

# Newell Highway Heavy Duty Pavements, Narrabri to Moree

Aboriginal and historic archaeological  
survey report

Roads and Maritime Services | May 2018



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### **Acknowledgement**

OzArk acknowledge Traditional Owners of the area on which this assessment took place and pay respect to their beliefs, cultural heritage and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

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## EXECUTIVE SUMMARY

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OzArk Environmental & Heritage Management has been engaged by Roads and Maritime Services (Roads and Maritime) to complete an Aboriginal archaeological survey report and historic heritage assessment of five sections of the Newell Highway (A39) including 33.8 kilometres of highway between Narrabri and Moree in the Narrabri and Moree Local Government Areas, NSW. These areas have the potential to be impacted by the construction of heavy duty pavement upgrades, five new overtaking lanes and one potential bridge.

A Stage 1 investigation has been carried out under the Roads and Maritime Services (2011) *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (PACHCI) and found sufficient evidence to elevate investigations to Stage 2 of the PACHCI. The Aboriginal archaeological assessment follows the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010) and Stage 2 of the PACHCI (RMS 2011). The historic heritage assessment follows the *Historical Archaeology Code of Practice* (Heritage Council 2006).

Background research on Aboriginal and historic heritage was undertaken and a predictive model of Aboriginal site location developed for the area. The fieldwork component of the alternative alignment assessment was undertaken by OzArk and five representatives from three Aboriginal groups (Gomeri People Native Title Claim Group, Narrabri Local Aboriginal Land Council [LALC] and Moree LALC) on Wednesday 31 May 2017. This assessment was restricted to the existing road corridor.

The field assessment utilised vehicle traverses for reconnaissance observation of the proposal areas in order to identify areas to be sampled. Pedestrian transects were used to sample and assess undisturbed areas with good ground surface visibility containing landforms possessing Aboriginal and historic archaeological potential. One Aboriginal site (BL-HW17-ST1) and one Aboriginal potential archaeological deposit (PAD; BC-HW17-PAD1) were recorded during the survey and five previously recorded historic heritage sites were located. Following this assessment, further fieldwork to assess the recommended alignment was undertaken by OzArk on Monday 15 to Wednesday 17 January 2018. Two additional sites, BC-HW17-ST1 and TC-HW17-ST1 were recorded during the 2018 assessment.

Recommendations concerning the management of Aboriginal cultural heritage within the proposal areas are presented in **Section 12.1** of this report and recommendations concerning historic heritage are presented in **Section 12.2**.

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# 1 INTRODUCTION

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## 1.1 BRIEF DESCRIPTION OF THE PROPOSAL

OzArk Environmental & Heritage Management (OzArk) has been engaged by Roads and Maritime Services (Roads and Maritime) (the proponent) to complete an Aboriginal archaeological survey report and historic heritage assessment of five sections of the Newell Highway (A39) including 33.8 kilometres of highway between Narrabri and Moree in the Narrabri and Moree Local Government Areas (LGAs), NSW (**Figure 1-1**).

## 1.2 BACKGROUND

The Newell Highway is the longest highway in New South Wales (NSW) traversing 1058 kilometres and providing an essential road connection for central western NSW. The highway is a vital transport corridor between Victoria, NSW and Queensland and is a major interstate freight corridor, being the third largest in NSW. The Newell Highway provides access to key regional primary industries and export markets and supports regional tourism with caravans being a major road user. Portions of The Newell Highway between Narrabri and Moree have been identified as nearing their end of life with regular failures occurring within the structural pavement and large sections not meeting the desired cross section dimensions. As such, significant pavement upgrades are required to 33.8 kilometres of the highway.

A Stage 1 Aboriginal cultural heritage investigation has been carried out under the Roads and Maritime Services (2011) *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (PACHCI). Sufficient evidence was found to elevate investigations to Stage 2 of the PACHCI. Stage 2 requires that an archaeologist carry out an archaeological survey to fulfil the specified requirements.

## 1.3 THE PROPOSAL AND PROPOSAL AREAS

The proposal forms part of the *Newell Highway Corridor Strategy* (2015) to provide an efficient and sustainable corridor that caters for increasing growth and improves safety along the Newell Highway. The Newell Highway carries substantial freight volumes, large volumes of inter-regional and local freight traffic, and is increasingly catering for substantial volumes of tourist traffic.

Key features of the proposal include:

- Upgrading and resurfacing five segments of the existing Newell Highway between Narrabri and Moree to a heavy duty (HD) pavement
- Road widening to provide 3.5 metre wide lanes and two metre shoulders
- Provision of a one metre wide painted median
- Provision of 1.5 kilometre long overtaking lanes at five locations (three northbound and two southbound)

- Upgrading of the existing intersections along the Newell Highway to channelised right hand turn (CHR), with an axillary left hand turn (AUL) intersection treatments
- Provision of a central two-way right turn lane (TWRTL) at Bellata
- Provision of three metre wide shoulders for 30 metres on either side of property accesses
- Improving the Newell Highway flood immunity to a minimum of five year average recurrence interval (ARI) where feasible and reasonable
- Property acquisitions as required
- Utility relocations as required
- Temporary construction ancillary facilities, including construction compounds, stockpile sites and erosion and sedimentation measures within the road corridor as required.

The proposal would be delivered in five segments with a combined length of 33.8 kilometres of upgrades along the Newell Highway between Narrabri and Moree. The five segments and indicative work locations are described in **Table 1-1**. The width of the study area assessed has been based on the worst case i.e. the recommended alignment and/or alternate option with a 10 metre buffer. The proposal area will be the recommended or alternate alignment with a four meter buffer as per **Table 1-1** below.

**Table 1-1: Proposal areas and proposed work**

Proposal area	Segment	Proposal alignment	Location	Proposed works
1	N2MS1	Recommended	7.2 kilometres to 12.9 kilometres north of Narrabri	<ul style="list-style-type: none"> <li>• Upgrading 5.7 kilometres of the Newell Highway</li> </ul>
2	N2MS2	Alternate	15.6km to 25.9km north of Narrabri at Edgeroi	<ul style="list-style-type: none"> <li>• Upgrading 10.3km of the Newell Highway</li> <li>• Two overtaking lanes - northbound and southbound</li> </ul>
3	N2MS3	Recommended	46.8km to 59.30km north of Narrabri at Bellata	<ul style="list-style-type: none"> <li>• Upgrading 4.1km of highway</li> <li>• One northbound overtaking lane</li> </ul>
4	N2MS4	Alternate	52.4km to 58.2km north of Narrabri, north of Bellata	<ul style="list-style-type: none"> <li>• Upgrading 5.8km of highway</li> </ul>
5	N2MS5	Alternate	88.4km to 96.4km north of Narrabri, south of Moree	<ul style="list-style-type: none"> <li>• Upgrading 8.0km of highway</li> <li>• Two overtaking lanes - northbound and southbound</li> </ul>

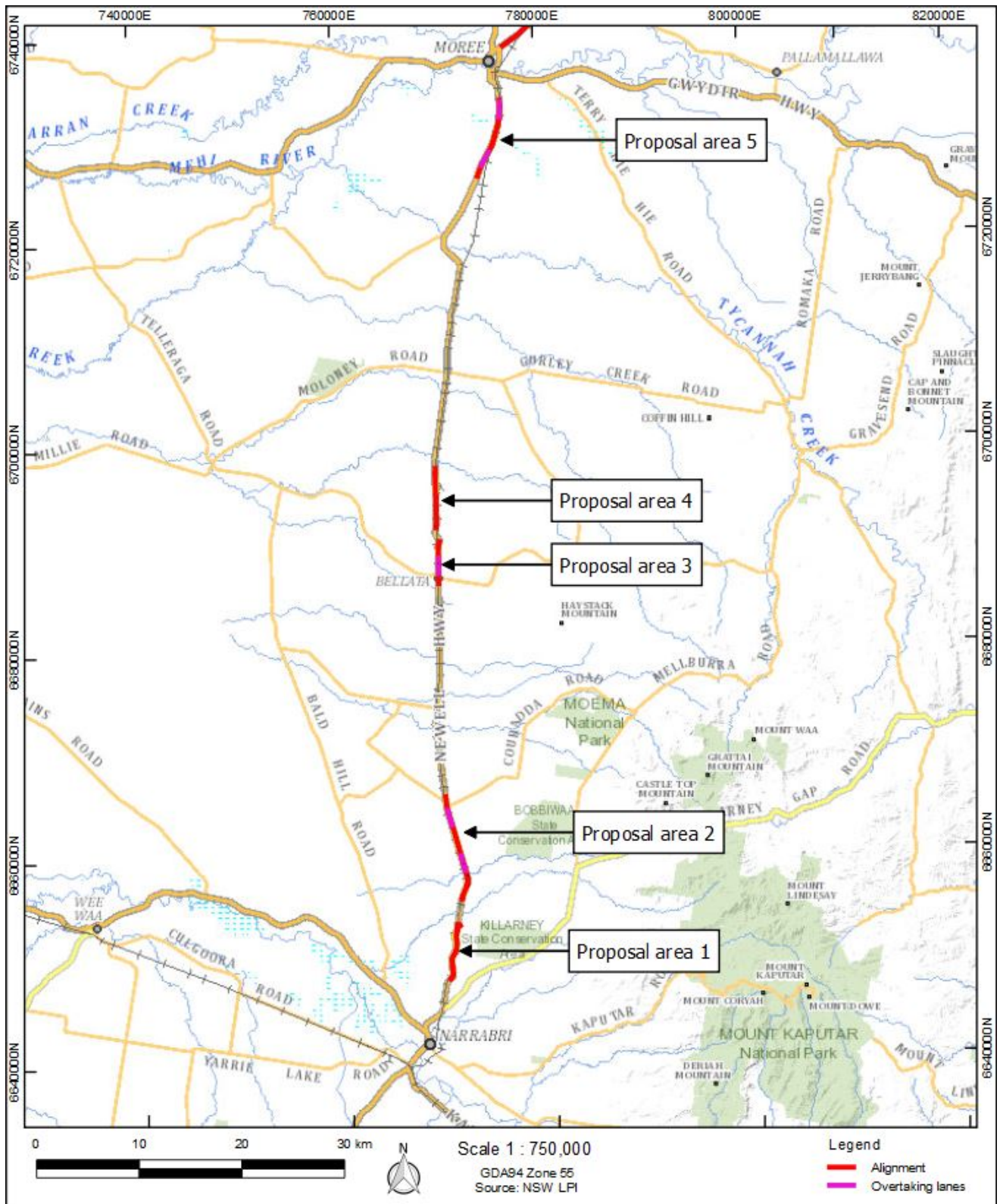


Figure 1-1: Map showing the location of the three proposed areas of construction: proposal areas 1 to 5.

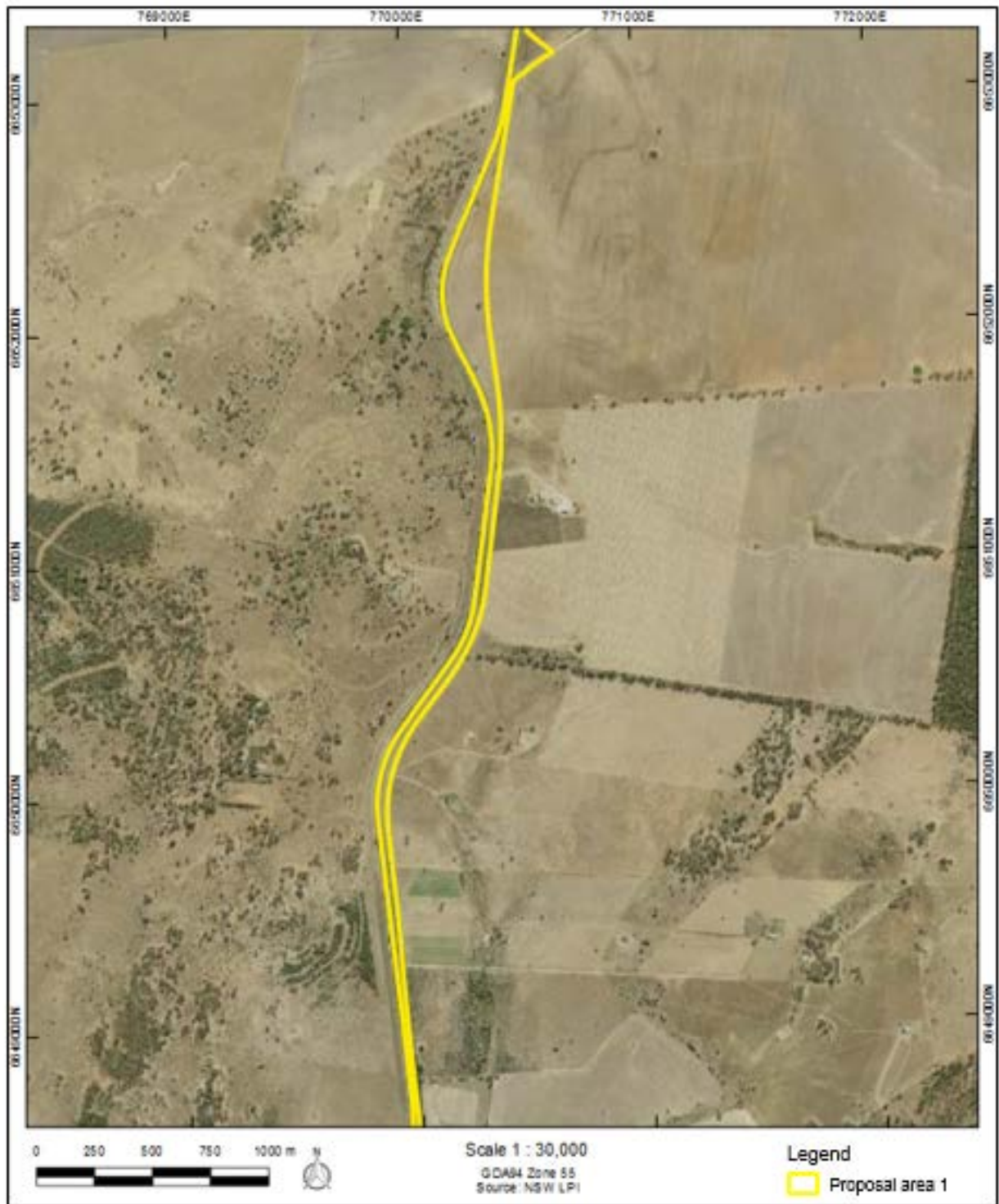


Figure 1-2: Map showing the area of proposed works on the Newell Highway: proposal area 1.



Figure 1-3: Map showing the area of proposed works on the Newell Highway: proposal area 2.



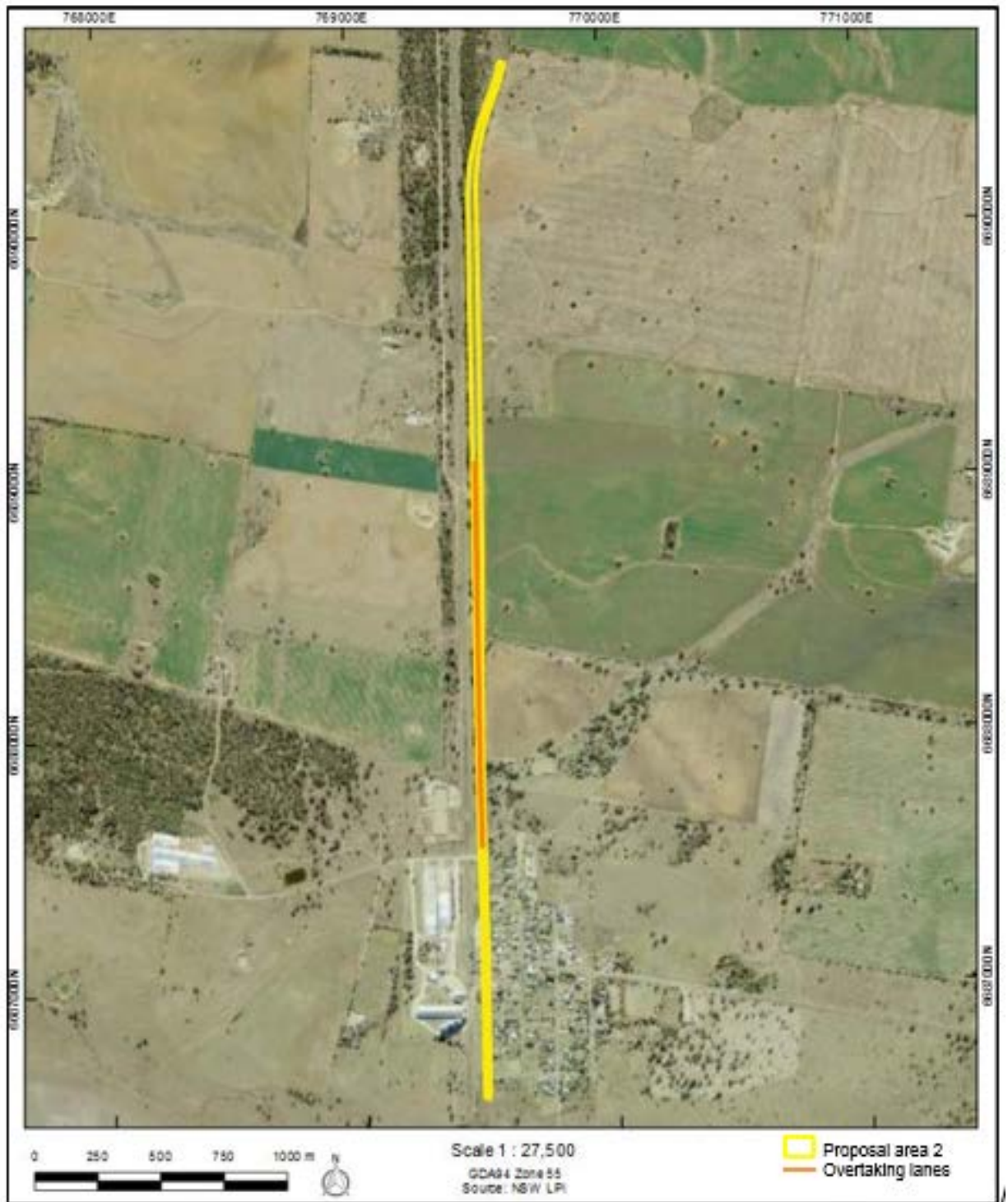


Figure 1-4: Map showing the area of proposed works on the Newell Highway: proposal area 3.



Figure 1-5: Map showing the area of proposed works on the Newell Highway: proposal area 4.



Figure 1-6: Map showing the area of proposed works on the Newell Highway: proposal area 5.

## 1.4 RELEVANT LEGISLATION

Cultural heritage is managed by a number of state and national Acts. Baseline principles for the conservation of heritage places and relics can be found in the *Burra Charter* (Australia ICOMOS 2013). The *Burra Charter* has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning

documents. The *Burra Charter* generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a state level.

A number of acts of parliament provide for the protection of heritage at various levels of government.

#### **1.4.1 State legislation**

##### ***Environmental Planning and Assessment Act 1979*** (EP&A Act)

This act, as amended in 2017 by the *Environmental Planning and Assessment Amendment Act 2017*, establishes requirements relating to land use and planning.

The proposal is to be carried out by Roads and Maritime, a self-determining authority, under Part 5, Division 5.1, of the EP&A Act

##### ***State Environmental Planning Policy (Infrastructure) 2007*** (ISEPP)

The proposed activity falls within the scope of the Infrastructure SEPP as being permissible without development consent, thereby permitting assessment of the proposal under Part 5, Division 5.1, of the EP&A Act.

##### ***National Parks and Wildlife Act 1974*** (NPW Act)

Amended during 2010, the NPW Act provides for the protection of Aboriginal objects (sites, objects and cultural material) and Aboriginal places. Under the Act (Part 6), an Aboriginal object is defined as: any deposit, object or material evidence (not being a handicraft for sale) relating to indigenous and non-European habitation of the area that comprises NSW, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction, and includes Aboriginal remains.

An Aboriginal place is defined under the NPW Act as an area which has been declared by the Minister administering the Act as a place of special significance for Aboriginal culture. It may or may not contain physical Aboriginal objects.

As of 1 October 2010, it is an offence under Section 86 of the NPW Act to 'harm or desecrate an object the person knows is an Aboriginal object'. It is also a strict liability offence to 'harm an Aboriginal object' or to 'harm or desecrate an Aboriginal place', whether knowingly or unknowingly. Section 87 of the Act provides a series of defences against the offences listed in Section 86, such as:

- The harm was authorised by and conducted in accordance with the requirements of an *Aboriginal Heritage Impact Permit* (AHIP) under Section 90 of the Act
- The defendant exercised 'due diligence' to determine whether the action would harm an Aboriginal object

- The harm to the Aboriginal object occurred during the undertaking of a 'low impact activity' (as defined in the regulations).

Under Section 89A of the Act, it is a requirement to notify the Office of Environment and Heritage (OEH) Director-General of the location of an Aboriginal object. Identified Aboriginal items and sites are registered on Aboriginal Heritage Information Management System (AHIMS).

### ***Heritage Act 1977***

The *Heritage Act 1977* (Heritage Act) established the Heritage Council of NSW. The Heritage Council's role is to advise the government on the protection of heritage assets, make State Heritage Register listing recommendations to the Minister, and assess/approve/decline proposals involving modification to heritage items or places listed on the Register. Most proposals involving modification are assessed under Section 60 of the Heritage Act.

Section 139 of the Heritage Act provides protection to all known and unknown archaeological relics not listed on the State Heritage Register or subject to an Interim Heritage Order. An excavation permit issued under Section 140 of the Heritage Act is required if it is anticipated that relics may be discovered, exposed, moved, damaged or destroyed during an activity.

'Relics' are defined as an archaeological deposit, artefact, object or material evidence that relates to the settlement of NSW and has heritage significance at a local or State level. A person must not disturb or excavate land if they know or have reasonable cause to suspect they might discover, expose, move or damage a 'relic', unless they have an excavation permit.

#### **1.4.2 Commonwealth legislation**

##### ***Environment Protection and Biodiversity Conservation Act 1999*** (EPBC Act)

Matters of National Environmental Significance listed under the EPBC Act include the National Heritage List and the Commonwealth Heritage List, both administered by the Commonwealth Department of the Environment and Energy. Ministerial approval is required under the EPBC Act for proposals involving significant impacts to National/Commonwealth heritage places.

#### **1.4.3 Applicability to the proposal**

The current proposal will be assessed under Part 5 of the EP&A Act.

Any Aboriginal sites within the proposal area are afforded legislative protection under the NPW Act.

Any items of local or state historical heritage significance within the proposal area are afforded legislative protection under the Heritage Act. Relics of local heritage significance are protected under Section 139 of the Heritage Act. If it is anticipated that a relic will be discovered, exposed, moved, damaged or destroyed during an activity, an application must be made to the Heritage Council for an excavation permit under Section 140 of the Heritage Act.

It is noted there are no Commonwealth or National heritage listed places within the proposal area, and as such, the heritage provisions of the EPBC Act do not apply.

## **1.5 ASSESSMENT APPROACH**

The current assessment follows the *Code of Practice for the Investigation of Aboriginal Objects in New South Wales* (Code of Practice; DECCW 2010), Stage 2 of the PACHCI (RMS 2011) and the *Cultural Heritage Guidelines* (RMS 2015).

The historic archaeological assessment follows the *Historical Archaeology Code of Practice* (Historical Code of Practice; Heritage Council of NSW 2006).

The Aboriginal archaeological assessment is presented in **Sections 2 to 6** and the historic heritage assessment is presented in **Sections 7 to 11**. Recommendations regarding Aboriginal cultural heritage and historic heritage are provided in **Section 12**.

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## 2 THE ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

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### 2.1 PURPOSE AND OBJECTIVES

The purpose of the current study is to identify and assess Aboriginal cultural heritage constraints relevant to the proposed works.

#### 2.1.1 Aboriginal archaeological assessment objectives

The current assessment will apply the Code of Practice to complete an Aboriginal archaeological assessment to meet the following objectives:

**Objective one:** Undertake background research on the study area to formulate a predicative model for site location within the proposal area

**Objective two:** Identify and record objects or sites of Aboriginal heritage significance within the proposal area, as well as any landforms likely to contain further archaeological deposits

**Objective three:** Assess the likely impacts of the proposed work to Aboriginal cultural heritage and provide management recommendations.

### 2.2 DATE OF ARCHAEOLOGICAL ASSESSMENT

The fieldwork component of the alternative alignment assessment was undertaken by OzArk on Wednesday 31 May 2017.

The fieldwork component of the recommended alignment assessment was undertaken by OzArk on Monday 15 January to Wednesday 17 January 2018.

### 2.3 ABORIGINAL COMMUNITY INVOLVEMENT

Aboriginal representatives from the following Aboriginal organisations participated in the survey (**Appendix 1**):

- Gomeroi People Native Title Claim Group (Gomeroi NTCG; Tribunal file no. NC2011/006; Federal Court file no. NSD2308/2011)
- Narrabri Local Aboriginal Land Council (Narrabri LALC)
- Moree Local Aboriginal Land Council (Moree LALC).

### 2.4 OZARK INVOLVEMENT

#### 2.4.1 Field assessment

The fieldwork component of the archaeological assessment was undertaken by:

- Fieldwork Director: Dr Chris Lovell (PhD, BA [Hons], BSc, University of Queensland)

The fieldwork component of the recommended alignment assessment was undertaken by:

- Archaeologist: Stephanie Rusden (BSc University of Wollongong and BA (Archaeology) University of New England)
- Archaeologist: Philippa Sokol (BA (Archaeology) University of New England).

#### **2.4.2 Reporting**

The reporting component of the archaeological assessment was undertaken by:

- Report Author: Dr Chris Lovell
- Contributor: Stephanie Rusden
- Reviewer: Ben Churcher (OzArk Principal Archaeologist; BA[Hons], Dip Ed).



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### 3 LANDSCAPE CONTEXT

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An understanding of the environmental contexts of a proposal area is requisite in any Aboriginal archaeological investigation (DECCW 2010). It is a particularly important consideration in the development and implementation of survey strategies for the detection of archaeological sites. In addition, natural geomorphic processes of erosion and/or deposition, as well as man-made landscape processes, influence the degree to which these material culture remains are retained in the landscape as archaeological sites; and the degree to which they are preserved, revealed and/or conserved in present environmental settings.

#### 3.1 TOPOGRAPHY

The proposal areas are located within the Brigalow Belt South bioregion (NPWS 2003: 131–137) and traverse two subregions—Northern Basalts and Northern Outwash (**Figure 3-1**)—and three Mitchell (2002) landscape units: Kaputar Slopes, Gwydir Alluvial Plains and Belata Sands (**Figure 3-2**). **Plates 1 to 18** contain photographs showing the topography of the proposal areas.

Proposal area 1 traverses the Northern Basalts and Northern Outwash subregions (NPWS 2003: 136). The Northern Basalts subregion occurs in the southern portion of proposal area 1 and is characterised by undulating low stony hills, long slopes with sandy wash and heavy clays in the valley floors. The Northern Outwash subregion occurs in the northern portion of proposal area 1 and is characterised by sloping plains with alluvial fans that are coarser and steeper than the Gwydir Fans located downstream. proposal area 1 occurs within the Kaputar Slopes landscape unit (Mitchell 2002) which includes the lower slopes of the Kaputar volcanic complex with radiating finger-like ridges capped by basalt, with general elevation of between 300 and 500 meters and local relief to 80 metres.

Proposal area 2 occurs within the Northern Outwash subregion (NPWS 2003: 136) and the Gwydir Alluvial Plains landscape unit (Mitchell 2002). The Gwydir Alluvial Plains landscape unit comprises channelized gently undulating plains with local relief between two and five metres.

Proposal area 3 occurs within the Northern Outwash subregion (NPWS 2003: 136) and the Belata Sands landscape unit (Mitchell 2002). The Belata Sands landscape unit includes the westward sloping plains and downs, and ephemeral creek channels, with general elevation between 220 and 260 metres and local relief of less than 10 metres.

Proposal area 4 occurs within the Northern Outwash subregion (NPWS 2003: 136) and traverses the Gwydir Alluvial Plains and Belata Sands landscape units (Mitchell 2002).

Proposal area 5 occurs within the Northern Outwash subregion (NPWS 2003: 136) and the Gwydir Alluvial Plains landscape unit (Mitchell 2002).

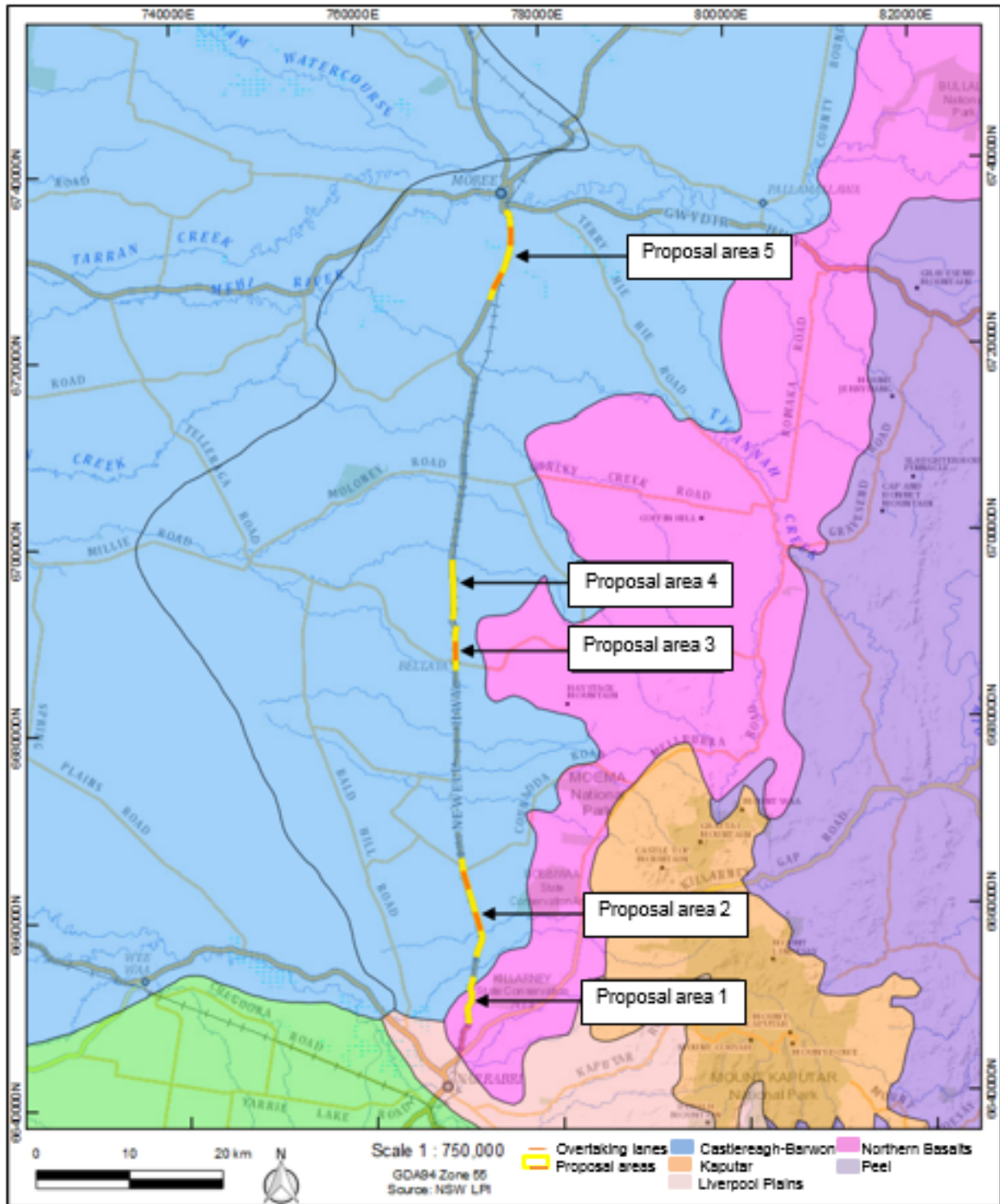


Figure 3-1: Map showing the Brigalow Belt South bioregion subregions in relation to the proposal areas.

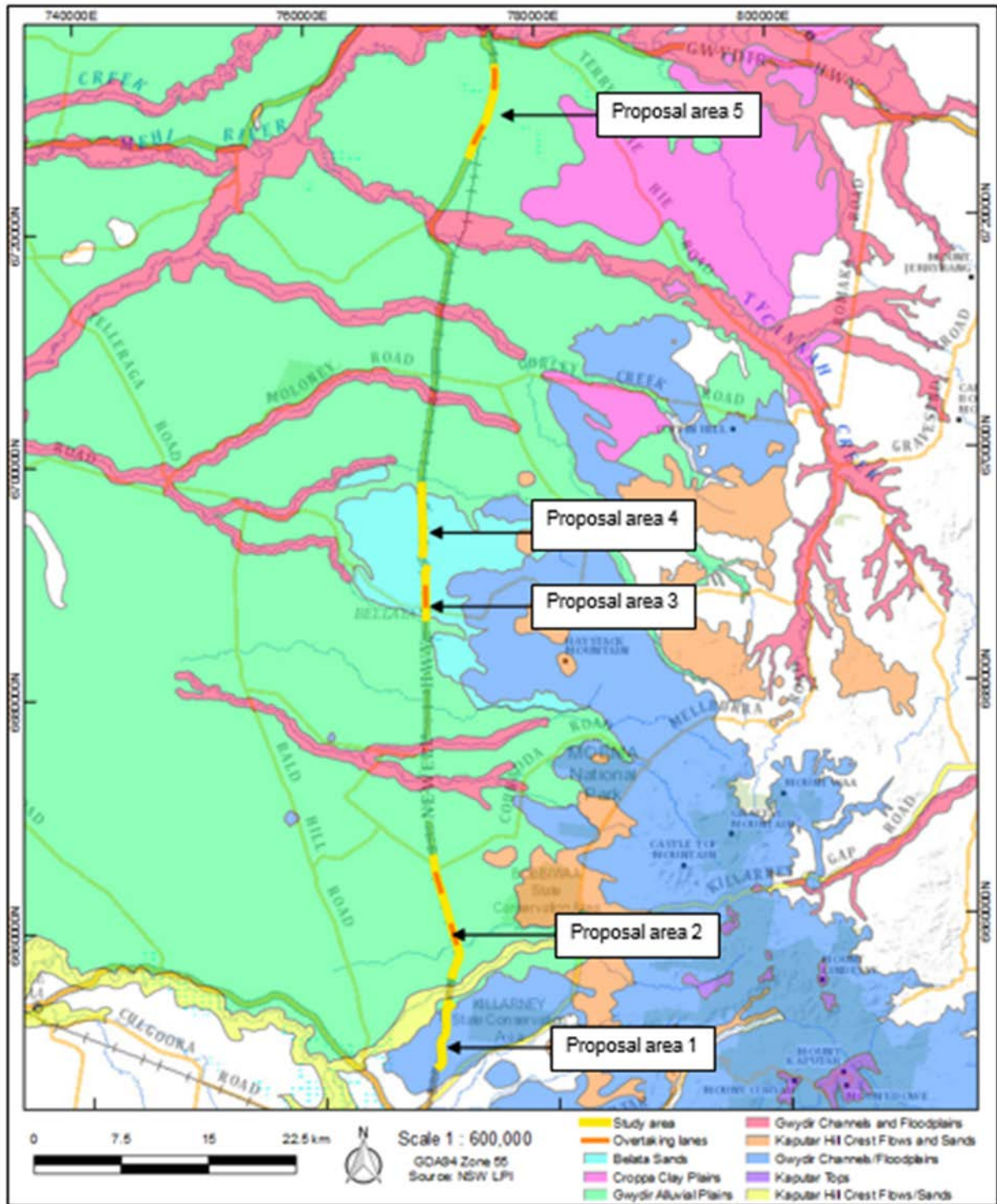


Figure 3-2: Map showing the Mitchell (2002) landscape units in relation to the proposal areas.

### 3.2 GEOLOGY AND SOILS

The geology of the Northern Basalts subregion comprises Tertiary basalts overlying Jurassic quartz sandstones, with alluvial sediments derived from these. Soils are composed of black loams on basalt ridges, deep sands on sandstones, and texture contrast soils on slopes. Heavy grey clay soils occur on the alluvial flats. The geology of the Northern Outwash subregion comprises Tertiary and Quaternary alluvial fans and stream terraces. Soils are composed of red loams and heavy brown clays (NPWS 2003: 136).

The geology of the Kaputar Slopes landscape unit (Mitchell 2002) comprises basalt overlying lower Permian and Triassic quartz sandstone, lithic sandstone, silty sandstone, conglomerate and thin coal measures. Soils are composed of: shallow stony red-brown loam and clay loam in uniform profiles on basalts; yellow and yellow-brown texture-contrast profile on sandstones; and deep black earths in the lowest valleys.

The geology of the Gwydir Alluvial Plains landscape unit (Mitchell 2002) comprises Holocene fluvial sediments of backplain and channelized backplain facies on the Gwydir River fan. Soils are composed of grey and brown silty clay deposited from suspended sediments in floodwater, often with gilgai. The elevated floodplain margins are composed of red-brown texture-contrast soils.

The geology of the Belata Sands landscape unit (Mitchell 2002) comprises Tertiary poorly cemented gravels, sand and clay. Soils are composed of red-brown to red-yellow earths with uniform or gradational profiles.

### 3.3 HYDROLOGY

Proposal area 1 traverses several minor ephemeral watercourses (**Figure 3-3**). Proposal area 2 traverses two major intermittent watercourses—Bobbiwaa Creek and Taree Creek—and several minor ephemeral watercourses (**Figure 3-4**). Proposal area 3 traverses two minor ephemeral tributaries of Tookey Creek and Gehan Creek (**Figure 3-5**). Proposal area 4 traverses one major intermittent watercourse—Tookey Creek—and two minor ephemeral tributaries of Tookey Creek (**Figure 3-6**). Proposal area 5 is close to a major intermittent watercourse—Clarks Creek—and traverses one major intermittent watercourse: Halls Creek (**Figure 3-7**).

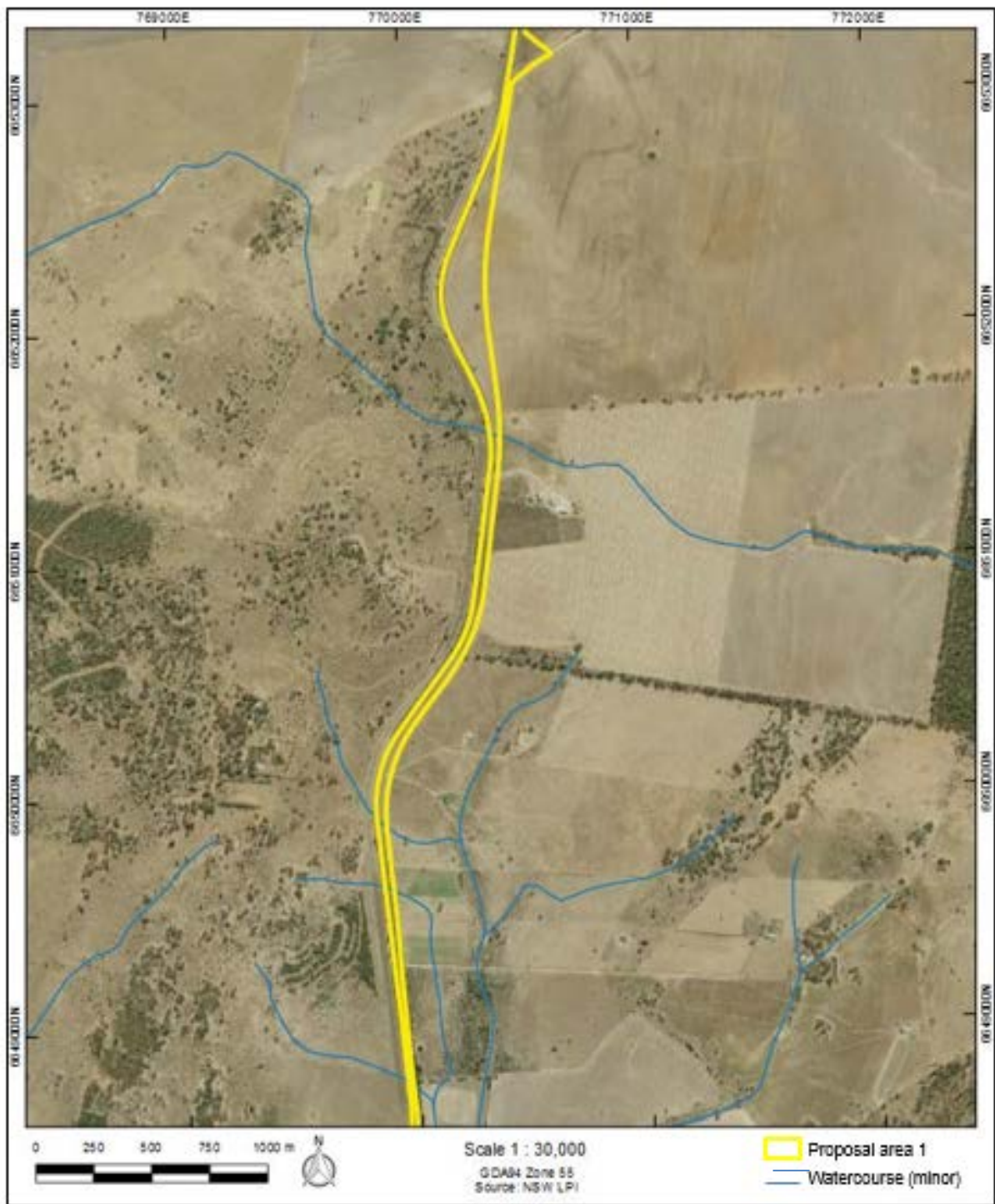


Figure 3-3: Map showing the location of watercourses in relation to proposal area 1.

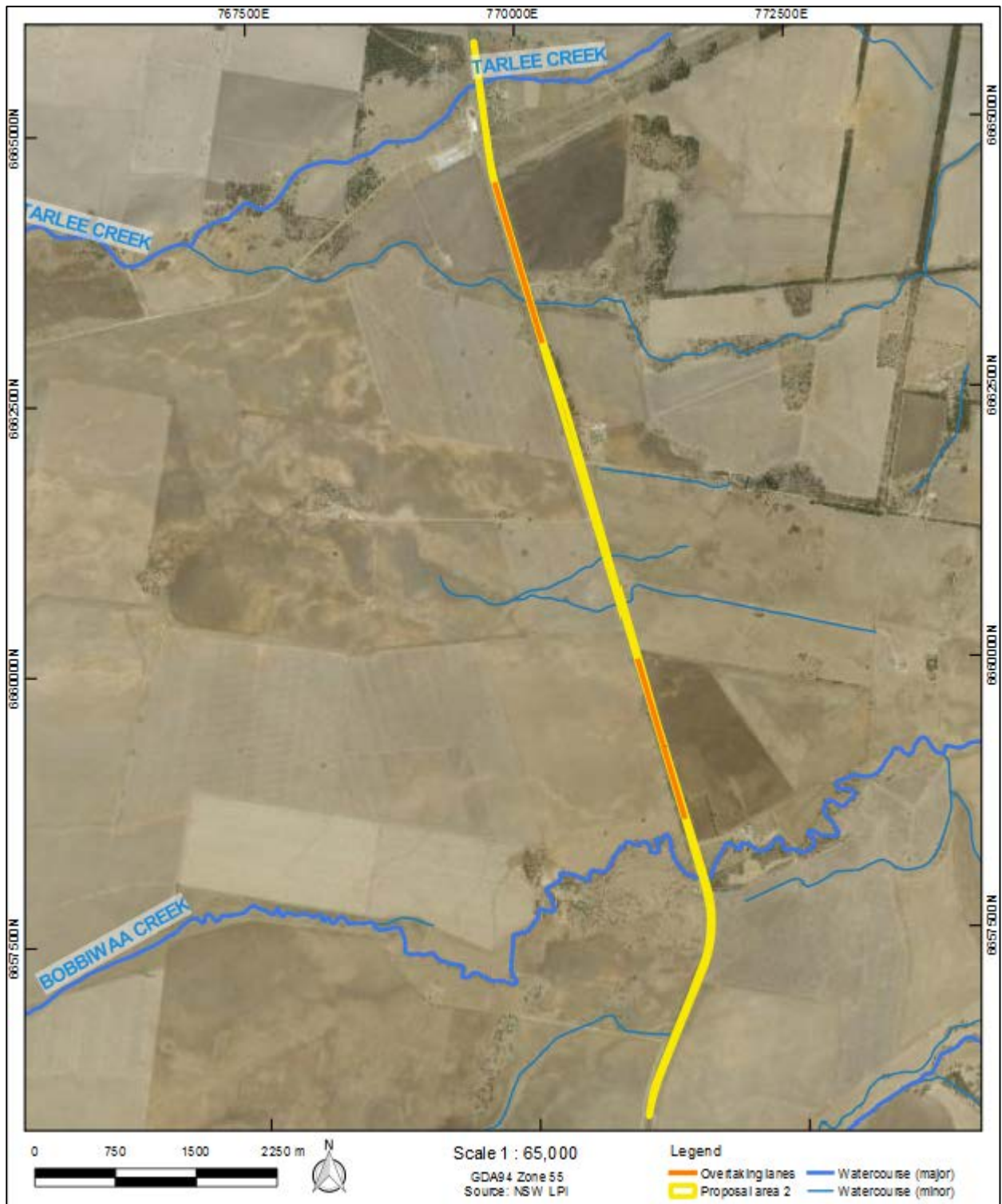


Figure 3-4: Map showing the location of watercourses in relation to proposal area 2.

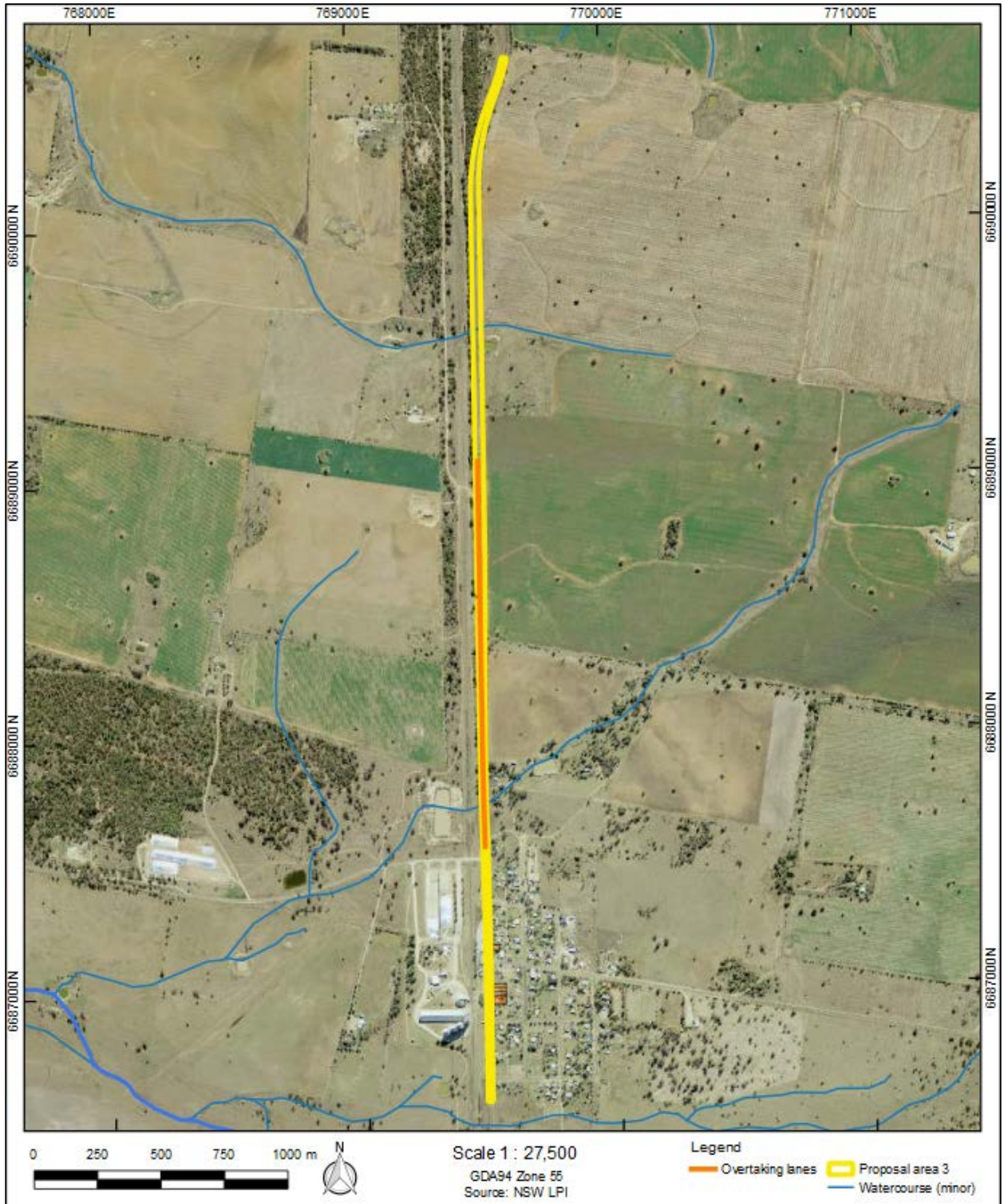


Figure 3-5: Map showing the location of watercourses in relation to proposal area 3.

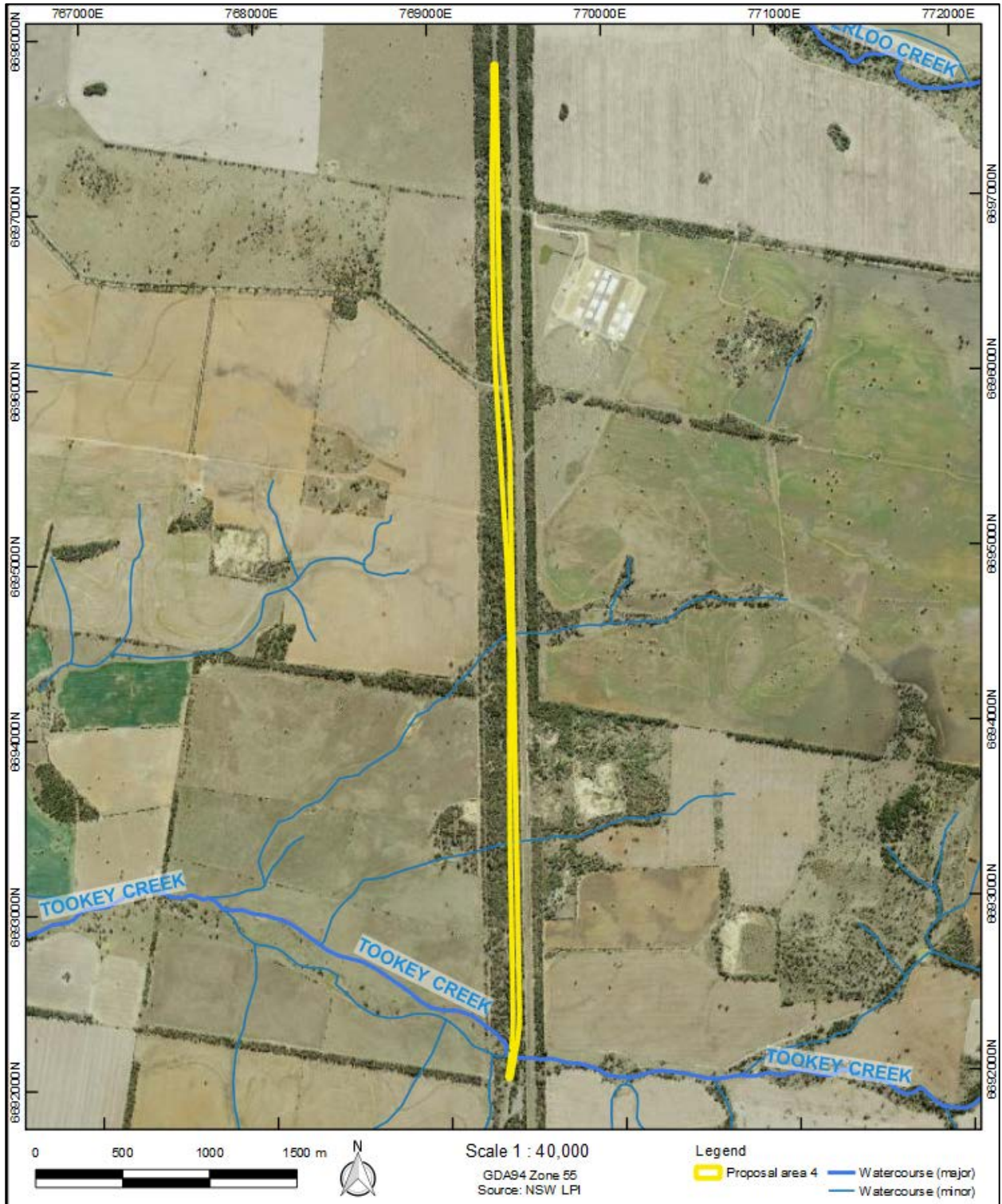


Figure 3-6: Map showing the location of watercourses in relation to proposal area 4.





Figure 3-7: Map showing the location of watercourses in relation to proposal area 5.

### 3.4 VEGETATION

At the time of European colonisation, vegetation within the Kaputar Slopes landscape unit (Mitchell 2002) likely comprised kurrajong and eucalypt woodlands on the lower slopes and valleys. Vegetation within the Gwydir Alluvial Plains landscape unit (Mitchell 2002) likely comprised open woodland and shrubland that contained wattle, sheoak, eucalypt, rosewood, wilga, whitewood, leopardwood, saltbush, wild orange and other shrubs and various grasses on

the lower claypans and along drainage lines. Eucalypt, wattle, eura and flowering lignum likely occurred in depressions and channels. Dense to moderate white cypress pine, eucalypt, sheoak, wilga, wattle, budda, quinine bush, sandhill riceflower and various grasses likely occurred on sandy rises. Vegetation within the Belata Sands landscape unit (Mitchell 2002) likely comprised sheoak woodlands with grasses and patches of bimble box.

### **3.5 CLIMATE**

Climate statistics from Moree at the northern limit of the proposal areas show that the region experiences long warm to hot summers, with moderate and variable rainfall and cool clear days during winter, with cold frosty nights. There is often a rapid transition from summer to winter occurring over several weeks.

Average maximum temperatures range from 17°C to 19°C in the winter to 33°C in the summer months. Average minimum temperatures range from between 4°C and 5°C in winter to between 18°C and 20°C in summer. In winter, the minimum is below zero on an average of 10.4 days. In summer, on average, more than 25 days reach 35°C or higher.

The annual average rainfall for Moree is 585 millimetres. Summer months usually provide the highest rainfalls, with the remaining months providing generally even rainfalls. Summer rain tends to be more variable than winter rain due to the incidence of thunderstorms. The highest daily rainfall recorded in Moree was 161.8 millimetres on 9 February 1888 and the highest monthly rainfall recorded was 461.3 millimetres in March 1894. The highest annual rainfall recorded in Moree was 1107mm in 1894 and the lowest annual rainfall was 202.7 millimetres in 1902 (BOM 2017).

### **3.6 LAND–USE HISTORY AND EXISTING LEVELS OF DISTURBANCE**

Aboriginal people have sustainably managed and harvested resources in the Brigalow Belt South bioregion in the vicinity of Narrabri and Moree for tens of thousands of years. The area began to be occupied by pastoralists shortly after Mitchell passed through the area in 1831 and Coxen in 1835, each reporting good pastoral land. Around this time, Europeans began to displace Aboriginal traditional custodians with locally contingent Aboriginal responses including: fierce resistance, disease epidemics, economic hardship, resilience and opportunism (NSW HO and DUAP 1996: 80–81).

In the interim, the bioregion has been subjected to a variety of landscape disturbances due to pastoralism, mining, vegetation clearance, forestry, cropping and water management. Other sources of disturbance include: the construction of urban centres at Moree and Narrabri; smaller towns (e.g. Bellata) and subdivisions; associated houses; commercial precincts; roads; highways; railways; and electricity transmission and telecommunications infrastructure. Large scale irrigation schemes have also been developed to support the cultivation of cotton and other crops.

The major source of disturbance within the proposal areas has been the construction, use and maintenance of the Newell Highway, a major regional highway. Disturbances include: earthworks associated with the construction, use and maintenance of the road formation and seal; culverts; cut batters; associated drainage features; and several bridges. The footprint of previous disturbances is generally larger than the currently visible road formation as the road formation has been shifted over time, machinery has turned around beside the road, site compounds have been established, borrow pits created and rest areas constructed.

### **3.7 CONCLUSION**

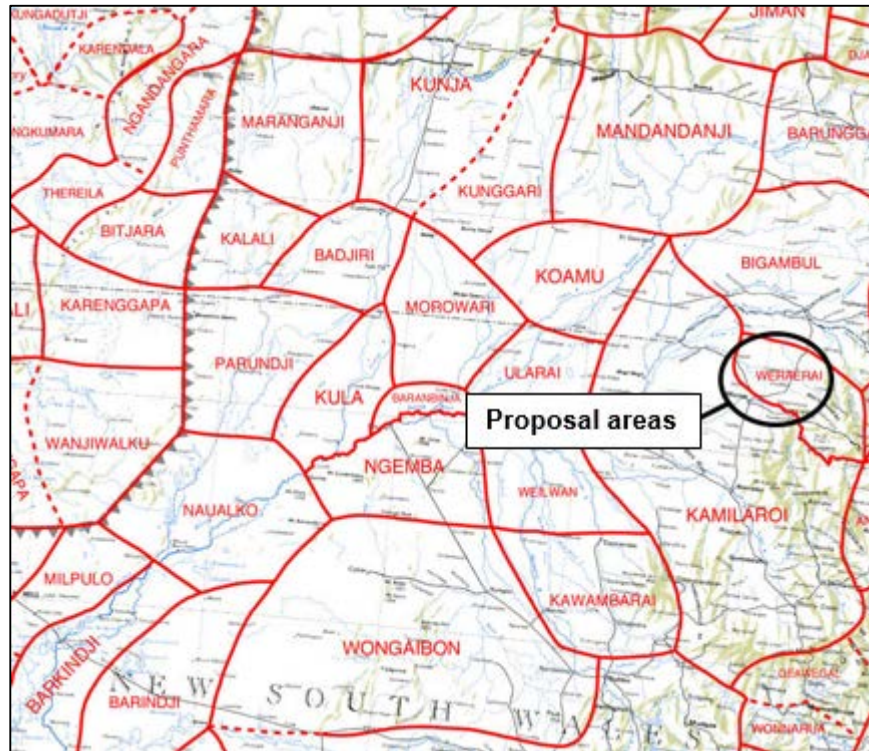
The proposal areas include a variety of landforms, geological features, soil types, hydrological conditions and vegetation types. Parts of the proposal areas once had the potential to provide Aboriginal people with suitable locations for occupation (e.g. camp sites), particularly those close to water with flat or gently sloping topographies. Occupation was particularly likely along named creeks, stream corridors and on raised landforms near seasonally inundated floodplains. Areas with suitable vegetation and fauna had the potential to provide Aboriginal people with areas for resource extraction.

However, post depositional processes of erosion and sedimentation, and possibly the accumulation of later historical deposits, could impede the detection of archaeological sites. In addition, a range of land use disturbances, principally the construction, use and maintenance of the Newell Highway, has affected the proposal area and these disturbances may have removed or dispersed evidence of past Aboriginal occupation.

## 4 ABORIGINAL ARCHAEOLOGY BACKGROUND

### 4.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

According to Tindale's (1974; **Figure 4-1**) and Horton's (1994) maps of 'tribal' boundaries, the proposal areas are located within the boundaries of Kamilaroi (also Gamilaraay) ethno-linguistic group (see also Austin et al 1980; **Figure 4-2**). It is acknowledged that use of the term 'tribe' and the delineation of 'tribal boundaries' on maps is problematic, although distinctive ethno-linguistic groups are known to exist.



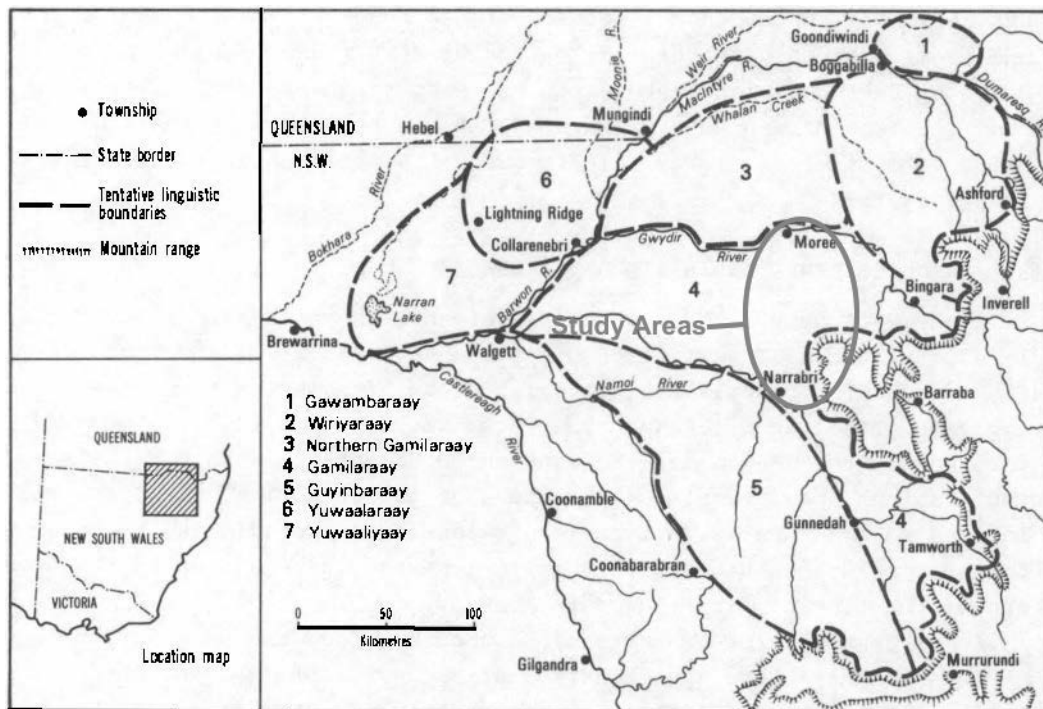
**Figure 4-1: A portion of Tindale's (1974) map showing the location of ethno-linguistic groups in relation to the proposal area.**

The surveyor-general Sir Thomas Livingstone Mitchell (1839) described two Aboriginal villages on the Moree plains. The first was located on the Gwydir River:

Each hut was semi-circular, or circular; the roof conical, and from one side a flat roof stood forward like a portico, supported by two sticks. Most of them were close to the trunk of a tree, and they were covered, not as in other parts, by sheets of bark, but with a variety of materials, such as reeds, grass, and boughs. (Mitchell 1839: 77)

The second village was located on a lagoon between Collarenbri and Bellata and comprised seven huts of substantial construction, neatly thatched with dry grass and reeds (Michell 1839: 121). By the late 1830s, many prime grazing sites along the Namoi River and Gwydir River had been taken up by European settlers, including James Cox at Moree, Thomas Simpson Hall at Wee Bella Bolla and John Fleming at Mundi Bundie (Elder 2003: 75).

Balme (1986) compiled a list of objects that likely comprised the toolkit used by Aboriginal people in the region from reports by Mitchell (1839), Oxley (1820) and Sturt (1834). Based on this list, the toolkit used by Kamiloroi people is likely to have included: bark containers for holding water and gathering food; throwing sticks for hunting; cloaks of kangaroo skin; wooden clubs for fighting; hafted stone axes; nets for catching fish and birds; spears and spear throwers; and fish traps constructed in major creeks and rivers.



**Figure 4-2: Map produced by Austin et al (1980) showing tentative linguistic boundaries in north central NSW in relation to the proposal areas.**

The explorer and natural scientist Alfred William Howitt was an early pioneer authority on Aboriginal cultures. In *Native Tribes of South-East Australia*, Howitt (1996 [1904]) discusses Kamiloroi social and political organisation, kinship, ritual practices, long distance trade and communication (see also Fison and Howitt 1880). Presbyterian minister Reverend William Ridley (1875) and surveyor and amateur anthropologist Robert Hamilton Mathews (1903) provided early linguistic descriptions of the Kamiloroi language. More recently, Austin and Tindale (1985) provided a translation of the Kamiloroi Dreaming story of the Emu and the Brolga, as recorded by Tindale in 1938; and Austin (1993) produced a Kamiloroi reference dictionary.

## 4.2 REGIONAL ARCHAEOLOGICAL CONTEXT

According to O'Connell and Allen (2004), Aboriginal people have inhabited the Australian continent for at least the last 50,000 years. Hamm et al (2016) report dates of between 46,000 and 49,000 years for the occupation of the arid interior. Aboriginal occupation of the NSW Darling Basin has been dated to over 42,000 years at Willandra Lakes (Bowler et al 2003). At Cuddie Springs, southwest of the proposal areas near the Macquarie River, flaked and ground stone

tools have been found associated with the remains of several megafauna species in horizons dating to between 30,000 and 40,000 years (Field and Dodson 1999; Dodson et al 1993). These dates are subject to continued revision as further evidence of Aboriginal cultural heritage is discovered and as more research is conducted.

Prior to 1980 little or no systematic archaeological studies had been undertaken in the Moree-Narrabri region (Haglund 1984). In the interim, a number of archaeological studies have since been conducted, providing baseline data for placing past Aboriginal sites within a regional landscape context (e.g. Balme 1986; Pearson 1981; Purcell 2000).

Pearson (1981) worked primarily in the Upper Macquarie region; nevertheless, the proximity of the Upper Macquarie to the current proposal areas and general topographic similarities render the findings relevant. Pearson divided the recorded archaeological sites into two main categories: occupation sites and non-occupation sites (including grinding grooves, scarred or carved trees, ceremonial and burial sites). Analysis of site locations produced a site prediction model with occupation occurring in areas with: access to water, good drainage, level ground, adequate fuel and appropriate localised weather patterns for summer or winter occupation. Occupation sites were most frequently located on low ridge tops, creek banks, gently undulating hills and river flats and usually in open woodland vegetation (Pearson 1981: 101). The location of non-occupation sites was dependent upon a variety of factors relating to site function. For instance, grinding grooves were found where appropriate outcropping sandstone occurred close to occupation sites. The location of scarred trees displayed no obvious patterning, other than proximity to watercourses. Pearson suggested that these patterns would differ on the drier plains to the west, towards Dubbo and beyond, where dependence upon larger, more permanent water supplies was greater.

The North-Central Rivers study undertaken by Balme (1986) examined site location in terms of site preservation. Balme (1986: 182) found that, other than historic impacts, site distribution was most affected by geomorphic processes affecting site preservation and leading to site exposure. There was little scope for the assessment of site chronologies as few datable contexts had been located. Balme concluded that sites recorded on AHIMS from ethnographic accounts were unlikely to be located in the current landscape. Balme (1986) reported that, of the 200 carved trees reported in the area, only five remained *in situ* at the time of the study; 50 are known to be in museum and private collections, and the whereabouts of the remainder are unknown, with many suspected to be in private collections.

Balme (1985) undertook a study focused on the Moree plains area, including surveys of the four major landforms identified in the area: major river channels, minor channels, floodplain areas not frequently inundated and frequently inundated floodplains. Aboriginal scarred trees and open camp sites were the most commonly recorded site types. Most were located close to water or on elevated areas more distant from water. Erosion had exposed many of the sites. Balme noted

that open camp sites were poorly represented, probably due to sediment deposition during flood events, rather than reflecting a true absence of sites.

High levels of land use disturbance in the Moree region have also been implicated for the apparent paucity of Aboriginal sites in the region. Witter (2004: 139) describes the Barwon Basin Region, which includes the Moree plains, as one of the major regions of archaeological disaster in NSW. Extensive areas of black alluvial cracking clays occur throughout the region. The self-mulching action of these soils is likely to have disrupted evidence of Aboriginal camps sites and vast areas have been laser levelled for irrigation, obliterating the remaining archaeology.

In an assessment of the Pilliga and Goonoo State Forests, Purcell (2000) recorded 47 and 106 Aboriginal sites respectively. Purcell (2000: 31) found that sites were more frequently located within alluvium landforms including creeks, swamps and chains of ponds surrounded by floodplains and terraces, and that 91.5 per cent of sites were recorded within 200 to 300 meters of water. Purcell (2002) found that sites located in the Moree area were often on floodplain and alluvial landforms within a few hundred metres of water. In the Northern Outwash subregion, sites were found up to 750 metres from water sources, with an average distance of 101 metres.

In addition, a number of development driven studies have been conducted in the region. Haglund's (1983, 1984) studies investigated an approximately eight kilometre portion of the Gwydir River, west of Moree, but did not locate any Aboriginal archaeological sites. Haglund (1984: 6–11) suggests that habitation sites are likely to occur close to water; however, in the Moree region, Haglund suggested that sites were more likely located on slightly elevated well drained landforms adjacent to floodplains above the normal flood level, where habitation conditions would have been more comfortable. Silcox and Bowdler (1982) surveyed a proposed electricity transmission line easement between Walgett and Narrabri and recorded 25 Aboriginal sites, mostly located within eroded areas, vehicle tracks and small elevated areas.

Appleton (1997) conducted an assessment of three options for the proposed Newell Highway Moree bypass. Appleton identified an archaeologically sensitive area adjacent to Skinners Creek and four previously recorded Aboriginal fringe camps.

Kelton (1999) conducted subsequent investigations of the proposed bypass and identified several archaeologically sensitive areas and sites. Both Appleton and Kelton assessed the banks of the Mehi River to be archaeologically sensitive.

Ozark (2004a) conducted subsurface test excavations within the potential archaeological deposits (PADs) identified on the banks of the Mehi River and Skinners Creek along the preferred Moree bypass alignment. The results indicated that no artefacts were present at the Skinners Creek PAD; and that the two artefacts recovered at the Mehi River PAD were not *in situ*, but likely transported and redeposited there by flood waters.

Appleton also conducted a number of assessments of proposed bridge sites on watercourses in the Moree Shire, but recorded no Aboriginal sites at the seven of the bridge sites reviewed by Heritage Concepts (2009: 46).

A survey undertaken for a proposed new bridge along the Newell Highway at Tycannah Creek did not locate any sites, and a subsequent reassessment of the creek banks found that they had been subjected to high levels of geomorphic and anthropogenic disturbance (OzArk 2004b).

Heritage Concepts (2009: 61–68) undertook a comprehensive review of Aboriginal cultural heritage sites within the Moree Plains Shire LGA. They found that Aboriginal culturally modified trees are the most common site type in the region. Scarred trees used to make canoes tend to be located close to major watercourses, whereas those used to extract building materials and to make containers tend to be distributed across the landscape. Carved trees can also be located anywhere in the landscape, and can be associated with ceremonial sites. Artefact scatters and isolated finds are the second most common site type in the region, with silcrete, quartzite and quartz the most commonly used raw materials. Artefact scatters tend to be located on eroded parts of the floodplain in areas not frequently inundated. As such, both proximity to water and dry surface conditions appear to have been important factors determining the location of occupational sites. Several burial sites have been recorded in the region, including both contact and pre-contact period sites. Burials tend to be located along the banks and adjacent source bordering dune formations of rivers and their tributaries. Carved trees were commonly used to mark graves. Grinding grooves are rare in the region due to a general lack of outcropping stone, but do occur where suitable outcropping stone exists. Nine ceremonial sites or bora rings were recorded in the region; but none are extant today having been destroyed by erosion, aggradation and agricultural disturbance. Several Dreaming sites have been identified in the region, relating to both the contact and pre-contact period. Contact period sites include: fringe camps, commonly located along the edges of European settlements, and often identified by the presence of flaked glass; massacre sites; burial sites; and mission sites.

Heritage Concepts (2009: 70) note that river channels in the Northern Outwash subregion often display evidence of stream channel migration and shifting with numerous palaeochannels present. As such, today's permanent water sources were likely in different locations during the Pleistocene. Predictive models must therefore take account of both modern and ancient water sources. Purcell (2002) surveyed palaeochannels in the Northern Outwash subregion, but did not locate any sites within these landforms. Balme (1986) notes that palaeochannel landforms have been subjected to extensive sand mining in the region, perhaps destroying Pleistocene aged sites within these landforms (Heritage Concepts 2009: 70).



## 4.3 LOCAL ARCHAEOLOGICAL CONTEXT

### 4.3.1 Desktop database searches conducted

Desktop database searches were conducted to identify any potential previously-recorded heritage within the proposal areas. The results of these searches are summarised in **Table 4-1** and presented in detail in **Appendix 2**.

**Table 4-1: Aboriginal heritage: desktop-database search results.**

Name of Database Searched	Date of Search	Type of Search	Comment
Australian Heritage Database	9 January 2018	Narrabri, Edgeroi, Bellata, Gurley and Moree	No places listed are located within the proposal areas.
NSW Heritage Office State Heritage Register (SHR) and State Heritage Inventory (SHI)	9 January 2018	Narrabri, Edgeroi, Bellata, Gurley and Moree	No Aboriginal places listed on the SHR or SHI are located within the proposal areas.
National Native Title Claims Search	9 January 2018	Narrabri LGA, Moree LGA	Gomeroi People (Tribunal file no. NC2011/006; Federal Court file no. NSD2308/2011); accepted for registration.
OEH AHIMS	22 May 2017	27km (east–west) by 98km (north–south) and 14km (east–west) by 36km (north–south) centred on the proposal areas	100 sites are located within the search areas. No sites are located within any of the proposal areas.
Local Environment Plan (LEP)	9 January 2018	Narrabri LEP of 2012; Moree LEP of 2011	None of the Aboriginal places listed are near the proposal areas.

A search of the OEH administered AHIMS database returned 100 records for Aboriginal heritage sites within the designated search areas (**Table 4-2**, **Figure 4-3** and **Figure 4-4**). One site has a restriction applied with no information about the location or site features provided<sup>1</sup>. No sites are located in the proposal areas; and the nearest sites are located more than 300 metres away.

Culturally modified trees are the most commonly represented site type in the area (76 per cent) followed by artefact scatters and isolated finds (12 per cent). Only two PADs have been identified. One is associated with an artefact near the Mehi River and the other is located near Skinners Creek. Four burials have been recorded, including two associated with culturally modified trees, mostly located close to major watercourses. A broad range of other site types exist at low frequencies, including two resource and gathering sites, a stone quarry near Halls Creek, a habitation structure, a ceremonial ring and a conflict site (the Waterloo Creek massacre site).

As per **Table 4-1**, it is noted that the proposal areas include land currently subject to Native Title Claim by the Gomeroi People (Tribunal file no. NC2011/006; Federal Court file no.

<sup>1</sup> A smaller scale search of the proposal areas shows that the restricted site is not located within any of the proposal areas.

NSD2308/2011). The proponent will need to obtain legal advice as to whether land tenure will require Native Title consultation.

**Table 4-2: AHIMS site types and frequencies.**

Site Type	Number	% Frequency
Modified tree	75	76
Artefact/s	12	12
Burial	2	2
Modified tree, burial	2	2
Resource and gathering	2	2
Artefact, PAD	1	1
PAD	1	1
Stone quarry	1	1
Habitation structure	1	1
Ceremonial ring	1	1
Conflict	1	1
Restricted	1	1
<b>Total</b>	<b>100</b>	<b>100</b>

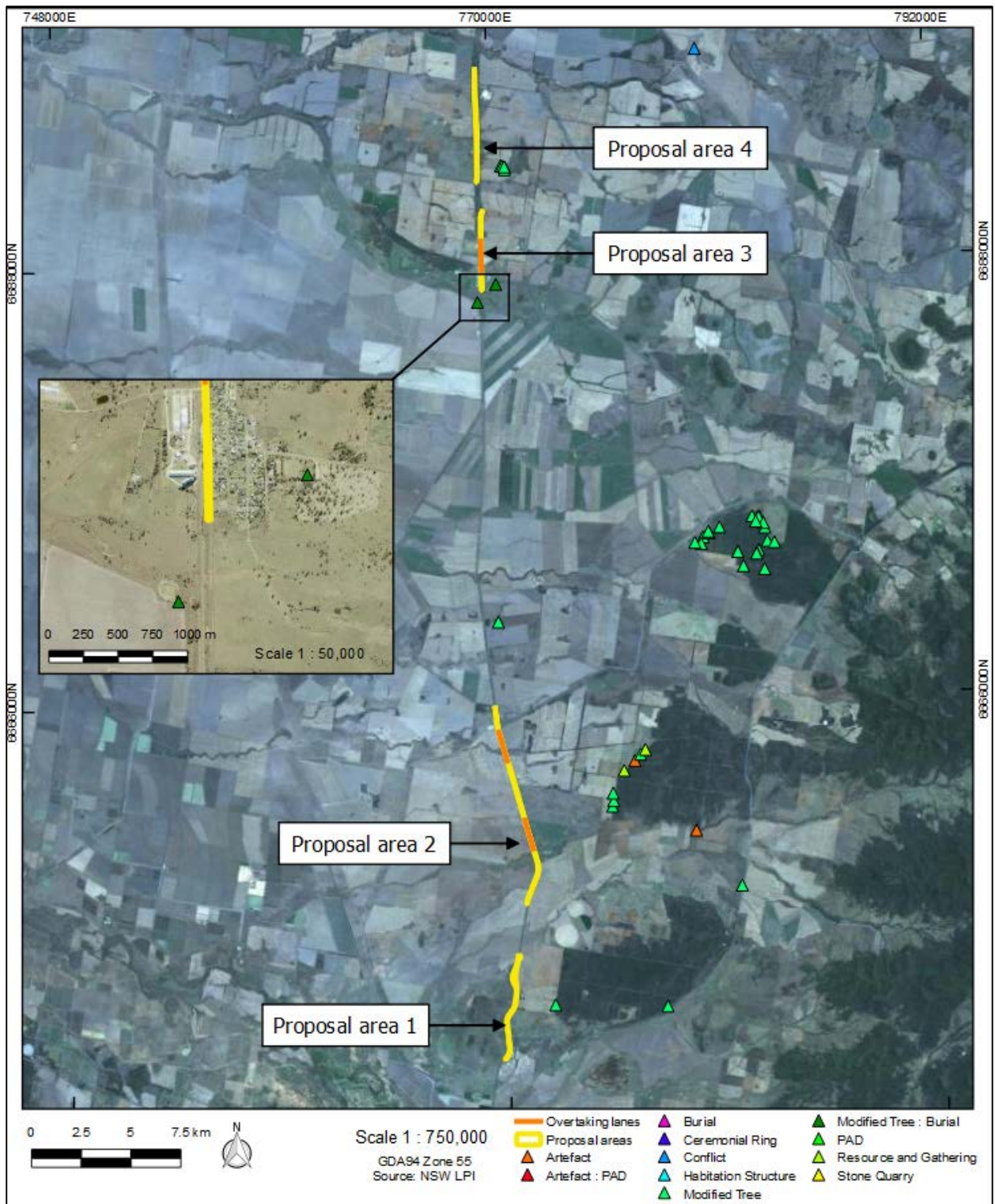


Figure 4-3: Map showing the locations and types of AHIMS sites in relation to proposal areas 1 to 4, including the location of two burials with modified trees to the south and east of proposal area 3 (inset).

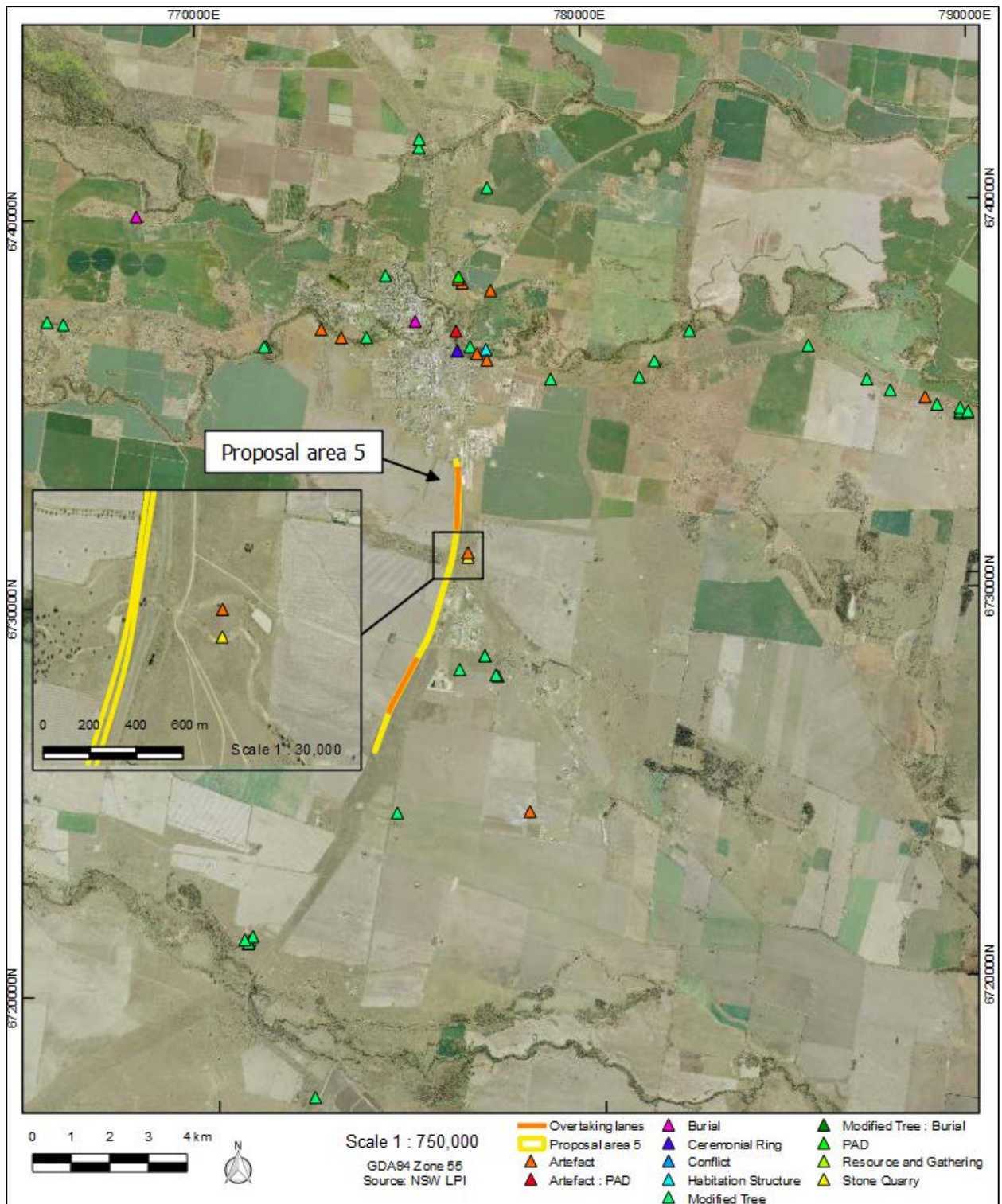


Figure 4-4: Map showing the locations and types of AHIMS sites in relation to the proposal area 5, including a stone quarry and artefact located close to proposal area 5 (inset).

#### 4.4 PREDICTIVE MODEL FOR SITE LOCATION

Across Australia, numerous archaeological studies in widely varying environmental zones and contexts have demonstrated a high correlation between the permanence of a water source and the permanence and/or complexity of Aboriginal occupation. Site location is also affected by the availability of and/or accessibility to a range of other natural resources including: plant and animal foods; stone and ochre resources and rock shelters; as well as by their general proximity to other sites/places of cultural/mythological significance. Consequently, sites tend to be found along permanent and ephemeral water sources, along access or trade routes or in areas that have good flora/fauna resources and appropriate shelter.

In formulating a predictive model for Aboriginal archaeological site location within any landscape, it is also necessary to consider post-depositional influences on Aboriginal material culture. In all but the best preservation conditions very little of the organic material culture remains of ancestral Aboriginal communities survives to the present. Generally, it is the more durable materials like stone artefacts, stone hearths, shell, and some bones that remain preserved in the current landscape. Even these, however, may not be found in their original depositional context since they may have been subject to either (a) the effects of wind and water erosion/transport over short and long time scales or (b) historical impacts associated with the introduction of European farming practices including: grazing and cropping; land degradation associated with exotic pests such as goats and rabbits and the installation of farm related infrastructure including water-storage, utilities, roads, fences, stockyards and residential buildings. Scarred trees may survive for up to several hundred years but rarely beyond.

Heritage Concepts (2009: 69–72) developed a predictive model for the Northern Outwash subregion of the Brigalow Belt South bioregion. Flood mapping indicates that the alluvial plains of the Northern Outwash subregion are not frequently inundated, with flooding generally confined to the immediate overbank areas. As such, occupational sites are more likely to be located within 100 metres of major watercourses, since they are infrequently covered by alluvial deposits, than on the frequently flooded plains located to the west. Erosion acting on high points on the alluvial plains is likely to create lag deposits due to the flat topography. On the shallow soils of the higher slopes, deposits are likely to be translocated downslope by sheetwash, rill and gully erosion and downslope creep. Sites are predicted to occur within palaeochannel landforms, although sand quarrying is likely to have destroyed many of these sites.

In general, alluvial landforms are more likely to preserve archaeological evidence due to aggradation. However, a general under-representation of archaeological deposits is expected on alluvial landforms in the region due to intensive agricultural practices. Those objects that are preserved *in situ* are likely to represent episodic small scale events that have subsequently been covered. Alternatively, objects are likely to have been transported and deposited in secondary contexts via fluvial processes. Preservation of large open camp sites is likely to occur only on

stable relatively dry land surfaces: e.g. on raised landforms like river terraces and source bordering dunes, situated away from the immediate river bank and adjacent to the active floodplain (Heritage Concepts 2007: 71–72).

OEH (2014) have produced a series of ‘pre-1750’ predictive models termed the Aboriginal Sites Decision Support Tool (ASDST) that combine data derived from AHIMS with a series of spatial variables that describe the landscape. The ASDST outputs GIS raster layers composed of one hectare cells that predict the likelihood of Aboriginal sites (e.g. mounds, artefacts, modified trees, grinding grooves, burials and hearths) occurring in the landscape prior to European settlement. These models do not account for land use disturbance in the intervening period, or natural conditions leading to differential preservation of features. However, the ASDST includes an ‘accumulated impacts’ model that indicates the extent to which post-settlement land-use history has impacted upon Aboriginal site features in the landscape. In combination, these models are used to predict the likelihood of encountering different Aboriginal site types prior to European settlement, and how the distribution of Aboriginal sites are likely to have been affected in the interim. According to the pre-1750 models:

- Stone quarries are possible in the proposal areas, particularly in proposal areas 3 and 4 to the north of Bellata;
- Modified trees are likely throughout the proposal areas, particularly near major watercourses;
- Rock art is highly unlikely throughout the proposal areas;
- Grinding grooves are likely in proposal area 1 and unlikely in the other proposal areas;
- Cultural mounds are not predicted to occur anywhere in the proposal areas;
- Hearths are unlikely throughout the proposal areas, with increased likelihood in proposal areas 1, 3 and 4 particularly near watercourses;
- Burials are possible in the proposal areas, particularly in proposal area 1 and near major watercourses;
- Artefact sites are possible in the proposal areas, particularly in proposal area 1, 2, 3 and 4 with increased likelihood around major watercourses.
- The ASDST accumulated impacts model indicates disturbance throughout the proposal areas, probably reflecting the construction, use and maintenance of the Newell Highway and intensive agricultural modification, with some patches of less disturbed land.

Based on knowledge of the environmental contexts of the proposal area and a desktop review of the known geomorphological and physiographic context; and the local and regional archaeological record, the following predictions are made concerning the probability of particular site types being recorded within the proposal areas:

- Isolated finds may be indicative of: random loss or deliberate discard of a single artefact, the remnant of a now dispersed and disturbed artefact scatter, or an otherwise obscured or sub-surface artefact scatter. They may occur anywhere within the landscape but are more likely to occur in topographies where open artefact scatters typically occur.
  - As isolated finds can occur anywhere, particularly within disturbed contexts, it is predicted that this site type could be recorded within the proposal areas.
- Open artefact scatters are defined as two or more artefacts, not located within a rock shelter, and located no more than 50 metres away from any other constituent artefact. This site type may occur almost anywhere that Aboriginal people have travelled and may be associated with hunting and gathering activities, short or long term camps, and the manufacture and maintenance of stone tools. Artefact scatters typically consist of surface scatters or sub-surface distributions of flaked stone discarded during the manufacture of tools, but may also include other artefactual rock types such as hearth and anvil stones. Less commonly, artefact scatters may include archaeological stratigraphic features such as hearths and artefact concentrations which relate to activity areas. Artefact density can vary considerably between and across individual sites. Small ground exposures revealing low density scatters may be indicative of background scatter rather than a spatially or temporally distinct artefact assemblage. These sites are classed as 'open', that is, occurring on the land surface unprotected by rock overhangs, and are sometimes referred to as 'open camp sites'.

Artefact scatters are most likely to occur on level or low gradient contexts, along the crests of ridgelines and spurs, and elevated areas fringing watercourses or wetlands. Larger sites may be expected in association with permanent water sources.

Topographies which afford effective through-access, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain larger sites, evidenced by open artefact scatters.

- Artefact scatters could be located in proposal area 1 within the Kapatour Slopes landform unit, particularly within a few hundred metres of watercourses, on flat or gently sloping landforms, or on the crests of hills and ridges. Artefacts deposited on slopes may have been translocated downslope. On the alluvial plain and floodplain landforms comprising proposal areas 2 to 5, artefact scatters are predicted to occur within a few hundred metres of major watercourses, particularly on raised landforms adjacent to watercourses (e.g. river terraces or source bordering dunes) where erosion is likely to have created lag deposits. Small *in situ* deposits or secondary deposits are possible within active floodplains, but will be generally difficult to detect due to aggradation within the floodplain and the self-mulching character of black earth floodplain soils.

Archaeological deposits on alluvial landforms are likely to have been destroyed by intensive agricultural practices. Artefact scatters are possible on palaeochannel landforms, although these sediments have, in general, been destroyed by sand mining.

- Aboriginal scarred trees contain evidence of the removal of bark (and sometimes wood) in the past by Aboriginal people, in the form of a scar. Bark was removed from trees for a wide range of reasons. It was a raw material used in the manufacture of various tools, vessels and commodities such as string, water containers, roofing for shelters, shields and canoes. Bark was also removed as a consequence of gathering food, such as collecting wood boring grubs or creating footholds to climb a tree for possum hunting or bark removal. Due to the multiplicity of uses and the continuous process of occlusion (or healing) following removal, it is difficult to accurately determine the intended purpose for any particular example of bark removal. Scarred trees may occur anywhere old growth trees survive. The identification of scars as Aboriginal cultural heritage items can be problematical because some forms of natural trauma and European bark extraction create similar scars. Many remaining scarred trees probably date to the historic period when bark was removed by Aboriginal people for both their own purposes and for roofing on early European houses. Consequently, the distinction between European and Aboriginal scarred trees may not be clear.
  - This site type is relatively common in the area, and is likely to occur wherever trees of suitable age and species for cultural modification occur, with increased likelihood near major watercourses and semi-permanent sources of water. Remnant mature trees are, in general, more likely to exist in road corridors where vegetation clearance was often confined to the road formation, although large areas of regrowth can also exist.
- Quarry sites and stone procurement sites typically consist of exposures of stone material where evidence for human collection, extraction and/or preliminary processing has survived. Typically, these involve the extraction of siliceous or fine grained igneous and meta-sedimentary rock types for the manufacture of artefacts. The presence of quarry/extraction sites is dependent on the availability of suitable rock formations.
  - This site type is unlikely due to a paucity of outcropping stone in the proposal areas, but could be recorded where suitable rock outcrops exist, particularly in proposal areas 3 and 4.
- Burials are generally found in soft sediments such as aeolian sand, alluvial silts and rock shelter deposits. In valley floor and plains contexts, burials may occur in locally elevated topographies rather than poorly drained sedimentary contexts. Burials are also



known to have occurred on rocky hilltops in some limited areas. Burials are generally only visible where there has been some disturbance of sub-surface sediments or where some erosional process has exposed them.

- Although it is possible that this site type could be found within the proposal areas particularly near major watercourses and particularly within proposal area 1, burials are a rare site type, particularly considering the high levels of disturbance within the proposal areas.
- Grinding grooves are oval-shaped indentations in sandstone outcrops made by Aboriginal people shaping and sharpening edge-ground stone axes. Flat, low outcrops of fine-grained sandstone were preferred, and Aboriginal people sometime carried small pieces of sandstone with them for sharpening axes. Axe-grinding grooves are usually located on the edges of rivers, creeks, lakes and swamps or near dry or drained water bodies.
  - This site type is possible in proposal area 1 particularly near watercourses where suitable outcropping sandstone exists, and unlikely in all other proposal areas.

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## 5 RESULTS OF ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

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### 5.1 SAMPLING STRATEGY AND FIELD METHODS

The archaeological methods utilised in the Aboriginal archaeological assessment followed the Code of Practice. Standard archaeological field survey and recording methods were employed in this study (Burke and Smith 2004). A sampling strategy was developed in accordance with the predictive model developed in **Section 4.4**. OzArk staff identified, recorded and evaluated physical (i.e. archaeological) evidence. Aboriginal representatives participated in the archaeological survey, identifying archaeological sites, determining the cultural significance of Aboriginal objects, advising whether cultural places and non-physical site types exist within the proposal areas, and providing input into management recommendations for the recorded sites. Aboriginal representatives and OzArk staff discussed whether impacts to sites could be avoided and, where impacts could not be avoided, specific management recommendations were discussed.

Vehicle traverses were utilised during the field assessment for reconnaissance observation of the proposal areas in order to identify areas to be sampled via pedestrian transect. Pedestrian transects were used to sample and assess undisturbed parts of the proposal areas with good ground surface visibility containing landforms possessing Aboriginal archaeological potential. Survey priority was afforded to: areas within several hundred metres of the major watercourses; the crests and gentle upper slopes of the low hills and ridges between watercourses; areas containing mature trees, particularly eucalypts; and relatively undisturbed areas outside of the Newell Highway road formation.

The alternative alignment survey was primarily undertaken by one person (the author), with occasional participation by Aboriginal representatives, particularly in areas where sites were identified. The recommended and alternate alignment assessment was completed by two archaeologists, surveying separate sections at a time. All landforms with potential to be impacted by the proposal were sampled during the assessment. **Figure 5-1** to **Figure 5-5** show GPS track data for vehicle traverses and pedestrian transects for one person (the author) during the survey. Only data from pedestrian transects was used to calculate effective survey coverage.

### 5.2 PROJECT CONSTRAINTS

There were no significant constraints affecting the completion of the Aboriginal heritage assessment.

### 5.3 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are ground surface visibility (GSV) and ground surface exposure (GSE). These factors are quantified in order to ensure that the survey data provides adequate evidence for the evaluation of the archaeological

materials across the landscape. For the purposes of the current assessment, these terms are used in accordance with the definitions provided in the Code of Practice (DECCW 2010).

GSV is defined as:

*... the amount of bare ground (or visibility) on the exposures which might reveal artefacts or other archaeological materials. It is important to note that visibility, on its own, is not a reliable indicator of the detectability of buried archaeological material. Things like vegetation, plant or leaf litter, loose sand, stone ground or introduced materials will affect the visibility. Put another way, visibility refers to 'what conceals' (DECCW 2010: 39).*

GSE is defined as:

*... different to visibility because it estimates the area with a likelihood of revealing buried artefacts or deposits rather than just being an observation of the amount of bare ground. It is the percentage of land for which erosion and exposure was sufficient to reveal archaeological evidence on the surface of the ground. Put another way, exposure refers to 'what reveals' (DECCW 2010: 37).*

**Plates 1 to 18** illustrate the GSV and GSE conditions in different parts of the proposal areas. Locational data for all pedestrian transects (i.e. survey units) was captured via non-differential GPS receiver, including track and point data used to quantify the effective survey coverage. **Figure 5-1** to **Figure 5-5** show the starting points of each survey unit. Effective survey coverage within each survey unit is detailed in **Table 5-1**. Where more than one observation of GSV and GSE was recorded per transect, the average of all observational data (to the nearest five per cent) is reported. **Table 5-2** provides a summary of the effective survey coverage in the proposal area, detailing the number of sites recorded within the landforms encountered.

GSV was low throughout the proposal areas due to dense vegetation cover within exposures. GSE was high due to the high levels of disturbance of most of the landforms assessed, particularly due to the construction and maintenance of A39 and high levels of agricultural disturbance. GSV averaged 73 per cent and GSE averaged 43 per cent, facilitating the assessment of the areas sampled. In many areas, the assessment of archaeological potential relied largely on assessments of archaeological potential of landforms due to poor GSV. Nevertheless, between 4 per cent and 16 per cent of each landform was effectively surveyed, which is considered low but sufficient survey coverage to complete the assessment.

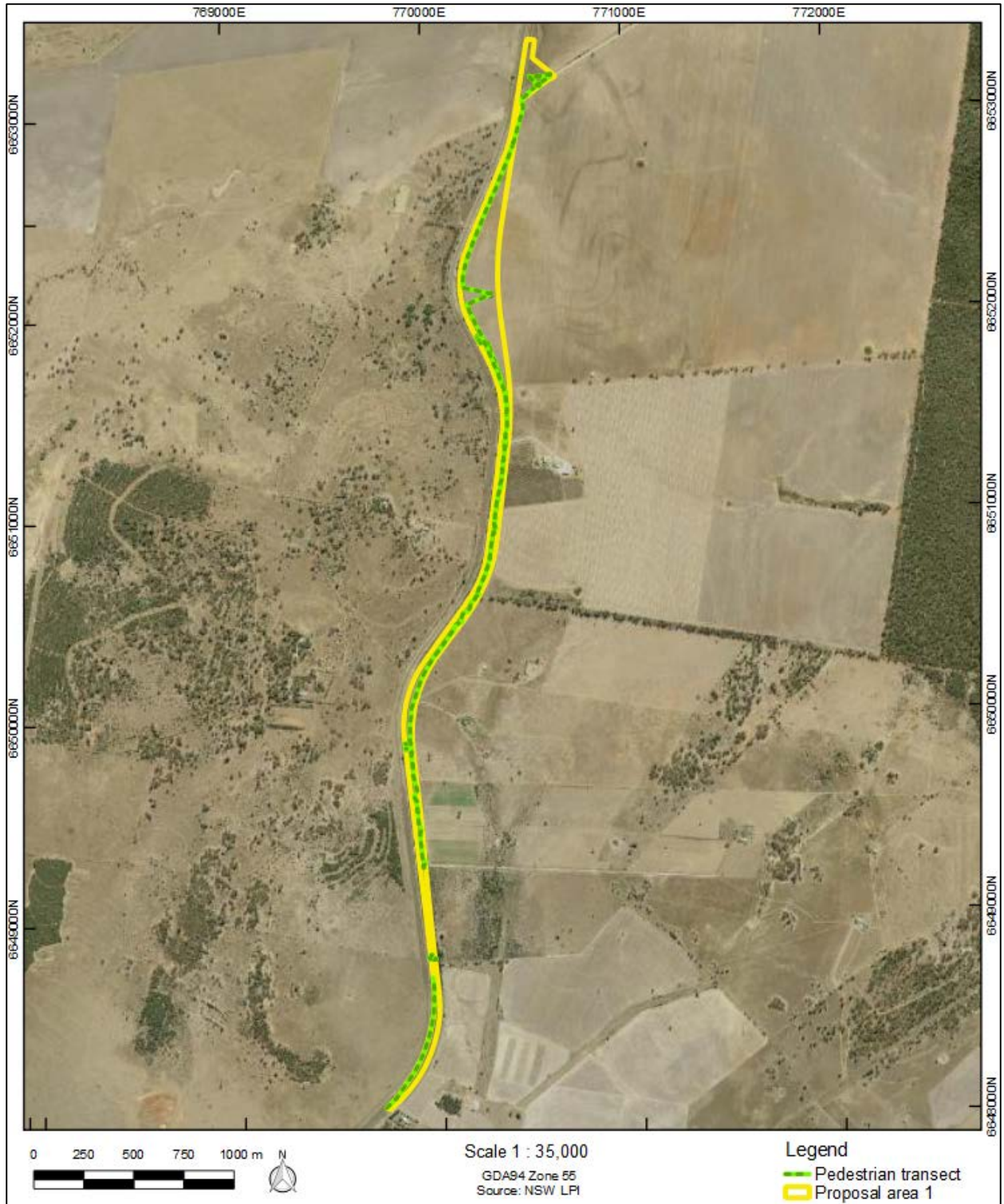
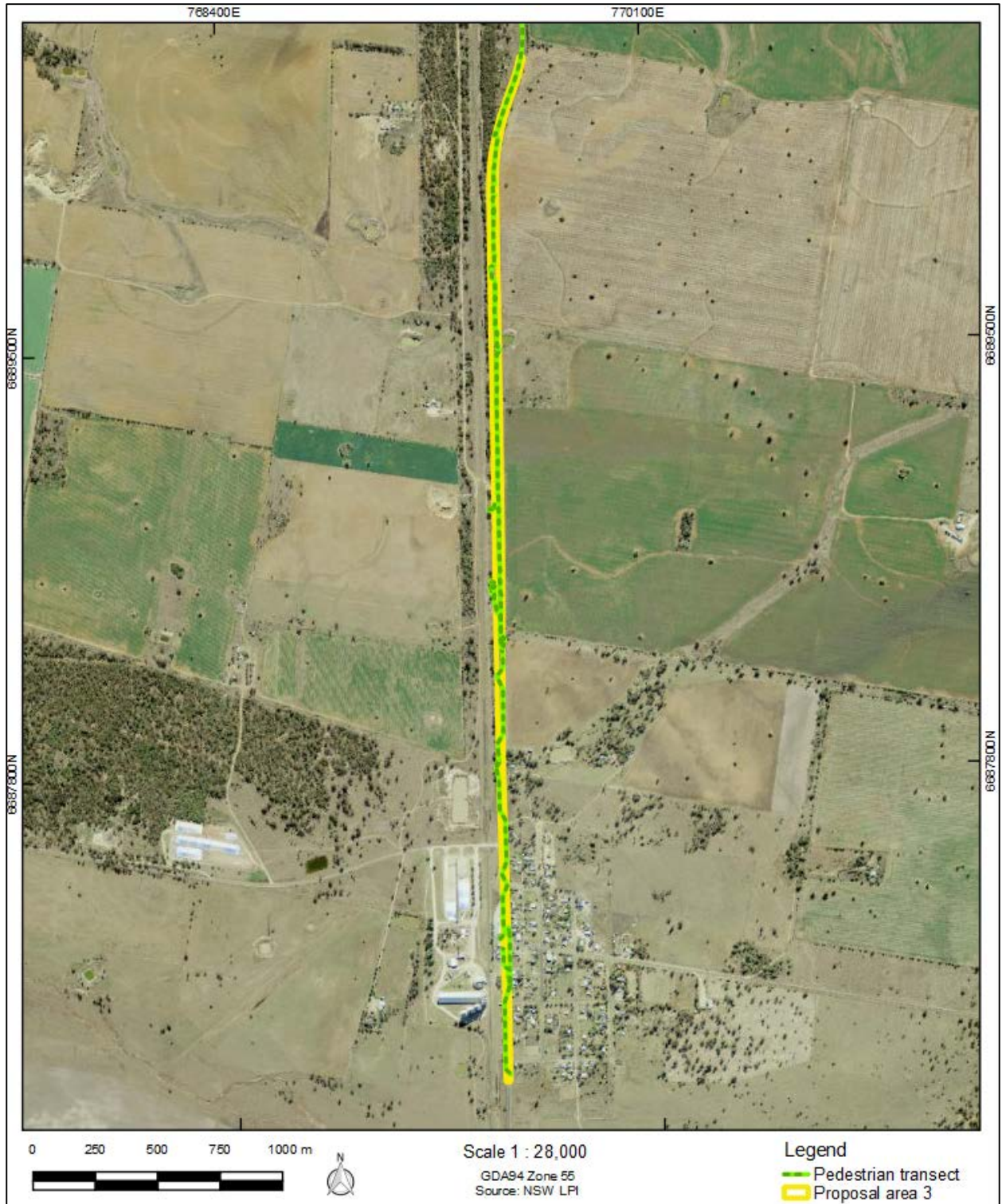


Figure 5-1: Map showing the pedestrian transects and survey coverage undertaken in proposal area 1.



Figure 5-2: Map showing the pedestrian transects and survey coverage undertaken in proposal area 2.



**Figure 5-3: Map showing the pedestrian transects and survey coverage undertaken in proposal area 3.**

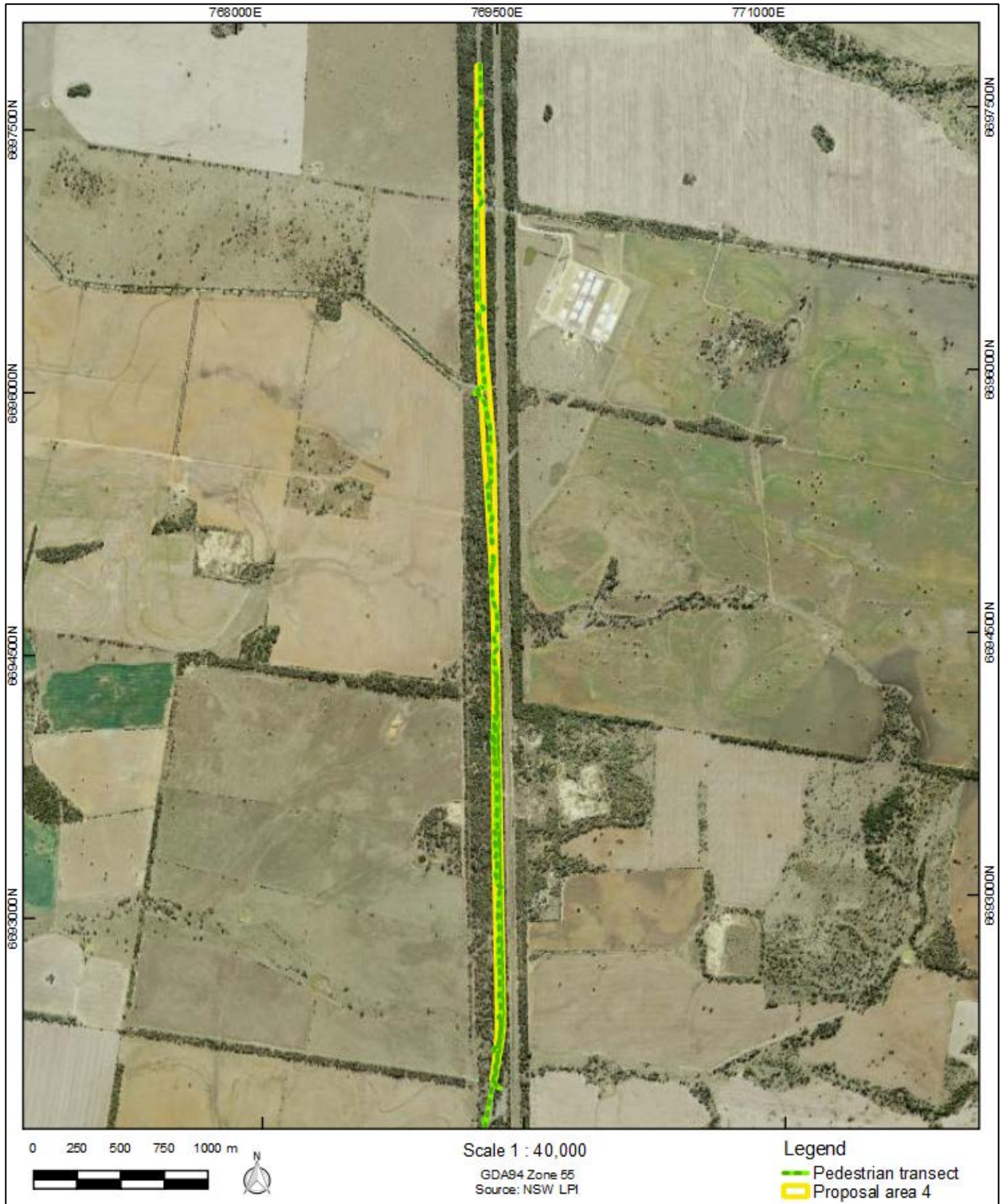


Figure 5-4: Map showing the pedestrian transects and survey coverage undertaken in proposal area 4.

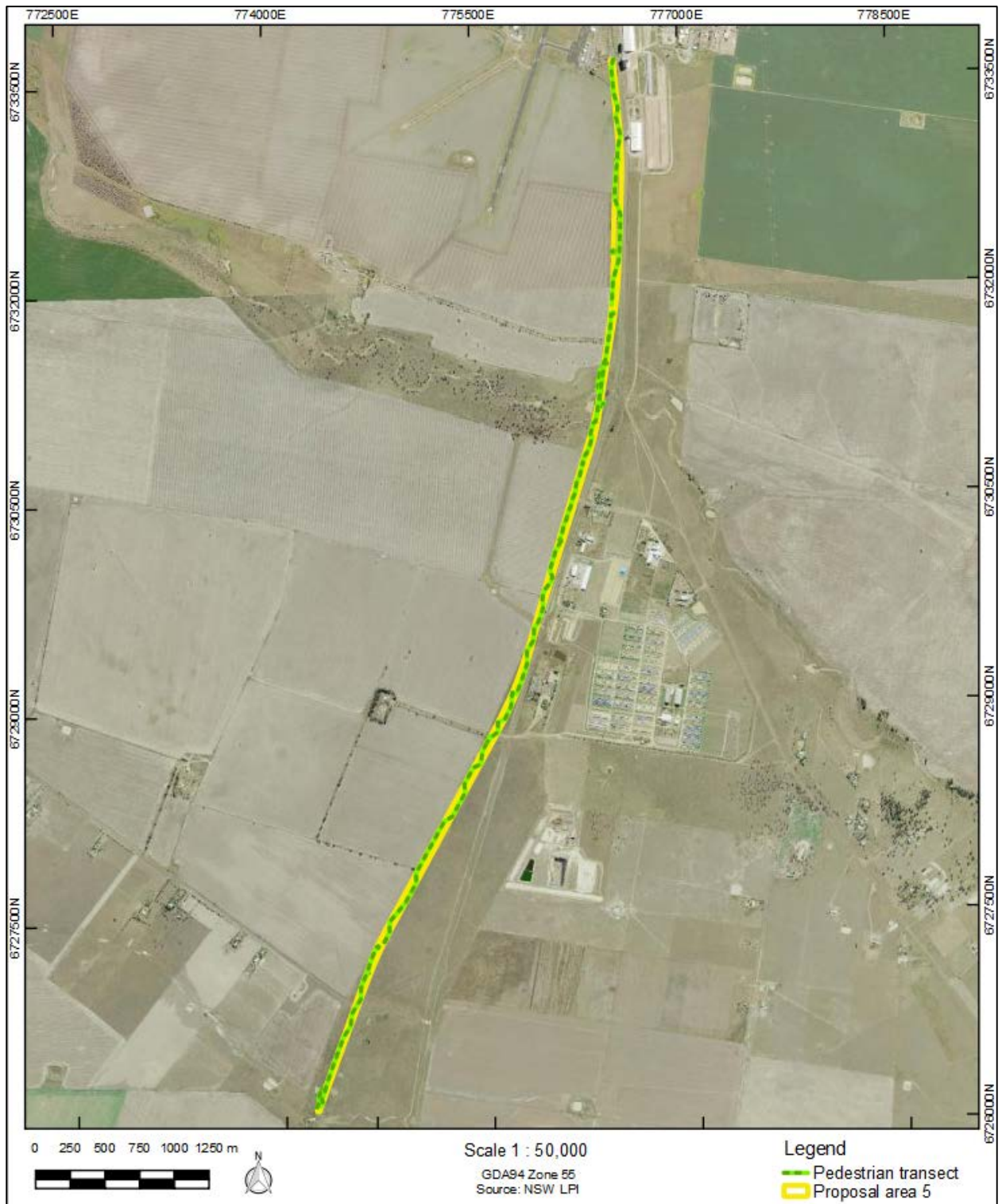


Figure 5-5: Map showing the pedestrian transects and survey coverage undertaken in proposal area 5.



**Table 5-1: Survey coverage data.**

Survey Unit	Landform	Survey Unit Area (sq m)	Visibility %	Exposure %	Effective Coverage Area (sq m) (= Survey Unit Area x Visibility % x Exposure %)	Effective Coverage % (= Effective Coverage Area / Survey Unit Area x 100)
1	Stream bank	30,600	10	50	1,530	5
2	Plain	135,100	20	80	21,616	16
3	Slope	18,000	40	90	648	3.6

**Table 5-2: Landform summary—sampled areas.**

Landform	Landform area (sq m)	Area Effectively Surveyed (sq m) (= Effective Coverage Area)	% of Landform Effectively Surveyed (= Area Effectively Surveyed / Landform x 100)	Number of Sites
Stream bank	30,600	1,530	5	1
Plain	135,100	21,616	16	3
Slope	18,000	648	3.6	0

## 5.4 ABORIGINAL SITES RECORDED

Three Aboriginal sites and one Aboriginal PAD were recorded during the survey (**Table 5-3** and **Figure 5-6**). Details of these sites are outlined below.

**Table 5-3: Summary of newly recorded Aboriginal sites in the proposal areas.**

Site Name	AHIMS ID	Feature(s)	Survey Unit	Landform
BC-HW17-PAD1	N/A	PAD	1	Stream bank
BC-HW17-ST1	#19-3-0159	Modified tree	2	Plain
BL-HW17-ST1	#10-6-0049	Modified tree	2	Plain
TC-HW17-ST1	#10-6-0050	Modified tree	2	Plain

### **Bobbiwaa Creek-HW17-PAD1 (BC-HW17-PAD1)**

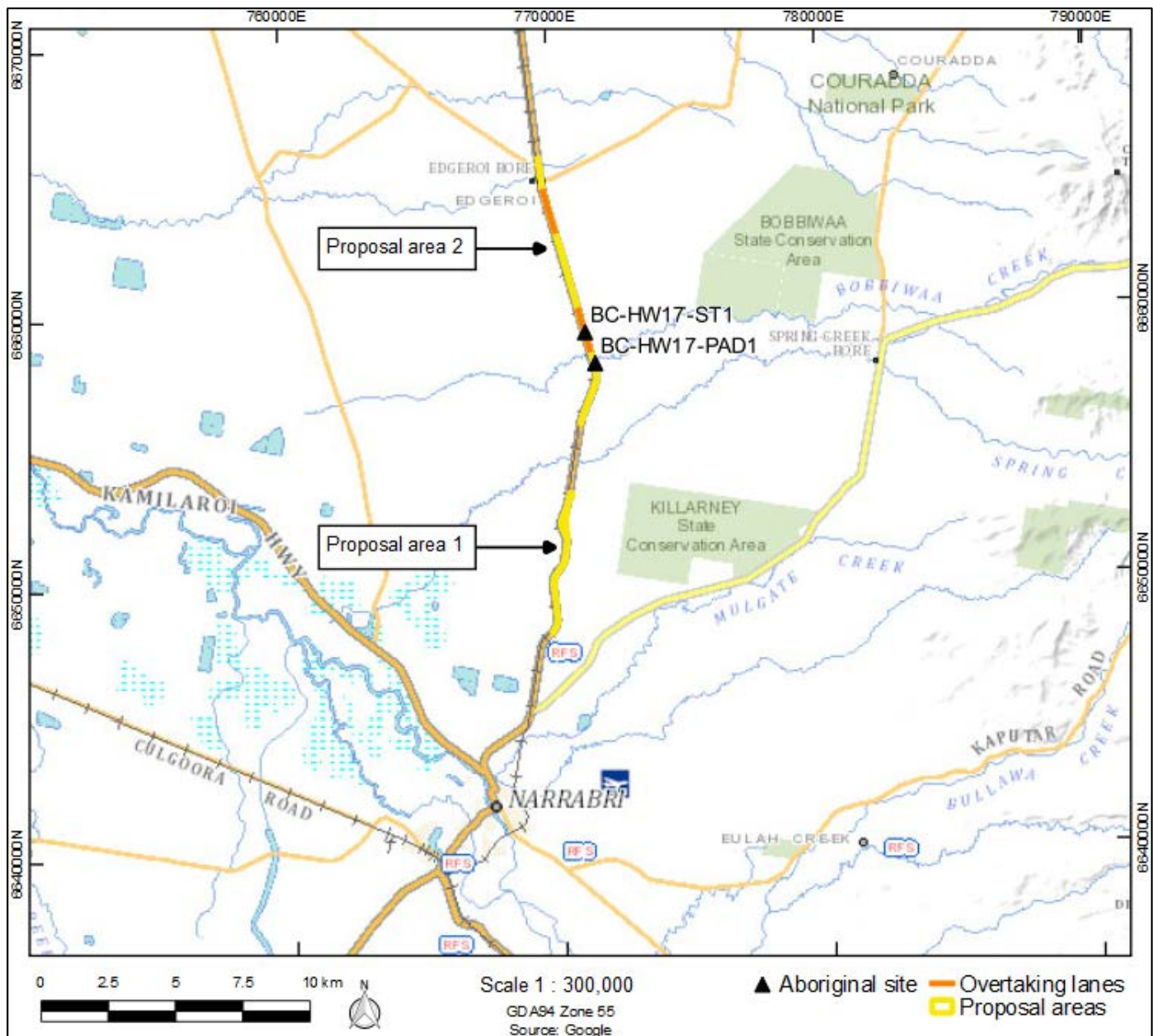
**Site Type:** PAD

**GPS Coordinates:** GDA94 (Zone [REDACTED])

**Location of Site:** Within [REDACTED] in the suburb of Narrabri about 17 kilometres north of the town of Narrabri, a few metres east of the Newell Highway, [REDACTED] north of the intersection of Junefield Road and the Newell Highway, on the northern and western bank of Bobbiwaa Creek (**Figure 5-6**).

**Description of Site:** BC-HW17-PAD1 is on the northern and western bank of Bobbiwaa Creek on an alluvial plain within a highly modified open woodland and riparian habitat (**Figure 5-7** and **Figure 5-8**). The PAD extends for approximately 100 metres (east–west) by 110 metres (north–south) encompassing a flat, slightly raised landform above the creek bank (**Figure 5-7**). The PAD includes a point bar deposit on the inner bank of Bobbiwaa Creek and the landform encompassed by the PAD has a slightly elevated topography

relative to the surrounding alluvial plain. GSV in the area was nil due to dense grass cover (**Figure 5-7**) and the PAD was identified on the basis of the moderate–high archaeological potential of the landform. Vegetation clearance, animal grazing and trampling, fencing, the construction and maintenance of the Newell Highway and possibly ploughing are likely to have affected the integrity any archaeological deposits. Nevertheless, intact archaeological deposits are likely to exist in the PAD area. The PAD is located outside of the Newell Highway Crown Land road reserve where construction of a bridge over Bobbiwaa Creek is proposed to replace the existing bridge (**Figure 5-7, photograph 2**).



**Figure 5-6: Map showing the location of BC-HW17-PAD1 and BC-HW17-ST1 in relation to proposal area 2.**



1. Overview of BC-HW17-PAD1 showing the flat slightly elevated landform above the northern and western creek bank, facing southeast.



2. View showing the Newell Highway and the existing bridge over Bobbiwaa Creek from the northern bank, facing south. The BC-HW17-PAD1 boundary is on the left.

**Figure 5-7: Photographs showing an overview of BC-HW17-PAD and the existing HW17 bridge.**

Figure has been removed for confidentiality

**Figure 5-8: Map showing BC-HW17-PAD1 within proposal area 2 in relation to the proposal.**

### **Bobbiwaa Creek-HW17-ST1 (BC-HW17-ST1)**

**Site Type:** Modified tree

**GPS Coordinates:** [REDACTED]

**Location of Site:** Within the Newell Highway Crown Land road reserve in the suburb of Narrabri. The site is located about 17.8 kilometres north of the town of Narrabri, a few metres east of the Newell Highway, 810 metres north of Bobbiwaa Creek and four kilometres north of the intersection of Junefield Road and the Newell Highway (**Figure 5-6**).

**Description of Site:** BC-HW17-ST1 is an Aboriginal culturally modified tree on an undulating alluvial plain, within a highly-modified woodland environment (**Table 5-4**, **Figure 5-9** and **Figure 5-10**). The tree contains a single oval shaped scar which is orientated to the southwest. The archaeological potential of the landform was assessed as low based on high levels of disturbance for the construction of the Newell Highway.

**Table 5-4: Attributes of BC-HW17-ST1.**

Attribute	Description	Scar dimensions	
Tree species	Bimble box ( <i>Eucalyptus populnea</i> )	Length of dry face (cm)	120
Tree condition	Alive - the tree appears to be in good overall health	Width of dry face (cm)	50
Scar orientation	Southwest	Height of base of scar above ground (cm)	30
Type of scar	Oval shaped bark slab (sheet) removal scar	Thickness of overgrowth (radial, from centre of tree) (cm)	15
Scar preservation (original attributes)	The dryface is well preserved	Tree dimensions	
		Diameter at breast height (cm)	270
Scar preservation (physical decay)	Good		
Toe holds	No		
Tool marks	None visible		
Epicormic stem present?	No		



1. Overview of BC-HW17-ST1 showing the context of the tree, facing east.



2. Overview of the BC-HW17-ST1 bark slab (sheet) removal scar, facing east.

**Figure 5-9: Photographs showing an overview of BC-HW17-ST1.**

Figure has been removed for confidentiality

**Figure 5-10: Map showing BC-HW17-ST1 within proposal area 2.**

**Bellata-HW17-ST1 (BL-HW17-ST1)**

**Site Type:** Modified tree

**GPS Coordinates:** [REDACTED]

**Location of Site:** Within the Newell Highway Crown Land road reserve in the suburb of Bellata about 1.5 kilometres north of the town of Bellata, within a roadside rest area, [REDACTED] in the middle of a large area covered by bitumen, beside an undercover picnic area, rubbish bin and two concrete bollards (**Figure 5-9**).

**Description of Site:** BL-HW17-ST1 is an Aboriginal culturally modified tree on an undulating alluvial plain, within a highly-modified woodland environment (**Table 5-4**, **Figure 5-10** and **Figure 5-11**). The tree is located within a highly disturbed roadside rest area. The site appears to have been previously assessed and managed during the construction of the rest area including the installation of two protective concrete bollards; however, the site does not appear to have been registered on AHIMS. The tree is in overall good condition, despite a very small area at the base of the tree (about three metres by three metres) being left uncovered by bitumen, which could severely limit the amount of moisture able to reach the tree's roots.

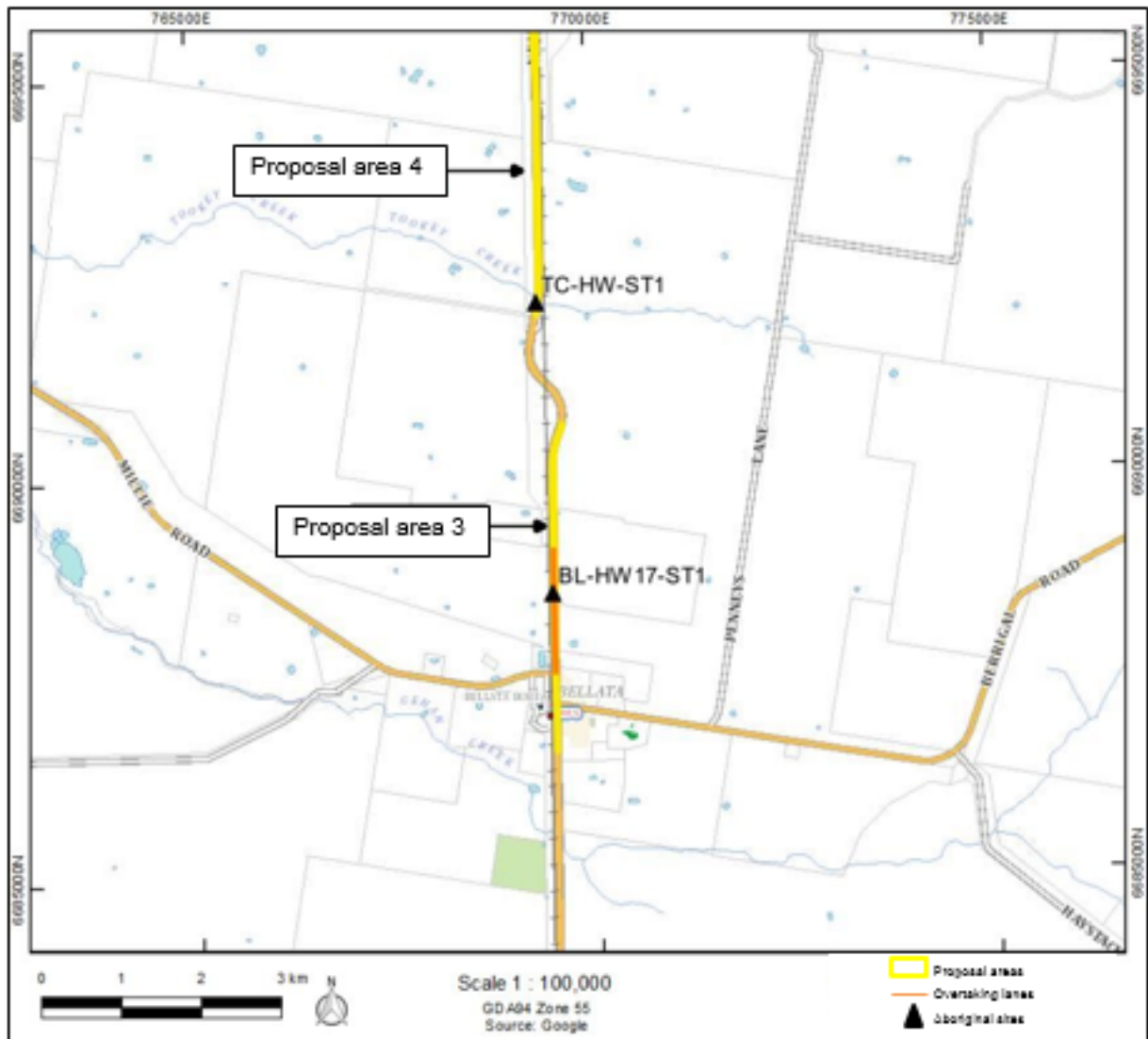


Figure 5-11: Map showing the location of BL-HW17-ST1 and TC-HW17-ST1 in proposal area 3 and 4.

**Table 5-5: Attributes of BL-HW17-ST1.**

Attribute	Description	Scar dimensions		
Tree species	Bimble box ( <i>Eucalyptus populnea</i> )	Length of dry face (cm)	90	
Tree condition	Alive - the tree appears to be in good overall health	Width of dry face (cm)	40	
Scar orientation	North-northwest	Height of base of scar above ground (cm)	60	
Type of scar	Oval shaped bark slab (sheet) removal scar	Thickness of overgrowth (radial, from centre of tree) (cm)	20	
Scar preservation (original attributes)	The dryface is well preserved	Width of overgrowth (outer edge to inner edge over dry face)	Top (cm)	
Scar preservation (physical decay)	Overgrowth obscures the original shape and extent of scarring, especially at the top		Left (cm)	20
			Bottom (cm)	10
			Right (cm)	20
Toe holds	No	<b>Tree dimensions</b>		
Tool marks	Possible axe marks	Diameter at breast height (cm)	110	
Epicormic stem present?	No	Height (m)	15	



1. Overview of BL-HW17-ST1, facing southeast.



2. Overview of BL-HW17-ST1 scar, facing southeast.



3. Top of the BL-HW17-ST1 scar.



4. Bottom of the BL-HW17-ST1 scar.



5. Possible axe marks.



6. Possible axe mark.

**Figure 5-12: Photographs showing an overview of BL-HW17-ST1 and details of the scar.**

Figure has been removed for confidentiality

**Figure 5-13: Map showing BL-HW17-ST1 within proposal area 3.**

### **Tookey Creek-HW17-ST1 (TC-HW17-ST1)**

**Site Type:** Modified tree

**GPS Coordinates:** [REDACTED]

**Location of Site:** Within the western Newell Highway Crown Land road reserve in the suburb of Bellata. The site is located about 4.5 kilometres north of the town of Bellata, about 26 metres west of the Newell Highway centre line and 20 metres north of Tookey Creek (**Figure 5-9**).

**Description of Site:** TC-HW17-ST1 is an Aboriginal culturally modified tree on an undulating alluvial plain [REDACTED] within a generally undisturbed woodland environment (**Table 5-6**, **Figure 5-14** and **Figure 5-15**). The tree contains a single, elongated scar facing northeast. The archaeological potential of the landform was assessed as low due to frequent inundation.

**Table 5-6: Attributes of TC-HW17-ST1.**

Attribute	Description	Scar dimensions	
Tree species	Box	Length of dry face (cm)	180
Tree condition	Alive - the tree appears to be in good overall health	Width of dry face (cm)	67
Scar orientation	Northeast	Height of base of scar above ground (cm)	20
Type of scar	Elongated	Thickness of overgrowth (radial, from centre of tree) (cm)	30
	The dryface is well preserved	<b>Tree dimensions</b>	



Attribute	Description	Scar dimensions	
Scar preservation (original attributes)		Diameter at breast height (cm)	230
Scar preservation (physical decay)	Good		
Toe holds	No		
Tool marks	None visible		
Epicormic stem present?	No		



1. Overview of TC-HW17-ST1, facing northwest.



2. Overview of TC-HW17-ST1 scar, facing northwest.

**Figure 5-14: Photographs showing an overview of TC-HW17-ST1 and details of the scar.**

Figure has been removed for confidentiality

**Figure 5-15: Map showing TC-HW17-ST1 within proposal area 4.**

## 5.5 PREVIOUSLY RECORDED ABORIGINAL SITES LOCATED

No previously recorded Aboriginal sites were assessed as none were located close to the proposal areas.

## 5.6 ABORIGINAL COMMUNITY INPUT

The Aboriginal stakeholder cultural heritage survey report provided by the Gomeroi People Native Title Claimants (**Appendix 1**) noted that the proposal areas have been subject to high levels of disturbance, which has affected the natural landscape proposal areas. The report concluded that the surveyed area is unlikely to affect any significant known or potential Aboriginal cultural heritage features.

## **5.7 DISCUSSION**

The results of the survey are consistent with the predictive model. The recording of TC-HW17-ST1 is consistent with the prediction that this site type is more likely to occur nearby permanent or semi-permanent sources of water, however, the recording of BC-HW-ST1 and BL-HW17-ST1 on a plain landform away from water is consistent with the prediction that this site type can occur anywhere trees of suitable age and species are found.

The identification of BC-HW17-PAD1 was based upon the prediction that artefact scatters (i.e. open camp sites) in the Northern Outwash subregion are likely to occur within a few hundred metres of major watercourses, particularly on raised landforms adjacent to those watercourses. These landforms are relatively infrequently inundated compared to the more frequently flooded plains further west. Very few Aboriginal PADs have been identified in the region and even fewer have been subjected to subsurface archaeological investigation (Heritage Concepts 2007: 45–46). As such, the careful identification of PADs, including those identified entirely on the basis of landform potential, is vital to the ongoing characterisation of the region's apparently sparse Aboriginal archaeological record.

## **5.8 ASSESSMENT OF SIGNIFICANCE**

### **5.8.1 Introduction**

The appropriate management of cultural heritage items is usually determined on the basis of their assessed significance as well as the likely impacts of any proposed developments. Scientific, cultural and public significance are identified as baseline elements of significance assessment, and it is through the combination of these elements that the overall cultural heritage values of a site, place or area are resolved.

### Social or Cultural value

This area of assessment concerns the importance of a site or features to the relevant cultural group: in this case the Aboriginal community. Aspects of social value include assessment of sites, items, and landscapes that are traditionally significant or that have contemporary importance to the Aboriginal community. This importance involves both traditional links with specific areas, as well as an overall concern by Aboriginal people for their sites generally and the continued protection of these. This type of value may not be in accord with interpretations made by the archaeologist: a site may have low archaeological value but high social value, or vice versa.

### Archaeological/scientific value

Assessing a site in this context involves placing it into a broader regional framework, as well as assessing the site's individual merits in view of current archaeological discourse. This type of value relates to the ability of a site to answer current research questions and is also based on a site's condition (integrity), content and representativeness.

The overriding aim of cultural heritage management is to preserve a representative sample of the archaeological resource. This will ensure that future research within the discipline can be based on a valid sample of the past. Establishing whether or not a site can contribute to current research also involves defining 'research potential' and 'representativeness'. Questions regularly asked when determining significance are: can this site contribute information that no other site can? Is this site representative of other sites in the region?

### Aesthetic value

This refers to the sensory, scenic, architectural and creative aspects of the place. It is often closely linked with the social values. It may consider form, scale, colour, texture and material of the fabric or landscape, and the smell and sounds associated with the place and its use (Australia ICOMOS 2013).

### Historic value

Historic value refers to the associations of a place with a historically important person, event, phase or activity in an Aboriginal community. Historic places do not always have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). They may have 'shared' historic values with other (non-Aboriginal) communities.

Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage. Consequently, the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives. This means it is often necessary to collect oral histories along with archival or documentary research to gain a sufficient understanding of historic values.

## 5.8.2 Assessed significance of the recorded sites

### Social or Cultural value

The social value of Aboriginal sites is generally determined through consultation with Aboriginal people. Sites BC-HW17-ST1, BL-HW17-ST1 and TC-HW17-ST1 which were recorded within the survey area are accorded **high social and cultural value** because they provide a tangible link to Aboriginal ancestors and cultural practices in accordance with the views of Aboriginal community representatives

### Archaeological/scientific value

The archaeological or scientific significance assessment of the four newly recorded sites is evaluated and summarised in **Table 5.7**.

**Table 5-7: The archaeological or scientific significance of the Aboriginal sites.**

Site Name	Research potential	Representativeness	Rarity	Scientific significance
BC-HW17-PAD1	Undetermined	Undetermined	Undetermined	<b>Undetermined:</b> The landform is a good representation of a PAD, which are rare in the region. However, the landform has been affected by disturbance. The nature and extent of any subsurface archaeological deposits would need to be determined by archaeological test excavation.
BC-HW17-ST1	Moderate	Moderate	Low-Moderate	<b>Moderate:</b> the scar is well preserved, and some potential exists for research. The scar is a good representation of an Aboriginal bark sheet removal scar, which are fairly common in the region.
BL-HW17-ST1	Moderate	Moderate	Low-Moderate	<b>Moderate:</b> the scar is well preserved, and some potential exists for research. The scar is a good representation of an Aboriginal bark sheet removal scar, which are fairly common in the region.
TC-HW17-ST1	Moderate	Moderate	Low-Moderate	<b>Moderate:</b> the scar is well preserved, and some potential exists for research. The scar is a good representation of an Aboriginal bark sheet removal scar, which are fairly common in the region.

### Aesthetic value

The sensory, scenic and creative aspects of BC-HW17-PAD1 have been diminished by vegetation clearance, grazing and agricultural disturbance as well as the construction, maintenance and use of the Newell Highway and the nearby bridge. Nevertheless, the PAD retains some sensory, scenic and creative qualities due to its proximity to Bobbiwaa Creek, the remnant fringing riparian woodland habitat and the slightly elevated, flat landform. However, the aesthetic value of the PAD cannot be fully determined without further archaeological investigation to establish whether an Aboriginal site exists. As such, BC-HW17-PAD1 is attributed **undetermined aesthetic value**.

The sensory, scenic and creative aspects of BC-HW17-ST1, BL-HW17-ST1 and TC-HW17-ST1 have been diminished by vegetation clearance, the development of a roadside rest area and adjacent road and rail infrastructure. Nevertheless, the trees retain significant sensory, scenic

and creative qualities due to the Aboriginal scarring as well as the form, colour and texture of the tree itself. BC-HW17-ST1, BL-HW17-ST1 and TC-HW17-ST1 are therefore attributed **moderate aesthetic value**.

#### Historic value

The historic value of BC-HW17-PAD1 cannot be established without further archaeological investigation to determine whether it is an Aboriginal site and whether there is any evidence consistent with a 'contact' or 'post-contact' site. As such, BC-HW17-PAD1 is assessed as having **undetermined historic value**.

BC-HW17-ST1, BL-HW17-ST1 and TC-HW12-ST1 do not have an apparent relationship to known historic Aboriginal or non-Aboriginal sites. The sites do not display clear evidence consistent with 'contact' or 'post-contact' Aboriginal sites. As such, BC-HW17-ST1, BL-HW17-ST1 and TC-HW12-ST1 are assessed as having **nil historic value**.

**Table 5-6** presents a summary of the heritage significance of each site.

**Table 5-8: Significance assessment.**

Site Name	Social or Cultural Value	Archaeological / Scientific Value	Aesthetic Value	Historic Value
BC-HW17-PAD1	Undetermined	Undetermined	Undetermined	Undetermined
BC-HW17-ST1	High	Moderate	Moderate	Nil
BL-HW17-ST1	High	Moderate	Moderate	Nil
TC-HW17-ST1	High	Moderate	Moderate	Nil

## **5.9 LIKELY IMPACTS TO ABORIGINAL HERITAGE FROM THE PROPOSAL**

The assessment has found that BC-HW17-PAD1 is at risk of harm from the proposal. If the PAD area is to be impacted, further investigation needs to take place to establish whether Aboriginal objects exist in the BC-HW17-PAD1 area. In the case of a PAD, further investigation would normally involve a limited test excavation program to determine the nature and extent of any archaeological deposits.

Harm to BL-HW17-ST1 and TC-HW17-ST1 can be avoided with the implementation of management strategies.

**Table 5-9: Impact assessment.**

Site Name	Type of Harm (Direct/Indirect / None)	Degree of Harm (Total/Partial / None)	Consequence of Harm (Total/Partial/No Loss of Value)
BC-HW17-PAD1	Direct	Partial (with management)	<b>Partial loss of value:</b> Construction of a bridge and new road formation is proposed in this area. Specific management recommendations apply to this site to mitigate harm arising from the proposal.
BC-HW17-ST1	Direct or none	Total loss of value or none (with management)	<b>No loss of value:</b> The alternative alignment has been proposed in this area. Specific management recommendations apply to this site to ensure no direct or indirect harm arises from the proposal.
BL-HW17-ST1	None	None (with management)	<b>No loss of value:</b> HD pavement construction and an overtaking lane are proposed in this area. Specific management recommendations apply to this site to ensure no direct or indirect harm arises from the proposal.
TC-HW17-ST1	None	None (with management)	<b>No loss of value:</b> HD pavement construction is proposed in this area. Specific management recommendations apply to this site to ensure no direct or indirect harm arises from the proposal.

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## 6 MANAGEMENT AND MITIGATION: ABORIGINAL HERITAGE

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### 6.1 GENERAL PRINCIPLES FOR THE MANAGEMENT OF ABORIGINAL SITES

Appropriate management of cultural heritage items is primarily determined on the basis of their assessed significance as well as the likely impacts of the proposed development. **Section 5.8.2** and **Section 5.9** describe, respectively, the significance / potential of the recorded sites and the likely impacts of the development. The following management options are general principles, in terms of best practice and desired outcomes, rather than mitigation measures against individual site disturbance.

- Avoid impact by altering the development proposal or in this case by avoiding impact to a recorded Aboriginal site or PAD. If this can be done, then a suitable curtilage around the site or PAD must be provided to ensure its protection both during the short-term construction phase of development and in the long-term use of the area. If plans are altered, care must be taken to ensure that impacts do not occur to areas not previously assessed.
- If impact to an Aboriginal site is unavoidable then the Aboriginal cultural heritage investigation must proceed to PACHCI Stage 3 (RMS 2011). Approval to disturb the site under the authority of an AHIP must be sought from OEH and will depend on many factors including the site's assessed significance. Aboriginal community consultation will also need to occur following the OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (ACHCRs). If an AHIP is granted, the local Aboriginal communities may wish to collect or relocate any evidence of past Aboriginal occupation (Aboriginal objects), whether temporarily or permanently. The fate of all artefacts remains within the statutory control of the OEH. A care and control permit may be issued to local Aboriginal groups or, with Aboriginal community consent, to other parties, for educational or display purposes.
- If impact to an Aboriginal PAD is unavoidable then the Aboriginal cultural heritage investigation must proceed to PACHCI Stage 3 (RMS 2011). Archaeological test excavation will be required in accordance with the Code of Practice or under an AHIP. If the test excavation concludes that Aboriginal objects are present in the PAD area at risk of harm, then an AHIP will be required to harm the site.

### 6.2 MANAGEMENT AND MITIGATION OF THE RECORDED ABORIGINAL SITES

The management and mitigation of Aboriginal sites involves consideration of the principles of ecologically sustainable development (ESD) including cumulative impacts, the precautionary principle and the principle of intergenerational equity (OEH 2011: 12–13).

### 6.2.1 Management of BC-HW17-PAD1

BC-HW17-PAD1 is located outside of the Newell Highway Crown Land road reserve where the construction of a bridge over Bobbiwaa Creek is proposed to replace the existing bridge and a new Newell Highway road formation is proposed next to the existing road formation. If the PAD area cannot be substantially avoided by the proposed work, then archaeological test excavation will be required in accordance with the Code of Practice and Stage 3 of the PACHCI. This includes:

- Aboriginal community consultation in accordance with ACHCRs, Requirement 15a of the Code of Practice and Stage 3 of the PACHCI
- The development of a test excavation sampling strategy for the BC-HW17-PAD1 area at risk of harm in accordance with Requirement 15b of the Code of Practice
- Notification to OEH at least 14 days before undertaking test excavations, including a copy of the proposed sampling strategy, in accordance with Requirement 15c of the Code of Practice
- Undertake test excavations in compliance with the test excavation methodology developed in accordance with Requirement 16 and 17 of the Code of Practice
- Reporting of the test excavation results in a Cultural Heritage Assessment Report (CHAR)

If the test excavation concludes that Aboriginal objects are present in the PAD area at risk of harm, then an AHIP will be required to harm the site. The AHIP may include requirements for salvage excavation and/or community collection in the area at risk of harm, depending upon the significance of any archaeological deposits and/or surface artefacts identified within the PAD area. If the test excavation concludes that no archaeological deposits, Aboriginal objects or PADs are present in the area at risk of harm, then work can proceed in the area, provided any management recommendations to avoid harming the remaining portions of BC-HW17-PAD1 area are followed.

### 6.2.2 Management of BC-HW17-ST1.

BC-HW17-ST1 is located within the Newell Highway Crown Land road reserve and will be avoided by the proposed work. For continued management of BC-HW17-ST1, the site must be demarcated during the proposed work using high visibility ground markers to delineate the site perimeter (i.e. staking and flagging) encompassing the tree canopy as shown in **Figure 5-10**. The ground markers used must be visible to any person in the vicinity of the site, whether on foot or in a vehicle. BC-HW17-ST1 must be mapped on the *Construction Environmental Management Plan* (CEMP) and detailed design plans and the canopy extent demarcated as a 'no-go' and 'no-harm' area. Vehicles must not be driven on, or in the immediate vicinity of, the BC-HW17-ST1



site extent. If required, appropriate sediment control measures must be installed, operated and maintained to prevent sediment moving onto the site extent during the proposed work.

### **6.2.3 Management of BL-HW17-ST1.**

BL-HW17-ST1 is located within the Newell Highway Crown Land road reserve where the construction of HD pavement and an overtaking lane are proposed. To avoid harming the site, BL-HW17-ST1 must be demarcated during the proposed work using high visibility ground markers to delineate the site perimeter (i.e. staking and flagging) encompassing the tree canopy as shown in **Figure 5-13**. The ground markers used must be visible to any person in the vicinity of the site, whether on foot or in a vehicle. BL-HW17-ST1 must be mapped on the CEMP and detailed design plans and the canopy extent demarcated as a 'no-go' and 'no-harm' area. Vehicles must not be driven on, or in the immediate vicinity of, the BL-HW17-ST1 site extent. If required, appropriate sediment control measures must be installed, operated and maintained to prevent sediment moving onto the site extent during the proposed work.

### **6.2.4 TC-HW17-ST1**

TC-HW17-ST1 is located within the Newell Highway Crown Land road reserve where the construction of HD pavement is proposed. To avoid harming the site, TC-HW17-ST1 must be demarcated during the proposed work using high visibility ground markers to delineate the site perimeter (i.e. staking and flagging) encompassing the tree canopy as shown in **Figure 5-15**. The ground markers used must be visible to any person in the vicinity of the site, whether on foot or in a vehicle. TC-HW17-ST1 must be mapped on the CEMP and detailed design plans and the canopy extent demarcated as a 'no-go' and 'no-harm' area. Vehicles must not be driven on, or in the immediate vicinity of, the TC-HW17-ST1 site extent. If required, appropriate sediment control measures must be installed, operated and maintained to prevent sediment moving onto the site extent during the proposed work.

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## 7 HISTORIC HERITAGE ASSESSMENT: INTRODUCTION

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### 7.1 BRIEF DESCRIPTION OF THE PROPOSAL

Please refer to **Sections 1.1 to 1.4** for a description of the proposal and the proposal areas.

### 7.2 HISTORIC HERITAGE ASSESSMENT OBJECTIVES

The current assessment will follow the RMS (2015) guidelines and the *Historical Archaeology Code of Practice* (Historical Code of Practice; Heritage Council 2006) in the completion of a historical heritage assessment, including field investigations, in order to meet the following objectives:

**Objective one:** To identify whether or not historical heritage items or areas are, or are likely to be, present within the study areas

**Objective two:** To assess the significance of any recorded historical heritage items or areas

**Objective three:** Determine whether the activities of the proponent are likely to cause harm to recorded historical heritage items or areas

**Objective four:** Provide management recommendations and options for mitigating impacts.

### 7.3 DATE OF HISTORIC HERITAGE ASSESSMENT

The fieldwork component of the alternative alignment assessment was undertaken by OzArk on Wednesday 31 May 2017.

The fieldwork component of the recommended and alternate alignment assessment was undertaken by OzArk on Monday 15 January to Wednesday 17 January 2018.

### 7.4 OZARK INVOLVEMENT

#### 7.4.1 Field assessment

The fieldwork component of the historic heritage assessment was undertaken by:

- Fieldwork Director: Dr Chris Lovell
- Stephanie Rusden
- Philippa Sokol.

#### 7.4.2 Reporting

The reporting component of the historic heritage assessment was undertaken by:

- Report Author: Dr Chris Lovell

- Contributor: Stephanie Rusden
- Reviewer: Ben Churcher (OzArk Principal Archaeologist; BA[Hons], Dip Ed).

## **7.5 LANDSCAPE CONTEXT**

Please refer to **Sections 3.1 to 3.5** for a description of the landscape context of the proposal areas.

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## 8 HISTORIC HERITAGE ASSESSMENT: BACKGROUND

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### 8.1 BRIEF HISTORY OF NORTH-CENTRAL NSW

Aboriginal people have occupied north central NSW for tens of thousands of years. European colonisation of north-central NSW occurred relatively late, as the expansion had halted at Wellington Valley during the 1820s. Land was taken up around Dubbo in the early 1830s and subsequent colonisation beyond Wellington was rapid, tending to follow the major river courses (Heritage Concepts 2009: 49). The Moree plains area between Narrabri and Moree began to be occupied by pastoralists shortly after Mitchell passed through the area in 1831 and Coxen in 1835, each reporting good pastoral land (NSW HO and DUAP 1996: 80-81). Mitchell's route passed through country around Narrabri, crossing the Gwydir River near Moree and continuing as far north as Mungindi (Heritage Concepts 2009: 49).

By the late 1830s, many prime grazing sites along the Namoi River and Gwydir River had been taken up by European pastoralists, including James Cox at Moree, Thomas Simpson Hall at Wee Bella Bolla and John Fleming at Mundi Bundie (Elder 2003: 75). Many more cattle runs were established than sheep stations in the Namoi and Gwydir pastoral districts. Runs tended to be owned by absentee landholders living in the Hunter Valley, Cumberland or Bathurst areas, and were attended to by ex-convict or convict stock keepers and shepherds living in huts. As a result, few early substantial houses built. More owners came to live in the region with the security of land tenure that emerged after 1847 when more substantial houses were built.

Conflict between Aboriginal people and European pastoralists probably occurred initially over competition for food and water resources. Access to creeks and rivers was often denied to Aboriginal people, which led to the poaching of sheep and cattle, with subsequent reprisals and attacks from both sides. Conflict between Aboriginal people and European colonists was particularly violent in the Gwydir and Macintyre Valleys, with reports made by the Commissioner of Crown Lands, Alexander Paterson, as early as 1837 (Heritage Concepts 2009: 50–51). This report led to the Waterloo Creek Massacre and subsequent rampages perpetrated by Mounted Police under Commander Major James Nunn in 1838 (Elder 2003: 79–82). A number of massacres occurred throughout the region, including the Myall Creek Massacre of 1838 perpetrated by 12 stockmen who massacred 28 Aboriginal men, women and children. Eleven of the 12 were tried for their crimes and seven were eventually found guilty of murder and hung in December 1838 at Sydney Goal (Elder 2003: 83–94). Throughout the 1840s the conflict between Aboriginal people and European colonists continued unabated as the Kamiloroi resisted European incursions (Heritage Concepts 2009: 54–56). It was not until 1850 that the region was eventually 'pacified' under violence from the Native Police Force (Heritage Concepts 2009: 49).

By 1861, most of north central NSW was occupied by Europeans (Heritage Concepts 2009: 49). Urban development prior to 1850 was very limited. Travellers' accounts indicate that isolated inns

were scattered across the landscape, catering to travellers and local recreation. Some of these inns developed into towns like Narrabri, while others were eventually abandoned or burned (NSW HO and DUAP 1996: 81).

An early pastoral centre was established at Warialda, which was home of the Commissioner of Crown Lands. In 1850 Warialda included a courthouse and lockup that served the region. The town of Moree was laid out in 1860 and an additional court was established there in 1862, although a courthouse building was not built until 1874. Moree soon eclipsed Warialda with the establishment of two inns, two stores, a post office, a pound and a population of 43 in 1861. By 1871, Moree had a population of 107, three hotels, a butcher, a saddler and a school. Major growth occurred during the 1880s with accelerated European occupation and the establishment of a Land Office to administer it. Moree became a municipality in 1891. The first of many bores was sunk into the Great Artesian Basin at Moree in 1895 and bores have continued to provide pastoral water supplies to the region, despite the depletion and westward retreat of the artesian basin. Moree's hot artesian water initially sustained a wool-scouring industry and continues to be exploited as a tourist attraction today (NSW HO and DUAP 1996: 83–84).

Narrabri is located on the northern edge of the Pilliga Scrub where sawmilling was historically important. A nearby early pastoral settlement was established at Wee Waa. In 1880, the larger town of Narrabri was established on a water reserve on Narrabri Creek, a tributary of the Namoi River, at an important crossing place on the droving route south. By 1871, Narrabri's population was 350 and the town included stores, inns, a bank and school. The railway reached the town in 1882 and Narrabri became an official municipality the following year, when a courthouse was also built (NSW HO and DUAP 1996: 84).

The small town of Bellata is located midway between Narrabri and Moree. Bellata was a small rural centre in the early to mid-twentieth century that included a post office, two general stores, two stock and station agencies, two garages, a cafe, a telephone exchange, a railway station and a doctor's surgery. The Nandewar Hotel was a two-storey colonial style hotel constructed in 1902 and was regarded as a local landmark until destroyed by fire in 2006. The Bellata Police station and residential quarters was originally designed in 1902 for use as a courthouse by the government architect Walter Liberty Vernon (**Appendix 3**).

## **8.2 LOCAL CONTEXT**

### **8.2.1 Desktop database searches conducted**

Desktop searches were conducted to identify any potential previously recorded heritage within the proposal areas. The results are summarised in **Table 8-1**. Database searches included the Heritage Council of NSW administered State Heritage Register (SHR) and State Heritage

Inventory (SHI), the Australian Heritage Database, Australia's National Heritage List and the Narrabri and Moree LEPs.

**Table 8-1: Historic heritage: desktop-database search results.**

Name of Database Searched	Date of Search	Type of Search	Comment
Australia's National Heritage List	9 January 2018	NSW	No items listed are located within the proposal areas
Australian Heritage Database	9 January 2018	Narrabri, Edgeroi, Bellata, Gurley and Moree	No items listed are located within the proposal areas
NSW Heritage Office SHR	9 January 2018	Narrabri, Edgeroi, Bellata, Gurley and Moree	No items listed on the SHR are located within the proposal areas.
NSW Heritage Office SHI	9 January 2018	Narrabri, Edgeroi, Bellata, Gurley and Moree	Six items listed on the SHI in Bellata are close to the proposal area 3 ( <b>Table 8-2</b> ).
LEP	9 January 2018	Narrabri LEP 2012; Moree LEP 2011	No items listed on the Moree LEP are located close to the proposal areas. Five items listed on the Narrabri LEP are near proposal area 3 in Bellata ( <b>Table 8-3</b> ).

There are six historic heritage sites in Bellata listed on the SHI (**Table 8-2**), but only five of these are registered on the Narrabri LEP. There is also an additional site listed on the Narrabri LEP that is not on the SHI (**Table 8-3** and **Appendix 3**). The Nandewar Hotel is listed on the SHI as being located in Bellata, but burnt down more than a decade ago and no longer exists (**Appendix 3**). One additional item listed on the Narrabri LEP is located in Bellata: LS Rowe Stock and Station Agents (**Appendix 3**). The curtilages of all five extant items, as shown on the Narrabri LEP Heritage Map (**Appendix 3**), are shown in **Figure 8-1**.

**Table 8-2: Historic heritage sites listed of the SHI.**

Item name	Database number	Level of significance
Nandewar Hotel	#11398	Local
AB Meppem & Co	#11389	Local
Bellata Post Office	#11387	Local
Oldhams Smallgoods	# 11390	Local
Bellata Police Station and Official Residence	#11388 and #4180157 <sup>2</sup>	Local
LS Rowe and Station Agents	#11400	Local

<sup>2</sup> The Bellata Police Station is listed twice of the SHI Register, under the Gazette NSW Statutory Listings and the State Government Register.

**Table 8-3: Historic heritage sites listed of the Narrabri LEP.**

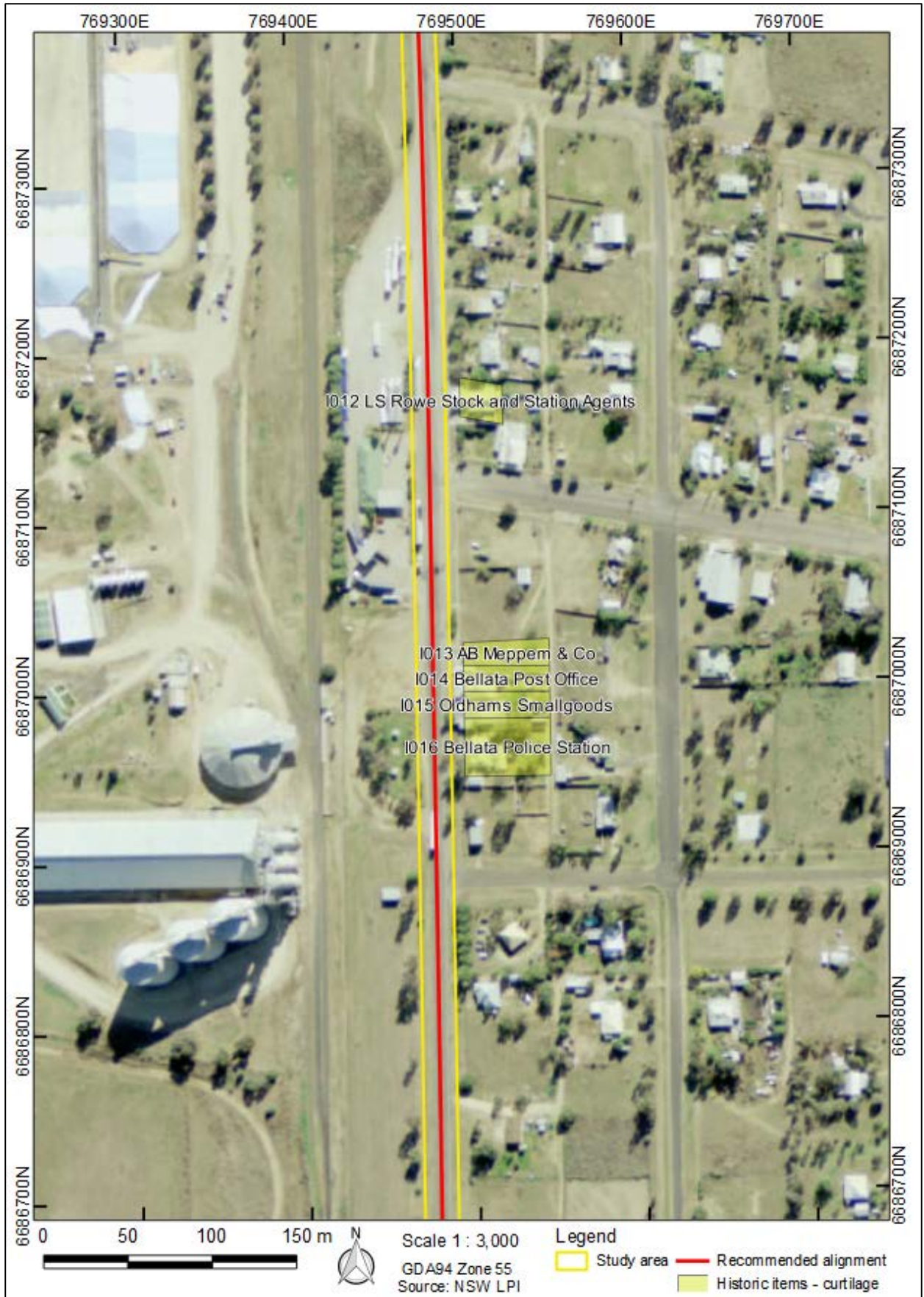
Item name	Item number	Level of significance
LS Rowe Stock and Station Agents	I012	Local
AB Meppem & Co	I013	Local
Bellata Post Office	I014	Local
Oldhams Smallgoods	I015	Local
Bellata Police Station	I016	Local

### 8.3 SURVEY METHODOLOGY

The archaeological methods used in the historic archaeological assessment followed the Historical Code of Practice. Standard archaeological field survey and recording methods were employed (Burke and Smith 2004) to ground-truth existing levels of disturbance, confirm the location and curtilage of previously recorded heritage items, and to assess whether any other historic heritage items exist, or are likely to exist, in the proposal areas. A combination of pedestrian transects and vehicle traverses were used to inspect the proposal areas. Survey coverage for the historic assessment was the same as that reported in **Section 5.3**.

### 8.4 PROJECT CONSTRAINTS

There were no significant constraints affecting the completion of the historic heritage assessment.



**Figure 8-1: Map showing the curtilages of the five extant historic items in Bellata, as shown on the Narrabri LEP Heritage Map (Appendix 3).**



## 9 RESULTS OF THE HISTORIC HERITAGE ASSESSMENT

### 9.1 HISTORIC HERITAGE SITES

No new historic heritage sites were recorded during the assessment. Five previously recorded historic heritage items were located. Details of these sites are provided below.

#### **AB Meppem & Co**

**Listings:** I013 (LEP) and #11389 (SHI register)

**Site Type:** Building

**GPS Coordinates:** GDA94 (Zone 55) 769523E 6687019N

**Location of Site:** Railway Parade (Newell Highway), Bellata NSW

**Description of Site:** The AB Meppem & Co building is a small weatherboard building (Figure 9-1). The satellite imagery suggests the western part of the building extends slightly beyond the curtilage frontage to the west. A veranda is attached to the building, covering the pavement further west of the building and, as such, is situated outside of the curtilage boundary. The full site extent encompassing the LEP curtilage and all parts of the building is shown in Figure 9-2.

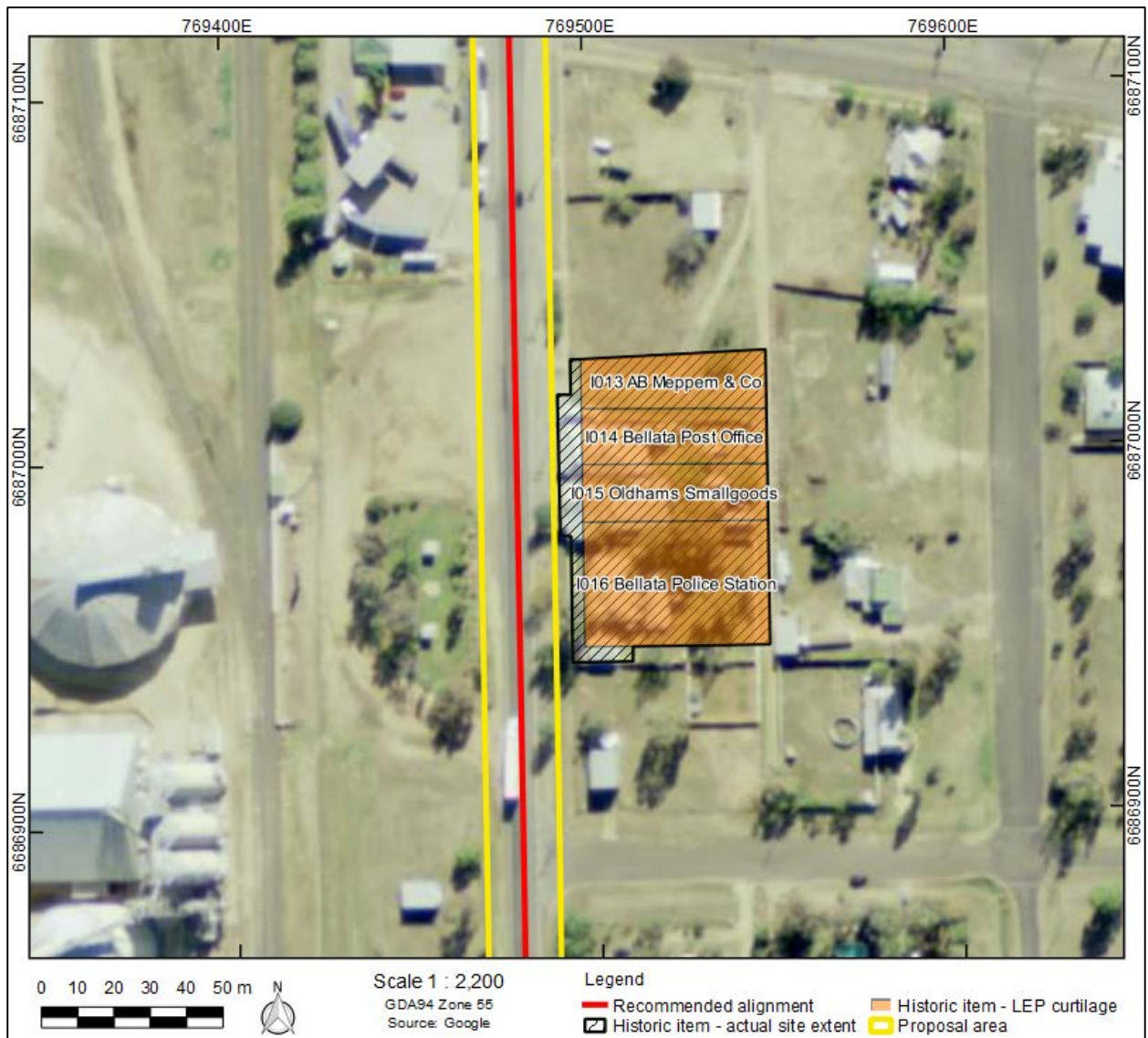


1. Overview of AB Meppem & Co building, showing the frontage, facing southeast.



2. Overview of AB Meppem & Co building, side view, showing the veranda covering the pavement, facing south.

**Figure 9-1: Photographs showing an overview of the AB Meppem & Co building.**



**Figure 9-2: Map showing the AP Meppem & Co, Bellata Post Office, Oldhams Smallgoods and Bellata Police Station curtilage and full site extent encompassing all of the building parts in relation to the proposal area and recommended alignment.**

## **Bellata Post Office**

**Listings:** I014 (LEP) and #11387 (SHI register)

**Site Type:** Building

**GPS Coordinates:** GDA94 (Zone 55) 769522E 6687004N

**Location of Site:** Railway Parade (Newell Highway), Bellata NSW

**Description of Site:** The Bellata Post Office building is a weatherboard building (**Figure 9-3**). The satellite imagery suggests the western part of the building extends slightly beyond the curtilage frontage to the west. A large veranda is attached to the building, covering the pavement further west of the building and, as such, is situated outside of the curtilage boundary. The full site extent encompassing the LEP curtilage and all parts of the building is shown in **Figure 9-2**.



1. Overview of the Bellata Post Office building showing the building frontage, facing east.



2. Overview of the Bellata Post Office building showing the building frontage and veranda over the pavement, facing northeast.

**Figure 9-3: Photographs showing overviews of the Bellata Post Office building.**

## **Oldhams Smallgoods**

**Listings:** I015 (LEP) and #11390 (SHI Register)

**Site Type:** Building

**GPS Coordinates:** GDA94 (Zone 55) 769522E 6686989N

**Location of Site:** Railway Parade (Newell Highway), Bellata NSW

**Description of Site:** The Oldhams Smallgoods building is a weatherboard building with large shopfront windows with a weatherboard and plasterboard extension to the south (**Figure 9-4**). The satellite imagery suggests the western part of the building extends slightly beyond the curtilage frontage to the west. A large veranda is attached to the building, covering the pavement further west of the building and, as such, is situated outside of the curtilage boundary. The full site extent encompassing the LEP curtilage and all parts of the building is shown in **Figure 9-2**.



1. Overview of Oldhams Smallgoods building, facing southeast.



2. Overview of Oldhams Smallgoods building, facing east.



3. Overview of Oldhams Smallgoods building, facing northeast.



4. Overview of Oldhams Smallgoods building, facing north.

**Figure 9-4: Photographs showing overviews of the Oldhams Smallgoods building.**

## **Bellata Police Station and Official Residence**

**Listings:** I016 (LEP) and #11388 and #4180157 (SHI register)

**Site Type:** Building

**GPS Coordinates:** GDA94 (Zone 55) 769524E 6686965N

**Location of Site:** Railway Parade (Newell Highway), Bellata NSW

**Description of Site:** The Bellata Police Station and Official Residence building is a weatherboard building and double garage (**Figure 9-5**). The main building is contained within the curtilage boundary. The satellite imagery suggests that the boundary fence and double garage extend slightly west and south of the curtilage boundary. The full site extent encompassing the LEP curtilage and all parts of the building is shown in **Figure 9-2**.



1. Overview of the Bellata Police Station building, facing southeast.



2. Overview of the Bellata Police Station building, facing east.



3. Overview of the Bellata Police Station building, facing northeast.



4. Overview of the Bellata Police Station building and pavement, facing north.

**Figure 9-5: Photographs showing overviews of Ballata Police Station building.**

## **LS Rowe Stock and Station Agents**

**Listings:** I012 (LEP) and #11400 (SHI Register)

**Site Type:** Building

**GPS Coordinates:** GDA94 (Zone 55) 769512E 6687167N

**Location of Site:** Railway Parade (Newell Highway), Bellata NSW

**Description of Site:** The LS Rowe Stock and Station Agents building is a weatherboard and plasterboard building with large shopfront windows and doors, a large corrugated metal fascia with shop signage and an awning overhanging the pavement (**Figure 9-6**). The satellite imagery suggests the western part of the building and awning extend slightly beyond the curtilage frontage to the west. The full site extent encompassing the curtilage boundary and all parts of the building is shown in **Figure 9-7**.



1. Overview of the LS Rowe Stock and Station Agents building, facing northeast.

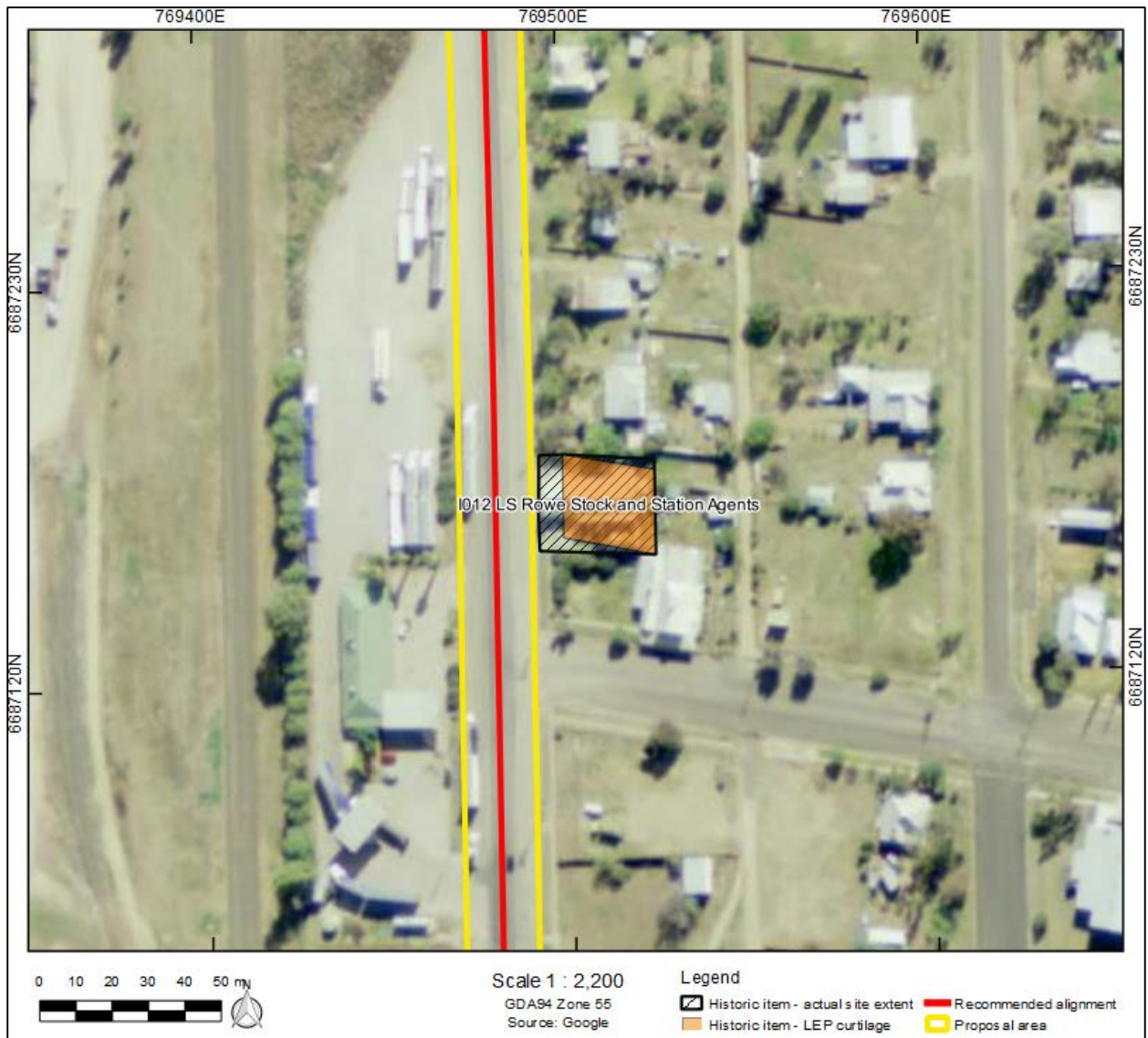


2. Overview of the LS Rowe Stock and Station Agents building, facing southeast.



3. Overview of the LS Rowe Stock and Station Agents building and pavement, facing south.

**Figure 9-6: Photographs showing overviews of the LS Rowe Stock and Station Agents building.**



**Figure 9-7: Map showing the LS Rowe Stock and Station Agents building, LEP curtilage and full site extent in relation to the proposal area and recommended alignment.**

## 9.2 LIKELY IMPACTS TO HISTORIC HERITAGE FROM THE PROPOSAL

Table 9–1 details the anticipated impacts to historic heritage from the proposal.

**Table 9-1: Impact assessment.**

Site	Rationale	Impact
AB Meppem & Co	The item is located close to the impact footprint. Specific management recommendations apply to ensure no harm arises from the proposal.	No heritage impact, provided the management measures in <b>Section 10.2</b> are followed.
Bellata Post Office	The item is located close to the impact footprint. Specific management recommendations apply to ensure no harm arises from the proposal.	No heritage impact, provided the management measures in <b>Section 10.2</b> are followed.
Oldhams Smallgoods	The item is located close to the impact footprint. Specific management recommendations apply to ensure no harm arises from the proposal.	No heritage impact, provided the management measures in <b>Section 10.2</b> are followed.
Bellata Police Station	The item is located close to the impact footprint. Specific management recommendations apply to ensure no harm arises from the proposal.	No heritage impact, provided the management measures in <b>Section 10.2</b> are followed.
LS Rowe Stock and Station Agents	The item is located close to the impact footprint. Specific management recommendations apply to ensure no harm arises from the proposal.	No heritage impact, provided the management measures in <b>Section 10.2</b> are followed.



## 10 MANAGEMENT AND MITIGATION: HISTORIC HERITAGE

### 10.1 GENERAL PRINCIPLES FOR THE MANAGEMENT OF HISTORIC SITES

Appropriate management of heritage items is primarily determined on the basis of their assessed significance as well as the likely impacts of the proposed development.

In terms of best practice and desired outcomes, avoiding impact to any historical item is a preferred outcome, however where a historical site has been assessed as having no heritage value, impacts to these items does not require any legislated mitigation.

### 10.2 MANAGEMENT AND MITIGATION OF RECORDED HISTORIC SITES

Management strategies are recommended to ensure that harm to all historic heritage sites within or close to the proposal areas is avoided. Recommendations for the management of historic heritage sites located within or close to the proposal areas are outlined in **Table 10-1**. Provided the management recommendations outlined in **Table 10-1** are followed, harm to all historic heritage sites can be avoided.

**Table 10-1: Management recommendations for historic heritage sites located within or close to the proposal areas.**

Site name	Management recommendation
AB Meppem & Co, Bellata Post Office, Oldhams Smallgoods, Bellata Police Station	<p>The sites must be demarcated during the proposed work using high visibility ground markers to delineate the 'historic item - actual site extent', along the western boundary next to the Newell Highway (<b>Figure 9-2</b>). The demarcation method must be developed in consultation with property owners and/or tenants to ensure that the method is practical and fit for purpose. The ground markers used must be visible to any person in the vicinity of the site, whether on foot or in a vehicle. The 'no-go' and 'no-harm' area must be mapped on the CEMP and detailed design plans encompassing the 'historic item - site extent' shown in <b>Figure 9-2</b>.</p> <p>Once the nature and extent of the proposed work surrounding the buildings has been finalised, a condition assessment may be required to determine how structurally sound the individual buildings are and whether or not a vibration assessment may be required.</p>
LS Rowe Stock and Station Agents	<p>The site must be demarcated during the proposed work using high visibility ground markers to delineate the 'historic item – actual site extent' (e.g. high visibility temporary fencing) along the western boundary next to the Newell Highway (<b>Figure 9-7</b>). The demarcation method must be developed in consultation with property owners and/or tenants to ensure that the method is practical and fit for purpose. The ground markers used must be visible to any person in the vicinity of the site, whether on foot or in a vehicle. A 'no-go' and 'no-harm' area must be mapped on the CEMP and detailed design plans encompassing the 'historic item – actual site extent' shown in <b>Figure 9-7</b>.</p> <p>Once the nature and extent of the proposed work surrounding the buildings has been finalised, a condition assessment may be required to determine how structurally sound the building is and whether or not and a vibration assessment may be required.</p>

A Statement of Heritage Impact (SOHI) has been prepared (**Section 11**) on the presumption that there will be no direct impact to the historic heritage sites or their curtilage. However, the SOHI may need to be refined once the extent nature and extent of the proposed work has been finalised.

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## 11 STATEMENT OF HERITAGE IMPACT

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The NSW Heritage Manual poses a series of questions that comprise the minimum information to form a 'Statement of Heritage Impact'. These questions are required to properly address proposed impacts to heritage items.

**The following aspects of the proposal respect or enhance the heritage significance of the item or conservation area for the following reasons:**

No heritage items or conservation areas are located within the proposal area. The historic heritage items are located adjacent to proposal area and inadvertent impacts to these items can be avoided in order to maintain their heritage values.

**The following aspects of the proposal could detrimentally impact on heritage significance. The reasons are explained as well as the measures to be taken to minimise impacts:**

There are no identified direct impacts to heritage items from the proposal. The historic heritage items are located adjacent to the proposal area and management is required to avoid inadvertent impacts.

Ground disturbing work must remain outside the 'historic item - site extent'. Once the nature and extent of the proposed work surrounding the buildings has been finalised, a condition assessment may be required to determine how structurally sound the individual buildings are. The results of the condition assessment would then determine whether or not a vibration assessment would be required.

**The following sympathetic solutions have been considered and discounted for the following reasons:**

No alternative sympathetic solutions have been considered and discounted as there are no identified direct impacts to heritage item from the proposed work. Inadvertent impacts to the historic heritage items can be avoided via the implementation of appropriate management strategies including a condition and vibration assessment.

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## 12 RECOMMENDATIONS

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### 12.1 ABORIGINAL HERITAGE

Under Section 89A of the NPW Act it is mandatory that all newly-recorded Aboriginal sites be registered with OEH AHIMS. As a professional in the field of cultural heritage management it is the responsibility of OzArk to ensure this process is undertaken.

To this end it is noted that **three Aboriginal sites and one PAD** were recorded during the assessment.

The following recommendations are made on the basis of the identified impacts and with regard to:

- Legal requirements under the terms of the NPW Act whereby it is illegal to damage, deface or destroy an Aboriginal place or object without the prior written consent of OEH
- The findings of the current investigations undertaken within the proposal area
- The interests of the Aboriginal community.

Recommendations concerning the proposal areas are as follows:

1. If the BC-HW17-PAD1 area cannot be substantially avoided by the proposed work, then archaeological test excavation will be required in accordance with the Code of Practice and Stage 3 of the PACHCI. This includes:
  - a. Aboriginal community consultation in accordance with ACHCRs, Requirement 15a of the Code of Practice and Stage 3 of the PACHCI
  - b. The development of a test excavation sampling strategy for the BC-HW17-PAD1 area at risk of harm in accordance with Requirement 15b of the Code of Practice
  - c. Notification to OEH at least 14 days before undertaking test excavations, including a copy of the proposed sampling strategy, in accordance with Requirement 15c of the Code of Practice
  - d. Undertake test excavations in compliance with the test excavation methodology developed in accordance with Requirement 16 and 17 of the Code of Practice
  - e. Reporting of the test excavation results in a CHAR
2. If the BC-HW17-PAD1 test excavation results show that Aboriginal objects are present in the PAD area at risk of harm, then an AHIP will be required to harm the site. The AHIP may include requirements for salvage excavation and/or community collection in the area at risk of harm, depending upon the significance of any archaeological deposits and/or surface artefacts identified within the PAD area. If the test excavation concludes that no archaeological deposits, Aboriginal objects or PADs are present in the area at risk of

harm, then work can proceed in the area, provided any management recommendations to avoid harming the remaining BC-HW17-PAD1 area are followed.

3. The BC-HW17-ST1 and TC-HW17-ST1 sites will be avoided by the proposed work. To avoid harm to the sites they must be demarcated during the proposed work using high visibility ground markers to delineate the site perimeter (i.e. staking and flagging) encompassing the tree canopy as shown in **Figure 5-10** and **5-15**. The ground markers used must be visible to any person in the vicinity of the site, whether on foot or in a vehicle. BC-HW17-ST1 and TC-HW17-ST1 must be mapped on the CEMP and detailed design plans and the canopy extent demarcated as a 'no-go' and 'no-harm' area. Vehicles must not be driven on, or in the immediate vicinity of the BC-HW17-ST1, and TC-HW17-ST1 site extents. If required, appropriate sediment control measures must be installed, operated and maintained to prevent sediment moving onto the site extent during the proposed work.
4. To avoid harm to BL-HW17-ST1 the site must be demarcated during the proposed work using high visibility ground markers encompassing the tree canopy as shown in **Figure 5-13**. The ground markers used must be visible to any person in the vicinity of the site, whether on foot or in a vehicle. BL-HW17-ST1 must be mapped on the CEMP and detailed design plans and the canopy extent demarcated as a 'no-go' and 'no-harm' area. Sufficient distances must also be provided to allow vehicles to access the rest area without colliding with or damaging the tree. If a significant residual risk of collision remains, steps must be taken to minimise that risk (e.g. installation of bollards and/or permanent high visibility barriers).
5. All mapping and demarcation of Aboriginal site extends and 'no-go' and 'no-harm' areas must be done in accordance with the geospatial vector data provided.
6. Any further changes to the impact footprint of the proposal should be assessed by a suitably qualified heritage professional.
7. All ground-disturbing work must be confined to the assessed proposal areas, but outside of the identified Aboriginal site extends and 'no-go' and 'no-harm' areas.
8. To avoid the potential for harm to Aboriginal objects on unassessed adjacent landforms, all construction vehicles, machinery, equipment and materials used for the proposed work must remain within the proposal areas, excluding the Aboriginal site extents and 'no-go' and 'no-harm' areas identified.
9. Inductions for staff undertaking the proposed work must explain the legislative protection requirements for all Aboriginal sites and objects in NSW and the relevant fines for non-compliance. Staff should be briefed on the identification of Aboriginal objects within the Moree plains region, with particular emphasis placed upon stone artefact identification.

10. All staff undertaking the proposed work must have access to the CEMP and be provided with an A3 map of each proposal area showing the detailed design plans and locations of all Aboriginal sites that specific management recommendations apply to. Notes must be attached to each map explaining the general and site-specific mitigation measures to be taken to avoid harm to sites.
11. If objects are encountered that are suspected to be of Aboriginal origin (including skeletal material) the *Accordingly, the Standard Management Procedure - Unexpected Heritage Items (Roads and Maritime, 2015)* (**Appendix 4**) must be followed, except in the case of objects that are the subject of an approved AHIP, in which case the AHIP conditions must be followed.
12. The proponent should obtain legal advice as to whether land tenure will require Native Title consultation.

## 12.2 HISTORIC HERITAGE

The following recommendations are made on the basis of these impacts and with regard to:

- Legal requirements under the terms of the Heritage Act
- Guidelines presented in the *Burra Charter* (Australia ICOMOS 2013)
- The findings of the current assessment
- The interests of the local community.

Recommendations concerning the proposal areas are as follows.

1. If the nature and extent of the proposed work adjacent to the AB Meppem & Co, Bellata Post Office, Oldhams Smallgoods, Bellata Police Station and Official Residence, has the potential to have an indirect impact a condition assessment, including an assessment of whether a vibration assessment is required, should be completed.
2. The AB Meppem & Co, Bellata Post Office, Oldhams Smallgoods, Bellata Police Station and Official Residence sites must be demarcated during the proposed work using high visibility ground markers to delineate the 'historic item – actual site extent' along the western boundary next to the Newell Highway (**Figure 9-2**). The demarcation method must be developed in consultation with property owners and/or tenants to ensure that the method is practical and fit for purpose. The ground markers used must be visible to any person in the vicinity of the site, whether on foot or in a vehicle. A 'no-go' and 'no-harm' area must be mapped on the CEMP and detailed design plans encompassing the 'historic item - site extent' shown in **Figure 9-2**.
3. The LS Rowe Stock and Station Agents site must be demarcated during the proposed work using high visibility ground markers to delineate the 'historic item – actual site extent'

along the western boundary next to the Newell Highway (**Figure 9-7**). The demarcation method must be developed in consultation with property owners and/or tenants to ensure that the method is practical and fit for purpose. The ground markers used must be visible to any person in the vicinity of the site, whether on foot or in a vehicle. A 'no-go' and 'no-harm' area must be mapped on the CEMP and detailed design plans encompassing the 'historic item - site extent' shown in **Figure 9-7**.

4. All mapping and demarcation of historic site extends and 'no-go' and 'no-harm' areas must be done in accordance with the geospatial vector data provided.
5. Any further changes to the impact footprint of the proposal should be assessed by a suitably qualified heritage professional.
6. All ground-disturbing work must be confined to the assessed proposal areas, but outside of the identified historic site extends and 'no-go' and 'no-harm' areas.
7. Inductions for staff undertaking the proposed work must explain the legislative protection requirements for historic sites and items in NSW and the relevant fines for non-compliance.
8. All staff undertaking the proposed work must have access to the CEMP and be provided with an A3 map of each proposal area showing the detailed design plans and locations of all historic sites that specific management recommendations apply to. Notes must be attached to each map explaining the general and site-specific mitigation measures to be taken to avoid harm to sites.
9. If objects are encountered that are suspected to be historic heritage items, the *Accordingly, the Standard Management Procedure - Unexpected Heritage Items (Roads and Maritime, 2015)* (**Appendix 4**) must be followed.

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## PLATES

**Plate 1: Proposal area 1 showing ground surface disturbance due to the Newell Highway construction and limited GSV, facing southeast.**



**Plate 2: Proposal area 1 showing ground surface disturbance due to the Newell Highway construction and very low GSV, facing southeast.**



**Plate 3: Proposal area 1 showing ground surface disturbance due to the Newell Highway construction and ploughing and good GSV, facing south.**



**Plate 4: Proposal area 1 showing very low GSV around the creek bank, facing south.**



**Plate 5: Proposal area 2 showing high levels ground surface disturbance due to the Newell Highway construction and ploughing and good GSV in the offline area south of Bobbiwaa Creek, facing south.**



**Plate 6: Proposal area 2 showing ground surface disturbance due to the Newell Highway road and bridge construction and low GSV at Bobbiwaa Creek, facing south.**



**Plate 7: Proposal area 2 showing ground surface disturbance due to the Newell Highway construction and limited GSV, facing north.**



**Plate 8: Proposal area 2 showing ground surface disturbance due to the Newell Highway construction and limited GSV, facing south.**



**Plate 9: Proposal area 3 showing ground surface disturbance due to the Newell Highway construction and urban development (Bellata) and limited GSV, facing south.**



**Plate 10: Proposal area 3 showing ground surface disturbance due to the Newell Highway construction and rest area construction and limited GSV, facing southeast.**





**Plate 11: Proposal area 4 showing ground surface disturbance due to the Newell Highway construction and rest area construction and limited GSV, facing north.**



**Plate 12: Proposal area 4 showing ground surface disturbance due to the Newell Highway construction and limited GSV, facing south.**



**Plate 13: Proposal area 4 showing ground surface disturbance due to the Newell Highway construction and limited GSV, facing south.**



**Plate 14: Proposal area 5 showing ground surface disturbance due to the Newell Highway construction and limited GSV around Clarkes Creek, facing south.**



**Plate 15: Proposal area 5 showing ground surface disturbance due to the Newell Highway construction and limited GSV, facing northeast.**



**Plate 16: Proposal area 5 showing ground surface disturbance due to the Newell Highway construction and limited GSV around Halls Creek, facing north.**



**Plate 17: Proposal area 5 showing ground surface disturbance due to the Newell Highway construction, building construction and ploughing and limited GSV, facing northeast.**



**Plate 18: Proposal area 5 showing ground surface disturbance due to the Newell Highway construction and limited GSV, facing south.**



## **APPENDIX 1: ABORIGINAL REPRESENTATIVE DOCUMENTS**

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**Documents have been removed for confidentiality**

## **APPENDIX 2: ABORIGINAL HERITAGE DESKTOP DATABASE SEARCH RESULTS**

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**Documents have been removed for confidentiality**

## APPENDIX 3: HISTORIC HERITAGE DESKTOP DATABASE SEARCH RESULTS

2017-5-22

Narrabri Local Environmental Plan 2012 - NSW Legislation

### Narrabri Local Environmental Plan 2012

Current version for 5 August 2016 to date (accessed 22 May 2017 at 18:15)

Schedule 5

#### Schedule 5 Environmental heritage

(Clause 5.10)

Locality	Item	Address	Property description	Significance	Item no
Bellata	Bellata Cemetery	300 Berrigal Road	Lots 7304 and 7305, DP 1137898	Local	I010
Bellata	"Dobikin" Homestead	559 Millie Road	Lots 22 and 23, DP 753964	Local	I009
Bellata	Bellata Police Station	24 Railway Parade	Lot 4, Section 1, DP 758081	Local	I016
Bellata	Oldhams Smallgoods	26 Railway Parade	Lot 1, DP 574841; Lots 11 and 12, Section 1, DP 758081	Local	I015
Bellata	Bellata Post Office	28 Railway Parade	Lot 1, DP 172046	Local	I014
Bellata	AB Meppen & Co	30 Railway Parade	Lot A, DP 957953	Local	I013
Bellata	LS Rowe Stock and Station Agents	40 Railway Parade	Lot 1, DP 653382	Local	I012
Boggabri	War Memorial	77 Brent Street	Lots 1-3, Section 41, DP 758128	Local	I039
Boggabri	General Cemetery	69 Denman Street	Lot 7017, DP 1028506; Lots 1-5, DP 724168	Local	I037
Boggabri	Iron Bridge	14224 Kamilaroi Highway	Lot 7003, DP 1050545	Local	I017
Boggabri	Boggabri Railway Station	90 Oakham Street	Railway land	Local	I038
Cuttabri	Cuttabri Wine Shanty	2325 Pilliga Road	Lot 51, DP 878793	Local	I006
Drildool	Drildool Private Cemetery	3347 Middle Route Road	Lot 9, DP 75392	Local	I005
Gwabegar	General Cemetery Gwabegar	3999 Gwabegar Road	Lot 7005, DP 1029992	Local	I008
Jews Lagoon	Cemetery Millie	2665 Millie Road		Local	I001
Narrabri	Narrabri Public School	88 Barwan Street	Lot 1, DP 930714; Lot 531, DP 821007; Lot 71, DP 962550; Lot 6, Section 11, DP 758755; Lot 1, DP 168344; Lot 1, DP 34355; Lot 1, DP 34298; Lots 1 and 2, DP 782780; Lot 1, DP 782504; Lot 5, DP 193900	Local	I022
Narrabri	Narrabri Gaol and Residence	Bowen Street	Lot 1, Section 6, DP 758755	State	I040
Narrabri	Gallipoli House	1 Bowen Street	Lots 1 and 2, DP 1093826	Local	I029
Narrabri	Railway Station Precinct	Buri and Mooloobar Streets	Lots 21 and 22, DP 543782; Lots 11-13, Section 2, DP 758756; Lots 4 and 5, Section 3, DP 758756	Local	I035
Narrabri	St Cyprians Anglican Church	13 Dewhurst Street	Lot 53, DP 843155	Local	I023
Narrabri	Narrabri Fire Station	4 Doyle Street	Lot 22, Section 4, DP 758755	Local	I021

<http://www.legislation.nsw.gov.au/#/view/EPI/2012/636/sch5>

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**Narrabri Local Environmental Plan 2012**

Heritage Map - Sheet HER\_003A

**Heritage**  Item - General

**Cadastral**

Cadastral Copyright Notice  
Base Data 18/03/2011 © NSW LPIMA.

**N**

Scale: 1:10,000 @ A3

Projection: GDA 1984  
MOA Zone 55

Map identifier number: 5795\_Comp\_EBP\_003A\_010\_20121009



2017-5-22

A B Meppem and Co. | NSW Environment &amp; Heritage

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# A B Meppem and Co.

## Item details

**Name of item:** A B Meppem and Co.

**Primary address:** Railway Parade, Bellata, NSW 2397

**Local govt. area:** Narrabri

### All addresses

Street Address	Suburb/town	LGA	Parish	County	Type
Railway Parade	Bellata	Narrabri			Primary Address

## Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
Local Environmental Plan		1992	24 Dec 92	148	9080

## References, internet links & images

None

Note: internet links may be to web pages, documents or images.

## Data source

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**Name:** Gazette NSW Statutory Listings

**Database number:** 11389

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2017-5-22

Bellata Police Station and Official Residence | NSW Environment &amp; Heritage



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## Bellata Police Station and Official Residence

### Item details

<b>Name of item:</b>	Bellata Police Station and Official Residence
<b>Other name/s:</b>	Bellata Police Station and Lockup Residence
<b>Type of item:</b>	Built
<b>Group/Collection:</b>	Law Enforcement
<b>Category:</b>	Police station
<b>Primary address:</b>	Railway Parade (Newell Highway), Bellata, NSW 2397
<b>Local govt. area:</b>	Narrabri

### All addresses

Street Address	Suburb/town	LGA	Parish	County	Type
Railway Parade (Newell Highway)	Bellata	Narrabri			Primary Address

### Owner/s

Organisation Name	Owner Category	Date Ownership Updated
NSW Police Service	State Government	

### Statement of significance:

The former Courthouse, the Bellata Police Station and Residence is an attractive building that forms a significant component in the commercial townscape. The building is historically and socially significant for its long and continuous association with the provision of law and order, including police services in the local area.

**Date significance updated:** 28 Apr 06

*Note: There are incomplete details for a number of items listed in NSW. The Heritage Division intends to develop or upgrade statements of significance and other information for these items as resources become available.*

### Description

<b>Designer/Maker:</b>	W.L. Vernon, Government Architect
<b>Physical description:</b>	The Police Station and Residence is sited prominently in the main street of Bellata. It is a single storey residential scaled building of modest design. The building features a projecting bay adjacent to a verandah with elaborate timber brackets.

<http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4180157>

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2017-5-22

## Bellata Police Station and Official Residence | NSW Environment &amp; Heritage

**Physical condition and/or Archaeological potential:**

The Police Station and Residence is constructed in weatherboard with a corrugated iron hipped and gabled roof.

**Date condition updated:** 19 Oct 05

**Further information:**

Materials Exterior: Weatherboard, Galanised Iron Roof

**Current use:**

Police Station & Residence

**Former use:**

Police Station & Residence

**History****Historical notes:**

The Police Station and Residence was originally designed for use as a Courthouse by the Government Architect, WL Vernon in 1902.

**Historic themes**

Australian theme (abbrev)	New South Wales theme	Local theme
7. Governing-Governing	Law and order-Activities associated with maintaining, promoting and implementing criminal and civil law and legal processes	(none)-

**Assessment of significance**

**SHR Criteria a)**  
[Historical significance]

\*

**SHR Criteria b)**  
[Associative significance]

\*

**SHR Criteria c)**  
[Aesthetic significance]

\*

**SHR Criteria d)**  
[Social significance]

\*

**Assessment criteria:**

Items are assessed against the  **State Heritage Register (SHR) Criteria** to determine the level of significance. Refer to the Listings below for the level of statutory protection.

**Recommended management:**

Professional assessment of the building is required before any works are planned or undertaken. Any proposed building works should respect the existing building fabric, including the interior of the building.

**Listings**

<http://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=4180157>

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2017-5-22

Bellata Police Station and Official Residence | NSW Environment &amp; Heritage

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
Heritage Act - s. 170 NSW State agency heritage register					

### References, internet links & images

Type	Author	Year	Title	Internet Links
Written	Tamworth District Accommodation Survey, November 1990			

Note: internet links may be to web pages, documents or images.



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2017-5-22

Nandewar Hotel | NSW Environment &amp; Heritage



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# Nandewar Hotel



## Item details

**Name of item:** Nandewar Hotel

**Primary address:** Railway Parade, Bellata, NSW 2397

**Local govt. area:** Narrabri

### All addresses

Street Address	Suburb/town	LGA	Parish	County	Type
Railway Parade	Bellata	Narrabri			Primary Address

## Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
Local Environmental Plan		1992	24 Dec 92	148	9080

## References, internet links & images

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2017-5-22

Oldhams Smallgoods | NSW Environment &amp; Heritage



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# Oldhams Smallgoods

## Item details

**Name of item:** Oldhams Smallgoods

**Primary address:** Railway Parade, Bellata, NSW 2397

**Local govt. area:** Narrabri

### All addresses

Street Address	Suburb/town	LGA	Parish	County	Type
Railway Parade	Bellata	Narrabri			Primary Address

## Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
Local Environmental Plan		1992	24 Dec 92	148	9080

## References, internet links & images

None

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2017-5-22

Oldhams Smallgoods | NSW Environment &amp; Heritage



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# Oldhams Smallgoods

## Item details

**Name of item:** Oldhams Smallgoods

**Primary address:** Railway Parade, Bellata, NSW 2397

**Local govt. area:** Narrabri

### All addresses

Street Address	Suburb/town	LGA	Parish	County	Type
Railway Parade	Bellata	Narrabri			Primary Address

## Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
Local Environmental Plan		1992	24 Dec 92	148	9080

## References, internet links & images

None

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2017-5-22

Police Station | NSW Environment &amp; Heritage



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## Police Station

### Item details

**Name of item:** Police Station

**Primary address:** Railway Parade, Bellata, NSW 2397

**Local govt. area:** Narrabri

### All addresses

Street Address	Suburb/town	LGA	Parish	County	Type
Railway Parade	Bellata	Narrabri			Primary Address

### Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
Local Environmental Plan		1992	24 Dec 92	148	9080

### References, internet links & images

None

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2017-5-22

Post Office | NSW Environment &amp; Heritage



[Home](#) > [Topics](#) > [Heritage places and items](#) > [Search for heritage](#)

## Post Office

### Item details

**Name of item:** Post Office

**Primary address:** Railway Parade, Bellata, NSW 2397

**Local govt. area:** Narrabri

### All addresses

Street Address	Suburb/town	LGA	Parish	County	Type
Railway Parade	Bellata	Narrabri			Primary Address

### Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
Local Environmental Plan		1992	24 Dec 92	148	9080

### References, internet links & images

None

Note: internet links may be to web pages, documents or images.

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## APPENDIX 4: UNEXPECTED HERITAGE ITEMS PROCEDURE

### 7. Unexpected heritage items procedure

**Table 1:** Specific tasks to be implemented following the discovery of an unexpected heritage item.

Aboriginal Cultural Heritage Advisor (ACHA); Aboriginal Sites Officer (ASO); Archaeologist (A); Project Manager (PM); Regional Environment Staff (RES); Registered Aboriginal Parties (RAPs); Senior Environmental Specialist (Heritage) (SES(H)); Team leader – Roads and Maintenance Division (TL - RMD); Works supervisor – Roads and Maintenance Division (WS - RMD).

Step	Task	Responsibility	Guidance & Tools
<b>1</b>	<b>Stop work, protect item and inform Roads and Maritime environment staff</b>		
1.1	Stop all work in the immediate area of the item and notify the Project Manager or Team Leader-RMD. (For maintenance activities, the Team Leader is to also notify the Works Supervisor-RMD)	All	<b>Appendix A</b> (Identifying Unexpected Heritage items)
1.2	Establish a 'no-go zone' around the item. Use high visibility fencing, where practical.	PM or TL-RMD	
1.3	Inform all site personnel about the no-go zone. No further interference, including works, ground disturbance, touching or moving the item must occur within the no-go zone.	PM or TL-RMD	
1.4	Inspect, document and photograph the item using 'Unexpected Heritage Item Recording Form 418'.	PM or TL-RMD	<b>Appendix B</b> (Unexpected Heritage Item Recording Form 418) <b>Appendix C</b> (Photographing Unexpected Heritage items)

Unexpected heritage items procedure

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Step	Task	Responsibility	Guidance & Tools
1.5	Is the item likely to be bone?  If <b>yes</b> , follow the steps in Appendix E – 'Uncovering bones'. Where it is obvious that the bones are human remains, you must notify the local police by telephone immediately. They may take command of all or part of the site.  If <b>no</b> , proceed to next step.	PM or WS-RMD	<b>Appendix E</b> (Uncovering Bones)
1.6	Is the item likely to be: a) A relic? (A relic is evidence of past human activity which has local or state heritage significance. It may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse) and/or b) An Aboriginal object? (An Aboriginal object may include a shell midden, stone tools, bones, rock art or a scarred tree).  If <b>yes</b> , proceed directly to Step 1.8  If <b>no</b> , proceed to next step.	PM or WS-RMD	<b>Appendix A</b> (Identifying heritage items)
1.7	Is the item likely to be a "work", building or standing structure? (This may include tram tracks, kerbing, historic road pavement, fences, sheds or building foundations).  If <b>yes</b> , can works avoid further disturbance to the item? (E.g. if historic road base/tram tracks have been exposed, can they be left in place?) If <b>yes</b> , works may proceed without further disturbance to the item. Complete Step 1.8 within 24 hours.  If works cannot avoid further disturbance to the item, works must not recommence at this time. Complete the remaining steps in this procedure.	PM or WS-RMD	<b>Appendix A</b> (Identifying heritage items)

Unexpected heritage items procedure

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Step	Task	Responsibility	Guidance & Tools
1.8	Inform relevant Roads and Maritime Regional Environmental Staff of item by providing them with the completed 'Form 418'.	PM or WS-RMD (RES)	<b>Appendix D</b> (Key Environmental Contacts)
1.9	Regional Environmental Staff to advise Project Manager or Works Supervisor whether RMS has an approval or safeguard in place (apart from this procedure) to impact on the 'item'. (An approval may include an approval under the <i>Heritage Act</i> , the <i>National Parks and Wildlife Act</i> or the <i>Planning and Assessment Act</i> ).  Does RMS have an approval, permit or appropriate safeguard in place to impact on the item?  If <b>yes</b> , work may recommence in accordance with the approval, permit or safeguard. There is no further requirement to follow this procedure.  If <b>no</b> , continue to next step.		
1.10	Liaise with Traffic Management Centre where the delay is likely to affect traffic flow.	PM or WS-RMD	
1.11	Report the item as a 'Reportable Event' in accordance with the Roads and Maritime <i>Environmental Incident Classification and Reporting Procedure</i> . Implement any additional reporting requirements related to the project's approval and CEMP, where relevant.	PM or WS-RMD	RMS Environmental Incident Classification and Reporting Procedure
<b>2</b>	<b>Contact and engage an archaeologist and, where required, an Aboriginal site officer</b>		
2.1	Contact the Project (on-call) Archaeologist to discuss the location and extent of the item and to arrange a site inspection, if required. The project CEMP may contain contact details of the Project Archaeologist.  OR	PM or WS-RMD (A; RES; SES(H))	Also see <b>Appendix D</b> (Key Environmental Contacts)

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Step	Task	Responsibility	Guidance & Tools
	Where there is no project archaeologist engaged for the works, engage a suitably qualified and experienced archaeological consultant to assess the find. A list of heritage consultants is available on the RMS contractor panels on the Buyways homepage. Regional environment staff and Roads and Maritime heritage staff can also advise on appropriate consultants.		<u>Buyways</u>
2.2	Where the item is likely to be an Aboriginal object, speak with your Aboriginal Cultural Heritage Advisor to arrange for an Aboriginal Sites Officer to assess the find. Generally, an Aboriginal Sites Officer would be from the relevant local Aboriginal land council. If an alternative contact person (ie a RAP) has been nominated as a result of previous consultation, then that person is to be contacted.	PM or WS-RMD (ACHA; ASO)	
2.3	If requested, provide photographs of the item taken at Step 1.4 to the archaeologist, and Aboriginal Sites Officer if relevant.	PM or WS-RMD (RES)	<b>Appendix C</b> (Photographing Unexpected Heritage items)
<b>3</b>	<b>Preliminary assessment and recording of the find</b>		
3.1	In a minority of cases, the archaeologist (and Aboriginal Sites Officer, if relevant) may determine from the photographs that no site inspection is required because no archaeological constraint exists for the project (eg the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'). Any such advice should be provided in writing (eg via email) and confirmed by the Project Manager or Works Supervisor - RMD.	A/PM/ASO/ WS-RMD	Proceed to Step 8
3.2	Arrange site access for the archaeologist (and Aboriginal Sites Officer, if relevant) to inspect the item as soon as practicable. In the majority of cases a site inspection is required to conduct a preliminary assessment.	PM or WS-RMD	
3.3	Subject to the archaeologist's assessment (and the Aboriginal Sites Officer's assessment, if relevant), work may recommence at a set distance from the item. This is to protect any other archaeological material that may exist in the vicinity, which has not yet been uncovered. Existing protective fencing established in Step 1.2 may need to be adjusted to	A/PM/ASO/ WS-RMD	

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Step	Task	Responsibility	Guidance & Tools
	reflect the extent of the newly assessed protective area. No works are to take place within this area once established.		
3.4	The archaeologist (and Aboriginal Sites Officer, if relevant) may provide advice after the site inspection and preliminary assessment that no archaeological constraint exists for the project (eg the item is not a 'relic', a 'heritage item' or an 'Aboriginal object'). Any such advice should be provided in writing (eg via email) and confirmed by the Project Manager or Works Supervisor - RMD.	A/PM/ASO/ WS-RMD	Proceed to Step 8
3.5	Where required, seek additional specialist technical advice (such as a forensic or physical anthropologist to identify skeletal remains). Regional environment staff and/or Roads and Maritime heritage staff can provide contacts for such specialist consultants.	RES/SES(H)	<b>Appendix D</b> (Key Environmental Contacts)
3.6	Where the item has been identified as a 'relic', 'heritage item' or an 'Aboriginal object' the archaeologist should formally record the item.	A	
3.7	The regulator can be notified informally by telephone at this stage by the archaeologist, Project Manager (or delegate) or Works Supervisor - RMD. Any verbal conversations with regulators must be noted on the project file for future reference.	PM/AWS-RMD	
<b>4</b>	<b>Prepare an archaeological or heritage management plan</b>		
4.1	The archaeologist must prepare an archaeological or heritage management plan (with input from the Aboriginal Sites Officer, where relevant) shortly after the site inspection. This plan is a brief overview of the following: (a) description of the feature, (b) historic context, if data is easily accessible, (c) likely significance, (d) heritage approval and regulatory notification requirements, (e) heritage reporting requirements, (f) stakeholder consultation requirements, (g) relevance to other project approvals and management plans etc.	A/ASO	<b>Appendix F</b> (Archaeological/ Heritage Advice Checklist)
4.2	In preparing the plan, the archaeologist with the assistance of regional environment staff must review the CEMP, any heritage sub-plans, any conditions of heritage approvals, conditions of project approval (and or Minister's Conditions of Approval) and heritage assessment documentation (eg Aboriginal Cultural Heritage Assessment Report). This will outline if the unexpected item is consistent with previous heritage/project approval(s)	A/RES/PM	<b>Appendix F</b> (Archaeological/ Heritage Advice Checklist)
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Step	Task	Responsibility	Guidance & Tools
	and/or previously agreed management strategies. The Project Manager and regional environment staff must provide all relevant documents to the archaeologist to assist with this. Discussions should occur with design engineers to consider if re-design options exist and are appropriate.		
4.3	The archaeologist must submit this plan as a letter, brief report or email to the Project Manager outlining all relevant archaeological or heritage issues. This plan should be submitted to the Project Manager as soon as practicable. Given that the archaeological management plan is an overview of all the necessary requirements (and the urgency of the situation), it should take no longer than two working days to submit to the Project Manager.	A	
4.4	The Project Manager or Works Supervisor must review the archaeological or heritage management plan to ensure all requirements can reasonably be implemented. Seek additional advice from regional environment staff and Roads and Maritime heritage staff, if required.	PM/RES/SES(H)/ WS-RMD	
<b>5</b>	<b>Notify the regulator, if required.</b>		
5.1	Review the archaeological or heritage management plan to confirm if regulator notification is required. Is notification required?  If <b>no</b> , proceed directly to Step 6  If <b>yes</b> , proceed to next step.	PM/RES/SES(H)/ WS-RMD	
5.2	If notification is required, complete the template notification letter.	PM or WS-RMD	<b>Appendix G</b> (Template Notification Letter)
5.3	Forward the draft notification letter, archaeological or heritage management plan and the site recording form to regional environment staff and Senior Environmental Specialist (Heritage) for review, and consider any suggested amendments.	PM/RES/SES(H)/ WS-RMD	
Unexpected heritage items procedure		15	

Step	Task	Responsibility	Guidance & Tools
5.4	Forward the signed notification letter to the relevant regulator (ie notification of relics must be given to the Heritage Division, Office of Environment and Heritage (OEH), while notification for Aboriginal objects must be given to the relevant Aboriginal section of OEH). Informal notification (via a phone call or email) to the regulator prior to sending the letter is appropriate. The archaeological management plan and the completed site recording form must be submitted with the notification letter. For Part 3A and Part 5.1 projects, the Department of Planning and Environment must also be notified.	PM or WS-RMD	<b>Appendix D</b> (Key Environmental Contacts)
5.5	A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form should be kept on file by the Project Manager or Works Supervisor- RMD and a copy sent to the Senior Environmental Specialist (Heritage).	PM or WS-RMD	
<b>6</b>	<b>Implement archaeological or heritage management plan</b>		
6.1	Modify the archaeological or heritage management plan to take into account any additional advice resulting from notification and discussions with the regulator.	A/PM or WS-RMD (RES)	
6.2	Implement the archaeological or heritage management plan. Where impact is expected, this would include such things as a formal assessment of significance and heritage impact assessment, preparation of excavation or recording methodologies, consultation with registered Aboriginal parties, obtaining heritage approvals etc, if required.	PM or WS-RMD (RAPs and RES)	PACHCI Stage 3
6.3	Where heritage approval is required contact regional environment staff for further advice and support material. Please note time constraints associated with heritage approval preparation and processing. Project scheduling may need to be revised where extensive delays are expected.	PM/RES/WS-RMD	
6.4	For Part 3A/Part 5.1 projects, assess whether heritage impact is consistent with the project approval or if project approval modification is required from the Department of Planning and Environment. Seek advice from regional environment staff and Environment Branch specialist staff if unsure.	PM/RES	

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Step	Task	Responsibility	Guidance & Tools
6.5	Where statutory approvals (or project approval modification) are required, impact upon relics and/or Aboriginal objects must not occur until heritage approvals are issued by the appropriate regulator.	PM or WS-RMD	
6.6	Where statutory approval (or Part 3A/Part 5.1 project modification) is not required and where recording is recommended by the archaeologist, sufficient time must be allowed for this to occur.	PM or WS-RMD	
6.7	Ensure short term and permanent storage locations are identified for archaeological material or other heritage material is removed from site, where required. Interested third parties (eg museums or local councils) should be consulted on this issue. Contact regional environment staff and Senior Environmental Specialist (Heritage) for advice on this matter, if required.	PM or WS-RMD	
<b>7</b>	<b>Review CEMPs and approval conditions</b>		
7.1	Check whether written notification is required to be sent to the regulator before re-commencing work. Where this is not explicit in heritage approval conditions, expectations should be clarified directly with the regulator.	PM	
7.2	Update the CEMP, site mapping and project delivery program as appropriate with any project changes resulting from final heritage management (eg retention of heritage item, salvage of item). Updated CEMPs must incorporate additional conditions arising from any heritage approvals, and Aboriginal community consultation if relevant. Include any changes to CEMP in site induction material and update site workers during toolbox talks.	PM	
<b>8</b>	<b>Resume work</b>		
8.1	Seek written clearance to resume project work from regional environment staff and the archaeologist (and regulator, if required). Clearance would only be given once all archaeological excavation and/or heritage recommendations (where required) are complete. Resumption of project work must be in accordance with the all relevant project/heritage approvals/determinations.	RES/A/PM/WS-RMD	
8.2	If required, ensure archaeological excavation/heritage reporting and other heritage	PM/A/WS-RMD	

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Step	Task	Responsibility	Guidance & Tools
	approval conditions are completed in the required timeframes. This includes artefact retention repositories, conservation and/or disposal strategies.		
8.3	Forward all heritage/archaeological assessments, heritage location data and its ownership status to the Senior Environmental Specialist (Heritage). They will ensure all heritage items in Roads and Maritime ownership and/or control are considered for the Roads and Maritime S170 Heritage and Conservation Register.	PM/SES(H)/ WS-RMD	
8.4	If additional unexpected items are discovered this procedure must begin again from Step 1.	PM/TL-RMD	