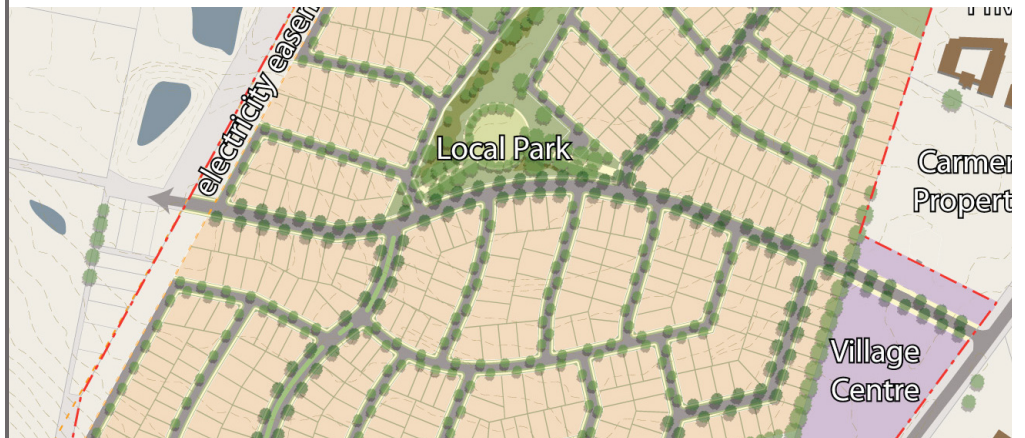
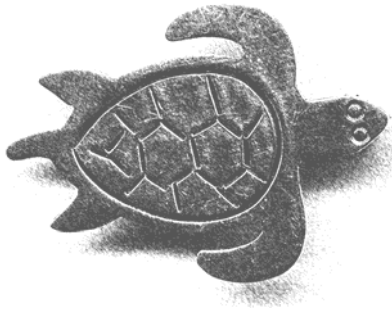




Appendix 11

Cultural Heritage Issues

Susan McIntyre-Tamwoy



SUSAN MCINTYRE-TAMWOY
HERITAGE CONSULTANT

Desk Top Assessment of the Cultural Heritage Issues associated with land at Bloomfield, South Orange currently owned by the Department of Primary Industry and Investment.



May 2010

**A report to the Department of Industry and Investment by
Susan McIntyre-Tamwoy, Heritage Consultant**



Contents

Figures.....	ii
Tables:.....	ii
1.0 Introduction.....	3
1.1 Scope of this Report.....	6
1.2 What is meant by Archaeological Potential?.....	6
1.3 What is meant by Cultural Significance?	7
1.4 Methodology	7
1.4.1 Aboriginal Consultation and Participation.....	7
1.4.2 Review of Existing information and historic research.....	8
1.5 Report Format.....	8
2.0 Legislative framework for the conservation of heritage places and sites	10
2.1 Considering cultural heritage issues in Part 3a project applications.....	10
3.0 The Study area	11
3.1 Land Uses and Disturbances.....	11
3.4 History and Ethnography.....	12
3.4.1 Aboriginal people in the region before the arrival of Europeans.....	12
3.4.2 After the arrival of Europeans.....	13
4.0 Aboriginal Cultural Heritage Sites and Places in the Region and within the Study Area.....	14
4.1 Impacts of past land-use activities.....	15
4.2 Limitations of the Existing Site Inventory.....	15
4.3 Archaeological Studies.....	16
4.3.1. What do we know?.....	16
4.3.2 What don't we know?	16
4.3.3. Regional Site Distribution Patterns?/What we think we know!	17
4.4 Types of Aboriginal Sites and Places in the Region.....	18
4.4.1 Pre contact archaeological sites in the region	18
4.4.2 Contact or Historic Sites	19
4.4.3 Places of Contemporary Social Value	20
4.5 Expected site types in the study area.....	21
5.0 Non-Indigenous Places of Cultural Significance.....	21
5.1 Places of known significance	22
7.0 Conclusions and Recommendations.....	22
7.1 Considering the Potential of the Study area to contain unlisted sites.....	23
7.3 Recommendations	23
References.....	25



Figures

Figure1: Location Map- The Study Area.....	2
Figure 2: The proposed development concept.....	3
Figure 3: NSW LALC boundaries showing location of Orange LALC area	9
Figure 4: Wiradjrui Burbung- ceremonial ground	10
Figure 5: Extract from Tindale's map of Tribal Boundaries.....	14
Figure 6: Parish Map 1894 showing the study area as Temporary and Permanent Common	20

Tables:

Table 1: Study Land Description	1
---------------------------------	---



1.0 Introduction

This desktop cultural heritage assessment was commissioned by the NSW Department of Industry and Investment. It draws on available information arising from past studies in the area, and relevant environment information. It does not include field inspection. The purpose of the report is to inform the preparation of a concept plan for the redevelopment of this site which is cognizant of any cultural heritage value and minimises any likely negative impacts on those values.

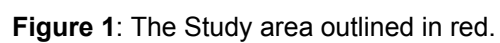
The study area is located south of Orange CBD on the Forest Road opposite the Bloomfield Hospital. It includes those parcels of land indicates in Table 1 and Figure 1.

Land Description	Status and Tenure
Lot 7017 DP 750401 (road)	Reserve 97682 for Public Buildings, notified 15/2/1985
Lots 2 and 134 DP 750401	97682 for Public Buildings, notified 15/2/1985 Reserve
Lot 179 DP 750401	Reserve 1011448 for Future Public Requirements, notified 31/3/2006
Lot 63 DP 750401	Added to Reserve 84622 for Research Station (Agricultural), notified 6/12/1963
Lot 147 DP 750401	Reserve 97682 for Public Buildings, notified 15/2/1985
Lot 143 DP 750401	
Lot 7011 DP 1000831	Reserve 84622 for Research Station (Agricultural), notified 8/11/1963, addition 6/12/1968 (previous TSR:56781-rev'k 6/12/1968)
Lot 145 DP 750401	Reserve 84622 for Research Station (Agriculture), not 8/11/1963

Source: NSW Department of Lands (2007) and Hoynes Wheeler and Thorne Pty Ltd (Cited in letter Peter Andrews & Associates to DG Dept of Planning 8th February 2010)

The proposed development which is outlined in the concept plan involves the development of the land currently zoned R2 Low Density Residential and the B4 Mixed Use Zone. It proposes:

- The residential subdivision of the land zoned R2 Low Density Residential (approx 550 lots);
- The development of infrastructure to support this residential subdivision such as
 - Access onto Forest Road through the Mixed Use Zone;
 - Water reservoir
 - Drainage swale
 - Local open space;
- A retail development in the B2 Mixed Use Zone



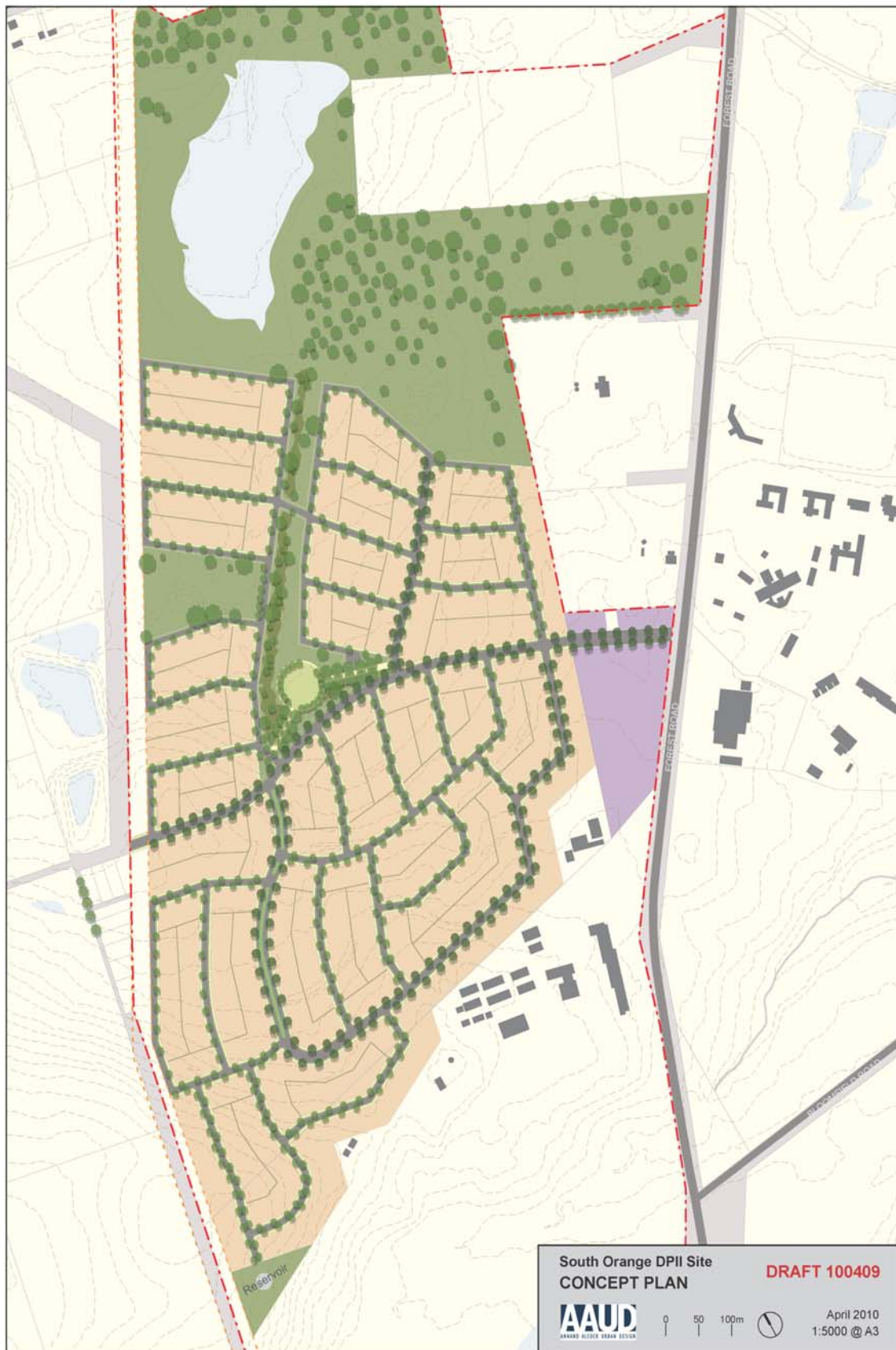


Figure 2: The concept plan for development.



1.1 Scope of this Report

This report assesses the known and likely heritage values of the property and provides recommendations to mitigate likely impacts. As it is a desktop study the findings of the report are based on information held in accessible repositories or on heritage lists and registers. These include:

- The Aboriginal Heritage Information System (AHIMS) managed by DECCW, NSW
- The State Heritage Inventory (SHI) managed by the Heritage Branch NSW
- The State heritage Register (SHR) managed by the Heritage Branch NSW
- The World Heritage List managed by the Commonwealth Department of Environment Heritage Water and the Art (DEWHA)
- The National Heritage List managed by the Commonwealth Department of Environment Heritage Water and the Art (DEWHA)
- The Commonwealth Heritage List managed by the Commonwealth Department of Environment Heritage Water and the Art (DEWHA)

None of these lists either individually or collectively provide a comprehensive record of all cultural heritage places. Therefore in cases such as this where there has been no previous comprehensive survey based assessment it is always possible that significant items exist as yet undetected.

I would like to acknowledge archaeological consultants Mary Dallas and Peter Douglas for providing access to relevant reports which had become lost, or otherwise inaccessible from the AHIMS.

No field work was undertaken as part of this study and of course this limits the findings to a consideration of what is already 'known' about the land and an assessment of its 'potential' to contain items or objects of cultural heritage value. This report is therefore intended as a preliminary guide to the cultural heritage constraints and opportunities that are likely to occur on the property for use in the initial concept design phase.

1.2 What is meant by Archaeological Potential?

Archaeological potential refers to the likelihood of the study area containing as yet undetected sites or archaeological deposits. Since there is no record of a past archaeological survey of the property it is not known if there is visible surface evidence of past Aboriginal occupation of the area.

Particularly in the case of Aboriginal sites but also sometimes in the case of non-indigenous sites subsurface archaeological evidence may exist despite few or no visible physical surface remains. This may occur for example where mobile or destabilised soils have covered an Aboriginal campsite or in the case of non-Indigenous sites where a structure has decayed or been removed without disturbance to underlying deposits which may include foundations, drains, under floor deposits, cellars etc. Archaeologists refer to these localised areas of potential, but unknown, material as Potential Archaeological Deposits (PADS). They are usually determined on the basis of a combination of:

- archival research (knowing what was once there) plus
- a consideration of the past land-use (to consider the likelihood of undisturbed deposits) plus
- in the case of Aboriginal sites especially- a knowledge of site distribution in the surrounding areas and



- field assessment to consider issues of context and topography.

The Department of Lands has undertaken an assessment which notes the existence of several structures and historic features (Harcombe 2007). These however were not assessed in that report in relation to their archaeological potential and in some cases it may be likely that there are as yet undefined archaeological deposits associated with them.

As no field work was undertaken as part of this study it will not be possible to define the boundaries of PADs rather the results will be limited to a more general consideration of potential pending field survey which may either discount that potential or confirm and delimit associated PADs.

1.3 What is meant by Cultural Significance?

Cultural Significance is defined by the *Burra Charter: the Australia ICOMOS Charter for Places of Cultural Significance* (AICOMOS 1999) as

“Cultural Significance means aesthetic, historic, scientific, social or spiritual value for past, present or future generations.

Cultural significance is embodied in the place itself, its fabric, use, associations, meanings, records, related places and related objects.

Places may have a range of values for different individuals or groups.”

This desktop study is insufficient to determine cultural significance of objects or items as yet undetected.

1.4 Methodology

The parameters of the study were defined by the brief provided by Mitcham Nelson. These were the response to the Director General's (Department of Planning's) requirements for the preparation of this Concept Plan which were prepared by Peter Andrews and Associates Pty Ltd.

In carrying out this desktop assessment for the Concept Plan consideration has been given to the *'Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation'* (DECC Draft dated July 2005) in so far as they are relevant to the Concept Plan stage (see section 2.1).

The study did not include field survey and relied wholly on existing documentation. The study did include a review of existing documentation including reports and data held by the Department of Environment Climate Change and Water, NSW, the Heritage Branch of the NSW Department of Planning and the client.

1.4.1 Aboriginal Consultation and Participation.

The study area has recently been rezoned and as part of that process the rezoning proposal was publically exhibited. No submissions were received from individuals or organisations identifying as representing Aboriginal people. In relation to the proposed development, preliminary Aboriginal consultation has been undertaken with the Orange Local Aboriginal Land Council (LALC). The Orange LALC has indicated that they agree with the recommendations as outlined in this report.

Consultation will need to be ongoing and occur before and during any field investigation. The nature of the proposed development, its location and the results of recent nearby studies and the likelihood of sites occurring within the current study area were discussed. As a result of these discussions specific recommendations are made regarding ongoing consultation and involvement of the Aboriginal community in the initial stages of the development project (see section 7.1). The LALC is committed to retrieving Aboriginal objects and has a relationship with the Milthorpe Museum to house Aboriginal



objects retrieved from monitoring projects. An application for a permit to vest *Care and Custody of Aboriginal Objects* in the Orange LALC and the Milthorpe Museum should be completed if such objects are retrieved during monitoring.

There is no evidence that the study area has been previously surveyed for Aboriginal sites. However, since the proposed development is restricted to previously disturbed farming land it is considered that monitoring by an Aboriginal community representatives and an appropriately qualified archaeologist during initial stages of the development is appropriate. Should any disturbance including creek rehabilitation or other works be required in the treed area, currently designated open space in the concept plan (see Figure 2) this should be preceded by a comprehensive archaeological survey. The reason for this is because this area does not appear to have been subjected to the same past land-use disturbance and therefore there is greater likelihood of Aboriginal 'objects' remaining *in situ*.

1.4.2 Review of Existing information and historic research.

This project included a review of all available existing documentation including a review of information held by the DECCW, NSW in their Aboriginal Heritage Information System and catalogue of archaeological reports (see Reference list for reports reviewed).

Searches of the following registers were conducted

- NPWS Aboriginal Heritage Information Management System
- State Heritage Register of NSW and the State Heritage Inventory
- Register of the National Estate and
- The World, National and Commonwealth Heritage Lists managed by DEWHA.

There are a number of records relating to the Aboriginal heritage of the general area that DECCW were unable to locate. However, none of these were records which identified objects within the study area boundary. Lack of information relating to sites in the immediate area does however affect the precision of predictive statements relating to the study area.

1.5 Report Format

The remainder of this report includes:

- A brief overview of the legislative context in relation to heritage
- A brief overview of the historical context of the study area including key elements of the known Indigenous and non-Indigenous history and past land use.
- An assessment of the potential of the study area to contain cultural heritage sites and objects.
- Recommendations for future work and mitigation strategies

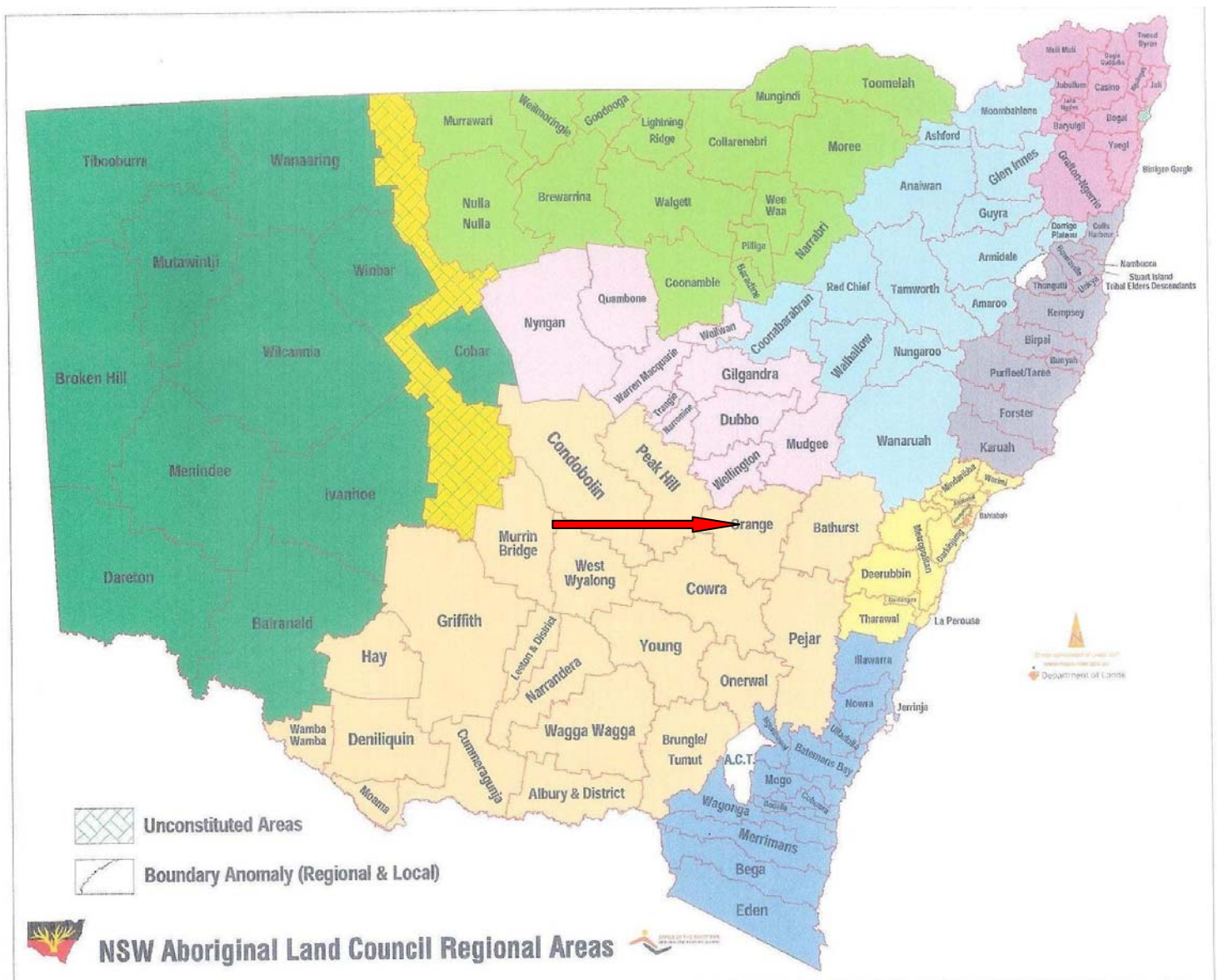


Figure 3: Aboriginal Land Council Boundaries in relation to the study area



2.0 Legislative framework for the conservation of heritage places and sites

There are a number of pieces of state legislation and then there is also relevant Commonwealth legislation to be considered in relation to heritage management in NSW. The Heritage Act was introduced in 1977 in response to concerns from the community of NSW to the increasing loss of environmental heritage in NSW. The term environmental heritage is used to cover places and landscapes of historic, social, spiritual, archaeological architectural or aesthetic significance (HONSW: Heritage Guidelines).

In general terms the NSW Heritage Branch defers to the Department of Climate Change and Water (DECCW) on the specific management of Aboriginal sites and places as that department has specific responsibility in NSW for the protection and management of Aboriginal sites (objects). Under the *National Parks and Wildlife Act, 1974* (as amended). Aboriginal objects (previously referred to in legislation as 'relics') have blanket protection in NSW. In other words, they are all protected regardless of whether or not objects or sites are listed on a register. This means that the onus is on a developer to assess the significance of any sites within a proposed development area and propose appropriate mitigation measures to protect it. If it cannot be protected then the onus is on the development proponent to demonstrate that the site is not significant and cannot be conserved within the development and that there is no reasonable alternative to its destruction. Of course in order to do this the DECCW expects them to use specialist expertise such as a qualified archaeologist, if required and to seek the opinions and input of relevant Aboriginal people.

Under the provisions of Part 3 A of the NSW Environmental Planning and Assessment Act 1979 (as amended), development applications deemed to be 'Major Projects' do not require part 6 approvals from the DECCW. In the case of such projects the Minister for Planning is the consent authority and determines matters relating to Aboriginal heritage.

DECCW have issued draft guidelines for Aboriginal cultural heritage impact assessment of Part 3A Major Projects. Specifically,

All project applications must state whether or not the project is likely to have an impact on Aboriginal cultural heritage and must include information about how this assessment was made.

This assessment must demonstrate that input by affected Aboriginal communities has been considered, when determining and assessing impacts, developing options and finalising the application.

2.1 Considering cultural heritage issues in Part 3a project applications

Projects carried out under the provisions of Part 3A of the NSW Environmental Planning and Assessment Act 1979 should thoroughly consider the potential impact on cultural heritage sites and objects (both Aboriginal and historic/non-indigenous). The required cultural heritage assessment can be staged but overall should include the following components:

1. A preliminary assessment to determine if the project is likely to have an impact on Aboriginal and /or non-Indigenous cultural heritage sites or objects.
2. Identifying Aboriginal cultural heritage values associated with the area through:



- a. consulting with Aboriginal people with cultural knowledge or responsibilities for country in which the proposed project occurs;
 - b. carrying out archival and oral research
 - c. field research and investigation.
3. Identifying and documenting non-Indigenous/historic sites and values associated with the area;
4. Understanding the significance of the Aboriginal and non-Indigenous heritage sites and objects;
5. Assessing the impact of the proposed development on these sites and objects, and
6. Developing recommendations for the conservation or management of these sites and objects and for mitigating negative impacts of the proposed development.

This current assessment did not involve field research and investigation. Limited field investigation is recommended prior to construction to identify, record and salvage any Aboriginal objects. This is considered adequate given the disturbed nature of the area and the likelihood that any objects that occur are will be in a disturbed context.

3.0 The Study area

The landscape of the study area is defined by the Orange to Cadia 132kV transmission line in the west and Forest Road to the north. It has an irregular boundary to the north in part marked by open bushland around a rifle range. The southern boundary is the Orange Department of Primary Industry Agricultural Research Facility. The study area is shown in Figure 2.

3.1 Land Uses and Disturbances

It is important to consider the impact of past land use on the archaeological potential of the shire. The major land use disturbances in the study area will be from agricultural use, although there are localised disturbances from other activities such as waste disposal. In general the land is flat to undulating rural land. Parts of the study area have been subject to ploughing and planting. This activity will have an impact on the likelihood of finding intact Aboriginal sites, if they once existed in the area. While stratified subsurface sites can survive ploughing this is only likely in contexts where soils and build up deposits are deeper than the plough zone (the depth to which plough blades penetrate).



3.4 History and Ethnography

3.4.1 Aboriginal people in the region before the arrival of Europeans

Orange falls within the boundaries occupied by the Wiradjuri people at the time of European colonisation (see extract from Tindale's Map: Figure 5). It is difficult to describe Aboriginal occupation of this area in detail prior to the European invasion of the area. Some information can be extrapolated back in time from the period of early contact between European explorers and surveyors and Aboriginal people of the area where this information has been recorded. However there is less information from such sources which is directly applicable to the specific study area.

We do know that the study area falls within the lands of the Wiradjuri people and that there are many sites related to their pre-European occupation of the land throughout the Central west. The territory of the Wiradjuri extended from Albury, northward to Dubbo, east to the Blue Mountains and as far west as Hay and Narrandera (see Figure 5).

The Wiradjuri people had a complex society that saw resource and landownership focussed on extended family groups or clans. Pearson (1979) suggests 3 broad grouping in the population at the time of European settlement i.e once around Rhylstone/Mudgee, one around Bathurst and one around Wellington. These people practiced a rich ceremonial life which bound them together culturally.

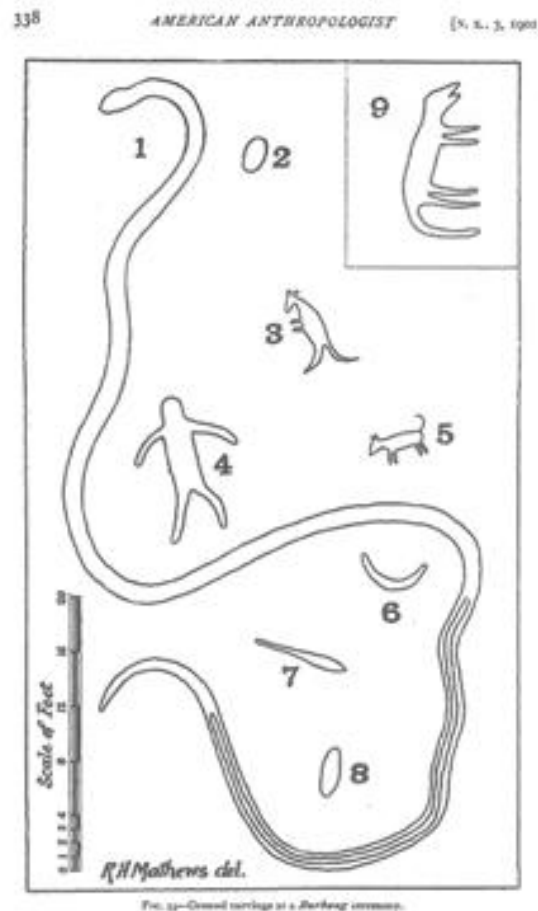


Figure 4: Drawing of a Wiradjuri Burbung ceremonial site by R.H Mathews (Mathews 1901:338)



Mathews 1901 provides several accounts of ceremonies conducted by the Wiradjuri although unfortunately none specifically from this central part of their territory. The example of the ceremonial ground in Figure 4 is from the western part of their territory but it is included here to demonstrate how some of the most significant sites of the Wiradjuri can also be the most sensitive to land-use damage. This ceremonial site included a circular earthen enclosure (often referred to now as a bora ring) with a pathway leading from it. It also had four elongated heaps of earth which Mathews remarked are 'not unlike grave' (1901:339ng in the soil). The ceremonial site was quite extensive with a number of figures carved into the soil. Mathews remarks that the serpent was '*by far the longest native carving in the soil that I have ever seen, the distance from the head to the tail, following the sinuosities of the body, being 130 feet, while the width, which was fairly uniform was from 15 to 18 inches.*' (1901:339)

There is oral tradition that Mount Canobolas near Orange was an important mythological site used for initiation (Wheeler 2006:17). Regardless it is a recorded mythological site or story place in the region. The two peaks of Mount Canobolas are known as Old Man and Young Man.

John Oxley made several observations of the Wiradjuri people during his 1817 expedition (Oxley 1820). These included observations about their attire. They wore possum skin cloaks, hair nets and ochre facial paint. Adult men had a front upper tooth excised and carried stone hatchets. Significantly he notes the use of stone hatchets and comments that the survey party came to associate these with proximity to water sources.

These water sources were of course important resource zones for Aboriginal people. Rivers and creeks provided food (fish, shellfish, birds etc) as well as water for drinking. Wiradjuri people used bark canoes in the larger creeks, rivers and waterholes.

In terms of the material culture of the Wiradjuri people they utilized many tools in their daily life. Not only did they construct huts and other shelters but also large bark canoes and stone fish traps and weirs. They had wooden spears, stone hatchets, wooden clubs, boomerangs, spear throwers, digging sticks, fibre nets, shell scrapers, bone needles, wooden containers and a range of stone tools including anvils, grinding dishes, hammerstones, and pestles.

The pre-invasion environment provided rich resources including fish, mammal, birds, native honey and a wide range of plants, tubers and fruit.

3.4.2 After the arrival of Europeans

While the initial expeditions of Oxley and Mitchell through Wiradjuri territory did not have an immediate impact on the way of life of Aboriginal people. Change when it came was rapid and often violent. In 1824 Governor Brisbane declared Marshall Law at Bathurst in Wiradjuri country before sending in troops to 'deal' with Aboriginal activists (Read 1988; Pearson 1981). In fact the period is often referred to as 'the Black Wars' as settler punitive attacks and Indigenous counter raids were frequent and intense.

A number of reserves and missions were established in Wiradjuri country including large missions at Wellington (1832-1844) and Cowra. Illness also took its toll. From 1829-31 the Indigenous population of NSW was afflicted by a devastating smallpox epidemic. In some parts of Wiradjuri country it is estimated that local populations were reduced to 1/3 of their original number (Carey and Roberts 2002,847). All of these factors impacted on the lives and traditions of Wiradjuri people and indeed are still impacting on them today (see for example McDonald 1998).

Some Wiradjuri people maintained direct contact with their country through employment in the pastoral industry and there are a number of known contact sites and places of shared history relating to this in the region.

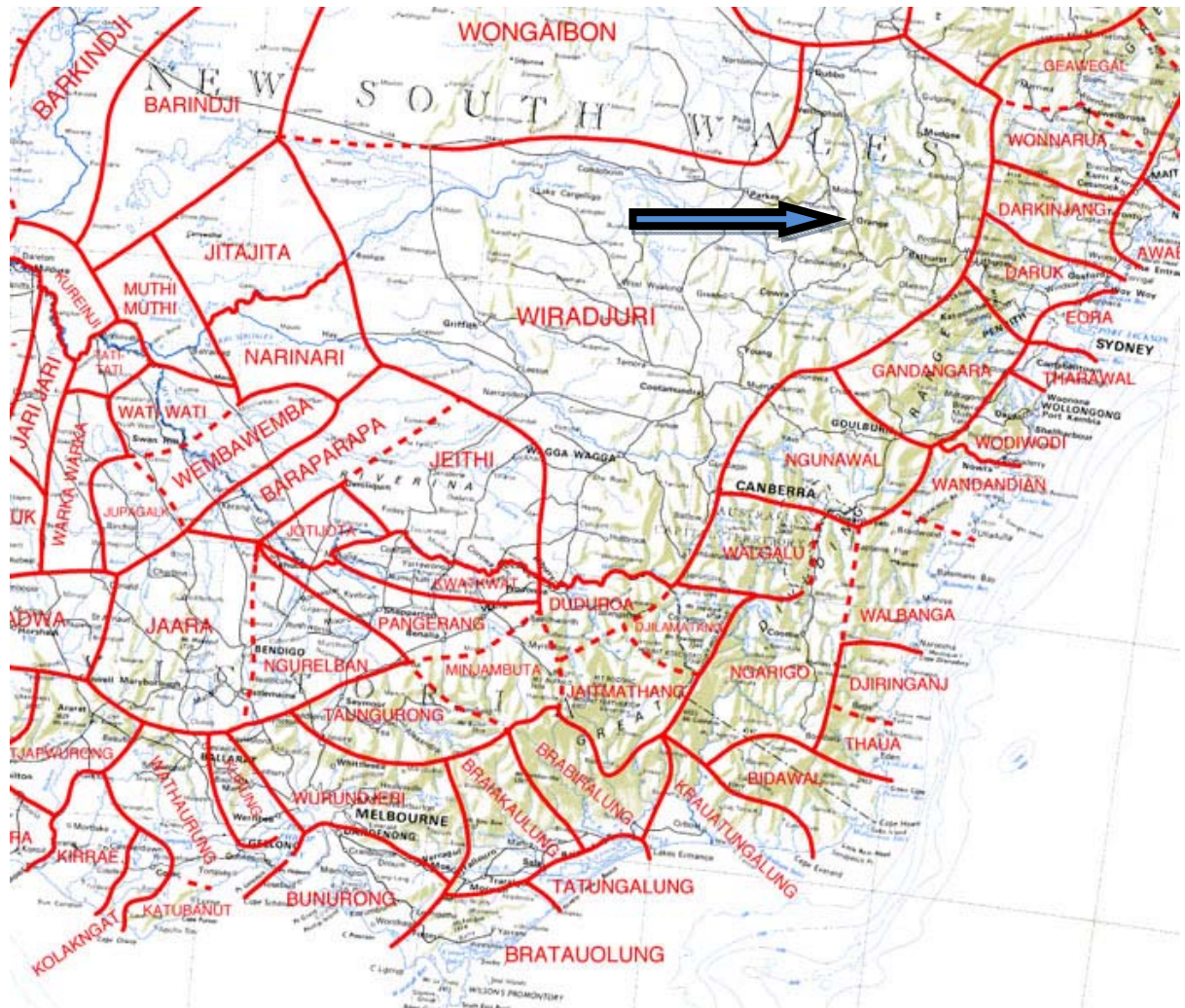


Figure 5: Extract from a reproduction (by W.Mumford) of the map 'Tribal Boundaries in Australia' by Norman B Tindale; showing the general location of the Study Area. (Courtesy of the S.A. Museum).

4.0 Aboriginal Cultural Heritage Sites and Places in the Region and within the Study Area

In predicting the likelihood of the site types listed above occurring in any area a number of factors need to be considered. These are

- The range of known site types in the region
- Their distribution and
- A consideration of the environmental attributes and resources that would have been available Aboriginal people in the past
- Past land-use and its likely impact on the survival of any sites.

In the study area the bulk of the area proposed for development has been subject to a variety of farming practices. It is important to note however that some sites have been demonstrated in other



areas to survive below the plough line.

4.1 Impacts of past land-use activities

Mitchell and Oxley travelled over a landscape that was dotted with huts and Aboriginal fires and would have come across caches of Aboriginal tools such as spears and hafted hatchets. Every so often they would walk through an area that had been set aside as traditional burial area often decorated with carved trees. Major creeks and rivers would have had large campsites with people fishing with nets, spears and canoes. Travelling through the area today is of course a very different experience, and the landscape itself has been indelibly altered by European land-use such as grazing, farming and in recent years urban expansion and industry. As can be seen by the brief description above of the nature of the material culture of the Wiradjuri, much of it is comprised of organic materials (wood, fibre, bark, bone and skins) and therefore sensitive to environmental processes and decay. The material left for archaeologists to discover is usually the more robust elements such as stone tools and sometimes bone and shell a small subset of Aboriginal material culture that needs to be interrogated to yield insights into the past. Of course it is not just natural processes that affect the survival of archaeological sites. The nature of the sites themselves means that they are very vulnerable to destruction through human activities such as clearing and ploughing.

Most if not all of the study area has been cleared at some time in the past and for the most part northern most extreme of the study area there is a small area of un-modified (or at least apparently so) creek line and a lightly wooded area that appears from aerial photos to be unploughed, although it should be noted that this area has been extensively grazed by the DPI for many years. Should Aboriginal sites have once been present, they have the best chance of having survived destruction in this area although some disturbance of surface material would be expected due to long term grazing activity.

4.2 Limitations of the Existing Site Inventory

The existing site inventory is very limited in its application for the analysis of site distribution patterns and predictive trends. This is because it does not present a representative sample of the probable surviving cultural heritage resource. The inventory is biased by its two main sources of information:

- opportunistic and periodic recordings of mostly visually obtrusive sites such as coastal middens;
- recordings from systematic archaeological surveys of localised areas prior to developments such as forestry, urban infrastructure, or residential development projects.

As far as can be ascertained very little of the Orange area has been subject to systematic and comprehensive surface archaeological survey. The majority of surveys have been conducted in localised urban infrastructure and urban release areas. Archaeological surveys do not appear to be carried out as a matter of course before most developments in the LGA. This has resulted in a lower than average survey coverage for the area.

Very few archaeological investigations have conducted follow-on sub-surface testing programs. There have been no systematic testing programs with the aim of testing the archaeological potential of landforms from which no surface artefacts have been detected.

There are no archaeological site recordings within the study area. However there are several archaeological sites to the immediate north of the study area. These were all stone artefact scatters. Open artefact scatters are most likely to predominate the total resource as a whole. Scarred trees could be expected to occur wherever the forest has survived with minimal logging and particularly where these occur close to Aboriginal reserves and settlements. Historic sites, including reserves are likely to be much more prevalent than suggested by the recorded sites.



4.3 Archaeological Studies

Most archaeological surveys undertaken in the vicinity of Orange have been restricted to specific small scale developments. Despite this, several sites have been registered with the NPWS adjacent to the study area. These occur within the rifle range bordering the north of the study area and are all sparse stone artefact scatters.

The closest comprehensive study for Aboriginal sites is that undertaken by Jim Wheeler of AHMS at the Bloomfield Hospital site adjacent to the current study area. That survey found no surface artefacts indicating the location of Aboriginal sites. It did however identify an area of low to moderate archaeological potential which they recommended to be tested. There is no record of this test excavation being carried out and AHMS (pers comm Peter Douglas 16/05/2010) has confirmed that they were not commissioned to carry it out. DECCW does not have a record of any report for excavation work at this site being carried out.

4.3.1. What do we know?

Relatively few archaeological surveys have been carried out in the immediate area and most of the surveys that have been carried out have been relatively small. Most surveys have been carried out as part of environmental impact assessment processes and are often confined to small areas of expected development impact. Such surveys have identified a number of sites including shell middens, campsites and Potential Archaeological Deposits (PADs). Many of such surveys, however, did not result in the identification of any sites and in most cases this was explained in terms of previous disturbance from past land uses or thick vegetation coverage.

To get an understanding of what sites might occur within the study area it is important to look at broader regional studies. However, it is also important to recognise that due to the general lack of comprehensive survey and excavation there is a significant 'best guess' factor in any predictive models for site distribution. There are some general 'rules' however which allow us to anticipate what sites might occur. The distribution, density and size of sites is to some extent dependent on the surrounding environment and geology. For instance, artefacts scatters and deposits are often large and more frequent in association with important resources of creeks, rivers, wetlands and stone sources. Such site might include grinding grooves where suitable sandstone outcrops in creeks occur. Rock shelters are only found in areas of sandstone escarpment which have been undercut by wind and/or rain and occasionally in the leeward side of large granite boulders and outcrops which provide shelter. While in the past the distribution of scarred and carved trees may have been extensive, today they are only possible to find where that distribution intersects with areas where trees have not been cleared or burnt out.

4.3.2 What don't we know?

Relatively little is known about the actual locations of Aboriginal sites within the broader area. This means that there is a high potential under the current situation for future developments to affect as yet unrecorded Aboriginal sites.

Several models have been postulated by archaeologists carrying out localised studies in the area but there has been insufficient field testing of the models to date for these to be particularly reliable. In most archaeological surveys conducted, the general lack of surface visibility has had a negative effect on the area effectively surveyed and is likely to have caused an underestimation of the number of sites. Aboriginal archaeological sites may be predominantly subsurface and can therefore difficult to detect during surface surveys. This has been inadequately tested through excavation in the region. It is important therefore that archaeological surveys include an assessment of 'archaeological potential' as well as a record of visible evidence and that follow up excavations are undertaken to refine the assessment of potential. The archaeological potential of an area will also be affected by past land-use disturbance which may reduce the likelihood of sites surviving in specific areas.



4.3.3. Regional Site Distribution Patterns?/What we think we know!

Archaeological & Heritage Management Solutions (Wheeler 2006) has carried out a comprehensive survey of the Bloomfield Hospital Site which is directly east across Forest Road from the current Study area. They developed the following synthesis of regional site patterns from the few broader regional studies. The text from this section is reproduced from Wheeler 2006 p27-28.

“A study of the regional archaeological of the Upper Macquarie River by Dr Pearson made a number of findings about changes in land use and settlement patterns. Although the pilot study was undertaken in the late 1970's, it remains the most useful regional model of settlement patterning. Pearson found that the most common Aboriginal site type was open sites with stone artefact scatters. The average site was located 98 metres from a water source and 9 metres above the water sources (Pearson 1979:10). Pearson found that 90% of these sites were on undulating topography and low hill landforms. Sites tended to be located in areas that are above cold valley air flow and frosts.

Pearson's regional model found that common open site traits included proximity to water sources, on level ground with good drainage, sheltered from cold winds and [with] adequate fuel supplies. Pearson (1981) also observed that tributaries, creek lines and the Upper Macquarie River would have provided important resources for food as well as forming movement corridors.

The patterns described above were largely based on the results of surface survey. Paton and Ferguson (1985), Barber (1990) and Barber and Williams (1993) have since tested Pearson's model by archaeological excavation and concluded that it is substantially correct. The highest density of open sites has been found in low lying areas with gently undulating topography (Paton and Ferguson 1985; Barber 1990). Barber found that larger sites were usually found on elevated spurs and terraces adjacent to high order streams and rivers. Very few sites were found on ridges away from water sources. Open sites in the region range from [stone tool making] 'workshops', which show discernible spatial patterning (i.e knapping floors), to low density scatters and isolated stone artefacts.”

Assessment cannot be based on surface survey alone in many cases. Elsewhere in NSW, McDonald has demonstrated through an extensive program of survey and excavation on the Cumberland Plain that surface survey alone is a very poor indicator of the archaeological resources present in an area. Some of her findings were quite striking and have demonstrated the benefit of sub-surface investigations. She found for instance that:

- 17 out of 61 excavated sites were only revealed through excavation i.e they had no surface artefacts.
- The ratio of recorded surface to excavated material was 1:25
- None of the excavated sites could be properly characterised on the basis of surface evidence. (McDonald 1997)



4.4 Types of Aboriginal Sites and Places in the Region

The dominant site types recorded across the region are surface scatters and subsurface archaeological deposits (almost exclusively of stone artefacts). Other common site types are scarred and/or carved trees, stone quarries, rock art sites, rock engravings and axe grinding grooves. Sites which are less common but which have also been recorded include burials, mythological sites, stone wells, contact sites, ceremonial sites, natural places and stone arrangements. Below is some information describing these site types.

4.4.1 Pre contact archaeological sites in the region

Previous archaeological and historical investigations have shown that a number of different site types exist within the broader region. These sites include both archaeological and natural mythological sites. Natural mythological sites are places that have been identified as being significant to local Aboriginal people. In addition, there are a number of Aboriginal historic sites, such as Aboriginal reserves, camps and schools. A brief explanation of the different archaeological, mythological and historical sites follows.

4.4.1.1 Open Artefact Scatters

Open artefact scatters may occur almost anywhere across the landscape where Aboriginal people have travelled. They may be associated with hunting and gathering activities, domestic base camps, or the manufacture and maintenance of stone tools. The density of artefacts represented in these scatters can vary dramatically. These sites are sometimes referred to as open campsites. These sites can result from someone briefly stopping to repair a tool kit while out hunting and losing or discarding some stone tools in the process or alternatively they can result from almost semi permanent camps where people had separate areas for discrete activities such as stone tool manufacture and repair.

Most open campsites within the region are located close to permanent creeks.

4.4.1.2 Waterholes & Wells

Waterholes or wells can be any natural or excavated water retaining feature, such as a pothole in rock outcrops, a spring or soak or a deep pool in a water course. The identification of these sites as an Aboriginal site may depend on historic or ethnographic information or be indicated by evidence of modification of the feature such as by excavation, carving or a capping rock.

This site type has not been recorded in this region.

4.4.1.3 Burials and Cemeteries

Burials can take the form of an isolated grave or a burial ground or cemetery within which several people are buried in the case of traditional burial carried out before the impact of Europeans these are generally found in soft sediments such as sand or alluvial silts. They can also occur in middens, rock shelters and hollow trees. Burials are generally only visible where there has been some disturbance of subsurface sediments or where some erosional process has exposed them. In the period after European settlement most burials occurred within cemeteries associated with reserves and mission although sometimes unlike European cemeteries these may not have been gazetted formally. Burials have been recorded in the Wiradjuri region but are rare archaeologically in the Orange district.

4.4.1.4 Story /ceremonial places (also called Natural Mythological sites).

Bora grounds or Keepara or Burbung Grounds, functioned as a prepared stage for initiation and other ceremonial activities which played a key role in the teaching and maintenance of the complex religious and social framework within Aboriginal society. Bora Grounds consist mostly of one or more circular rings defined by mounded earth, sand and /or rocks. There may also be an associated depression within the ring. A pathway generally connected two rings and was often many hundreds



of meters long. Typically one ring was associated with more public ceremonies and the second with restricted and sacred information. Bora Grounds are most often located on river flats and low ridges.

Such sites have been recorded in the broader Wiradjuri region including a rare stone bora ring at Evans Crown Nature Reserve. Most of these sites however were made of earth and are likely to have been destroyed by farming practices.

Natural mythological sites are frequently natural features, such as mountains and waterholes, which may not exhibit any material evidence that could indicate their importance to an uninformed person. Identification of this site type is dependent on information being available from informed Aboriginal people. Mt Canobolas is the nearest recorded site of this type.

4.4.1.6 Carved Trees

Carved Trees, a rare site type, are often found in association with ceremonial or burial grounds and characteristically include carved figurative and non-figurative motifs on the exposed wood created within a scar produced by bark removal. Carved trees were known to occur in Wiradjuri country to mark Aboriginal graves.

4.4.1.7 Scarred Trees

These are trees that have been marked for more utilitarian purposes such as by the removal of bark for use in lining shelters, making dishes or for carrying babies. As we have seen previously Oxley remarks on the use of scarred trees as indicators of water sources.

4.4.1.8 Isolated finds

Isolated finds are artefacts that have been found in isolation from any other archaeological material. Isolated finds are generally found on the surface of the soil or from eroding areas of the landscape. They are usually flaked stone or ground stone artefacts.

4.4.1.9 Stone arrangements

Stone arrangements are stones that have been ceremonially arranged in the landscape, these can take the form of stone cairns or stones arranged in a line or in a particular shape.

4.4.1.10 Traditional travel routes or pathways

No places of this type have been recorded within the region. However it is likely that as in other areas along the north coast, travel routes existed up onto the escarpment.

4.4.2 Contact or Historic Sites

It is important not to overlook the important places from the contact and post contact period. Of course many of these places may have been important prior to European invasion and may therefore provide evidence of Aboriginal tradition continuity from the pre contact to the post contact period. Such places may include burial sites and important campsites. Other places may have been created after the contact period and therefore may provide evidence of Aboriginal adaptations to the new pressures and confines of the post invasion environment and society.

4.4.2.1 Aboriginal Reserves and missions

During the protectionist era Aboriginal people in NSW were forcibly confined to government reserves.

4.4.2.2 Post Contact Camps

Aboriginal settlements are known to have been located at places such as town commons or along travelling stock routes in fringe encampments around European settlements. While no record of an unofficial 'Aboriginal Reserve' within the study area could be located within the scope of this study, it remains possible that parts of the study area may have been used in this way.

4.4.2.3 Places where conflict occurred

Several well publicised massacres and other violent encounters with the Wiradjuri are known to have occurred in the early period of European invasion of the region.

4.4.2.4 Significant buildings ruins or potential archaeological deposits.



No buildings or structures of significance to Aboriginal people are listed on any registers although it is possible that such places exist unrecorded.

4.4.3 Places of Contemporary Social Value

Heritage legislation, principles and charters have long included the need to consider social value but it is really only recently that heritage professionals have looked at really exploring this type of heritage. This is not to say that places of social value have not been recognised and protected in the past however, this has largely been because social value overlapped with other more easily quantifiable and verifiable values such as scientific importance or historic importance.

Recently, however there have been moves to recognise those places that Aboriginal communities use to today and to recognise the importance of such places in the development and maintenance of community identity.

4.4.3.1 Places where post contact wild resources collection occurred (s)

Little information has been recorded about places that were regularly used by Aboriginal people for hunting and gathering and other resources extraction such as stone quarrying or ochre quarrying. While Aboriginal people had access to the entire landscape within their territory, their knowledge of the environment would have led them to favour certain places for hunting fishing etc. There may be places used regularly by Aboriginal **community** people today in the same way. English (2001:42) points out that such places can be of social significance to Aboriginal people as they can be bound into notion of community health and well being.



Figure 6: Extract from Parish Map 1897 showing the study area as a temporary and permanent common with the Bloomfield hospital site identified across the road.



4.5 Expected site types in the study area

After considering all the factors including the distribution and nature of sites within the region, the environmental resources which would have been available to Aboriginal people and the impacts on the material evidence that may once have occurred of the current and past land use; provides an insight into the likelihood of Aboriginal objects and sites occurring within the study area.

It is expected that in the area that has been subjected to repeated ploughing and agricultural activity that there is little likelihood of any intact Aboriginal sites occurring. The most common site type in the region consists of open artefacts scatters and/or isolated finds comprising stone tools. It is expected small artefact scatters which were the remains of small Aboriginal campsites are the most likely sites to have occurred within the study area. It is also possible that scarred trees once occurred. Scarred trees are also common along stock routes and around commons as these were often areas where Aboriginal people congregated after colonisation.

There is some possibility that isolated scarred trees remain in the uncleared areas zoned as open space. The area proposed for residential and commercial development has been cleared in the past. It is expected that Aboriginal objects will occur but that these will not be *insitu* but have been dispersed across the study area by ploughing. Given the lack of permanent water from the seasonal creek on the property the campsites that would have given rise to these objects are not anticipated to be large and therefore the density of Aboriginal objects over the study area is expected to be low.

Most other site types are relatively rare and unlikely to have been situated within the study area and even if they once had existed past land-use is likely to have removed all traces of them.

5.0 Non-Indigenous Places of Cultural Significance

The study area has had a number of historic uses. Most recently the bulk of the site has been part of the Orange agricultural research institute but in the recent history past the land was reserved as a common and a range of activities have been associated with that.

Barton's (1886) *Historical Sketch of NSW* (Facsimile edition 1980:116) describes the town of Orange thus:

Orange lies amongst grassy hills, over which tower the Canobolas, capped through several months of the year with snow. There is no river near but there is an abundant rainfall and water is seldom scarce. The District is commonly said to have the most English look of any in the colony, the farms and the vegetation remaining one of English rural scenes...In the gardens and the field the influence of the cooler climate is very noticeable. The daphnes, magnolias and oleanders of Sydney gardens are absent, but the hawthorn hedges are vigorous, currants and gooseberries come to perfection and the wheat harvest is later than that of Bathurst.'

Already by the time Barton is writing only some 50 years after European settlement of the district the landscape has been modified to resemble that of the English countryside. The first permanent European settlement in Orange occurred in 1830 when the area was taken up as a cattle station. It had brief exciting role at the very start of the gold rush in 1851 when Hargraves discovered gold near here at Lewis Ponds. Orange township made its fortunes as the nearest commercial centre and grew rapidly. Its agricultural economy really grew after the construction of the railway.

Within the study area itself there are few extant remains surviving of past uses. In 1867 and 1868 the northern part of the study area was reserved as a Temporary Common and the southern section as a Permanent Common.



Immediately adjacent to the study area is an area which was used for military training in the 1880s of the Boer War and various features such as the Martini range and the grenade pit are still present although outside the Study area. There has been a continuous connection of this land with firearm related uses as there is still a rifle club operating here. It is likely that further assessment of this site might reveal that it is of heritage significance however it is not currently on any state or commonwealth list and it is unlikely to constrain development on neighbouring land except to the extent that it constrains proximity and use of development for safety reasons.

The orange agricultural research facility buildings are outside the study area. Given the significant research that has taken place there over the years since it was established it is likely to be of scientific and historic significance. However once again this is not likely to constrain the development options within the study area as long as they do not impinge on the viability of complex.

5.1 Places of known significance

The nearest place of recognised cultural heritage significance is the Bloomfield Hospital which is listed on the NSW State Heritage Register (Item #01745). The land for the hospital was set aside in 1889, when 640 acres south of Orange was dedicated for future development of a mental hospital. However, it wasn't until 1909 that plans for the hospital were drawn up and even then construction did not start till 1923.

As well as its historical significance the hospital 'in its landscape setting' is recognised as being of high aesthetic significance. Therefore it will be important to maintain the landscape amenity a visual catchment analysis is recommended for developments along Forest Road.

7.0 Conclusions and Recommendations

This assessment has considered the likely impact of the proposal on cultural heritage sites and places based on a desktop review of available information. A review of available heritage registers and lists has revealed that:

- There are no Aboriginal sites or places within the study area that are currently subject to a Declaration under the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)*;
- There are no sites or items within the study area that are currently listed as items of Commonwealth, National or World Heritage on lists established under the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*
- There are no Aboriginal objects currently listed on the AHIMS maintained by the NSW DECCW ;
- There are no places currently listed on the State heritage Register or the State Heritage Inventory maintained by the Heritage Branch of the NSW Dept of Planning under the Heritage Act of NSW.

However there is an item of State significance nearby, Bloomfield Hospital complex which is listed on the State Heritage Register (Item # 01745 Gazetted 10 March 06 p 1349) and it will be necessary for the proposed development to be mindful of this visual impact of the development on this historic hospital complex.

Landowners and developers have specific responsibilities and can play a key role in the conservation of cultural heritage values. These include:

- Ensuring they are sensitive to cultural heritage by identifying any values early in the development planning process,
- Designing their development projects to maximise the conservation of cultural heritage values and building in ways to recognise and celebrate these values.
- Planning their proposals to take account of significant heritage matters,



- Conserving places of heritage significance which are located on their land.
- Providing opportunities for public involvement in the conservation of cultural heritage,
- Ensuring that Aboriginal people and relevant stakeholders are consulted during the survey and assessment phase of cultural heritage assessments.

7.1 Considering the Potential of the Study area to contain unlisted sites

There are two questions of relevance to the design of the development options. The first of these has been considered here and answered with some confidence. This is: ***What is the likelihood of cultural heritage sites, objects and places existing on the property that are not yet included on registers?***

As discussed in section 4.5, it is unlikely that intact sites exist within that part of the study area proposed for residential and retail development although it is likely that some Aboriginal objects (as defined in the NPWS Act 1974, NSW) exist in these areas having been redistributed due to ploughing. Elsewhere in the study area, within the areas proposed as open space (see Figure 2 and note the green treed area to the north of the site around the dam), it is possible that small artefact scatters exist relatively intact as this area appears not to have been subject to major surface/subsurface disturbance. For similar reasons it is possible that isolated scarred trees will be present in the area proposed as open space. In either case the density of sites and the 'objects' associated with them is expected to be low.

It remains possible that there are some historic deposits or features associated with the historic uses of part of the property as a Common. Once again any such evidence should it exist is likely to be in the form of modest archaeological debris and is likely only to have survived in the area proposed as open space as elsewhere such material would have been disturbed by the agricultural activities.

The second question is harder to answer and this is: ***If sites do occur, how significant will they be?*** This question is considered in light of what can be deduced about the **likely** types of sites and objects (see section 4.5) and is contextualised through a consideration of the range of **possible** sites which occur in the region (see section 4.4). It can generally be assumed that the most likely Aboriginal site types will be small campsites and /or isolated scarred trees with limited capacity to provide significant new information. However the past use of parts of the area as a TSR and a public common are all factors that make the area somewhat unusual and increase the possibility that an archaeologically significant site may occur.

The concept plan proposes that most of the areas that have been identified as being of some degree of archaeological sensitivity will be included in open space which will minimise impact on any sites that do occur in these areas.

Overall it is considered unlikely that significant Indigenous or non-Indigenous sites occur as yet undetected within that part of the study area proposed for residential and commercial development (see figure 2). There remains a low-moderate chance of significant sites occurring within the less disturbed area that has been proposed as open space.

7.3 Recommendations

There are no obvious cultural heritage impediments to the development as presented in the concept plan. While there is no evidence that the study area has been previously surveyed for Aboriginal sites, the proposed development is restricted to previously disturbed farming land where it is likely that any sites that may once have existed will have been destroyed. While the past land-use is likely to have destroyed site integrity, NSW legislation protects 'objects' (the definition of which includes individual artefacts). There remains a likelihood that Aboriginal objects exist on the property albeit in a



disturbed context. Such objects always have some significance to the Aboriginal community; they can occasionally be of scientific significance in their own right. For these reasons a number of strategies are recommended below to mitigate the impact of the development.

Within that part of the study area proposed for residential and commercial development (see Figure 2) monitoring by an Aboriginal community representatives and an appropriately qualified archaeologist during initial stages of the development is appropriate. The focus of such a monitoring program would be the mapping, recording and salvage of Aboriginal objects.

Should any disturbance including creek rehabilitation or other works be required in the treed area, currently designated open space in the concept plan (see Figure 2) this should be preceded by a comprehensive archaeological survey and cultural heritage assessment of the area. The reason for this is because this area does not appear to have been subjected to the same past land-use disturbance and therefore there is greater likelihood of Aboriginal 'objects' remaining *in situ*.

Taking into account preliminary consultation with the local Aboriginal community, the following recommendations are made regarding mitigation against impact of the development on any as yet undetected Aboriginal objects.

1. Consultation with the local Aboriginal community should continue through the initial development stage
2. Specifically within that part of the study area proposed for residential and commercial development (see Figure 2) representatives of the Aboriginal community and a qualified archaeologist should be involved in monitoring the clearing and initial earth-moving works. The focus of this monitoring programme will be the recording and salvage of any Aboriginal objects.
3. Should any works be required within the treed area currently designated as open space in the concept plan (i.e the northern section of the study area –see Figure 2) then comprehensive field survey and assessment should precede that work.
4. Any Aboriginal objects or sites identified during the steps above should be recorded and the information added to the Aboriginal Heritage and Information System (AHIMS) managed by DECCW.
5. Aboriginal Object recovered should be stored in accordance with the wishes of the local Aboriginal community who have indicated that they have an arrangement to this end with the Milthorpe Museum.
6. An application for a permit to vest *Care and Custody of Aboriginal Objects* in the Orange LALC and the Milthorpe Museum should be completed if such objects are retrieved during monitoring.
7. Any non –Indigenous heritage relics identified during the steps above steps should be recorded and the information provided to the Heritage Branch, Dept of Planning NSW.
8. Copies of this report and any subsequent studies should be lodged with the Heritage Branch, Department of Planning NSW, the AHIMS in DECCW, NSW, the Orange Local Aboriginal Land Council and the Local Historical Society and local studies section of the Orange City Library.



References

- Australian International Council on Monuments and Sites. 1999 *The Australia ICOMOS Charter for the Conservation of Places of Cultural Significance*, (The Burra Charter).
- Carey, H., and Roberts, D. A. (eds.). (2002a). The Wellington Valley Project. Letters and Journals relating to the Church Missionary Society Mission to Wellington Valley, NSW, 1830–45. Electronic edition available from: <http://www.newcastle.edu.au/group/amrhd/wvp/>
- Dallas, M. 1991 Archaeological Survey at Canobolas Wool Topmaking Pty Ltd Land at Orange, NSW. Report to Canobolas Wool Topmaking Pty Ltd.
- Day, D. 2001 *Claiming a Continent: A new history of Australia*. Harper Collins Pty Ltd, Sydney (2nd edition).
- DECC 2005 Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation. DECC, NSW (unpublished draft guidelines relating to Part 3a of the *EPA Act, 1979 (NSW)*).
- Goodall, H 1996 *Invasion to Embassy: land In Aboriginal Politics in NSW 1770-1972*. Allen & Unwin in Association with Black Books.
- Haglund, L 1984. Assessment of the Prehistoric Heritage in the Orange City Area. Report lodged with NSW NPWS.
- Harcombe, L. 2007 Assessment of Crown Lands at Bloomfield, Orange, Parish of Orange, County of Bathurst. Report prepared for the Department of Lands, NSW.
- Irish, P. 2009 Preliminary Aboriginal and European Historical Heritage Assessment Report; Orange North 132kV Switching Station and associated Transmission lines, Orange NSW. Report to Aurecon Australia Pty Ltd on behalf of TransGrid.
- Kass, T. 2003. A thematic History of the Central West: comprising the NSW Historical Regions of Lachlan and Central tablelands . Report prepared for the NSW Heritage Office.
- Kuskie, P and Clarke E., 2007. Aboriginal Heritage Assessment: SMP Application Area (Longwall Panels w2-w3) of mining lease 1468, Ulan Coal Mine Central Tablelands, New South Wales. A report to Ulan Coal Pty Ltd.
- MacDonald, G. 1998. 'Master narratives and the Dispossession of the Wiradjuri'. Aboriginal History vol22 p162-179
- Marquis –Kyle, P. and Walker, M. 1992 *The illustrated Burra Charter* International Council on Monuments and Sites, Sydney, Australia.
- Mathews R.H 1901. Initiation Ceremonies of the Wiradjuri Tribes. American Anthropologist, New Series Vol.3, No. 2(April-Jun., 1901) pp337-341.
- Navin K and Officer, K 1994. Preliminary Cultural Heritage Overview Optus Link from Sydney to Newcastle and Orange. Report to Sinclair Knight. Navin Officer Archaeological Resource Management Pty Ltd.
- NSW Heritage Office. 2002 *Local Government Heritage Guidelines* . NSW Heritage Office, Parramatta.
- NSW Ministry for Aboriginal Affairs 19 ? Aboriginal reserves in NSW: A land Rights Research Aid. Occasional Paper No.4. NSW Govt Printers Office.



Oxley, J. 1820. *Journals of the Expeditions into the interior of New South Wales, by Order of the British Government in the Years 1817-1818*. London.

Ozark Environmental & Heritage Management Pty Ltd 2005 Indigenous Heritage Assessment Central West Regional Road /Rail Freight Terminal Bathurst , NSW Report to Mellor Gray Architects on behalf of SLOBAX Pty Ltd.

Paton, R 1990 An archaeological Investigation of MLA312 and MPLA315 at Junction Reef near Orange, New South Wales. A report to R.W Corkery and Co. National Heritage Studies Pty Ltd.

Pardoe, C. 2009 Cadia East Project Aboriginal cultural Assessment. Report to Cadia Holdings Pty Ltd

Pearson, M 1979. Aboriginal Sites in the Bathurst-Orange Development Area: A pilot survey.

Pearson, M 1981 Seen through Different Eyes: Changing Land-use and Settlement Patterns in the Upper Macquarie region of NSW from Prehistoric Time to 1860. Unpub PhD thesis, Department of Prehistory and Anthropology. ANU Canberra.

Pearson, M and Lennon, J. 2010 *Pastoral Australia: Fortunes, Failures and Hard Yakka, a historical overview 1788-1967*. CSIRO publishing in association with DEWHA & the Australian Heritage Council.

Read, P. (1988). *A Hundred Years War: The Wiradjuri People and the State*, Australian National University Press, Canberra.

Read, P. 1983. A history of the Wiradjuri people of New South Wales 1883-1969. Unpub PhD thesis ANU Canberra.

Reynolds, H. 1989 *Dispossession: Black Australians and White Invaders*. Allen & Unwin, St Leonards.

Tindale, N.B 1940 'Distribution of Australian Aboriginal Tribes: a field survey. Results of the Harvard -Adelaide Universities Anthropological Expedition. 1938-39'. *Transactions of the Royal Society of South Australia* Vol 64 pp140-231.

Wheeler, J. 2006 Bloomfield Hospital, Orange, NSW Heritage Impact Assessment, Proposed (Part 3A major-project) re-development. Report by Archaeological & Heritage Management Solutions Pty Ltd for the NSW Government Office.