



View of the Boradze depot.

ABORIGINAL AND NON-ABORIGINAL HERITAGE ASSESSMENT

Regional Rail Maintenance Facility

Dubbo, NSW

Dubbo Regional LGA

July 2018

Report Prepared by
OzArk Environmental & Heritage Management Pty Ltd
for Jacobs on behalf of Transport for NSW



**Environmental and
Heritage Management P/L**

OzArk EHM

145 Wingewarra St
(PO Box 2069)
Dubbo NSW 2830

Phone: (02) 6882 0118
Fax: (02) 6882 0630
enquiry@ozarkehm.com.au
www.ozarkehm.com.au

This page has intentionally been left blank.

DOCUMENT CONTROLS

Proponent	Transport for NSW		
Client	Jacobs		
Project No / Purchase Order No	ISD-17-6846 (TfNSW)		
Document Description	<i>Aboriginal and non-Aboriginal Heritage Assessment: Regional Rail Maintenance Facility, Dubbo, NSW. Dubbo Regional LGA.</i>		
	Name	Signed	Date
Clients Reviewing Officer			
Clients Representative Managing this Document	OzArk Person(s) Managing this Document		
	Dr Jodie Benton		
Location	OzArk Job No.		
	1786		
Document Status: FINAL			
Internal Draft V0.1 Author to Editor OzArk 1 st Internal (Series V1. = OzArk internal edits)	V1.0: TD 14/03/18 V1.1: Update 16/3/18 V1.2: TD to JB V1.3: JB to BC 21 March 2018 V1.4 BC edit 21/3/18		
Internal Draft V0.2 Report Draft for release to client (Series V2. = OzArk and Client edits)	V2.0 JB to Jacobs 22/3/2018 V2.1 TD to JB 1.5.18 V2.2 OzArk to Jacobs 15/5/18		
Initial draft to TfNSW	AB (Jacobs) to TfNSW (18/5/2018)		
Second draft to TfNSW	14/07/18 to TfNSW		
Final report for TfNSW	27/07/18 to TfNSW		
Prepared For	Prepared By		
Aaron Bowden Associate Environmental Planner, Jacobs for TfNSW Level 7, 177 Pacific Hwy North Sydney NSW 2060 P: 02 9032 1321 aaron.bowden@jacobs.com	Dr Jodie Benton Director OzArk Environmental & Heritage Management 145 Wingewarra Street (PO Box 2069) Dubbo NSW 2830 P: 02 6882 0118 F: 02 6882 6030 jodie@ozarkehm.com.au		
COPYRIGHT			
© OzArk Environmental & Heritage Management Pty Ltd 2018 and © Jacobs / Transport for NSW, 2018 All intellectual property and copyright reserved.			
Apart from any fair dealing for the purpose of private study, research, criticism or review, as permitted under the Copyright Act 1968, no part of this report may be reproduced, transmitted, stored in a retrieval system or adapted in any form or by any means (electronic, mechanical, photocopying, recording or otherwise) without written permission.			
Enquiries should be addressed to OzArk Environmental & Heritage Management Pty Ltd.			

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.

EXECUTIVE SUMMARY

OzArk Environmental & Heritage Management (OzArk) has been engaged by Jacobs, on behalf of Transport for NSW, to complete an Aboriginal and non-Aboriginal heritage assessment for the proposed Regional Rail Maintenance Facility at Dubbo, NSW (the Proposal). The Proposal would comprise of six tracks each capable of stabling 200 metre trains, with three of these roads being partly covered by the maintenance building. Access to Proposal Site the facility would be possible from both the east and west from the Main Western Line. The Proposal site would cover an area of approximately 220,000 square metres and would be bounded by a perimeter fence.

A preliminary assessment was carried out prior to concept design (OzArk, 2017c), which included physical inspections on Wednesday 25 October and Tuesday 13 November 2017. This work, together with further field survey in the company of Aboriginal community representatives completed on Tuesday 13 February 2018, forms the foundation of the current assessment, the purpose of which is to identify and assess known and potential Aboriginal and non-Aboriginal heritage constraints relevant to the Proposal.

Field inspection of the study area confirmed high levels of disturbance primarily associated with the construction and use of Dubbo Railway Station and associated railway line and work depots; as well as local council use of the land. Disturbances include vegetation clearance, the construction of railway formations, a road formation, buildings, work depots, stockpiles, vehicle tracks, significant scale drainage basins/features and fences. This disturbance is likely to have impacted any Aboriginal sites that may have been present.

In terms of non-Aboriginal heritage, a number of heritage items and potential heritage items were identified, although none impose significant constraints upon the Proposal. These include: the Boradze depot; possible remains of a fettlers' camp and a signalman's cottage (unlikely), and the erroneously mapped Dubbo Local Environmental Plan (LEP) listing of the Macquarie River Rail Bridge.

Recommendations concerning the study area on the basis of desktop assessment and field inspection are as follows.

Aboriginal heritage

Existing levels of disturbance across the entirety of the study area are high, relating primarily to the use and construction of the railway line. As such, Aboriginal sites are unlikely to remain extant and hence unlikely to be harmed.

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

- 1) The Proposal may proceed in the study area without further archaeological investigation if all land and ground disturbance activities are confined to within the study area boundary, as this will eliminate the risk of harm to Aboriginal objects potentially present in adjacent landforms. Should the proposed works extend beyond the assessed area boundary, then further archaeological assessment may be required.
- 2) This assessment has concluded that there is a low likelihood that the Proposal will adversely harm Aboriginal cultural heritage items or sites. However, during the course of works, if Aboriginal artefacts or skeletal material are noted, all work should cease and the procedures in the TfNSW's *Unexpected Heritage Finds Guideline* (TfNSW, 2016) would be followed (refer to **Appendix 4**).
- 3) Work crews should undergo cultural heritage induction to ensure they recognise Aboriginal artefacts (see **Appendix 5**) and are aware of the legislative protection of Aboriginal objects under the *National Parks and Wildlife Act 1974* and the provisions of the TfNSW's *Unexpected Heritage Finds Guideline* (TfNSW, 2016).

Non-Aboriginal heritage

- 4) A heritage induction would be provided to workers prior to construction, informing them of the location of known heritage items and guidelines to follow if unanticipated heritage items or deposits are located during construction.
- 5) No identified items of non-Aboriginal heritage within the study area will be impacted by the Proposal, and as a consequence, no further non-Aboriginal heritage investigation is necessary.
- 6) The Boradze depot, which may be of local heritage significance (but is not currently a listed item), is located outside the study area boundary. Should works be proposed that may impact this item then a Statement of Heritage Impact should be prepared prior to commencement of works.
- 7) Dubbo Regional Council should be notified of the error in the LEP mapping of the curtilage of the Macquarie River rail bridge to ensure it is correctly updated.
- 8) In the unlikely event that historical relics or deposits are unearthed during the construction of the Proposal, the TfNSW's *Unexpected Heritage Finds Guideline* (TfNSW, 2016) would be followed (refer to **Appendix 4**).
- 9) As this report identifies an item with potential local heritage significance, a copy of this report should be sent to the Dubbo Regional Council for their consideration prior to the Proposal commencing.

CONTENTS

EXECUTIVE SUMMARY	III
1 INTRODUCTION	1
1.1 Brief description of the proposal	1
1.2 Study area	3
1.3 Proposal overview	3
1.4 Relevant legislation.....	6
1.4.1 State legislation	6
1.4.2 Commonwealth legislation.....	8
1.5 Assessment approach	8
2 LANDSCAPE CONTEXT	9
2.1 Topography, geology and soils.....	9
2.2 Hydrology.....	12
2.3 Vegetation.....	12
2.4 Climate.....	12
2.5 Existing levels of disturbance	12
2.6 Conclusion	13
3 ABORIGINAL ARCHAEOLOGY BACKGROUND.....	14
3.1 Ethno-historic sources of regional Aboriginal culture	14
3.2 Regional Aboriginal archaeological context.....	15
3.3 Local Aboriginal archaeological context	18
3.3.1 Desktop database searches conducted	18
3.3.2 Previous Aboriginal archaeological assessments	22
3.4 Predictive model for Aboriginal site location.....	24
4 NON-ABORIGINAL HERITAGE ASSESSMENT: BACKGROUND.....	27
4.1 Introduction	27
4.2 Brief history of Dubbo	27
4.3 History of the Dubbo railway.....	28
4.4 Local historic archaeological context.....	31
4.4.1 Desktop database searches conducted	31

5	ASSESSMENT RESULTS	36
5.1	Survey methodology	36
5.1.1	Aboriginal heritage.....	36
5.1.2	Non-Aboriginal heritage.....	36
5.2	Aboriginal heritage results	38
5.3	Non-Aboriginal heritage results	38
5.3.1	The Boradze depot.....	38
5.3.2	Fettlers' camp / signalman house / Tin Town.....	39
5.3.3	Dubbo Rail Station and Yard Group.....	42
5.4	Assessment of non-Aboriginal heritage significance.....	42
5.4.1	Assessment of significance—general principles	42
5.4.2	Assessment of significance of historic items	43
5.5	Likely impacts to heritage from the proposal.....	44
6	DISCUSSION AND CONCLUSION	45
6.1	Aboriginal heritage.....	45
6.2	Non-Aboriginal heritage.....	45
7	MANAGEMENT RECOMMENDATIONS	47
7.1	Aboriginal cultural heritage	47
7.2	Non-Aboriginal heritage.....	47
8	REFERENCES	49
	PLATES	52
	APPENDIX 1: AHIMS SEARCH RESULTS	58
	APPENDIX 2: STATE HERITAGE REGISTER LISTINGS	63
	APPENDIX 3: DUBBO LEP 2011 LISTINGS	64
	APPENDIX 4: UNEXPECTED HERITAGE FINDS GUIDELINE	65
	APPENDIX 5: ABORIGINAL HERITAGE: ARTEFACT IDENTIFICATION	74

FIGURES

Figure 1-1: Location of the Proposal	2
Figure 1-2: The Proposal	5
Figure 2-1: Topographic context of the study area	10
Figure 2-2: Mitchell landscapes of the study area	11
Figure 3-1: A portion of Tindale's (1974) map showing the location of the Wiradjuri ethno-linguistic group in relation to the study area	14
Figure 3-2: Map showing the locations of AHIMS sites in relation to the study area.....	20
Figure 3-3: Carved trees recorded as part of site #36-1-0024 (source: Etheridge 1918: p. 44, plate vii, figures 3 and 4).	21
Figure 3-4: Carved trees recorded as part of site #36-1-0026 surrounding a tumulus (source: Etheridge 1918: p. 44, plate xxxi, figure 1).....	21
Figure 3-5: Photograph of carved tree C (source: Etheridge 1918: p. 44 to 45, plate x, figure 2).....	22
Figure 4-1: Aerial showing the western curtilage portion of the Macquarie River Rail Bridge as shown on the Dubbo LEP Heritage Map in relation to the study area	33
Figure 4-2: Map showing the curtilage of the Dubbo Rail Bridge over Macquarie River as shown on the SHR listing in relation to the study area	34
Figure 4-3: Map showing the curtilage of the Dubbo Railway Station and Yard Group as shown on the SHR listing in relation to the study area.....	35
Figure 5-1: Survey coverage within the study area	37
Figure 5-2: Location of non-Aboriginal heritage items within the vicinity of the study area.....	41

TABLES

Table 3-1: Aboriginal heritage: desktop-database search results	18
Table 3-2: AHIMS site types and frequencies.....	19
Table 4-1: Non-Aboriginal heritage: desktop-database search results.....	31

1 INTRODUCTION

1.1 BRIEF DESCRIPTION OF THE PROPOSAL

OzArk Environmental & Heritage Management (OzArk) has been engaged by Jacobs, on behalf of Transport for NSW (TfNSW), to complete an Aboriginal and non-Aboriginal heritage assessment for the proposed Regional Rail Maintenance Facility at Dubbo (the Proposal). The Proposal is situated within the Dubbo Regional local government area (LGA) (**Figure 1-1**).



JACOBS NSW SPATIAL - GIS MAP file: I4176200_6_IS_REF_F006_r1v3_Locality | 5/07/2018

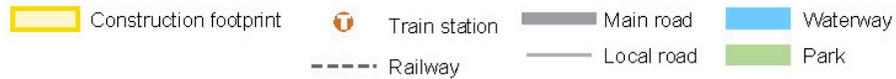


Figure 1-1: Location of the Proposal

1.2 STUDY AREA

The study area is about 25 hectares and comprises portions of Lot 1 DP1185204; Lot 100 DP710487; and Lots 1 to 5 DP1006357 and the Main Western Line in Dubbo. The study area is currently accessed from White Street in the north and includes land leased by John Holland, Australian Rail Track Corporation (ARTC) and land owned by Dubbo Regional Council.

1.3 PROPOSAL OVERVIEW

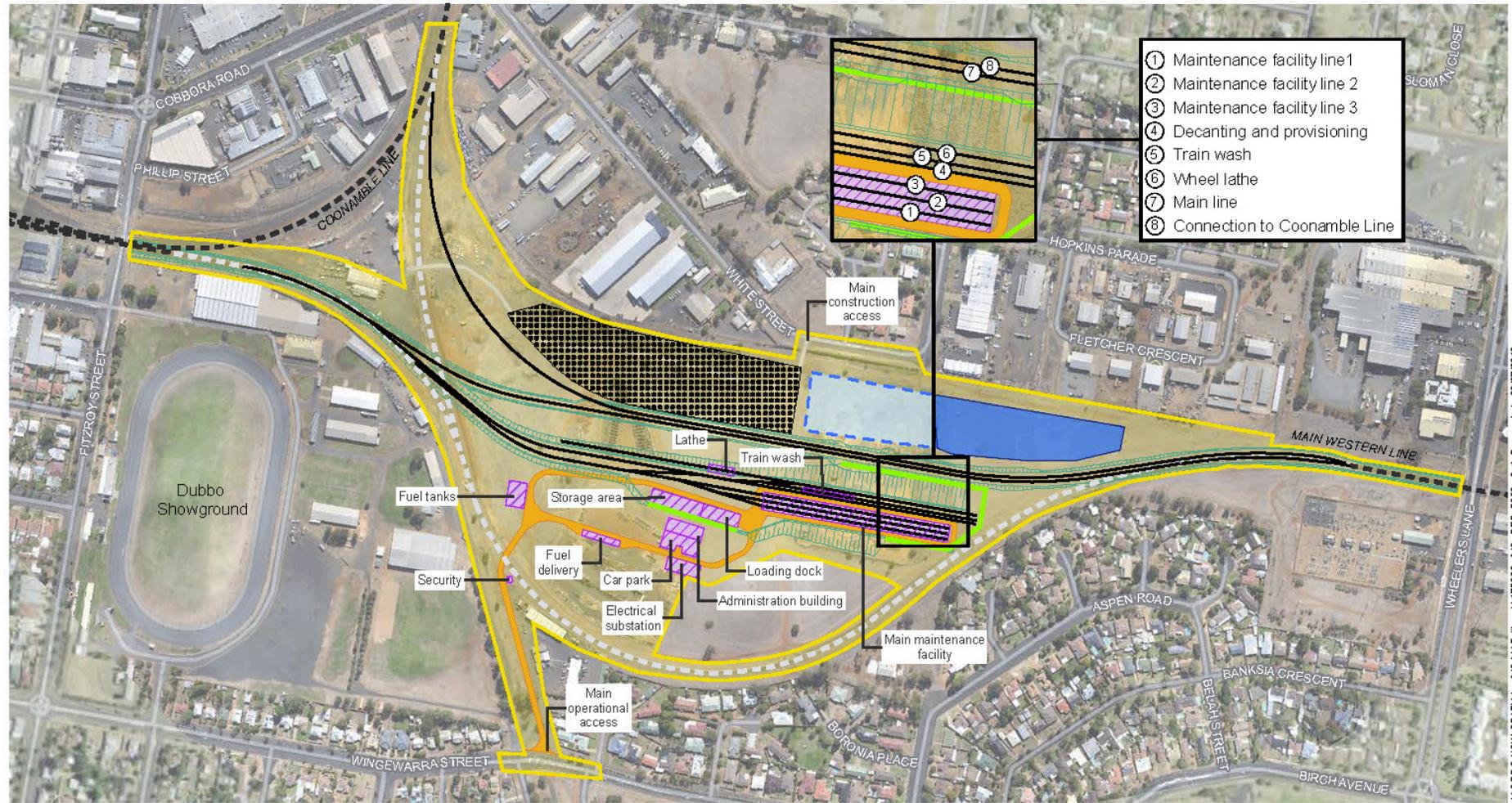
The Proposal would comprise six tracks each capable of stabling 200 metre trains, with three of these roads being partly covered by the maintenance building. The Proposal Site would cover an area of approximately 220,000 square metres and would be bounded by a perimeter fence.

The key features of the Proposal are shown in **Figure 1-3** and would comprise the following:

- Maintenance facility elements:
 - Fleet maintenance building would include three tracks to undertake maintenance activities partly housed within a single covered enclosure. The size of the building would be approximately 220 metres by 30 metres.
 - Wheel lathe– a separate building allowing for train wheels to be periodically machined using an underfloor wheel lathe.
 - Train wash– an enclosed structure comprising automated wash equipment for train sets with nearby waste water treatment plant.
- Administration building – a building comprising office facilities, kitchen, dining area and amenities.
- Security building.
- Storage area, loading dock and fuel delivery area – used for the delivery and storage of plant, equipment and fuel.
- Rail infrastructure works:
 - Realignment of the Main Western Line through the site.
 - Six maintenance rail tracks (three tracks within the maintenance facility building and three external).
 - A connection to the Main Western Line on the western side of the site.
 - Decanting and provisioning infrastructure.
- Road vehicle infrastructure:
 - Access roads throughout the site.
 - Staff car park.
- Power supply including a substation, and utility adjustments.

- Relocated detention basins.
- Earthworks.

Subject to planning approval, construction is expected to commence in 2019 and take around 30 months to complete.



- ① Maintenance facility line 1
- ② Maintenance facility line 2
- ③ Maintenance facility line 3
- ④ Decanting and provisioning
- ⑤ Train wash
- ⑥ Wheel lathe
- ⑦ Main line
- ⑧ Connection to Coomamble Line

Legend

- Existing rail line
- Existing rail line to be removed
- Existing stormwater detention basin
- Construction footprint
- Proposed new track
- Proposed batter
- Approximate location of retaining wall
- Proposed vehicle access track
- Construction compound
- Project building or facility
- Stormwater detention basin extension

Imagery © TIN SW and © Department of Finance, Services & Innovation 2017



Subject to site survey and detailed design. Not to be used for construction.

Figure 1-2: The Proposal

1.4 RELEVANT LEGISLATION

Cultural heritage is managed by a number of State and Commonwealth 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.

1.4.1 State legislation

Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) establishes the framework for land use and planning in NSW. An assessment of potential impacts on any heritage items due to activities undertaken by a public authority is required under the EP&A Act. This report informs the Dubbo Maintenance Facility Review of Environmental Factors Proposal to be prepared in accordance with Part 5, Division 5.1 of the EP&A Act.

National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) provides for the protection of Aboriginal objects (sites, objects and cultural material) and Aboriginal places. Under Part 6 of the NPW Act, 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 NSW and includes Aboriginal remains.

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

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; or
- 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) 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) is the primary piece of State legislation enacted to conserve environmental heritage across NSW. This Act established the Heritage Council of NSW. The Heritage Council's role is to advise the government on the protection of heritage assets, make listing recommendations to the Minister in relation to the State Heritage Register (SHR), and assess/approve/refuse proposals involving modification to heritage items or places listed on the Register. Most proposals involving modifications to State heritage items are assessed under section 60 of the Heritage Act.

All government agencies are required under section 170 of the Heritage Act to establish and maintain a register of heritage assets. RailCorp's *Section 170 Heritage and Conservation Register* includes Dubbo Railway Precinct (SHI #4806342).

Automatic protection is afforded to 'relics', defined as 'any deposit or material evidence relating to the settlement of the area that comprised New South Wales, not being Aboriginal settlement, and which holds state or local significance' (note: formerly the Act protected any 'relic' that was more than 50 years old. Now the age determination has been dropped from the Act and relics are protected according to their heritage significance assessment rather than purely on their age). Excavation of land on which it is known or where there is reasonable cause to suspect that 'relics' will be exposed, moved, destroyed, discovered or damaged is prohibited unless ordered under an excavation permit issued under section 140 of the Heritage Act or an excavation exception under section 139(4) of the Heritage Act.

Any Aboriginal sites within the study area are afforded legislative protection under the NPW Act and non-Aboriginal heritage under the Heritage Act. Should impacts to heritage be required, permits under the NPW Act or the Heritage Act may be required.

1.4.2 Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999

Matters of National Environmental Significance listed under the *Environment Protection and Biodiversity Conservation Act 1999* (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. There are no Commonwealth or National heritage listed places within the study area. Accordingly, the heritage provisions of the EPBC Act do not apply to the Proposal.

1.5 ASSESSMENT APPROACH

The current field assessment broadly follows the *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011) and the *Heritage Council's Historical Archaeology Code of Practice* (Historic Code of Practice; Heritage Council 2006).

2 LANDSCAPE CONTEXT

An understanding of the environmental context of a study area is required in any Aboriginal archaeological investigation (DECCW, 2010b). 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 humanly activated 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.

2.1 TOPOGRAPHY, GEOLOGY AND SOILS

The study area is situated in the Talbragar Valley subregion of the Brigalow Belt South bioregion as per the Interim Biogeographic Regionalisation of Australia (IBRA) (Thackway & Cresswell, 1995). This bioregion consists of landscapes derived from both extensive basalt flows and quartz sandstones, and consequently has highly variable soils and vegetation depending on the local rock type or sediment source (OEH, 2016).

The study area has minimal topography relief with an elevation range from about 265 metres to 285 metres AHD (**Figure 2-1**). The Proposal Site has a gentle slope from east to west. The Proposal Site is situated near the junction of two Mitchell landscapes; Goonoo Slopes and the Macquarie Alluvial Plains (Mitchell, 2002) (**Figure 2-2**). These are characterised in general terms as follows:

- The Goonoo Slopes landscape is comprised of extensive undulating to stepped low hills with long slopes on sub-horizontal Triassic / Jurassic quartz sandstone, conglomerates, siltstone, shale and some coal. The general elevation of this landscape is from 300 metres to 500 metres AHD with local relief to 30 metres. It has an overall westerly slope and a poorly defined drainage network. Soils are typically stony yellow earths with sandstone outcrops on ridgelines to yellow harsh texture-contrast soils in shallow valleys (Mitchell, 2002, p. 13).
- The Macquarie Alluvial Plains landscape is comprised of Holocene fluvial sediments of backplain facies of the Marra Creek Formation associated with the Macquarie River main alluvial fan and distributary stream system. It has a local relief of one to three metres. Dark yellow-brown silty clay with patches of sand and carbonate nodules deposited from suspended sediments in floodwater, often with gilgai. Slightly elevated areas with red-brown texture-contrast soils.

The Proposal Site location is more aligned to the Macquarie Alluvial Plains landscape, being at lower elevation and on the gentle slope near a historic woodland swamp landscape with fine-grained brown soils.

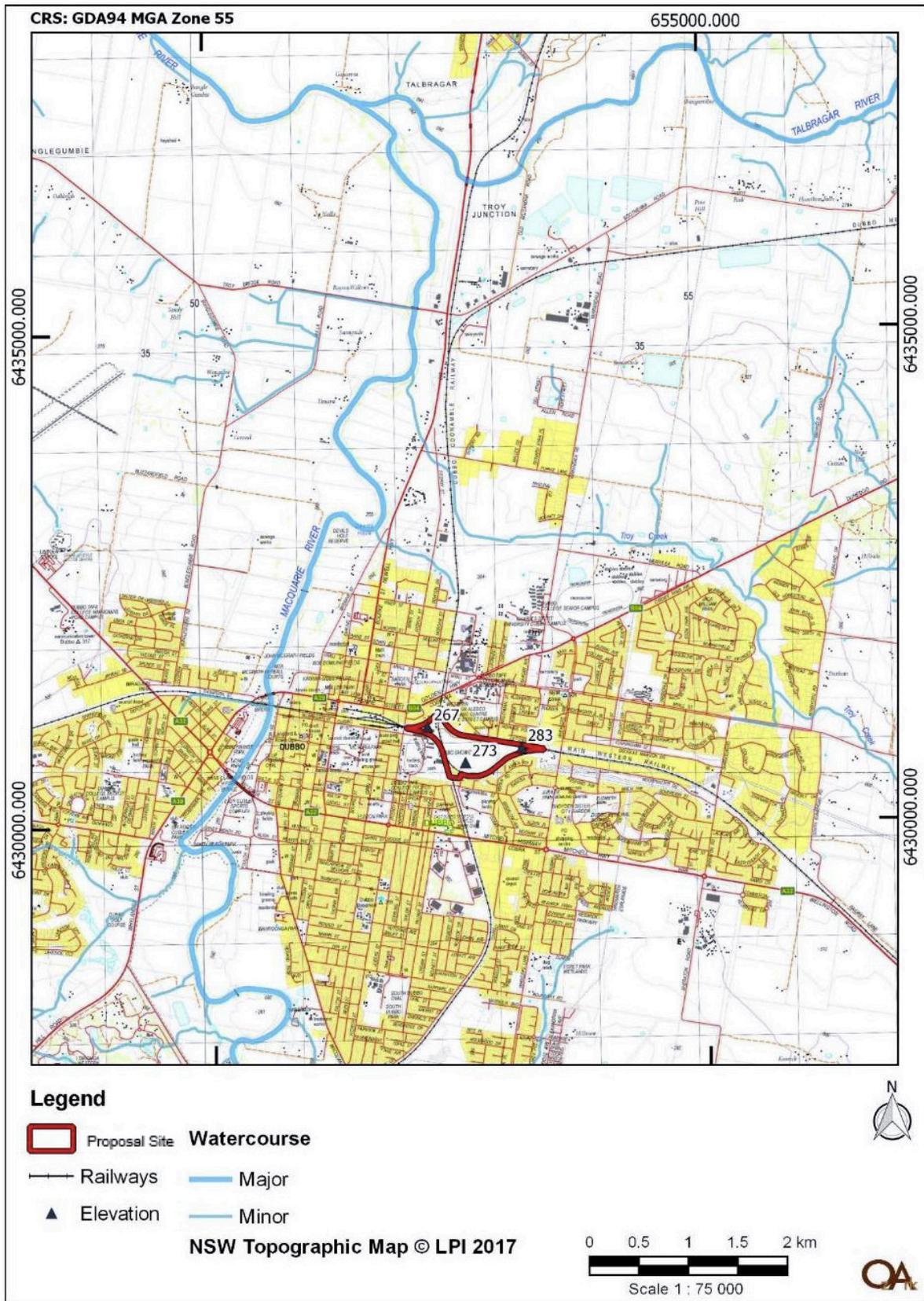


Figure 2-1: Topographic context of the study area

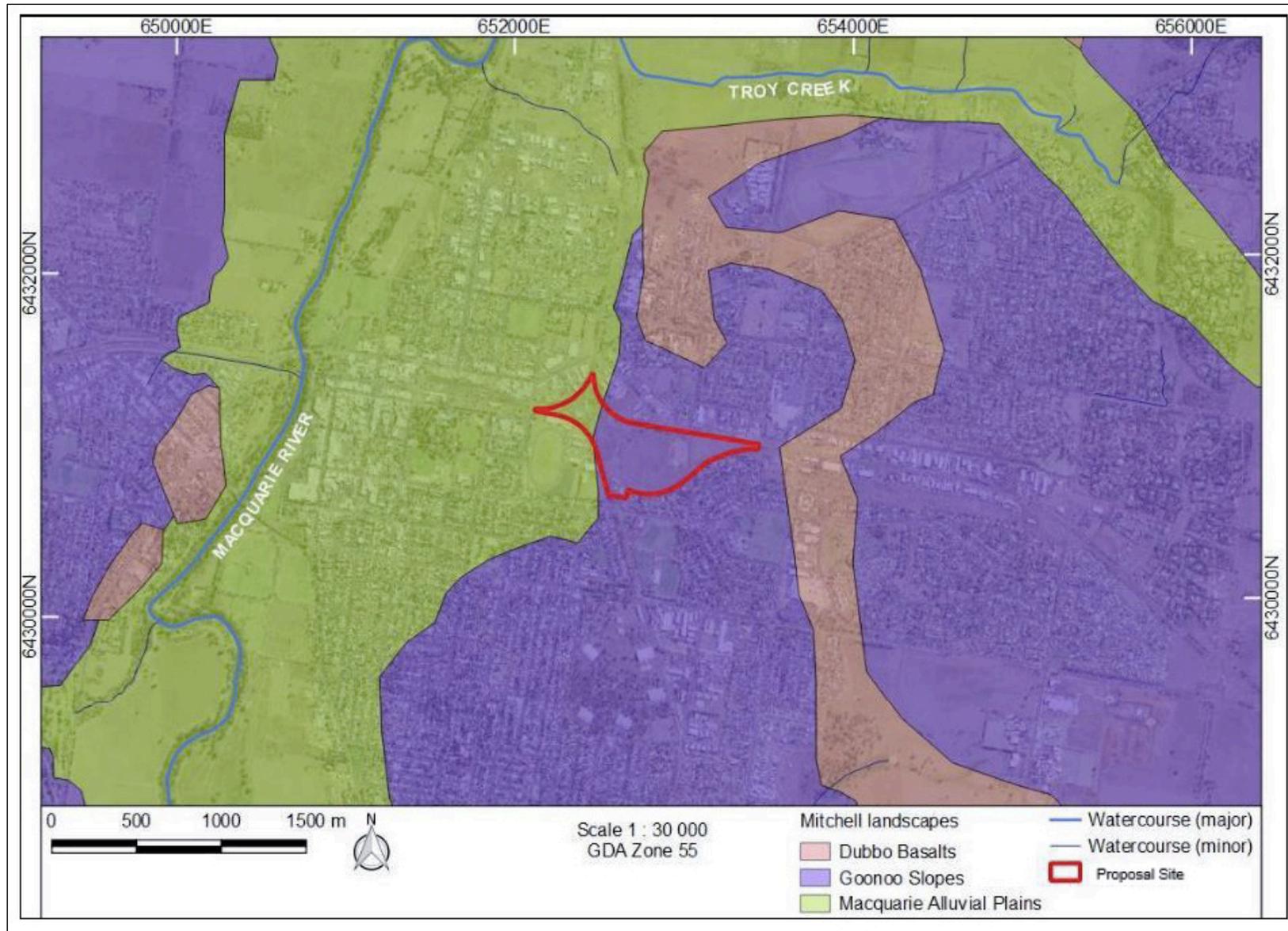


Figure 2-2: Mitchell landscapes of the study area

2.2 HYDROLOGY

The study area is located approximately 1.8 kilometres east of the Macquarie River, the region's major waterway and six kilometres to the south of the Talbragar River at its confluence with the Macquarie River. The study area is south of Troy Creek, a major tributary of the Macquarie River. An unnamed ephemeral tributary of Eulomogo Creek is located about two kilometres southeast of the study area. The land slopes gently to the west, towards the Macquarie River however there are no mapped watercourses or discernible drainage lines which would constitute aquatic habitat within the Proposal site.

The hydrology of the area has been impacted through the installation of ponds, concrete drainage channels and drains for purposes of urban development, including the construction of the railway infrastructure.

2.3 VEGETATION

At the time of European settlement, vegetation in the vicinity of the study area would have comprised Eucalypt and Cypress Pine woodland.

Vegetation within the study area today includes derived grassland dominated by exotic species and isolated stands of regenerating and mature tree species including a Fuzzy Box, White Cedar and Kurrajong. The westernmost portion of the study area has been previously cleared of all vegetation for the construction of railway associated infrastructure.

2.4 CLIMATE

Dubbo is located at the far south-eastern area of the Brigalow Belt South bioregion and falls within the temperate climate zone. Rainfall distribution across the year is relatively even between an average of 42.7 millimetres per month in September and 60.7 millimetres per month in January. Mean daily maximum temperatures range from 15.2 degrees Celsius in July to 33 degrees Celsius in January. Summer temperatures can regularly approach, or exceed, 40 degrees Celsius. Mean daily minimum temperatures range from 2.6 degrees Celsius in July to 17.9 degrees Celsius in January (BoM, 2017).

2.5 EXISTING LEVELS OF DISTURBANCE

Review of the past and present land use patterns within the study area demonstrates that the entirety of the study area has undergone significant physical modification as a result of drainage of the Wingewarra Swamp, the construction and use of the Dubbo Railway Station and railway line and current land use for stockpiling (refer to **Section 4.3** for further information).

2.6 CONCLUSION

The review of the environmental context of the study area allows the following conclusions to be made concerning both the likelihood of past occupation, as well as the factors affecting site preservation in the area:

- **Topography and hydrology:** The study area is mostly featureless, comprised of low lying gently sloping land, the western portion of which is historically documented as being a swamp, lying at 267 metres AHD. The swamp environment would have made the study area rich in plant and animal resources for Aboriginal people; however, its susceptibility to inundation would likely make the area undesirable for anything beyond transient Aboriginal occupation. Early historic occupation prior to the swamp being drained would have also been restricted by the boggy nature of the landform.
- **Geology and soils:** Rock outcropping is not expected to occur within the study area based on the landform present, and no outcropping rock was observed. Given the presence of the swamp, soils within the study area are not well-drained and therefore have very low archaeological potential for subsurface Aboriginal or historic deposits.
- **Vegetation:** Plant communities which would have occurred within the study area prior to European occupation would have supported a variety of native fauna and provided Aboriginal people with access to a range of plant and animal resources. However, the study area has been subject to large scale vegetation clearance with only a few, small stands of trees remaining.
- **Climate:** The climate was not an impediment to year-round occupation by Aboriginal people.
- **Land use:** The study area exhibits high levels of disturbance primarily associated with the construction and use of the Dubbo Railway Station and railway line. Disturbances include vegetation clearance, the construction of the railway formation, buildings, roads and pavements, vehicle tracks, drainage features and more recently stockpile hardstands, depots and fences. These activities have disturbed or destroyed ecological niches that may have been located in the resource swamp area in prehistory and are likely to have removed traces of Aboriginal and/or more transitory historic occupation. In terms of more-permanent items of non-Aboriginal heritage, the construction of the railway line and associated buildings have potential to have historic significance.

3 ABORIGINAL ARCHAEOLOGY BACKGROUND

3.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

According to Tindale's (1974) and Horton's (1994) maps of tribal boundaries, the Dubbo area falls within the northern limits of the Wiradjuri 'tribal' or ethno-linguistic group (**Figure 3-1**). The Wiradjuri are typically described as a large language group or tribal nation extending over a considerable area of New South Wales, comprising numerous sub-groups. Use of the term 'tribe' and the delineation of 'tribal boundaries' on maps is considered problematic, although distinctive ethno-linguistic groups are known to exist. Two group names are used within the Dubbo region: Wiradjuri and Tubba-Gah. The Tubba-Gah comprise a local sub-group, 'clan' or mob within the larger Wiradjuri entity and are historically linked to the locality encompassing the study area (Kelton 1995:7-8; Koettig 1985:21-22). The territory thought to have been traversed by the Tubba-Gah lies to the east of the Macquarie River, south of the Talbragar River and north of Eulomogo Creek.

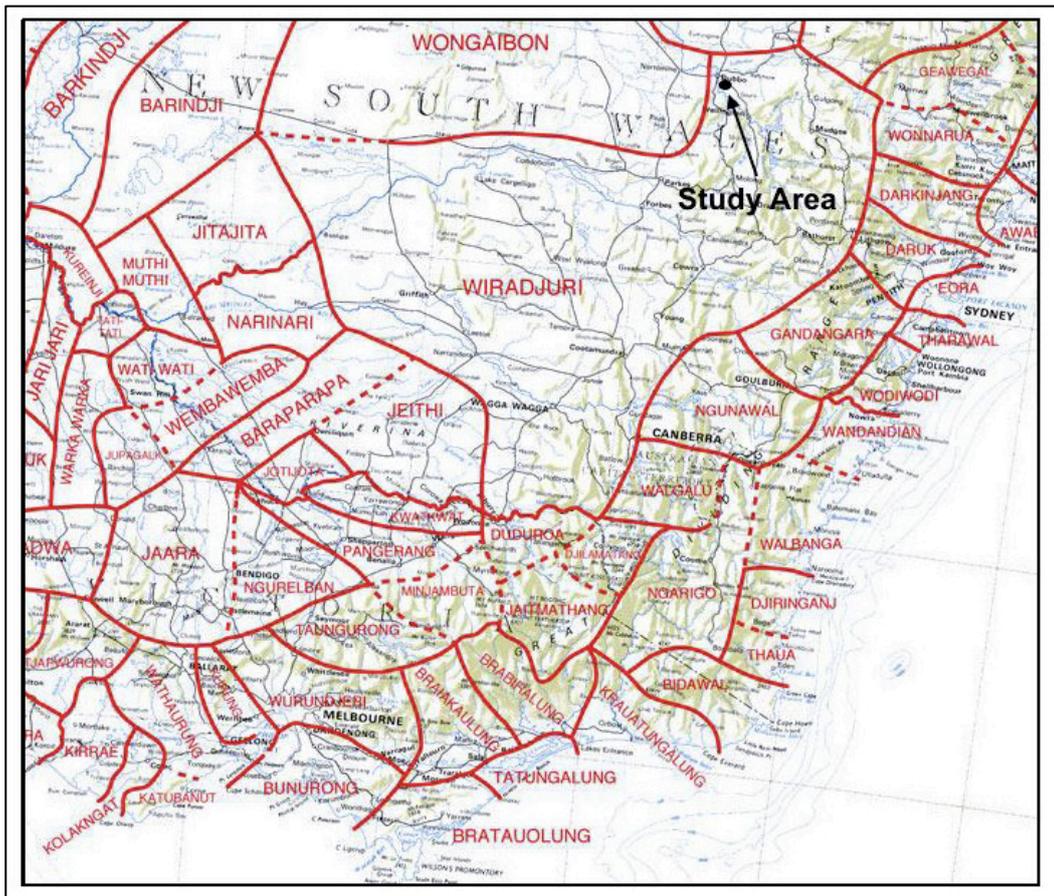


Figure 3-1: A portion of Tindale's (1974) map showing the location of the Wiradjuri ethno-linguistic group in relation to the study area

Little recorded information survives concerning the life of Aboriginal people in the Dubbo area following European settlement (Koettig 1985: 19). The most important historical resources are the oral histories passed from parent to child by local Indigenous inhabitants. The current

caretakers of this knowledge are involved in a project to record that information. When it becomes available, this resource stands to replace existing documents as the most valuable written resource describing Aboriginal cultural practices at the time of European settlement.

Early accounts of contact between European and Aboriginal people in the Macquarie River area were provided by Oxley (1820) and Sturt (1834) and later by Garnsey (1942) who was born in Dubbo in 1874. Garnsey's interest in Aboriginal cultures led him to record information gleaned from his father and from Aboriginal elders in the Dubbo area. His work remains a useful account of everyday life and religious/ceremonial practices.

According to early accounts, Tubba-Gah territory was rich in animal and plant food resources (Koettig 1985). Garnsey's (1942: 6) description of camp life suggests that many activities were performed communally, for the benefit of the mob. Campsites comprised a series of bark or bush shelters arranged in a semi-circle opening to the east, arranged around a central fire, with men occupying shelters to the north, women in the centre, and children to the south. Camps moved frequently over short distances due to alterations in social relations and weather, and in response to hygiene concerns, among other factors. Longer distance movements tended to be linked to participation in large-scale gatherings (e.g. ceremony or warfare) or alterations in resource availability. Garnsey (1942: 16–23) also provides detailed descriptions of ceremonial practices related to alterations in social status and passages from infancy to adulthood. These descriptions are a composite of various verbal accounts, the accuracy of which is difficult to ascertain. Garnsey (1942: 14) suggests that the 'mob' structure began to break down during the 1890s when only older men appeared to retain the tribal markings and knowledge associated with ceremonial practice. Oral histories of traditional custodians are likely to elaborate upon and refute aspects of these early accounts.

3.2 REGIONAL ABORIGINAL ARCHAEOLOGICAL CONTEXT

A number of archaeological studies have since been conducted within the Dubbo region over the last 30 years (Pearson 1981; Koettig 1985 and Balme 1986). These provide baseline data for placing past Aboriginal sites within a regional landscape context. Most recently, Purcell (2000 and 2002) and OzArk (2006) have completed systematic archaeological studies in proximity to the current study area including the BBS bioregion and the Dubbo Regional LGA.

David Bell (1980) carried out an extensive survey to locate previously recorded Aboriginal carved trees in NSW and his study included the Macquarie River. One of the main foci of Bell's study was to relocate and record the 131 trees recorded by McCarthy in 1945 and the 112 carved tree sites reported by Etheridge in 1918. As well as devising a classification system for carved trees, Etheridge had also assessed their distribution across the landscape, stating that they tended to be concentrated on the central slopes and plains of NSW. Bell was able to expand on this, outlining that carved trees tended to be concentrated along the major rivers of central-western

NSW, particularly the Bogan and Macquarie Rivers and the middle reaches of the Lachlan River. Further, he noted that their distribution is restricted to the eastern two thirds of the state, with none occurring in the far west and that a distinctive form of carving appears around the Lachlan River area, characterised by a zig-zag motif.

Koettig (1985: 81–82) examined evidence of Aboriginal occupation within five kilometres of Dubbo's city limits. She concluded that sites existed throughout all landscape units surveyed; artefact scatters, scarred trees and grinding grooves were the most frequently occurring site types; and that site location and size were determined by various environmental and social factors. Of the environmental factors, proximity to water, geological formation and availability of food resources were most important. As such, her site prediction model suggested that: all site types would occur along watercourses; stone arrangements would occur most frequently on knolls or prominent landscape features; larger campsites would occur most frequently along permanent watercourses, near springs or wetlands; small campsites could occur anywhere; scarred trees could occur anywhere, but particularly in remnant native woodland communities; campsites would be smaller and more sporadic near the headwaters of creeks; grinding grooves could occur where appropriate sandstone existed; quarries could occur wherever there were suitable stone sources; and shell middens could occur only along the Macquarie River.

Purcell (2000) completed a two stage Aboriginal Cultural Heritage assessment of the Pilliga State Forest and the Goonoo State Forest. The aim of the assessments was to increase understanding of the cultural links between Aboriginal people and the BBS bioregion and to sample 12 landform types expected to be associated with Aboriginal cultural heritage. Those landforms within the Pilliga and Goonoo State Forests included floodplains, soil mantled slopes, terraces, rocky ground and alluvium. During the Stage 1 assessment Purcell recorded 47 and 106 Aboriginal sites respectively through Aboriginal consultation, oral history, archival investigations and a cultural heritage field survey. Purcell (2000: 31) found that sites were more frequently located within alluvium landforms, demonstrating that 91.5 per cent of sites were recorded within 200–300 metres of water. During Stage 1, the multi-level approach adopted was successful in highlighting the importance of the Goonoo State Forest for Aboriginal people during periods of economic and social oppression, and in gathering information of sites and landforms.

Stage 2 of Purcell's assessment (2002) continued with the multi-level approach focusing on the remainder of the BBS bioregion to identify Aboriginal interest in forest areas and the broader bioregion. The field survey for Stage 2 adopted a targeted approach, surveying landforms that were considered potentially sensitive based on the Stage 1 results which established that sites are strongly linked with water features associated with higher contoured terrain of the Goonoo and Pilliga State Forests. A total of 849 sites were recorded during the Stage 2 field survey with the variety of site types identified highlighting the diversity of Aboriginal culture within the bioregion. Collectively, the sites reflect a diverse range of Aboriginal land use among different

landforms. Site types included artefact scatters, scarred trees, isolated finds, and rock engravings, shelter sites with art, ochre quarries, stone arrangements and stone quarries. Overall, results of the Stage 2 assessment shared close similarities with Stage 1 displaying that the distribution of recorded Aboriginal sites is influenced by the variety of widespread water features that occur on floodplain and alluvium landforms, including river frontage locations, creek tributaries, swamps and chains of ponds.

OzArk (2006) assessed Indigenous heritage resources within the former Dubbo LGA to assist the former Dubbo City Council with planning. This study aimed to: consolidate previous surveys and assessments of Indigenous heritage; set a baseline for further study; and survey areas zoned for future expansion. Approximately 1,120 hectares of land was surveyed within five study areas surrounding the city of Dubbo. During the survey, 26 new Aboriginal sites were recorded, and eight of 12 previously recorded sites were located. Proportions of newly located sites by type were similar to those recorded in previous studies. Fewer scarred trees were recorded than expected, likely due to intensive agricultural practices and associated tree clearance around Dubbo City compared to the broader former Dubbo LGA. No new grinding groove sites were recorded, which was probable given this site type comprised only 3.61 per cent of previously recorded sites within the former broader Dubbo LGA. Scarred tree distribution adhered to the predictive model, exclusively following waterways and fence-lines, although this probably reflected land clearing practices more than Indigenous site patterning. Isolated finds and open sites followed a similar pattern, largely limited to watercourse edges and elevated terraces within 500 metres of the Macquarie River and other permanent to semi-permanent waterways. No real pattern emerged in terms of site size or quality, perhaps because surface manifestations do not adequately reflect site size or complexity.

In 2016, OzArk was engaged by the Central West Local Land Service (CWLLS) to formulate and test a predictive model for Aboriginal site locations within Travelling Stock Reserves (TSRs) across the CWLLS area. The closest area surveyed to the current study area was five kilometres to the east along Goobang Creek. A total of 59 sites were recorded during the fieldwork component of the assessment across 32 TSRs (OzArk 2016). Of the recorded sites, 26 (44 per cent) are scarred trees, 22 (37 per cent) are artefact scatters and 11 (19 per cent) are isolated finds. Background research, formulation of the predictive model for site location and the survey to test the predictive model concluded that:

- The majority of sites will be recorded within Channel and Floodplains, and Slopes landscapes (as defined by Mitchell 2002);
- Sites in Channel and Floodplains landscapes are likely to be scarred trees, while those in Slopes landscapes are likely to be artefact scatters;

- The majority of sites will be recorded in TSR Hierarchy 1 locations¹; and
- Of these, a majority of sites will be recorded within TSR Hierarchy 1 locations within Channel and Floodplain landscapes.

3.3 LOCAL ABORIGINAL ARCHAEOLOGICAL CONTEXT

3.3.1 Desktop database searches conducted

Desktop database searches were conducted to identify any potential previously recorded Aboriginal heritage within the study area. The results of these searches are summarised in **Table 3-1** and presented in detail in **Appendix 1**.

Table 3-1: Aboriginal heritage: desktop-database search results

Name of Database Searched	Date of Search	Type of Search	Comment
Australian Heritage Database	9 October 2017	Dubbo (suburb)	No places listed on either the National or Commonwealth heritage lists are located within the study area
NSW Heritage Office State Heritage Register (SHR) and State Heritage Inventory (SHI)	9 October 2017	Dubbo Regional LGA	No places listed on either the SHR or SHI lists are located within the study area
National Native Title Claims Search	9 October 2017	Dubbo Regional LGA	No Native Title claims exist within the study area
OEH AHIMS	8 October 2017	Eight kilometres (east–west) by eight kilometres (north–south) centred on the study area	112 Aboriginal sites are located within the search area
Local Environmental Plan (LEP)	9 October 2017	Dubbo LEP 2011	None of the Aboriginal places listed occur near the study area

A search of the OEH administered AHIMS database returned 112 records for Aboriginal heritage sites within the designated search area (approximately eight square kilometres centred on the study area; **Figure 3-1** and **Table 3-2**). Within the searched area the dominant site type is artefact sites (i.e. isolated finds or artefact scatters), followed by culturally modified trees (i.e. carved or scarred). Other site types such as grinding grooves, middens, stone quarries and burials are recorded in much lower frequencies.

¹ A TSR Hierarchy 1 location is defined in OzArk 2016: it consists of TSRs within 200 metres either side of a major waterway.

Table 3-2: AHIMS site types and frequencies

Site Type	Number	% Frequency
Artefact	63	56.25%
Modified tree	40	35.71%
Grinding groove	3	2.68%
Burial, modified tree	2	1.79%
Artefact, modified tree	2	1.79%
Artefact, shell	1	0.89%
Artefact, stone quarry	1	0.89%
Total	112	100

The closest recorded sites to the study area as per the AHIMS database are #36-1-0024, #36-1-0025 and #36-1-0026, located between 180 and 460 metres to the north and northeast (**Figure 3-2**). Site #36-1-0024 is recorded as a carved tree site, while #36-1-0025 and #36-1-0026 are recorded as carved tree sites associated with burials. Site #36-1-0024 is recorded as comprising two carved trees, first recorded in Etheridge (1918) (**Figure 3-3**). The site card describes the trees as being located within a cultivated paddock about one mile (1.6 kilometres) from Dubbo. As such, it is likely that the location provided by AHIMS is incorrect. No further information of the meaning of the glyphs is known. Site #36-1-0025, a carved tree and burial site, notes the presence of 12 carved trees, however, the information on the location of the site on the site card is brief, and refers to trees located on the western bank of the Macquarie River. In addition to this, reference of the trees in Etheridge (1918) refer to the trees as being located 'near' Dubbo, and may represent trees at 'The Springs' or possibly Tomingley Creek (Etheridge 1918: 45). As such, it is determined that the locations provided by AHIMS are also likely incorrect, and the actual location of the trees are not known. Site #36-1-0026, a carved tree and burial site, includes four carved trees surrounding a tumulus grave. While the exact location of the site provided on AHIMS is unknown, the site is described as being located two miles (3.2 kilometres) from Dubbo Railway Station. Tree A stood due south of the tumulus grave; B south-east; C due north; D due west, and the stump east (**Figure 3-4** and **3-5**). The glyphs on trees C and D were noted as being unique, while tree B was said to be very difficult to distinguish from the glyphs present at #36-1-0024. Given the brief description on the location of the site, it is concluded that the coordinates provided by AHIMS are again incorrect, and the exact location of the site is unknown.

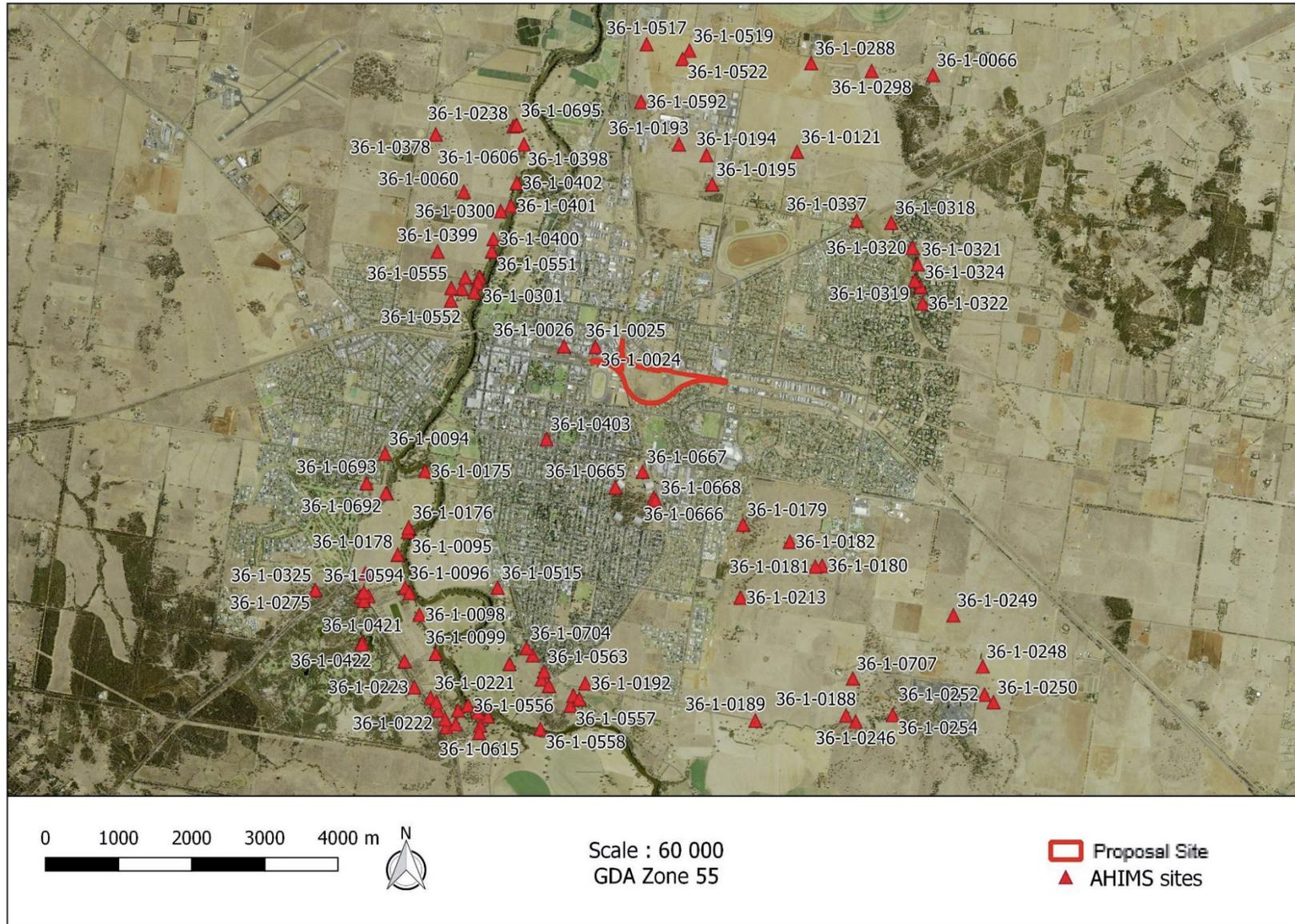


Figure 3-2: Map showing the locations of AHIMS sites in relation to the study area

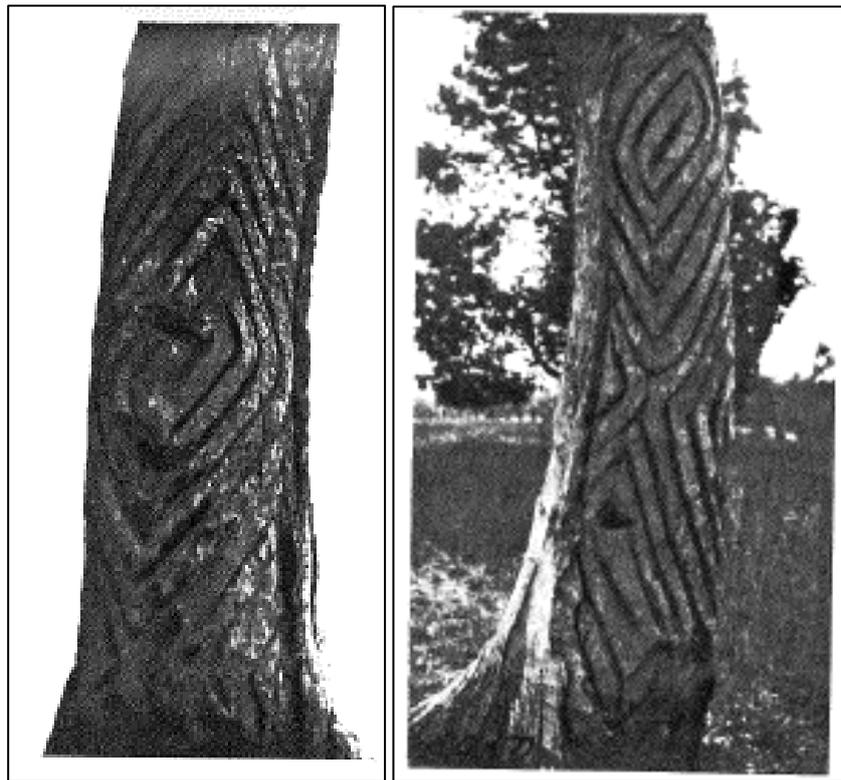


Figure 3-3: Carved trees recorded as part of site #36-1-0024 (source: Etheridge 1918: p. 44, plate vii, figures 3 and 4).

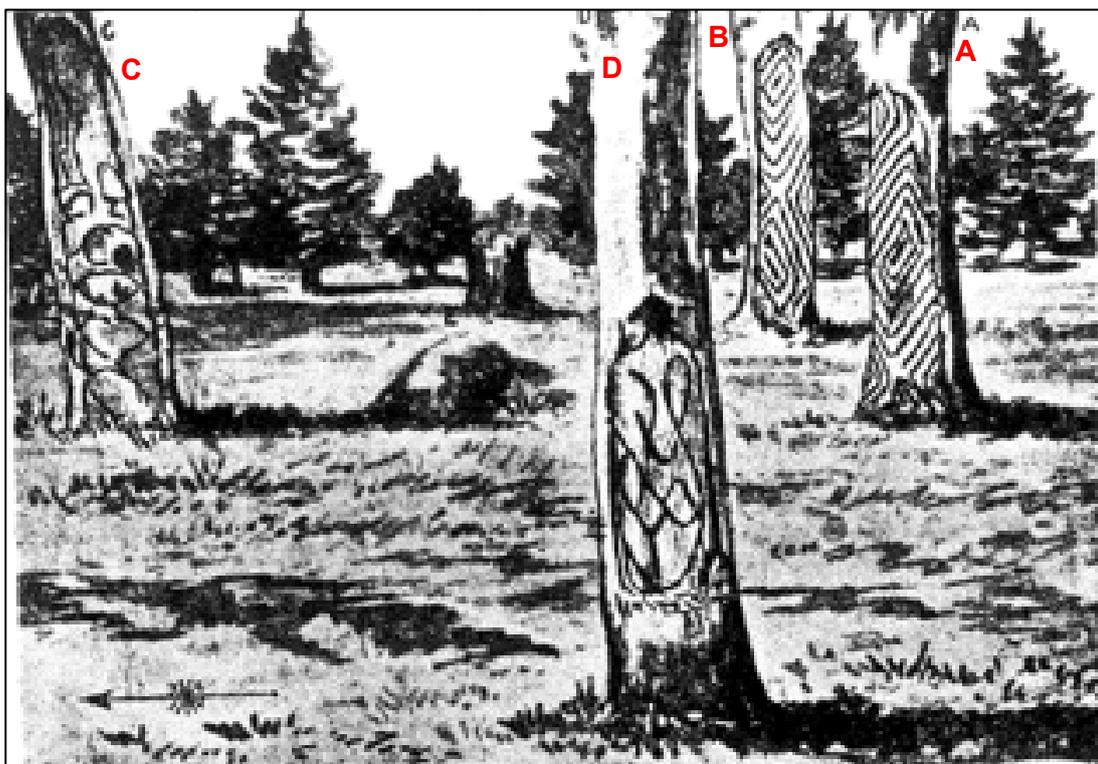


Figure 3-4: Carved trees recorded as part of site #36-1-0026 surrounding a tumulus (source: Etheridge 1918: p. 44, plate xxxi, figure 1).



Figure 3-5: Photograph of carved tree C (source: Etheridge 1918: p. 44 to 45, plate x, figure 2).

3.3.2 Previous Aboriginal archaeological assessments

Wiradjuri archaeological heritage in the Dubbo region has also been documented through many heritage assessments undertaken as part of development assessment. The following sections review studies undertaken over this region, which collectively help to provide a backdrop for the type of sites likely to occur within the study area.

Kelton (1995) undertook an archaeological survey for the proposed 'Keswick' housing subdivision of 415 hectares of rural land approximately 2.5 kilometres southeast of the study area. Seven Aboriginal sites comprising four artefact scatters, two isolated artefacts and one culturally modified tree (scarred) were recorded in the area. All recorded sites were located within several hundred metres of Eulomogo Creek and the Macquarie River on elevated floodplains (above the one-in-a-hundred-year flood zone) and the banks and elevated banks of Eulomogo Creek. Flaked stone artefacts were composed of chert, mudstone, quartzite, quartz and basalt; and grinding stone fragments were composed of mudstone and sandstone.

Kelton (1998) completed an Aboriginal archaeological survey of approximately 300 hectares of privately owned land, located 4.5 kilometres southeast of the study area, identified by the (then) Dubbo City Council as a potential area for the location of an industrial estate (Kelton 1998: 1).

Kelton's 1998 study resulted in the identification of nine Aboriginal sites, including two axe grinding groove sites, a scarred tree, and six artefact scatters. Kelton noted that the location of artefact scatters and axe grinding grooves along the banks and adjacent terraces of Eulomogo Creek conformed to the predictive model as sites were predicted to occur along the banks of perennial and ephemeral creek lines. Of the nine sites recorded, seven sites (sites #36-1-0246, #36-1-0247, #36-1-0250, #36-1-0251, #36-1-0252, #36-1-0253 and #36-1-0254) are located within 200 metres of Eulomogo Creek and drainage features of Eulomogo Creek. However, the recording of the extensive artefact scatter (#36-1-0248) along a low hillslope east of the 'South Keswick'" homestead was not expected.

OzArk (2002) undertook an archaeological survey of the Western Plains Zoo landholding located 2.7 kilometres southwest of the study area. Twelve previously unrecorded Aboriginal sites were located, in addition to twenty-one previously recorded sites. Together they comprised 14 artefact scatters, 15 scarred trees, two isolated finds, one midden and one site complex. Site distributions generally adhered to the predictive model, with: artefact scatter sites predominantly located along creek banks or within 200 metres of the Macquarie River; scarred trees found close to water supplies; a burial site recorded in 1918 located on the gentle slope leading away from the sandy alluvial flats of the Macquarie River and associated with grinding grooves on outcropping sandstone; and midden material found at one site located close to the banks of the Macquarie River.

OzArk (2014) undertook an archaeological assessment of Lot 710 DP 1041906 comprising approximately 15 hectares located 4.3 kilometres south of the study area. One new open site comprising two silcrete artefacts and an associated potential archaeological deposit (PAD) were recorded on a gentle south trending slope, approximately 300 metres north of the Macquarie River.

OzArk (2017a) undertook an Aboriginal cultural heritage assessment of the former Royal Australian Air Force (RAAF) base located within Lot 11 DP1050240 about 700 metres south of the southern portion of the study area. One previously unrecorded Aboriginal site, a scarred tree (#36-1-0666) was recorded during the assessment and three previously recorded sites including one artefact scatter (#36-1-0665) and two scarred trees (#36-1-0667 and #36-1-0668) were located. All recorded scars were recorded on Grey Box trees, however, of the three scarred trees identified within the study area, only #36-1-0668 was noted as being supported by a scientific assessment as being of cultural origin. Sites #36-1-0666 and #36-1-0667 were registered as 'possible scarred trees' of low significance at the expressed request of Aboriginal community representatives. The two previously recorded artefacts at #36-1-0665, a red/yellow silcrete flaked piece and a fine grey mudstone flaked piece, were successfully located during the assessment. The artefacts were recorded in an area of high disturbance adjacent to a road cutting. The artefact scatter was assessed as not being associated with any subsurface deposits based on the high

levels of disturbance, minimal to negligible A-Horizon deposits and a lack of a discernible landform feature to aid in the delineation of a PAD.

In 2017, OzArk completed an assessment following the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (Due Diligence; DECCW 2010a) for the proposed upgrade of Sewer R and its associated pipeline route. A portion of the assessed study area traverses the study area, tracking north south along the eastern side of the railway line in the western portion of the study area. No new Aboriginal sites or PADs were recorded and no previously recorded Aboriginal sites were assessed during the inspection (OzArk 2017b). Most of the area was confirmed to be disturbed land due to vegetation clearance, the construction of the railway formation, roads and pavements, vehicle tracks, drainage features and fences.

3.4 PREDICTIVE MODEL FOR ABORIGINAL 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 such as 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 these may be subject to either (a) the effects of wind and water erosion/transport – both over short and long time scales or (b) the 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 quarters. Scarred trees may survive for up to several hundred years but rarely beyond.

A useful tool for the prediction of Aboriginal sites is landscape unit mapping (refer to **Section 2**). A higher frequency of Aboriginal sites can be anticipated within ecotones, that is the area of interface between two different landscape units. It is along these ecotones that a more diverse range of environmental resources can typically be found resulting in more frequent use of these zones in prehistory. It is important to note that the study area contains an ecotone and was

previously a 'swamp environment' which would have provided abundant resources and have attracted Aboriginal occupation. However, as noted in **Section 2.7**, the study area's susceptibility to inundation would likely make the area undesirable for anything beyond transient occupation.

Knowledge of the environmental contexts of the study area and a desktop review of the known local and regional archaeological record, the following predictions are made concerning the probability of those site types being recorded within the study area:

- 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 study area.
- 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 across, and relative to, the surrounding landscape, such as the open basal valley slopes and the valleys of creeks, will tend to contain more and larger sites, mostly camp sites evidenced by open artefact scatters.

- Artefact scatters, as well as isolated stone artefacts, are the predominant site types occurring in the region (**Section 3.3.1**). If present in the study area, this site type is likely to be in a secondary context due to the high levels of disturbance. It is likely that any sites associated with the landforms present in the study area will have a low artefact density and a low complexity of tool types as the sites are probably either one-off events or only infrequently used.
- Culturally modified trees (these include scarred trees and dendroglyphs – carved trees) 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. Tree carving was undertaken for a range of ceremonial purposes, including marking burials, bora grounds, initiation rites and avenging expeditions.

- A number of carved and scarred trees have been previously recorded within the Dubbo region, however, due to the near-total clearance of trees from within the study area, this site type is not predicted to occur.
- Bora/ceremonial sites are places which have ceremonial or spiritual connections. Ceremonial sites may comprise of natural landscapes or have archaeological material. Bora sites are ceremonial sites which consist of a cleared area and earthen rings.
 - This site type does not necessarily follow landform predictability and are, overall, a rare site type with a low likelihood of being present within the study area. If they had once existed within the study area it is highly likely that this site type has been previously destroyed by the documented disturbances that have occurred in the study area.
- 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.
 - The environmental context of the study area as a 'swamp environment' susceptible to inundation would not have made it a favourable location for burials.

4 NON-ABORIGINAL HERITAGE ASSESSMENT: BACKGROUND

4.1 INTRODUCTION

The current assessment applies the Heritage Council *Historical Archaeology Code of Practice* (Heritage Council 2006) in the completion of the historical heritage assessment, including field investigations.

4.2 BRIEF HISTORY OF DUBBO

Aboriginal people have occupied the central west region of NSW for tens of thousands of years. In 1818, the explorer John Oxley reported on the area now known as Dubbo noting the potential of the valley for grazing and agriculture. European colonisation of the region occurred relatively late, as the expansion halted at Wellington Valley during the 1820s. Nevertheless, squatters and pastoralists obtained 'tickets of occupancy' to temporarily graze sheep and cattle on Crown Land in the area during the 1820s and a station was established at Dubbo in 1824, but was withdrawn due to the remote location. A permanent run was claimed by Robert Dalhanty in 1833, which he called 'Dubbo', and large tracts of land were taken up around Dubbo and the Macquarie River in the early 1830s (NSW HO and DUAP 1996: 80–81).

Subsequent colonisation beyond Wellington was rapid and tended to follow the major river courses. In 1836, the Lands Act allowed the lease of Crown Land for an annual fee. By 1840 much of the Macquarie River frontage and adjoining land in the Dubbo area had been taken up as land leased for sheep and cattle runs (NSW HO and DUAP 1996: 80–81). Early squatters and pastoralists constructed basic vernacular huts and temporary shelters, very few of which have survived. Dundullimal Homestead was built around 1840 by John Maugham on a 26,000 acre (11,000 hectare) sheep station. The property is on the southern outskirts of Dubbo and the surviving slab residence is one of the oldest homesteads still standing in western NSW (Perumal 1986: 23).

The siting of Dubbo village was related to its location as a staging post, a camping area and the convergence of regional stock travelling routes. In 1846, the settlement had only four buildings: the constable's residence, a courthouse and lock-up, a general store, and an inn. The colony's Surveyor General G. Boyle White surveyed and gazetted the village in November 1849. The original town plan was a square mile grid laid out to the east of the Macquarie River and the first land sales took place in 1850 (Dormer 1981: 35).

The *Crown Lands Act of 1861* enabled settlers to select 40 to 320 acres of Crown Land at one pound per acre for the purpose of farming. Crown Land leaseholders had first right of purchase and acquired most of the attractive riverside property. Despite the encouragement of settlers into the area, population growth was slow until the gold rush of the 1860s. Cobb & Co established coach runs connecting Dubbo to the north, east and west in 1865, and in the same

year Dubbo's first bank was opened. The Macquarie River was spanned by a number of temporary bridges both upstream and downstream, but the first permanent crossing was the Oxley Bridge, constructed in 1866 (Dormer 1981: 51).

A committee to establish a district hospital at Dubbo was formed in 1866 and plans for a new hospital were prepared by architect G.A. Hartley. The Dubbo Base Hospital was completed in 1867 but did not open until 1870. The hospital catered for a large area surrounding Dubbo, with several large building extensions constructed before 1900. Major additional extensions were undertaken in the early twentieth century due to excessive demand for services; and in 1964, plans for a new hospital were prepared and subsequently constructed on the site (Aitken 2007: 74).

Large-scale urban and rural subdivision phases did not occur in Dubbo until after the municipal government was established in 1871. An extension to the Main Western Railway from Wellington to Dubbo was formally opened on 1 February 1881. Dubbo boomed during the 1880s when much of its architecture was built. Dubbo increased in importance when the railway line to Bourke was completed in 1885, diverting the river trade into New South Wales and away from South Australia. The Dubbo rail bridge over the Macquarie River was completed in 1884 (NSW HO and DUAP 1996: 82–83).

The early twentieth century saw the destruction of the great pastoral holdings on the plains and their subdivision and replacement by large sheep stations and wheat-sheep farms, with further subdivision around Dubbo for soldier settlement schemes (NSW HO and DUAP 1996: 84–85). The construction of several branches of the Main Western Railway meeting at Dubbo (e.g. the Molong–Dubbo Railway and Dubbo–Coonamble Railway) was completed in the early decades of the twentieth century, providing Dubbo with greater connectivity and trade within the region and initiating a renewed period of economic expansion (Aitken 2007: 72–73).

Australia entered into World War II with the declaration of war in September 1939 and defence sites were subsequently expanded. During the war, the Royal Australian Air Force (RAAF) operated ten stores depots around Australia, including two in NSW, one of which was located in Dubbo: The Dubbo RAAF Stores Depot (Shipard & Mortimore 1996: 2). The site was located within an area of State Forest, adjacent to the Molong–Dubbo Railway line, allowing for camouflaging within the surrounding cypress pine forest and immediate rail servicing. All 27 buildings at the Dubbo Stores Depot were completed by April 1943 when stores were arriving daily, including aeroplane parts, wireless equipment, ammunition and bombs. At the cessation of hostilities, the Dubbo Stores Depot was the largest in Australia in terms of size and stock held.

4.3 HISTORY OF THE DUBBO RAILWAY

Construction of the Dubbo railway commenced in 1879, and the site was to become a major junction for a number of lines opening up the northwest and central north of the state

(Cottee 2004: 111). The line from Sydney reached Wellington on 1 June 1880 and opened in Dubbo on 1 February 1881 (Dormer 1981: 91). The opening of the line to Dubbo was originally scheduled to open shortly after Wellington, however, delays in the completion of the rail bridge over the Macquarie River posed a problem. Sleeper-cutters (also referred to as fettlers) and their families camped beside the job in tents and shacks during the construction, and made quick work of the ironbark forests between Dubbo and Wellington (Dormer 1981: 91).

The station for the new railway was subject to strategic planning. Land was resumed at the north of the Wingewarra Swamp Reserve, which had been set aside as a park (Dormer 1981). The area was drained, roads built to carry the expected heavy vehicle traffic, as Talbragar Street had previously ended at the park. As the road to the station had to be constructed over the swamp, it became the first stone based, blue metal road in Dubbo.

In anticipation of the railway, business premises began extending down Talbragar Street, and new hotels were being built to be in close proximity to the railway station for those requiring overnight accommodation. George Taylor, Mayor of Dubbo, was in charge of planning for the first train's arrival (Dormer 1981). The official opening in 1881 was performed by Sir John Robertson, who was five times premier of NSW. The opening was expected to be attended by two thousand people, but up to five thousand people were believed to have been present. A banquet at the Exchange Hall was held following the opening and was filled to capacity. The opening of the railway provided Dubbo with greater connectivity and trade within the region and initiated a renewed period of economic expansion. More families came to Dubbo to live, with signalmen stationed at a number of street crossings including Fitzroy Street and Darling Street. Oral accounts recall also at least one signalman's house, reportedly within the western portion of the study area².

Maintenance of the railway track and its structures was undertaken by fettlers. Many lived in isolated camps and undertook hard physical labour replacing worn sleepers and rails, and shovelling ballast (MWA International 2009). Often fettlers and their families lived in tents and makeshift houses constructed from fibro sheeting supplied by the railway, corrugated iron; and their water, basic household supplies and mail were delivered by passing trains. The gangs travelled to their work sites on small trolleys (trikes) where they replaced decaying sleepers, spread ballast brought in from departmental quarries and repaired the track after derailments or washways (MWA International 2009). Data collected on accidents demonstrates that the highest proportion of lives lost arose from shunting accidents across NSW, while there are also many fettlers listed who were killed by an unexpected train movement or accidents associated with their trikes (MWA International 2009).

² Whether this was a gatekeeper's cottage or signalman's cottage is unclear from the oral accounts.

The main camp of fettlers at Dubbo Railway Station reportedly camped adjacent to the original alignment of the railway line within the current study area, and spreading southeast into the area where the showground is currently located. Whilst fettlers generally moved on shortly after the main period of local construction had been completed, shifting camp along the line to remain near the focus of work (MWA International 2009), there is some suggestion locally that the Dubbo camp may have persisted in some form. Anecdotal sources have connected this camp with an area near the showgrounds called 'Tin Town', as describing an informal settlement of ephemeral dwellings reaching its peak in the early-mid 20th century, potentially having arisen from the initial camp of fettlers and their families. Historical mentions suggest that an ephemeral camp referred to as 'Calico Town' arose sometime at the turn of the century before later evolving into an informal settlement of pensioners and struggling families known, by 1915, as Tin Town. Unemployed drifters were also documented as camping on crown land in the vicinity during the depression era who may have contributed to the growth of the settlement (*Dubbo Dispatch* 8/10/1915; *National Advocate* 21/02/1934, 21/12/1934; *The Dubbo Liberal* 10/05/1932). Contemporary newspaper excerpts describe the unhygienic conditions and destitution troubling Tin Town but also the acts of charity and support lent to the settlement's inhabitants by the community of Dubbo (*National Advocate* 21/12/1934, 15/6/1938, 4/8/1938).

In order to finish the wooden sleepers for the railway line, a Boradze building was constructed within the study area, although the date is unknown. The sleepers arrived at the Boradze depot from sawmills, and were 'bored', 'adzed' and treated to form railway sleepers. The year of construction of the building is unknown, and very little, additional information is available on the operation of the building. The only other Boradze depot within NSW is located at Taree. This was decommissioned in 2012 due to the replacement with concrete or metal sleepers across the state. It is not known when the Boradze building in Dubbo ceased being used.

Most of the stone structures that comprise Dubbo Railway Station were constructed between 1879 and 1881 in preparation for the opening of the station in 1881 (Cottee 2004: 111). Stone for the buildings was quarried from outcrops to the west of the Macquarie River. The Station Masters' residence, a significant two-storey sandstone building, was completed the same year. During the late nineteenth and early twentieth centuries some additions were made to the station precinct including:

- Construction of the lamp room and wool stage in 1891.
- Dubbo West siding in 1893.
- Carriage shed in 1897.
- Western end platform extension in 1898.
- Opening of the Dubbo-Coonamble line in 1903.

- Installation of a 20-tonne cart weighbridge and extensions to the Sydney end of the platform in 1904.
- Addition of a transshipping shed in 1906.
- A grain shed in 1908.

Further, numerous additions and alterations were made in the first two decades of the early twentieth century decreasing in frequency into the 1930s and 1940s (Cottee 2004: 111).

By 1975 passenger services to Bourke, Cobar and Coonamble were replaced by a road coach service connecting with the trains at Dubbo Railway Station. The 1980s saw the demolition of several by then anachronistic structural elements including the municipal gas siding, the livestock loading facility, the Darling Street gatehouse and the Institute Hall (relocated). The Dubbo–Molong line was decommissioned in 1988.

Dubbo Railway Station remains an operational rail station on the Main Western Line, operated by NSW Trains although the residence at 106 Darling Street is now in private ownership.

4.4 LOCAL HISTORIC ARCHAEOLOGICAL CONTEXT

4.4.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any potential previously-recorded heritage within the study area. The results of this search are summarised in **Table 4-1**.

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

Name of Database Searched	Date of Search	Type of Search	Comment
National Heritage List	9 October 2017	NSW	No items listed are located within the study area.
Australian Heritage Database	9 October 2017	Dubbo	No items listed are located within the study area.
NSW Heritage Office SHR and SHI	9 October 2017	Dubbo	No items listed are located within the study area. One item, Dubbo Rail Station and Yard Group (Appendix 2), is located 370 metres west of the study area. The Macquarie River Rail Bridge (SHR #01032) is located about 1.5 kilometres away.
LEP	9 October 2017	Dubbo LE P 2011	One item listed is located within the study area: Macquarie River Rail Bridge (west of railway station) (I238). Another item, Dubbo Railway Station (I215) (Appendix 3) is located to the west of the study area.
RailCorp Section 170 Heritage and Conservation Register	9 October 2017	Dubbo	Dubbo Railway Precinct (SHI #4806342) is listed as present on Talbragar Street, Dubbo. It is presumed from review of this listing that it does not extend into the current study area.

The study area appears to encompass the curtilage of an item registered with state significance on the SHR (#01032) and Dubbo LEP (I238): Macquarie River Rail Bridge (west of railway station)

(**Figure 4-1**). However, the SHR listing places the item approximately 1.5 kilometres west of the study area (**Figure 4 -2**). The Dubbo LEP Heritage Map (Dubbo LEP Heritage Map Sheet HER-008A) also shows the item's curtilage as being located approximately 1.5 kilometres west of the study area. However, the Dubbo LEP Heritage Map (Dubbo LEP Heritage Map Sheet HER-008B) also shows the item's curtilage as being located in the western portion of the study area, at the confluence of the Dubbo–Coonamble Railway, Main Western Railway and decommissioned Molong–Dubbo Railway lines, as shown on (**Figure 4-1**). The latter appears to be an error on the Dubbo LEP Heritage Map. Nevertheless, visual inspection of this area was undertaken in this area to confirm whether any items of historic significance are evident at this location (**Section 5**).

The study area is also located approximately 370 metres east of the Dubbo Rail Station and Yard Group SHR curtilage (**Figure 4-3**). The Dubbo Rail Station and Yard Group is listed on the SHR as database #01130 and Schedule 5 of the Dubbo LEP as I215. It is noteworthy that that mapped curtilage for Dubbo Rail Station on the SHR and LEP are not the same, although neither extend as far east as the study area.

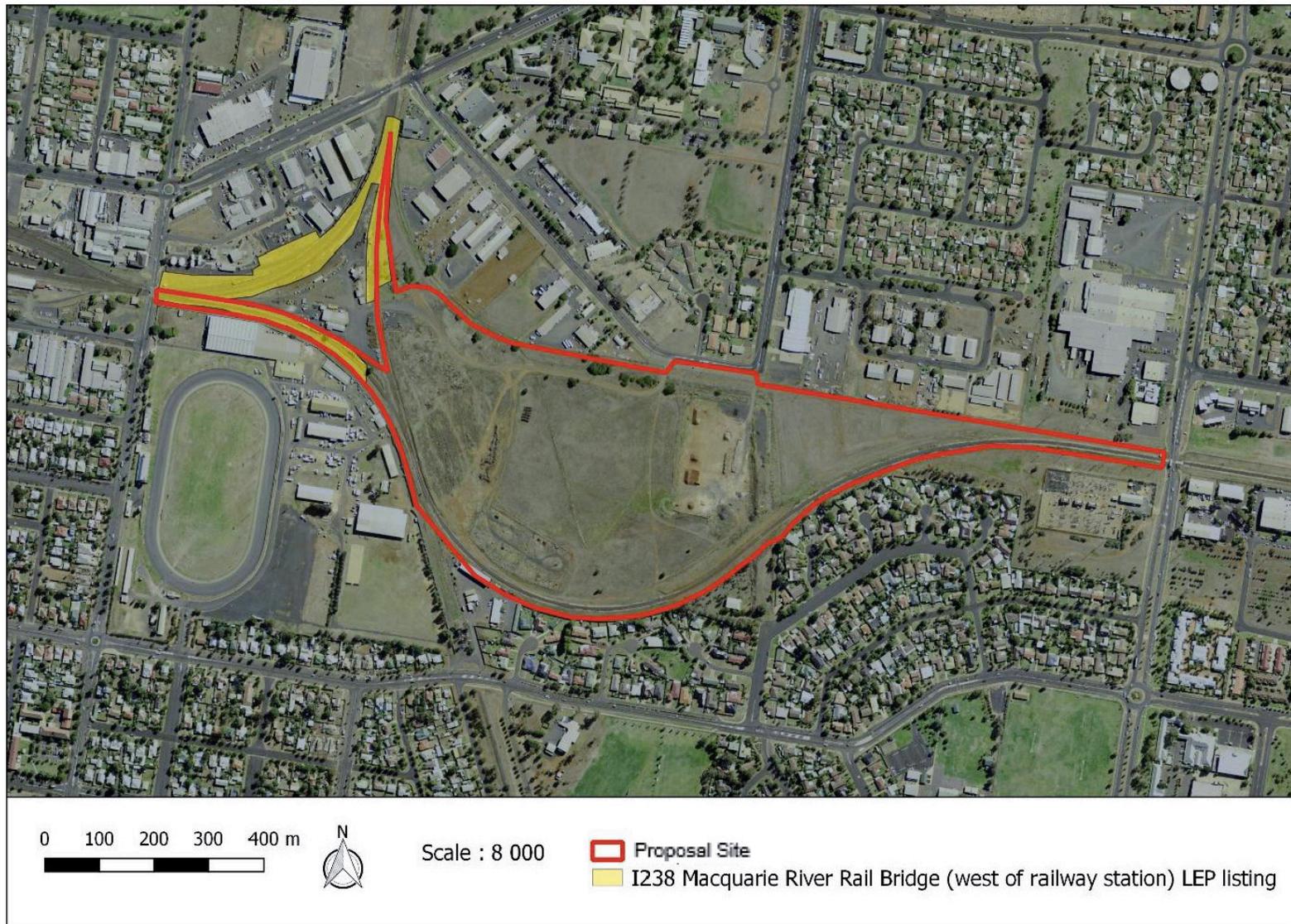


Figure 4-1: Aerial showing the western curtilage portion of the Macquarie River Rail Bridge as shown on the Dubbo LEP Heritage Map in relation to the study area

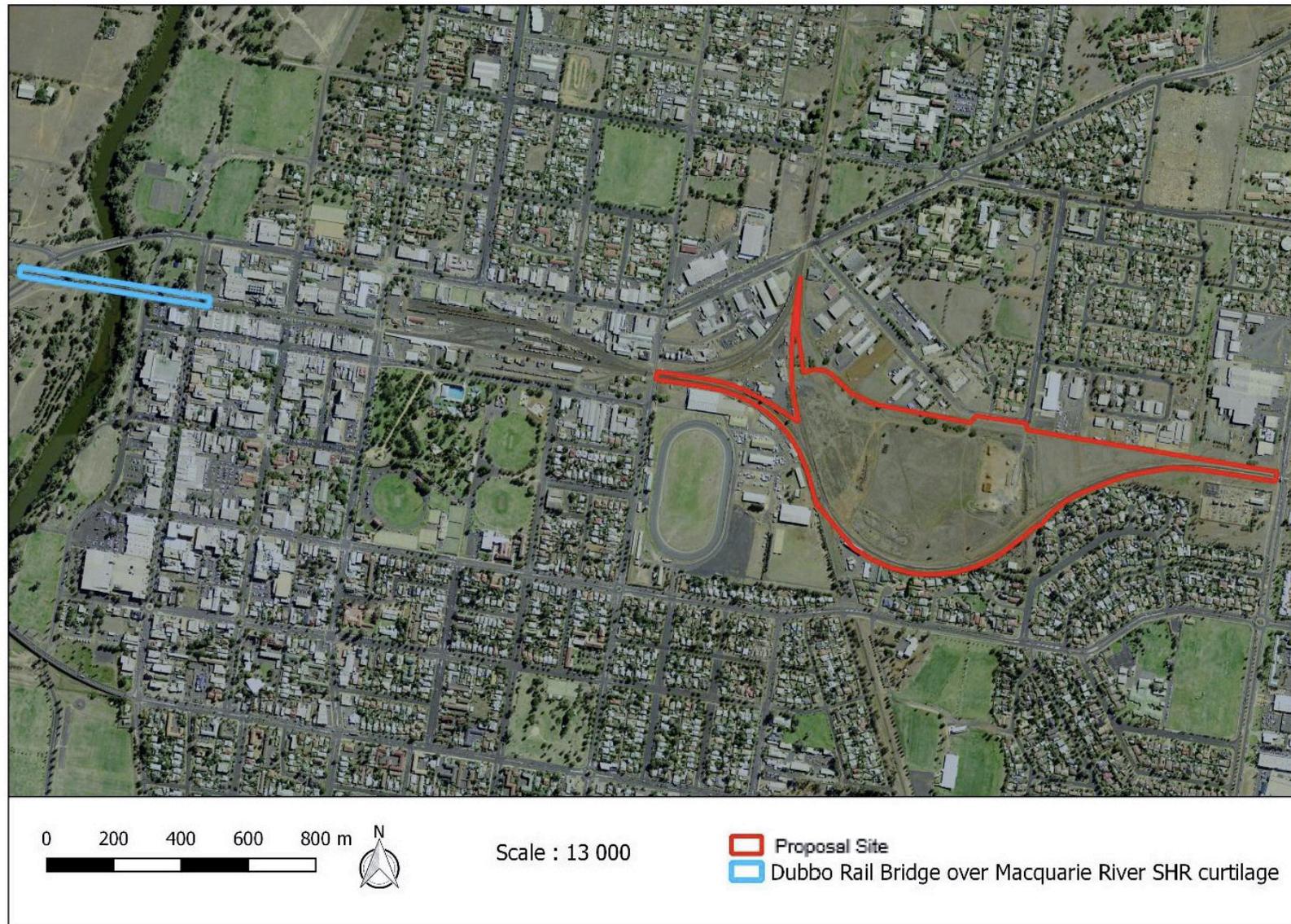


Figure 4-2: Map showing the curtilage of the Dubbo Rail Bridge over Macquarie River as shown on the SHR listing in relation to the study area



Figure 4-3: Map showing the curtilage of the Dubbo Railway Station and Yard Group as shown on the SHR listing in relation to the study area

5 ASSESSMENT RESULTS

5.1 SURVEY METHODOLOGY

Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004). Inspection of the study area was carried out over two phases, the preliminary heritage assessment completed on Wednesday 25 October and Tuesday 13 November 2017 and reported in OzArk 2017c, and the additional inspection completed on Tuesday 13 February 2018 associated with the current assessment. The non-Aboriginal heritage field survey was completed concurrently with the Aboriginal heritage field assessment in both instances. Pedestrian transects were used to assess the study area with track data captured via handheld GPS as shown in **Figure 5-1**.

5.1.1 Aboriginal heritage

Emphasis was placed upon areas with minimal ground surface disturbance, good ground surface exposure and landforms identified as having any Aboriginal archaeological potential. All trees deemed to be of sufficient age with potential to contain Aboriginal cultural scarring or carving were inspected.

Consultation with Aboriginal stakeholders was conducted during the current assessment and two Aboriginal community representatives from Tubba-Gah Traditional Owners, accompanied the comprehensive field assessment.

5.1.2 Non-Aboriginal heritage

Pedestrian transects were completed to ground-truth existing levels of disturbance, confirm the location and curtilage of previously recorded heritage items (**Section 4.4**), and to assess whether any other non-Aboriginal heritage items exist, or are likely to exist, in the study area. Emphasis was placed within areas displaying minimal ground surface disturbance, as well as landforms identified as having historic archaeological potential, such as the potential location of the former fettlers' camp.

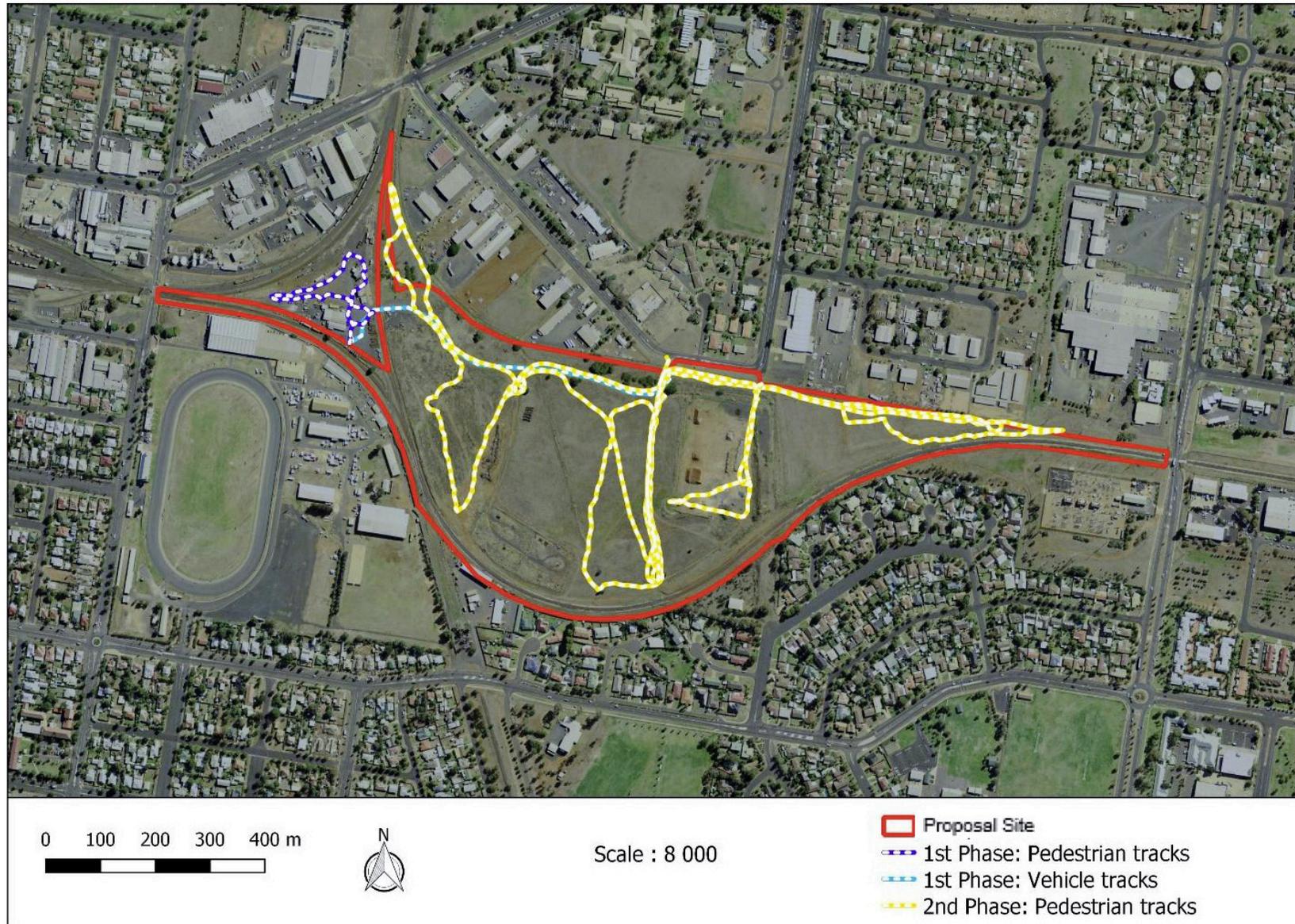


Figure 5-1: Survey coverage within the study area

5.2 ABORIGINAL HERITAGE RESULTS

As noted in **Section 3.3**, 112 Aboriginal sites have been previously recorded within approximately eight square kilometres of the study area. Of these sites, none are located within the study area, and those sites shown to be located closest to the study area from the coordinates provided by the AHIMS database are incorrect (**Section 3.3.1**).

No Aboriginal sites were recorded as a result of the site inspections. In addition to this, no landforms with increased archaeological sensitivity and potential to contain sub-surface deposits were identified. Only one tree was deemed old enough to possess cultural scarring and no potential scars were identified. Vegetation within the study area was predominantly composed of grasses and weeds with some immature eucalypt trees, and some exotic trees and shrubs. Ground surface exposure across the study area was generally low (25 per cent), however, ground surface visibility within areas of exposure were high, averaging 80 per cent. Exposures were afforded by vehicle tracks, drainage work, earthworks and fence lines. Soils were generally composed of brown silty sand with some waterworn pebble and cobble inclusions, and some railway track ballast. No stone material suitable for manufacturing stone artefacts was identified within the study area, and no rock outcropping was identified.

High levels of ground surface disturbance were identified across the entirety of the study area, which is likely to have removed Aboriginal cultural remains, had they existed. Most of the area was confirmed to be disturbed land due to vegetation clearance, the construction of the railway formation, roads and pavements, vehicle tracks, drainage basins and other features, and fences (**Plates 1 to 8**). The field inspections also confirmed the environment of the study area would not have been conducive to repeated, long-term occupation and evidence of any transient occupation may have been obscured or dissipated due to the impact of flooding events in this landform type.

5.3 NON-ABORIGINAL HERITAGE RESULTS

A search of the Heritage Council of NSW administered heritage databases returned one record for a known historical heritage site within the designated search area (shown in **Table 4-1**). The Macquarie River Rail Bridge (west of railway station) is listed on the Dubbo LEP as item number 238 and the curtilage is shown to be located in the west of the study area (**Figure 4-1**). In order to further confirm the discrepancy in the listing, the western portion of the study area was inspected on foot. No historic items associated with the Macquarie River Rail Bridge (west of railway station) were found to be located in this area.

5.3.1 The Boradze depot

Preliminary inspection of the western portion of the study area recorded one non-Aboriginal heritage item, the Boradze depot, located within close proximity of the northwest section of study area (**Figure 5-2**). The depot is comprised of two corrugated iron buildings which were used to

cut and treat the timber sleepers for the railway lines (**Section 4.3**). The timbers arrive rough cut from the sawmills via the rail line and are then 'bored', 'adzed' and treated to form the final wooden railway sleeper. From here they are put on special rail wagons to be taken along the line and then laid. The disused wagons can be seen in image **Plate 9**.

The depot is not listed on any administered heritage databases, and no previous significance assessment of the depot has been conducted. Historical research into the site conducted during the current assessment included consultation with local photographers, newspapers, and libraries as well as searches of Trove through the National Library of Australia and other digitised historical databases and specialty forums. The only historical mentions of a boradze depot in NSW relate to the Taree yard, which operated until 2012/2013 and has since been dismantled. However, the *Bathurst Times* (27/06/1922) makes mention of an adzing machine operating from the railway yards on the Dubbo section of the Molong-Dubbo line. This document further remarks that 'truck-loads' of sleepers were treated and stockpiled at these yards. While these mentions likely reference the boradze depot adjacent the study area, there are no details which firmly attribute this information to the site.

As the Boradze depot is not within the current study area, further research into its potential significance is not definitively required, although a preliminary review is provided below.

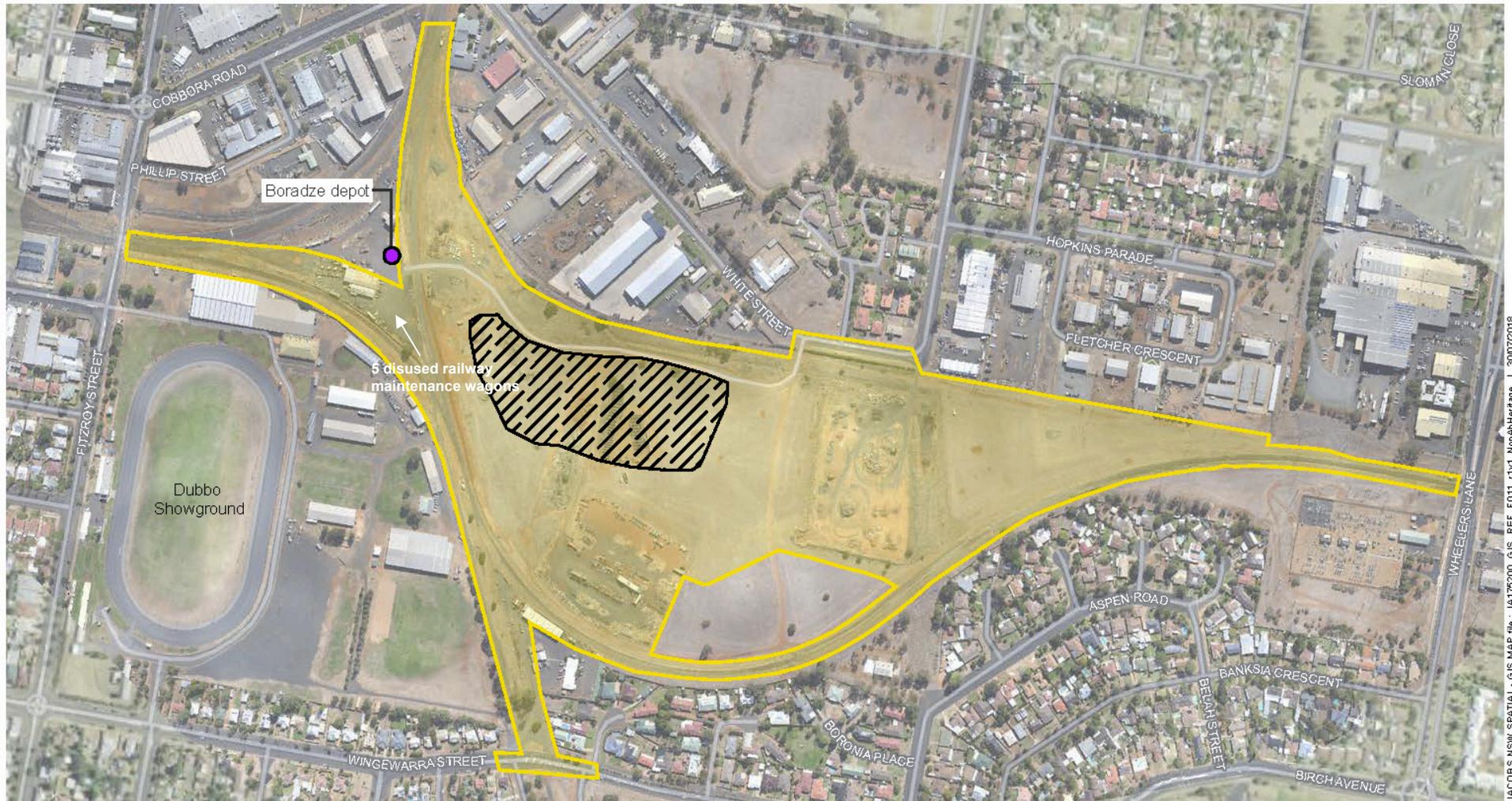
At the time of the field survey the study area contained a row of disused railway maintenance wagons (refer to **Plate 9**), some used for carrying sleepers and others for carrying and dispersing the ballast along the line. These wagons have since been removed from the site by the current operator of the site and do not form part of this assessment.

5.3.2 Fettlers' camp / signalman house / Tin Town

The current assessment also aimed to assess the potential for remains of Tin Town, the fettlers' camp and signalman's house being present in the study area. The credibility of the connection between Tin Town and the fettler's camp, alluded to by anecdotal sources, was also assessed. Anecdotal accounts place the location of the fettler's camp as 'beyond the showgrounds', potentially within the current study area adjacent the route of the old line (**Figure 5-2**). Historical sources, however, place the site of Tin Town as adjacent Wellington Road (now including Cobra Street) more than 500 metres to the south of the study area (*The Dubbo Liberal* 10/05/1932). The settlement was most likely located eastwards of the corner of Hampden and Cobra Streets where a proposal was put forward to plant a thick screen of trees "so that the 'Tin Town' settlement might be shielded from the view of the Highway" (*The Dubbo Liberal* 13/01/1949, 22/11/1947). While the settlement may have grown after this time before its eventual demolition by the 1960s, no sources suggest that it ever extended so far as to cross what is now Wingewarra Street and to transect the current study area. As such, no material traces were expected to be recorded during the physical assessment. The distance of Tin Town from the route of the railway line also makes

a direct connection between this site and the fettler's camp unlikely, beyond a possible movement of fettlers into Tin Town following relocation of their camp. The fettler's camp, therefore, would have remained a small collection of ephemeral dwellings before soon being disassembled once the main focus of rail work had progressed further along the line. Material archaeological traces of such an occupation would be expected to be sparse and readily dispersed by low-depth ground disturbances.

During the physical assessment, no surface manifestations of artefacts or features potentially associated with Tin Town, the fettlers camp or any house were identified. The location of the camp and house are likely to have been bulldozed once they were no longer in use. In addition, ground surfaces throughout the study area have been disturbed, sometimes at-depth and so, while isolated instances of buried historic relics is feasible, any that are present would be highly modified and disassociated with their context. Given the temporary nature of the fettlers' camp (**Section 4.3**) and current disturbances, the study area is unlikely to be associated with intact or significant subsurface deposits.



JACOBS NSW SPATIAL - GIS MAP file : I:\175200_GIS_REF_F011_riv1_NonAbHeritage | 30072018

- Legend**
- Construction footprint
 - Potential fettlers' camp location

Imagery © TNSW and © Department of Finance, Services & Innovation 2017



Subject to site survey and detailed design. Not to be used for construction.

Figure 5-2: Location of non-Aboriginal heritage items within the vicinity of the study area.

5.3.3 Dubbo Rail Station and Yard Group

The Dubbo Rail Station and Yard Group (**Figure 4-3**) is located outside the study area and as such, was not visited during the inspection. Given the distance between the Proposal and the Dubbo Rail Station and Yard Group, it is unlikely the Proposal will have significant aesthetic impacts on the Dubbo Rail Station and Yard Group.

5.4 ASSESSMENT OF NON-ABORIGINAL HERITAGE SIGNIFICANCE

5.4.1 Assessment of significance—general principles

The current assessment will evaluate the heritage significance of the non-Aboriginal heritage sites identified within the study area in accordance with the NSW Heritage Office guidelines for *Assessing Heritage Significance* (Heritage Office 2001). A non-Aboriginal heritage site must satisfy at minimum one of the following criterion to be assessed as having heritage significance:

Criterion (a): *An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).*

Criterion (b): *An item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area).*

Criterion (c): *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).*

Criterion (d): *An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons.*

Criterion (e): *An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area).*

Criterion (f): *An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area).*

Criterion (g): *An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments).*

Significance assessments are carried out on the basis that decisions about the future of heritage items must be informed by an understanding of these items' heritage values. The *Australia ICOMOS Burra Charter* (Australia ICOMOS 2013) recognises four categories of heritage value: historic, aesthetic, scientific, and social significance

Items are categorised as having local or state level significance. The level of significance is assessed in accordance with the geographical extent of the item's value. An item of state significance is one that is important to the people of NSW whilst an item of local significance is one that is principally important to the people of a specific LGA.

5.4.2 Assessment of significance of historic items

The following significance assessment of recorded non-Aboriginal heritage was conducted in accordance with the NSW Heritage Office guidelines and the *Burra Charter* (Australia ICOMOS 2013).

Please note, a preliminary significance assessment has only been prepared for the Boradze depot, as it is not located within the study area for the Proposal. That being said, there is a paucity of information available to inform a significance assessment.

No significance assessment is provided for the fettlers' camp or signalman's house, as no evidence of these sites can be found; nor for the Dubbo Railway Station and Yards or the Macquarie River Rail Bridge, as neither are in close proximity to the study area and both have already had significance assessments completed.

5.4.2.1 Boradze depot

Criterion (a): *An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).*

The Boradze depot in itself is not important in the course of local history but within the context of the broader framework of the rail industry in the development of Dubbo, it does possess local significance.

Criterion (b): *An item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area).*

Not relevant.

Criterion (c): *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area).*

Not relevant.

Criterion (d): *An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons.*

Not relevant.

Criterion (e): *An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area).*

Not relevant.

Criterion (f): *An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area).*

The Boradze depot in itself comprises two associated galvanised iron sheds, a furnace and rolling benches for the movement of timbers. Documentation on the existence of such industrial sheds is scarce in NSW, but it appears that the only other one known was at Taree and has now been dismantled. This does increase the likely rarity of this type of building as an element of an historic railway work yard.

Criterion (g): *An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments).*

Not relevant.

Summary Statement of significance (preliminary)

The Boradze depot contributes to the story of the rail industry in Dubbo, which is an aspect of the economic and social development of the town through the twentieth century. It is also likely to be a representative example of this element of rail industry structures and may be rare over NSW.

Overall, the Boradze depot is preliminarily assessed as having local heritage significance.

5.5 LIKELY IMPACTS TO HERITAGE FROM THE PROPOSAL

As no Aboriginal heritage items were recorded during this assessment, there are no foreseeable impacts to Aboriginal heritage as a result of this Proposal.

No known non-Aboriginal heritage sites have been recorded within the study area and hence there are no foreseeable impacts to non-Aboriginal heritage as a result of this Proposal. The nearby state heritage listed Dubbo Railway Station and Yard group is not visible from the study area and is considered unlikely to be impacted in terms of visual amenity.

If works are likely to extend beyond the study area boundary, then additional assessment may be required to determine whether this will generate potential impacts to items of heritage significance. This is particularly relevant to the Boradze depot, which is outside the study area but within close proximity of it. Should impacts be proposed to this item, a Statement of Heritage Impact (SOHI) would then be required to assess the degree of impact and propose management measures.

6 DISCUSSION AND CONCLUSION

Overall conclusions based on the results contained within this assessment and the local contextual data, indicate the following regarding anticipated and/or known constraints relevant to the Proposal:

6.1 ABORIGINAL HERITAGE

- Knowledge of the environmental contexts of the study area and a desktop review of the known local and regional archaeological record, indicates the most likely sites to be encountered are:
 - Artefact scatters are possible, however, due to the high level of disturbance across the study area this site type, if present, has a high likelihood of being disturbed and/or of low integrity; and
 - Isolated finds may occur anywhere, especially in disturbed locations.
- Comprehensive visual inspection of the study area over three site visits found no evidence of Aboriginal heritage and confirmed that the majority of the study area had been subject to previous ground disturbance, often at-depth. Any objects present subsurface would therefore be expected to be isolated, removed from context, and of low significance if present at all.
- No Aboriginal cultural values arose out of the consultation process or during visual inspection of the study area in the presence of Aboriginal community representatives.
- The Proposal has a low likelihood of encountering items of Aboriginal heritage.

6.2 NON-ABORIGINAL HERITAGE

- One historic heritage item, the Boradze depot, was identified during site inspections, but is located outside the study area. Given its association with the development of the railway in Dubbo, this has been preliminarily assessed as meeting the criteria for local heritage significance. As the Boradze depot is outside the study area for the Proposal, there is no likely impact and hence a SOHI is not required. Should impacts to this item be proposed, a SOHI would be needed, which would inform the scope for potential management measures required.
- Tin Town was established to have been most likely located outside of the study area, approximately 500 metres to the south.
- The presence of a fettlers' camp and the signalman's house are generally known, however, the exact location of these sites is not known. The areas identified as the most likely location of these elements was comprehensively inspected on more than one occasion and no surface indications of artefacts or features were recorded. Furthermore, this area had been subject to substantial previous ground disturbance. This assessment concluded that the likelihood of the study area containing *in situ* archaeological deposits

or other intact heritage associated with these sites is low and therefore, a SOHI will not be required for these items.

- One state heritage listed item, the Dubbo Rail Station and Yard Group, is located 370 metres east of the study area. The Proposal will not directly interact with this item, and has been assessed to be extremely unlikely to have an impact on its aesthetic values, due to the Proposal location not coinciding with any significant views of the Dubbo Rail Station and Yard Group.
- Desktop and field inspection of the study area have confirmed that the Macquarie River Rail Bridge is not located within the study area, and therefore, potential impacts to this item do not need to be assessed.

7 MANAGEMENT RECOMMENDATIONS

7.1 ABORIGINAL CULTURAL HERITAGE

Existing levels of disturbance across the entirety of the study area are high, relating primarily to the use and construction of the railway line, as well as water management. As such, Aboriginal sites are unlikely to remain extant and hence unlikely to be harmed.

To ensure the greatest possible protection to the area's Aboriginal cultural heritage values, the following recommendations are made:

- 1) The Proposal may proceed within the study area without further archaeological investigation if all land and ground disturbance activities are confined to within the assessed study area boundary, as this will eliminate the risk of harm to Aboriginal objects potentially present in adjacent landforms. Should the proposed works extend beyond the assessed areas boundary, then further archaeological assessment may be required.
- 2) This assessment has concluded that there is a low likelihood that the Proposal will adversely harm Aboriginal cultural heritage items or sites. However, during the course of works, if Aboriginal artefacts or skeletal material are noted, all work should cease and the procedures in the TfNSW's *Unexpected Heritage Finds Guideline* (TfNSW, 2016) would be followed (refer to **Appendix 4**).
- 3) Work crews should undergo cultural heritage induction to ensure they recognise Aboriginal artefacts (see **Appendix 5**) and are aware of the legislative protection of Aboriginal objects under the NPW Act and the contents of the Unanticipated Finds Protocol.

7.2 NON-ABORIGINAL HERITAGE

- 4) A heritage induction would be provided to workers prior to construction, informing them of the location of known heritage items and guidelines to follow if unanticipated heritage items or deposits are located during construction.
- 5) No identified items of non-Aboriginal heritage within the current study area will be impacted by the current Proposal and hence no further non-Aboriginal heritage investigation is considered necessary.
- 6) The Boradze depot, which may be of local heritage significance (but is not currently a listed item), is located outside the study area boundary. Should works be proposed to this depot then a SOHI would not need to be prepared prior to commencement of works.
- 7) Dubbo Regional Council should be notified of the error in the LEP mapping of the curtilage of the Macquarie River rail bridge.
- 8) In the unlikely event that historical relics or deposits are unearthed during the construction of the Proposal, the TfNSW's *Unexpected Heritage Finds Guideline* (TfNSW, 2016) would be followed (refer to **Appendix 4**).

- 9) As this report identifies an item with potential local heritage significance, a copy of this report should be sent to the Dubbo Regional Council for their consideration prior to the Proposal commencing.

8 REFERENCES

- Aitken 2007 Christo Aitken & Associates 2007. *Dubbo Urban Heritage Review 2006-07: Community Based Heritage Study, Final Report (Volume 1)*. Report to: Dubbo City Council.
- Australia ICOMOS 2013 International Council on Monuments and Sites 2013. *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance*, 2013.
- Balme 1986 Balme, J. *North Central Rivers Archaeological Project*. Report to National Parks and Wildlife Service, NSW.
- Bell 1980 Bell, D. 1980. *Aboriginal Carved Trees in New South Wales: A Survey Report: Part 1*. Report to NSW National Parks and Wildlife Service
- BoM 2017 Bureau of Meteorology (BoM) [website]. Available from: <http://www.bom.gov.au/> [accessed 7th November 2017].
- Burke & Smith 2004 Burke, H. and Smith, C. 2004. *The Archaeologist's Field Handbook*, Blackwell, Oxford.
- Cottee 2004 Cottee, J. 2002. *Stations on the Track: Selected New South Wales Country Railway Stations – An Historical Overview*. Ginninderra Press, Charnwood, ACT.
- DECCW 2010a DECCW. 2010. *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. Department of Environment, Climate Change and Water, Sydney.
- DECCW 2010b DECCW. 2010. *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. Department of Environment, Climate Change and Water, Sydney.
- Dormer 1981 Dormer, M. 1981. *Dubbo to the Turn of the Century: An Illustrated History of Dubbo and Districts 1818-1900*. Macquarie Publications, Dubbo.
- Etheridge 1918 Etheridge, R. 1918. The Dendroglyphs or “Carved Trees” of NSW. *Memoirs of the Geographical Survey of NSW*. Ethnological Series No. 3.
- Garnsey 1942 Garnsey, E.J. 1942. *A Treatise on the Aborigines of Dubbo and District: Their Camp-Life, Habits and Customs*. Dubbo: Dubbo Museum and Historical Society.
- Heritage Council 2006 Heritage Council of NSW. 2006. *Historical Archaeology Code of Practice*. In NSW Office of Environment & Heritage [electronic article]. Available from: <http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/His tArchCodeofPractice.pdf>

- Horton 1994 Horton, David (ed.) *The Encyclopaedia of Aboriginal Australia*. Canberra: Aboriginal Studies Press.
- Kelton 1995 Kelton, J. *An Archaeological Survey for the Proposed Keswick Housing Subdivision, Dubbo, NSW*. Central West Archaeological Services.
- Kelton 1998 Kelton, J. 1998. *An Aboriginal Archaeological Survey of Industrial Candidate Area No. 1 – Mitchell / Eulomogo, East of Dubbo, central West Plains, NSW*. Report to Dubbo City Council.
- Koettig 1985 Koettig, M. 1985. *Assessment of Aboriginal sites in the Dubbo City area*. Report to Dubbo City Council.
- MWA International 2009 MWA International. 2009. *Thematic History of the NSW Railways*. Report to Office of Rail Heritage (RailCorp).
- Mitchell 2002 Mitchell, Dr. Peter. 2002. *Description for NSW (Mitchell) Landscapes Version 2*. Department of Environment and Climate Change NSW.
- NPWS 2003 National Parks and Wildlife Services. 2003. *The Bioregions of New South Wales – Their Biodiversity, Conservation and History*. NSW National Parks and Wildlife Service, Hurstville.
- NSW Heritage Office 2002 NSW Heritage Office 2002. *Statements of Heritage Impact*. Available from: <http://www.environment.nsw.gov.au/Heritage/publications/> [accessed 18 October 2017].
- NSW HO and DUAP 1996 NSW Heritage Office and Department of Urban Affairs and Planning 1996. *Regional Histories: Regional Histories of New South Wales*. NSW Heritage Office and Department of Urban Affairs and Planning, Sydney.
- OEH 2010 Office of Environment and Heritage. 2010. *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*.
- OEH 2011 Office of Environment and Heritage. 2011. *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in New South Wales*. Department of Environment, Climate Change and Water, Sydney.
- Oxley 1820 Oxley, J. *Journals of Two Expeditions into the Interior of New South Wales: Undertaken by Order of the British Government in the Years 1817-1818*. London: Murray.
- OzArk 2002 OzArk EHM. 2002. *Aboriginal and European Heritage Survey: Western Plains Zoo, Dubbo, NSW*. Report to The Zoological Parks Board, NSW.
- OzArk 2006 OzArk Environment and Heritage Management 2006. *Dubbo Local Government Aboriginal Heritage Study*. Report to Dubbo City Council.

- OzArk 2014 OzArk Environmental & Heritage Management Pty Ltd. 2014. *Aboriginal Archaeological Assessment: Hennessy Drive Subdivision, Dubbo NSW*. Report to Geolyse Pty Ltd.
- OzArk 2016 OzArk Environmental & Heritage Management Pty Ltd. 2016. *Central West Local Land Services Travelling Stock Reserves Study*. Report for Central West Local Lands Service.
- OzArk 2017a OzArk Environmental & Heritage Management Pty Ltd. 2017. *Former Royal Australian Air Force (RAAF) Base, Dubbo LGA, NSW*. Report to Geolyse Pty Ltd.
- OzArk 2017b OzArk Environmental & Heritage Management Pty Ltd. 2017. *Aboriginal Due Diligence Archaeological Assessment: Upgrade of Sewer R, Dubbo Regional LGA*. Report to NSW Public Works Advisory.
- OzArk 2017c OzArk Environmental & Heritage Management Pty Ltd. 2017. *Preliminary Heritage Assessment – Aboriginal and Historic Heritage: Regional Rail Maintenance Facility, Dubbo, NSW, Dubbo Regional LGA*. Report to Transport for NSW.
- Pearson 1981 Pearson, M. *Seen through Different Eyes: Changing Land Use and Settlement Patterns in the Upper Macquarie River Region of NSW from Prehistoric Times to 1860*. [PhD thesis] Submitted to the Department of Prehistory and Anthropology, The Australian National University.
- Perumal 1986 Perumal, Wrathall and Murphy Pty Ltd 1986 *Dubbo Heritage Study*. Report to: Dubbo City Council.
- Purcell 2000 Purcell 2000. *DECCW Aboriginal Cultural Heritage Assessment Brigalow Belt South Stage 1*. Report to Resource and Conservation Assessment Council.
- Purcell 2002 Purcell, P. *DECCW Aboriginal Cultural Heritage Assessment, Brigalow Belt South, Stage 2*. Report to Resource and Conservation Assessment Council.
- Shipard & Mortimore 1996 Shipard, N and Mortimore, P. 1996. *An Explanation of Development Strategies for the Proposed Dubbo Cultural Common on the Site of the Former RAAF Base Dubbo, Store Depot*.
- Sturt 1833 Sturt, C. *Two Expeditions into the Interior of Southern Australia*. London: Smith, Elder and Co.
- Tindale 1974 Tindale, A. 1974, *Aboriginal Tribes of Australia*, University of California Press.

PLATES



Plate 1: View across a stockpiling location in the study area



Plate 2: View along the southern boundary of the study area including the railway line



Plate 3: An access track within the study area providing a good area of exposure



Plate 4: Drainage work being completed in the western end of the study area during the 2017 site visit



Plate 5: View to the south, in the western portion of the study area



Plate 6: Sample area in the centre of the study area with no ground surface exposure due to thick exotic grass cover



Plate 7: View of the Boradze depot



Plate 8: View across the western ARTC area (known as the ARTC triangle), much of which is outside the study area, immediately to the west



Plate 9: View over the area the fettlers' camp may have covered, showing dumped materials and flattened ground



Plate 10: View south over the eastern end of the study area showing the machine levelled water detention basins that characterise this area, with the bridge abutment in the distance



Plate 11: Zone of ground surface visibility around the Council stockpile area. Note the different conditions for assessment in contrast to Plate 6

APPENDIX 1: AHIMS SEARCH RESULTS

 Office of Environment & Heritage		AHIMS Web Services (AWS) Extensive search - Site list report							Your Ref/PO Number : TNSW Client Service ID : 305598	
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0246	EC-OS-1;Eulomogo Creek;	AGD	55	654950	6426800	Open site	Valid	Artefact :-	Open Camp Site	4378
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd							
36-1-0248	Eulomogo Creek (EC-OS-3)	GDA	55	656544	6427593	Open site	Valid	Artefact :-	Open Camp Site	4378
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd,OzArk Environmental and Heritage Management							
36-1-0249	EC-OS-4;Keswick South (Eulomogo);	AGD	55	656100	6428000	Open site	Valid	Artefact :-	Open Camp Site	4378
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd							
36-1-0250	EC-OS-5; Keswick South (Eulomogo)	GDA	55	656662	6427183	Open site	Valid	Artefact :-	Open Camp Site	4378
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd,OzArk Environmental and Heritage Management							
36-1-0252	EC-ST-1; Keswick South (Eulomogo)	GDA	55	656559	6427271	Open site	Valid	Modified Tree (Carved or Scarred) :-	Scarred Tree	4378
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd,OzArk Environmental and Heritage Management							
36-1-0254	EC-AG-1;Eulomogo Creek;	AGD	55	655380	6426870	Open site	Valid	Grinding Groove :-	Axe Grinding Groove	4378
	Contact	Recorders	Central West Archaeological and Heritage Services Pty Ltd							
36-1-0421	WPZ-ST4	AGD	55	649255	6427800	Open site	Valid	Modified Tree (Carved or Scarred) :-		98215
	Contact	Recorders	Doctor,Jodie Benton							
36-1-0399	SP-OS-09	AGD	55	650192	6432258	Open site	Valid	Artefact :-		
	Contact	Recorders	L.Nolan							
36-1-0400	SP-OS-05	AGD	55	650841	6432394	Open site	Valid	Artefact :-		
	Contact	Recorders	L.Nolan							
36-1-0401	SP-OS-04	AGD	55	651050	6432770	Open site	Valid	Artefact :-		
	Contact	Recorders	L.Nolan							
36-1-0402	SP-OS-03	AGD	55	651120	6433030	Open site	Valid	Artefact :-		
	Contact	Recorders	L.Nolan							
36-1-0403	Cobra Street ST	AGD	55	651422	6430087	Open site	Valid	Modified Tree (Carved or Scarred) :-		1701
	Contact	Recorders	Miss.Rebecca Ogden-Brunell							
36-1-0398	SP-OS-01	AGD	55	651210	6433470	Open site	Valid	Artefact :-		
	Contact	Recorders	L.Nolan							
36-1-0378	MD51	AGD	55	650190	6433600	Open site	Valid	Modified Tree (Carved or Scarred) :-		
	Contact	Recorders	Navin Officer Heritage Consultants Pty Ltd							

Report generated by AHIMS Web Service on 08/10/2017 for Philippa Sokol for the following area at Datum :GDA, Zone : 55, Eastings : 648730 - 656730, Northings : 6426908 - 6434908 with a Buffer of 0 meters. Additional Info : background information. Number of Aboriginal sites and Aboriginal objects found is 112
 This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 1 of 9

 Office of Environment & Heritage		AHIMS Web Services (AWS) Extensive search - Site list report							Your Ref/PO Number : TNSW Client Service ID : 305598	
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0409	SP-OS-08	AGD	55	650680	6431960	Open site	Valid	Artefact :-		
	Contact	Recorders	L.Nolan							
36-1-0410	SP-OS-07	AGD	55	650670	6431960	Open site	Valid	Artefact :-		
	Contact	Recorders	L.Nolan							
36-1-0422	WPZ-ST5	AGD	55	649244	6427771	Open site	Valid	Modified Tree (Carved or Scarred) :-		98215
	Contact	Recorders	Doctor,Jodie Benton							
36-1-0550	DLGA-ST-07	GDA	55	650722	6431972	Open site	Valid	Modified Tree (Carved or Scarred) :-		102502
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0551	DLGA-ST-06	GDA	55	650933	6432435	Open site	Valid	Modified Tree (Carved or Scarred) :-		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0552	DLGA-OS-15	GDA	55	650451	6431881	Open site	Valid	Artefact :-		102502
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0553	DLGA-OS-11	GDA	55	650578	6432014	Open site	Valid	Artefact : 2		102502
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0554	DLGA-IF-07	GDA	55	650622	6432141	Open site	Valid	Artefact :-		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0555	DLGA-IF-10	GDA	55	650457	6432023	Open site	Valid	Artefact :-		102502
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0556	DLGA-ST-03	AGD	55	650466	6427053	Open site	Valid	Modified Tree (Carved or Scarred) :-		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0557	DLGA-ST-02	AGD	55	651652	6427032	Open site	Valid	Modified Tree (Carved or Scarred) :-		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0558	DLGA-ST-01	AGD	55	651300	6426770	Open site	Valid	Modified Tree (Carved or Scarred) :-		
	Contact	Recorders	OzArk Environmental and Heritage Management							
36-1-0559	DLGA-OS-03	AGD	55	651324	6427339	Open site	Valid	Artefact : 5		
	Contact	Recorders	OzArk Environmental and Heritage Management							

Report generated by AHIMS Web Service on 08/10/2017 for Philippa Sokol for the following area at Datum :GDA, Zone : 55, Eastings : 648730 - 656730, Northings : 6426908 - 6434908 with a Buffer of 0 meters. Additional Info : background information. Number of Aboriginal sites and Aboriginal objects found is 112
 This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 2 of 9

 Office of Environment & Heritage		AHIMS Web Services (AWS) Extensive search - Site list report				Your Ref/PO Number : TNSW Client Service ID : 305598				
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0560	DLGA-OS-02	AGD	55	651407	6427264	Open site	Valid	Artefact : 2		
	Contact	Recorders		OzArk Environmental and Heritage Management				Permits		
36-1-0561	DLGA-OS-01	AGD	55	651688	6427148	Open site	Valid	Artefact : 18		
	Contact	Recorders		OzArk Environmental and Heritage Management				Permits		
36-1-0562	DLGA-IF-02	AGD	55	651224	6427616	Open site	Valid	Artefact : -		
	Contact	Recorders		OzArk Environmental and Heritage Management				Permits		
36-1-0563	DLGA-IF-01	AGD	55	651353	6427429	Open site	Valid	Artefact : -		
	Contact	Recorders		OzArk Environmental and Heritage Management				Permits		
36-1-0318	TG-ST-02	AGD	55	655450	6432510	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	Recorders		Lloyd Nolan				Permits		
36-1-0325	PR-IF_01	AGD	55	648720	6428400	Open site	Valid	Artefact : 1		Isolated Find
	Contact	Recorders		Lloyd Nolan				Permits		
36-1-0324	TG-ST-01	AGD	55	655780	6431770	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	Recorders		Lloyd Nolan				Permits		
36-1-0319	TG-9-01	AGD	55	655710	6431840	Open site	Valid	Stone Quarry : -, Artefact : -	Quarry	
	Contact	Recorders		Lloyd Nolan				Permits		
36-1-0320	TG-05-04	AGD	55	655690	6432220	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders		Lloyd Nolan				Permits		
36-1-0321	TG-05-03	AGD	55	655750	6432030	Open site	Valid	Artefact : -	Open Camp Site	
	Contact	Recorders		Lloyd Nolan				Permits		
36-1-0322	TG-05-02	AGD	55	655800	6431580	Open site	Valid	Artefact : -	Open Camp Site	1432
	Contact	Recorders		Lloyd Nolan				Permits		
36-1-0323	TG-05-01	AGD	55	655710	6431840	Open site	Valid	Artefact : -	Open Camp Site	1432
	Contact	Recorders		Lloyd Nolan				Permits		
36-1-0194	TC-ST-2	GDA	55	653434	6433498	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3351
	Contact	Recorders		Jim Kelton, OzArk Environmental and Heritage Management, Miss. Stephanie Rusder				Permits		3977
36-1-0094	M1 Dubbo	AGD	55	649550	6429950	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders		N Franklin, Margrit Koettig, Rex Silcox				Permits		
36-1-0095	M2 Dubbo	AGD	55	649800	6429050	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders		N Franklin, Margrit Koettig, Rex Silcox				Permits		

Report generated by AHIMS Web Service on 08/10/2017 for Philippa Sokol for the following area at Datum :GDA, Zone : 55, Eastings : 648730 - 656730, Northings : 6426908 - 6434908 with a Buffer of 0 meters. Additional Info : background information. Number of Aboriginal sites and Aboriginal objects found is 112
 This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 3 of 9

 Office of Environment & Heritage		AHIMS Web Services (AWS) Extensive search - Site list report				Your Ref/PO Number : TNSW Client Service ID : 305598				
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0096	M3 Dubbo	AGD	55	649760	6428410	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders		N Franklin, Margrit Koettig, Rex Silcox				Permits		
36-1-0040	Dubbo;Cootha;	AGD	55	650955	6427521	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	Contact	Recorders		Michael Pearson				Permits		
36-1-0195	TC-ST-1	AGD	55	653384	6432980	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3351
	Contact	Recorders		Jim Kelton				Permits		
36-1-0157	dundullirial;	AGD	55	650210	6426810	Open site	Valid	Artefact : -	Open Camp Site	1333
	Contact	Recorders		Warren Bluff				Permits		
36-1-0097	Dubbo M4	AGD	55	649810	6428350	Open site	Valid	Artefact : -	Open Camp Site	1065
	Contact	Recorders		N Franklin, Margrit Koettig, Rex Silcox				Permits		
36-1-0213	K-ST-6	AGD	55	653640	6428240	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3350
	Contact	Recorders		Jim Kelton				Permits		
36-1-0174	C-OS-2;	AGD	55	649334	6428326	Open site	Valid	Modified Tree (Carved or Scarred) : 1	Scarred Tree	3700
	Contact	Recorders		Jim Kelton				Permits		
36-1-0175	C-ST-3	AGD	55	650010	6429740	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3700
	Contact	Recorders		Jim Kelton				Permits		
36-1-0176	C-IF-1 (Dubbo)	AGD	55	649810	6429100	Open site	Valid	Artefact : 1	Isolated Find	3700
	Contact	Recorders		Jim Kelton				Permits		
36-1-0177	C-ST-1.	AGD	55	649680	6428790	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	3700
	Contact	Recorders		Jim Kelton				Permits		
36-1-0178	C-OS-1 Dubbo	AGD	55	649680	6428790	Open site	Valid	Artefact : -	Open Camp Site	3700
	Contact	Recorders		Jim Kelton				Permits		
36-1-0179	Keswick-Scarred Tree-5 (K-ST-5)	GDA	55	653794	6429259	Open site	Destroyed	Modified Tree (Carved or Scarred) : -	Scarred Tree	3350
	Contact	Recorders		Central West Archaeological and Heritage Services Pty Ltd, OzArk Environmental and Heritage Management				Permits		3873

Report generated by AHIMS Web Service on 08/10/2017 for Philippa Sokol for the following area at Datum :GDA, Zone : 55, Eastings : 648730 - 656730, Northings : 6426908 - 6434908 with a Buffer of 0 meters. Additional Info : background information. Number of Aboriginal sites and Aboriginal objects found is 112
 This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 4 of 9

 Office of Environment & Heritage		AHIMS Web Services (AWS) Extensive search - Site list report				Your Ref/PO Number : TNSW Client Service ID : 305598					
SiteID	SiteName	Datum	Zone	Eastings	Northings	Context	Site Status	SiteFeatures	SiteTypes	Reports	
36-1-0180	K-ST-4	AGD	55	654590	6428590	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	3350	
Contact		Recorders		Central West Archaeological and Heritage Services Pty Ltd				Permits			
36-1-0181	K-ST-3	AGD	55	654510	6428580	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	3350	
Contact		Recorders		Central West Archaeological and Heritage Services Pty Ltd				Permits			
36-1-0182	K-ST-2	AGD	55	654220	6428870	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	3350	
Contact		Recorders		Central West Archaeological and Heritage Services Pty Ltd				Permits			
36-1-0121	DN 1;	AGD	55	654372	6433337	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	1320	
Contact		Recorders		Denise Donlon,Les Smith				Permits			
36-1-0221	OR-ST-9 (Eulomogo)	AGD	55	650036	6427148	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	3737,4738	
Contact		Recorders		Jim Kelton				Permits			
36-1-0222	OR-IF-2 (Eulomogo)	AGD	55	650120	6427000	Open site	Valid	Artefact : 1	Isolated Find	3737,4738	
Contact		Recorders		Jim Kelton				Permits			
36-1-0223	OR-IF-1 (Eulomogo)	AGD	55	649848	6427271	Open site	Valid	Artefact : -	Isolated Find	3737,4738,98215	
Contact		Recorders		Doctor,Jodie Benton,Jim Kelton				Permits			
36-1-0225	OR-ST-1 (Eulomogo)	AGD	55	649240	6428320	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	3737	
Contact		Recorders		Jim Kelton				Permits			
36-1-0226	OR-ST-2 (Eulomogo)	AGD	55	649280	6428270	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	3737,4738	
Contact		Recorders		Jim Kelton				Permits			
36-1-0066	Troy Junction,Site 6;	AGD	55	655959	6434193	Open site	Valid	Artefact : -	Open Camp Site	511	
Contact		Recorders		ASRSYS				Permits			
36-1-0024	Dubbo1	AGD	55	652005	6431140	Open site	Valid	Modified Tree (Carved or Scarred) :	Carved Tree	65,102502	
Contact		Recorders		David Bell				Permits			

Report generated by AHIMS Web Service on 08/10/2017 for Philippa Sokol for the following area at Datum :GDA, Zone : 55, Eastings : 648730 - 656730, Northings : 6426908 - 6434908 with a Buffer of 0 meters. Additional Info : background information. Number of Aboriginal sites and Aboriginal objects found is 112
 This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 5 of 9

 Office of Environment & Heritage		AHIMS Web Services (AWS) Extensive search - Site list report				Your Ref/PO Number : TNSW Client Service ID : 305598					
SiteID	SiteName	Datum	Zone	Eastings	Northings	Context	Site Status	SiteFeatures	SiteTypes	Reports	
36-1-0025	Dubbo	AGD	55	652005	6431140	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : 12	Carved Tree	65,102502	
Contact		Recorders		David Bell,R Etheridge				Permits			
36-1-0026	Dubbo Railway Station	AGD	55	651639	6431153	Open site	Valid	Burial : -, Modified Tree (Carved or Scarred) : -	Burial/s,Carved Tree	65,102502	
Contact		Recorders		David Bell,R Etheridge,W.Y Thomas				Permits			
36-1-0030	Cootha,Dubbo;	AGD	55	650955	6427521	Open site	Valid	Artefact : -	Open Camp Site		
Contact		Recorders		Michael Pearson				Permits			
36-1-0188	K-OS-3;	AGD	55	654840	6426873	Open site	Valid	Artefact : -	Open Camp Site	3348,102800,103709	
Contact		Recorders		Jim Kelton				Permits			
36-1-0189	K-OS-4;	AGD	55	653790	6426830	Open site	Valid	Artefact : -	Open Camp Site	3348	
Contact		Recorders		Jim Kelton				Permits			
36-1-0190	K-OS-1;	GDA	55	651870	6427290	Open site	Valid	Artefact : -	Open Camp Site	3348	
Contact		Recorders		Jim Kelton				Permits			
36-1-0191	K-ST-1;	GDA	55	651870	6427290	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	3348	
Contact		Recorders		Jim Kelton				Permits			
36-1-0192	K-IF-1;	GDA	55	651940	6427470	Open site	Valid	Artefact : -	Isolated Find	3348	
Contact		Recorders		Jim Kelton				Permits			
36-1-0193	Troy Creek Open Site 1 (TC-OS-1)	GDA	55	653118	6433627	Open site	Valid	Artefact : -	Open Camp Site	3351	
Contact		Recorders		Jim Kelton,OzArk Environmental and Heritage Management,Miss.Stephanie Rusder				Permits			
36-1-0230	OR-ST-8 (Eulomogo)	AGD	55	649740	6427570	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	3737,4738	
Contact		Recorders		Jim Kelton				Permits			
36-1-0238	MD47	AGD	55	651090	6433680	Open site	Valid	Artefact : 5	Open Camp Site		
Contact		Recorders		Kerry Navin,Mr.Kelvin Officer				Permits			
36-1-0517	TR-ST-001	AGD	55	652648	6434595	Open site	Valid	Modified Tree (Carved or Scarred) :			
Contact		Recorders		Lloyd Nolan				Permits			
36-1-0519	TR-IF-04	AGD	55	653143	6434515	Open site	Valid	Artefact : -			
Contact		Recorders		Lloyd Nolan				Permits			
36-1-0522	TR-GG-01	AGD	55	653061	6434419	Open site	Valid	Artefact : -			

Report generated by AHIMS Web Service on 08/10/2017 for Philippa Sokol for the following area at Datum :GDA, Zone : 55, Eastings : 648730 - 656730, Northings : 6426908 - 6434908 with a Buffer of 0 meters. Additional Info : background information. Number of Aboriginal sites and Aboriginal objects found is 112
 This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 6 of 9

 Office of Environment & Heritage											AHIMS Web Services (AWS) Extensive search - Site list report		Your Ref/PO Number : TNSW Client Service ID : 305598	
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports				
36-1-0515	DWTP-OS1	AGD	55	650830	6428395	Open site	Valid	Artefact : 6						
	Contact Searle	Recorders Lloyd Nolan						Permits						
36-1-0613	Dundullimal Reserve Scarred Tree 1 (DR-ST1)	AGD	55	650605	6426823	Open site	Valid	Modified Tree (Carved or Scarred) :	2166,2167,2216,2305	101792				
	Contact	Recorders OzArk Environmental and Heritage Management						Permits						
36-1-0614	Dundullimal Reserve Scarred Tree 2 (DR-ST2)	AGD	55	650695	6426925	Open site	Valid	Modified Tree (Carved or Scarred) :	1	101792				
	Contact	Recorders OzArk Environmental and Heritage Management						Permits						
36-1-0615	Dundullimal Reserve Open Site with PAD (DR-OS1-WITH PAD)	AGD	55	650592	6426739	Open site	Valid	Artefact : 50						
	Contact	Recorders OzArk Environmental and Heritage Management						Permits						
36-1-0592	PL-IF 1	AGD	55	652574	6433937	Open site	Valid	Artefact : 1						
	Contact	Recorders Doctor,Jodie Benton,OzArk Environmental and Heritage Management,Mr.Phillip Ca						Permits						
36-1-0606	SP-OS-02	AGD	55	651210	6433470	Open site	Valid	Artefact : 7						
	Contact	Recorders Lloyd Nolan						Permits						
36-1-0594	C-ST-2 (Eulomogo)	AGD	55	649280	6428370	Open site	Valid	Modified Tree (Carved or Scarred) :		4738				
	Contact	Recorders Jim Kelton						Permits						
36-1-0288	DTG/OC6 - Yarrandale 1	AGD	55	654550	6434350	Open site	Valid	Artefact : -	Open Camp Site					
	Contact	Recorders Mr.Mark Rawson						Permits	2300,2304					
36-1-0298	DTG/AGG1 - Yarrandale 2	AGD	55	655250	6434250	Open site	Valid	Grinding Groove : -	Axe Grinding Groove					
	Contact	Recorders Mr.Mark Rawson						Permits						
36-1-0275	PR-IF-1	AGD	55	648720	6428400	Open site	Valid	Artefact : 1	Isolated Find					
	Contact	Recorders Lloyd Nolan						Permits						
36-1-0299	TP-OS-1	AGD	55	651120	6433690	Open site	Valid	Artefact : 30	Open Camp Site	4362				
	Contact	Recorders Jim Kelton						Permits						
36-1-0300	TP-OS-2	AGD	55	650930	6432710	Open site	Valid	Artefact : 10	Open Camp Site	4362				
	Contact	Recorders Jim Kelton						Permits						
36-1-0301	TP-OS-3	AGD	55	650650	6431890	Open site	Valid	Artefact : -	Open Camp Site	4362				
	Contact	Recorders Jim Kelton						Permits						
36-1-0060	Macquarie River 1	AGD	55	650507	6432939	Open site	Valid	Grinding Groove : 90	Axe Grinding Groove					
	Contact	Recorders Sabu Dunn						Permits						

Report generated by AHIMS Web Service on 08/10/2017 for Philippa Sokol for the following area at Datum :GDA, Zone : 55, Eastings : 648730 - 656730, Northings : 6426908 - 6434908 with a Buffer of 0 meters. Additional Info : background information. Number of Aboriginal sites and Aboriginal objects found is 112

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 7 of 9

 Office of Environment & Heritage											AHIMS Web Services (AWS) Extensive search - Site list report		Your Ref/PO Number : TNSW Client Service ID : 305598	
SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports				
36-1-0098	M5 Dubbo	AGD	55	649920	6428100	Open site	Valid	Artefact : -	Open Camp Site	1065				
	Contact	Recorders N Franklin,Margrit Koettig,Rex Silcox						Permits						
36-1-0099	M6 Dubbo	AGD	55	650100	6427650	Open site	Valid	Artefact : -	Open Camp Site	1065				
	Contact	Recorders N Franklin,Margrit Koettig,Rex Silcox						Permits						
36-1-0100	M7 Dubbo	AGD	55	650100	6427100	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site, Scarred Tree	1065				
	Contact	Recorders N Franklin,Margrit Koettig,Rex Silcox						Permits						
36-1-0101	M8 Dubbo	AGD	55	650350	6427000	Open site	Valid	Artefact : -, Modified Tree (Carved or Scarred) : -	Open Camp Site, Scarred Tree	1065				
	Contact	Recorders N Franklin,Margrit Koettig,Rex Silcox						Permits						
36-1-0102	M9 (a)(b)(c) Dubbo	AGD	55	650580	6426970	Open site	Valid	Modified Tree (Carved or Scarred) :	3	1065				
	Contact	Recorders N Franklin,Margrit Koettig,Rex Silcox						Permits						
36-1-0103	M10 Dubbo	AGD	55	650320	6426840	Open site	Valid	Shell : -, Artefact : 93	Open Camp Site	1065				
	Contact	Recorders N Franklin,Margrit Koettig,Rex Silcox						Permits						
36-1-0104	M11 Dubbo	AGD	55	650200	6426900	Open site	Valid	Modified Tree (Carved or Scarred) :	1	1065				
	Contact	Recorders N Franklin,Margrit Koettig,Rex Silcox						Permits						
36-1-0337	TC ST 1	AGD	55	655050	6432540	Open site	Valid	Modified Tree (Carved or Scarred) :		97376				
	Contact	Recorders Navin Officer Heritage Consultants Pty Ltd						Permits						
36-1-0036	Gootha, Dubbo	AGD	55	649300	6428581	Open site	Valid	Grinding Groove : -	Axe Grinding Groove	1922				
	Contact	Recorders Sabu Dunn,Michael Pearson,P Gresser,A.K. Morris						Permits						
36-1-0665	DSD1 (RAAF-OS1)	GDA	55	652323	6429705	Open site	Valid	Artefact : 1						
	Contact	Recorders Ms.Morgan Wilcox						Permits						
36-1-0666	RAAF-ST3	GDA	55	652764	6429580	Open site	Valid	Modified Tree (Carved or Scarred) :	1					
	Contact	Recorders Ms.Morgan Wilcox						Permits						
36-1-0667	Scarred Tree 1 (RAAF-ST1)	GDA	55	652642	6429881	Open site	Valid	Modified Tree (Carved or Scarred) :	1					
	Contact	Recorders Ms.Morgan Wilcox						Permits						

Report generated by AHIMS Web Service on 08/10/2017 for Philippa Sokol for the following area at Datum :GDA, Zone : 55, Eastings : 648730 - 656730, Northings : 6426908 - 6434908 with a Buffer of 0 meters. Additional Info : background information. Number of Aboriginal sites and Aboriginal objects found is 112

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Page 8 of 9



SiteID	SiteName	Datum	Zone	Eastings	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
36-1-0668	Scarred Tree (RAAF-ST2)	GDA	55	652788	6429549	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	Contact								Permits	
36-1-0707	Hillview-IF1	GDA	55	655038	6427478	Open site	Valid	Artefact :-		103709
	Contact								Permits	
36-1-0704	Macquarie-OS1	GDA	55	651268	6427884	Open site	Destroyed	Artefact :-		103498,10367 0
	Contact								Permits	4087
36-1-0692	DBAS02	GDA	55	649677	6429679	Open site	Valid	Artefact : 1		
	Contact								Permits	
36-1-0693	DBIA02	GDA	55	649444	6429796	Open site	Valid	Artefact : 1		
	Contact								Permits	
36-1-0694	DBIA01	GDA	55	649664	6429679	Open site	Valid	Artefact : 1		
	Contact								Permits	
36-1-0695	DBAS01	GDA	55	651245	6433874	Open site	Valid	Artefact : 1		
	Contact								Permits	

Report generated by AHIMS Web Service on 08/10/2017 for Philippa Sokol for the following area at Datum :GDA, Zone : 55, Eastings : 648730 - 656730, Northings : 6426908 - 6434908 with a Buffer of 0 meters. Additional info : background information. Number of Aboriginal sites and Aboriginal objects found is 112

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

APPENDIX 2: STATE HERITAGE REGISTER LISTINGS

Section 2. Items listed under the NSW Heritage Act.

Your search returned 9 records.

Item name ^	Address	Suburb	LGA	SHR
CBC Bank	110-114 Macquarie Street	Dubbo	Dubbo	00039
CML Building	118 Macquarie Street	Dubbo	Dubbo	00180
Dubbo RAAF Stores Depot (former)	Cobra Street	Dubbo	Dubbo	01701
Dubbo rail bridge over Macquarie River	Main Western railway, 462.762 km	Dubbo	Dubbo	01032
Dubbo Railway Station and yard group	Main Western railway	Dubbo	Dubbo	01130
Dundullimal	Obley Road	Dubbo	Dubbo	01497
Kemwah Court	195-197 Macquarie Street	Dubbo	Dubbo	00544
Old Dubbo Gaol	215 Macquarie Street	Dubbo	Dubbo	01689
Talbragar Shire Council Chambers	Macquarie Street	Dubbo	Dubbo	00219

APPENDIX 3: DUBBO LEP 2011 LISTINGS

Dubbo Local Environmental Plan 2011

Current version for 1 September 2017 to date (accessed 17 November 2017 at 15:40)

Schedule 5

Schedule 5 Environmental heritage

Suburb	Item Name	Address	Property Description	Significance	Item No
Dubbo	Dubbo Railway Station	Talbragar Street	Lot RAIL, DP 758361	State	I215
Dubbo	Macquarie River Rail Bridge (west of railway station)	Other	Lot RAIL, DP 758361	State	I238

APPENDIX 4: UNEXPECTED HERITAGE FINDS GUIDELINE



Unexpected Heritage Finds Guideline

3TP-SD-115/3.0

Supporting Document – Applicable to Infrastructure & Services

Quality Management System

Status:	Approved
Version:	3.0
Branch:	Planning and Environment Services
Business unit:	Environmental Management
Date of issue:	28 April 2016
Review date:	28 April 2017
Audience:	Project Delivery/External TSR
Asset classes:	<input checked="" type="checkbox"/> Heavy Rail; <input checked="" type="checkbox"/> Light Rail; <input checked="" type="checkbox"/> Multi Sites; <input checked="" type="checkbox"/> Systems; <input checked="" type="checkbox"/> Fleets
Project delivery model:	I&S Project/Alliance/Novo Rail
Project type:	Not Applicable
Project lifecycle:	<input type="checkbox"/> Feasibility; <input type="checkbox"/> Scoping; <input type="checkbox"/> Definition; <input checked="" type="checkbox"/> Construction readiness; <input checked="" type="checkbox"/> Implementation; <input checked="" type="checkbox"/> Finalisation; <input type="checkbox"/> Not applicable
Process owner:	Director Planning and Environment Services

Document history

Version	Date of approval	Doc. control no.	Notes
1.0	11 Jul14	3164499_5	First issue
2.0	14 Apr15	3164499	Updated to be published to TfNSW website
3.0	28 Apr 16	3164499_12	Updated to reflect changes in organisation structure.

Table of contents

1. Purpose	3
2. Scope	3
3. Definitions	3
4. Accountabilities	4
5. Legislative requirements	4
6. Unexpected heritage finds protocol	5
6.1. What is an unexpected heritage find?.....	5
6.2. Managing unexpected heritage finds	6
7. Related documents and references	8

1. Purpose

The purpose of this document is to provide guidance to site personnel in the event that an unexpected heritage find is encountered on a Infrastructure & (I&S) site.

An ‘unexpected heritage find’ can be defined as any unanticipated archaeological discovery, that has not been previously assessed or is not covered by an existing excavation permit, and that has potential heritage value.

In New South Wales, there are strict laws to protect and manage heritage objects and relics. As a result, appropriate heritage management measures need to be implemented to minimise impacts on heritage values, ensure compliance with relevant heritage notification and other obligations, and to minimise the risk of penalties to individuals, I&S and its contractors.

2. Scope

In some instances, even when appropriate and robust cultural heritage assessments are undertaken during the environmental impact assessment process, some heritage objects or relics are not identified, and are subsequently found on a I&S site. This guideline outlines the procedure that should be followed in those circumstances.

This guideline includes references to some of the relevant legislative and regulatory requirements but is not intended to replace them. It is not intended to replace any requirements identified as part of the environmental impact assessment process

This guideline does not apply to:

- Aboriginal and non-Aboriginal cultural heritage objects or relics found during investigations undertaken to inform the environmental assessment, in accordance with relevant legislation and the [Planning Approvals and Environmental Impact Assessment – 2TP-ST-051](#). These environmental impact assessments typically identify all heritage items before the project is implemented
- cultural heritage investigations undertaken to comply with conditions set out in any land use planning approval for a project
- archaeological investigations permitted under the *National Parks and Wildlife Act 1974* (NPW Act) or the *Heritage Act 1977* (Heritage Act).

3. Definitions

All terminology in this document is taken to mean the generally accepted or dictionary definition with the exception of the following terms which have a specifically defined meaning:

CEMP	Construction environmental management plan
EM	Contractor/alliance environment manager
EP&A Act	NSW <i>Environmental Planning and Assessment Act 1979</i>
EPM	I&S environment and planning manager
Heritage Act	NSW <i>Heritage Act 1977</i>
NPW Act	NSW <i>National Parks and Wildlife Act 1974</i>
NSW	New South Wales

OEH	NSW Office of Environment and Heritage
PME	Principal Manager Environmental Management
TSR	TfNSW Standard Requirement

4. Accountabilities

The Director Planning and Environment Services is accountable for this document including authorising the document, monitoring its effectiveness and performing a formal document review.

Project directors are accountable for ensuring the requirements of this document are implemented within their area of responsibility.

Project directors who are accountable for specific projects/programs are accountable for ensuring associated contractors follow this document to the extent they are required under the TfNSW Standard Requirements (TSR).

Contractors are accountable for following this document, where this guideline forms a part of their contract.

5. Legislative requirements

Table 1 identifies some of the relevant legislation/regulations for the protection of heritage and the management of unexpected heritage finds in NSW. It should be noted that significant penalties exist for breaches of the listed legislation as a result of actions that relate to unauthorised impacts on heritage items. Further, it is noted that heritage that has been assessed and is being managed in accordance with an environmental impact assessment is exempt from these offences.

To avoid breaches of legislation, it is important that I&S and its contractors are aware of their legislative obligations under relevant legislation and that appropriate management measures are in place to avoid impacts on unexpected heritage items during construction. Contractors/alliances will need to ensure that they undertake their own due diligence to identify any other legislative requirements that map apply for a given project.

Table1 Legislation and guidelines for management of unexpected heritage finds

Relevant Requirement	Objectives and offences
<i>Environmental Planning and Assessment Act 1979 (EP&A Act)</i>	<ul style="list-style-type: none"> Requires heritage to be considered within the environmental impact assessment of projects. This guideline is based on the premise that an appropriate level of Aboriginal and non-Aboriginal cultural heritage assessment and investigations and mitigation have already been undertaken under the relevant legislation, including the EP&A Act, during the assessment and determination process. It also assumes that appropriate mitigation measures have been included in the conditions of any approval.
<i>National Parks and Wildlife Act 1974 (NPW Act)</i>	<ul style="list-style-type: none"> Provides for the protection and management of Aboriginal objects. An Aboriginal object is defined as: <i>'any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction,</i>

Relevant Requirement	Objectives and offences
	<p><i>and includes Aboriginal remains’.</i></p> <ul style="list-style-type: none"> It is an offence to harm or desecrate an Aboriginal object or place. These are strict liability offences. An offence cannot be upheld where the harm or desecration was authorised by an Aboriginal heritage impact permit and the permit’s conditions were not contravened. A person must notify the Heritage Branch of OEH if a person is aware of the location of an Aboriginal object. Penalties for some of the offences can include 2 years imprisonment and/or up to \$550,000 (for individuals), and a maximum penalty of \$1.1million (for corporations).
<p>Heritage Act 1977</p>	<ul style="list-style-type: none"> Provides for the care, protection and management of relics. A relic is defined as: <i>‘any deposit, artefact, object or material evidence that: (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and (b) is of State or local heritage significance.’</i> It is an offence to disturb or excavate any land knowing or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed, unless the disturbance or excavation is carried out in accordance with an excavation permit issued by the Heritage Branch of the OEH. A person must notify the Heritage Branch of OEH, if a person is aware or believes that they have discovered or located a relic. Penalties for offences under the Heritage Act can include 6 months imprisonment and/or up to \$1.1million.

6. Unexpected heritage finds protocol

6.1. What is an unexpected heritage find?

An ‘unexpected heritage find’ can be defined as any unanticipated archaeological discovery that has not been identified during a previous assessment or is not covered by an existing permit under relevant legislation such as the NPW Act or Heritage Act. The find may have potential cultural heritage value, which may require some type of statutory cultural heritage permit or notification if any interference of the heritage item is proposed or anticipated.

The range of potential archaeological discoveries can include but are not limited to:

- Aboriginal stone artefacts, shell middens, burial sites, engraved rock art, scarred trees
- remains of rail infrastructure including buildings, footings, stations, signal boxes, rail lines, bridges and culverts
- remains of other infrastructure including sandstone or brick buildings, wells, cisterns, drainage services, conduits, old kerbing and pavement, former road surfaces, timber and stone culverts, bridge footings and retaining walls
- artefact scatters including clustering of broken and complete bottles, glass, ceramics, animal bones and clay pipes
- archaeological human skeletal remains.

6.2. Managing unexpected heritage finds

In the event that an unexpected heritage find (the 'find') is encountered on a I&S site, the flowchart in Figure 1 should be followed. Table 2 indicates roles and responsibilities referred to in Figure 1.

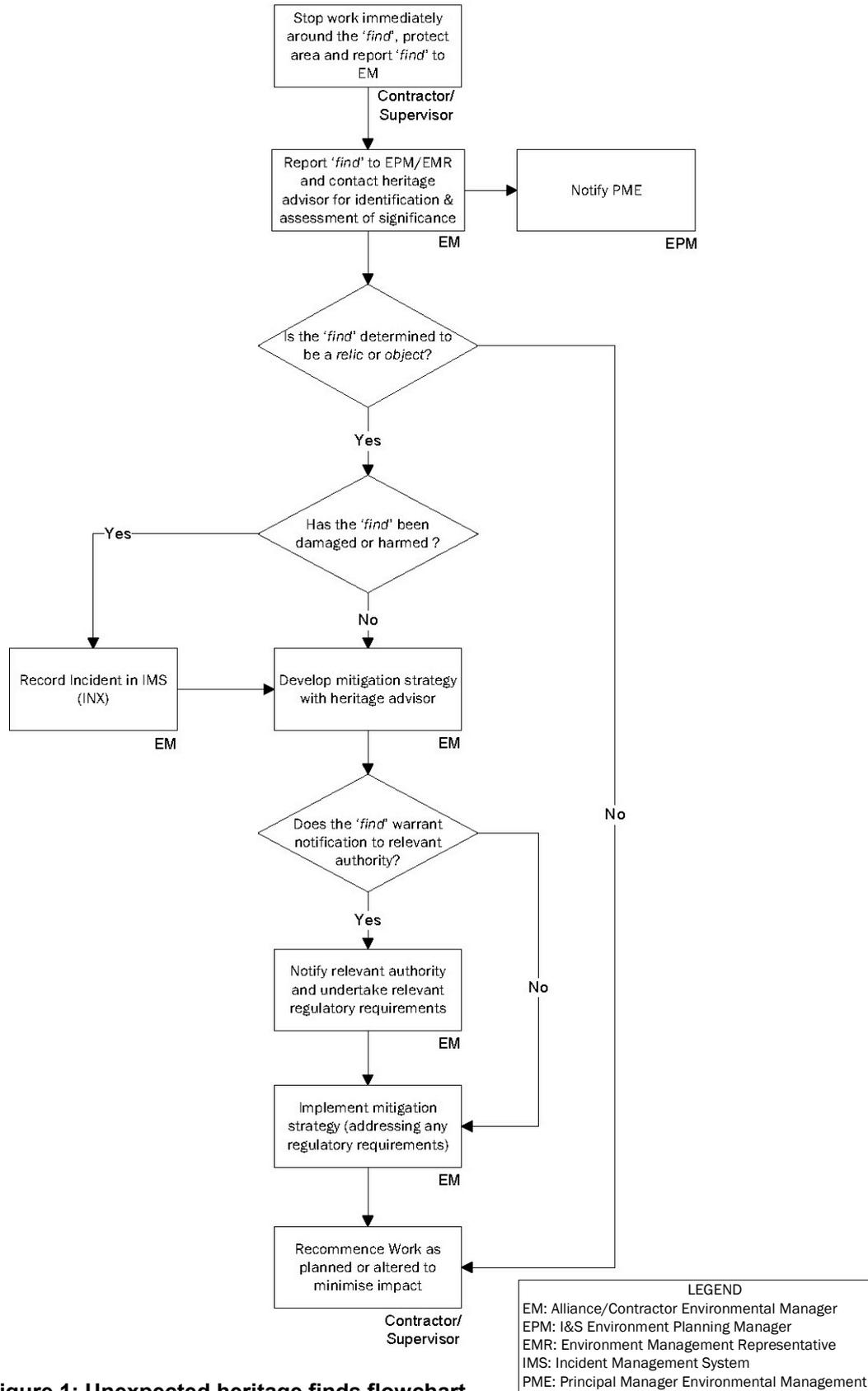


Figure 1: Unexpected heritage finds flowchart

Table 2: Roles and responsibilities within Figure 1

Abbreviation used in flowchart	Role	Responsibility or role under this Guideline
Contractor/ supervisor	Contractor / supervisor	Stop work immediately when an unexpected heritage find is encountered. Cordon off area until EM advises that work can recommence.
EM	Contractor or alliance environment manager	<p>Manage the process of identifying, protecting and mitigating impacts on the 'find'.</p> <p>Liaise with heritage advisor and relevant authorities on significance of the find, mitigation and regulatory requirements.</p> <p>Complete incident report and review CEMP for any changes required. Propose amendments to the CEMP if any changes are required.</p> <p>Advise Contractor / supervisor to recommence work.</p>
Heritage advisor	Contractor's or project heritage advisor or consultant	Provide expert advice to the EM on 'find' identification, significance, mitigation, legislative procedures and regulatory requirements.
EPM	I&S environment and planning manager	Notify PME of 'find' and manage incident reporting once completed by EM.
Relevant authorities	Environment Protection and Regulation Group of OEH (for Aboriginal objects)	<p>Regulate the care, protection and management of Aboriginal objects.</p> <p>Issue Aboriginal heritage impact permits.</p>
	Heritage Branch of OEH (for relics)	<p>Regulate the care, protection and management of relics.</p> <p>Issue excavation permits.</p>

7. Related documents and references

- [Environmental Incident Classification and Reporting – 9TP-PR-105](#)
- [Planning Approvals and Environmental Impact Assessment – 2TP-ST-051](#)
- [Guide to Environmental Control Map – 3TP-SD-015](#)

APPENDIX 5: ABORIGINAL HERITAGE: ARTEFACT IDENTIFICATION

<p>Retouched blades (scale = 1cm)</p>	<p>Flakes</p>
<p>Microliths (scale = 1cm)</p>	<p>Scraper (scale = 1cm)</p>
<p>Flake characteristics (scale = 1cm)</p>	<p>Core from which flakes have been removed (scale = 1cm)</p>