal Land Council on the 17 July 2013) outlining the proposed Aboriginal cultural heritage assessment process and methodology for this project (Appendix 4).

These meetings were attended by:

- Crystal Skinner and Brett Tibbett, Grafton Ngerrie Local Aboriginal Land Council
- Vicky Sisson, Roads and Maritime.

Methodology Pack outcomes

The Grafton Ngerrie Local Aboriginal Land Council provided a written response to the Methodology Pack on the 24 September 2013 (Appendix 3). The Grafton Ngerrie Local Aboriginal Land Council did not raise any issues with the proposed methodology but requested that if artefacts/objects were found/located during the investigation the Local Aboriginal Land Council would be notified as soon as possible with the following action:

- The Local Aboriginal Land Council Board of Directors be consulted and a meeting organised to discuss, in consultation with Aboriginal site officers, any further actions to be undertaken with artefacts/objects.

Grafton Ngerrie Local Aboriginal Land Council Meeting 06 February 2014

A meeting was held at the Grafton Ngerrie Local Aboriginal Land Council offices in Grafton on 6 February 2014 to discuss the following items:

- A temporary boat launching facility to be used during the construction stage of the project and if the Land Council had any comments or feedback in relation to this proposal
- In regards to the movement of the alignment of the proposed bridge, which was shifted approximately 3m closer to the Alipou Creek

- Organising a meeting with the Grafton Ngerrie Local Aboriginal Land Council elders to discuss the Alipou Creek area and the elder's knowledge around the cultural significance.

Written feedback from these items was sought on the 6th, 12th and 18th February 2014. Grafton Ngerrie Local Aboriginal Land Council responded on the 12th February 2014 to indicate that these information requests were being followed up, but no further information was provided.

Information Gathered During Fieldwork

Whilst the Local Aboriginal Land Council was invited and attended fieldwork, no further cultural information was disseminated to Biosis during the fieldwork conducted for the project. Brett Duroux did however highlight that the Golden Eel dreaming site and Susan Island were significant places for the Aboriginal community and had been identified to Roads and Maritime to ensure their preservation.

4.3. Review of Draft Aboriginal Cultural Heritage Assessment Report

The Draft Aboriginal Cultural Heritage Assessment Report was provided to registered Aboriginal parties on 23 May 2014 for review and comment. The RAP was given 28 days to provide comments. No formal written response was provided, but phone discussions between the RAP and Roads and Maritime were held on the 23 June 2014. The Grafton Ngerrie Local Aboriginal Land Council was happy that recommendations for interpretive signage and temporary pedestrian proof fencing had been included in the report as requested.

The Grafton Ngerrie Local Aboriginal Land Council also indicated that they would like opportunities for Land Council site officers being used on site during construction to assist in identifying items of Aboriginal cultural heritage significance. Roads and Maritime acknowledges this request but considers council site officers would not be required during construction as the project area is considered to have low potential for Aboriginal archaeological sites. Nonetheless, in the event that unexpected Aboriginal cultural material or skeletal remains are encountered, Roads and Maritime would implement the *Standard Management Procedure for Unexpected Archaeological Finds* (Roads and Maritime, 2012). This procedure outlines the involvement of Aboriginal registered parties during construction where required (Refer to Section 8.6 of the *Standard Management Procedure for Unexpected Archaeological Finds*).

5. Aboriginal cultural significance assessment

The two main values addressed when assessing the significance of Aboriginal sites are cultural values to the Aboriginal community and archaeological (scientific) values. This report will assess the cultural values of Aboriginal sites in the study area. Details of the scientific significance assessment of Aboriginal sites in the project area are provided in Appendix 5.

5.1. Introduction to the assessment process

Heritage assessment criteria in NSW fall broadly within the significance values outlined in the *Australia International Council on Monuments and Sites (ICOMOS) Burra Charter* (Australia ICOMOS 1999). This approach to heritage has been adopted by cultural heritage managers and government agencies as the set of guidelines for best practice heritage management in Australia. These values are provided as background and include:

- **Historical significance** (evolution and association) refers to historic values and encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment
- **Aesthetic significance** (Scenic/architectural qualities, creative accomplishment) refers to the sensory, scenic, architectural and creative aspects of the place. It is often closely linked with social values and may include consideration of form, scale, colour, texture, and material of the fabric or landscape, and the smell and sounds associated with the place and its use
- **Social significance** (contemporary community esteem) refers to the spiritual, traditional, historical or contemporary associations and attachment that the place or area has for the present-day community. Places of social significance have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods or events. Communities can experience a sense of loss should a place of social significance be damaged or destroyed. These aspects of heritage significance can only be determined through consultative processes with local communities
- **Scientific significance** (Archaeological, industrial, educational, research potential and scientific significance values) refers to the importance of a landscape, area, place or object because of its archaeological and/or other technical aspects. Assessment of scientific value is often based on the likely research potential of the area, place or object and will consider the importance of the data involved, its rarity, quality or representativeness, and the degree to which it may contribute further substantial information.

The cultural and archaeological significance of Aboriginal and historic sites and places is assessed on the basis of the significance values outlined above. As well as the ICOMOS Burra Charter significance values guidelines, various government agencies have developed formal criteria and guidelines that have application when assessing the significance of heritage places within NSW. Of primary interest are the following guidelines prepared by the Office of Environment and Heritage (OEH):

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

These guidelines above state that an area may contain evidence and associations which demonstrate one or any combination of the ICOMOS Burra Charter significance values outlined above in reference to Aboriginal heritage. Reference to each of the values should be made when evaluating archaeological and cultural significance for Aboriginal sites and places.

In addition to the previously outlined heritage values, the OEH Guidelines (DECC 2006) also specify the importance of considering cultural landscapes when determining and assessing Aboriginal heritage values. The principle behind a cultural landscape is that 'the significance of individual features is derived from their inter-relatedness within the cultural landscape'. This means that sites or places cannot be 'assessed in isolation' but must be considered as parts of the wider cultural landscape. Hence the site or place will possibly have values derived from its association with other sites and places. By investigating the associations between sites, places, and (for example) natural resources in the cultural landscape the stories behind the features can be told. The context of the cultural landscape can unlock 'better understanding of the cultural meaning and importance' of sites and places.

Although other values may be considered – such as educational or tourism values – the two principal values that are likely to be addressed in consideration of Aboriginal sites and places are the cultural/social significance to Aboriginal people and their archaeological or scientific significance to archaeologists. The determinations of archaeological and cultural significance for sites and places should be expressed as statements of significance that preface a concise discussion of the contributing factors to Aboriginal cultural heritage significance.

5.2. Cultural (social significance) values

Cultural or social significance refers to the spiritual, traditional, historical and/or contemporary associations and values attached to a place or objects by Aboriginal people. Aboriginal cultural heritage is broadly valued by Aboriginal people as it is used to define their identity as both individuals and as part of a group (also see DECC 2005: 1, 3; DECCW 2010: iii). More specifically it provides a:

- "Connection and sense of belonging to Country" (DECCW 2010: iii)
- Link between the present and the past (DEC 2005: 2-3; and DECCW 2010: 3)
- A learning tool to teach Aboriginal culture to younger Aboriginal generations and the general public (DECCW 2010: 3)
- Further evidence of Aboriginal occupation prior to European settlement for people who do not understand the magnitude to which Aboriginal people occupied the continent (also see DECCW 2010: 1; DECCW 2010: 3).

It is broadly acknowledged that Aboriginal people are the primary determiners of the cultural significance of Aboriginal cultural heritage.

Throughout consultation, representatives of the Grafton Ngerrie Local Aboriginal Land Council have emphasised the importance of the Golden Eel site as having important cultural values to the local Aboriginal community. Broadly, the Golden Eel site is a creation story associated with the Clarence River and Alipou Creek. The confluence of the Alipou Creek and the Clarence River has been identified as a specific landscape feature with important an important relationship to the Golden Eel story. This landscape feature is not located in the project area, however the Grafton Ngerrie Local Aboriginal Land Council have indicated that alteration of this landscape feature would be considered to impact the cultural values of the Golden Eel site.

Dreaming stories such as the Golden Eel story, gain their importance to Aboriginal people as informative and communicative devices utilised to communicate spiritual beliefs and cosmology; relationships between people, genders and country; living arrangements and practices; food and food collecting; and designs on implements, weapons and body adornment (Attenbrow, 2003, p. 127).

The specific detail related to the Golden Eel story is culturally restricted information. Tony Perkins, a Gumbaynggir person, has described a deliberate cultural teaching practice among the Gumbaynggir Aboriginal people where some levels of information are restricted from certain members of the group. This restriction of information is used to encourage communication and sharing amongst individuals of a peer group as they aged to build a complete picture of each story from different fragments handed down to individuals by Elders (Sommerville, 2010, p. 217).

Although no Aboriginal cultural material was identified in the project area during this assessment, such material would be considered to have high cultural values to the local Aboriginal community as being tangible connections between Aboriginal past and present and evidence of past Aboriginal lifestyles.

5.3. Historic values

Historic significance refers to associations a place or object may have with a historically important person, event, phase or activity to the Aboriginal and other communities. The project area is not known to have any historic associations.

5.4. Archaeological (scientific significance) values

An archaeological scientific assessment was undertaken for the project area and is presented in detail as part of the attached Archaeological Assessment (Appendix 5). There are no archaeological values specifically associated with the Golden Eel site located within the project area. Alipou Creek AS 1 is located near the project area and is a low density artefact scatter that contains a limited range of artefact types. It lacks stratified deposits and is a common site type within the local region. Alipou Creek AS 1 has some, although limited potential to provide new information about the exploitation of raw stone material and plant processing in the region and is of low scientific significance.

Although Aboriginal people would have frequented the project area, particularly along the Clarence River, no Aboriginal archaeological places have been recorded within the proposed project footprint. This is largely a result of the significant disturbance from urban, industrial and infrastructure construction that has occurred in the areas likely to have been frequented by Aboriginal people, particularly the Clarence River, since European settlement. As such the project area has limited archaeological research potential to inform research questions of the Aboriginal past in the local area and is of low scientific significance.

5.5. Aesthetic values

The project area has been heavily disturbed, however the setting and visual relationship between the Clarence River and Alipou Creek are closely linked with Aboriginal cultural values and provide a landscape context for Aboriginal dreaming stories that gives a strong sense of place. The local Aboriginal community strongly identifies with the landscape of the project area and the visual relationship between the Clarence River and Alipou Creek has aesthetic values to the local Aboriginal community.

5.6. Statement of significance

The following statement of significance for Aboriginal heritage values is for the project area and incorporates the cultural, historic, scientific and aesthetic criteria discussed above according to the Burra Charter and as required by guidelines developed by OEH.

The project area is located in an area associated with the Golden Eel dreaming story, which holds important cultural values with the local Aboriginal community associated with Aboriginal cosmology, spirituality and people's connection to place. While no tangible Aboriginal cultural material associated with the Golden Eel dreaming story is

located in the project area, the physical setting and integrity of the Clarence River and Alipou Creek are intrinsically linked to the Golden Eel dreaming story, particularly the mouth of Alipou Creek.

Although the landscape of the project area was been heavily modified by urban, industrial and infrastructure construction, the context of the Clarence River and Alipou Creek and their relationships within the Golden Eel dreaming story are readily interpretable by contemporary Aboriginal observers. As such, intangible cultural landscape values are associated with the physical landscape to provide a strong sense of place and identity to the local Aboriginal community.

Overall the project area is an important cultural landscape that has high cultural values with important visual components (aesthetic values) to the local Aboriginal community. In terms of Aboriginal heritage, the project area contains low historic and scientific values, but due to the high cultural values is of overall high heritage significance.

6. Impact assessment

Within the project area, there is one recorded Aboriginal site, the Golden Eel Site (12-6-0326) that may be subject to harm. The Alipou Creek AS 1 site is located in close proximity to the project area but will not be subject to harm. Strategies to avoid or minimise harm to Aboriginal heritage in the project area are discussed below.

A summary of the potential impact of the proposed project on known Aboriginal sites within the project area is provided in Table 3 below.

Table 3: Summary of potential impacts

AHIMS Site No.	Site Name	Significance	Type Of Harm	Degree Of Harm	Consequence Of Harm
12-6-0326	Golden Eel site	High	Direct	None	No or minor loss of value.

6.1. Potential impacts to Aboriginal cultural heritage

Golden Eel Site (12-6-0326)

The cultural importance of the Golden Eel site has been continually highlighted during consultation with the Grafton Ngerrie Local Aboriginal Land Council. Grafton Ngerrie Local Aboriginal Land Council have indicated that direct impacts, i.e. through landscaping and construction, to Alipou Creek would significantly impact the cultural values of the Golden Eel site and that such impacts must be avoided. As discussed in Section 6.2, the project has been designed to avoid direct impacts to the site.

Alipou Creek AS 1

Alipou Creek AS 1 consists of two stone artefacts located 150 m east of the project footprint, and will not be impacted by the project. There is potential for accidental harm occurring to the site via vehicle movement, however potential harm can be significantly reduced through appropriate avoidance of harm management strategies.

Carr's Creek Camp

Carr's Creek Camp consisted of a giant fig tree that is located 40m east of the proposed levee upgrade, and will not be impacted by the development. There is potential for accidental harm occurring to the site via vehicle movement, however potential harm can be significantly reduced through appropriate avoidance of harm management strategies.

6.2. Avoiding harm to Aboriginal heritage

Golden Eel Site (12-6-0326)

Meetings with Grafton Ngerrie Local Aboriginal Land Council on the 1 July 2011, 10 November 2011 and 30 April 2013 have discussed options for avoiding harm to the Golden Eel site. Generally, Grafton Ngerrie Local Aboriginal Land Council has requested that the bridge alignment avoid impacting Alipou Creek. Roads and Maritime responded to Grafton Ngerrie Local Aboriginal Land Council requests by investigating a bridge route located between the existing bridge and Alipou Creek that avoids direct impacts to Alipou Creek. To minimise any potential visual impacts to Alipou Creek, Grafton Ngerrie Local Aboriginal Land Council also requested that the new bridge be placed as west as possible within the Option C alignment. This request has been complied with by Roads and Maritime (Figure 4).

To avoid accidental harm to Alipou Creek during construction, Grafton Ngerrie Local Aboriginal Land Council suggested that temporary fencing be erected between the construction area and the creek during works. A pedestrian proof fence was subsequently erected by Roads and Maritime to separate the project area and Alipou Creek to avoid potential impacts from the field investigations (for example geotechnical investigations) which were undertaken for the EIS.

To promote community recognition and respect of the cultural importance of the area to the local Aboriginal community, the Grafton Ngerrie Local Aboriginal Land Council requested that a public interpretation strategy be developed. Grafton Ngerrie Local Aboriginal Land Council has suggested that signage containing culturally appropriate information for the area and potentially a seating area be considered.

Alipou Creek AS 1

To avoid accidental harm to Alipou Creek during construction, if works are undertaken within 30 m of the site then temporary fencing must be erected with a 2 m buffer around the site.

Carr's Creel Camp

To avoid accidental harm to Carr's Creek Camp during construction, if works are undertaken within 30 m of the site then temporary fencing must be erected with a 2m buffer around the site.

6.3. Management and mitigation measures

Ideally, heritage management involves conservation of sites through the preservation and conservation of fabric and context within a framework of "*doing as much as necessary, as little as possible*" (Marquis-Kyle and Walker 1994: 13). In cases where conservation is not practical, several options for management are available. For sites, management often involves the salvage of features or artefacts, retrieval of information through excavation or collection (especially where impact cannot be avoided) and interpretation.

The following management measures are recommended:

Prior to construction

The following activities are recommended:

- All construction staff and managers would undergo an Aboriginal heritage induction prior to commencing works. The Aboriginal heritage induction would be undertaken in consultation with Grafton Ngerrie Local Aboriginal Land Council, who would be given an opportunity to present the induction
- Fencing erected to bar access to Alipou Creek from the construction site would be checked regularly and this area clearly identified to site workers and contractors
- If works come within 30 m of a known Aboriginal site, a temporary above ground physical barrier (e.g. exclusion fencing) would be erected to protect the site during construction.

Public interpretation strategy

The public interpretation strategy is intended to heighten public awareness and enhance understanding of Aboriginal cultural heritage values. Public interpretation strategies can include print and electronic publications, public lectures, on-site and directly related off-site installations, educational programs, community activities, and ongoing research, training, and evaluation of the interpretation process itself.

An interpretive strategy must be formulated in consultation with the local Aboriginal community. This would highlight salient sites and features within the landscape in a manner that respectfully enhances and protects these values.

7. Recommendations

Strategies have been developed based on the cultural significance of cultural heritage relevant to the project area and have been influenced by:

1. Predicted impacts to Aboriginal cultural heritage;
2. The planning approvals framework;
3. Current best conservation practise, widely considered to include:

a. Ethos of the Australia ICOMOS Burra Charter; and

b. The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010).

Prior to any works occurring within the project area, the following is recommended:

Recommendation 1: Avoid harm to Golden Eel dreaming site

The bridge constructed on current proposed alignment is acceptable, but there should be no further encroachment towards the Golden Eel dreaming site. Detailed design and construction stages are to avoid further encroachment towards the Golden Eel dreaming site.

Recommendation 2: Consultation with Aboriginal community

Consultation with the Aboriginal community should continue as an identified group within the overall community consultation strategy for the project.

Recommendation 3: Aboriginal Cultural Heritage Induction

The project site induction will incorporate Aboriginal culture awareness training for all relevant staff and contractors. This induction will include information about the Aboriginal culture and history of the locality, the location of sites and items that require protection, heritage management measures and protocols, and legal obligations. This training will be developed in consultation with the Grafton Ngerrie Local Aboriginal Land Council and provided prior to commencing work on-site.

Recommendation 4: Known Aboriginal Objects and Places

Aboriginal sites located in close proximity to the project construction work zone will be designated ‘no-go’ areas which would be clearly identified and appropriately fenced to prevent access or damage during construction.

Recommendation 5: Discovery of Unanticipated Aboriginal Cultural Material and Human Remains

In the event that unexpected Aboriginal cultural material or skeletal remains are encountered, the Roads and Maritime *Standard Management Procedure for Unexpected Archaeological Finds* (2012) should be implemented.

Recommendation 6: Interpretive Strategy for Tangible and Intangible Aboriginal Heritage

An interpretive strategy must be formulated in conjunction with the local Aboriginal community. This would highlight salient sites and features within the landscape in a manner that respectfully enhances and protects these values.

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Appendices

Appendix 1 – Consultation Log

Consultation	Organisation Contacted	Date and Type of Contact	Date and Type of Response	Response Details
Initial Action 1. Notification of Agencies				
Contacting Agencies to Identify Aboriginal Stakeholders	Department of Aboriginal Affairs	8-10 March 2010 -Letter	-	
	Grafton Ngerrie Local Aboriginal Land Council	8-10 March 2010 -Letter	15 March 2010 – Letter	Registered interest in consultation.
	Department of Planning - Heritage Branch (now part of OEH)	8-10 March 2010 -Letter	-	
	The Native Title Service of NSW	8-10 March 2010 -Letter	-	
	NSW Aboriginal Land Council	8-10 March 2010 -Letter	-	
	National Native Title Tribunal	8-10 March 2010 -Letter	-	
	DECCW now OEH	8-10 March 2010 -Letter	25 March 2010 – Letter	Identified three potential Aboriginal stakeholders: • Durahrwa Training and Development Aboriginal Corporation; • Grafton Ngerrie Local Aboriginal Land Council; and • Burra Waj Ad.
	Clarence Valley Council	8-10 March 2010 -Letter	-	
Initial Action 2. Public Notice				
Public Notice	Public Notice	1 March 2010 - Public notice in *The Daily Examiner*.	7 March 2010 – Letter	Individual Aboriginal stakeholder registered interested in consultation.
Field Inspection 10 August 2010				
Field Survey	Grafton Ngerrie Local Aboriginal Land Council	10 August 2010 – Field Survey	11 February 2011 – Letter	Discussion of survey results.

Consultation	Organisation Contacted	Date and Type of Contact	Date and Type of Response	Response Details
Reissue Action 1 Notification of Agencies				
Contacting Agencies to Identify Aboriginal Stakeholders	Department of Aboriginal Affairs	22 December 2010 - Letter	14 January 2011	Identified that the Grafton Ngerrie Local Aboriginal Land Council should be consulted.
	Grafton Ngerrie Local Aboriginal Land Council	22 December 2010 - Letter	-	
	Department of Planning - Heritage Branch (now part of OEH)	22 December 2010 - Letter	-	
	The Native Title Service of NSW	22 December 2010 - Letter	-	
	NSW Aboriginal Land Council	22 December 2010 - Letter	10 January 2011	Identified that the Grafton Ngerrie Local Aboriginal Land Council should be consulted.
	National Native Title Tribunal	22 December 2010 - Letter	-	
	DECCW now OEH	22 December 2010 - Letter	6 January 2011	Identified four potential Aboriginal stakeholders: • Jana Ngalee Local Aboriginal Land Council; • Durahrwa Training and Development Aboriginal Corporation; • Grafton Ngerrie Local Aboriginal Land Council; and • Burra Waj Ad.
	Clarence Valley Council	22 December 2010 - Letter	-	
	Catchment Management Authority	22 December 2010 - Letter	-	
	Burra Waj Ad	22 December 2010 - Letter	-	

Consultation	Organisation Contacted	Date and Type of Contact	Date and Type of Response	Response Details
	Individual Aboriginal stakeholder	22 December 2010 - Letter	No Response – Roads and Maritime informally notified that Individual Aboriginal stakeholder had passed away.	
Reissue Action 2. Public Notice				
Public Notice	Public Notice	22 January 2011 - Public notice in *The Daily Examiner*.	-	-
Aboriginal Focus Group meeting 10 May 2011				
Meeting	Grafton Ngerrie Local Aboriginal Land Council	10 May 2011 – Meeting at Grafton Ngerrie Local Aboriginal Land Council office	-	-
Aboriginal Focus Group workshop 28 June 2011				
Meeting	Grafton Ngerrie Local Aboriginal Land Council	28 June 2011 – Meeting at Grafton Ngerrie Local Aboriginal Land Council office	-	-
Grafton Ngerrie Local Aboriginal Land Council Meeting 1 July 2011				
Meeting	Grafton Ngerrie Local Aboriginal Land Council	1 July 2011 – Meeting at Grafton Ngerrie Local Aboriginal Land Council office	-	-
Review of Preliminary Route Options Report				
Review of Report	Grafton Ngerrie Local Aboriginal Land Council		02 August 2011 - Email	Response to report.

Consultation	Organisation Contacted	Date and Type of Contact	Date and Type of Response	Response Details
Grafton Ngerrie Local Aboriginal Land Council Meeting 10 November 2011				
Meeting	Grafton Ngerrie Local Aboriginal Land Council	10 November 2011 – Meeting at Grafton Ngerrie Local Aboriginal Land Council office	-	-
Field Inspection February 2012				
Field Survey	Grafton Ngerrie Local Aboriginal Land Council	10 February 2012 – Field Survey	-	-
Field Inspection April 2012				
Field Survey	Grafton Ngerrie Local Aboriginal Land Council	10 February 2011 – Field Survey	-	-
Grafton Ngerrie Local Aboriginal Land Council Meeting 17 January 2013				
Meeting	Grafton Ngerrie Local Aboriginal Land Council	17 January 2013 – Meeting at Grafton Ngerrie Local Aboriginal Land Council office	-	-
Project Methodology				
Provision of Methodology	Grafton Ngerrie Local Aboriginal Land Council	17 July 2013 - Letter	24 September 2013	Comments on Methodology.
Meeting	Grafton Ngerrie Local Aboriginal Land Council	17 January 2013 – Meeting at Grafton Ngerrie Local Aboriginal Land Council office	-	-
Meeting	Grafton Ngerrie Local Aboriginal Land Council	17 January 2013 – Meeting at Grafton Ngerrie Local	-	-

Consultation	Organisation Contacted	Date and Type of Contact	Date and Type of Response	Response Details
		Aboriginal Land Council office		
Aboriginal Cultural Heritage Assessment				
Meeting	Grafton Ngerrie Local Aboriginal Land Council	06 February 2014 – Meeting at Grafton Ngerrie Local Aboriginal Land Council office	Follow email was responded to on the 12 February 2014 by email.	Grafton Ngerrie Local Aboriginal Land Council would discuss internally however no further communication was received.
Draft Aboriginal Cultural Heritage Assessment Report for Review				
Provision of Draft Report	Grafton Ngerrie Local Aboriginal Land Council	23 May 2014- Letter	23 June 2013 – Phonecall 23 June 2013 - Phonecall	Comments on Draft Report

Appendix 2 – Agency Responses and Public Notice

Your reference : PDM 00369.03/10
Our reference : DOC10/10819, FIL06/1092
Contact : Glenda Roberts, (02) 6659 8272
Date : 25th March 2010

Stephen Williamson
Project Manager
RTA
PO Box 576
Grafton NSW 2460

Dear Stephen,

RE: REGISTRATION OF ABORIGINAL INTEREST GROUPS FOR CLARENCE RIVER, CLARENCE VALLEY LGA NSW

I refer to your correspondence, dated 10th March 2010, to the Department of Environment, Climate Change and Water (DECCW) for your project located within the Clarence Valley LGA and described as additional crossing of the Clarence River project.

Please find attached a list of known Aboriginal parties that DECCW considers is likely to have an interest in your development. I note this is not necessarily an exhaustive list of all interested Aboriginal parties. Receipt of this list does not remove the requirement for a proponent/consultant to advertise the proposal in the local print media and contact other bodies and community groups seeking interested Aboriginal parties, in accordance with DECCW's *Interim Community Consultation Requirements for Applicants (2004)*.

If you encounter any changes to the contact details of interested Aboriginal parties, or become aware of additional parties, we encourage you to forward this information to the Department so we can update our records.

If you have any further questions regarding this matter, please contact Glenda Roberts, Aboriginal Heritage Planning Officer on (02) 6659 8272.

Yours sincerely

D L Crosdale 26/3/10

DIANE CROSDALE
A/Manager Planning and Aboriginal Heritage
North East Branch
Environment Protection & Regulation Group

Encl: Attachment 1

ATTACHMENT 1 : LIST OF ABORIGINAL STAKEHOLDER GROUPS

PLEASE ENSURE YOU ALSO CONTACT THE LOCAL ABORIGINAL LAND COUNCIL(S) & ALL OTHER ABORIGINAL STAKEHOLDER GROUPS YOU HAVE PRIOR OR NEW KNOWLEDGE OF FOR THIS AREA

Grafton Ngerrie Local Aboriginal Land Council,
Maurie Maher
PO Box 314
South Grafton NSW 2460
(02) 6642 6020
(02) 6642 6994

ngerrie@bigpond.net.au

Durahrwa Training and Development Aboriginal Corporation,
Andrew Hegedus
PO Box 1075
Grafton NSW 2460
(02) 6643 4866
(02) 6643 4381

andrew.hegedus@durahrwa.com.au

Grafton Ngerrie Local Aboriginal Land Council,
Maurie Maher
PO Box 314
South Grafton NSW 2460
(02) 6642 6020
(02) 6642 6994

ngerrie@bigpond.net.au

Burra:Waj:Ad,
Dave Walker
48 Spring Street
Grafton NSW 2460

which was left on its roof with three wheels torn off.

The driver of the utility suffered a serious leg injury.

"There was stuff everywhere on the road," Steve and Edwin said. "They were all very lucky."

■ The Swan Creek accident on Friday night involved a Ford XR6 utility and a Toyota 4 Runner,

P 4

Copy

S. Williamson

Jodi Justin

NSW GOVERNMENT

RTA

Aboriginal Heritage Additional crossing of the Clarence River, Grafton

The Roads and Traffic Authority of NSW (RTA) has recommenced studies either side of the existing bridge to identify a preferred option for an additional crossing of the Clarence River at Grafton.

The RTA seeks the registration of Aboriginal groups and/or Aboriginal people who wish to be consulted on Aboriginal cultural heritage matters relating to an additional crossing of the Clarence River at Grafton.

The cultural heritage assessment may result in the RTA applying for a section 87 permit and/or a section 90 consent under Part 6 of the *National Parks and Wildlife Act 1974*, and may also be used in the assessment of the impact of the project under the *Environmental Planning & Assessment Act 1979*.

Registrations from Aboriginal groups and/or Aboriginal people wishing to be consulted must be received by phone or in writing by **Monday 23 March 2010**.

To register your interest, please contact: Stephen Williamson, on (02) 6640 1018; email Stephen_williamson@rta.nsw.gov.au or post to PO Box 576 Grafton NSW 2460.

803619

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

11-13 Mansfield Street
Glebe NSW 2037
PO Box 112, Glebe NSW 2037
P. 02 9562 6327 F. 02 9562 6350

Mr Chris Clark
RTA Project Manager
Roads & Traffic Authority
PO Box 546
Grafton NSW 2460

Dear Chris

Re: Request - Search for Registered Aboriginal Owners

I refer to your letter dated 14 January 2011 regarding a project on the Clarence River at Grafton, NSW.

I have searched the Register of Aboriginal Owners and the project area described does not appear to have Registered Aboriginal Owners pursuant to Division 3 of the *Aboriginal Land Rights Act* 1983 (NSW).

I suggest you contact the Grafton-Ngerrie Local Aboriginal Land Council. They may also be able to assist you in identifying other Aboriginal stakeholders for this project.

Yours sincerely

Megan Mebberson
Senior Project Officer
Office of the Registrar, *Aboriginal Land Rights Act* (1983)

17 January 2011

NSW GOVERNMENT | Environment, Climate Change & Water

Your reference	PMD00369.02.01.03
Date:	6th January 2011
Our reference:	DOC10/58384
Contact:	Glenda Roberts

Chris Clark
Project Manager
RTA
PO Box 576
Grafton NSW 2460

Dear Mr Clark

RE: PROPOSED ADDITIONAL CROSSING OF THE CLARENCE RIVER, GRAFTON

I refer to your correspondence, dated 22 December, to the Department of Environment, Climate Change and Water (DECCW) for your project located within Clarence Valley LGA and described as proposed additional Crossing of the Clarence Rivers, Grafton.

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

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

- Please ensure the project documents the full consultation process in the Aboriginal cultural heritage assessment report or Aboriginal Heritage Impact Permit application and to include copies of all correspondence sent or received from all relevant stakeholders (including Aboriginal stakeholders and the agencies listed in section 4.1.2). *Omission of these records in the final report may cause delays in approval or require parts of the consultation process to be repeated if the evidence provided to DECCW does not demonstrate that the consultation process has been fair, equitable and transparent.*

- *Unless DECCW is provided with evidence that reasonable attempts have been made to contact the relevant parties associated with the CRs, then DECCW will deem that the consultation process has not been complied with.*

- DECCW considers *evidence of reasonable efforts* to contact relevant parties would *include, but not be limited to, multiple forms of communication*; faxes (with confirmation slips demonstrating successful transmission), an e-mail log, registered post details, copies of letters and a phone call log.

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

- *Please note in Appendix A of the 2010 CRs contains a map illustrating which regions of DECCW that need to contacted according to which local government area your project falls within.* Full details of the consultation requirements and the relevant Fact Sheets can be located on our website at: http://www.environment.nsw.gov.au/licences/consultation.htm

- *If you encounter any changes to the contact details of interested Aboriginal parties, or become aware of additional parties, we encourage you to forward this information to the Department so we can update our records.*

- *Consultation must be fair, equitable and transparent. If the Aboriginal parties express concern or objects to parts or all of your project, DECCW expects that evidence will be provided to demonstrate the efforts made to find common ground between the two perspectives.*

If you have any further questions regarding this matter, please contact me (02) 6659 8272.

Yours sincerely

GLENDA ROBERTS
Senior Aboriginal Planning Officer
Environment Protection & Regulation Group

Enclosure

Jana Ngalee Local Aboriginal Land Council,
Mary Randall
PO Box 1398
Grafton NSW 2460
(02) 6647 2115
(02) 6647 2119
jana_ngalee@yahoo.com.au

1.

Durahrwa Training and Development Aboriginal Corporation,
Andrew Hegedus
PO Box 1075
Grafton NSW 2460
(02) 6643 4866
(02) 6643 4381
andrew.hegedus@durahrwa.com.au

2.

Burra:Waj:Ad,
Dave Walker
48 Spring Street
Grafton NSW 2460

3.

Grafton Ngerrie Local Aboriginal Land Council,
Maurie Maher
PO Box 314
South Grafton NSW 2460
(02) 6642 6020
(02) 6642 6994
ngerrie@bigpond.net.au

4.

NEW SOUTH WALES ABORIGINAL LAND COUNCIL

ABN 82 726 507 500

Our reference: 11/7

Chris Clark
Project Manager
Roads and Traffic Authority
PO Box 576
Grafton NSW 2460

Via email Chris_CLARK@rta.nsw.gov.au

Cc CEO Grafton-Ngerrie LALC
NSWALC Northern Zone Director, Andrew Riley

Dear Mr Clark,

RE: RTA Aboriginal community consultation; Additional Crossing of the Clarence River, Grafton.

Thank you for your letter received on 6 January 2011 regarding the above mentioned matter.

As you may be aware, the NSW Aboriginal Land Council (NSWALC) is the peak representative body for Aboriginal people in NSW, and has, pursuant to the NSW *Aboriginal Land Rights Act 1983* authority to act to protect and promote Aboriginal culture and heritage across the state.

However, Local Aboriginal Land Councils (LALCs) have the same statutory function to protect and promote Aboriginal culture and heritage within their boundaries, and also have access to local knowledge and local knowledge holders.

The position of LALCs in regards to such matters has been recognised in the *RTA's Procedure for Aboriginal Cultural Heritage Consultation and Investigation.* This procedures document requires relevant Project Managers to engage/advise relevant LALCs where it has been assessed that a particular project has the potential to impact upon Aboriginal culture and heritage; as your correspondence indicates is the case in this instance.

Accordingly, your letter has been urgently referred to the relevant LALCs for the area identified in your correspondence: The **Grafton-Ngerrie Local Aboriginal Land Council**. The contact details for this LALC have also been included at the end of this letter.

Although we endeavour to forward letters of this nature to LALCs promptly, writing to NSWALC does not constitute sufficient written notice to relevant LALCs as required by the RTA procedures referred to above, or the Department of Environment, Climate Change and Water (DECCW) Community Consultation Policy upon which they are based. As LALCs are distinct corporate entities independent of NSWALC, any notice period should be taken to commence only after notification has been provided directly to the relevant LALCs.

Head Office
Ground Floor, 33 Argyle Street
Parramatta NSW 2150
PO Box 1125
Parramatta NSW 2124
Tel: 02 9689 4444
Fax: 02 9687 1234
DX 28308 Parramatta 2150

Western Zone
62 Bultje Street
Dubbo NSW 2830
PO Box 1196
Dubbo NSW 2830
Tel: 02 6885 7000
Fax: 02 6881 6268
DX 4009 Dubbo 2830

Northern Zone
Suite 2-26, Park Avenue
Coffs Harbour NSW 2450
PO Box 1912
Coffs Harbour NSW 2450
Tel: 02 6659 1200
Fax: 02 6650 0420
DX 7557 Coffs Harbour 2450

Eastern Zone
Level 5, 33 Argyle Street
Parramatta NSW 2150
PO Box 987
Parramatta NSW 2124
Tel: 02 8836 6000
Fax: 02 8836 6006
DX 28308 Parramatta 2150

Southern Zone
Suite 110, Corporate Level
Riverside Plaza
Monaro Street
Queanbeyan NSW 2620
PO Box 619
Queanbeyan NSW 2620
Tel: 02 6124 3555
Fax: 02 6297 3541
DX 24202 Queanbeyan 2620

If the relevant LALC has not already been notified directly, please be advised that they should be contacted in writing and an extension should be provided to the 8 February 2011 deadline stipulated in your correspondence, for registering an interest.

Please also note that the Office of the Registrar of the Aboriginal Land Rights Act, NTSCORP, and the National Native Title Tribunal (NNTT) should also be notified of such proposed projects. The details for these organisations have also been provided at the end of this letter for your convenience.

For future information, the contact details for all LALCs in NSW are available on the NSWALC website at: http://www.alc.org.au/land-councils/contact-details.aspx.

Finally, regular correspondence and contact with relevant LALCs is to be encouraged throughout the life of a project regardless of whether the LALCs have registered an interest, and is required by policy in certain instances, including by the DECCW Community Consultation Policy.

As community organisations with a wide range of responsibilities and only limited resources to fulfil them, LALCs may at times encounter difficulties in the administration of such matters. However, LALCs may also be of assistance with the early identification of sites and where the information held on the DECCW Aboriginal Heritage Information System Database is deficient.

I trust this information is of assistance to you. Should you have any questions about the issues discussed in this letter please do not hesitate to contact the Policy and Research Unit on 02 9689 4444.

Yours Sincerely,

Clare McHugh
Director
Policy and Research Unit

Date: 10/1/10

Grafton-Ngerrie Local Aboriginal Land Council
CEO: Wesley Fernando
PO Box 314, South Grafton NSW 2460
Phone: 02 6642 6020
Fax: 02 6642 6994
Email: gnlalc@bigpond.com

Office of the Registrar *Aboriginal Land Rights Act*
13 Mansfield Street
Glebe NSW 2037 Australia
PO Box 112 Glebe NSW 2037
Phone: 02 9562 6327
Fax. 02 9562 6350

NTSCorp Head Office
Suite 15/245 Chalmers Street
Redfern NSW 2016
PO Box 2105 Strawberry Hills NSW 2012
DX 22525 Surry Hills
Phone: 02 9310 3188
Fax: 02 9310 4177

National Native Title Tribunal (NSW)
Level 25, 25 Bligh Street
Sydney NSW 2000
GPO Box 9973, Sydney NSW 2001
Telephone: (02) 9235 6300
Freecall: 1800 640 501
Fax: (02) 9233 5613

NSW GOVERNMENT | Transport Roads & Traffic Authority

Aboriginal Heritage

Additional crossing of the Clarence River, Grafton

The RTA is seeking to engage more effectively with the community and stakeholders in identifying a preferred route for an additional crossing of the Clarence River at Grafton.

We are currently surveying residents on options for a second crossing and no decisions have been made on these options.

The RTA needs to better understand Aboriginal heritage downstream of Susan Island to, and including, Elizabeth Island.

An Aboriginal cultural heritage assessment will be undertaken for this project and may result in the RTA:

- Applying for an Aboriginal Heritage Impact Permit (AHIP) under Part 6 of the *National Parks and Wildlife Act 1974*, and/or
- Undertaking investigations in accordance with the *Code of practice for archaeological investigations in NSW*, and/or
- Undertaking an environmental assessment under the *Environmental Planning & Assessment Act 1979*.

The RTA invites Aboriginal people and/or Aboriginal groups who hold cultural knowledge relevant to determining the significance of Aboriginal objects(s) and/or place(s) in the area to register with the RTA to be consulted.

Registrations from Aboriginal people and/or Aboriginal groups wishing to be consulted must be received by **Friday 14 February 2011**. To register your interest:

Phone: 1800 633 332 (toll free)
Post: PO Box 546 Grafton NSW 2460
Email: graftonbridge@rta.nsw.gov.au

81364412

The Daily Examiner Page 7 22/1/2011

Appendix 3 – Responses from RAPs

GRAFTON NGERRIE LOCAL ABORIGINAL LAND COUNCIL

ABN : 65 563 910 928

PHONE: 02 6642 6020
FAX: 02 6642 6994
EMAIL: gnlalc@bigpond.com

50 WHARF ST
SOUTH GRAFTON
PO BOX 314
SOUTH GRAFTON,
NSW 2460

Mr Stephen Williamson
Project Manager
Roads and Traffic Authority
31 Victoria Street
GRAFTON NSW 2460

Monday, 15 March 2010

Dear Mr Williamson,

I am writing in regards to registering our interest for community consultation for the additional crossing of the Clarence River in Grafton.

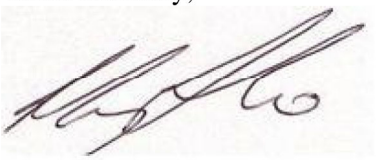
Yes, we are registering an interest in this project.

It should be noted that all development activities WILL impact on Aboriginal places and objects of Cultural significance not MAY, as traditional Aboriginal people were nomadic moving through their country. All country is significant, in addition to this our spirituality is entwined throughout the landscape, therefore it is impossible for a development NOT to impact on Aboriginal culture and heritage.

In response to this all proponents (RTA) should be required to contact the relevant LALC (which you have done) so that these people that speak for country can be identified and involved in the planning process from its onset, this will minimise the inevitable impact from developments.

As the primary centre for the Aboriginal community in Grafton we look forward to meeting with you to discuss this project in more detail.

Yours sincerely,



Wesley Fernando
Chief Executive Officer
Grafton Ngerrie Local Aboriginal Land Council
Office Address : 50 Wharf Street
South Grafton NSW 2460
Postal Address: Po Box 314
South Grafton NSW 2460
Ph: 02 66426020 Fax: 02 66426994 Mob: 0427426020
E-mail: gnlalc@bigpond.com

131 Hoof Street
Grafton
2473 NSW

Dear Stephen,

The Marshall family were among the very first Aboriginal people to arrive and live in the Grafton area.
They were Elders of the Gumbaynggirr Tribe and also a Elder of the Yuwalaraay Tribe.
I would like to be consulted on Aboriginal cultural heritage matters relating to an additional crossing of the Clarence River at Grafton.

Yours Faithfully

[redacted] J.P. & M.
Elder Gumbaynggirr Tribe

NORTHERN REGIONAL OFFICE
- 9 MAR 2010
ACTION BY:
A. Leonard

CORRESPONDENCE
REF. NO. 10/518
FILE by Date

GRAFTON NGERRIE LOCAL ABORIGINAL LAND COUNCIL

PHONE: 02 6642 6020
FAX: 02 6642 6994
EMAIL: gnlalc@bigpond.com

50 WHARF ST
SOUTH GRAFTON
PO BOX 314
SOUTH GRAFTON,
NSW 2460

17 February 2011

ABORIGINAL CULTURAL SIGNIFICANCE ASSESMENT

RE: PROPOSED GRAFTON SECOND CROSSING OF THE CLARENCE RIVER.

TO WHOM IT MAY CONCERN:

I AM WRITING IN REGARDS TO THE SITE INSPECTION THAT TOOK PLACE ON THE ABOVE MENTIONED PROPERTIES.

PURPOSE OF THIS ASSESMENT:

IS TO DETERMINE WHETHER ANY FEATURES OF ABORIGINAL CULTURAL SIGNIFICANCE OCCURRED IN THE STUDY AREA FOR THE PROJECT YOU PROPOSE AND WHETHER THE SIGNIFICANCE WOULD BE AFFECTED BY THE PROPOSED PROJECT/DEVELOPMENT.

PROJECT DETAILS:
SITE OFFIDER BRETT DUROUX UNDERTOOK THE SITE ASSESSMENT BY FOOT.

LOCATION OF STUDY AREA:
IOLANTHE STREET SOUTH GRAFTON - PROCCEDING TO THE PACIFIC HWY HEADING NORTH/ EAST FROM BUNNINGS- CATHERINE MCAULEY COLLEGE

NAME OF ABORIGINAL SITE OFFICER COMPLETEING THE ASSESMENT & UNDERTAKING THE SITE SURVEY:

BRETT DUROUX

NAME OF ABORIGINAL ORGANISATION REPRESENTED BY THIS STUDY:

GRAFTON NGERRIE LALC

DATE OF SURVEY/INSPECTION: 10/08/2010

INFORMATION ON THE SITE SURVEY:

Commenced 9am 10th August 2010, left land council surveyed from Wharf Street to Ryan Street back to the riverbank on the south side, surrounding areas no artefacts or modified trees in surrounding area because of previous developments in prior years.

From Wharf Street along Ryan Street covered surrounding areas no artefacts or modified trees in surrounding area because of previous developments in prior years.

Proceeded north across the current bridge to the old catholic college property, inspected banks and surrounding areas no artefacts or modified trees in surrounding area because of previous developments in prior years. Although in our opinion this area is of high cultural significance and if this was the selected route we (**MUST**) inspect the property again before ground is disturbed.

After lunch we proceeded back over to south of Grafton along Iolanthe Street, found several European artefacts all the way down to the river bank. Day 1 completed 4:30pm

11th August 2010 commenced at 9am, Met at McDonalds south Grafton, met with the railway officer and inspected the railway area, more European artefacts found.
Inspected area of the Golden Eel site and ceremonial tree (**which cannot be located further investigation is required as to the possible desecration of this ceremonial tree)** , found no physical artefacts although this is a spiritual area of high significance to the Aboriginal people and must not be disturbed in any way.

Proceeded Iolanthe Street, on the left hand side of the road heading north, we surveyed the area and noticed a large concrete slab exposed in the area and are concerned that possible artefact scatters may be present, if this was the preferred route we (**MUST**) inspect upon removal of concrete and or top soil.

Proceeded to property behind Bunning's warehouse, at the rear of the Bunning's building found (1) scarred tree close to the pacific hwy on northern side of levee, 250 metres heading north on the edge of the property boundary was a double scarred modified tree, recorded , took photos, GPS data , measurements.

Proceeded north to Catherine McCauley College near tee tree farm property and there is a high likely hood given the significance in the area that any developments will impact Aboriginal Culture and Heritage significance.

SURVEY RESULTS:

OUR SITE OFFICERS INSPECTED THE PROPERTY AND HAVE INFORMED US THAT IT IS LIKELY THAT ANY DEVELOPMENTS IN THE ABOVE MENTIONED AREAWOULD AFFECT THE ABORIGINAL CULTURAL SIGNIFICANCE EITHER KNOWN OR POTENTIAL.

THEREFORE IN OUR OPINION WE RECOMENED THAT NO DEVELOPMENT FROM IOLANTHE STREET PROCCEDING TO THE PACIFIC HWY HEADING NORTH/ EAST FROM BUNNINGS- CATHERINE MCAULEY COLLEGE BE PLANNED OR FURTHER PURSUED DUE TO THE FINDINGS OF OUR ASSESMENT AS STATED ABOVE.

THIS ASSESMENT HAS BEEN COMPLETED BY:

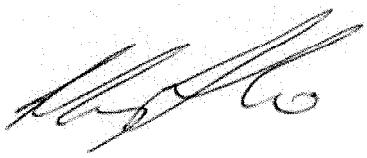
BRETT DUROUX

POSITION: ABORIGINAL SITES OFFICER

YOURS SINCERELY

BRETT DUROUX,
ABORIGINAL SITE OFFICER

SIGNED ON BEHALF,



WESLEY FERNANDO
CHIEF EXECUTIVE OFFICER

Samantha Higgs

From: Wesley Fernando <gnlalc@bigpond.com>
Sent: Tuesday, 2 August 2011 7:30 AM
To: 'MILLICHAMP Simon'; Samantha Higgs
Cc: 'Graham Purcell'
Subject: RE: Review of Biosis report and approval of letter regarding Elizabeth Island, Alipou Ck and Great Marlow

Hi everyone,

Thanks for being so patient.

- In the acknowledgements we need to add David "Bunny "Daley.
- Figure 3: the dots on the sites, I am concerned about the detail throughout the report identifying exact areas of aboriginal artefacts and places, due to the historic destruction by community once these sites are released publicly.(Please provide your opinions on this and we can have a chat about the level of information re: sites).
- 5.2 – 2.5 Low impact areas such as building and roads: If these are to be disturbed in any way we must be afforded the chance to assess as you can imagine we were never afforded the chance when structures and roads were built years ago, and due to the high level of significance in the area it is highly likely sites would be present. **To add to that it is the Grafton Ngerrie Land Councils opinion that all developments will impact on Aboriginal Culture and Heritage as all country whether it has been developed or not is of significance to Aboriginal people and we must be afforded an opportunity to be fully involved in all aspects of the development and construction of the additional crossing of the Clarence river at Grafton.**

Apart from these few issues I feel the report represents our involvement and we look forward to discussions again once we have a short list of proposed routes.

Simon the letter I sent you is fine to release.

If you need to ring me today please ring 0427426020 I will be on the road this morning.

Thank-you for your time.

Regards,

Wesley Fernando
Chief Executive Officer

Grafton Ngerrie Local Aboriginal Land Council
Office Address : 50 Wharf Street
South Grafton NSW 2460
Postal Address: PO Box 314
South Grafton NSW 2460
Ph: 02 66426020 Fax: 02 66426994 Mob: 0427426020
E-mail: gnlalc@bigpond.com
Facebook: Grafton Ngerrie LALC

GRAFTON NGERRIE LOCAL ABORIGINAL LAND COUNCIL

ABN : 65 563 910 928

PHONE: 02 6642 6020
FAX: 02 6642 6994
EMAIL: gnlalc@bigpond.com

50 WHARF ST
SOUTH GRAFTON
PO BOX 314
SOUTH GRAFTON,
NSW 2460

Graham Purcell,
Simon Millichamp, Chris Clark.
Roads and Traffic Authority
31 Victoria Street
GRAFTON NSW 2460

Wednesday, 27 July 2011

Dear Graham, Simon & Chris,

I am writing in regards a meeting from 1st July 2011, at our Land Council Office, involving yourself Brett Tibbett, David Daley and I to discuss the options that have been set out by the wider community for the additional crossing of the Clarence River at Grafton and in particular the areas around (Alipou Creek) Elizabeth Island and Great Marlow.

From this meeting the following was determined:

Elizabeth Island:

Is a Sacred Aboriginal Men's site, with high significance much the same as Susan Island, it is the Aboriginal communities determination that NO disturbance can occur on any part of the island.

Therefore we recommend that any routes proposed on Elizabeth island must be removed from your scope and not considered for any developments such as the additional crossing of the Clarence river.

Alipou Creek:

As discussed many times with Rta staff, Alipou Creek is the resting place of the Golden Eel which is of great significance to all of the neighbouring tribal groups.

There are many scarred trees and a marriage tree in this area that cannot be impacted upon.

The community feel strongly that Alipou Creek cannot be directly impacted upon

There was talk to "threading the needle" beside the bridge, we feel this still may be a possibility and we would like to discuss further when options have been narrowed down, we would need to assess and look at any plans that may be in this area alongside the bridge.

Great Marlow:

This area was a common place for Aboriginal people to travel through and there are many areas of high significance throughout Great Marlow, any options considered would need to be assessed by Land Council Site Officers as would any options that were being targeted in your scope before we could give an accurate assessment of the areas.

It should be noted that all development activities will impact on Aboriginal places and objects of Cultural significance, as traditional Aboriginal people were nomadic moving through their country. All country is significant, in addition to this our spirituality is entwined throughout the landscape, therefore it is impossible for a development not to impact on Aboriginal culture and heritage.

Under the Aboriginal Land Rights act it is our duty to ensure our Culture and Heritage is protected and maintained.

As the primary centre for the Aboriginal community in Grafton we look forward to meeting with you to discuss this project in more detail once options are narrowed down.

If you require any more information please contact me on the numbers provided.

Thank you for your time.

Yours sincerely,

Wesley Fernando

Chief Executive Officer
Grafton Ngerrie Local Aboriginal Land Council
Office Address : 50 Wharf Street
South Grafton NSW 2460
Postal Address: Po Box 314
South Grafton NSW 2460
Ph: 02 66426020 Fax: 02 66426994 Mob: 0427426020
E-mail: gnlalc@bigpond.com

GRAFTON NGERRIE LOCAL ABORIGINAL LAND COUNCIL

PHONE: 02 6642 6020
FAX: 02 6642 6994
EMAIL: gnlalc@bigpond.com

50 WHARF ST
SOUTH GRAFTON
PO BOX 314
SOUTH GRAFTON,
NSW 2460

10 May 2012
SIMON MILLICHAMP
RMS

ABORIGINAL CULTURAL SIGNIFICANCE ASSESMENT

RE: PROPOSED GRAFTON SECOND CROSSING OF THE CLARENCE RIVER.

DEAR SIMON,

I AM WRITING IN REGARDS TO THE SITE INSPECTIONS THAT HAVE TAKEN PLACE ON THE ABOVE MENTIONED PROPERTIES.

PURPOSE OF THIS ASSESMENT:

IS TO DETERMINE WHETHER ANY FEATURES OF ABORIGINAL CULTURAL SIGNIFICANCE OCCURRED IN THE STUDY AREA FOR THE PROJECT YOU PROPOSE AND WHETHER THE SIGNIFICANCE WOULD BE AFFECTED BY THE PROPOSED PROJECT/DEVELOPMENT.

PROJECT DETAILS:
SITE OFFIDER BRETT DUROUX AND RODNEY DUROUX UNDERTOOK THE SITE ASSESSMENTS BY FOOT.

LOCATION OF STUDY AREA:
ALL OPTIONS WITHIN THE CORRIDOR

NAME OF ABORIGINAL SITE OFFICER COMPLETEING THE ASSESMENT & UNDERTAKING THE SITE SURVEY:

BRETT DUROUX, RODNEY DUROUX

NAME OF ABORIGINAL ORGANISATION REPRESENTED BY THIS STUDY:

GRAFTON NGERRIE LALC

DATE OF SURVEY/INSPECTION: 2011-2012

INFORMATION ON THE SITE SURVEY:

SITE OFFICERS INSPECTED APPLICABLE OPTIONS, CONCERNS REGARDING OPTION (C) WILL NEED A DETAILED FURTHER ASSESMENT, DUE TO THE HIGH SIGNIFICANCE IN THIS AREA (GOLDEN EEL SITE, MARRIAGE TREE, SCARED TREE'S)

OPTION (A) INSPECTED ALONG RIVERBANK, IT IS NOTED THAT ALOT OF EUROPEAN DISTURBANCE HAS OCCURED ALTHOUGH THERE HAVE BEEN NO PREVIOUS INSPECTION OF THESES SITES AND THE POSSIBILITY OF FINDING ABORIGINAL CULTURE AND HERITAGE IS VERY HIGH.

OPTION (E) HIGH POTENTIAL AREA – WOULD REQUEST A (TRANSIC) IN THIS AREA TO ENSURE C&H IS PROTECTED.INSPECTED PAC HWY EGGINS LANE, HIGH SIGNIFICANCE, OPTIONS 4-5-14 HAVE HIGH SIGNIFICANCE IN THESE AREAS. (WITH ALL OPTIONS FURTHER CONSULTATION REQUIRED IF SELECTED BEST OPTION)

OPTION (14) (15) TRACKER ROBINSONS CAMP, MUST BE AVOIDED, FURTHER CONSULT TO ESTABLISH BUFFER ZONE.

OPTION (11) WE WOULD REQUEST A TRANSIC IN THESE AREAS DUE TO UNBROKEN LAND

SURVEY RESULTS:

OUR SITE OFFICERS INSPECTED THE PROPERTY AND HAVE INFORMED US THAT IT IS LIKELY THAT ALL DEVELOPMENTS IN THE ABOVE MENTIONED AREAWILL AFFECT THE ABORIGINAL CULTURAL SIGNIFICANCE EITHER KNOWN OR POTENTIAL.

THEREFORE IN OUR OPINION WE RECOMENED THAT ANY OPTIONS FURTHER SHORTLISTED WILL NEED TO BE FURTHER ASSESSED AS DOCUMENTED IN THE ARCHAELOGICAL REPORTS.

PLEASE NOTE: FURTHER INTERNAL CONSULTATION WILL COMMENCE WITHIN THE LAND COUNCIL/COMMUNITY TO DISCUSS ALL OPTIONS, OPTION (C) IS A CONCERN TO ALL INVOLVED AND A FINAL DETERMINATION ON OPTION (C) WILL COME FROM THE MEMBERS OF THE GRAFTON NGERRIE LALC.

THIS ASSESMENT HAS BEEN COMPLETED BY:

BRETT DUROUX, RODNEY DUROUX

POSITION: ABORIGINAL SITES OFFICER

YOURS SINCERELY

BRETT DUROUX,
ABORIGINAL SITE OFFICER

SIGNED ON BEHALF,

WESLEY FERNANDO
CHIEF EXECUTIVE OFFICER

Asher Ford

Subject: FW: Consultation with the LALC on temporary construction boat launching facility

---

From: Grafton Ngerrie LALC [mailto:gnlalc@bigpond.com]
Sent: Wednesday, 12 February 2014 2:49 PM
To: SISSON Vicky
Subject: RE: Consultation with the LALC on temporary construction boat launching facility

Hi Vicky,

My apologies about this morning, was in another meeting.

In relation to information below, I've forwarded onto Brett Tibbett and will be highlighting this in the Board of Directors Meeting tonight prior to approaching our Elders.

Please let me know if you would like to meet again or anything else I may have missed.

Kind Regards,

Crystal Skinner
Chief Executive Officer
Grafton Ngerrie Local Aboriginal Land Council

Ph: 02 66426020
Fax: 02 66426994
Mob: 0427426020

Office Address : 50 Wharf Street, South Grafton NSW 2460
Postal Address: PO Box 314, South Grafton NSW 2460
E-mail: gnlalc@bigpond.com
ABN: 65 563 910 928

"Always was, Always will be Aboriginal Land "

I would like to acknowledge the Traditional Owners of the country throughout Australia and their continuing connection to Land and Community. I pay my respect to them and their cultures, and to my Gumbaynggirr and Bundjalung Elders both past and present to which land I live and work in.

access or unauthorised amendment. Any views expressed in this email and any attachments do not necessarily reflect the views of the GNLALC or the views of any of our related or associated companies.

From: SISSON Vicky [mailto:Vicky.SISSON@rms.nsw.gov.au]
Sent: Thursday, 6 February 2014 8:42 AM
To: gnlalc@bigpond.com
Subject: FW: Consultation with the LALC on temporary construction boat launching facility

Hey Crystal,

Thanks for your time this afternoon. As discussed - RMS are seeking feedback from the Grafton Ngerrie Local Aboriginal Land Council on the following matters:

- It is proposed to place a temporary boat launching facility to be used during the construction stage of the project - the location of this facility is shown on the attached map, and will be inside the area currently fenced off from Alipou Creek. Could you please let me know if the Land Council has any comments or feedback in relation to this proposal
- In regards to the movement of the alignment of the proposed bridge, which has shifted approximately 3m closer to the Alipou Creek - as per the map provided yesterday, the red line represents the new alignment, the black lines represent the old alignment, and the green line represents the proposed property boundary, which is where the pedestrian proof fence is currently located. Please note the first pier on land may be slightly closer to the creek, but still within the fenced area, and the location of the embankment for the new alignment is unlikely to change.
- Finally - the project team is still wishing to meet with the Grafton Ngerrie Local Aboriginal Land Council elders to discuss the Alipou Creek area and the elder's knowledge around the cultural significance. We would be happy to take notes only if this makes the elders feel more comfortable in providing some of their cultural knowledge of the site. If you could let me know whether this might be possible, it would be greatly appreciated. At this stage, the team undertaking the Aboriginal cultural heritage study will be in Grafton for a few days from the 24 February

Thanks again for your time, and look forward to meeting with you again.

Vicky

Vicky Sisson
T 02 6604 9309 **F** 02 6604 9318
www.rms.nsw.gov.au

Roads and Maritime Services
21 Prince St Grafton NSW 2460 | PO Box 546 Grafton NSW 2460

Asher Ford

From: Javier Valderrama <Javier.Valderrama@arup.com>
Sent: Monday, 23 June 2014 1:51 PM
To: Asher Ford
Subject: FW: Land Council comments on the ACHAR and Archaeological report

Follow Up Flag: Follow up
Flag Status: Flagged

FYI

From: SISSON Vicky [mailto:Vicky.SISSON@rms.nsw.gov.au]
Sent: Monday, 23 June 2014 1:36 PM
To: Javier Valderrama
Cc: WOODS Mark; Toby Heys; SCOLARO Maria
Subject: Land Council comments on the ACHAR and Archaeological report

Hi Javier,

I have talked to the acting CEO for the Grafton-Ngerrie Land Council (Joanne Bolt) this morning about comments on the Aboriginal Cultural Heritage report and Archaeological Report. There appear to be no comments from either officer provided with the documents. Given this we agreed to assume the Land Council has no further comments to make on the draft reports. Joanne indicated she was happy with this, and would try to contact the relevant officers this afternoon - however Brett Tibbett has previous indicated to Joanne he was satisfied with what had occurred to date on the preferred option.

Given this - I suggest we finalise the report based on no further comments from the land council, and if anything is found during construction, the Grafton-Ngerrie Local Aboriginal Land Council is contacted for guidance / comments on how any finds are treated - as per comments provided by the Land Council on the Research Methodology report.

Thanks

Vicky

Vicky Sisson
T 02 6604 9309 **F** 02 6604 9318
www.rms.nsw.gov.au

Roads and Maritime Services
21 Prince St Grafton NSW 2460 | PO Box 546 Grafton NSW 2460

Roads & Maritime

Asher Ford

From: Javier Valderrama <Javier.Valderrama@arup.com>
Sent: Monday, 23 June 2014 3:07 PM
To: SISSON Vicky
Cc: Grafton Ngerrie LALC; b1tibbett@bigpond.com; WOODS Mark; SCOLARO Maria; Toby Heys; Asher Ford
Subject: RE: Grafton-Ngerrie Local Aboriginal Land Council comments on the Aboriginal Cultural Heritage Assessment report

Follow Up Flag: Follow up
Flag Status: Flagged

Noted. Thanks.

From: SISSON Vicky [mailto:Vicky.SISSON@rms.nsw.gov.au]
Sent: Monday, 23 June 2014 2:56 PM
To: Javier Valderrama
Cc: Grafton Ngerrie LALC; b1tibbett@bigpond.com; WOODS Mark; SCOLARO Maria
Subject: Grafton-Ngerrie Local Aboriginal Land Council comments on the Aboriginal Cultural Heritage Assessment report

Hi Javier,

Further to my previous email regarding comments from the land council on the Aboriginal Heritage reports for the Grafton Bridge project, Brett Tibbett just called to discuss the report and provide some further comments. The Land Council are keen to see some interpretive signage opportunities around the bridge - noting opportunities for this are included in the report, as well as ensuring the pedestrian proof fence is provided during construction to protect the Alipou Creek area (again, Brett noted this was in the report which the council are happy to see).

One point Brett raised though are opportunities regarding land council site officers being used on site during construction to assist in identifying items of Aboriginal cultural heritage significance. This is not included in the document, and was raised by the land council as an opportunity they wished to be included. Could you please include this as an issue raised by the Council.

Thank you

Vicky

Vicky Sisson
T 02 6604 9309 **F** 02 6604 9318
www.rms.nsw.gov.au

Roads and Maritime Services
21 Prince St Grafton NSW 2460 | PO Box 546 Grafton NSW 2460

Roads & Maritime

Appendix 4 – Project Information Pack and Project Methodology Pack

Grafton Bridge, Grafton NSW:
Aboriginal Heritage Methodology Information Pack

Draft

Prepared for Roads and Maritime Services

26 September 2013

Biosis offices

AUSTRALIAN CAPITAL TERRITORY

Canberra

Floor 1, Unit 3, 38 Essington Street
Mitchell ACT 2911

Phone: (02) 6241 2333
Fax: (03) 9646 9242
Email: canberra@biosis.com.au

NEW SOUTH WALES

Sydney

Unit 14, 17-27 Power Avenue
Alexandria NSW 2015

Phone: (02) 9690 2777
Fax: (02) 9690 2577
Email: sydney@biosis.com.au

Wollongong

8 Tate Street
Wollongong NSW 2500

Phone: (02) 4229 5222
Fax: (02) 4229 5500
Email: wollongong@biosis.com.au

QUEENSLAND

Brisbane

Suite 4 First Floor, 72 Wickham Street
Fortitude Valley QLD 4006

Phone: (07) 3831 7400
Fax: (07) 3831 7411
Email: brisbane@biosis.com.au

VICTORIA

Ballarat

506 Macarthur Street
Ballarat VIC 3350

Phone: (03) 5331 7000
Fax: (03) 5331 7033
Email: ballarat@biosis.com.au

Melbourne (Head Office)

38 Bertie Street
Port Melbourne VIC 3207

Phone: (03) 9646 9499
Fax: (03) 9646 9242
Email: melbourne@biosis.com.au

Wangaratta

16 Templeton Street
Wangaratta VIC 3677

Phone: (03) 5721 9453
Fax: (03) 5721 9454
Email: wangaratta@biosis.com.au

Document information

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LGA:	Clarence Valley Council

Document control

Version	Internal reviewer	Date issued	Issued by
Draft 01	Melanie Thomson	26/06/2013	MT
Draft 02	Asher Ford	27/06/2013	ASF
Draft 03	Asher Ford	26/09/2013	ASF

Abbreviations

ACHA	Aboriginal Cultural Heritage Assessment
ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
CMA	Catchment Management Authority
DEC	Department of Environment and Conservation
DECCW	Department of Environment, Climate Change and Water
DoPI	Department of Planning and Infrastructure
EP&A Act	Environment Planning and Assessment Act
GSV	Ground Surface Visibility
LALC	Local Aboriginal Land Council
LEP	Local Environment Plan
LGA	Local Government Area
OEH	Office of Environment and Heritage
RMS	Roads and Maritime Services

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1 Introduction

1.1 Background

This Research Methodology Information Pack is being provided to the Grafton-Ngerrie Local Aboriginal Land Council (LALC), who have registered their interest to be consulted for the Grafton Bridge Project located at Grafton NSW (Figure 1). The purpose of this information pack is to provide the LALC with an opportunity to review and inform the Aboriginal Cultural Heritage Assessment (ACHA) research methodology. This information pack includes the results of assessment undertaken to date and the proposed survey and archaeological excavation methodology and builds on the heritage assessment undertaken during earlier constraint assessments.

Previous studies and reports undertaken for Aboriginal cultural heritage for the project include:

- *Main Road 83 Summerland Way - Additional Crossing of the Clarence River at Grafton: Preliminary Route Options Report – Final*. *Technical Paper: Aboriginal Heritage* (RMS, January 2012); and
- *Main Road 83 Summerland Way - Additional Crossing of the Clarence River at Grafton: Route Options Development Report. Technical Paper: Aboriginal Heritage* (RMS, August 2012).

Constraints assessments for an additional bridge over the Clarence River at Grafton were undertaken between June 2011 and January 2012 in the Grafton area and surrounds. In January 2012, six route options to be investigated further as part of the process to identify a location for the crossing were announced. The outcomes of these investigations, community comment and a community and stakeholder evaluation workshop provided the inputs to the selection of the short-list of options. Of the six route options considered, Route Option C has been selected as the preferred option. This ACHA is being undertaken to support the Part 5.1 State Significant Infrastructure Project Application for the Project.

1.2 Project Area

- The Project Area is located within the suburbs of Grafton and South Grafton in the Clarence Valley Council, Local Government Area (LGA) (

Figure 1), on the NSW Mid North Coast, about 610 kilometres north of Sydney. It is a major regional centre in the NSW Mid North Coast region.

1.3 Project description

The main components of the project are:

- Building a new bridge about 70 metres downstream of the existing bridge (which would be retained)
- Upgrading parts the road network in Grafton and South Grafton to accommodate the new bridge.

The project would also include ancillary works, structures and facilities required for the purposes of the project.

The project route alignment is presented in Figure 2.

The new Grafton Bridge would be about 458 metres long and 16 metres wide. The bridge deck would have one northbound lane and one southbound lane for vehicles and a shared path (for pedestrians and cyclists) 3.1 metres wide on the western side that would connect to the Pacific Highway at Iolanthe Street in South Grafton and to Pound Street in Grafton.

1.4 ACHA Methodology

The ACHA methodology has been developed using the following NSW Aboriginal heritage guidelines:

- The *Code of Practice for the Investigation of Aboriginal Objects in New South Wales 2010* (DECCW);
- The *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010); and
- The *Roads and Maritime Services procedure for Aboriginal cultural heritage consultation and investigation* (RMS 2011).

The objectives of the investigation process are to:

- Consult with any registered Aboriginal stakeholders;
- Consolidate Aboriginal heritage information from previous reports and update heritage register searches;
- Update heritage register searches for the Project Area;
- Undertake a targeted survey of the Project Area, to properly assess land affected by the Project not accessible at the time of the previous field surveys. The field survey of the Project Area in accordance with the methodology outlined in *Code of Practice for the Investigation and Protection of Aboriginal Objects in NSW* (DECCW 2010) will be undertaken in order to identify any previously unknown Aboriginal objects or Places, should they be present;
- Undertake test excavations to collect information about the presence, nature and extent of subsurface Aboriginal objects;
- Record and assess sites identified during the survey in compliance with the guidelines issued by the NSW Office of Environment and Heritage (OEH);
- Assess the heritage significance of all identified Aboriginal cultural heritage sites and places;
- Identify impacts to all identified Aboriginal cultural heritage sites and places based on potential ground disturbance from the proposed construction of the new bridge; and

- Make recommendations to minimise or mitigate potential impacts of the new landfill cell to cultural heritage values within the Study Area.

1.5 Planning Approvals

The Grafton Bridge project will be assessed against Part 5.1 of the *Environmental Planning and Assessment Act 1979* NSW (EP&A Act) as a State Significant Infrastructure (SSI) project. Relevant legislation and planning instruments that will inform this assessment include:

- *State Environmental Planning Policy (State and Regional Development) 2011;*
- *Environmental Planning and Assessment Regulation 2000*;
- *National Parks and Wildlife Act 1974* (NSW)
- *National Parks and Wildlife Amendment Act 2010* (NSW); and
- *Clarence Valley Local Environmental Plan 2011*.

Figure 1: Location of the Project Area in a regional context

Matter: 16256
Date: 27 June 2013,
Checked by: ASF, Drawn by: JMS, Last edited by: jshepherd
Location:P:\16200s\16256\Mapping\

0 300 600 900 1,200
Metres
N
Scale 1:30,000 @ A4, GDA 1994 MGA Zone 55

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Figure 2: Aerial of the Project Area

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Acknowledgements: Imagery provided by Arup

Matter: 16256
Date: 27 June 2013,
Checked by: ASF, Drawn by: JMS, Last edited by: jshepherd
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16256_F2_20130626

0 80 160 240 320 400

Metres
Scale 1:8,000 @ A3
Coordinate System: GDA 1994 MGA Zone 56

N

2 Desktop Assessment

The desktop assessment is provided in order to give a context to the proposed survey and excavation methodology and the following background is a summary of the information relevant to the current assessment of Aboriginal archaeological values of the Project Area.

2.1 Environmental Context

2.1.1 Geology and Soils

Grafton lies at the south-eastern end of the geological feature known as the Clarence-Moreton Sedimentary Basin, which covers 16,000 km2 of north-eastern New South Wales. Across this basin there has been widespread fluvial and lacustrine to paludal deposition. This deposition is recorded in the grey siltstone, thick banded coal horizons and fine to medium grained lithic sandstone. Although the sediments are non-marine in origin, the quartz dominated sandstone of the Clarence-Moreton Basin is similar to the Sydney Basin sandstones, which have numerous outcrops and overhang formations present (NSW Trade and Investment Website).

In the south-east of the Clarence-Moreton Basin (where Grafton lies), an overlying layer of the erodible Grafton Formation remains creating an undulating land surface. The Grafton Formation is a fluvial to lacustrine claystone and sandstone unit. This formation overlies the coarser Kangaroo Creek Sandstones which are comprised of sandstone, siltstone, claystone and conglomerate. Both the Grafton and Kangaroo Creek geological units are Mesozoic sediments comprised largely of sandstone and sandstone derivatives (NPWS 2006) (Figure 3).

The geological processes that have contributed to the formation of the Grafton area have been largely the weathering of materials flowing down the Clarence River and deposited following flooding events to create the Clarence-Richmond alluvial floodplains. The alluvium in the Clarence River at Grafton is estimated to be about 40m thick (NSW Trade and Investment).

Landforms associated with the Clarence - Richmond alluvial plains include wide valleys, channels, floodplains, terraces and estuaries of the Clarence and Richmond Rivers and other coastal streams on Quaternary alluvium, which have a general elevation of 0m to 50m Australian Height Datum (AHD), with a local relief of 15m. The alluvium in the Clarence River at Grafton is estimated to be about 40m thick (Department of Primary Industries 1970). These alluvial soils (structure loams) are characterised as being deep brown earths and structured brown clays on floodplains. These soils are fertile having a high organic content and are generally not considered to have high erosion potential.

Soils within the Grafton and South Grafton area have been substantially disturbed through sub-urban, agricultural and industrial land uses. Severe floods in the 1940s and 1950s prompted the development of an extensive levee and drainage network to mitigate the effects of major flooding events. The levee system was completed in the 1970s with levees present on both sides of the bank of the Clarence River and extending across the floodplains in South Grafton.

Less disturbed portions of the Grafton and South Grafton area where topsoils remain at least partially intact include isolated patches of native vegetation that is typical floodplain vegetation of the lower Clarence.

2.1.2 Hydrology

The Clarence River catchment, covering an area of 22,700km is located in the Northern Rivers region of New South Wales (DEC 2005.2, Northern Rivers CMA Website). Draining east from the Great Dividing Range to the river entrance adjacent to the townships of Yamba and Iluka, the catchment extends from the New South Wales/Queensland border and Richmond Range in the north to the Doughboy Range/Dorrigo Plateau in the south. The catchment is characterised by upper tableland areas which fall away to a relatively large, flat coastal floodplain. Grafton and South Grafton are located within the upper reaches of the floodplain.

The Grafton and South Grafton area has a history of both droughts and floods. Since 1839 the Clarence River has experienced 74 moderate to major floods (shown in Chart 1), the most recent flood events being in 2001, 2009 and 2011, when the river reached levels of 7.70mAHD, 7.37mAHD and 7.64mAHD respectively at the Prince Street gauge in North Grafton.

Due to the size of the Clarence River catchment upstream of Grafton, relative to its various downstream tributary catchments, the flooding behavior of the Lower Clarence River floodplain is dominated by the flow originating from upstream of Grafton in terms of both peak flood levels and duration of inundation. The flow typically contributes 80% to 90% of the total volume of floodwaters that enters the lower floodplains during main river flood events. Clarence River floods typically occur from low rainfall intensity events that last several days or even weeks.

Grafton has experienced frequent and significant flooding in the past. Construction of various levee banks and drainage improvements has been progressively undertaken over the years to help reduce the frequency of flooding. These works commenced in about 1890 with the construction of drainage improvements and minor levees along low sections of the riverbank. However, it was not until the 1960's that a major program of levee construction at Grafton and South Grafton was initiated. Since that time, additional levee banks were gradually constructed, or the height of existing levees increased, to further reduce the frequency of flooding. Today, Grafton is protected by a series of seven levees that, in addition to natural high ground and the elevated railway embankment, surround the town.

The Grafton and South Grafton levees begin to overtop when flood levels are at, or close to, eight meters on the Prince Street gauge, which translates to about a 20-year average recurrence interval (ARI) flood event. Following overtopping, significant areas of Grafton and South Grafton are inundated by floodwater. Cyclical flooding events have the potential to impact on the survival of Aboriginal archaeological features. Strong floodwater movement can either scour the river banks and terraces, effectively removing stone artefacts from in situ. This movement, can however, result in the deposition of flood sediments, burying and preserving archaeological material.

2.1.3 Climate

In general terms the climate in the Grafton region has two major seasonal influences. The first is the sub tropical high-pressure belt which occurs in winter and spring and the second is the monsoonal cyclones and trade winds of summer and autumn. Bureau of Meteorology weather station records (Station 058130 – collected from Grafton Swimming Pool) show that more rainfall is experienced during the summer and autumn months. This has an impact on the availability of freshwater which would have influenced the occupation patterns of the Aboriginal inhabitants. The drier winter and spring seasons see only small freshwater inflow into waterways while the cyclones bring large intermittent short lived fresh water events.

2.1.4 Flora and Fauna

The land immediately surrounding Grafton is now considered an urban landscape, surrounded by rural and prime agricultural lands as the native vegetations have since been extensively cleared and/or modified.

All early historical accounts of the Clarence support an understanding that the current vegetation patterns do not reflect pre-contact vegetation types. While the margins of the Clarence are now largely cleared urban or agricultural lands, cedar getters were some of the earliest non-Aboriginal people along the Clarence River. An account by Capt James Butcher noted that the banks of the river were 'thickly covered with timber' (Stubbs 2007: 9). The alluvial plains were thick with brush when an influx of settlers arrived following the passing of the Land Acts in 1861 (Sabine 1970:1: 8). The density of brush was synonymous with soil fertility, and essentially ensured that such areas were the first selected and cleared to allow the commencement of agriculture. Historical records of the vegetation present along the Clarence River before European settlement indicate riparian vegetation and open woodlands existed within 1 km of the riverbank (Sabine 1970).

The Mitchell Landscapes of NSW (DECCW 2003) outline a list of dominant flora species expected to have occurred on the Clarence-Richmond alluvial floodplains - inferring that the now extensively cleared valley floor was likely to have supported forests of cabbage gum (*Eucalyptus amplifolia*), forest red gum (*Eucalyptus tereticornis*), broad-leaved apple (*Angophora subvelutina*), river oak (*Casuarina cunninghamiana*), silky oak (*Grevillea robusta*), rough-barked apple (*Angophora floribunda*), native teak (*Flindersia australis*), coastal grey box (*Eucalyptus bosistoana*), pink bloodwood (*Corymbia intermedia*), spotted gum (*Corymbia maculata*), grey ironbark (*Eucalyptus paniculata*), broad-leaved paperbark (*Melaleuca quinquenervia*), blackwood (*Acacia melanoxylon*) and black she-oak (*Casuarina litoralis*).

This vegetation community would have supported a range of fauna. Terrestrial mammals would presumably have been an abundant and reliable food source in the woodlands for Aboriginal people. Land mammals such as kangaroos and arboreal mammals such as possums would have been important prey species within these vegetation communities. Birds, reptiles and fish would also have been important resources. The Clarence River would have supported an abundance of aquatic species, including estuarine species that occur in the Clarence River with salinity variations based on seasonal freshwater flows and tidal movements.

2.1.5 Summary of Resource Availability

The geology of the immediate Grafton and South Grafton area does not suggest the likelihood of readily available raw material sources. Some stone types suitable for tool manufacture are available in the local area as river bed outcrops or river pebbles.

The Clarence River is an important natural feature for Aboriginal people as it supported an abundance of resources integral to their lifestyles and cultural practices. The river is also the subject of several dreaming stories, the ones publicly available relate to the creation of the river. The river has mythological values and this aspect of significance may have no additional tangible features beyond physical presence. Aboriginal community consultation is required to refine cultural associations and connections to the river.

It should also be considered that the river may have cultural significance in the demarcation of space and place. The river creates a tangible barrier to accessing the opposite bank and the river islands, and this demarcation may have significance in the social organisation and cultural practices of local Aboriginal populations. Both Susan and Elizabeth islands (respectively west and east of the existing Grafton Bridge) are of significance to local Aboriginal women and are listed as Aboriginal Women's places.

The pre-contact vegetation communities supported numerous plant species utilised by Aboriginal people for a wide range of purposes. Certain plants provided important food sources (yams and roots) and/ or medicines, while others provided toxins which might be used to stupefy fish in waterholes. Sabine (1970: II: 21) notes that plant derived poisons used in fishing include Duboisine from the Corkwood Tree, a poison extracted from an unspecified weed and a poison made from pounding the leaves of a tree called "Cutiga".

Plants were used to manufacture a wide range of items including personal decorations, clothing, tools, art (pigment fixatives), watercraft, traps and shelter. Certain plants also featured in local mythologies, and some were considered sacred and/or had ritual uses.

Wood, bark, fibres, and resin are all examples of useful materials derived from plants. For example: wood could be used to manufacture items such as boomerangs, clubs, digging sticks, weapons, shields or containers; bark could also be used to manufacture clothing, canoes, or dishes; fibres could be used to manufacture string, fishing nets, baskets, traps, or mats; and resin could be used as an adhesive in tool manufacture and decoration, or to seal leaks in canoes (Sabine 1970).

The plant species discussed previously would have supported a range of fauna also used by local Aboriginal inhabitants. Animals were not only used for food, but also contributed to several cultural aspects of Aboriginal life; they provided materials for tool technologies, played a role in local mythologies, and some were considered sacred or had ritual significance.

Reptiles, mammals, birds, insects, fish, molluscs, and amphibians would have all been exploited for food. The Clarence River and its floodplain would have supported the major food sources exploited by Aboriginal people, including; a variety of fish, molluscs, tortoises, turtles, eels, and crayfish. Waterbirds flocking on the floodplains such as ibis, geese, ducks, swans, shags, darters and cormorants were harvested by the Aboriginals for meat, eggs and feathers (Sabine 1970). Macropods, possums and emu also found in the area were used for meat and skins.

Aboriginal technologies also made use of materials sourced from animals. Skins could be used as clothing, such as macropod and possum skin cloaks; bone points (awls) and sinews were used for sewing; animal teeth, bones, and sinews were used in tool manufacture; and animal products, such as feathers and teeth were used as personal decoration (Sabine 1970).

Figure 3: Geology mapping of the Project Area

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Acknowledgements: Imagery provided by Arup

Matter: 16256
Date: 27 June 2013,
Checked by: ASF, Drawn by: JMS, Last edited by: jshepherd
Location:P:\16200s\16256\Mapping\
16256_F3_Geology

0 80 160 240 320 400

Metres
Scale 1:8,000 @ A3
Coordinate System: GDA 1994 MGA Zone 56

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2.2 Historical Context

2.2.1 Land Use Impacts

The land within and surrounding the Grafton and South Grafton area has undergone extensive modification. From the beginning of non-Aboriginal settlement in the 1830s clearing of vegetation was rapidly undertaken. This was followed by pastoral land activity and the steady growth of the urban environment.

The northern side of the Clarence River is mostly urban streets, residential and commercial development and some parkland. To the south, developed urban areas also occur to the west of the existing bridge. However, on the south east side of the existing bridge, open farm lands with associated houses and roads dominate the landscape. Most of these areas comprise alluvial flood plain. The alluvial nature of the floodplain soils to the south and the impact of agriculture and the urban development have reduced the likelihood of some types of evidence of Aboriginal occupation remaining intact.

2.2.2 Ethnohistory

Our knowledge of the social organisation of Aboriginal people prior to European contact is, to a large extent, reliant on documents written by early European arrivals recording their impressions. By the time colonial diarists, missionaries and proto-anthropologists began making detailed records of Aboriginal people in the late 19th Century; pre-European Aboriginal groups had been broken up and reconfigured by European settlement activity. The inherent bias of the class and cultures of these authors necessarily affect such documents. They were also often describing a culture that they did not fully understand – a culture that was in a heightened state of disruption given the arrival of settlers and disease. Early written records and images can, however, be used in conjunction with archaeological information in order to gain a picture of Aboriginal life in the region. Oral histories from members of the Aboriginal community also provide valuable information. The following information relating to Aboriginal people of the Grafton region is based on such early detailed records.

The following information has been reproduced from the initial Biosis Research (2004) as no new ethno-historical sources have been found and this information has not altered since.

2.2.3 Aboriginal History

At the time of non-Aboriginal arrival in Grafton the area to the north of the Clarence River were Bundjalung lands. The Yaegl tribe occupied lands on the coast. The Clarence River and Grafton are within the area previously inhabited by the Gumbainggir people. These people also inhabited the steep terrain of the escarpment zone, located south of Grafton, where other sites and evidence of occupation have been found (Witter 2000).

The first interaction between the Aboriginal inhabitants of the Grafton region and the incoming European settlers came in 1825 in the form of an escaped convict, Richard Craig. Conflict between the Aboriginal population and the incoming settlers followed soon after initial European settlement. Killings were carried out by both communities and stock was speared to drive them off land.

One man, Coutts, a squatter, was tried for poisoning Aboriginal people with arsenic laced flour. He was acquitted (NSW Heritage Office 1996). Violence, displacement and disease reduced the numbers of Aboriginal people in the area. By 1891 it was reported that the police had brought 'peace'. Nine reserves had been created to house the remaining Aboriginal population and many Aboriginal people were employed in European industry as stockmen, cane strippers and fishermen (NSW Heritage Office 1996).

A community of Aboriginal people remains in Grafton to this day, many of them with strong spiritual links to the original inhabitants and important knowledge of their past ways of life.

2.3 Archaeological Context

2.3.1 Regional Archaeological Context

Isabel McBryde conducted a substantial amount of work in the Northern Rivers and New England regions in the 1970s (McBryde 1974). McBryde emphasised wide-ranging population movements on a seasonal basis suggesting that annual migration occurred between the coast and the tableland foothills, predicting a range of seasonal sites across resource zones. Other models for similar resource zones suggest a more sedentary based pattern focused on coastal areas. This would be demonstrated in the archaeological record by large repeated use sites in resource rich areas. Associated with this settlement pattern would be smaller transitory groups transecting more marginal resource areas such as ridge lines and watercourses. This movement would depend, to some extent, on the topography and would be characterised by small briefly inhabited sites (Hall and Lomax 1993). To date much work remains to be done to test these occupation models.

The oldest dated site in the region is the Seelands Rock Shelter site. It is located within 10kms to the northeast of Grafton. The Seelands site's relatively deep stratified deposit was excavated with occupation dating from 6400BP to 300BP, making it the oldest site in the region (Byrne 1981). The earliest levels of the rock shelter contained typical early core and flake type artefacts. A sequence of transition is also recorded within the shelter with ground edge axes and smaller artefacts such as backed blades appearing later in the assemblage (Haglund 1983).

The sandstone geology above the riverbanks provides rock overhangs suitable for locating shelter sites. Grinding grooves have also been recorded along the Clarence River in granite outcrops, beyond the immediate vicinity of the Grafton and South Grafton area.

2.3.2 Localised archaeological record

A small amount of archaeological work has been undertaken within the Clarence Valley region, with most consisting of development driven survey assessments being undertaken within and immediately surrounding Grafton (Byrne 1981; Haglund 1985; Navin and Officer 1990; Piper 1994a, 1994b).

The findings from this work can contribute an understanding of Aboriginal cultural heritage within the current project area by understanding sites within a similar context in the wider Clarence River Valley. Those most relevant to the Grafton and South Grafton proposal area have been summarised below.

Byrne (1981) undertook an Aboriginal archaeological survey of a proposed 330kV electricity line between Grafton and Lismore. The study resulted in the identification of three stone artefact sites. While not located within the proposed electricity line, the Parrotsnest Hill mythological site was discussed with the local Aboriginal community to ensure that the proposed works would not in any way affect the cultural values of the site, as such sites extend throughout the surrounding landscape and not restricted to a single point or feature.

Haglund (1985) was commissioned to undertake a desktop assessment of archaeological potential of proposed transmission lines between Coffs Harbour and Grafton. The study identified landforms which have the greatest potential for Aboriginal sites to be present, and was based on previous studies in the area. Over half of the sites identified were considered to be mythological or dreaming sites. Broad scale predictive models produced for this report suggest that various site types were likely to be present within the study area, including rockshelters with art, artefact sites and grinding grooves. The possibility of additional mythological sites was also mentioned.

Navin and Officer (1990) were engaged by the Electricity Commission of NSW to undertake an archaeological assessment of proposed 330kV transmission lines between Coffs Harbour and Koolkhan. During the survey for the project 50 sites were identified, including artefact sites, scarred trees, rock shelter

sites and quarry sites. Sites were located along ridgelines, knolls and spurs, as well as being associated with creeks. Areas of potential archaeological deposits were also identified. It is noted that several of these sites have been subject to s.90 Permits, with some of these completely destroyed (Navin and Officer 1990).

With the exception of rock shelter sites, Navin and Officer (1990) identified stream flats and areas of elevated ground adjacent to wetlands or flood plains as having highest archaeological potential. Flat areas on the crests of ridgelines and spurs were also found to be sensitive, but sites in these localities were likely to be of lower significance and greatly disturbed.

Piper (1994a) completed an archaeological survey for the Waterview Seelands Water Supply, approximately 6 km west of the Grafton and South Grafton area. The proposed underground pipeline runs from the junction of the Gwyder Hwy and Old Glen Innes Road, south for 7km. Ground surface visibility varied along the entire alignment. The pipeline route crosses flat, spur line crests where archaeological potential is considered to be highest. Despite the presence of sensitive landforms, only one Scarred Tree was recorded, 22m from the alignment.

Piper (1994b) undertook an archaeological survey at the Northern Hardwood Holdings property at Koolkhan, near Bunyip Creek, on the eastern margins of the current project area. Ground surface visibility across the study area was considered good. The general area comprised of flat grassed paddocks, some distance from a permanent water source. Based on this and the findings of the field survey, the area was identified as having only low archaeological potential.

2.3.3 Known Aboriginal Cultural Heritage

Field surveys for the *Main Road 83 Summerland Way - Additional Crossing of the Clarence River at Grafton: Preliminary Route Options Report – Final*. *Technical Paper: Aboriginal Heritage* (RMS, January 2012) was conducted on Tuesday 10 to Thursday 12 August 2010 by Melanie Thomson (Biosis) and Brett Duroux (Grafton-Ngerrie Local Aboriginal Land Council). The reconnaissance survey area included a number of properties along the Clarence River, including open floodplain and a number of minor creek lines and drainage features. The survey also focused on vegetation and open areas amongst the urban development of Grafton and South Grafton. Most of the areas accessed and surveyed consisted of thick grass cover or were heavily modified.

The results of the 2010 surveys identified six Aboriginal sites within the proximity of the Project Area, an updated search of the AHIMS register has not identified any additional sites. The six sites are listed in Table 1 following and the locations of these sites are shown in Figure 4.

Table 1: Known AHIMS sites within the proximity of the Project Area

AHIMS #	Site Name	Site Type	Notes
12-6-0219	Susan Island	Ceremonial Mound / Ring	Restricted, Women's site Access to site card by permission only.
12-6-0326	Clarence River Golden Eel	Aboriginal Ceremony and Dreaming	General restriction Access to site card by permission only.
12-6-0345	Dovedale Scar Tree	Modified Tree	Site card not available from AHIMS
12-6-0400	Alipou OC 1	Open Campsite	
12-6-0401	Alipou SCT 1	Modified Tree	
12-6-0402	Alipou SCT 2	Modified Tree	

Details for these sites listed are provided following. Information has not been included for Susan Island (12-6-0219) due to the culturally sensitive nature of this site.

Golden Eel site (12-6-0326) ceremonial and dreaming

The Clarence River Golden Eel site (Plate 1 and 2) is a culturally significant site, with a general restriction applying to access to the site card.

Plate 1: Looking across the Clarence River, to the southern banks near Alipou Creek, where part of the Golden Eel site story is linked

Plate 2: The Clarence River, identified as being created during The Dreamtime

Co-ordinates for this site have been provided by OEH however the extent of the site has not been specified. For the purposes of mapping the entirety of the Clarence River has been identified as an Aboriginal site, with the registered location of the site identified. At this stage, information on this site is limited.

There is no defined area for such Dreamtime stories but it is known that the Golden Eel site and the formation of the Clarence River are considered to be of high cultural significance to the local Aboriginal people.

Dovedale scar tree (12-6-0345) modified tree

Although the site card containing the details of the location of the tree was not available from the OEH AHIMS register, it is easily accessible and the location known to the Grafton-Ngerrie local Aboriginal land council.

Plate 3: Large Jacaranda tree situated in a row of large figs in east Grafton

Plate 4: Large uneven scar on the north eastern face of the tree

The tree is located at the end of a row of large fig trees on the corner of Berimba and Bacon streets (Plate 3). The tree species is a Jacaranda. The age of the tree is unknown and advice from an arborist should be sought with regards to the age of the tree and the authenticity of the scar (Plate 4).

Goorie Park (12-6-0216) modified tree

Although this site card was not available from the OEH AHIMS register, the location however is known to the Grafton-Ngerrie local Aboriginal land council and easily accessible. The tree was originally recorded in 1996. At this time, the tree was inspected for its authenticity. The site card notes at the time that 'the tree itself has been burnt out through the middle making identification slightly difficult as the majority of the scar has been burnt. The main factor that... [that it is considered] ...an Aboriginal scar is that the top of the scar comes to a broad point uniform to other scarred trees in the district' (Plate 5 and 6).

Plate 5: View of tree on the edge of the modified billabong

Plate 6: View of large open scar, facing south east

Alipou SCT 1 (12-6-0401) scarred tree

This scarred tree is situated on the open floodplain, 650m south of the Clarence River, and about 500m south of Alipou Creek (Plate 7). The tree is located on the fence line in the corner of the property. Only a few other scattered trees occur in the surrounding area.

The tree species is *Eucalyptus tereticornis* (River Red Gum) is alive and has a girth measuring 4.2m. The tree contains two separate scars, one facing north and one facing north east.

North facing scar: The scar itself measures 1.6m in length, 0.20m in width and has regrowth measuring approximately 0.30m (Plate 8). The scar does not exhibit any axe marks and the tree contains no toe holds.

North east facing scar: The scar itself measures 1.9m in length, 0.30m in width and has regrowth measuring approximately 0.40m. The scar does not exhibit any axe marks and the tree contains no toe holds.

Plate 7: Location of scarred tree Alipou SCT 1 on fence line near corner of property, facing north east

Plate 8: North facing scar on a medium sized *Eucalyptus tereticornis* (River Red Gum)

Alipou SCT 2 (12-6-0402) scarred tree

This scarred tree is situated on the open floodplain, 900m south of the Clarence River, and about 400m west of Alipou Creek. The tree is located on the fence line in the corner of the property, close to the Pacific Highway and an existing levee bank (Plate 9). The tree is located amongst a small scatter of surviving river red gums that stretch along the northern boundary of the property.

The tree species is *Eucalyptus tereticornis* (river red gum) is dead and has a girth measuring 3.15m. The tree contains one scar facing east.

The scar itself measures 2.25m in length, 0.35m in width and has regrowth measuring approximately 0.40m – although this is difficult to determine as the dry face is no longer present (Plate 10). The scar does not exhibit any axe marks and the tree contains no toe holds.

Plate 9: Location of scarred tree Alipou SCT 2, near Pacific Hwy boundary and existing levee bank, facing west.

Plate 10: Distinct scar in dead *Eucalyptus tereticornis* (River Red Gum). The top half of the tree has broken off.

Alipou OC 1 (12-6-0400) open campsite

The site is situated on the western bank of Alipou Creek and has been exposed by an eroded drainage channel that runs between the planted tea tree rows (Plate 11). The ground surface visibility was high in this section of the drain and the artefacts were identified eroding out of the banks of the drainage feature. The site extended along the length of the drainage feature, covering an area approximately 50 x 15 m.

Plate 11: Location of Alipou OC 1 stone artefact camps site, on the banks of the creek, facing north west

Plate 12: Chert core was identified amongst the stone artefacts at this site

A total of 10 stone artefacts were recorded at the site and the details are as follows:

- 1 x quartz complete flake with 25% cortex (measures 26x12x7mm).
- 1 x yellow mudstone complete flake with smooth pebble cortex of 25% (measures 62x42x12 mm).
- 1 x chert complete flake with 60% cortex (measures 36x39x7mm).
- 1 x quartz broken flake (measures 22mm).
- 1 x quartz complete flake with 25% cortex (maximum 15mm).
- 1 x quartz multi-facial core (measures 17x15x7mm).
- 1 x quartz angular fragment (maximum 20mm).
- 1 x quartz medial flake (maximum 14mm).
- 1 x silcrete broken flake (maximum 27mm).
- 1 x chert multi-facial core (measures 28x27x19mm) (Plate 12).

It is evident that the site has been partially disturbed through the construction of the cut drainage feature. Following this, erosion has caused further exposure of the site within the feature. The areas adjacent to the identified site are likely to contain further archaeological material, although this has been partially impacted by the planted tea-trees.

North Street
Queen Street
Elizabeth Island
Hoof Street
Summerland Way
Grafton
12-6-0216
Villiers Street
Susan Island
Prince Street
Fry Street
Pacific Highway
Fitzroy Street
12-6-0345
Clarence River
Alipou Creek
Gwydir Highway
South Grafton
12-6-0401
12-6-0086
12-6-0402
12-6-0400
12-6-0352
12-6-0340

Legend

Grafton Bridge project

Registered Aboriginal Archaeological sites

Habitation Structure, Potential Archaeological Deposit

Modified Tree

Artefact scatter

Cultural Values/Places

Aboriginal Ceremony and Dreaming, Men's site

Ceremonial Ring, Women's site

Dreaming/Creation Story

Golden Eel Site + Marriage Tree

Great Marlow Region

Biosis Pty Ltd

Ballarat, Brisbane, Canberra, Melbourne, Sydney, Wangaratta & Wollongong

Figure 4: Aboriginal Heritage Sites in Proximity to the Project Area

Acknowledgements: Imagery provided by Arup

Matter: 16256
Date: 27 June 2013,
Checked by: ASF, Drawn by: JMS, Last edited by: jshepherd
Location:P:\16200s\16256\Mapping\
16256_F4_PreviousSitesl

0 200 400 600 800 1,000

Metres
Scale 1:20,000 @ A3
Coordinate System: GDA 1994 MGA Zone 56

N

2.4 Aboriginal archaeological potential

During the 2010 field survey, an assessment for Aboriginal archaeology potential was undertaken for landforms. Areas of high, moderate and low archaeological potential were identified (see Figure 5 following). These areas are indicated on potential mapping and outlined in Table 2 below.

Table 2: Areas of Aboriginal archaeological potential within the Project Area.

Defined Area of Aboriginal ArchaeolOgical Potential	Location of Areas of potential
Low Aboriginal archaeological potential - Areas that have been identified as having specific locations where there has been a high degree of disturbance since the arrival of non-Aboriginal people, where the impact has been to the extent where no intact deposits are believed to be present. Areas may also include steep slopes or plains away from water sources. Artefacts found in this area are likely to be isolated, representative of 'background scatter', or in a highly disturbed context.	Existing roads, urban development, highly disturbed section of Clarence River bank, residential properties, and low-lying flood prone flood plain subject to annual inundation.
Moderate Aboriginal archaeological potential - Moderate likelihood for intact Aboriginal archaeological remains – Areas where minor post contact disturbance has occurred; the area is located along creeks and waterways where short term campsites may have been present. Artefact scatters are likely to vary in density, but are concentrated in small areas.	Northern and southern banks of Clarence River, Apliou Creek banks, other minor creeks and drainage features, foothills, remnant stands of mature vegetation.
High Aboriginal archaeological potential - High likelihood for intact Aboriginal archaeological remains – Areas associated with major creek lines, raised flat landforms such as ridges and hills, or where there has been minimal disturbance to the specific area and it is believed that an intact sensitive landscape exists. Artefacts that remain within these areas are likely to be high density and large in size.	Sections of the northern and southern banks of Clarence River, undisturbed banks of Alipou Creek and some minor creek lines, Susan and Elizabeth islands.

For the purposes of this investigation, archaeological potential reflects not only the archaeological potential of different landforms, but also the levels of previous disturbance, as this affects the integrity of archaeological deposits. The degrees of archaeological potential outlined above are not a reflection of the presence or absence of cultural material.

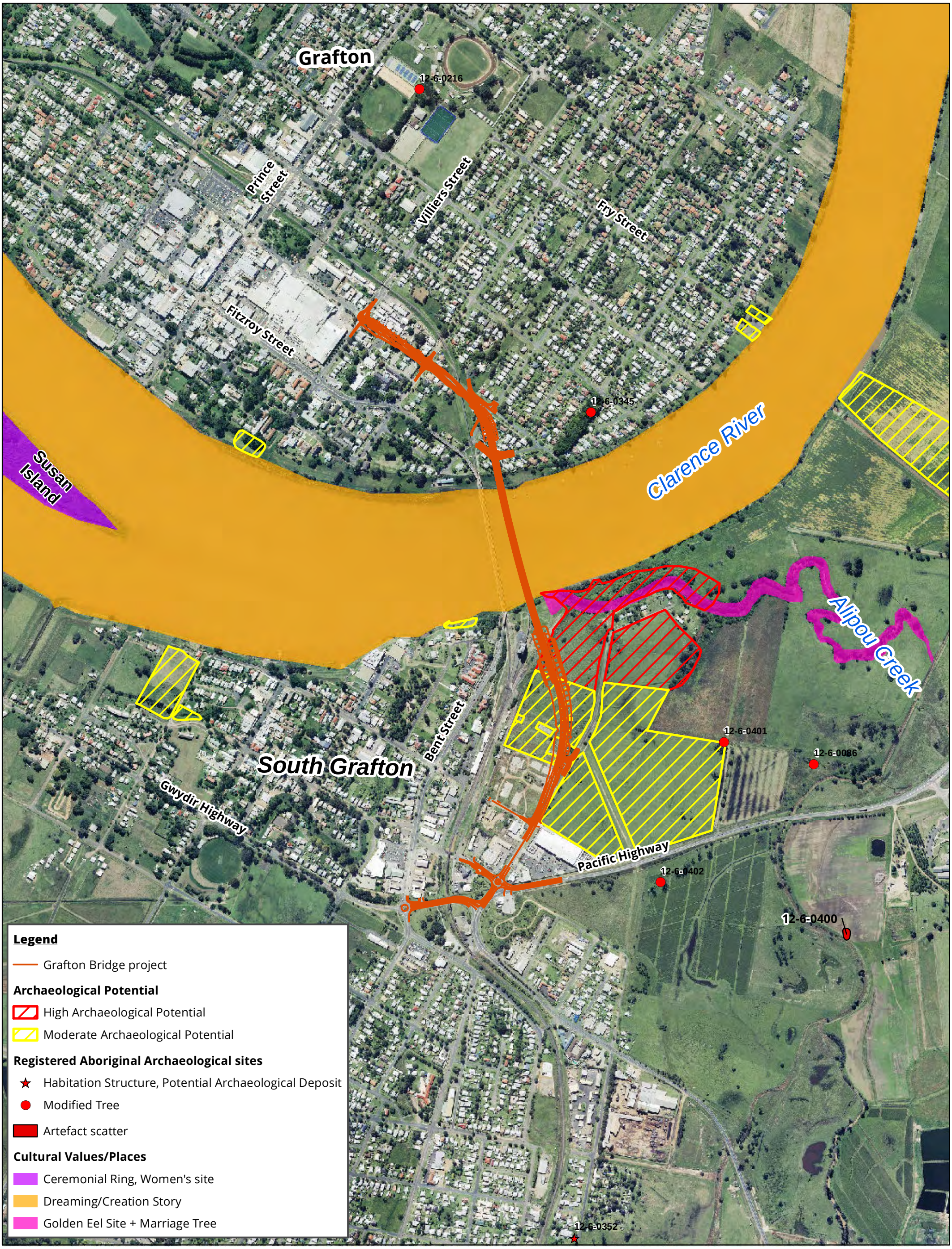

Figure 5: Areas of Aboriginal archaeological potential defined during the field surveys

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Acknowledgements: Imagery provided by Arup

Matter: 16256
Date: 27 June 2013,
Checked by: ASF, Drawn by: JMS, Last edited by: jshepherd
Location:P:\16200s\16256\Mapping\
16256_F5_AbArchPotential

0 100 200 300 400 500
Metres
Scale 1:10,000 @ A3
Coordinate System: GDA 1994 MGA Zone 56
N

3 Assessment Methodology

As part of the specialist studies to be undertaken for the Environmental Impact Statement, an assessment of impacts on Aboriginal heritage including cultural and archaeological significance will be conducted to support the Part 5.1 project application. The assessment methodology aims to identify the nature, extent and significance of any Aboriginal cultural heritage values that may be present within the Project Area. The archaeological methodology proposed below has been devised in light of these requirements and the results of the *Main Road 83 Summerland Way-Additional Crossing of the Clarence River at Grafton, Preliminary Route Options Report: Technical Paper: Aboriginal Heritage* (RMS, January 2012) and the *Main Road 83 Summerland Way-Additional Crossing of the Clarence River at Grafton: Route Options Development Report Technical Paper – Aboriginal Heritage* (RMS, August 2012). This methodology will be forwarded to the Grafton-Ngerrie LALC for comment and comments received will be incorporated into the methodology. A table showing the relationship of the consultation and assessment process is provided on Page 26.

3.1 Aboriginal Community Consultation

To date, Aboriginal community consultation has been undertaken following the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW) and in accordance with RMS (Roads and Maritime Service, then RTA) *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (PACHCI). The consultation process for the entire project has been initiated and overseen by the RMS.

The Grafton-Ngerrie LALC was the only respondent and as such, will continue to be consulted as the primary stakeholder group for the current Project Proposal.

Further consultation with the Grafton-Ngerrie LALC will assist in identifying areas of Aboriginal cultural significance and appropriate management strategies.

Stage 1: Notification of project proposal and registration of interest

This stage determines those individuals or groups to be consulted for the project.

As RMS has already completed this part of the consultation process, no additional work will be required for this stage.

Stage 2: Presentation of information about the proposed project

This stage aims to provide information about the project to Grafton-Ngerrie LALC. The Grafton Bridge project is currently in this stage in the consultation process. Project information will be presented as an introduction to the Project Methodology as follows:

- Biosis, on behalf of RMS, will either present or provide information to Grafton-Ngerrie LALC on the project. This would include detailed documentation and mapping of the Grafton Bridge project. A record or consultation log of all communications should be kept by both Biosis and RMS. The log should include any agreed outcomes or any issues raised that may require further discussion. This should then be provided to all registered Aboriginal parties; and
- As the project site has already been assessed and visited by various members of the Grafton-Ngerrie LALC during previous project stages, no additional site visits or on-site meetings will be required at this stage.

Stage 3: Gathering information about cultural significance

This stage involves providing a methodology for the proposed cultural heritage investigations, consultation program, providing results of field assessment to date, along with gathering information about cultural values identified by registered Aboriginal parties during the investigation process.

The following activities will be undertaken:

- Biosis will provide the details of the proposed works, proposed continuation of the consultation methodology and a summary of previous regional work in the form of an Aboriginal Heritage Methodology Information Pack to Grafton-Ngerrie LALC;
- In additional to the already identified Golden Eel Site, Biosis will seek Grafton-Ngerrie LALC to identify any Aboriginal objects or cultural value or places of cultural value within or in close proximity to the Project Area; and
- Grafton-Ngerrie LALC must be given a period of **28 days** to review the methodology and provide feedback to Biosis. However, Grafton-Ngerrie LALC may provide feedback before the 28 day review period is finished.

Stage 4: Aboriginal Cultural Heritage Assessment Report (ACHAR)

This stage would involve the completion of an ACHAR that details all field investigations and results, including mapping, undertaken for the project to date. This information will be summarised by the findings of both the *Main Road 83 Summerland Way-Additional Crossing of the Clarence River at Grafton, Preliminary Route Options Report: Technical Paper: Aboriginal Heritage* (RMS, January 2012) and the *Main Road 83 Summerland Way-Additional Crossing of the Clarence River at Grafton: Route Options Development Report Technical Paper – Aboriginal Heritage* (RMS, August 2012).

- Following the completion of all required archaeological and cultural heritage work, a meeting to discuss the findings and proposed mitigation and management recommendations should be held between RMS and Grafton-Ngerrie LALC. All comments and concerns would be considered and incorporated into the Final ACHAR.
- Biosis will complete a DRAFT ACHAR outlining the findings of the field surveys, assessments of significance, feedback from the Grafton-Ngerrie LALC during the assessment and recommendations for the management of Aboriginal heritage;
- Once completed, the DRAFT ACHAR will be provided to Grafton-Ngerrie LALC for comment – RMS must allow **28 days** for comment; and
- The ACHAR would then be finalised by Biosis and include all comments and correspondence sent and received regarding the project as an Appendix to the completed ACHAR.

Assessment Process	
Aboriginal Consultation Stages	**Actions**
Stage 1 Notification of Project Proposal and Registration of interest	Stage 1 consultation has been completed by RMS
Stage 2 Presentation of information about the proposed project	Project information will be provided to the Grafton-Ngerrie LALC as part of the Aboriginal Heritage Methodology Pack.
Stage 3 Gathering information about cultural significance	**Aboriginal Heritage Methodology Pack** Provision of the Aboriginal Heritage Methodology Pack to Grafton-Ngerrie LALC for review. Grafton-Ngerrie LALC must be given a period of **28 days** to review the methodology and provide feedback to Biosis. However, Grafton-Ngerrie LALC may provide feedback before the 28 day review period is finished.
	Archaeological Survey Targeted survey of the Project Area with Grafton-Ngerrie LALC representatives. Biosis will seek Grafton-Ngerrie LALC to identify any Aboriginal objects or cultural value or places of cultural value within or in close proximity to the Project Area.
	Sub Surface Testing Archaeological test excavation with Grafton-Ngerrie LALC representatives, in areas of Aboriginal archaeological potential identified in the Project Area during previous surveys.
	Geotechnical Testing Pending the results of the archaeological survey and test excavations, Aboriginal heritage clearance works may be undertaken during geotechnical testing.
Stage 4 Review of draft cultural heritage assessment report	**Draft ACHA Report** Biosis will complete a draft ACHAR outlining the findings of the field surveys, assessments of significance, feedback from the Grafton-Ngerrie LALC during the assessment and recommendations for the management of Aboriginal heritage. Once completed, the draft ACHAR will be provided to Grafton-Ngerrie LALC, and **28** days will be provided for comment.
	Final ACHA Report All comments and responses to the review will be documented in the final ACHA report.

3.2 Archaeological Survey

3.2.1 Aims of the Survey

The aims of the survey are to:

- Provide the registered Aboriginal parties an opportunity to view the Project Area and to discuss previously identified Aboriginal objects and places in or within close proximity to the Project Area;
- To undertake a systematic survey of the Project Area targeting areas with the potential for Aboriginal heritage that have not been previously surveyed and site testing locations;
- Identify and record Aboriginal archaeological sites visible on the ground surface; and,
- Identify and record areas of potential archaeological deposits (PADs).

3.2.2 Survey Methodology

The survey methods are intended to assess and understand the landforms and to determine whether any archaeological material from Aboriginal occupation or landuse exists within the Project Area. Identification of natural soil deposits within the Project Area will be undertaken if possible. Photographs and recording techniques will be incorporated into the survey including representative photographs of survey units, landforms, vegetation coverage, ground surface visibility and the recording of soil information for each survey unit. Any Aboriginal objects observed during the survey will be documented and photographed. Since this is purely a survey no artefacts are to be removed from the site.

Recording during the survey will follow the guidelines of the OEH, in particular the *Code of Practice for Archaeological Investigation of Aboriginal objects in New South Wales* (DECCW 2010).

Information that will be recorded during the survey will include:

- Aboriginal objects or sites present in the study area during the survey;
- Survey coverage;
- Any resources that may have potentially have been exploited by Aboriginal people;
- Landforms;
- Photographs of the site indicating landforms;
- Evidence of disturbance; and,
- Aboriginal artefacts, culturally modified trees or any other Aboriginal sites.

Distinguishing landform elements and their association with Aboriginal cultural heritage will assist with the identification of site patterning, though with the awareness of the following limitations:

- The degree of ground surface visibility (GSV) and amount of exposed areas can significantly bias the discovery of surface artefacts; and,
- Cultural material exposed on the surface is not necessarily representative of the potential extent of the site (either horizontally or vertically).

Information about the presence of potentially exploitable resources helps contribute to predictions of the Aboriginal sites that may occur within the Project Area. Information about GSV, disturbance and areas of exposures help to provide a general indication of the effectiveness of the survey for identifying Aboriginal cultural heritage exposed to the surface. Observable disturbances are also considered when assessing the

integrity of known or potential sites for an area. The location of Aboriginal cultural heritage and points marking the boundary of the landform elements will be recorded using a hand-held Global Positioning System and the Map Grid of Australia (94) coordinate system.

3.3 Sub Surface Investigations

Areas of Aboriginal archaeological potential were identified in the Project Area during previous surveys and the preferred option route alignment will not avoid impacts to these areas. Sub surface investigations will be undertaken to determine the extent, nature and significance of any potential Aboriginal cultural material in these areas. It is proposed to excavate three 1m by 2m test trenches in areas of archaeological potential in the Project Area. The locations of these proposed test trenches are shown Figure 6. Two test trenches will be focused within the area identified as being high potential and one additional test trench will be excavated within the area of moderate potential.

The proposed sub-surface investigation methodology is informed by the *Code of Practice for Archaeological Investigation of Aboriginal objects in New South Wales* (DECCW 2010) and will be undertaken by hand in the following manner:

- Each 1m x 2m test trench will be excavated in 50cm by 50cm units and in 5cm spits;
- All test excavation locations will be excavated using hand tools only;
- All material excavated from each test location will be sieved using a 5 mm aperture wire-mesh sieve;
- All test excavation locations will be excavated to a culturally sterile layer; and,
- Records of each test excavation location will be undertaken which will include the following:
  - unique test pit identification number;
  - soil colour and texture;
  - amount and location of artefacts within deposit;
  - nature of disturbance if present;
  - stratigraphy;
  - archaeological features (if present);
  - photographic records; and,
  - spit records.

For safety reasons all test pits will be backfilled with sieved spoil at the end of the excavation to ensure a level surface within the study area. Depending on the results of hand excavation, requirements for mechanical excavation may be discussed.

Prior to sub-surface investigations taking place, the final sub-surface investigation methodology incorporating all comments, would be forwarded to them for their records.

3.4 Geotechnical Testing

It is understood that geotechnical investigations will need to be undertaken to inform the Project design and ACHA impact assessment process. If following sub surface testing it is determined Aboriginal cultural material is likely to be impacted by geotechnical testing then a clearance program may be required if

geotechnical testing locations are likely to cause harm and are unable to be relocated. The methodology of a clearance program will be informed by the results of sub surface testing and the nature of geomorphological testing to be undertaken. Tasks that may be undertaken in a clearance program may include:

- Targeted surface survey and collection of cultural material;
- Targeted sub surface investigations at geotechnical testing locations, which may include:
  - Manual hand auger probes at borehole locations;
  - Manual test trench excavation at geopitting locations;
  - Mechanical trench excavation at geopitting locations; and/or
  - Mechanical sieving of geopitting works.

If sub surface testing indicates that Aboriginal cultural material is unlikely to be impacted by geotechnical testing then further heritage works will not be required.

3.5 Aboriginal Cultural Heritage Assessment Report

Biosis Research will prepare an ACHA and an Archaeological Assessment report for the proposed development. As per current ACHA reporting requirements, the archaeological report will be prepared as separate appendix to the ACHA. The main aims of the reports are to document the assessment of potential development related impacts to Aboriginal cultural heritage and to formulate strategies to manage these impacts. Reporting will follow the guidelines of the OEH, in particular the *Code of Practice for the Protection of Aboriginal Objects in New South Wales 2010* and the Consultation Guidelines 2010.

The reports will contain:

- Aboriginal Consultation Process;
- Environmental Context;
- Aboriginal Archaeological Context;
- Survey Results;
- Aboriginal Site Significance Assessment;
- Impact Assessment;
- Management Strategies; and
- Mapping.

Strategies to manage development related impacts to Aboriginal cultural heritage will be formulated through consultation with the Aboriginal parties (DECCW 2010: 1-2, 7, also see 15). The development of these strategies will be principally based on the significance of this heritage, particularly, its cultural and archaeological (scientific) value (DECCW 2010: 13).

As a starting point, Biosis will develop preliminary strategies based on the archaeological (significance) of cultural heritage relevant to the Project. These strategies will also be influenced by:

- predicted impacts to Aboriginal cultural heritage;
- planning approvals framework;
- current best conservation practice; and the ethos of the Australia ICOMOS Burra Charter.

These strategies will be presented to the Grafton-Ngerrie LALC in the draft ACHA report and their comments sought. Proposed modifications or further strategies are to be provided by the Grafton-Ngerrie LALC's respective nominated spokesperson(s).

The registered Aboriginal parties will be provided with the draft ACHA report and their comments sought as per Stage 4 consultation requirements. Comments on the report's content are to be provided to RMS/Biosis by Grafton-Ngerrie LALC in writing. All comments not provided in writing will be recorded in a logbook by RMS and Biosis. All suggestions will be documented and described as they were understood by RMS/Biosis in the final ACHA report (DECCW 2010:6). In the final ACHA report, Biosis will also explain how suggestions were considered and/ or implemented in the finalisation of the management plan (DECCW 2010:6).

These comments and responses to these comments will be documented in the final ACHA report. RMS will consider and respond to all comments and will also explain how suggestions concerning management strategies were considered and/or implemented in the finalisation of the management plan (DECCW 2010: 6).

3.5.1 Final ACHA Report

The final ACHA report will be provided to Grafton-Ngerrie LALC, OEH and RMS.

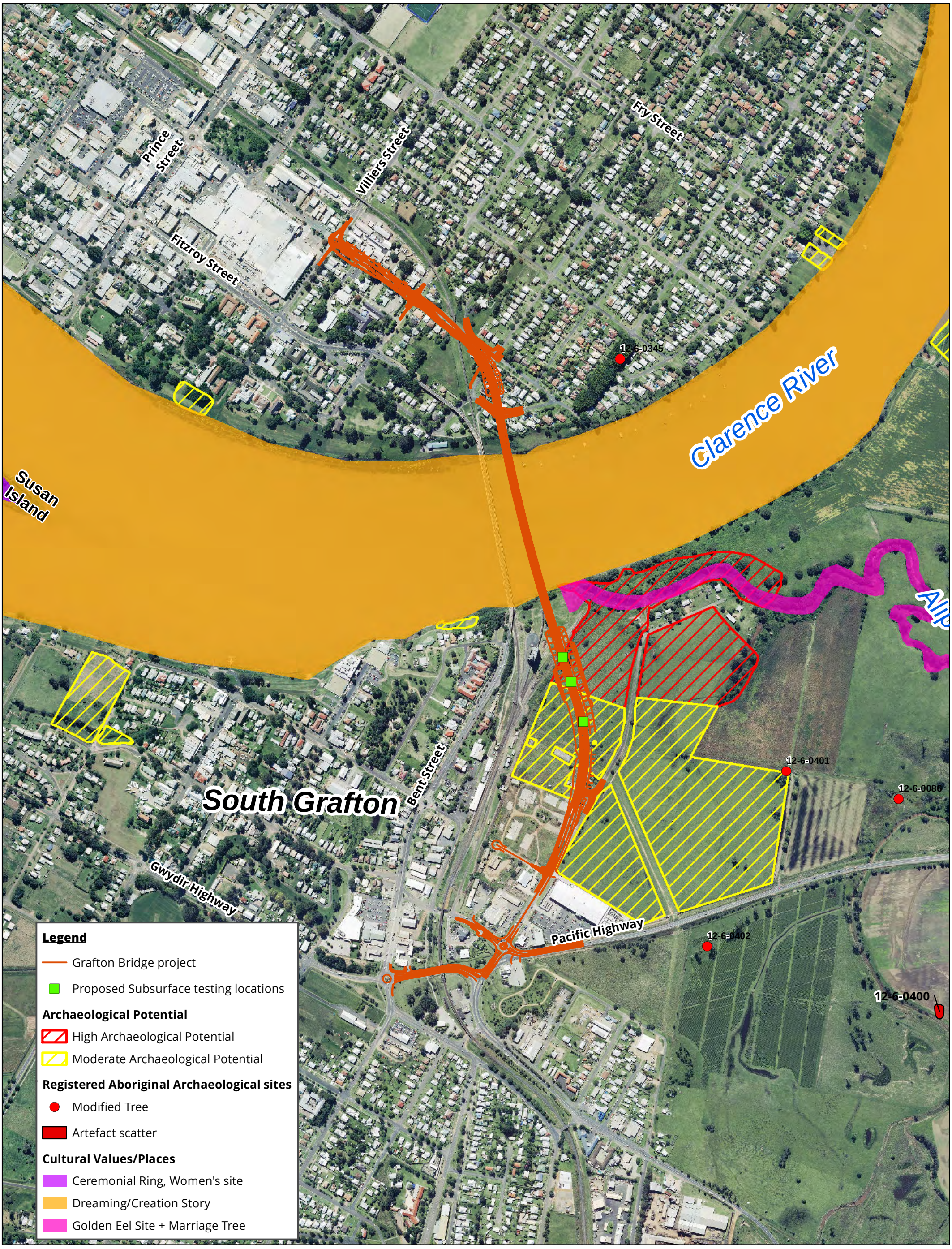

Figure 6: Proposed Sub Surface Testing Locations

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Acknowledgements: Imagery provided by Arup

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Appendix 5 - Archaeological Assessment

Additional crossing of the Clarence River at Grafton:

Archaeological Assessment

Final

Prepared for Arup

04 August 2014

Biosis offices

AUSTRALIAN CAPITAL TERRITORY

Canberra
Floor 1, Unit 3, 38 Essington Street
Mitchell ACT 2911

Phone: (02) 6241 2333
Fax: (03) 9646 9242
Email: canberra@biosis.com.au

NEW SOUTH WALES

Sydney
Unit 14, 17-27 Power Avenue
Alexandria NSW 2015

Phone: (02) 9690 2777
Fax: (02) 9690 2577
Email: sydney@biosis.com.au

Wollongong
8 Tate Street
Wollongong NSW 2500

Phone: (02) 4229 5222
Fax: (02) 4229 5500
Email: wollongong@biosis.com.au

QUEENSLAND

Brisbane
Suite 4 First Floor, 72 Wickham Street
Fortitude Valley QLD 4006

Phone: (07) 3831 7400
Fax: (07) 3831 7411
Email: brisbane@biosis.com.au

VICTORIA

Ballarat
506 Macarthur Street
Ballarat VIC 3350

Phone: (03) 5331 7000
Fax: (03) 5331 7033
Email: ballarat@biosis.com.au

Melbourne (Head Office)
38 Bertie Street
Port Melbourne VIC 3207

Phone: (03) 9646 9499
Fax: (03) 9646 9242
Email: melbourne@biosis.com.au

Wangaratta
16 Templeton Street
Wangaratta VIC 3677

Phone: (03) 5721 9453
Fax: (03) 5721 9454
Email: wangaratta@biosis.com.au

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- Aileen Roberts - Grafton Ngerrie Local Aboriginal Land Council

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- Office of Environment and Heritage
- National Native Title Tribunal

Client

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- Vicky Sisson - Arup
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Abbreviations

Abbreviation	Meaning
ACHAR	Aboriginal Cultural Heritage Assessment Report
AGD	Australian Geodetic Datum
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
c.	Circa
cm	Centimetre
DEC	Department of Environment and Conservation
DECC	Department of Environment and Climate Change
DECCW	Department of Environment, Climate Change and Water
DGR's	Director Generals Environmental Assessment Requirements
PI	Planning and Infrastructure
EIS	Environmental impact statement
EP&A Act	*Environmental Planning and Assessment Act 1979*
ICOMOS	International Council on Monuments and Sites
km	Kilometre
LALC	Local Aboriginal Land Council
LGA	Local Government Authority
m	Metres
NPWS	National Parks and Wildlife Service
NSW	New South Wales
OEH	Office of Environment and Heritage
Roads and Maritime	Roads and Maritime Services

Abbreviation	Meaning
RTA	Roads and Traffic Authority (now Roads and Maritime)
SSI	State Significant Infrastructure

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Executive summary

Roads and Maritime Services (Roads and Maritime) is seeking approval for an additional crossing of the Clarence River at Grafton (Figure 1 and Figure 2) to address short-term and long-term transport needs. Arup (on behalf of Roads and Maritime) has engaged Biosis Pty Ltd to undertake an Aboriginal archaeological investigation. This Archaeological Assessment has been prepared as an appendix to the Aboriginal Cultural Heritage Assessment Report (ACHAR) and details the results of the archaeological investigation of Aboriginal heritage in the study area.

Archaeological investigations

As part of the route options development, field surveys were carried out in 2010 and 2012. The objective of these surveys was to locate archaeological sites within and surrounding the route options being investigated, which included the current study area. An assessment for Aboriginal archaeology potential was then undertaken across different landforms within the Grafton and South Grafton areas. A number of areas of high, moderate and low archaeological potential were identified, including areas of high and moderate potential south of the Clarence River located in the study area.

An archaeological survey of areas of high and moderate potential in the project area south of the Clarence River was then undertaken in 2013. Archaeological survey of potential flood mitigation works near Carrs Creek Camp (12-3-0338) was also undertaken in 2014. The 2013 and 2014 survey effort did not include all of the study area, but built on the results of the 2010 and 2012 survey efforts. As such, areas assessed as having low potential for Aboriginal archaeology potential during the 2010 and 2012 archaeological surveys were not resurveyed as part of this assessment. The survey was hampered by poor ground surface visibility due to thick grass cover, with ground surface visibility being less than 5 % and limited exposures meaning that the overall effective survey coverage was very limited.

During the 2013 survey south of the Clarence River, two Aboriginal sandstone artefacts, a retouched cobble (nuclear tool) and a grinding stone, were identified in an exposure at the base of a tree located 50 m south of Alipou Creek (designated Alipou Creek AS 1), however these artefacts are located outside the project area. No other Aboriginal cultural material was identified during either the 2013 or 2014 surveys.

Archaeological excavation to investigate areas of moderate and high archaeological potential within the project area was undertaken in October 2013. Three 1 m x 2 m test trenches were excavated within the southern flood plain surrounding the Clarence River; two in an area of high potential closer to the Clarence River and Alipou Creek and one in an area of moderate potential further away from the Clarence River. No sub surface Aboriginal cultural material was encountered during excavations.

Coal cinders were detected at Test Trench 1 and 2. These are most likely the result of burnt coal ash and cinders being spread from steam locomotives from the former railway siding to the north. The presence of coal cinders to a depth of 25 cm would indicate that some mixing of surface soils has occurred, and is most likely the result of ploughing and cropping. While ploughing is likely to have disturbed any Aboriginal material it is unlikely to have removed it. The lack of cultural material at Test Trench 1, 2 or 3 may indicate that camping and other past Aboriginal activities likely to leave material remains were occurring in closer proximity to waterways. In this instance, areas closer to the Clarence River have been heavily impacted by extensive historical rail, maritime and urban development to the north and are considered to have very low Aboriginal archaeological potential.

The project area includes the Golden Eel site (12-6-0326), a ceremonial and dreaming with cultural values associated with the Clarence River and Alipou Creek. Archaeological survey and excavation has not identified any archaeological values associated with the Golden Eel site in the study area. Cultural values identified during archaeological survey and consultations with the Aboriginal community are discussed in the ACHAR.

Activities associated with the bridge building and road upgrade activities would be expected to impact on soil surfaces and potentially harm Aboriginal material if it is present. However no Aboriginal archaeological sites have been identified during the investigations and the project area has been identified as having low Aboriginal archaeological potential. As such no harm to identified Aboriginal archaeological sites has been identified and the potential of construction activities to harm unidentified Aboriginal cultural material is considered to be low. There is one Aboriginal archaeological site, Alipou Creek AS 1, which is located within 150 m of the project area and is potentially at risk from accidental harm. The accidental harm risk to Alipou Creek AS 1 would be managed through appropriate avoidance strategies.

Recommendations

Strategies have been developed based on the archaeological significance of cultural heritage relevant to the study area and have been influenced by:

- Predicted impacts to Aboriginal cultural heritage;
- The planning approvals framework;
- Current best conservation practise, widely considered to include:
  - Ethos of the Australia ICOMOS Burra Charter
  - The *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010).

Prior to any works occurring within the study area, the following is recommended:

Recommendation 1: Aboriginal Cultural Heritage Induction

The project site induction will incorporate Aboriginal culture awareness training for all relevant staff and contractors. This induction will include information about the Aboriginal culture and history of the locality, the location of sites and items that require protection, heritage management measures and protocols, and legal obligations. This training will be developed in consultation with the Grafton Ngerrie Local Aboriginal Land Council and provided prior to commencing work on-site.

Recommendation 2: Known Aboriginal objects and Places

Aboriginal sites located in close proximity to the project construction work zone will be designated ‘no-go’ areas which would be clearly identified and appropriately fenced to prevent access or damage during construction.

Recommendation 3: Discovery of Unanticipated Aboriginal Cultural Material and Human Remains

In the event that unexpected Aboriginal cultural material or skeletal remains are encountered, the Roads and Maritime *Standard Management Procedure for Unexpected Archaeological Finds* (2012) should be implemented.

1 Introduction

1.1 Project background

Roads and Maritime Services (Roads and Maritime) is seeking approval for an additional crossing of the Clarence River at Grafton, NSW (Figure 1) to address short term and long term transport needs. The Grafton Bridge project will be assessed against Part 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) as a State Significant Infrastructure (SSI) project. Biosis Pty Ltd was commissioned by Roads and Maritime to undertake an Aboriginal archaeological investigation of the study area.

The existing bridge, built in 1932, is the only crossing of the Clarence River in the Grafton area. Peak hour traffic flows across the bridge are at, or very close to, the practical capacity of the bridge. Traffic congestion associated with the bridge, and the resultant delays, are affecting the efficiency of Summerland Way and the Grafton road network. RMS forecasts that this traffic congestion will worsen over time, and substantially affect the performance of the state and local road network. There, the project would involve:

- Building a new bridge about 70 m downstream of the existing bridge (which would be retained)
- Upgrading parts of the road network in Grafton and South Grafton to connect the new bridge to the existing road network
- The project would also include ancillary works, structures and facilities required for the purposes of the project.

This Archaeological Assessment has been prepared as an appendix to the Aboriginal Cultural Heritage Assessment Report (ACHAR) and details the results of the archaeological investigation of Aboriginal heritage in the study area. The archaeological investigation has been undertaken in accordance with the:

- Director Generals Environmental Assessment Requirement's for the Project
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) ('the Code')
- *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010)
- *Procedure for Aboriginal cultural heritage consultation and investigation* (Roads and Maritime 2011).

The Code has been developed to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the *National Parks and Wildlife Act 1974* (NSW).

1.2 Study area and project area

This report refers to the study area and the project area. The study area covers all areas of Grafton and South Grafton in the Clarence Valley Council, local government area (LGA), that have been considered for all project options for this and previous heritage reports for the project. The study area is located on the NSW Mid North Coast, about 610 km north of Sydney (Figure 1 and Figure 2).

The project area (Figure 2) encompasses the discrete project footprint based on the April 2014 design that includes all works during operation and construction, including:

- Operational road boundary
- Permanent ancillary elements such as operational detention basin and pump station in Grafton

- Construction work zone, which includes temporary facilities such as South Grafton ancillary site, Pound Street ancillary site and the jetty for barge launching
- Flood mitigation works construction zone, which includes temporary stockpile areas.

1.3 Study requirements

The Grafton Bridge project will be assessed against Part 5.1 of the EP&A Act as a SSI project. Relevant legislation and planning instruments that will inform this assessment include:

- *State Environmental Planning Policy* (State and Regional Development) 2011
- *Environmental Planning and Assessment Regulation 2000*
- *National Parks and Wildlife Act 1974* (NSW)
- *National Parks and Wildlife Amendment Act 2010* (NSW)
- *Clarence Valley Local Environmental Plan 2011*.

Director General Requirement's (DGR's) for the project were issued on the 3 October 2013 (SSI Application 13-6103) and detailed requirements for an environmental impact statement (EIS) to be completed. The DGR's identified heritage as a key issue for the EIS to address and presented the following requirements specific to Aboriginal heritage investigations (iv-v):

DGR Requirement	Addressed
An assessment of impacts to Aboriginal heritage (including cultural and archaeological significance), in particular impacts to Aboriginal objects and potential archaeological deposits (PAD), should be assessed. Where impacts are identified, the assessment shall:	
Outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the measures) generally consistent with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005);	See ACHAR Section 6.
Be undertaken by a suitably qualified heritage consultant(s);	See ACHAR Section 1.5
Demonstrate effective consultation with Aboriginal communities in determining and assessing impacts and developing and selecting options and mitigation measures (including the final proposed measures);	See ACHAR Section 4
Assess and document the archaeological and cultural significance of cultural heritage values of affected sites; and	See ACHAR Section 5. Within this report, see Section 7.
Develop an appropriate assessment methodology, including research design, in consultation with the Department and the Office of Environment and Heritage, to guide physical archaeological test excavations of the sites and areas of PAD identified in a manner that	See ACHAR Appendix 4

DGR Requirement	Addressed
establishes the full spatial extent and significance of any archaeological evidence across each site/area of PAD, and include the results of these excavations.	

In accordance with the DGR's, this Archaeological Assessment has been undertaken in accordance with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (Department of Environment and Conservation, 2005), assesses and documents the archaeological significance of Aboriginal heritage within the study area; assesses potential impacts to Aboriginal heritage archaeological values; and outlines mitigation and management measures. Archaeological test excavation strategies and methodology are also detailed in in Section 5 of this report and in Appendix 4 of the ACHAR. Details of Aboriginal heritage cultural vales and consultation are detailed in the Aboriginal Cultural Heritage Assessment Report, to which this Archaeological Assessment is amended.

1.4 Assessment objectives

The current assessment follows on from previous heritage studies commissioned for the project by Roads and Maritime, which have been documented in the following reports:

- *Main Road 83 Summerland Way-Additional Crossing of the Clarence River at Grafton: Preliminary Route Options Report, Technical Paper: Aboriginal Heritage* (Biosis Research, 2011)
- *Main Road 83 Summerland Way-Additional Crossing of the Clarence River at Grafton - Route Options Development Report - Technical Paper: Aboriginal Heritage* (Biosis Research, 2012).

These previous assessments have included desktop assessments and archaeological field surveys conducted in consultation with the Grafton Ngerrie LALC in the study area. Building on this previous research, the main objectives of this assessment is to:

- Identify and consult with any registered Aboriginal stakeholders
- Conduct background research in order to recognise any identifiable trends in site distribution and location
- Search statutory and non-statutory registers and planning instruments to identify listed Aboriginal cultural heritage sites within the study area
- Highlight environmental information considered relevant to past Aboriginal occupation of the locality and associated land use and the identification and integrity/preservation of Aboriginal sites
- Summarise past Aboriginal occupation in the locality of the study area using ethnohistory and the archaeological record
- Formulate a model to broadly predict the type and character of Aboriginal sites likely to exist throughout the study area, their location, frequency and integrity
- Conduct a field survey and test excavations of the study area to locate unrecorded or previously recorded Aboriginal sites and to further assess the archaeological potential of the study area
- Assess the significance of any known Aboriginal sites in consultation with the Aboriginal community
- Identify the impacts of the proposed project on any known or potential Aboriginal sites within the study area
- Recommend strategies for the management of Aboriginal cultural heritage within the context of the proposed project.

1.5 Investigators and contributors

The roles, previous experience and qualifications of the Biosis project team involved in the preparation of this Archaeological Assessment are described below in Table 1.

Table 1: Investigators and contributors

Melanie Thomson	**BSc(Hons)**	**12 years experience**
Melanie has over 12 years experience as an archaeologist, with application to cultural heritage management for various projects throughout Queensland, New South Wales and Victoria. Melanie has acquired extensive experience working as a consulting archaeologist for Biosis over the past five years as both a project archaeologist and project manager. During this time, she has developed skills in both Aboriginal and historical archaeological research, survey, excavation, monitoring, and reporting. She also has technical skills to undertake the analysis of Aboriginal stone tools and historical artefacts. Melanie specialises in assessing the Social Value of Cultural Landscapes in association with Aboriginal and Historical sites. Melanie has authored and / or co-authored over 180 consultant reports.		Project Roles • Technical Review. • Project Methodology.
Alexander Beben	**MA, BA (Hons)**	**7 years experience**
Alexander Beben is a Senior Archaeologist with Biosis in the Wollongong office. Alex has seven years archaeological experience and has conducted over 80 heritage projects across Australia and internationally in the UK and Italy. Alex has primarily undertaken projects on the east coast in New South Wales and Victoria and has a detailed understanding of the heritage values within the Illawarra, Sydney Basin, Cumberland Plain, Hunter Valley and rural areas such as Northern, Central West and Southern NSW. He has extensive experience in the successful completion of Aboriginal and Historical assessments, archaeological surveys, excavations, permits and management plans. He has operated as the heritage consultant within large multidisciplinary teams tasked with delivering Environmental Impact Assessments (EIAs) under the NSW *Environmental Planning and Assessment Act* 1979 (EP&A Act) and Commonwealth projects under the *Environment Protection and Biodiversity Act 1999* (EPBC Act).		Project Roles • Lead cultural heritage advisor. • Archaeological survey leader. • Archaeological excavation leader. • Aboriginal community consultation. • Preparation of the report. • Technical Review.
Asher Ford	**BA (Hons)**	**6 years experience**
Asher is a Consultant Archaeologist with Biosis. Asher has over six years experience as a consultant archaeologist, with application to cultural heritage management for various projects throughout Victoria, New South Wales and South Australia. His skills include Aboriginal and non-Aboriginal archaeological assessments, Aboriginal and historical site recording, survey, sub surface testing and excavation, project research, geographic information systems (GIS), graphics and report writing. Asher has technical experience in recording artefact scatters, scarred trees, middens, axe grinding grooves, rock shelters, art sites and stone features across a range of Australian environments including the Victorian Western Volcanic Plains, Gippsland, Victorian High Country, Murray River, the NSW Southern Tablelands, Cumberland Plains, Illawarra region, Hunter Valley, and the Woomera Prohibited Area. Asher has authored and / or co-authored over 30 consultant reports.		Project Roles • Project Methodology. • Preparation of the report.

Melanie Thomson	BSc(Hons)	12 years experience
Ana Jakovljevic	**BA (PostGrad Dip)**	**6 years experience**
Ana Jakovljevic has over 6 years experience as an archaeologist that includes archaeological surveys and excavations, documentation and analysis of cultural material and cultural heritage site assessments. Her skills also include site significance assessments and preparing cultural heritage management plans. Ana also has extensive experience during the construction phase of projects implementing recommendations set out as cultural heritage requirements. Working extensively on monitoring programs, Ana has developed excellent technical skills in baseline recording and impact assessments of Aboriginal shelter and grinding grooves sites. She has also worked on, and has extensive technical skills in, shell midden excavations and analysis. Ana has also authored and co-authored numerous cultural heritage assessment reports, archaeological reports and due diligence assessments.		Project Roles • Archaeological excavation. • Archaeological survey.

1.6 Limitations

It should be noted that due to the nature of the project, a proportion of the project area was not accessible and/or not yet identified through earlier design in order to undertake surveys, namely some of the indicative ancillary site locations associated with flood mitigation works and large portions of the flood mitigation works (Figure 1). Flood mitigation works have not been surveyed on the basis that these works would be expected to impact on soil surfaces of existing flood levee structures only and thus present a very low risk of harm to Aboriginal heritage. An Aboriginal risk assessment for the ancillary stockpile sites has been undertaken through an AHIMS search by the project team only, as directed by Roads and Maritime. The Aboriginal risk assessment has concluded that the ancillary stockpile sites have a low potential for impacts to Aboriginal heritage and no further assessment of these areas has been undertaken.

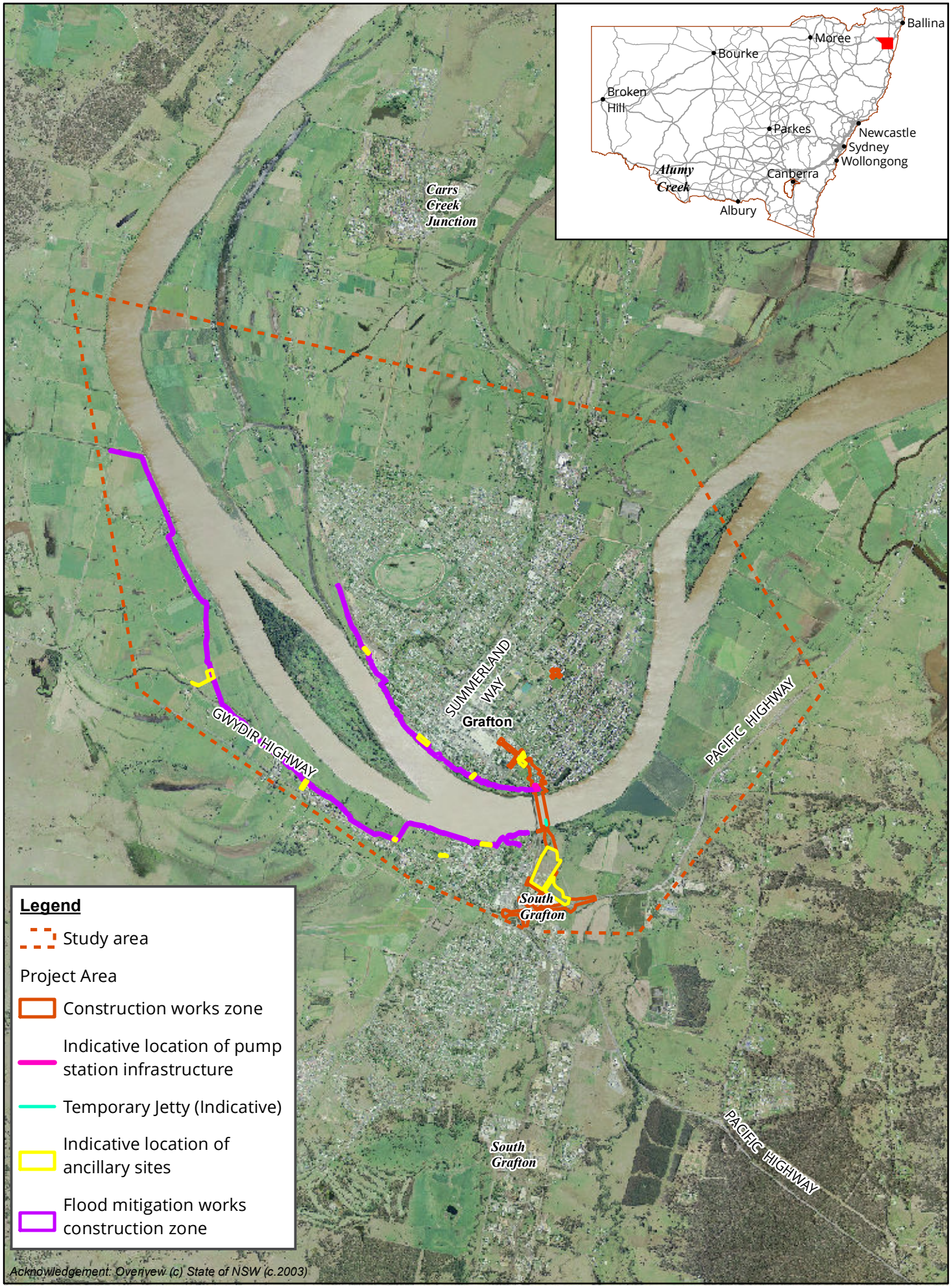

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Figure 1: Location of the project area in a regional context

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Figure 2: Aerial of the project area

Biosis Pty Ltd
Ballarat, Brisbane, Canberra, Melbourne, Sydney, Wangaratta & Wollongong

Acknowledgements: Imagery provided by Arup

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2 The Project

The main components of the Grafton Bridge project are:

- Construction of a new bridge over the Clarence River about 70 metres downstream (east) of the existing road and rail bridge, comprising two traffic lanes
- Construction of a new road to link the new bridge with Iolanthe Street in South Grafton
- Construction of a new road to link the new bridge with Pound Street in Grafton
- An approach viaduct, about 58 metres long, on the South Grafton side of the Clarence River and 29 metres long on the Grafton side.
- Upgrades to the road network in South Grafton to connect the new bridge to the existing road network, including:

– Widening Iolanthe Street to four lanes

– Widening the Gwydir Highway to four lanes between Bent Street and the Pacific Highway

– Realigning the existing Pacific Highway to join Iolanthe Street near Through Street

– Providing a new roundabout at the intersection of the Pacific Highway and Gwydir Highway

– Providing a new roundabout at the intersection of Through Street and Iolanthe Street

– Limiting Spring Street and the Old Pacific Highway to left in and left out only where they meet Iolanthe Street

– Realigning Butters Lane

- Upgrades to the road network in Grafton to connect the new bridge to the existing road network, including:

– Widening Pound Street to four lanes between Villiers Street and the approach to the new bridge

– Providing traffic signals at the intersection at Pound Street and Clarence Street

– Closing Kent Street where it is crossed by the bridge approach road

– Realigning and lowering Greaves Street beneath the new bridge

– Realigning Bridge Street to join directly to the southern part of Pound Street (east of the new bridge approach). There would be no direct connection between Pound Street south and the new bridge approach

– Widening Clarence Street to provide formal car park spaces

– Minor modifications to the existing Dobie Street and Villiers Street roundabout.

- Replacement of the existing three span concrete arch rail viaduct which crosses Pound Street in Grafton with a single span steel truss bridge
- Construction of a pedestrian and cycle path to provide connectivity between Grafton, South Grafton and the new bridge
- Provision of two signalised pedestrian crossings in South Grafton to improve safety for pedestrians crossing Iolanthe Street and Gwydir Highway
- Construction of new pedestrian links to connect the new bridge with the existing bridge

- Provision of designated car park spaces in Pound Street and Clarence Street, including some off street parking, to maintain a similar number of existing car park spaces currently available in those two street
- Flood mitigation works, which include raising the height of sections of the existing levee upstream from the new bridge in Grafton and South Grafton
- Construction of a stormwater detention basin and pump station in Grafton to manage local flooding
- Public utilities adjustment
- Ancillary facilities required for the construction of the project, including some or all of the following: site compounds, concrete batching plant, pre-cast facilities, and stockpile areas for materials and temporary storage of spoil and mulch.

The main elements of the project are shown in Figure 3, including the construction footprint of the project.

Grafton

Prince Street

Villiers Street

Fry Street

Fitzroy Street

Clarence River

Susan Island

South Grafton

Gwydir Highway

Bent Street

Pacific Highway

Legend

- Current works design

Project Area

- Construction works zone
- Indicative location of pump station infrastructure
- Temporary Jetty (Indicative)
- Indicative location of ancillary sites
- Flood mitigation works construction zone

Figure 3: The project

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3 Desktop archaeological assessment

The desktop assessment is provided to give a context for the proposed survey and excavation methodology. It provides a summary of the information relevant to the current assessment of Aboriginal archaeological values of the study area.

Please note that names and photos of deceased Aboriginal persons have been removed from the public version of this report.

3.1 Environmental context

3.1.1 Geology and soils

Grafton lies at the south-eastern end of the geological feature known as the Clarence-Moreton Sedimentary Basin, which covers 16,000 km^2 of north-eastern NSW. Across this basin there has been widespread fluvial and lacustrine to paludal deposition. This deposition is recorded in the grey siltstone, thick banded coal horizons and fine to medium grained lithic sandstone. Although the sediments are non-marine in origin, the quartz dominated sandstone of the Clarence-Moreton Basin is similar to the Sydney Basin sandstones, which have numerous outcrops and overhang formations present (NSW Trade and Investment 2013).

In the south-east of the Clarence-Moreton Basin (where Grafton lies), an overlying layer of the erodible Grafton Formation remains creating an undulating land surface. The Grafton Formation is a fluvial to lacustrine claystone and sandstone unit. This formation overlies the coarser Kangaroo Creek Sandstones which are comprised of sandstone, siltstone, claystone and conglomerate. Both the Grafton and Kangaroo Creek geological units are Mesozoic sediments comprised largely of sandstone and sandstone derivatives (NPWS 2006) (Figure 4).

The geological processes that have contributed to the formation of the Grafton area have been largely the weathering of materials flowing down the Clarence River and deposited following flooding events to create the Clarence-Richmond alluvial floodplains. Landforms associated with the Clarence-Richmond alluvial plains include wide valleys, channels, floodplains, terraces and estuaries of the Clarence and Richmond Rivers, and other coastal streams on Quaternary alluvium, which have a general elevation of 0 – 50 m Australian Height Datum (AHD), with a local relief of 15 m. The alluvium in the Clarence River at Grafton is estimated to be about 40 m thick (Department of Primary Industries 1970). These alluvial soils (structure loams) are characterised as being deep brown earths and structured brown clays on floodplains. These soils are fertile having a high organic content and are generally not considered to have high erosion potential.

Soils within the Grafton and South Grafton area have been substantially disturbed through sub-urban, agricultural and industrial land uses. Severe floods in the 1940s and 1950s prompted the development of an extensive levee and drainage network to mitigate the effects of major flooding events. The levee system was completed in the 1970s with levees on both sides of the bank of the Clarence River extending across the floodplains in South Grafton.

Less disturbed portions of the Grafton and South Grafton area where topsoils remain at least partially intact include isolated patches of native vegetation that is typical floodplain vegetation of the lower Clarence River and Grafton.

3.1.2 Hydrology

The Clarence River catchment, covering an area of 22,700 km^2 is located in the Northern Rivers region of NSW (Department of Primary Industries Office of Water Website). The catchment extends from the NSW/Queensland border and Richmond Range in the north to the Doughboy Range/Dorrigo Plateau in the south and drains east from the Great Dividing Range to the river entrance adjacent to the townships of Yamba and Iluka. It is characterised by

upper tableland areas which fall away to a relatively large, flat coastal floodplain. Grafton and South Grafton are located within the upper reaches of the floodplain.

The Grafton and South Grafton area has a history of both droughts and floods. Since 1839 the Clarence River has experienced 78 moderate to major floods, the most recent flood events being occurring in 2013 when the river reached levels of 8.09 m AHD in January, 6.28 m AHD in February and 3.65 m AHD in March respectively at the Prince Street gauge in Grafton (Clarence Valley Council Website).

The flooding behavior of the Lower Clarence River floodplain in terms of peak flood levels and duration of inundation is dominated by the flow originating from upstream of Grafton due to the size of the catchment upstream relative to its various downstream tributary catchments. The flow typically contributes 80 – 90% of the total volume of floodwaters that enters the lower floodplains during main river flood events. Clarence River floods typically occur from low rainfall intensity events that last several days or even weeks.

Grafton has experienced frequent and significant flooding in the past. Levee bank construction and drainage improvement works have been progressively undertaken since around 1890 to help reduce the frequency of flooding. These works commenced with the construction of minor levees along low sections of the riverbank. It was not until the 1960s that a major program of levee construction at Grafton and South Grafton was initiated. Since that time, additional levee banks have been gradually constructed, or the height of existing levees increased, to further reduce the frequency of flooding. Today, Grafton is protected by natural high ground, the elevated railway embankment and a series of seven levees that surround the town.

The Grafton and South Grafton levees begin to overtop when flood levels are at, or close to, 8 m on the Prince Street gauge, which translates to about a 20-year average recurrence interval (ARI) flood event. Following overtopping, significant areas of Grafton and South Grafton are inundated by floodwater. Cyclical flooding events have the potential to impact on the survival of Aboriginal archaeological features. Strong floodwater movement can scour the river banks and terraces, effectively removing stone artefacts from in situ. It can also result in the deposition of flood sediments that bury and preserve archaeological material.

3.1.3 Climate

In general terms the climate in the Grafton region has two major seasonal influences. The first is the sub tropical high-pressure belt which occurs in winter and spring, and the second is the monsoonal cyclones and trade winds of summer and autumn. Bureau of Meteorology (2013) weather station records (Station 058130 – collected from Grafton Swimming Pool) show that more rainfall is experienced during the summer and autumn months. This has an impact on the availability of freshwater which would have influenced the occupation patterns of the Aboriginal inhabitants. The drier winter and spring seasons see only small freshwater inflow into waterways while the cyclones bring large intermittent short lived fresh water events.

3.1.4 Flora and fauna

The land immediately surrounding Grafton is now considered an urban landscape, surrounded by rural and prime agricultural lands as the native vegetation has been extensively cleared and/or modified.

All early historical accounts of the Clarence River Valley support an understanding that the current vegetation patterns do not reflect pre-contact vegetation types. While the margins of the Clarence River Valley are now largely cleared urban or agricultural lands, cedar getters were some of the earliest non-Aboriginal people along the Clarence River. An account by Capt James Butcher noted that the banks of the river were ‘thickly covered with timber’ (Stubbs 2007: 9). The alluvial plains were thick with brush when an influx of settlers arrived following the passing of the Land Acts in 1861 (Sabine 1970:1: 8). The density of brush was synonymous with soil fertility, and essentially ensured that such areas were the first selected and cleared for agriculture. Historical records of the vegetation present along the Clarence River before European settlement indicate riparian vegetation and open woodlands existed within 1 km of the riverbank (Sabine 1970).

The *Mitchell Landscapes of NSW* (DECCW 2003) lists dominant flora species expected to have occurred on the Clarence-Richmond alluvial floodplains. From it can be inferred that the now extensively cleared valley floor was likely to have supported forests of cabbage gum (*Eucalyptus amplifolia*), forest red gum (*Eucalyptus tereticornis*), broad-leaved apple (*Angophora subvelutina*), river oak (*Casuarina cunninghamiana*), silky oak (*Grevillea robusta*), rough-barked apple (*Angophora floribunda*), native teak (*Flindersia australis*), coastal grey box (*Eucalyptus bosistoana*), pink bloodwood (*Corymbia intermedia*), spotted gum (*Corymbia maculata*), grey ironbark (*Eucalyptus paniculata*), broad-leaved paperbark (*Melaleuca quinquenervia*), blackwood (*Acacia melanoxylon*) and black she-oak (*Casuarina litoralis*).

This vegetation would have supported a range of mammals, birds and reptiles. The Clarence River would have supported an abundance of aquatic species, including estuarine species that occur in the Clarence River with salinity variations based on seasonal freshwater flows and tidal movements. The plant species would have supported a range of fauna also used by local Aboriginal people.

3.1.5 Summary of resource availability

The geology of the immediate Grafton and South Grafton area suggests raw material sources were not likely to be readily available. Some stone types suitable for tool manufacture, such as quartz, are available in the local area as river bed outcrops or river pebbles.

The Clarence River is an important natural feature for Aboriginal people as it supported an abundance of resources integral to their lifestyles and cultural practices. The river is also the subject of several dreaming stories, the ones publicly available relate to the creation of the river. The river has mythological values and this aspect of significance may have no additional tangible features beyond physical presence. Aboriginal community consultation is required to refine our knowledge of cultural associations and connections to the river.

The river may have cultural significance in the demarcation of space and place. It creates a tangible barrier to accessing the opposite bank and the river islands, and this demarcation may have significance in the social organisation and cultural practices of local Aboriginal populations. Both Susan and Elizabeth islands (west and east of the existing Grafton Bridge respectively) are of significance to local Aboriginal women and are listed as Aboriginal Women's places.

The pre-contact vegetation communities supported numerous plant species utilised by Aboriginal people for a wide range of purposes. Certain plants provided important food sources (yams and roots) and/or medicines, while others provided toxins which might be used to stupefy fish in waterholes. Sabine (1970: II: 21) notes that plant derived poisons used in fishing include Duboisine from the Corkwood Tree, a poison extracted from an unspecified weed and a poison made from pounding the leaves of a tree called "Cutiga".

Plants were used to manufacture a wide range of items including personal decorations, clothing, tools, art (pigment fixatives), watercraft, traps and shelter. Certain plants also featured in local mythologies and some were considered sacred and/or had ritual uses.

Wood, bark, fibres, and resin are all examples of useful materials derived from plants. For example: wood could be used to manufacture items such as boomerangs, clubs, digging sticks, weapons, shields or containers; bark could also be used to manufacture clothing, canoes, or dishes; fibres could be used to manufacture string, fishing nets, baskets, traps, or mats; and resin could be used as an adhesive in tool manufacture and decoration, or to seal leaks in canoes (Sabine 1970).

The plant species discussed previously would have supported a range of fauna also used by local Aboriginal inhabitants. Animals were not only used for food, but also contributed to several cultural aspects of Aboriginal life; they provided materials for tool technologies, played a role in local mythologies, and some were considered sacred or had ritual significance.

The Clarence River and its floodplain environs would have supported the major food sources exploited by Aboriginal people, including a variety of fish, molluscs, turtles, eels, crayfish, waterbirds, emu, macropods and possums (Sabine 1970). Aboriginal technologies also made use of materials sourced from animals. Skins could be used as clothing, such as macropod and possum skin cloaks; bone points (awls) and sinews were used for sewing; animal teeth, bones and sinews were used in tool manufacture; and animal products, such as feathers and teeth were used as personal decoration (Sabine 1970).

3.2 Historical context

3.2.1 Land use impacts

The land within and surrounding the Grafton and South Grafton area has undergone extensive modification. From the beginning of non-Aboriginal settlement in the 1830s, vegetation was cleared rapidly, followed by pastoral land activity and the steady growth of the urban environment.

The northern side of the Clarence River is mostly urban streets, residential and commercial development and some parkland. To the south, developed urban areas occur to the west of the existing bridge and open farm lands with associated houses and roads dominate the landscape to the east. The alluvial nature of the floodplain soils to the south and the impact of agriculture and urban development have reduced the likelihood of some types of evidence of Aboriginal occupation remaining intact.

3.2.2 Ethnohistory

Our knowledge of the social organisation of Aboriginal people prior to European contact is, to a large extent, reliant on documents written by early European arrivals recording their impressions. By the time colonial diarists, missionaries and proto-anthropologists began making detailed records of Aboriginal people in the late 19th Century, pre-European Aboriginal groups had been broken up and reconfigured by European settlement activity. The inherent bias of the class and cultures of these authors necessarily affect such documents. They were also often describing a culture that they did not fully understand – a culture that was in a heightened state of disruption given the arrival of settlers and disease. Early written records and images can, however, be used in conjunction with archaeological information in order to gain a picture of Aboriginal life in the region. Oral histories from members of the Aboriginal community also provide valuable information. The following information relating to Aboriginal people of the Grafton region is based on such early detailed records.

At the time of non-Aboriginal arrival in Grafton, the area to the north of the Clarence River were Bundjalung lands. The Yaegl tribe occupied lands on the coast. The Clarence River and Grafton are within the area previously inhabited by the Gumbainggir people. These people also inhabited the steep terrain of the escarpment zone located south of Grafton, where other sites and evidence of occupation have been found (Witter 2000).

The first interaction between the Aboriginal inhabitants of the Grafton region and the incoming European settlers came in 1825 in the form of an escaped convict Richard Craig, who would later inform the colonial government of the Clarence River and drive the first sheep into the area (McKay, 1938). Conflict between the Aboriginal population and the incoming settlers followed soon after initial European settlement. Killings were carried out by both communities and stock was speared to drive them off land. One man, Coutts (a squatter), was tried for poisoning Aboriginal people with arsenic laced flour but was acquitted (NSW Heritage Office 1996). Violence, displacement and disease reduced the number of Aboriginal people in the area. In 1882 a protector of Aborigines was appointed (Northern Star, 1882) and nine reserves were subsequently created to house the remaining Aboriginal population. By 1891 it was reported that the police had brought ‘peace’ to the region.

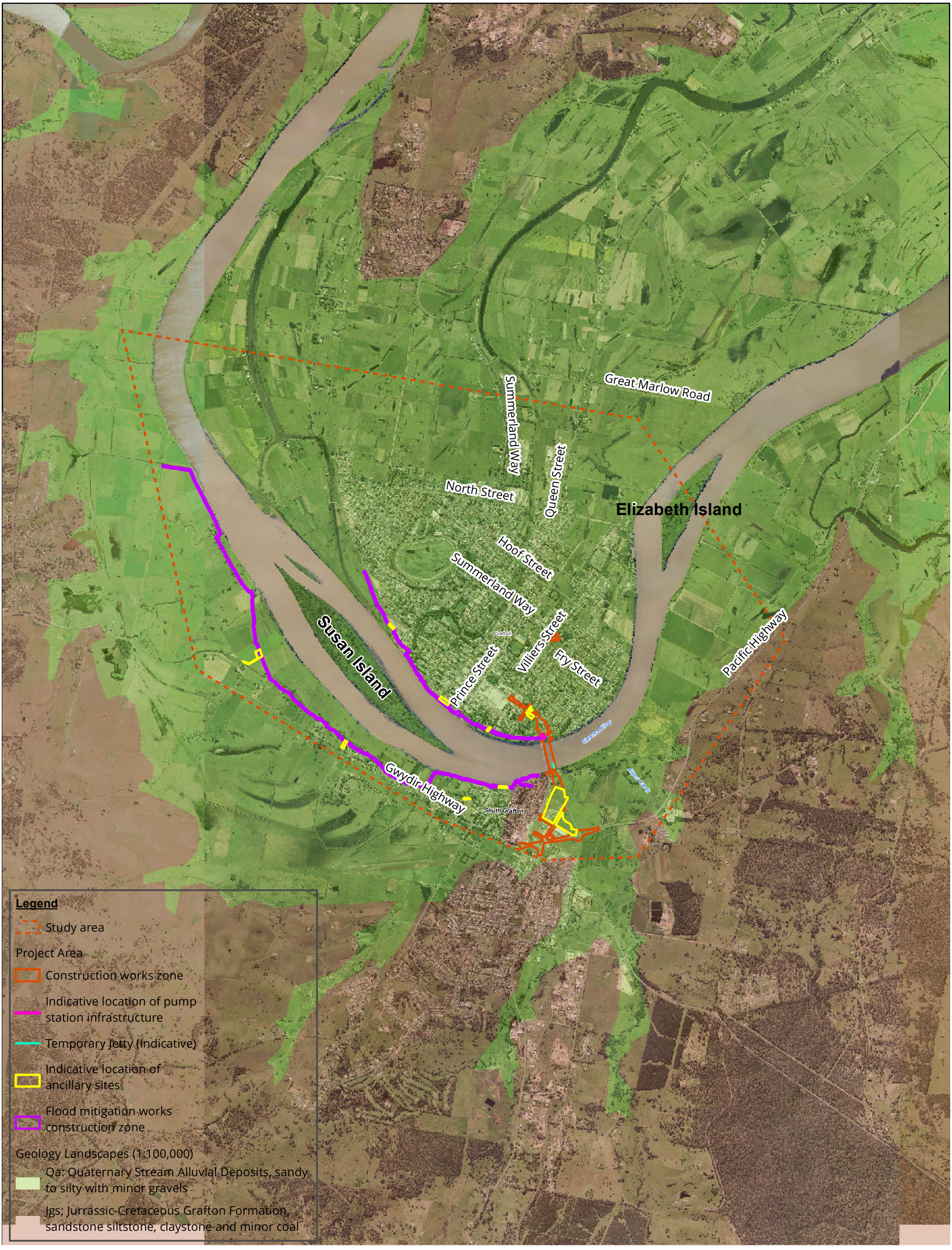

Figure 4: Geology mapping of the project area

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Following European settlement many Aboriginal people found employment in European industry as stockmen, cane strippers and fishermen (NSW Heritage Office 1996). Traditional hunting and bush skills continued to be practiced by many Aboriginal people (Plate 1) and were complemented by adaptions of European technologies such as shown in the construction of the timber hut shown in Plate 2. Interactions with traditional social groups also continued to be important with records of Clarence River Aborigines travelling to Casino in the c. 1880s to corroboree and fight with Richmond River and Queensland tribes (Northern Star, 1940). These connections and rivalries would continue into the 21st Century through well attended football matches between Clarence River, Cabbage Tree Island and Richmond River Aboriginal groups (Northern Star, 1931).

A community of Aboriginal people remains in Grafton to this day, many of them with strong spiritual links to the original inhabitants and important knowledge of their past ways of life.

Plate 1: Aborigines spearing fishing in river at Grafton in 1895 (Source: George Washington Wilson and Co. 1935)

Plate 2: Aboriginal hut and family in Grafton District 1895 (Source: George Washington Wilson and Co. 1895)

3.3 Archaeological context

3.3.1 Regional archaeological context

Isabel McBryde conducted a substantial amount of work in the Northern Rivers and New England regions in the 1970s (McBryde 1974). McBryde emphasised wide-ranging seasonal population movements suggesting that annual migration occurred between the coast and the tableland foothills, which would have resulted in a range of seasonal sites across resource zones. Other models for similar resource zones suggest a more sedentary based pattern focused on coastal areas. This would be demonstrated in the archaeological record by large repeated use sites in resource rich areas. Associated with this settlement pattern would be smaller transitory groups transecting more marginal resource areas such as ridge lines and watercourses. This movement would depend, to some extent, on the topography and would be characterised by small briefly inhabited sites (Hall and Lomax 1993). To date much work remains to be done to test these occupation models.

The oldest dated site in the region is the Seelands Rock Shelter site. It is located within 10 km to the north-east of Grafton. The Seelands site's relatively deep stratified deposit was excavated with occupation dating from 6400BP to 300BP, making it the oldest site in the region (Byrne 1981). The earliest levels of the rock shelter contained typical early core and flake type artefacts. A sequence of transition is also recorded within the shelter with ground edge axes and smaller artefacts such as backed blades appearing later in the assemblage (Haglund 1983).

The sandstone geology above the riverbanks provides rock overhangs suitable for locating shelter sites. Grinding grooves have also been recorded along the Clarence River in granite outcrops, beyond the immediate vicinity of the Grafton and South Grafton area.

3.3.2 Localised archaeological record

A small amount of archaeological work has been undertaken within the Clarence Valley region, with most consisting of development driven survey assessments being undertaken within and immediately surrounding Grafton (Byrne 1981; Haglund 1985; Navin and Officer 1990; Piper 1994a, 1994b).

The findings from this work can contribute to an understanding of Aboriginal cultural heritage within the current study area by understanding sites within a similar context in the wider Clarence River valley. Those most relevant to the Grafton and South Grafton study area have been summarised below.

Byrne (1981) undertook an Aboriginal archaeological survey of a proposed 330kV electricity line between Grafton and Lismore. The study resulted in the identification of three stone artefact sites. While not located within the proposed electricity line, the Parrots Nest Hill mythological site was discussed with the local Aboriginal community to ensure that the proposed works would not in any way affect the cultural values of the site, as such sites extend throughout the surrounding landscape and are not restricted to a single point or feature.

Haglund (1985) was commissioned to undertake a desktop assessment of archaeological potential of proposed transmission lines between Coffs Harbour and Grafton. The study examined previous studies in the area to discuss potential of different Aboriginal site types across different landforms. Over half of the sites previously identified in the study area were considered to be mythological or dreaming sites, which were frequently natural features without any associated archaeological evidence. Ridge crests or small knolls were identified has having potential for stone arrangements, although these could be hard to identify. Rock shelter sites were considered likely to be present wherever appropriate vertical rock walls were exposed. Open site artefact scatters were likely to be present on relatively high, well drained land flanking watercourses, with denser larger sites near enclosed meanders often quite large.

Navin and Officer (1990) were engaged by the Electricity Commission of NSW to undertake an archaeological assessment of proposed 330kV transmission lines between Coffs Harbour and Koolkhan. During the survey for the project 50 sites were identified, including artefact sites, scarred trees, rock shelter sites and quarry sites. Sites were located along ridgelines, knolls and spurs, as well as being associated with creeks. Areas of potential archaeological deposits were also identified. It is noted that several of these sites have been subject to s.90 Permits, with some of these completely destroyed (Navin and Officer 1990).

With the exception of rock shelter sites, Navin and Officer (1990) identified stream flats and areas of elevated ground adjacent to wetlands or floodplains as having highest archaeological potential. Flat areas on the crests of ridgelines and spurs were also found to be sensitive, but sites in these localities were likely to be of lower significance and greatly disturbed.

Piper (1994a) completed an archaeological survey for the Waterview Seelands Water Supply, approximately 6 km west of the Grafton and South Grafton area. The proposed underground pipeline runs from the junction of the Gwydir Hwy and Old Glen Innes Road, south for 7 km. Ground surface visibility varied along the entire alignment. The pipeline route crosses flat, spur line crests where archaeological potential is considered to be highest. Despite the presence of sensitive landforms, only one scarred tree was recorded 22 m from the alignment.

Piper (1994b) undertook an archaeological survey at the Northern Hardwood Holdings property at Koolkhan, near Bunyip Creek. Ground surface visibility across during the survey was considered good. The general area comprised of flat grassed paddocks, some distance from a permanent water source. Based on this and the findings of the field survey, the area was identified as having only low archaeological potential.

3.3.3 Preliminary route options report

Biosis was commissioned by Arup, on behalf of the RTA (now Roads and Maritime), to prepare the *Main Road 83 Summerland Way-Additional Crossing of the Clarence River at Grafton: Preliminary Route Options Report, Technical Paper: Aboriginal Heritage* (Biosis Research, 2011). The assessment was a preliminary Aboriginal

archaeological investigation to identify potential constraints or opportunities in the Grafton area that may affect an additional crossing of the Clarence River. This investigation involved detailed desktop research, heritage register search updates, preliminary Aboriginal consultation, reconnaissance field surveys and reporting of all findings.

Field surveys were conducted from Tuesday 10 to Thursday 12 August 2010 by Melanie Thomson (Biosis) and Brett Duroux from Grafton NgerrieLocal Aboriginal Land Council (Grafton NgerrieLALC). The reconnaissance survey area included a number of properties along the Clarence River, including open floodplain and a number of minor creek lines and drainage features (Figure 5). The survey also focused on vegetation and open areas in the urban areas of Grafton. Most of the areas accessed and surveyed consisted of thick grass cover or were heavily modified.

No new Aboriginal archeological places were identified, but the Clarence River Golden Eel (AHIMS 12-6-0326), Dovedale Scar Tree (AHIMS 12-6-0345), Alipou OC 1 (12-6-0400), Alipou SCT 1 (12-6-0401) and Alipou SCT 2 (12-6-0402) were located. The results of the survey and desktop assessment were used to develop a broad prediction model for the study area. This model rated the Aboriginal archaeological potential of different areas as follows:

- Low potential: Areas subject to a high degree of disturbance, steep slopes or plains away from water sources. Any Aboriginal heritage present is likely to consist of low density artefact scatters or isolated finds
- Moderate potential: Areas where minor post contact disturbance has occurred along creeks and waterways where short term campsites may have been present. Artefact scatters in these areas were expected to vary in density, but concentrated in small areas
- High potential: Areas associated with major creek lines, raised flat landforms such as ridges and hills, or where there has been minimal disturbance to the specific area and it is believed that an intact sensitive landscape exists. Artefacts that remain within these areas are likely to be at high density and large in size.

3.3.4 Route options development report

Options for an additional crossing over of the Clarence River were developed following the Preliminary Route Options Report (Roads and Maritime, 2012). Six of these options were selected for detailed assessment and Aboriginal heritage constraints and opportunities for each option were reported in the *Main Road 83 Summerland Way-Additional Crossing of the Clarence River at Grafton - Route Options Development Report - Technical Paper: Aboriginal Heritage* (Biosis Research, 2012). The assessment included a targeted field survey of each of the six routes alignments under consideration, although not all land was able to be accessed and had to be viewed from roadsides. The surveys were conducted in February and April 2012 by Samantha Higgs and Samantha Gibbins from Biosis, with Brett Duroux and Rod Duroux from Grafton Ngerrie LALC.

Areas of high, moderate and low Aboriginal archaeological potential were revised and updated following the 2012 targeted surveys, with areas of moderate and high potential noted on the floodplain south of the Clarence River and in close proximity to Alipou Creek (Figure 8). It was recommended that test excavations be undertaken to further investigate areas of high and moderate Aboriginal archaeological potential if these areas were unable to be avoided by the proposed development (Biosis Research, 2012).

Of the six options assessed in the 2012 survey, Option C has been selected as the preferred route (the subject of this report). The 2012 survey had access to portions of land occupied by and in proximity to this option (Figure 6), however no new Aboriginal archaeological sites were identified. It was noted that the Golden Eel site (AHIMS 12-6-0326) could potentially be impacted during the construction of Option C. The Grafton Ngerrie LALC raised concerns in regards to potential impacts as well as the impacts on the aesthetic values of the site, which have been addressed by modification of the route.

Figure 5: 2010 survey effort for the Preliminary route options report

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Figure 6: 2012 survey effort for the Route options development report

Acknowledgements: Imagery provided by Arup

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3.3.5 Known Aboriginal cultural heritage

The results of the 2010 and 2012 Biosis surveys identified nine Aboriginal sites within 600 m of the project area. Of these sites, only the Clarence River Golden Eel site is located in the project area, with the next closest site being Alipou SCT 2 (12-6-0402) located 50 m south of the project area. Alipou SCT 1 (12-6-0401) and Dovedale Scar Tree (12-6-0345) are both located 200 m east of the project area in Grafton and South Grafton respectively. Updated searches of the AHIMS register were undertaken in September and November 2013 and have not identified any additional sites. The results of the most recent Aboriginal Heritage Information Management System (AHIMS) search are located in Appendix A. The nine Aboriginal sites are listed in Table 2 and the locations of these sites are shown in Figure 7.

Table 2: Known AHIMS sites within the proximity of the study area

AHIMS #	Site Name	Site Type	Notes
12-6-0219	Susan Island	Ceremonial Mound / Ring	Restricted, Women's site Access to site card by permission only.
12-3-0338	Carrs Creek Camp	Open Campsite	Post contact
12-6-0086	Grafton Marriage trees	Modified Tree	
12-6-0216	Goorie Park	Modified Tree	
12-6-0326	Clarence River Golden Eel	Aboriginal Ceremony and Dreaming	General restriction Access to site card by permission only.
12-6-0345	Dovedale Scar Tree	Modified Tree	Site card not available from AHIMS
12-6-0400	Alipou OC 1	Open Campsite	
12-6-0401	Alipou SCT 1	Modified Tree	
12-6-0402	Alipou SCT 2	Modified Tree	

Details for sites listed in Table 2 are provided below. Information has not been included for Susan Island (AHIMS 12-6-0219) due to the culturally sensitive nature of this site. It should be noted that more sites have been recorded in the Grafton and South Grafton area, but due to the culturally sensitive and tangible nature of some of these sites and the public nature of this report, only those closest to project area have been discussed and listed in Table 1.

Clarence Golden Eel site (12-6-0326) ceremonial and dreaming

The Clarence River Golden Eel site (Plate 3 and 4) is a culturally significant site, with a general restriction applying to access to the site card.

Plate 3: Looking across the Clarence River, to the southern banks near Alipou Creek, where part of the Golden Eel site story is linked

Plate 4: The Clarence River, identified as being created during The Dreamtime

Co-ordinates for this site have been provided by OEH, however the extent of the site has not been specified. On the basis of information provided in the field by Aboriginal representatives the entirety of the Clarence River and Alipou Creek has been identified as an Aboriginal site associated with the Golden Eel dreaming story. It is known that the Golden Eel site and the formation of the Clarence River are considered to be of high cultural significance to the local Aboriginal people. In her book, *Singing the Coast*, Somerville discusses with Tony Perkins the importance of the "Golden" dreaming stories to the Gumbaynggir Aboriginal people:

> *"Each of the different clan groups in Gumbaynggir country had different major storylines and associated miirlarl* (sacred or special places) *and where these storylines meet up are the most powerful places of all."*
>
> *"Tony explained: 'The three main golden spirits that belong to Aboriginal people is that Golden Eel, that Golden Dog, and down at Nambucca way they got that Golden Kangaroo'."*
>
> *"We've got, you know, the Golden Kangaroo and if you go up, between here and Grafton and Grafton does have the Golden Dog Hotel there and they also have the Golden Eel up at the bridge at Grafton there, so they're the three sites, the Waanyji Miirlarl in Coramba, Buurrga* (Eel) *Miirlalrl at Grafton and Nunguu Miirlarl here, special places…"* (Sommerville, 2010, p. 215).

While there are discrete Aboriginal archaeological sites located in proximity to the Clarence River and Alipou Creek, the Golden Eel site is related specifically to the topographical features of the waterways themselves. Aboriginal representatives have indicated that the integrity and setting of the Clarence River and Alipou Creek is important to the overall cultural values of the Golden Eel site.

Goorie Park (12-6-0216) and Dovedale scar tree (12-6-0345) modified trees

Both of these modified trees are located in urban areas, with Goorie Park (12-6-0216) located in the Grafton showgrounds and Dovedale scar tree located at the end of a row of large fig trees on the corner of Berimba and Bacon streets (Plate 5). Although the site card containing the details of the location of the trees are not available from the OEH AHIMS register, they are easily accessible and the locations are known to the Grafton Ngerrie LALC.

Plate 5: Large Jacaranda tree situated in a row of large figs in east Grafton

Plate 6: Large uneven scar on the north eastern face of the tree

The tree species of 12-6-0345 is a Jacaranda. The age of the tree is unknown and advice from an arborist should be sought with regards to the age of the tree and the authenticity of the scar (Plate 6). 12-6-0216 is associated with a small billabong.

Alipou SCT 1 (12-6-0401) scarred tree

This scarred tree is situated on the open floodplain, 650 m south of the Clarence River, and about 500 m south of Alipou Creek (Plate 7). The tree is located on the fence line in the corner of the property. Only a few other scattered trees occur in the surrounding area.

The tree species is *Eucalyptus tereticornis* (River Red Gum) is alive and has a girth measuring 4.2 m. The tree contains two separate scars, one facing north and one facing north east.

North facing scar: The scar itself measures 1.6 in length, 0.20 m in width and has regrowth measuring approximately 0.30 m (Plate 8). The scar does not exhibit any axe marks and the tree contains no toe holds.

North east facing scar: The scar itself measures 1.9 m in length, 0.30 m in width and has regrowth measuring approximately 0.40 m. The scar does not exhibit any axe marks and the tree contains no toe holds.

Plate 7: Location of scarred tree Alipou SCT 1 on fence line near corner of property, facing north east

Plate 8: North facing scar on a medium sized *Eucalyptus tereticornis* (River Red Gum)

Alipou SCT 2 (12-6-0402) scarred tree

This scarred tree is situated on the open floodplain, 900 m south of the Clarence River, and about 400 m west of Alipou Creek. The tree is located on the fence line in the corner of the property close to the Pacific Highway and an existing levee bank (Plate 9). It is amongst a small scatter of surviving river red gums that stretch along the northern boundary of the property.

The tree species is *Eucalyptus tereticornis* (river red gum), is dead however has a girth measuring 3.15 m. The tree contains one scar facing east. The scar itself measures 2.25 m in length, 0.35 m in width and has regrowth measuring approximately 0.40 m – although this is difficult to determine as the dry face is no longer present (Plate 10). The scar does not exhibit any axe marks and the tree contains no toe holds.

Plate 9: Location of scarred tree Alipou SCT 2, near Pacific Hwy boundary and existing levee bank, facing west.

Plate 10: Distinct scar in dead *Eucalyptus tereticornis* (River Red Gum). The top half of the tree has broken off.

Alipou OC 1 (12-6-0400) open campsite

The site is situated on the western bank of Alipou Creek and has been exposed by an eroded drainage channel that runs between the planted tea tree rows (Plate 11). The ground surface visibility was high in this section of the drain and the artefacts were identified eroding out of the banks of the drainage feature. The site extended along the length of the drainage feature, covering an area approximately 50 x 15 m.

Plate 11: Location of Alipou OC 1 stone artefact camps site, on the banks of the creek, facing north west

Plate 12: Chert core was identified amongst the stone artefacts at this site

A total of 10 stone artefacts were recorded at the site and the details are as follows:

- 1 x quartz complete flake with 25% cortex (measures 26 x12 x 7 mm);
- 1 x yellow mudstone complete flake with smooth pebble cortex of 25% (measures 62 x 42 x 12 mm);
- 1 x chert complete flake with 60% cortex (measures 36 x 39 x 7 mm);
- 1 x quartz broken flake (measures 22 mm);
- 1 x quartz complete flake with 25% cortex (maximum 15 mm);
- 1 x quartz multi-facial core (measures 17 x 15 x 7 mm);
- 1 x quartz angular fragment (maximum 20 mm);
- 1 x quartz medial flake (maximum 14 mm);
- 1 x silcrete broken flake (maximum 27 mm); and
- 1 x chert multi-facial core (measures 28 x 27 x 19 mm) (Plate 12).

It is evident that the site has been partially disturbed through the construction of a drain. Erosion has since caused further exposure of the site within the drain. The areas adjacent to the identified site are likely to contain further archaeological material, although this has been partially impacted by the planted tea-trees.

Carr's Creek Camp Aboriginal Fringe Settlement (12-3-0338).

The site consists of a giant fig tree situated between Carr's Creek to the east and a railway easement to the west (see Plate 13). As Europeans arrived in the local area, Aboriginal people became displaced from their traditional lands and became focused in areas located on the outskirts of early towns and villages. Carr's Creek Camp consisted of small, low level occupation located immediately beneath the Fig Tree. The site is of high social

significance to the Grafton-Ngerrie community. It is important in demonstrating the social connections that still exist today between present day communities and former places of habitation.

Plate 13. Looking northwest at Carrs Creek Camp.

Grafton Marriage Trees (12-6-0086)

Marriage trees (12-6-0086) are registered south east of Grafton, on the banks of Alipou Creek. The 12-6-0086 site card notes that there are four trees, between 150-300 years of age, which have been ring-barked and are now dead. According to tradition, the trees were used to dissolve relationships rather that create them; According to Day (2005: 2), “young children were committed to future partners by tribal custom. If this arrangement was to be broken at a later stage, a challenge to climb the marriage tree and remove branches would be set”. A survey including land along Alipou Creek was conducted by Biosis Research in 2004. While the report does not mention the marriage trees specifically, it does note that there is some potential for [archaeological] sites to exist in areas adjacent to Alipou Creek as it is likely to have been a resource rich area (2004: 18).

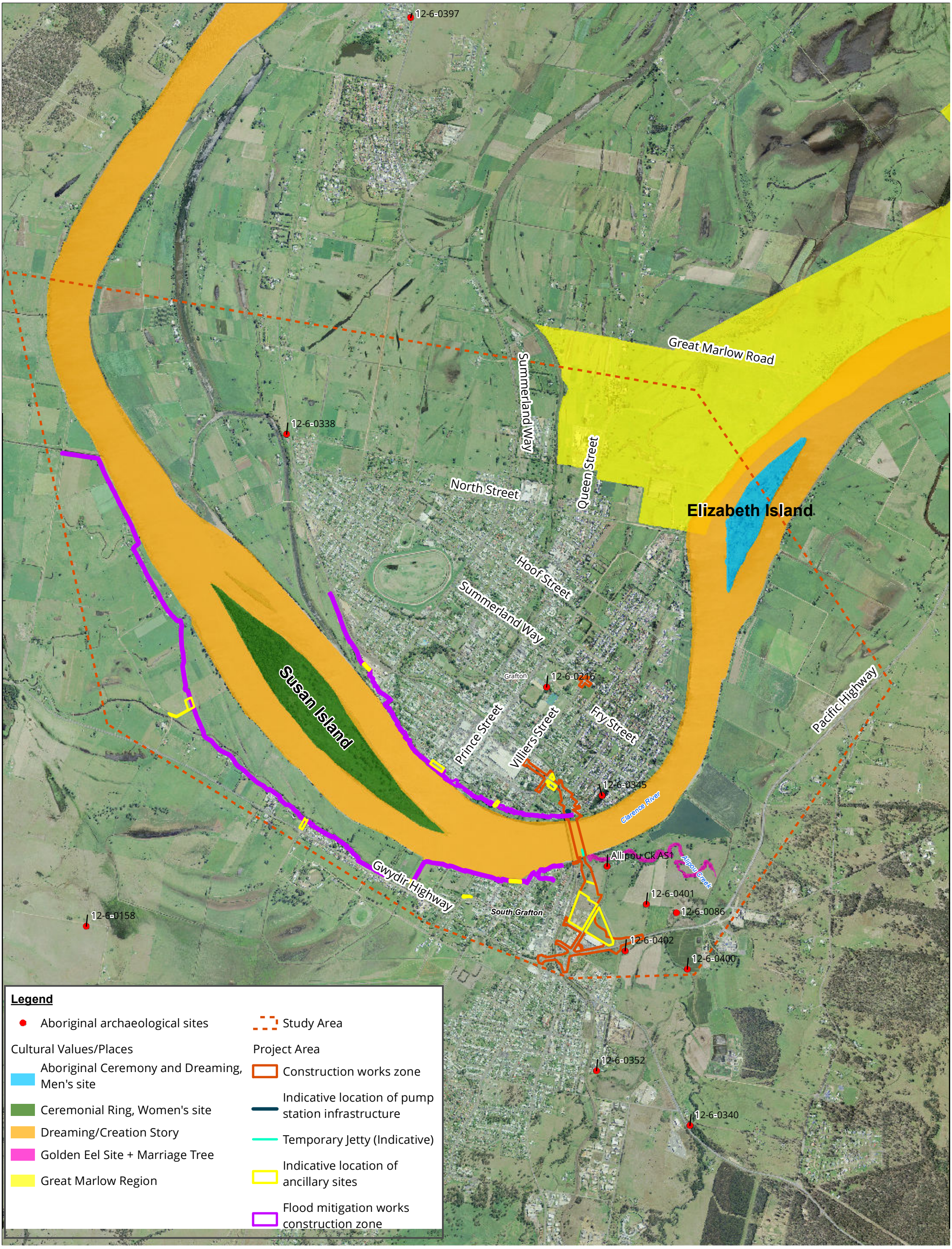

Figure 7: Aboriginal heritage sites in proximity to the project area

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3.4 Aboriginal archaeological potential

The potential for Aboriginal archaeological sites to be located in the study area is assessed through an examination of the environmental, historical and archaeological context of the study area. The study area straddles the Clarence River and its surrounding floodplains. While large portions of these landforms have been disturbed by infrastructure, urban and agricultural development, the areas immediately surrounding the Clarence River would have been resource rich area for Aboriginal people in the past. Landforms surrounding waterways have been previously identified in local archaeological studies as having the highest archaeological potential (Navin and Officer 1990).

Previously identified Aboriginal archaeological sites in the locality of the study area include artefact scatters, scarred trees and mythological sites. Given the limited archaeological assessment of the study area and general region to date, it is likely that further such site types may be identified in the study area that have not or had limited impacts from past development activities. It is possible that other archaeological site types may be present, however due to the lack of sandstone and other rock outcrops, it is unlikely that rock shelters or grinding grooves will be present.

During the 2010 and 2012 field surveys, an assessment for Aboriginal archaeology potential was undertaken across different landforms. A number of areas of high, moderate and low archaeological potential were identified in the wider study area. These areas of potential specific to the project area are indicated on Figure 8 and outlined in Table 3.

Table 3: Areas of Aboriginal archaeological potential within the project area.

Defined Area of Aboriginal Archaeological Potential	Location of Areas of potential
Low Aboriginal archaeological potential - Areas that have been identified as having specific locations where there has been a high degree of disturbance since the arrival of non-Aboriginal people, where the impact has been to the extent where no intact deposits are believed to be present. Areas may also include steep slopes or plains away from water sources. Artefacts found in this area are likely to be isolated, representative of 'background scatter', or in a highly disturbed context.	Existing roads, urban development, highly disturbed section of Clarence River bank and levee system, residential properties, and low-lying flood prone floodplain subject to annual inundation.
Moderate Aboriginal archaeological potential - Moderate likelihood for intact Aboriginal archaeological remains. Areas where minor post contact disturbance has occurred; the area is located along creeks and waterways where short term campsites may have been present. Artefact scatters are likely to vary in density, but are concentrated in small areas.	Northern and southern banks of Clarence River, Alipou Creek banks, other minor creeks and drainage features, foothills, remnant stands of mature vegetation.
High Aboriginal archaeological potential - High likelihood for intact Aboriginal archaeological remains. Areas associated with major creek lines, raised flat landforms such as ridges and hills, or where there has been minimal disturbance to the specific area and it is believed that an intact sensitive landscape exists. Artefacts that remain within these areas are likely to be high density and large in size.	Sections of the northern and southern banks of Clarence River, undisturbed banks of Alipou Creek and some minor creek lines, Susan and Elizabeth islands.

For the purposes of this investigation, archaeological potential reflects not only the archaeological potential of different landforms, but also the levels of previous disturbance, as this affects the integrity of archaeological deposits. The degrees of archaeological potential outlined above are not a reflection of the presence or absence of cultural material.

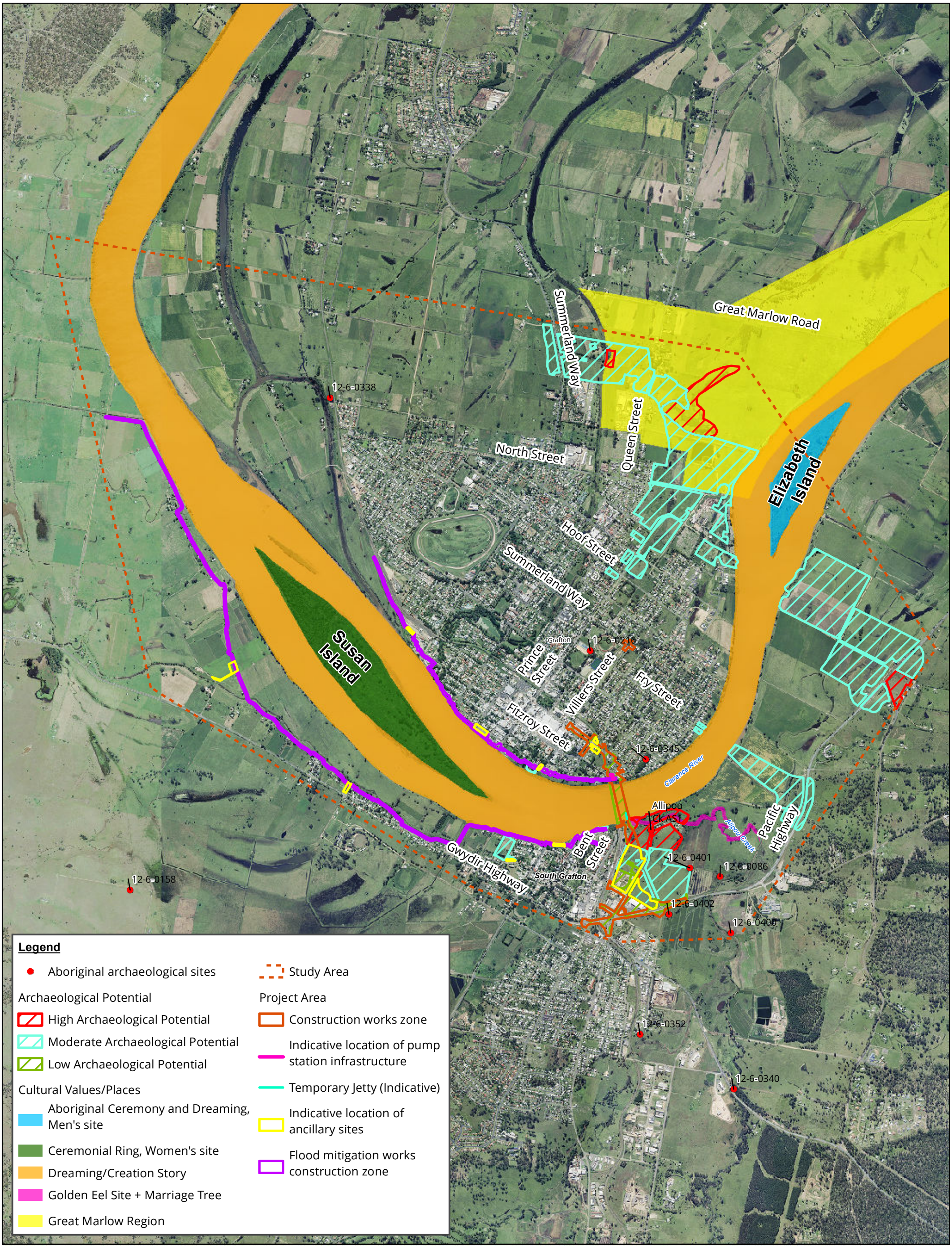

Figure 8: Areas of archaeological potential within and surrounding the study area in 2012

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4 Archaeological survey

A field survey for the project was undertaken on the 14 October 2013 and 28 February 2014. The October 2013 survey focussed on areas south of the Clarence River that were identified as having moderate and high potential from earlier Aboriginal heritage assessments. The February 2014 survey focused on Carr's Creek Camp Aboriginal Fringe Settlement (12-3-0338) near proposed flood mitigation works north of Grafton. The field survey sampling strategy, methodology and a discussion of results are provided below.

4.1 Archaeological survey aims

The principle aims of the survey were to:

- Provide Registered Aboriginal Parties (RAPs) an opportunity to view the study area and to discuss previously identified Aboriginal object(s) and/or place(s) in or within close proximity to the study area;
- To undertake a systematic survey of the study area targeting areas with the potential for Aboriginal heritage;
- Identify and record Aboriginal archaeological sites visible on the ground surface; and
- Identify and record areas of potential archaeological deposits (PADs).

4.2 Archaeological survey methodology

The intent of the survey was to assess and understand the landforms and to determine whether any archaeological material from Aboriginal occupation or land use exists within the study area.

4.2.1 Sampling strategy

The survey effort targeted those portions of the study area on the southern side of the Clarence River that have been previously identified in the 2012 Biosis assessment as having high or moderate potential for Aboriginal cultural material and along the road verges of Iolanthe Street (Figure 9). All areas of the survey effort are located on alluvial floodplain south of the Clarence River. Areas of low potential have been surveyed previously by Biosis in 2010 and 2012 with the Grafton Ngerrie LALC and did not require additional survey. Some survey related to the area surrounding the study area, was inspected following the discovery of an Aboriginal archaeological site.

4.2.2 Survey methods

The archaeological survey was conducted on foot with a field team of two members. Recording during the survey followed the archaeological survey requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) and industry best practice methodology. Information recorded during the survey included:

- Aboriginal objects or sites present
- Survey coverage
- Any resources that may potentially have been exploited by Aboriginal people
- Landform
- Photographs of the site indicating landform
- Evidence of disturbance

- Aboriginal artefacts, culturally modified trees or any other Aboriginal sites.

Identification of natural soil deposits within the study area was undertaken and soil information for each survey unit was recorded where possible. Representative photographs were taken of survey units, landform, vegetation coverage and ground surface visibility. Any potential Aboriginal objects observed during the survey were documented and photographed. The location of Aboriginal cultural heritage and points marking the boundary of the landform elements were recorded using a hand-held Global Positioning System and the Map Grid of Australia (94) coordinate system.

4.3 Survey results

Archaeological survey was conducted on the 14 October 2013 by Alexander Beben (Biosis) and Brett Duroux (Grafton Ngerrie Local Aboriginal Local Council). A total of 8 transects were walked across the floodplains landform with the two surveyors walking 2 m apart (Table 6 and Figure 9). This follows the methodology set out in Burke and Smith (2004: 65) which states that a single person can only effectively visually survey an area of two linear metres. The results from the field surveys have been summarised in Table 6 and 7 below and full transect details are provided in Appendix 2.

The overall effective survey coverage was very limited due to thick grass cover (ground surface visibility less than 5%) and low number of exposures (refer to Table 7 and see Plate 14 and Plate 15). The study area was uniformly flat floodplain disrupted only by the flood levee to the south (Plate 14) and disused rail sidings to the north (Plate 15). Exposures were located in the vicinity of an entrance gate and at the base of trees in the northeast along Transect 6 (Figure 9).

While no Aboriginal sites were identified in the study area, one Aboriginal site was identified 150 m east of the study area. Two Aboriginal sandstone artefacts were identified in an exposure at the base of one of the trees, designated Alipou Creek AS 1 (Plate 16 and Plate 17). No other Aboriginal cultural material was identified during the survey.

Both artefacts from Alipou Creek AS 1 are sandstone river cobbles, with one being a nuclear tool and the other a grinding stone. The nuclear tool has been classified as a Bungwal basher as defined by Jo Kamminga (1978), and was most likely used for processing roots. The grinding stone has pronounced indentation on the dorsal surface and limited wear on ventral side. Both of these artefacts are located 50 m south of Alipou Creek.

Survey conditions had not significantly altered from the 2010 and 2012 survey efforts with poor ground surface visibility limiting the effectiveness of the survey.

On the 28 February 2014, further survey focused on Carr's Creek Camp Aboriginal Fringe Settlement (12-3-0338) was conducted by Alexander Beben, Ian Stuart and Shoshanna Grounds (Biosis). Grafton Ngerrie Local Aboriginal Local Council representatives were unavailable for this survey. A 100 m transect following the existing flood levee was walked across the floodplains landform with the three surveyors walking 2 m apart (Table 6 and Figure 9). An additional 15 m radius around the central fig tree of Carr's Creek Camp was also surveyed (Figure 10 and Plate 13).

When inspected, the site consisted of knee high grass which obscured ground surface visibility (less than 5% visibility) (Plate 13). No Aboriginal artefacts were identified but modern refuse including a camp oven was noted. The latter may represent remnants of nineteenth to early twentieth century use of the site. The site has been heavily disturbed through the construction of the railway and levee adjacent to Carrs Creek and any archaeological deposits would be isolated to the area immediately beneath the tree. The survey determined that flood mitigation works will not harm Carr's Creek Camp Aboriginal Fringe Settlement (12-3-0338) as they will be restricted to the existing flood levee and no requirements for sub surface excavation where identified.

The identification of Alipou Creek AS 1 in combination with other previously recorded Aboriginal heritage sites along or in close proximity to Alipou Creek indicates that further cultural material is likely to present in close proximity to this creek. Areas of moderate and high potential assessed in the 2012 survey effort were confirmed and at the

conclusion of the October 2013 survey, test excavations were undertaken to further investigate areas of high and moderate Aboriginal archaeological potential (see Section 5).

Table 4: Survey effort

Survey Unit	Landform Element	Survey Unit area (m²)	Visibility %	Exposure %	Effective Coverage Area (m²)	Effective Coverage %	Aboriginal Site
Transect 1	Floodplain	488	5%	5%	1.22	0.0025%	
Transect 2	Floodplain	768	5%	5%	1.92	0.0025%	
Transect 3	Floodplain	788	5%	5%	1.97	0.0025%	
Transect 4	Floodplain	944	5%	5%	2.36	0.0025%	
Transect 5	Floodplain	1448	5%	5%	3.62	0.0025%	
Transect 6	Floodplain	1032	5%	5%	2.58	0.0025%	Alipou Creek AS 1
Transect 7	Floodplain	1784	5%	0%	0	0%	
Transect 8	Floodplain	1784	5%	0%	0	0%	
Transect 9	Floodplain	600	5%	0%	0	0%	
Transect 10	Floodplain	706	5%	0%	0	0%	Carr's Creek Camp Aboriginal Fringe Settlement.

Table 5: Survey coverage summary

Landform	Landform Area (m²)	Area effectively surveyed (m²)	% of Landform Effectively Surveyed	Number of Aboriginal Sites	Number of Artefacts or Features
Floodplain	70,000	13.67	0.019%	2	2

Plate 14: Surveyors in area of moderate potential floodplain in south of study area (facing South).

Plate 15: Looking across area of high potential floodplain towards current Grafton Bridge (facing northeast).

Plate 16: Grinding stones from Alipou Creek AS 1.

Plate 17: Looking northwest at Alipou Creek AS 1 (circled in red and facing northeast).

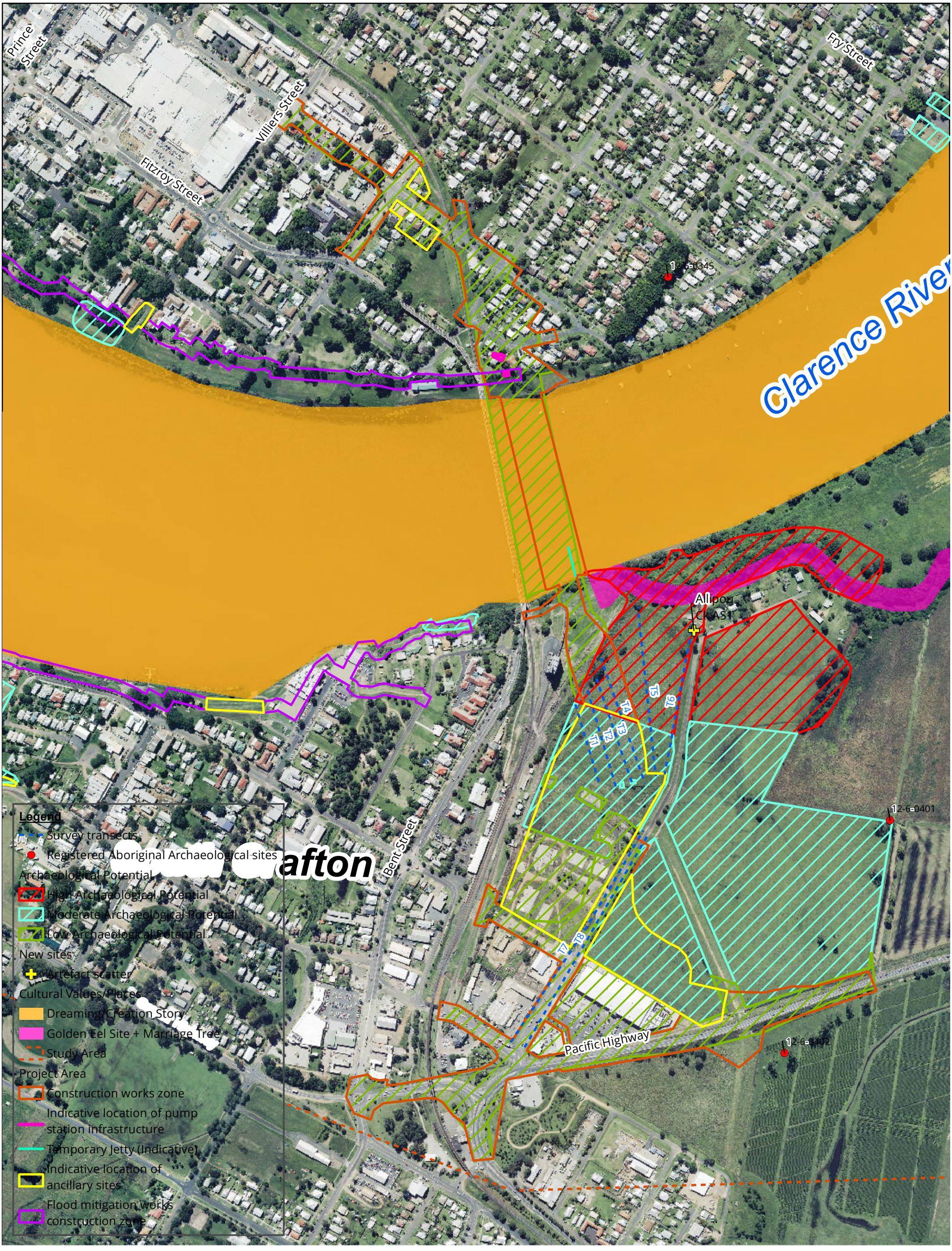

Figure 9: October 2013 survey coverage

Acknowledgements: Imagery provided by Arup

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Figure 10: February 2014 survey coverage

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5 Test excavation

Following the results of the field survey a test excavation program was undertaken to further investigate areas of high and moderate Aboriginal archaeological potential. Excavation was undertaken between 14 and 16 October 2013 by Biosis archaeologists Alexander Beben and Ana Jakovljevic, with Brett Duroux, Shirley Duroux and Aileen Roberts from Grafton Ngerrie LALC. The sampling strategy, methodology and results of the test excavation program are outlined below.

5.1 Aims

Test excavations were undertaken to characterise the extent, nature and archaeological (scientific) value of any potential Aboriginal cultural heritage within the project area. Test excavations were undertaken in areas of high and moderate Aboriginal archaeological potential that are likely to be affected by the project, specifically the proposed bridge footprint and southern approach road which will not be able to avoid impacts to these areas of potential.

5.2 Sampling strategy

Three 1 m x 2 m test pits were excavated within the floodplain south of the Clarence River (see Plate 18 and Figure 11) in order to investigate areas of moderate and high potential for Aboriginal cultural material. Excavation effort was undertaken only in areas of high and moderate potential as testing low potential areas was unlikely to yield beneficial results. The 1 m x 2 m size for each test pit was chosen to improve coverage at each excavation point as low density Aboriginal stone artefact scatters was the cultural material most likely to be encountered. The size of test pits was also chosen in anticipation that deep alluvial deposits may be encountered and a larger test pit would enable deeper excavation if required.

The three test pits were placed linearly along the project alignment 80 m apart in order to achieve an adequate sample of the floodplain in areas of high and moderate potential. Excavation effort was weighted towards areas of high potential with Test Pit 1 and Test Pit 2 located in an area of high potential, being closer to the Clarence River and Alipou Creek, and Test Trench 3 located in an area of moderate potential, being further away from waterways. As such only one landform was subject to test excavation with 0.008% of the landform being effectively tested (Table 8).

5.3 Test excavation methodology

The proposed test excavation investigation methodology has been guided by the *Code of Practice for Archaeological Investigation of Aboriginal objects in New South Wales* (DECCW 2010) and was undertaken by hand in the following manner:

- Each 1 m x 2 m test trench was excavated in 50 x 50 cm units and in 5 cm spits
- All test excavation locations were excavated using hand tools only
- All material excavated from each test location was sieved using a 5 mm aperture wire-mesh sieve
- All test excavation locations were excavated to a culturally sterile layer
- Records collected for each test excavation location included:
  - Unique test pit identification number
  - Soil colour and texture

- Amount and location of artefacts within deposit
- Nature of disturbance if present
- Stratigraphy
- Archaeological features (if present)
- Photographic records
- Spit records.

For safety reasons all test pits were backfilled with sieved spoil at the end of the excavation to ensure a level surface within the study area.

5.4 Test excavation results

No sub surface Aboriginal cultural material was encountered during excavations within the project area in South Grafton. Detailed individual test pit and soil analysis results are provided in Appendix 2 and a summary of soil profiles is provided below.

Soil profiles of clayey silts over silty clays were consistent across all three test trenches, with the gradual transition from silt to clay generally occurring at 30 cm depth. A sondage was sunk in Test Trench 1 to 1 m to establish the continuation of the clay to this depth (Plate 19). Test Trench 2 and Test Trench 3 were excavated to a clay base at 30 cm and 20 cm respectively (Plate 20 and Plate 21). Silts and clays were moderately compacted, becoming drier as depth increased. Fine gravel inclusions were noted in upper silt deposits and coal cinders were also identified in Test Trench 1 and Test Trench 2 to depths of 25 cm. The structured brown clay profiles encountered at Test Trench 1, 2 and 3 are typical characteristics of soil profiles in alluvial floodplains of South Grafton (Department of Primary Industries 1970).

The presence of coal cinders at Test Trench 1 and 2 are most likely the result of burnt coal ash and cinders being spread from steam locomotives from the former railway siding to the north. The presence of coal cinders to a depth of 25 cm would indicate that some mixing of surface soils has occurred, and is most likely the result of ploughing and cropping. While ploughing is likely to have disturbed any Aboriginal material it is unlikely to have removed it. The lack of cultural material at Test Trench 1, 2 and 3, indicates that there is a lower potential for Aboriginal archaeological sites in tested portions of the study area than previously assessed during the archaeological surveys. Test excavation and survey results suggest that evidence of campsites appears to be located in much closer proximity to waterways than previously considered (i.e <100 m). As such portions of the study area in South Grafton previously assessed as having high and moderate potential for Aboriginal archaeological sites are reassessed as having low potential.

Table 6: Test excavation results by landform

Landform	Landform Area	Area Tested	% of PAD effectively tested	No of sites	No of artefacts
Floodplain	70,000 m²	6m²	0.008%	0	0

Plate 18: Test Trench 1 located on floodplain south of Clarence River.

Plate 19: Test Trench 1 soil profile showing sondage.

Plate 20: Test Trench 2 soil profile.

Plate 21: Test Trench 3 soil profile.

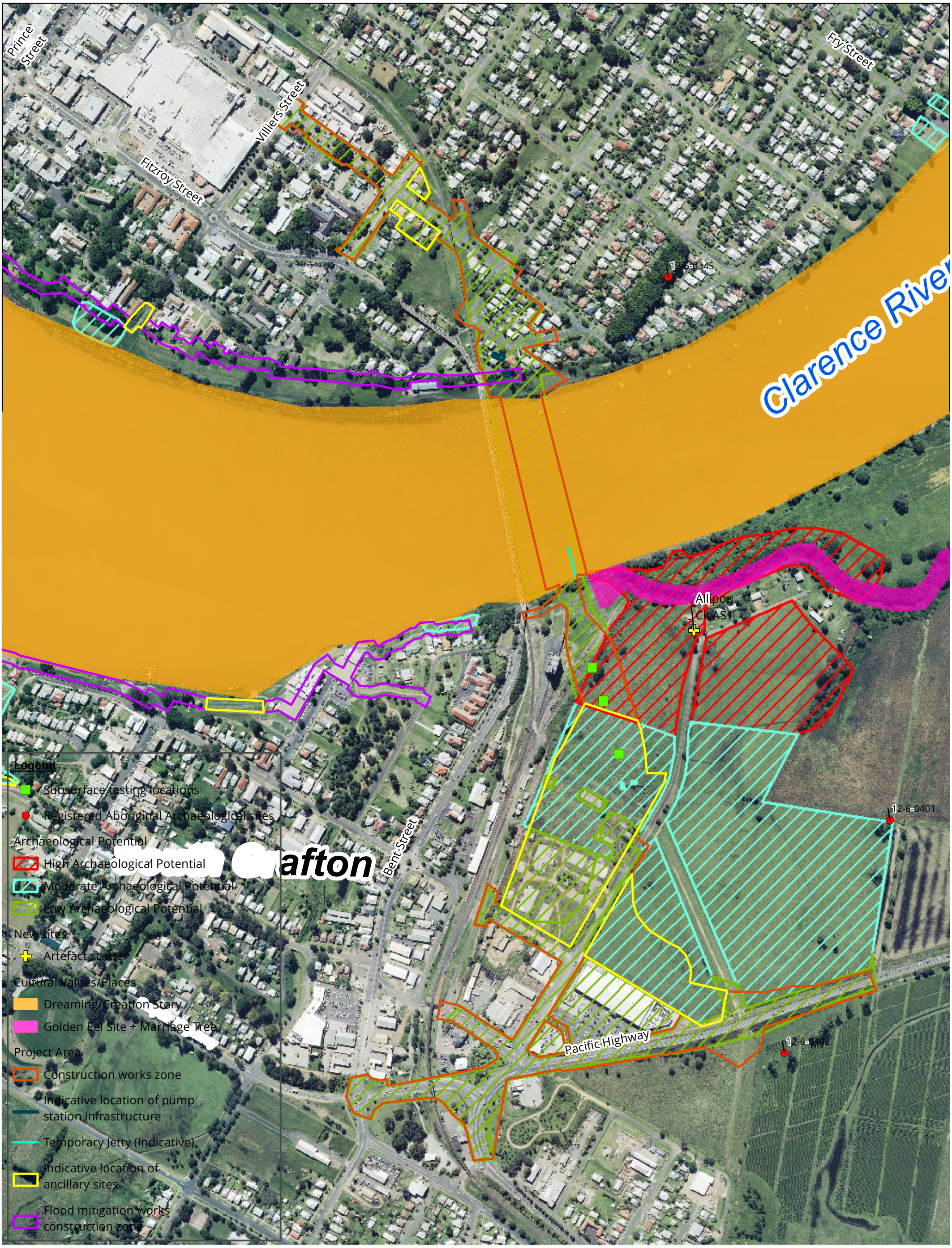

Figure 11: Test excavation results

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6 Analysis and discussion

The nature of Aboriginal settlement in Grafton and South Grafton is discussed in the following sections based on the results of this and previous archaeological assessments. Although dreamtime stories and other intangible cultural values for the Grafton and South Grafton area are well known by the local Aboriginal community, the archaeological record associated with the Grafton and South Grafton areas is currently underdeveloped. Due to the limited archaeological evidence available, which is not unusual for the archaeological record for many parts of Australia, the analysis can provide only a broad discussion and is largely complemented by cultural knowledge and ethnographic accounts for the area.

6.1 Lithics analysis

The lithic assemblage available for analysis is limited to the artefacts recorded at Alipou OC 1 and Alipou Creek AS 1, a total of 12 artefacts (Table 7) all located outside of the study area. It terms of raw material, quartz is the most dominant (50%) followed by chert (16.6%), sandstone (16.6%), mudstone (8.3%) and silcrete (8.3%). The most common artefact types are complete flakes (33%) followed by broken flakes (16.6%), cores (16.6%), medial flakes (8.3%), angular fragments (8.3%), mill stones (8.3%) and nuclear tools (8.3%). The presence of a mill stone (grinding stone or slab) and a nuclear tool (Bungwal basher) indicates that vegetation was being processed locally, most likely for food. Grinding stones were typically used to process seeds from grasses, trees and shrubs for food, while ethnographic accounts for Bungwal basher's indicate that they were used to pound and cut fern roots after roasting (Holdaway & Stern, 2004, p. 245).

Table 7: Artefact raw material in relation to artefact types recorded during effort survey at Alipou OC 1 and Alipou Creek AS 1.

Raw Material	Artefact Type							Total
	Complete Flake	Broken Flake	Medial Flake	Angular Fragment	Core	Mill Stone	Nuclear Tool	
Quartz	**2**	**1**	**1**	**1**	**1**			6 (50%)
Mudstone	**1**							1 (8.3%)
Chert	**1**				**1**			2 (16.6%)
Silcrete		**1**						1 (8.3%)
Sandstone						**1**	**1**	2 (16.6%)
Total	4 (33%)	2 (16.6%)	1 (8.3%)	1 (8.3%)	2 (16.6%)	1 (8.3%)	1 (8.3%)	12 (100%)

6.2 Scarred trees

There are three scarred trees recorded in proximity to the study area: Dovedale Scar Tree and Alipou SCT 1 located 200 m east of the study area; and Alipou SCT 2 located 50 m south of the study area. While the Dovedale Scar Tree requires further inspection by an aborist, the scars on Alipou SCT 1 and Alipou SCT 2 are both relatively long scars on *Eucalyptus tereticornis* (river red gum). The length of the scar on Alipou SCT 2 (2.25 m) suggests that it was a possible canoe scar. The two scars on Alipou SCT 1 (1.6 m and 1.9 m respectively) may have been used for a range of purposes such as shields or carrying utensils.

6.3 Discussion

McBryde (1974) has argued that wide-ranging population movements of Aboriginal people on a seasonal basis would have occurred as part of annual migration between the coast and the tableland foothills. As such it would be expected that a range of seasonal sites across resource zones should be visible in the archaeological record in the local region. Ethnographic information indicates that Clarence River and Alipou Creek are important cultural areas to the local and surrounding Aboriginal people, being locations of important creation stories and ceremonial activities. As a resource rich and culturally important area, sites showing frequent Aboriginal visitation along the Clarence River would be expected to be encountered.

Sites providing evidence for frequent Aboriginal visitation, i.e. sites with high density cultural remains, have not yet been identified in the Grafton and South Grafton areas despite ethnographic evidence indicating that the area would have been frequently visited. Visitation was most likely to access resources along the Clarence River but also for ceremonial purposes at nearby Elizabeth and Susan islands. This gap in the record is most likely due to a combination of historical disturbance along riverbanks and urban areas and limited archaeological investigation which has tended be focused on larger infrastructure projects away from the Clarence River, rather than an absence of such sites. Stone tools and cultural scars at Alipou Creek AS 1, Alipou SCT 1 and Alipou SCT 2, do indicate that Aboriginal people were utilising local flora resources for food and as raw materials for making implements.

Although Aboriginal people would have frequented the local area, particularly along the Clarence River, no Aboriginal archaeological places have been recorded within the proposed project footprint. Archaeological investigations have indicated that there is low potential for Aboriginal archaeological material to occur within the study area due predominantly to the history of disturbance. The lack of cultural material at Test Trench 1, 2 or 3 may indicate that floodplain landforms in the project area that have survived with only minimal disturbance are of low potential and portions of the project area in South Grafton previously assessed as having high and moderate potential for Aboriginal archaeological sites have been reassessed as having low potential.

Camping and other past Aboriginal activities likely to leave material remains were likely occurring in closer proximity to waterways. In this instance, however, areas closer to the Clarence River have been heavily impacted by extensive historical rail, maritime and urban development to the north and are considered to have very low Aboriginal archaeological potential (Figure 12). However areas to east of the project area around Alipou Creek remain relatively undisturbed are still considered to have high archaeological potential for Aboriginal cultural material.

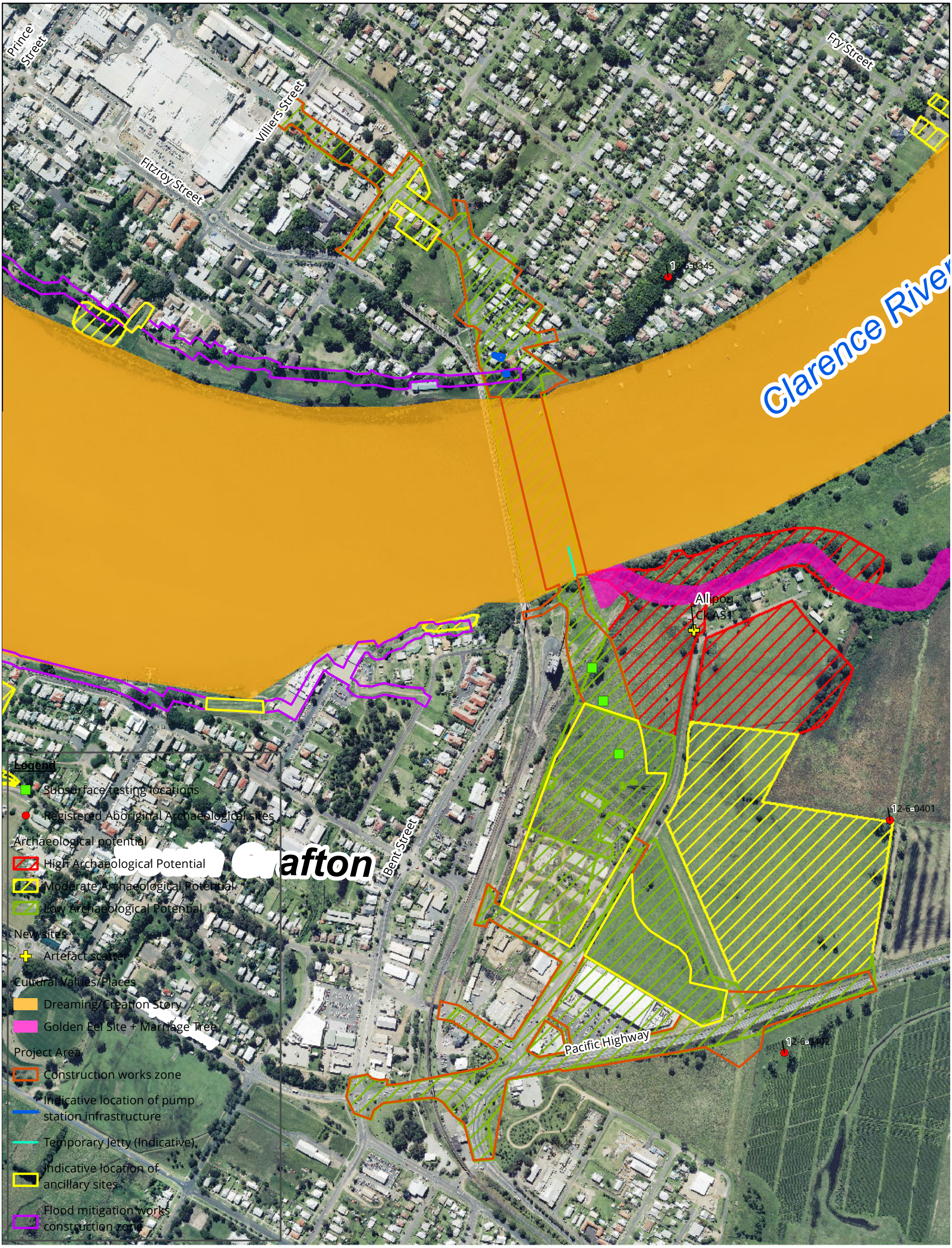

Figure 12: Final assessment of potential within project area

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Acknowledgements: Imagery provided by Arup

Matter: 16256
Date: 06 May 2014,
Checked by: ASF, Drawn by: JMS, Last edited by: jshepherd
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7 Scientific values and significance assessment

The two main values addressed when assessing the significance of Aboriginal sites are cultural values to the Aboriginal community and archaeological (scientific) values. This section of the report assesses scientific values while the separate Aboriginal Cultural Heritage Assessment Report will detail the cultural values of Aboriginal sites in the study area.

The project area includes the Golden Eel site (12-6-0326), a ceremonial and dreaming site with cultural values associated with the Clarence River and Alipou Creek. No archaeological values associated with the Golden Eel site are located in the study area. Cultural heritage values and significance assessment of other heritage values of the Golden Eel site (12-6-0326) are provided in the Aboriginal Cultural Heritage Assessment Report.

Although no Aboriginal archaeological sites have been identified within the project footprint, Alipou Creek AS 1 has been assessed due to its close proximity and being located within the same property boundary as the project area.

7.1 Introduction to the assessment process

Heritage assessment criteria in NSW fall broadly within the significance values outlined in the Australia International Council on Monuments and Sites (ICOMOS) Burra Charter (Australia ICOMOS 1999). This approach to heritage has been adopted by cultural heritage managers and government agencies as the set of guidelines for best practice heritage management in Australia. These values are provided as background and include:

- **Historical significance** (evolution and association) refers to historic values and encompasses the history of aesthetics, science and society, and therefore to a large extent underlies all of the terms set out in this section. A place may have historic value because it has influenced, or has been influenced by, an historic figure, event, phase or activity. It may also have historic value as the site of an important event. For any given place the significance will be greater where evidence of the association or event survives in situ, or where the settings are substantially intact, than where it has been changed or evidence does not survive. However, some events or associations may be so important that the place retains significance regardless of subsequent treatment;
- **Aesthetic significance** (scenic/architectural qualities, creative accomplishment) refers to the sensory, scenic, architectural and creative aspects of the place. It is often closely linked with social values and may include consideration of form, scale, colour, texture, and material of the fabric or landscape, and the smell and sounds associated with the place and its use;
- **Social significance** (contemporary community esteem) refers to the spiritual, traditional, historical or contemporary associations and attachment that the place or area has for the present-day community. Places of social significance have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods or events. Communities can experience a sense of loss should a place of social significance be damaged or destroyed. These aspects of heritage significance can only be determined through consultative processes with local communities; and
- **Scientific significance** (archaeological, industrial, educational, research potential and scientific significance values) refers to the importance of a landscape, area, place or object because of its archaeological and/or other technical aspects. Assessment of scientific value is often based on the likely research potential of the area, place or object and will consider the importance of the data involved, its rarity, quality or representativeness, and the degree to which it may contribute further substantial information.

The cultural and archaeological significance of Aboriginal and historic sites and places is assessed on the basis of the significance values outlined above. As well as the ICOMOS Burra Charter significance values guidelines, various government agencies have developed formal criteria and guidelines that have application when assessing

the significance of heritage places within NSW. Of primary interest are guidelines prepared by the OEH. The relevant sections of these guidelines are presented below.

The *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011) state that an area may contain evidence and associations which demonstrate one or any combination of the ICOMOS Burra Charter significance values outlined above in reference to Aboriginal heritage. Reference to each of the values should be made when evaluating archaeological and cultural significance for Aboriginal sites and places.

The OEH Guidelines (DECC 2006) also specify the importance of considering cultural landscapes when determining and assessing Aboriginal heritage values. The principle behind a cultural landscape is that 'the significance of individual features is derived from their inter-relatedness within the cultural landscape'. This means that sites or places cannot be 'assessed in isolation' but must be considered as parts of the wider cultural landscape. Hence the site or place will possibly have values derived from its association with other sites and places. By investigating the associations between sites, places, and (for example) natural resources in the cultural landscape the stories behind the features can be told. The context of the cultural landscape can unlock 'better understanding of the cultural meaning and importance' of sites and places.

Although other values may be considered – such as educational or tourism values – the two principal values that are likely to be addressed in consideration of Aboriginal sites and places are the cultural/social significance to Aboriginal people and their archaeological or scientific significance to archaeologists. The determinations of archaeological and cultural significance for sites and places should then be expressed as statements of significance that preface a concise discussion of the contributing factors to Aboriginal cultural heritage significance.

7.2 Archaeological (scientific significance) values

Archaeological significance (also called scientific significance, as per the ICOMOS Burra Charter) refers to the value of archaeological objects or sites as they relate to research questions that are of importance to the archaeological community, including indigenous communities, heritage managers and academic archaeologists. Generally the value of this type of significance is determined on the basis of the potential for sites and objects to provide information regarding the past life-ways of people (Burke and Smith 2004: 249, NPWS 1997). For this reason, the NPWS (part of DECC) summarises the situation as 'while various criteria for archaeological significance assessment have been advanced over the years, most of them fall under the heading of archaeological research potential' (NPWS 1997: 26). The NPWS criteria for archaeological significance assessment are based largely on the ICOMOS Burra Charter.

The original version of the scientific assessment methodology used in this report was published by du Cros in 1989 and assessed scientific significance on the basis of a site's research potential and its representativeness on a regional scale. This methodology was a response by du Cros to archaeological discussions at the time in regards to assessing heritage significance, particularly Bowdler's approach to determining scientific (or archaeological) significance based on research potential (Bowdler 1984).

In du Cros's original model representativeness was rated as either common or rare while research potential was assessed against the criteria of site contents, site structure and site integrity. Each research potential criteria was rated low, medium or high, however no overall site rating was provided. This model was subsequently refined by du Cros and Associates to three overall criteria:

- contents (combining what had been previously assessed as site contents and site structure)
- condition
- representativeness.

Each criteria was rated between 0 and 3 and then totalled to give an overall score between 1 and 9 for scientific significance (rated as low, moderate or high). This modified model has been used by Biosis since du Cros and Associates merged with Biosis Research in 1998 and was updated by Jane Harrington in 2002.

Research potential

Research potential is assessed by examining site content and site condition. Site content refers to all cultural materials and organic remains associated with human activity at a site. Site content also refers to the site structure – the size of the site, the patterning of cultural materials within the site, the presence of any stratified deposits and the rarity of particular artefact types. As the site contents criterion is not applicable to scarred trees, the assessment of scarred trees is outlined separately below. Site condition refers to the degree of disturbance to the contents of a site at the time it was recorded.

The site contents ratings used for archaeological sites are:

- 0 - No cultural material remaining;
- 1 - Site contains a small number (e.g. 0–10 artefacts) or limited range of cultural materials with no evident stratification;
- 2 - Site contains a larger number, but limited range of cultural materials; and/or some intact stratified deposit remains; and/or are or unusual example(s) of a particular artefact type; and
- 3 - Site contains a large number and diverse range of cultural materials; and/or largely intact stratified deposit; and/or surface spatial patterning of cultural materials that still reflect the way in which the cultural materials were deposited.

The site condition ratings used for archaeological sites are:

- 0 - Site destroyed;
- 1 - Site in a deteriorated condition with a high degree of disturbance; lack of stratified deposits; some cultural materials remaining;
- 2 - Site in a fair to good condition, but with some disturbance; and
- 3 - Site in an excellent condition with little or no disturbance. For surface artefact scatters this may mean that the spatial patterning of cultural materials still reflects the way in which the cultural materials were laid down.

Pearson and Sullivan (1995: 149) note that Aboriginal archaeological sites are generally of high research potential because 'they are the major source of information about Aboriginal prehistory'. Indeed, the often great time depth of Aboriginal archaeological sites gives them research value from a global perspective, as they are an important record of humanity's history. Research potential can also refer to specific local circumstances in space and time – a site may have particular characteristics (e.g. well preserved samples for absolute dating, or a series of refitting artefacts) that mean it can provide information about certain aspects of Aboriginal life in the past that other less or alternatively valuable sites may not (Burke and Smith 2004: 247-8). When determining research potential value particular emphasis has been placed on the potential for absolute dating of sites.

Representativeness

Representativeness refers to the regional distribution of a particular site type. Representativeness is assessed by whether the site is common, occasional, or rare in a given region. Assessments of representativeness are subjectively biased by current knowledge of the distribution and number of archaeological sites in a region. This varies from place to place depending on the extent of archaeological research. Consequently, a site that is assigned low significance values for contents and condition, but a high significance value for representativeness,

can only be regarded as significant in terms of knowledge of the regional archaeology. Any such site should be subject to re-assessment as more archaeological research is undertaken.

Assessment of representativeness also takes into account the contents and condition of a site. For example, in any region there may only be a limited number of sites of any type that have suffered minimal disturbance. Such sites would therefore be given a high significance rating for representativeness, although they may occur commonly within the region.

The representativeness ratings used for archaeological sites are:

- 1 - common occurrence;
- 2 - occasional occurrence; and
- 3 - rare occurrence.

Overall scientific significance ratings for sites, based on a cumulative score for site contents, site integrity and representativeness are:

- 1-3 low scientific significance;
- 4-6 moderate scientific significance; and
- 7-9 high scientific significance.

Each site is given a score on the basis of these criteria – the overall scientific significance is determined by the cumulative score. This scoring procedure has been applied to the Aboriginal archaeological sites identified during the archaeological investigation. The results are in Table 10.

7.2.1 Statements of archaeological significance

The following archaeological significance assessment is based on Requirement 11 of the *Code of practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010). Using the assessment criteria detailed in Scientific Values and Significance Assessment, an assessment of significance was determined and a rating for each site was determined. The results of the archaeological significance assessment are given in Table 8 and

Table 9 below.

Table 8: Alipou Creek AS 1 scientific significance.

Site Name	Site Content	Site Condition	Representativeness	Scientific Significance
Alipou Creek AS 1	1	1	1	3 - Low

Table 9: Statements of scientific significance for Alipou Creek AS 1.

Site Name	Statement of Significance
Alipou Creek AS 1	Alipou Creek AS 1 is a low density artefact scatter that contains a limited range of artefact types. It also lacks stratified deposits and is a common site type within the local region. The site has some, although limited potential to provide new information about the exploitation of raw stone material and plant processing in the region.

8 Impact assessment

This impact assessment discusses potential impacts to Aboriginal archaeological sites of the basis of the proposal to:

- Build a new bridge about 70 m downstream of the existing bridge (which would be retained); and
- Upgrade parts of the road network in Grafton and South Grafton to connect the new bridge to the existing road network.
- Ancillary facilities required for the construction of the project, including some or all of the following: site compounds, concrete batching plant, pre-cast facilities, and stockpile areas for materials and temporary storage of spoil and mulch.

This impact assessment discusses potential impacts the project has on Aboriginal archaeological sites. Potential impacts to intangible Aboriginal cultural heritage values are discussed in the separate Aboriginal Cultural Heritage Assessment report.

8.1 Predicted physical impacts

The project would be expected to impact on soil surfaces and would therefore have the potential to harm Aboriginal heritage material. However there are no identified Aboriginal archaeological sites and values located within the project area and there is low potential for Aboriginal cultural material to be present. The closest Aboriginal archaeological values are at Alipou Creek AS 1, located 150 m east of the project area, but this site will not be impacted by the project.

Flood mitigation works would be expected to impact on soil surfaces of existing flood levee structures. There are no identified Aboriginal archaeological values located within the flood levees study area. Carrs Creek Camp is located in close proximity to the flood levees, but this site will not be impacted by the project.

The project area crosses the Clarence River which is associated with the Golden Eel site (12-6-0326). However no archaeological values associated with the Golden Eel site are located within the study area. An assessment of potential impacts to cultural values of the Golden Eel site is provided in the Aboriginal Cultural Heritage Assessment.

A summary of impacts is provided below in Table 10.

Table 10: Summary of potential archaeological impact

Site Name	Significance	Type Of Harm	Degree Of Harm	Consequence Of Harm
Alipou Creek AS 1	Low	None	None	No loss of value.
Golden Eel site	High Cultural Significance	None	None	No loss of value

8.2 Management and mitigation measures

Although no direct impacts to Aboriginal material heritage have been identified, avoidance strategies should be implemented to avoid accidental harm to Alipou Creek AS 1 and Carr's Creek Camp.

9 Recommendations

Strategies have been developed based on the archaeological significance of cultural heritage relevant to the study area and have been influenced by:

- Predicted impacts to Aboriginal cultural heritage;
- The planning approvals framework;
- Current best conservation practice, widely considered to include:
  - Ethos of the Australia ICOMOS Burra Charter; and
  - The Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010).

Prior to any works occurring within the study area, the following is recommended:

Recommendation 1: Aboriginal Cultural Heritage Induction

The project site induction will incorporate Aboriginal culture awareness training for all relevant staff and contractors. This induction will include information about the Aboriginal culture and history of the locality, the location of sites and items that require protection, heritage management measures and protocols, and legal obligations. This training will be developed in consultation with the Grafton Ngerrie Local Aboriginal Land Council and provided prior to commencing work on-site.

Recommendation 2: Known Aboriginal objects and Places

Aboriginal sites located in close proximity to the project construction work zone will be designated 'no-go' areas which would be clearly identified and appropriately fenced to prevent access or damage during construction.

Recommendation 3: Discovery of Unanticipated Aboriginal Cultural Material and Human Remains

In the event that unanticipated Aboriginal cultural material or skeletal remains are encountered the Roads and Maritime *Standard Management Procedure for Unexpected Archaeological Finds* (2012) should be implemented.

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Appendices

Appendix 1 - AHIMS Results

THE FOLLOWING APPENDIX IS NOT TO BE MADE PUBLIC

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Appendix 2 – Test excavation results

Test Trench	Date Excavated	Co ordinate	Depth	Soil Description	Munsell	pH	Artefacts
1	14-15 Oct 2013	494585E 6714383N	0-3cm	Humic clayey silt with rootlets throughout.	10YR 3/2	6.5	No
			3-5cm	Clayey silt moderately compacted.	10YR 3/2	6.5	No
			5-10cm	Clayey silt with fine gravel inclusions, moderately compacted.	10YR 3/2	6.5	No
			10-15cm	Clayey silt with fine gravel inclusions, some cinder inclusions, moderately compacted.	10YR 3/2	6.5	No
			15-20cm	Clayey silt, moderately compacted and dry. Very fine gravel inclusions	10YR 3/3	6.5	No
			20-25cm	Clayey silt, moderately compacted and dry. Very fine gravel inclusions	10YR 3/3	6.5	No
			25-30cm	Clayey silt with silty clay inclusions, very dry and friable.	10YR 3/3	7	No
			30-46cm	Dark brown clay with yellow clay inclusions, very dry and friable.	7.5YR 3/3	7	No
			46-60cm	Dry friable yellowish clay mottled with dark brown clay.	7.5YR 4/4	7	No
			60-84cm	Dry friable yellowish clay mottled with dark brown clay.	7.5YR 4/4	7	No
			84-100cm	Greyish brown clay with yellowish brown clay inclusions.	10YR 4/2	7.5	No
2	15 Oct 2013	494594E 6714301N	0-5cm	Humic clayey silt with grass roots throughout.	7.5YR 2.5/2	6.5	No
			5-10cm	Clayey silt, moderately compacted.	7.5YR 2.5/2	6.5	No

Test Trench	Date Excavated	Co ordinate	Depth	Soil Description	Munsell	pH	Artefacts
			10-15cm	Claey silt, moderately compacted with small gravel and cinder inclusions.	10 YR 3/3	6.5	No
			15-20cm	Clayey silt with some yellow clay inclusions, moderately compacted.	10YR 3/2	6.5	No
			20-25cm	Clayey silt with yellow clay inclusions, fine gravel and cinder inclusions, moderately compacted.	10YR 3/2	6.5	No
			25-30cm	Clayey silt with yellow clay inclusions.	10YR 3/3	6.5	No
			30cm	Clay mottled with yellow clay.	10YR 3/3	6.5	No
3	16 Oct 2013	494595E 6714224N	0-5cm	Humic clayey silt with grass roots throughout.	7.5YR 3/3	6.5	No
			5-10cm	Clayey silt, moderately compacted.	7.5YR 3/3	6.5	No
			10-15cm	Clayey silt, moderately compacted.	7.5YR 3/3	6.5	No
			15-20cm	Clayey silt, moderately compacted.	10YR 3/2	7	No
			20-40cm	Clay with one large root inclusions.	7.5YR 2.5/3	7	No