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BATHURST REGIONAL LOCAL GOVERNMENT AREA

ABORIGINAL HERITAGE STUDY

PUBLIC RELEASE VERSION

Bathurst Regional Council

July 2017

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Prepared by Extent Heritage Pty Ltd on behalf of Bathurst Regional Council

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Frontispiece: *Bathurst Plains and Settlement*, 1825–28. Augustus Earle Watercolour Bequeathed by David Scott Mitchell, 1907. ML PXD 265, f.4

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EXECUTIVE SUMMARY

Extent Heritage Pty Ltd was commissioned by Bathurst Regional Council to prepare an Aboriginal cultural heritage study of the Bathurst Regional Local Government Area (LGA). The aim of this study was to identify objects, places and archaeological sites of Aboriginal cultural significance, record those places (if appropriate) and develop recommendations for their management and conservation.

Consultation with local Aboriginal community stakeholders and Wiradjuri traditional knowledge holders was undertaken in the preparation of this heritage study to identify cultural values and places, and to incorporate the views of the Aboriginal community in the development of Council policy for the management and protection of Aboriginal cultural values, places and sites. This included liaison with Local Aboriginal Land Councils, community organisations and Wiradjuri traditional owners, as well as the Office of Environment and Heritage and other agencies and departments.

The study identified 262 previously documented Aboriginal objects/sites within the LGA. In general, sites in the Bathurst LGA mostly comprise open artefact scatters, which were likely to have been camp sites or activity locales. These sites are distributed throughout the entirety of the LGA, and dominate the overall archaeological signature of the area. The next most common site category is modified trees, which encompass trees harvested for bark used in the fabrication of containers, shields and canoes, as well as ceremonial carved trees that were an important feature of Wiradjuri initiation and burial ceremony. Modified trees are mostly found in the upland forested areas along the eastern boundary of the LGA, in the central north. The third most common site feature are stone arrangements associated with Wiradjuri initiation and ceremonial activities, all of which are found in the central north, on the higher terrain just above the Macquarie River valley floor. In comparison with areas that have been subject to intensive investigation such as the Sydney Basin and the Hunter Valley, the archaeology of the Bathurst region is not well understood. This is largely due to a historical lack of development pressure, which is the main driver of archaeological investigation.

As part of the study, a detailed Thematic History and Interactive Wiradjuri Heritage Map of the Bathurst region were also prepared. These resources both identify and spatially reference places of cultural and historic Aboriginal significance throughout Bathurst's history. They focus on key historic themes and events relating to the daily lives of local Aboriginal people prior to European settlement; the role of Aboriginal people in the exploration of the region, both during initial settlement and in the gold rush era; frontier violence, Aboriginal resistance, the Bathurst War of 1824 and subsequent survival; and the struggle for social, cultural and legal recognition in the recent past. Over eighty site-specific ethnographic observations were identified and plotted, including historical paintings, word lists, Aboriginal tracks and locations of key historical events. The Interactive Map has been developed as an openly-accessible spatial file and has been incorporated into sensitivity mapping for consideration in protection and future planning decision making.

Extent Heritage has developed detailed Aboriginal heritage sensitivity mapping to assist Council in future planning and protection of Aboriginal cultural heritage and cultural values within the Bathurst LGA. The sensitivity mapping draws on detailed ethno-historical, environmental and archaeological research and staged consultation with the local Aboriginal community that included cultural values workshops. The sensitivity maps are designed to provide Bathurst Regional Council, landowners and development proponents with a guide to Aboriginal cultural sensitivity within various parts of LGA; to assist in gauging risk and making informed decisions about development design, zoning and the management of Aboriginal cultural resources.

Statutory Provisions, Management Recommendations and Actions

The environmental planning instrument that requires consideration of development and land use impacts on Aboriginal heritage in the Bathurst Regional LGA is the Bathurst Regional Local Environmental Plan 2014. This planning instrument requires Council to consider the impact of proposed development on known or potential Aboriginal heritage places and archaeological sites within its LGA boundaries.

The archaeological sensitivity map developed as part of the study is designed to inform Council planning and development approval decision making processes with respect to Aboriginal heritage. The sensitivity map is also designed to provide landowners and development proponents with a guide to archaeological sensitivity within various parts of the LGA to assist in gauging risk and making informed decisions about development design.

In general terms, the risk of impact on significant archaeological and Aboriginal cultural heritage values is likely to increase in accordance with sensitivity level. Therefore, areas that are in the very high sensitivity zones are likely to have the highest level of archaeological significance and as a result these areas are also likely to have the highest level of risk for development proponents. Likewise, areas of negligible sensitivity have a very low risk level.

We would recommend Council consider the following planning design responses with reference to the sensitivity zones on the sensitivity map developed as part of the study:

Very High Sensitivity: The aim of Council planning should be to minimise future development impact on these areas and where possible, to retain these areas in their current form. This approach will protect areas with high potential for significant archaeological deposits and cultural values.

Options for retention could include inclusion of parts of the very high sensitivity land within open space, riparian, bio-link, set-backs and/or asset protection zones. Where possible, the landscape integrity and amenity of these areas should be retained, including appropriate set-backs where this is relevant. Appropriate and robust planning provisions should be established during the Council planning and re-zoning process for areas that are proposed to be retained. Provisions for retention could include specific measures that limit ground disturbance or erosion into the future.

Where development impact must occur within the areas of Very High Sensitivity, Council should require an Aboriginal Cultural Heritage Assessment (ACHA) in accordance with OEH standards and guidelines, prior to approval of re-zoning or development approvals. If an activity area includes a cultural place identified by the Aboriginal community during the current study, Council should ensure adequate consultation with the knowledge holders who identified the place to ensure its values are given due consideration in development and planning decision making.

High and Moderate Sensitivity: where there is an opportunity, development impact should be minimized where practicable through Council development application processes. For instance, where there are opportunities to establish open space, these could be placed on areas of high / moderate sensitivity rather than areas of low sensitivity to protect Aboriginal heritage. Areas of high sensitivity should take precedence over areas of moderate sensitivity.

Where development impact is proposed within the areas of High Sensitivity, Council should require an Aboriginal Cultural Heritage Assessment (ACHA) in accordance with OEH standards and guidelines prior to approval of development approvals. If an activity area includes a cultural place identified by the Aboriginal community during the current study, Council should ensure adequate consultation with the knowledge holders who identified the place to ensure its values are given due consideration in development and planning decision making.

Where development impact is proposed within the areas of Moderate Sensitivity, Council should require a Due Diligence Assessment in accordance with the OEH Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales prior to approval of development applications.

Very Low and Low Sensitivity: no design and planning recommendations. These areas are essentially 'neutral' from a planning and protection perspective and are generally compatible with residential subdivision and development.

Unless there are known Aboriginal places or sites within a proposed development area or proposed land use activity area, development may generally 'Proceed with Caution' in these areas. Council should however assess each development proposal on a case by case area in accordance with the OEH Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales process.

Negligible Sensitivity: these areas could be the focus of future development, particularly high impact features of a subdivision like a town centre, medium or high density residential, industrial or commercial.

Unless there are known Aboriginal places or sites within a proposed development area or proposed land use activity area, development may generally 'Proceed with Caution' in these areas. Council should however assess each development proposal on a case by case area in accordance with the OEH Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales process.

The following recommendations set out the key legal requirements that apply to development planning within the Bathurst Regional LGA and within the East Kelso Residential Expansion area:

1. If a proposed activity will or is likely to harm a known Aboriginal site, object or place registered on the OEH *Aboriginal Heritage Information Management System* (AHIMS), the proponent must obtain an Aboriginal Heritage Impact Permit (AHIP) from the Office of Environment and Heritage (OEH) before the activity may commence.

2. If a proposed activity will not impact on any known Aboriginal sites, objects or places:

    a. If the activity is a 'low impact activity' described under Clause 80B, Section 87(4) of the National Parks and Wildlife Act 1974, it may proceed with caution without the need for a formal Aboriginal Cultural Heritage Assessment, provided the activity does not impact on an Aboriginal carved or scarred tree and provided that work ceases in the event any Aboriginal sites or objects are discovered during the activity and OEH are notified for advice before work recommences.

    b. If the activity is not a 'low impact activity' the proponent must undertake a Due Diligence Assessment in accordance with the OEH *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW.* If the assessment finds the activity is likely to harm Aboriginal heritage, a formal Aboriginal Cultural Heritage Assessment (ACHA) will be required before the activity can commence.

3. **Known Aboriginal Places** – registered on the OEH Aboriginal Heritage Information Management System (AHIMS) are protected by the *NSW National Parks & Wildlife Act 1974*. It is an offence to disturb or destroy these places without first obtaining an Aboriginal Heritage Impact Permit (AHIP) from OEH.

4. **Blanket Protection** – The *NSW National Parks & Wildlife Act 1974* provides blanket protection for all Aboriginal sites, objects and places. If any Aboriginal objects (artefacts),

sites, places or skeletal remains are identified at any time before or during development works, they cannot be harmed until an Aboriginal Heritage Impact Permit (AHIP) that specifically permits harm to that place has been approved by OEH.

5. The **Aboriginal Sites and Places** identified in this study should be recorded on the OEH Aboriginal Heritage Information Management System.

CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 INTRODUCTION

1.1 The Project

Bathurst Regional Council commissioned Extent Heritage Pty Ltd to prepare an Aboriginal Heritage Study of the Bathurst Regional Local Government Area (LGA). The study was designed to establish a more coherent and encompassing picture of Aboriginal cultural heritage values in the Bathurst Region and to enable Bathurst Regional Council to make informed decisions regarding the management and protection of Aboriginal cultural heritage within its Local Government Area. The information provided in this study is intended to be used as the basis for a range of community, educational, cultural, heritage and planning programs and policies.

1.1.1 Project Aims

The principle aims of the Heritage Study were to:

- Outline the statutory requirements relevant to the Bathurst region with regard to Aboriginal cultural heritage;
- Undertake Aboriginal community consultation with local Aboriginal groups and members of the Aboriginal community, in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (Department of Environment, Climate Change and Water [DECCW] 2010) and *Ask First: A Guide to respecting Indigenous heritage places and values* (Australian Heritage Commission 2002);
- Carry out detailed primary and secondary research for the preparation of a thematic history with particular emphasis on both pre- and post-contact Aboriginal history, using themes developed by the Department of Planning, Heritage Branch;
- Identify, record and map Aboriginal heritage objects, sites and places identified during the production of the thematic history, or identified by members of the local Aboriginal community, in accordance with the wishes of the local Aboriginal community;
- Assess the cultural significance of any identified objects, sites and places in consultation with members of the local Aboriginal community;
- Develop recommendations for the management of Aboriginal cultural heritage in the Bathurst Regional LGA, in consultation with members of the local Aboriginal community.

1.1.2 Report Format

The Draft Bathurst Region Aboriginal Heritage Study Report is set out in the following format:

- Executive Summary
- Section 1: Introduction
- Section 2: Legislative Context
- Section 3: Environmental Context
- Section 4: Ethnographic and Thematic History
- Section 5: Archaeological Context
- Section 6: Modelling and Sensitivity Maps
- Section 7: Aboriginal Consultation
- Section 8: Aboriginal Cultural Heritage Management Strategy
- Section 9: References

1.2 The Study Area

The Bathurst Regional Local Government Area covers approximately 3,820 square kilometres and is located within the Central West region of NSW, approximately 100 kilometres northeast of Cowra and 160 kilometres west of Sydney (**Figure 1**). Bathurst Regional LGA is one of thirteen local government areas to make up the Central West region along with Lachlan, Bland, Weddin, Forbes, Parkes, Cabonne, Orange, Blayney, Cowra, Oberon, Lithgow and Mid-Western.

A significant proportion of Bathurst Regional LGA is agricultural land, with lesser proportions of dedicated state forest or national park and residential areas. Major watercourses in the northern portion are the Macquarie, Turon, Fish and Campbells Rivers, and the Abercrombie and Isabella Rivers in the southern portion.

The majority of the Bathurst Region population of 41,682 (2014 Census) lives in the City of Bathurst and surrounding residential areas, including Kelso, West Bathurst, Windradyne, Llanarth and Raglan. The remaining population resides across rural areas where cattle grazing, mixed farming and viticulture predominate. Manufacturing industries as well as education and timber processing are significant contributors to the local economy.

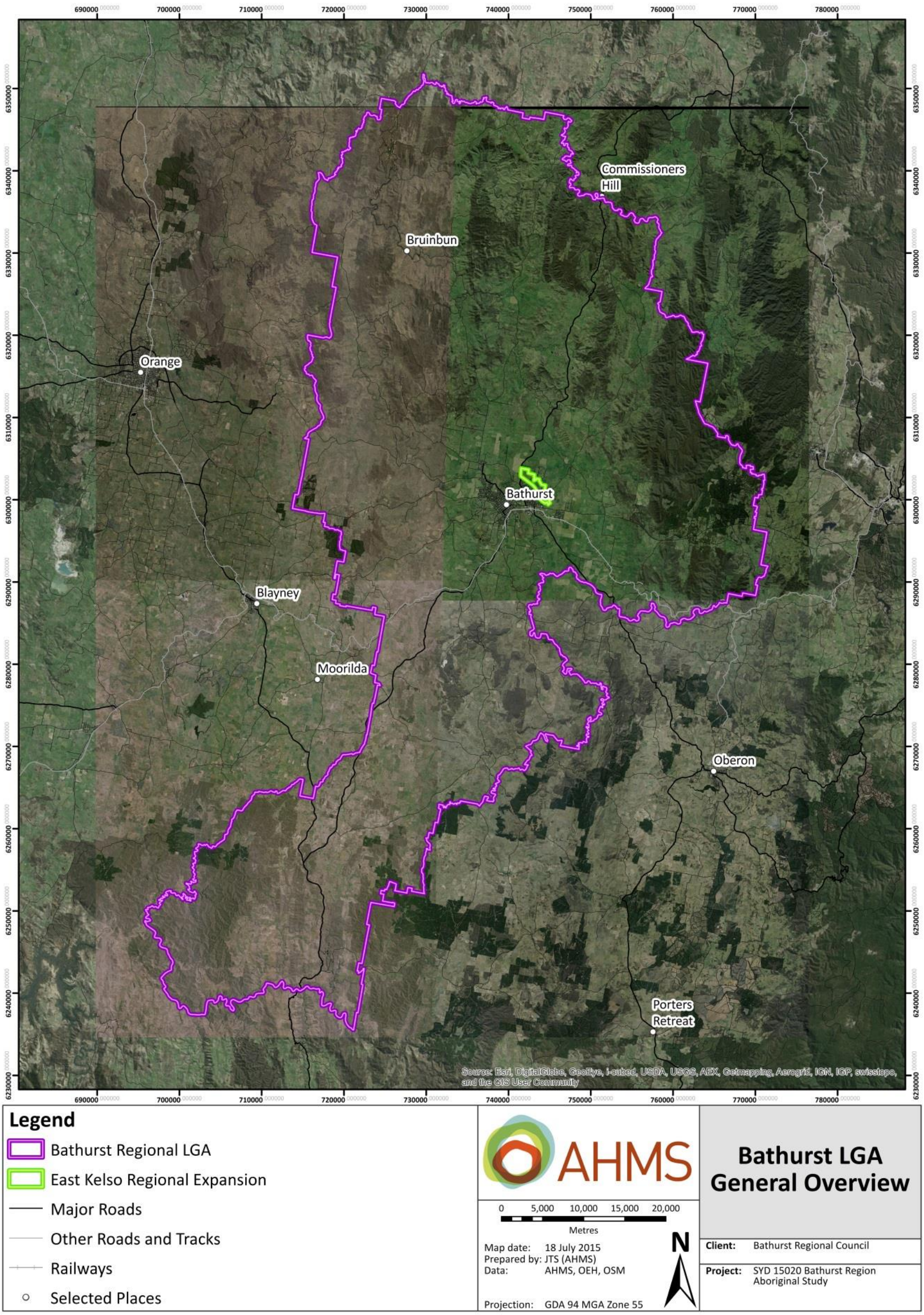

Figure 1. Bathurst Regional Local Government Area. The boundaries of the East Kelso Regional Expasion are also highlighted.

2 LEGISLATIVE CONTEXT

2.1 Preamble

A brief outline of the heritage legislation that applies or may apply to Aboriginal archaeological sites and historical sites of heritage significance in the Bathurst Regional LGA, is outlined below. It has been summarised because it establishes the context for several of the management recommendations in **Section 8**.

2.2 Commonwealth Registers and Legislation

2.2.1 The Aboriginal and Torres Strait Islander Heritage Protection Act 1984

The *Aboriginal and Torres Strait Islander Heritage Protection Act, 1984* preserves and protects areas (particularly sacred sites) and objects of particular significance to Aboriginal Australians from damage or desecration. As well as providing protection to areas, it can also protect objects by Declaration, in particular, Aboriginal skeletal remains (Section 12). The Commonwealth can invoke the application of the Act on a State level if the State is unwilling or unable to provide protection for such sites or objects.

2.2.2 Environment Protection & Biodiversity Conservation Act 1999

The *Environment Protection & Biodiversity Conservation Act, 1999* provides for the protection of natural and cultural heritage places. The Act establishes (amongst other things) a National Heritage List (NHL) and a Commonwealth Heritage List (CHL). It also provides for and protects Australian places on the World Heritage List.

The Act requires that the Minister administering the EPBC Act assess any action which has, will have, or is likely to have, a significant impact on the heritage values of a listed place.

There are no Aboriginal heritage items or places listed on the NHL or CHL within the BRLGA.

2.2.3 The Register of the National Estate

While no longer a statutory register, and closed to new entries, the Register of the National Estate (RNE) includes 89 sites within the BRLGA. Only three of these relate to Aboriginal heritage:

- Indigenous Place, Dunkeld, NSW, Australia (#16033 – Indicative Place)
- Indigenous Place, Portland, NSW, Australia (#16039 – Indicative Place)
- Bathurst General Conservation Area Extension, 10-22 Busby St, South Bathurst, NSW, Australia (#101318 – Registered Place)

Requests for further information regarding the nature and extent of these Aboriginal sites were made with the Department of the Environment, though no further details could be provided. On the basis of other registered Aboriginal places on the RNE, and considering the Aboriginal sites that have been previously identified in the region, they are likely related to artefact scatter sites or mythological/ceremonial sites. The RNE Statement of Significance for the Bathurst General Conservation Area Extension states that “Indigenous values of national estate significance may exist in this place [but] as yet, these values have not been identified, documented or assessed”. No particular cultural values for the Busby Street area were identified by Traditional Owners during the course of the current Heritage Study, however, and it is considered that further investigation is required to investigate these claims.

2.2.4 Native Title Act 1993

The *Native Title Act 1993* provides recognition and protection for native title. The Act established the National Native Title Tribunal to administer native title claims to rights and interests over lands and waters by Aboriginal people. The Tribunal also administers the future act processes that attract the right to negotiate under the *Native Title Act 1993*.

The Act also provides for Indigenous Land Use Agreements (ILUA). An ILUA is an agreement between a native title group and others about the use and management of land and waters. ILUAs were introduced as a result of amendments to the Native Title Act in 1998. They allow people to negotiate flexible, pragmatic agreements to suit their particular circumstances.

An ILUA can be negotiated over areas where native title has, or has not yet, been determined. They can be part of a native title determination, or settled separately from a native title claim. An ILUA can be negotiated and registered whether there is a native title claim over the area or not.

A search of the National Native Title Tribunal Registers was undertaken on 19 May 2015. No registered or unregistered native title claims or Indigenous land use agreements have been registered for areas within the Bathurst Regional LGA.

2.3 NSW Legislation

2.3.1 The National Parks & Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NPW Act) is the principal legislation managing Aboriginal heritage in NSW. To a large extent, except where otherwise specifically suspended, other key statute defers to the NPW Act with respect to Aboriginal cultural heritage management. The NPW Act protects all Aboriginal objects and places, whether they are known and included in heritage registers of schedules or not, and defines an Aboriginal Object as:

> *...any deposit, object or material evidence (not being a handicraft for sale) relating to indigenous and non-European habitation of the area that comprises New South Wales, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction, and includes Aboriginal remains.(NPWS Act, NSW, 1974S5(1))*

An Aboriginal Place is any place declared by the Minister for Environment & Heritage under Section 84 of the NPW Act to be an Aboriginal place. There are no declared Aboriginal places within the Bathurst Regional LGA.

Under Section 90 of the NPW Act it is an offence to 'harm' an Aboriginal object or place unless an Aboriginal Heritage Impact Permit (AHIP) has been issued by the Director General of the Office of Environment and Heritage (OEH). In addition, anyone who discovers an Aboriginal object is obliged to report the discovery to OEH.

The operation of the NPW Act is administered by OEH. With regard to the assessment of Aboriginal cultural heritage, OEH has endorsed the following guidelines:

- Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (DECCW 2010b).
- Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010c).
- Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010).

- Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW (OEH 2011).

OEH Due Diligence Code

The Office of Environment and Heritage (OEH) have developed a Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales (hereafter 'the Code'). The Due Diligence advice has three objectives:

- To identify whether or not Aboriginal objects are, or are likely to be, present in a proposed activity area;
- To determine whether or not a proposed activity is likely to harm Aboriginal objects (if present); and
- To determine whether an Aboriginal Heritage Impact Permit (AHIP) application and approval from OEH is required for a proposed activity.

The Code stipulates that a more detailed Aboriginal Cultural Heritage Assessment (ACHA) should be undertaken if a Due Diligence assessment concludes there is a likelihood the land subject to proposed development impact contains Aboriginal sites, objects and/or an AHIP is required.

The OEH Due Diligence Code of Practice provides a flowchart composed of four questions that are designed to identify whether or not a proposed activity has the potential to harm Aboriginal objects. The questions are as follows (DECCW 2010b):

1. *Will the activity disturb the ground surface or any culturally modified tree?*

2 *Are there any relevant confirmed site records of other associated landscape feature information on AHIMS? or Are there any other sources of information of which a person is already aware? or Are there any landscape features that are likely to indicate the presence of Aboriginal objects?*

3. *Can harm to the Aboriginal objects listed on AHIMS or identified by other sources of information and/or can the carrying out the activity at the relevant landscape features be avoided?*

4. *Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?*

If the Due Diligence assessment concludes that the proposed activity is unlikely to harm Aboriginal objects or Aboriginal objects are unlikely to be present within the area of development impact, the activity may 'proceed with caution'. If the Due Diligence process concludes that the proposed activity will or is likely to impact on Aboriginal sites, objects or places, a formal Aboriginal Cultural Heritage Assessment (ACHA) must be undertaken in accordance with OEH standards and guidelines.

2.3.2 Heritage Act 1977

The *Heritage Act 1977* is administered by the NSW Department of Premier and Cabinet and the Office of Environment and Heritage, and it predominantly protects places, buildings and landscapes and archaeological sites of historical heritage significance. Places of Aboriginal heritage significance, such as mission sites, may be listed on the State Heritage Register (SHR) or subject to an Interim Heritage Order (IHO) under the Act. Most places of Aboriginal heritage significance included on the SHR are missions or reserves or similar.

The only place within the Bathurst Regional LGA included on the SHR for its Aboriginal heritage values is Windradyne's Grave at Brucedale, listing number 01714.

2.3.3 Aboriginal Land Rights Act 1983

The *Aboriginal Land Rights Act 1983* was established to provide land rights for Aboriginal people in NSW and to provide for representative land councils and to enable the vestment of land in these councils and also to provide funding and provide for community benefit schemes by and on behalf of Aboriginal Land Councils. Importantly it allows vacant Crown land not required for an essential purpose or for residential land, or subject to a native title determination or an application for determination, to be claimed and transferred to an Aboriginal Land Council. A search of existing and completed land rights claims under the Act in the Bathurst Regional LGA can be undertaken through the NSW Office of Registrar Aboriginal Lands Right Act 1983. A search was not undertaken for this study as individual lot and DP numbers are required to initiate a search and this was beyond the scope of the study.

2.3.4 The Environmental Planning & Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) can establish mechanisms for managing and protecting places of Aboriginal heritage significance in land use and development planning. Part 3 of the Act is principally about preparing Local Environmental Plans (LEPS) and State Environmental Planning Policies (SEPPs). Part 4 of the Act establishes provisions for preparing, considering and approving development applications where Council or the State is the consent authority. Part 5 relates to activities proposed and determined by a public authority (State or local).

The Act (through its Regulations and policies) and planning practice notes requires that Local Environment Plans (LEPs) that affect an Aboriginal object or place must include provisions to facilitate conservation of that object or place. Places of Aboriginal heritage significance can also be included in LEP heritage schedules and so be subject to LEP heritage clauses that require council to consider the effect of a proposed development on their heritage significance before granting development consent.

Part 4.1 of the Act suspends the operation of key Aboriginal heritage provisions of the *National Parks & Wildlife Act 1974* for certain Major Developments.

2.3.5 Bathurst Regional Local Environment Plan 2014

Section 5.10 of the Bathurst Regional LEP 2014 establishes procedures for considering and managing Aboriginal heritage in development contexts. Extracts from key clauses are summarised below.

The objectives of Clause 5.10 are:

> (c) to conserve archaeological sites,
> (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

Clause 5.10(2) requires that consent is required for any of the following:

> (c) disturbing or excavating an archaeological site while 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,
> (d) disturbing or excavating an Aboriginal place of heritage significance,
> (e) erecting a building on land:
>> (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance,
> (f) subdividing land:
>> (ii) on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance.

Clause 5.10 (8) requires that the consent authority must, before granting consent under this clause to the carrying out of development in an Aboriginal place of heritage significance:

- consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place by means of an adequate investigation and assessment (which may involve consideration of a heritage impact statement); and
- notify the local Aboriginal communities, in writing or in such other manner as may be appropriate, about the application and take into consideration any response received within 28 days after the notice is sent.

Windradyne's Grave site, located in the north-western corner of a paddock on 'Brucedale', at 1361 Sofala Road, NSW 2795 (Item I199), is the only item of Aboriginal heritage significance listed on Schedule 5 of the Bathurst Regional LEP.

3 ENVIRONMENTAL CONTEXT

3.1 Preamble

Identifying environmental characteristics and contexts is an essential initial step in identifying how Aboriginal people used the landscape in the past and therefore the Aboriginal archaeological potential of any given area. It also assists to explain why certain historical events may have occurred and why certain historical themes may apply or dominate in a particular area. The environmental context of the Bathurst region and the wider South-eastern Highlands Region of NSW, which includes the Bathurst LGA, is discussed below.

3.2 Environment and Landform Characteristics

3.2.1 Bioregions

The CSIRO Interim Bioregionalisation of Australia (IBRA) (Thackaway & Cresswell, 1995; Morgan & Terry, 1992) identifies that the Bathurst LGA is located within the South-Eastern Highlands Bioregion. Bioregions are relatively large land areas that are distinguished from one another by broad, landscape-scale natural features and characteristic environmental processes. Bioregions can be further subdivided into sub-bioregions which are distinguished by finer differences in geology, vegetation and biophysical attributes. The South-Eastern Highlands Bioregion covers the dissected ranges and plateau of the Great Dividing Range, and is formed of Palaeozoic granites, metamorphosed sedimentary rocks and Tertiary basalts. Topographically, the dominant features of the bioregion are plateau remnants, granite basins with prominent ridges formed on contact metamorphic rocks and the western ramp grading to the South Western Slopes. Streams cutting through the bioregion are deeply entrenched with only a few terrace features. Valleys are narrow and there is little Quaternary sediment except in the numerous lake basins of the Monaro province (outside of the Bathurst Regional LGA).

There are a total of ten sub-bioregions within the South-Eastern Highlands bioregion. The Bathurst subregion encompasses the Bathurst area, and is characterised by low rounded hills in a granite basin surrounded by steep slopes on the margin. Granite outcrops (tors) occur frequently at the margins between gentle and steeper topography, while terrace alluvium (Quaternary sands) occur in isolation along the Macquarie River.

3.2.2 Landforms

The landforms in the Bathurst subregion that are important indicators of the type, distribution and survival of Aboriginal archaeological sites and places of value are:

- Flats – generally occurring adjacent to creeks and of less than 3% slope angle. Frequently these types of landforms retain significant depositional soil profiles that can retain undisturbed Aboriginal archaeological material;
- Slopes – a wide ranging landform that can be further delineated into lower, mid and upper slopes. Slopes are differentiated through slope angle, with lower depositional slopes being of key archaeological interest;
- Ridgelines – a flat or very gently sloping linear landform, which is distinguished by its elevation above the general surrounding landscape and its location at the top of a slopes. The delineation between slopes and ridgelines is not always clear. Hillcrests are similar to ridgelines, but will generally be circular, rather than linear in nature;

- Spurs – a landform that is defined by it elevation above surrounding slopes. Unlike ridgelines, spurs are characterised by a clear change of angle between the spur and surrounding slopes. Spurs are frequently associated with adjacent ridgelines and/or adjacent creeklines; and
- Creeklines/watercourses/rivers – a linear landform that retains water and facilitates it movement, generally found in low lying areas or in the base of valleys and within hill depressions.

3.2.3 Geology and Soils

Geological and soil landscape mapping provides a useful insight into the expected conditions within the LGA, but due to the scale of the mapping (1:100,000-1:250,000) it is not a reliable predictor of conditions on the ground at any given place. Ground truthing is usually required to confirm geology and soil types.

Geographically, the study area is situated on the Central Tablelands – an extensive landscape comprising several plateaux. The highest peaks occur near Mount Lambie, Black Springs and Mount Canobolas (1,398m). The dominant geology across the Bathurst sub-region consists of Carboniferous granite with limited areas of Tertiary basalt caps and Quaternary sands along the Macquarie River (**Figure 3**). The granite hills around Bathurst lie at much lower elevations (c. 700m) forming part of the Macquarie River Valley and the Bathurst Plain. The region is drained by the Macquarie River and its tributaries.

To a large extent, slope determines the depth of soil and drainage regime in the region. Soils are generally shallow and well-drained on steep slopes with frequent rock outcrops. Lower slopes and depressions generally contain deeper poorly-drained soils. To describe soils across the vast Bathurst Regional LGA the Great Soil Group classification system (Soil Conservation Service of NSW, after Stace *et al.* 1968), which groups a range of unique soil landscapes, has been used. In the Bathurst area, where the underlying geology is predominantly granite, Siliceous Sands, Red Earths and Red Podzolic soils form on hill crests and upper slopes; Chocolate soils and Red and Yellow Podzolic soils form on mid slopes; Red Sodolic soils and Soloths develop on lower slopes, depressions and along drainage lines and deep Alluvial soils on valley bottoms, plains and alluvial terraces. Their specific distribution across the LGA and specific characteristics are summarised in **Table 1** and illustrated in **Figure 4** below.

Soil landscape mapping of the Bathurst region by the Soil Conservation Service of NSW reveals that as many as 30 unique soil landscapes occur across the Bathurst Regional LGA; though much of the Bathurst town centre, and the Kelso expansion area, are situated on the Bathurst Soil Landscape. This soil landscape occurs on the low, undulating to rolling hills surrounding Bathurst, and has non-calcic brown soils with yellow solodic soils on the lower slopes and in drainage lines. Sands and mottled yellow solodic soils also occur. The underlying geology is mapped as Bathurst Granite, consisting of medium- to coarse-grained and massive granodiorites and adamellites. Slopes range from 6-10%, with the length of slope usually between 400 and 800m. Erosion channels drain north into major waterlines.

Aboriginal objects (if present) are likely to be found within A horizon topsoils, often deflating to form a layer above the interface with the B horizon.

3.2.4 Vegetation

The natural vegetation of a landscape is an important consideration, because the resources provided by the natural vegetation were an important factor in determining the range of uses and nature of occupation that may have occurred in the past. Bark from particular tree species was stripped to make

canoes, shields and other items. The vegetation itself provided food resources such as edible plants, fruits and seeds and also provided habitats for animal food sources such as possums and birds.

Prior to European settlement much of the area was savannah woodland, dominated by open-canopied eucalypts, sparse shrubs and a continuous grassy ground cover. Remnant vegetation communities associated with the Southern Tableland Grassy Woodlands, Upper Riverina Dry Sclerophyll Forests and Southern Tableland Dry Sclerophyll Forests provide glimpses of past vegetation which existed during Aboriginal occupation (**Figure 5**). Typical tree species would have included Yellow Box (*Eucalyptus melliodora*), Red stringybark (*E. macrorhyncha*) and Scribbly gum (*E. rossii*); while Blakeys red gum (E. blakelyi), grey box (E. microcarpa), apple box (*E. bridgesiana*), bastard box (*E. elaeophloia*) and broad leafed peppermint (*E. dives*) dominated lower areas (Keith 2006:92-93; 164-165).

Historical sources provide further clarification of the nature of the original vegetation in the Bathurst area. Early watercolours and sketches of the region shortly after settlement was established, and before land clearance would have drastically altered the landscape, illustrate a landscape dominated by vast, open grassy plains; with small stands of relatively dispersed and low-statured eucalypt forest. In contrast, more established, taller gum species are visible along the banks of rivers and creek lines, where alluvial soils of greater fertility would have supported a more diverse and abundant plant resource (**Figure 2**). The settlement was often described as the 'Bathurst Plains', a fitting moniker to describe the open character of the landscape.

Figure 2. Sketch of 'An east view of Bathurst Plains from an eminence near the West extremity', by Mrs R. Sadlier, c.1820 (Source: State Library of NSW, Digital Order No. a7232001).

Further descriptions of the Bathurst landscape were provided by Surveyor John Oxley, who in 1817 described land in the vicinity of Wellington:

From several of the hills over which our route led us, we had the most extensive and beautiful prospects; from thirty to forty miles round, from the north to south, the country was broken in irregular low hills thinly studded with small timber, and covered with grass: the whole landscape within the compass of our view was clear and open, resembling diversified pleasure grounds irregularly laid out and planted. The animation of the whole scenery was greatly increased by the smoke of the natives' fires arising in every quarter, distinctly marking that we were in a country which afforded them ample means of subsistence; far different from the low deserts and morasses to the south-west (Oxley 1817).

In the post-contact period, stands containing yellow box, apple box, some white box (*E. albens*) and red stringybark were retained across much of the area outside of settlement. Ribbon gums (*E. viminalis*) occurred on lower slopes, with brown barrel (*E. fastigata*) present in the east of the region. Patches of black cypress pine (*Callitris endlicheri*) occurred in areas of outcropping rock, while river oak was present along streams and creeklines (Morgan 2001, cited in Office of Environment and Heritage 2011).

It is likely that some remnant trees survive across the Bathurst LGA area, particularly where limited disturbance has occurred. Some of these trees may be of sufficient age to have scars associated with Aboriginal occupation; evidence of the removal of bark for making products such as shields, canoes or containers. Such trees are known as “scarred trees”. Although rare, there is also a possibility mature trees may have carvings associated with Wiradjuri traditions, often associated with burial and initiation areas. Such trees are known as “carved trees”.

3.2.5 Hydrology and Drainage

The Bathurst LGA is situated within the Macquarie River catchment area, which forms part of the wider Murray-Darling basin. The Macquarie River, a large fourth-order watercourse rises in the central NSW highlands, formed from the confluence of the Fish and Campbell Rivers and extends on a north-west direction through the northern part of the LGA. The Turon River rises in the Capertee Valley, also flowing through the northern part of the LGA, forming a further confluence with the Macquarie River near Sailors Bluff (**Figure 6**; Environmental and Heritage Management 2011:17).

As well as providing water, the rivers and nearby creeks would have supported diverse plant and animal resources. It is likely that they formed critical resources for Aboriginal use and occupation of the region in the past. The banks of the Macquarie River were used as a camping location by local Aboriginal people in the historical period (Oxley 1817), and it is likely this was also the case prior to contact.

A large number of smaller order drainage lines extend across much of the Bathurst LGA, typically as tributaries of the higher order lines (**Figure 6**). Though these may have provided sources of water shortly after periods of inundation, they were by no means perennial and would generally not have supported Aboriginal populations in the past. It is clear from historic accounts that Aboriginal occupation was associated with areas that were rich in resources and near reliable sources of water (Oxley 1817). This is a general pattern that has also emerged from archaeological investigations, as will be discussed in subsequent sections of this report.

3.2.6 Land Use and Disturbance

The Bathurst Regional LGA has been subjected to varying degrees of historical disturbance since the early nineteenth century. At a broad level, disruption to traditional Aboriginal occupation of the land began when the town of Bathurst was first settled; land on the western bank of the Macquarie River was reclaimed for the construction of convict huts, barracks and other administrative buildings, thus restricting access to traditional hunting grounds and marine resources. What little vegetation remained in close proximity to the settlement was quickly felled for the construction of housing and other infrastructure, such that mature trees bearing evidence of Aboriginal cultural modification (scarring and carving) would likely have been destroyed. This likely forced local Aboriginal clans to either relocate into the potentially hostile lands of neighbouring Aboriginal groups, to partially integrate into colonial society as fringe dwellers, or to resist. Resistance by Aboriginal groups was often met with retaliatory action by white settlers and the colonial administration.

Further disruption to Aboriginal land and dislocation of the Aboriginal population of the region occurred with the coming of the gold rush. Payable gold was discovered at Ophir near Orange in 1851, and later in the same year on the Turon River. Goldfield settlements were quickly established at Sofala, on a small plain above the Turon River; and later at Bald Hill (Hill End) and Tambaroora. The gold rush brought with it an influx of free emigrants, many of whom brought new skills and professions to the colonial settlement. Some of these chose to stay on and established themselves in the newly prosperous city. The coming of the Great Western Railway in 1876 further transformed the Bathurst township itself. The town was marketed as a major regional tourist destination and construction of civic and residential buildings reflected the town's landmark status.

Outside of the boundaries of the Bathurst settlement and its expanding urban footprint, however, little historic development occurred. The expansive, open grasslands of the 'Bathurst Plain' were well-suited for pasture grazing, and large tracts of land were partially cleared and used for sheep and cattle rearing, for small scale farming, and orcharding. A number of State Forests, Reserves and Parks containing remnant natural vegetation were set aside, particularly in the southern (Mount David State Forest, Copperhannia Nature Reserve) and eastern (Turon State Forest, Winburndale Nature Reserve) portions of the LGA.

As the population of the Bathurst region has and will continue to expand, those areas previously used for agricultural purposes are becoming increasingly resumed. This has included the areas of West Bathurst, Kelso, Windradyne, Llanarth and Raglan. Major future release areas include East Kelso and Eglinton.

Table 1. Great Soil Group Descriptions, after Stace et al. 1968 (Kovac, Murphy & Lawrie 1990:5-9).

Great Soil Group	Description	Associated soil landscapes in LGA
Alluvial Soils	Described as those soils relating to post-European settlement. They generally occur in valley bottoms or flats where both overbank and bedloaf river sedimentation has occurred. Found on alluvial plains and terraces of the Lachlan, Molong, Bell, Macquarie, Campbells and upper Belubula Rivers and associated creeks.	Lachlan; Macquarie
Chocolate Soils	Generally occur on mid to upper slopes of Gingkin soils and are derived from Tertiary basalts. These soils are moderately to highly fertile with an accumulation of organic matter in upper horizons. Grazing on improved pasture is practiced.	Gingkin
Krasnozems	Occur in the east on hillslopes of Tertiary basalt. These soils are moderately fertile and are used for orchards, pasture and for pine plantations.	Panorama
Non-calcic Brown Soils	Occur mainly to the west and in the Bathurst rainshadow area, on slopes of undulating to rolling hills on various parent materials (Canowindra Porphyry, Bathurst Granite). Soils are of low fertility, massive of weakly structured and range from sandy loam to loam, fine sandy.	Bathurst; Wiagdon
Red Earths	Occur on well drained slopes and crests mainly associated with andesites and other sedimentary and meta-sedimentary rocks. Soils have low to medium nutrient status and are used for native and improved pastures.	Sunny Corner; Vittoria-Blayney
Red Podzolic Soils	Widespread across the south central and northern part of the area, on a variety of landforms and parent materials. They occur on well drained upper to midslopes. Topsoils are usually sandy loams or fine sandy loams, ranging to loam, fine sandy, overlying well-structured sandy to heavy clays.	Carcoar-Barry; One Eye; Rockley; Sofala; Wattle Flat
Red Solodic Soils	Not as widespread as the yellow solodic soils, occurring mainly in the Raglan, Dulladerry and Greydene soil landscapes. The soils are strongly differentiated with the topsoils mainly sandy loam, with some loamy sands and loams, overlying sandy clay loams to heavy clays. These soils can be used for grazing native pastures, when cleared.	Raglan
Shallow Soils	Also known as Lithosols, these soils intergrade with other soups with gradational or duplex profiles. They are usually less than 50cm deep, with some only 10cm. They support native vegetation or are used for native pastures. Rock outcrop is common.	Abercrombie; Burrendong; Lambie; Pine Mountain; Razorback
Siliceous Sands	Occur mainly on siliceous granites on hillcrests and slopes and on coarse-grained intermediate igneous rocks of Quarry soil landscape. They are weakly differentiated with shallow loamy sand to sandy loam. Siliceous sands are chemically infertile but in some areas will support improved pasture.	Duckmaloi; Rocks
Soloths	Occur on lower slopes and in drainage depressions. These soils are generally similar to podzolic soils; but are highly erodible and susceptible to gully erosion.	Mookerawa; Mullion Creek
Terra Rossa Soils	Occur on limestone on well drained undulating low hills. They are often shallow and overlying bedrock. Topsoils vary from loams, fine sandy to clay loams. The main land use is grazing, because they are frequently associated with limestone rock outcrop.	Limekilns
Yellow Podzolic Soils	Present on the Gumble and Young Granites, and Black Springs and Isabella Granodiorites. They occur mostly on midslope, although they do occur upslope in Mayfield soils. Topsoils are sandy loams to fine sandy loams, overlying sandy clay loams to heavy clays. The main land use is grazing, however some pine plantations occur in Mayfield soils.	Burraga; Mayfield; Trunkey; Yetholme

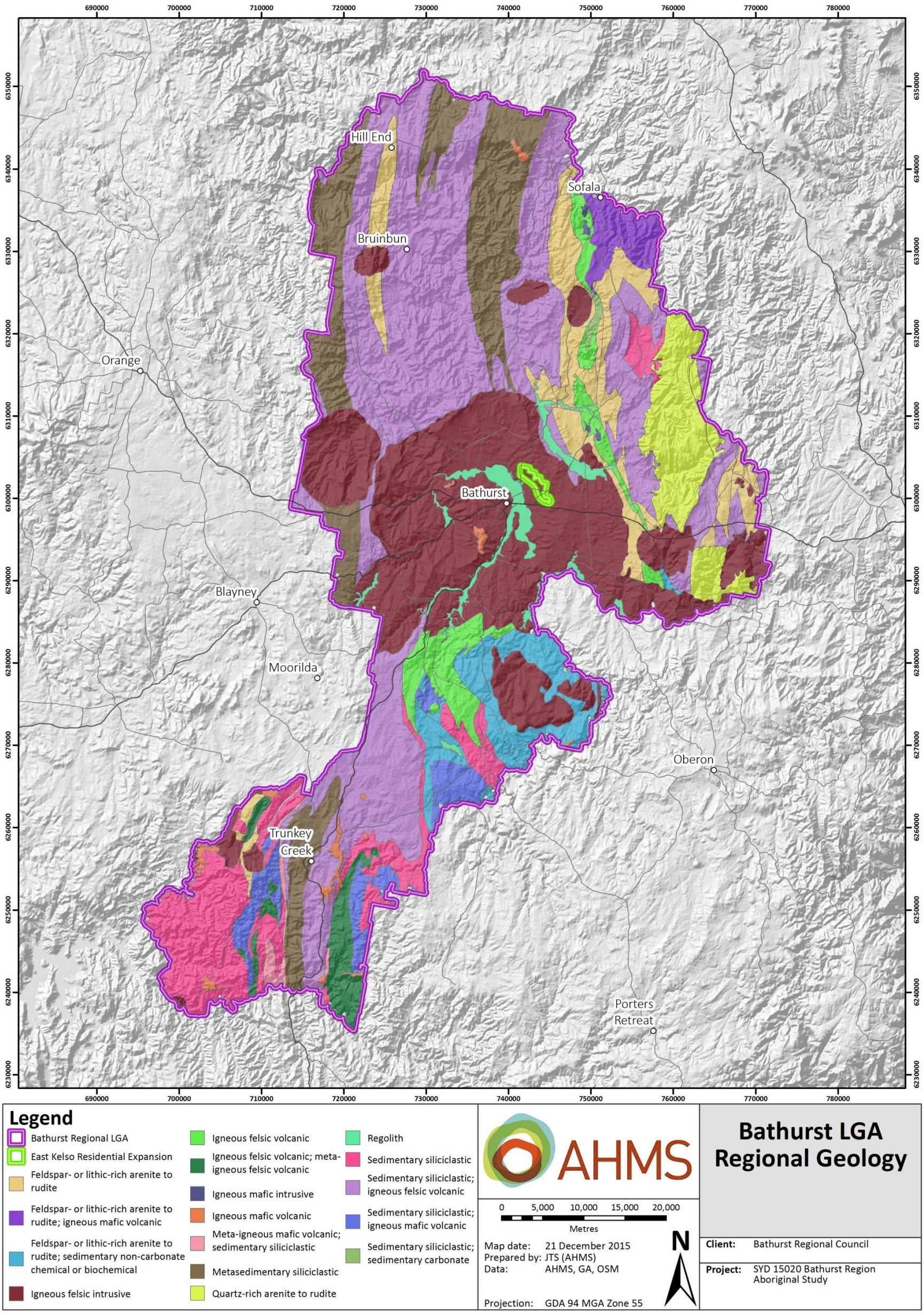

Figure 3. Geology of the Bathurst Regional LGA.

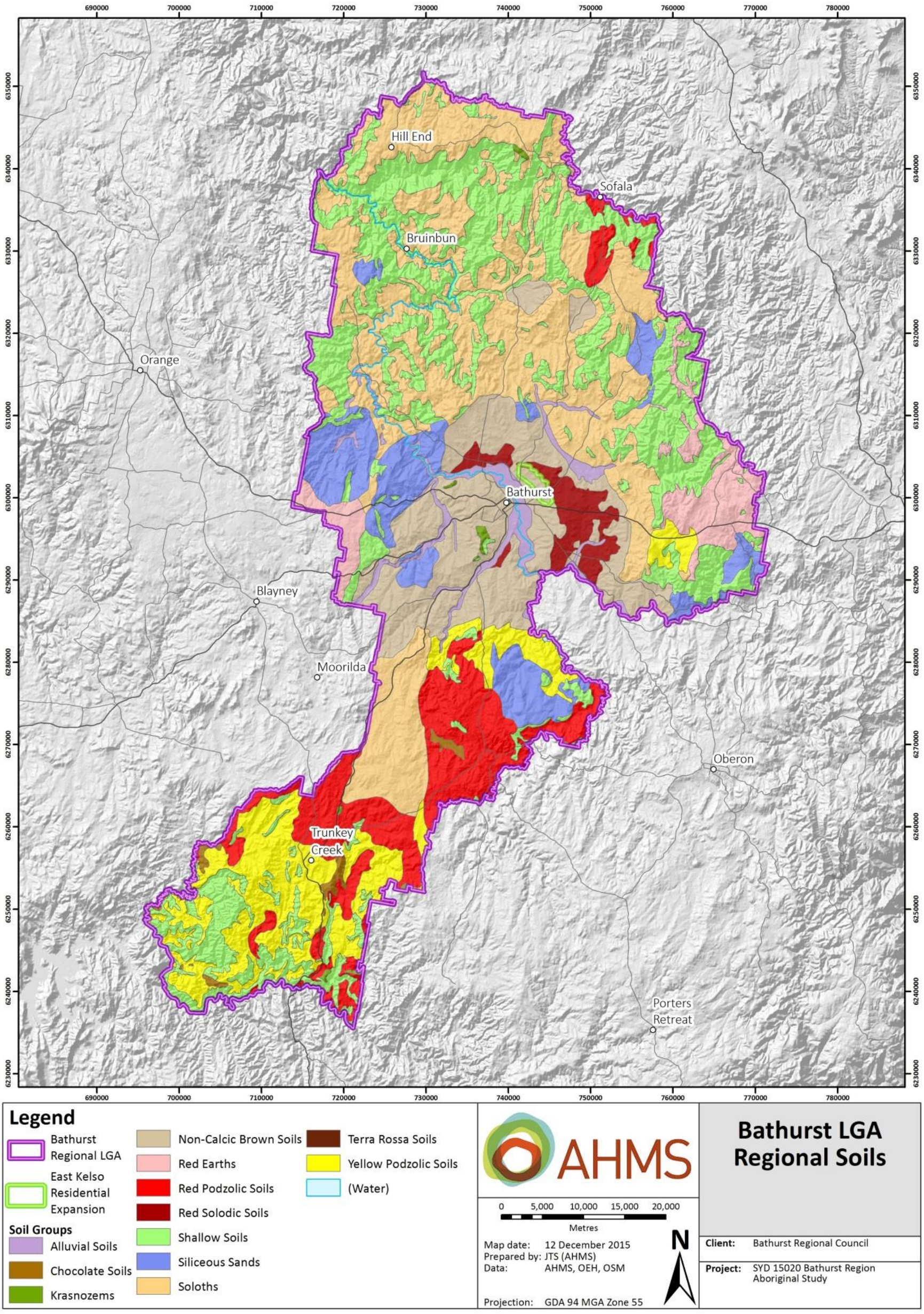

Figure 4. Soil Landscape mapping of the Bathurst Regional LGA, according to the Great Soil Group classification system (after Stace et al. 1968).

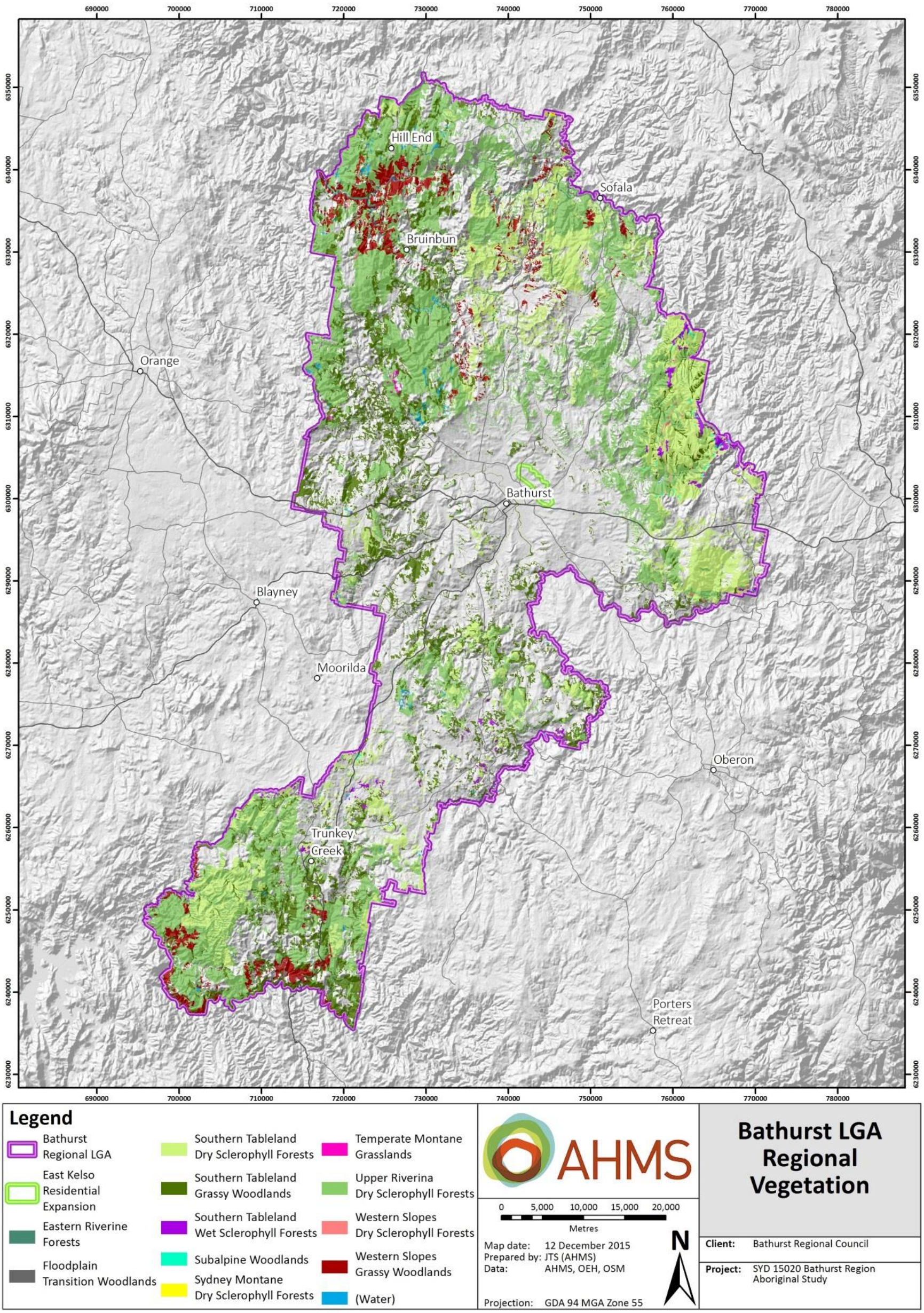

Figure 5. Native vegetation across the Bathurst Regional LGA.

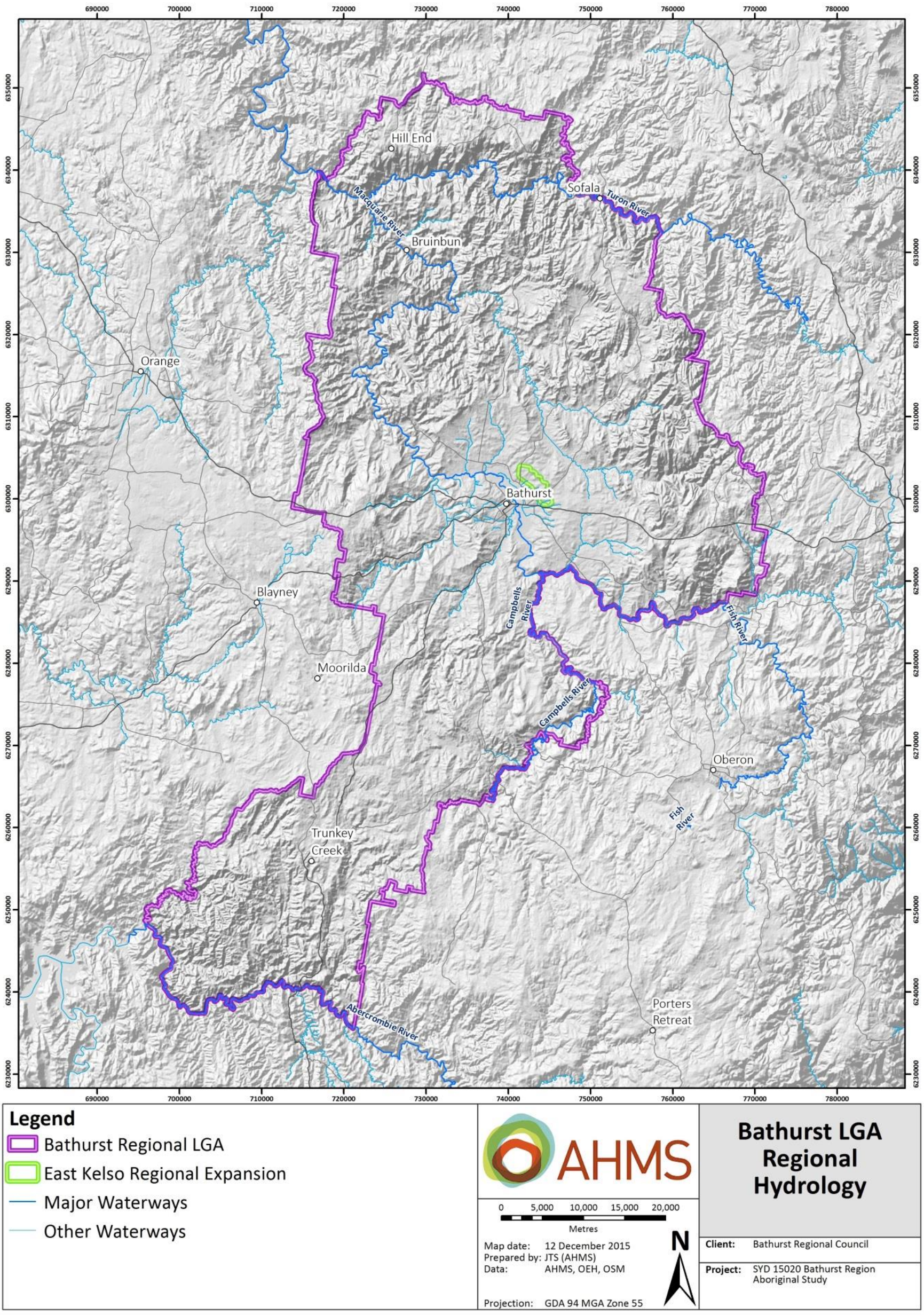

Figure 6. Hydrology of the Bathurst Regional LGA.

4 ETHNOGRAPHIC AND THEMATIC HISTORY

4.1 Interactive Wiradjuri Heritage Map

Extent Heritage has created an Interactive Wiradjuri Heritage Map which provides a spatial perspective of Aboriginal life in the Bathurst region around contact. It has been developed as a spatial file accessible through open mapping software such as GoogleEarth and it includes a range of sources that capture the dynamic nature of Wiradjuri culture and history. The focus on the spatial dimension of the history helps bring coherence to the subtleties and complexities of Aboriginal heritage and draws attention to places and events that are often missed in historical surveys. The Interactive Wiradjuri Heritage Map, along with the accompanying Thematic History, identifies places of cultural and historical significance and provides avenues for their interpretation.

The Interactive Wiradjuri Heritage Map has been created through a systematic review of twenty-five early primary sources for the Bathurst region, ranging from George Evans's journey across the Bathurst Plains in 1813 to Charles Darwin's visit in 1836. Over eighty site-specific ethnographic observations were plotted on the map, including historical paintings, word lists and Aboriginal tracks. The criteria for adding information to the map was threefold. It had to one, come from a primary source, two, contain evidence of Aboriginal activity, and three, be able to be pinned down to a specific point or a small area on a map of the wider Bathurst area.

Each entry is recorded with information about the cultural and historical significance of the site, location information, quotes and references, as well as relevant sketches, paintings and historical maps. This primary research has been combined with secondary materials to write the accompanying Thematic History.

For public access to use the Interactive Wiradjuri Heritage Map and Database, please contact Bathurst Regional Council.

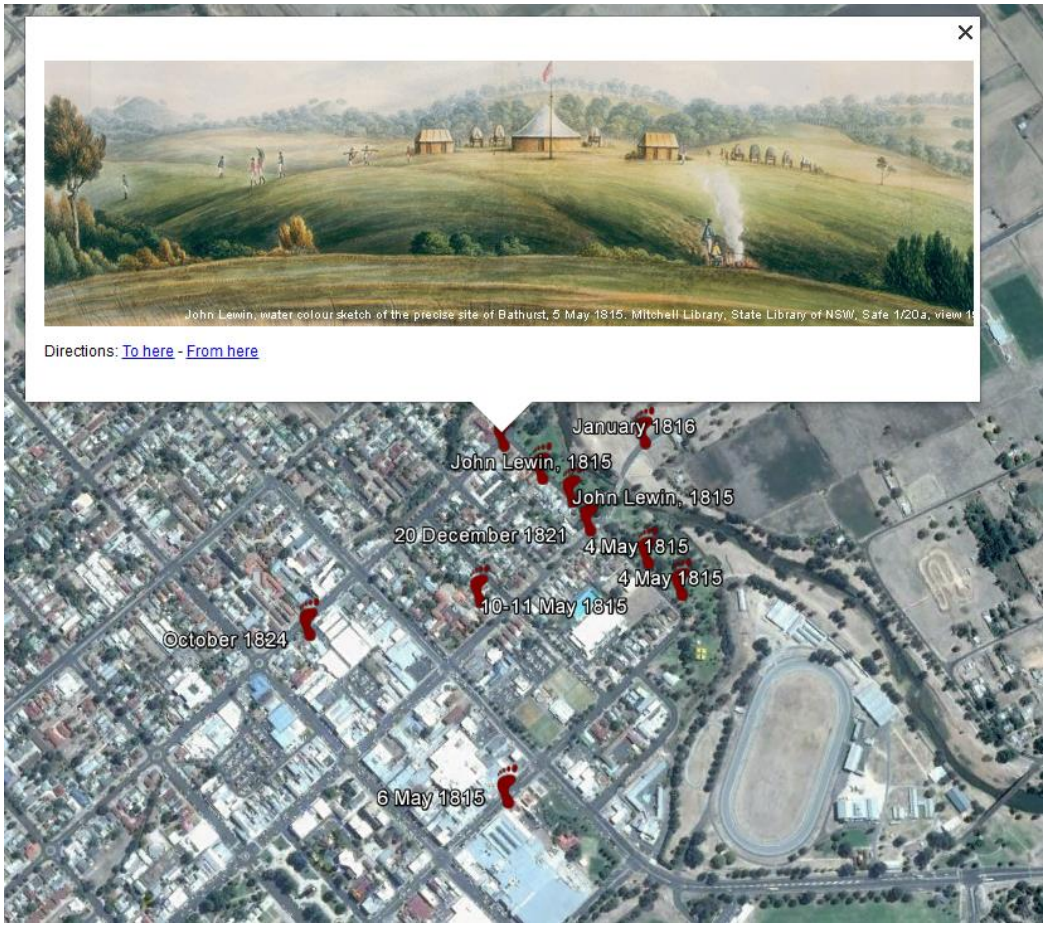

Figure 7: Detail from the Interactive Wiradjuri Heritage Map

4.1.1 Sample Entry

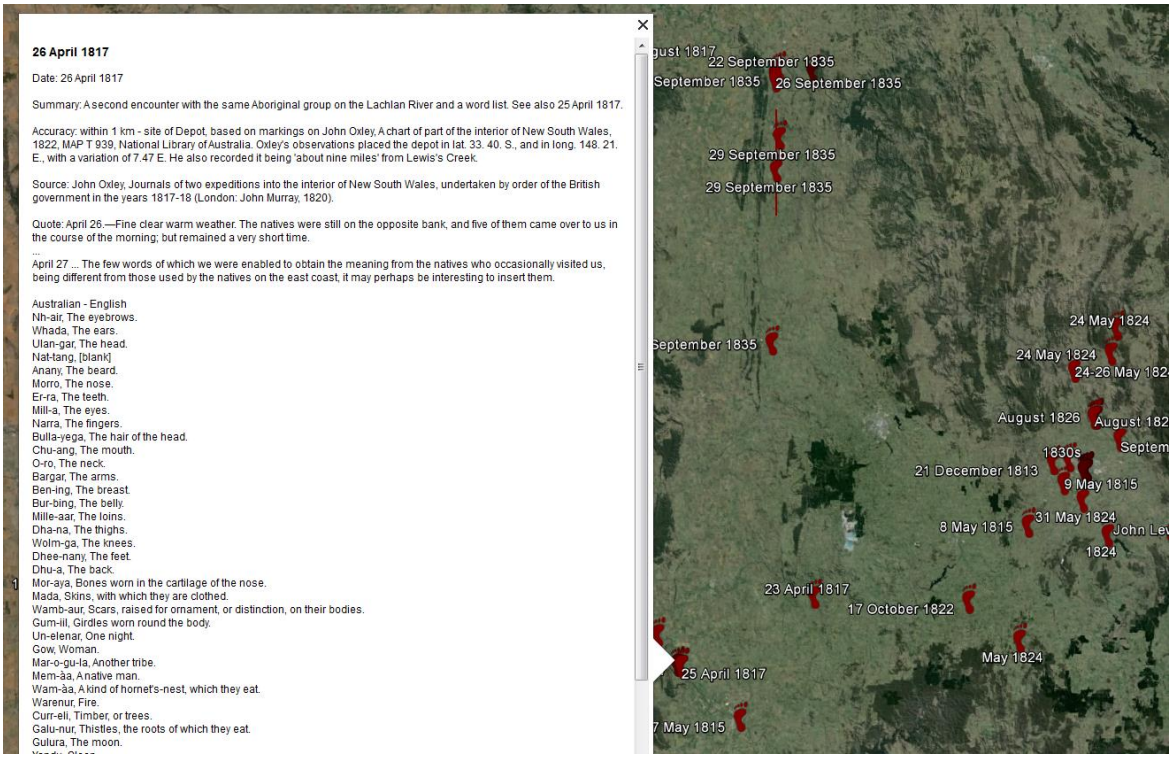

Figure 8: Detail of Interactive Wiradjuri Heritage Map, featuring plotted text.

Each entry in the Interactive Wiradjuri Heritage Map is recorded using the same structure. This includes a quick summary remark, location information, quotes and references, and any other details that might need be included. The full details are below:

- The title of the entry is the date it was recorded/observed.
- Date: '1 January 1821' or 'January 1821' or even 'c.1821'
- Summary: a short sentence describing the entry. This is designed to make large quotes accessible.
- Accuracy: most plotted points are estimates; this section is designed to explain the accuracy of the marker – 'within 500 metres', 'within 2 km' or 'within 5 km' – along with any landmarks in the sources that help identify the location.
- Source: full bibliographical details of the source/sources.
- Quote: extracts from the source that detail the relevant observation/description and location.
- Details: this is to give context. If this was observed on a European expedition, what was the purpose of that expedition? Who was on it? For how long did it run?

4.1.2 Themes and Chronology

Extent Heritage has identified the following four themes as most relevant to the Aboriginal history of the Bathurst region:

- The relationship between the environment and human activities.
- Frontier violence and Aboriginal resistance and survival.
- Activities associated with teaching and transmission of Aboriginal culture and identity.

- The role of Aboriginal people in the exploration of the region.

In addition to establishing broad themes for identifying and evaluating places of potential heritage value, various Commonwealth and State Aboriginal heritage assessment guidelines identify the types of places that can hold great meaning and significance to Aboriginal people. They can include:

- Places associated with Dreaming stories.
- Places that are associated with spirituality and cultural activities.
- Places where other cultures came into contact with Indigenous people.
- Places that are significant for more contemporary uses.

The Thematic History of the Bathurst region uses the findings from the Interactive Wiradjuri Heritage Map to identify some of these place types and their locations. The themes have been ordered into a chronological narrative under the following headings:

- **'Wiradjuri people, Wiradjuri country'**, which discusses traditional society and culture and how it was transmitted across communities and from generation to generation;
- **'Invasion'**, which documents first contact experiences, British exploration, Aboriginal reactions to British settlements and frontier violence;
- **'Surviving between two worlds'**, which discusses the impact of British settlement on Aboriginal communities and shows how Aboriginal people coped with attempts to assimilate them to European lifestyles.

Figure 9: John Lewin, 'Native Chief at Bathurst', (sketched while Macquarie was in Bathurst in 1815), appears in* John Oxley, Journals of two expeditions into the interior of New South Wales *(London: John Murray 1820). This depicts the great Wiradjuri leader Windradyne.

4.2 Thematic History

4.2.1 Wiradjuri people, Wiradjuri country

When Europeans first ventured over the Blue Mountains onto the Bathurst Plains in 1813, they were entering the country of the Wiradjuri nation. The Wiradjuri lived in extended family groupings – or clans – of around thirty to fifty men, women and children. They moved between different campsites across their traditional lands, occasionally converging with other clans to trade, hunt, fight, feast, arrange marriages, resolve disputes and share information. The interactive map includes details of a gathering of around 150 Wiradjuri people at Brucedale Station in 1826, at which 'Saturday' (Windradyne) and 'Magpie' (the Mudgee chief) sat with their families 'round a number of small fires', singing. On another occasion, in January 1816, a large group of '117 men, women, and children came down to Bathurst Plains, on the north side of Macquarie River, opposite the settlement' to feast (*Sydney Gazette*, 3 February 1816). Barron Field and George Suttor, writing in 1822 and 1826 respectively, estimated the extent of each clan's territory to be around 'thirty to forty miles' (Field 1825: 432; *The Australian*, 14 October 1826). The immediate vicinity of Bathurst was divided amongst at least three clans each with their own distinct practices, diets, dress and dialects (Pearson 1981).

The Interactive Wiradjuri Heritage Map reveals a landscape criss-crossed with Aboriginal paths, many of which later became roads. The route that Gregory Blaxland, William Wentworth, and William Lawson famously took to cross the Blue Mountains in 1813 probably followed an existing Aboriginal path. Over successive days – on 27, 28, and 29 May – Blaxland wrote in his journal of a 'camp of natives' who 'moved before' the explorers 'about three miles'. On 31 May he recorded the 'traces' they had left in their wake, in the 'fires they had left the day before, and in the flowers of the honeysuckle tree scattered around, which had supplied them with food' (Blaxland 27-31 May 1813). Before picking up this path, on 25 and 26 May, the party progressed at the rate of 3.5 and 2.75 miles a day. After noticing the travelling group of Aboriginal people, they were able to move much faster, covering 5.25 and 5.75 miles on 27 and 28 May. This suggests that the Blue Mountains, far from being an impenetrable barrier until 'conquered' by Blaxland, Wentworth and Lawson, were, in fact, quite permeable. Such paths formed part of an intricate network of exchange that reached across the country. Songs and stories preserve these trading routes and Dreaming tracks, while archaeological evidence shows the extent of this network. For example, stone axe heads crafted from stone on the edge of the Oberon plateau are found across the wider Bathurst region (Gemmell-Smith 2004: 14-15).

Through this network of trade and information, stories of Europeans reached the Wiradjuri long before the settlers arrived. When John Oxley surveyed the course of the Lachlan River in 1817 he recorded an encounter near Eugowra 'with a small tribe of natives, consisting of eight men', who 'had either seen or heard of white people before', despite Oxley's expedition being the first European foray that far west (Oxley, 1820: 5 May 1817). His party also encountered Aboriginal men and women 'acquainted with fire-arms' (Lee, 1925: 25 April 1817). Missionary James Backhouse was amazed by the speed and sophistication of communication along these networks. On 23 October 1835 he encountered Aboriginal people in Richmond who knew of his brief visit to Wellington, over 300 kilometres away: 'Our persons, costume, and many other particulars, including our manner of communicating religious instruction, had been minutely described' (Backhouse 1843: 339).

Disease was also carried swiftly throughout this network. George Suttor lamented the impact of European diseases on a people who 'seem generally to enjoy good health': 'among other evils brought upon them by the Colonists, is that horrid v[enereal] disease; and it is to be feared it will entail lasting misery upon them, as they may long suffer without a remedy. I have seen some of these poor creatures shocking objects from it' (*The Australian*, 14 October 1826). After the establishment of the township of Bathurst outbreaks of smallpox, tuberculosis, influenza and venereal disease continued to devastate the Wiradjuri population.

The primary sources offer only glimpses of the ceremonial life of these Aboriginal communities. Europeans recorded some Aboriginal customs, such as the avulsion of teeth and 'scarifications' of certain initiated men, and the possum skins that women stretched out on their laps to beat out rhythms during ceremonies and dances. However, due to the secrecy surrounding ceremonial events, there are serious limitations to even the most richly described accounts in the ethnographic record. Many of these rituals live on in the contemporary culture of Wiradjuri people.

The Wiradjuri fished from canoes and hunted with spears and nets for ducks, kangaroos, goannas, emus, platypuses, wallabies and tortoises. Their staple foods included plant resources, such as roots and yams, as well as grubs, which the women dug from earth with long wooden tools (Oxley 1820). They collected ants' eggs and mussels, captured lizards and snakes, and harvested large moths, which, when roasted, tasted to the Europeans 'not unlike new bread' (Backhouse 1843: 318–19). They lured and trapped birds with elaborate hides and extracted native honey from the hollow limbs of trees 'which they drink when mixed with water' (Backhouse 1843: 318-319). They chased possums up trees 'by cutting little notches in them, into which they fix their hands or feet'. The possums were clubbed and then 'expertly' skinned to 'make very warm cloaks, or mantles, large enough to cover their whole persons, neatly sewed together with a bone needle and the strings from the tails of the opossoms. In the winter season they put the fur side next their bodies – in the summer it is reversed' (*The Australian*, 14 October 1826). Aboriginal wells were also scattered across the countryside, often linking rivers and waterholes. These wells 'evidently dug by the natives' were readily exploited by the Europeans in their conquest of Wiradjuri country (Oxley 1820: 3 June 1817).

Fire was a constant presence in early Bathurst, from the patches of 'bare and naked' country recently 'fired by natives' to the columns of campfire smoke 'arising in every quarter' on the horizon (Lee 1925: 23 April 1817; Oxley 1820: 6 May 1817). The first Australians became known as the 'fire-makers' (Cox 15 September 1814). The Wiradjuri used fire to open paths and to clean country; to drive animals into the paths of hunters and then to cook the kill; to keep warm at night and to carry as a torch the next day; to treat wood, melt resin and crack stone for tools; to gather around and dance and share stories. The interactive map gives us an insight into local Wiradjuri burning regimes, suggesting a connection to the land and an understanding of the seasons that the settlers could not fathom.

4.2.2 Invasion

The earliest settlers rarely encountered the Wiradjuri people, instead observing their 'traces' in the landscape: fires and hearths, bark huts and broken canoes, blackened shells and burial mounds, stone arrangements and notches in trees. Carved trees found at the junction of the Macquarie and Campbell Rivers at O'Connell can now be seen on display in the Bathurst Historical Museum. Bora rings, where initiations and other important ceremonies were held, marked the river valleys and mountain tops, and stone monuments associated with men's business were encountered across the Bathurst Plains, including at Mount Pleasant where Major Henry Colden Antill observed in 1815 'a great quantity of loose stones of a peculiar kind … thrown into heaps, as if placed there by the hands of men' (Antill 1978: 85-86).

The British built a road across the Blue Mountains in 1814 and established a settlement at Bathurst the following year. The early relationships between the Wiradjuri and the settlers were relatively peaceful, supported by Governor Macquarie's 'strict injunction to treat [the Wiradjuri] kindly, to put no restraint upon their movements, but to let them come and go when they thought proper' (Antill 1978:83). On his visit to the site of Bathurst in May 1815, Macquarie met and traded with many Wiradjuri men and children. He described them as 'very like those in the Neighbourhood of Sydney, tho' rather better looking and Stronger Made… they Appear perfectly harmless and Inoffensive, and not at all Warlike, few of them Carrying any Weapons Whatever, but merely a Stone Instrument like an Axe' [*sic*] (Macquarie 1916:609).

Macquarie carefully controlled early settlement in the Bathurst district and reserved most of the fertile plains to run government sheep and cattle. By 1820 the European population of the area was only 114. Most of these settlers, 75, were convicts who worked as shepherds and stockmen, with a few officials and soldiers to oversee them. When Macquarie's term ended in 1821 the new Governor, Thomas Brisbane, issued a spate of land grants and grazing permits that allowed intensive settlement to begin. Settlers poured over the mountains. The population of Bathurst population grew to one thousand by 1825 and doubled to two thousand by 1828 (Roberts 2014).

Dispossession was swift. The very nature of the geography helped facilitate European conquest. The settlers used the rich grasslands of the Bathurst Plains for sheep and cattle, with combined numbers of stock increasing from 33,733 in 1821 to 113,973 in 1825 (Connor 2005:55). By 1825, the region accounted for 40% of the colony's sheep (Roberts 2014: 247). The hooves did their damage: the native grasslands were destroyed, while fences and paper boundaries imposed a new order on the bush. As the *Sydney Gazette* reported on 8 January 1824, in a light-hearted tone, 'the natives urge that the white men have driven away all the kangaroos and oppossums, and that black men must now eat beef!' (*Sydney Gazette*, 8 January 1824). As historian Michael Pearson laments, 'Amusing as this may have appeared to the editors of the day, there was more truth to the claim than the writer knew' (Pearson 1984:74).

The Bathurst Plains could no longer accommodate two cultures without hostility. The Wiradjuri were pushed off their land and denied access to resources and sacred sites. They resisted the invasion by dispersing and hunting herds of sheep and cattle, and occasionally attacking and killing stockmen infringing on their land. Sporadic conflict was recorded on the Cudgegong River in February 1822 and later that year shepherds had abandoned their huts west of Bathurst, due to the 'recent plunder on the part of the native Indians' (Field 1825: 17 October 1822). Soldiers garrisoned remote properties, and absentee landlords distributed guns into the hands of their shepherds. W.H. Suttor, who was a child at the time of the Bathurst War, recalled poisoned flour being 'left purposely exposed in shepherds' huts in order to tempt the blacks to steal and to eat. They did eat, and died in horrible agony. No wonder reprisals took place' (Suttor 1887:65). The major events in what became known as the Bathurst War are plotted on the Interactive Wiradjuri Heritage Map.

One of the Wiradjuri clan leaders, Windradyne, known to the settlers as 'Saturday', led attacks against settlers at Millah Murrah, Warren Gunyah and The Mill Post, north of Bathurst, in May 1824 (Salisbury and Gresser 1971:22). The settlers responded with violence, rapidly escalating the conflict through random killings of Wiradjuri people. In June 1824 five European men were arrested for killing three Wiradjuri women on the O'Connell Plains and were put on trial for manslaughter. All five were acquitted, but these legal preceding provide the best picture from the fragmentary historical sources of the extent of the violence on the Bathurst frontier in the months before the declaration on martial law. By August 1824, William Cox concluded that 'the natives may now be called at war with the Europeans' (*Sydney Gazette*, 12 August 1824).

Within a week of the acquittal of the five men, on August 14 1824, Governor Brisbane issued a proclamation of martial law:

> *'WHEREAS THE ABORIGINAL NATIVES of the Districts near Bathurst have for many Weeks past carried on a Series of indiscriminate Attacks on the Stock Station there, putting some of the Keepers to cruel Deaths, wounding others, and dispersing and plundering the Flocks and Herds; themselves not escaping sanguinary Retaliations. AND WHEREAS the ordinary Powers of the CIVIL MAGISTRATES (although most anxiously exerted) have failed to protect the Lives of HIS MAJESTY'S Subjects; and every conciliatory Measure has been pursued in vain; and the Slaughter of Black Women and Children and Unoffending White Men, as well as of the lawless Objects of Terror, continue to threaten the before mentioned Districts; AND*

> *WHEREAS by Experience, it hath been found that mutual Bloodshed may be stopped by the Use of Arms against the Natives beyond the ordinary Rule of Law in Time of Peace, and for this End Resort to summary Justice has become necessary: NOW THEREFORE, by Virtue of the Authority in me vested by His Majesty's Royal Commission, I do declare, in Order to restore Tranquillity, MARTIAL LAW TO BE IN ALL THE COUNTRY WESTWARD OF MOUNT YORK*…' (Salisbury and Gresser, 1971: Appendix C).

With civil law thus suspended and violence officially sanctioned, the death toll rose dramatically. Brisbane despatched 75 soldiers to systematically roam the Bathurst region with orders to keep the Wiradjuri 'in a constant state of alarm' (Salisbury and Gresser 1971: 31). On 14 September 1824, the Reverend William Walker estimated in a letter that 'not fewer than a hundred blacks, men, women and children, have been butchered' (Salisbury and Gresser 1971: 32). The *Sydney Gazette* described the conflict as 'an exterminating war' (14 October 1824). Throughout October and November, the Wiradjuri gradually surrendered to the Bathurst settlement in groups of up to 60 (*Sydney Gazette*, 28 October 1824). Martial law was repealed on 11 December 1824.

On 28 December 1824, Windradyne made his first public appearance in many months to attend the Governor's Annual Conference in Parramatta. He 'wore a straw hat, on which was affixed a label with the word 'PEACE' inserted, besides a little branch representing the olive' (*Sydney Gazette*, 20 December 1824). *The Sydney Gazette* described him as:

> *'… one of the finest looking natives we have seen in this part of the country. He is not particularly tall but much stouter and more proportionable limbed than the majority of his countrymen; which combined with a noble looking countenance and piercing eye, are calculated to impress the beholder with other than disagreeable feelings towards a character who has been so much dreaded by the Bathurst settler. Saturday is, without doubt, the most manly native we have ever beheld* (*Sydney Gazette*, 20 December 1824)'.

The details of the Bathurst war remain hazy, but W.H. Suttor recalled that under martial law 'blacks were shot down without any respect … When martial law had run its course extermination is the word that most aptly describes the result' (Suttor 1887:65).

4.2.3 Surviving between two worlds

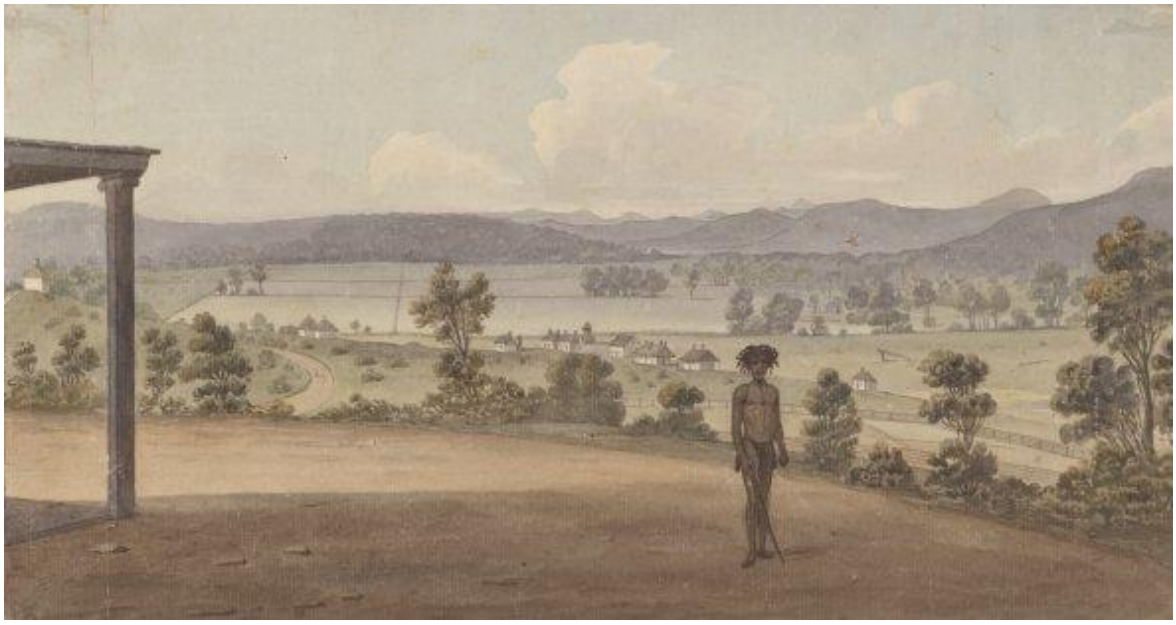

Figure 10: Augustus Earle, Wellington Valley, New South Wales, looking east from Government House, 1826, watercolour, Rex Nan Kivell Collection; NK12/24. ANL

With the loss of access to their hunting grounds and sacred sites, and with a significantly diminished population, the Wiradjuri were no longer able to live independently of the growing settler society. The clans dispersed, with some staying in the Bathurst area while others moved between settlements along the rivers living in camps on the fringes of stations and towns, where disease and alcohol took their toll. Jane Piper recalled a large camp near 'Westbourne' on the outskirts of Bathurst in the 1830s:

> *'Their shelters consisted of two sheets of bark, under which a black and his woman slept at night. The men provided the food consisting of opossum, lizard, snake, and other delicacies. The women cooked it by throwing it on red-hot coals, skinned but not disembowelled. When cooked it was laid on a piece of bark and the man sat down to it on the ground, his woman seated at his back. He tore the food to pieces with his fingers, and threw the bones over his shoulder to his woman* (Piper 2015)'.

During the 1830s and 1840s many Wiradjuri lived on and around the Wellington Mission north-west of Bathurst. Here missionary James Günther compiled an extensive grammar and vocabulary of Wiradjuri language, which has since become an invaluable source for cultural revival (Read 1988: 18).

Wiradjuri men, women and children made significant contributions to the new settler economy. The Bathurst War was followed by another violent period in the region's history, and free settlers were left to rue the number of firearms that had been distributed to their convict servants. Many of these armed convicts became bushrangers, and, ironically, the Government sought out the skills and expertise of Aboriginal trackers to hunt them down (Lowe 2000:17).

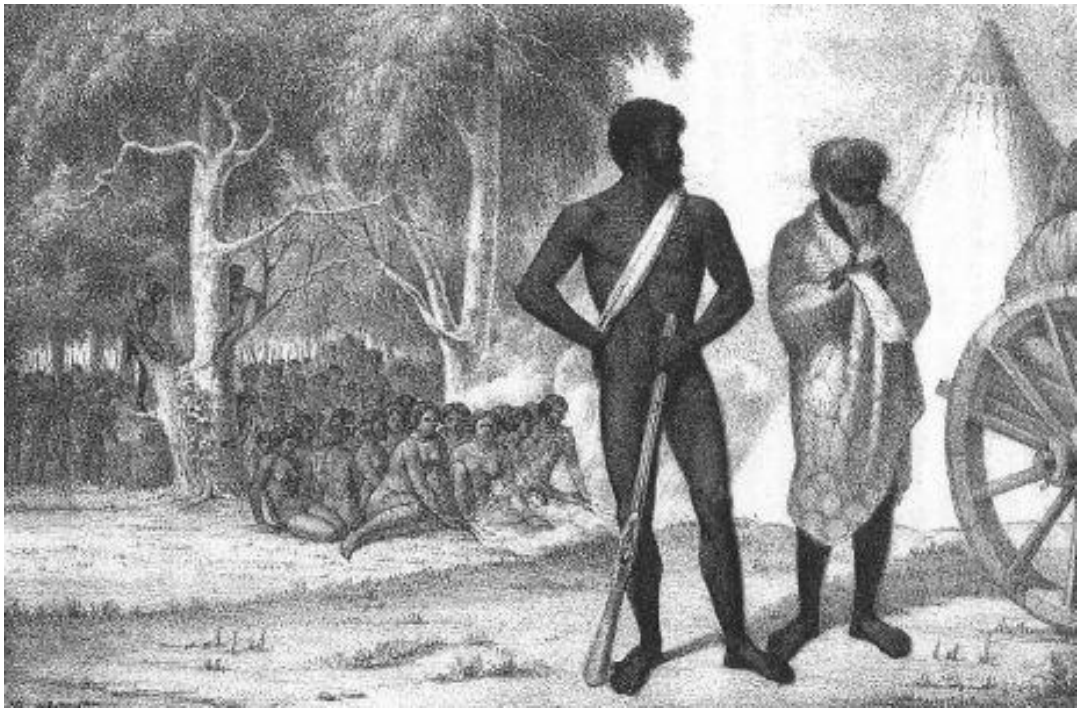

Figure 11: Piper Watching the Cart at Benanee, Major T.L. Mitchell del. Waldeck Lith. J. Graf Printer to Her Majesty. Published by T. and W. Boone, London

Thomas Mitchell, Surveyor General of NSW, relied heavily on a Bathurst Wiradjuri man, John Piper, as a guide, interpreter and adviser during his 2,700 km journey to Victoria in 1836. Piper and five other Wiradjuri people found water throughout the expedition, made and used canoes to ferry provisions, caught fish and hunted possums and guided the party through remote and unfamiliar country. Mitchell was constantly impressed by his companion's energy and ingenuity, reflecting on 19 June 1836: 'the intelligence and skill of our [Wiradjuri] friends made the "white-fellow" appear rather stupid' (Mitchell 1965: 19 June 1836).

Aboriginal labour also played an understated role on the goldfields, after the gold-rush in the mid-nineteenth century brought thousands of new settlers onto the Bathurst Plains (Cahir 2012). The discovery of Kerr's nugget and the Tambaroora gold field, for example, are attributed to the efforts of individual Wiradjuri (NSW Department of Primary Industries, 2007:1). Local Wiradjuri were also a part of everyday life on the Ophir gold fields, selling bark for huts, looking after horses and guiding prospectors across the land (Jones and Cook 2007:1).

From 1883 onwards 'protection' policies were implemented which aimed to break up fringe camps and segregate Aboriginal people across New South Wales (Read 1988:29). The new Aboriginal Protection Board had the power to forcibly remove people from their traditional lands onto state reserves. While no reserves were established in the Bathurst LGA itself, Wiradjuri people were likely sent to reserves in nearby Eugowra (AR 9386, from 1889), Forbes (AR 43462/3, 1909-1915), Wellington (AR 45426/7 and AR 87975, from 1910), or Spring Flat (AR 80144, 1957-1964) (Thinee and Bradford 1998:353-362). Across NSW, the reserves had few services and poor sanitation. White administrators controlled the movement, income, property, education and even marriages of the Wiradjuri who lived on these reserves. Until 1972, government policies allowed for the forcible removal of children from their families, dislocating several generations from their culture and traditions.

Historian Peter Read in *A Hundred Years War* writes of the gradual revival of Wiradjuri culture from a low point of the 1920s. He identifies a turning point in the 1930s and 1940s 'when sufficient Aborigines ceased to think their Aboriginality was inferior, even shameful, and soon to become extinct, and came to believe instead that Aboriginality should and would survive' (Read 1988: xiv-xv). He writes of the early Aboriginal rights activists of the 1930s and 1940s who published in the *Abo Call*, and who organised a national day of mourning on 26 January 1938. But the significance of the words and actions of these Indigenous leaders did not mature until the 1960s.

In 1965 an Aboriginal university student, Charles Perkins, led a bus of Sydney University students around country New South Wales to protest the widespread discrimination against Indigenous Australians. It became known as the Freedom Ride. The bus passed through Bathurst on 12 February 1965 on its way to Wellington, where the Freedom Riders saw firsthand the poor conditions endured by Wiradjuri people. Ann Curthoys wrote of the experience in her diary on 13 February:

> *'Houses of tin, mud floors, very overcrowded, kids had eye diseases, had to cart water (very unhealthy) from river. People fairly easy to talk to, kids quite friendly. General picture of extreme poverty but not a great deal of social discrimination. General picture of scarcity, of jobs. Mainly garden work, which is very seasonal. Average of three months for year out of work. Some working on a dam nearby. Some did shearing jobs. Did not encounter or hear of any women with jobs at all. Did not seem to know much about social services etc* (1965)'.

The Freedom Rides were part of a massive social and political awakening to discrimination against Aboriginal people throughout Australia. The 1967 referendum, which was held to determine whether two references in the Australian Constitution, which discriminated against Aboriginal people, should be removed, received the highest 'yes' vote ever recorded in Australian history (90.77%). Since the 1970s, and the breakdown of the reserve system, the Aboriginal population on the Bathurst Plains has grown significantly, and the Wiradjuri have become actively involved in efforts towards cultural revival. According to the 2011 census, 1,638 people – or approximately 3% of the Bathurst Regional Council population – identify as Aboriginal (ABS 2015).

5 ARCHAEOLOGICAL CONTEXT

5.1 Preamble

For the purposes of determining settlement and site location patterns, archaeologists examine regional and local trends in the distribution and character of known sites in relation to environment and topography. This provides evidence about economic and social systems in the past and also assists archaeologists in predicting likely site types, site locations and the nature of the archaeological resource in any given area.

In comparison with areas that have been subject to intensive investigation such as the Sydney Basin and the Hunter Valley, the archaeology of the Bathurst region is not well understood. This is largely due to a historical lack of development pressure, which is the main driver of archaeological investigation. Nevertheless there have been a limited number of archaeological investigations in the region that provide a baseline for understanding the nature of local archaeological patterns.

Most Aboriginal archaeological assessments and studies conducted within the LGA and its immediate context have been undertaken in association with proposed infrastructure upgrades (Pickering 1980; Truscott & Lance 1987; Appleton 1993; Central West Archaeological and Heritage Services Pty Ltd 1995, 2000; OzArk Environmental and Heritage Management 2013) or resource extraction proposals (Gollan & Bowdler 1983), or associated with the development of the Ben Chifley dam (OzArk Environmental and Heritage Management 2011; Kelton 2000a, 2000b). Some 262 sites have been recorded and registered on the OEH Aboriginal Heritage Information Management System (AHIMS) in the Bathurst LGA. This reflects largely on the relative paucity of archaeological investigations undertaken in the region. In comparison, a recent LGA study by AHMS Pty Ltd in the Hunter Valley recorded 1,097 sites in the Cessnock LGA area (AHMS 2013).

5.2 Regional Archaeological Context

5.2.1 Early Occupation of NSW

Aboriginal occupation of NSW spans at least 40,000 years (Stockton and Holland 1974; Nanson et al. 1987; JMcDCHM 2005:107-125), although dates of more than 40,000 years have been claimed for artefacts and human remains found in barrier sands of Lake Mungo, in the Willandra Lakes Region (Shawcross 1998; Bowler et al. 2003). The dates of these sites fall at about the beginning of the Last Glacial Maximum, a period from about 30,000 to 18,000 BP, when temperatures were between 6 °C and 10 °C cooler than they are today and rainfall was lower. At the height of the Last Glacial Period, about 21,000 BP, areas of rainforest and tall open forest contracted and areas of woodland became more extensive than in the periods before 44,000 BP and after 11,000 BP (Attenbrow 2010:37).

After this time, the climate gradually became warmer and wetter, and sea levels rose. From this period onwards, there is a more continuous archaeological record. Late Pleistocene occupation sites have been identified at Shaws Creek in the Blue Mountain foothills (14,700 BP) (Kohen et al. 1984), at the Noola rock shelter in the Capertee Valley (12,550 BP) (Tindale 1961), at Mangrove Creek and Loggers Shelter in the Sydney Basin (c.11,000 BP) (Attenbrow 1981, 2004), and at Burrill Lake on the South Coast (c.20,000 BP) (Lampert 1971).

Aboriginal occupation of the Central West region dates back at least 7,150 years, according to radiocarbon dates obtained from basal occupation deposits during archaeological excavations of the Granites 1 rock shelter, located near Bathurst (Pearson 1981:56-57).

5.2.2 Intensification during the Holocene

The Holocene spans the period from 10,000 BP through to the present. The last significant rise in sea level occurred approximately 7,000 years ago, and the level stabilised after about 6,500 years ago. Bays and estuaries formed in previous low-lying valleys and flats, and the groups living along the coast were forced inland (McDonald 2008:40). Later in the Holocene, about 3,000 years ago, the onset of an ENSO dominated climate started a trend to a drier and more variable rainfall (McDonald 2008:37).

Archaeological evidence indicates that significant and widespread changes occurred during the Holocene. Changes in lithic technology included a decline in the use of silicified tuff as the preferred raw material, and a greater use of local materials; a substantial growth, then decline, in the production and use of backed artefacts; and the introduction of ground-edged implements (with the peak period being approximately 4,000–1,000 BP). Correlations appear with respect to the archaeology of the Central West Region, however. Preliminary field observations of the lithic assemblage recovered during archaeological excavations of the Abercrombie shelter, approximately 58 km south-west of Bathurst, revealed an assemblage dominated by locally-sourced quartz with lesser (<5%) proportions of fine-grained volcanics, chert, silcrete and river pebbles. Though undated the assemblage fit broadly with the Australian Small Tool Tradition, and was characterised by retouched flakes, bladelets, burin, notches, scrapers and fabricators (Johnson 1977:36-38). Based on a review of the archaeological evidence, J. Kelton notes that stone artefact assemblages found across the region are often consistent with pre-Bondaian technology of the terminal Pleistocene and early Holocene (Kelton 2000a:18).

There is also a considerable increase in archaeological evidence of occupation. McDonald notes a spike in artefact accumulation rates in the 9th and 8th millennia. From about 6,000 BP there was a steady increase in the number of sites being used. For instance, almost 80% of the Sydney region's radiocarbon ages date to the last 5,000 years, the number of dated sites peaks in the second millennium, and 28% of regional dates (including Bathurst) fall between 2,000 and 1,000 BP (McDonald 2008:36).

It has been argued that this is a result of increased populations and 'intensification' of cultural activity during this period. Smith et al. (2008) and Williams et al. (2010), both suggest that populations were in fact larger in the last 2,000 years than any preceding period. Using radiocarbon data and regional studies, they demonstrate that there is an increasing use of sites in all locations at this time, which cannot be explained by movement of people across the landscape, but rather points to increasing numbers of people using more of the landscape.

It is likely that the technological changes and possible population increase were accompanied by broad social changes. Hiscock and Attenbrow have suggested that the changed climate conditions after c3,000 years ago stimulated a change in foraging practice, perhaps incorporating a shift to higher mobility (McDonald 2008: 37). McDonald suggests instead that by about 4,000 BP, people occupied smaller territories and on a more permanent basis. People used residential bases and defined foraging ranges on annual and extended cycles (McDonald 2008:40).

5.2.3 Regional Site Patterns

Prior to 1979, no systematic, regional based archaeological studies had been undertaken in the Bathurst area. The only sites recorded within the region were generally done so by interested locals or amateurs. In the 1960s, Gresser, an amateur site recorder noted that the hilly land from Bathurst to the north was covered with camp sites, all of which were located on the low ridges that led down to the creeks and springs. He also noted that although sites are usually close to the creeks, they can

also, albeit rarely, be found in other locations such as elevated ridge tops (OzArk Environmental and Heritage Management 2011:22).

During a pilot survey of the Lewis Ponds and Browns Creek valleys between Lucknow and Bathurst, Pearson recorded forty-two Aboriginal sites, including both isolated finds and open artefact scatters (Pearson 1979:8). Further intensive research of the Upper Macquarie Region, focusing on changes in land use and settlement patterns, was published by Pearson in 1981. The study made a number of findings about site location patterns in the Bathurst region. Pearson found that the most common Aboriginal sites type was open sites with stone artefact scatters. These were most likely to occur in places that had access to water, good drainage and views over watercourses or river flats, and level ground, and were frequently found on low ridge tops, creek banks, gently undulating hills and river flats and open woodland vegetation (Pearson 1981:101).

The study also demonstrated that access and proximity to water was an important factor in site patterning, and that site density decreased with distance from water. Pearson found that the average site was located 98 m from a water source and 9m above the water source. Pearson also observed that tributaries, creek lines and the upper Macquarie River would also have provided important resources for food as well as forming movement corridors. Interestingly, Pearson's model appears to be in accord with observations of Wiradjuri settlement patterning made by the explorer John Oxley during his expedition in 1817. Oxley repeatedly noted an association between Wiradjuri activity and water sources (Oxley 1817).

In general, the more recent development driven studies (Truscott & Lance 1987:18; Barber & Williams 1993; OzArk Environmental and Heritage Management 2011:36) have conformed to the site prediction model outlined by Pearson for the Bathurst area. The highest density of open sites was found in areas with gently undulating topography (Barber 1990). Barber found that larger sites were usually found on elevated spurs and terraces adjacent to high order streams and rivers. Very few smaller sites tended to be found on ridges away from water sources. Open sites in the region range from 'workshops', which show discernible spatial patterns (i.e. knapping floors), to low density scatters and isolated stone artefacts.

Archaeological investigations are often limited by a reliance on surface evidence and existing settlement models. However, extensive excavation across the Cumberland Plain in the Sydney Basin has shown that areas with no surface evidence often contain sub-surface deposits buried beneath current ground surfaces. This is a critical consideration in aggrading soil landscapes. In a 1997 study of the aggrading soils of shale landscapes on the Cumberland Plain, McDonald (1997) found that:

- There were no surface artefacts prior to excavation in 17 out of 61 excavated sites.
- 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. In short, surface evidence (or the absence of surface evidence) does not necessarily indicate the potential, nature or density of sub-surface material.

The results of McDonald's study clearly highlight the limitations of surface survey in identifying archaeological deposits. The study also shows the importance of test excavation in establishing the nature and density of archaeological material, particularly in aggrading soils. This point is particularly relevant to the Bathurst Regional LGA where previous investigations have been limited in number.

5.2.4 Aboriginal Heritage Site Types

Previously recorded Aboriginal sites in the Bathurst Regional LGA generally occur in elevated areas near watercourses and in areas with sandstone geology, sources of raw stone material or mature vegetation. The northern half of the LGA contains 79% of the region's known Aboriginal sites. However, this half comprises 59% of the total land area of the LGA, and the most parsimonious explanation for the discrepancy between the number of sites and the amount of land area is that the southern half of the LGA has been inadequately studied and/or sampled.

Table 2 describes the types of Aboriginal sites which occur in the Bathurst Regional LGA, and identifies where such sites are usually located. It also describes site types that have not yet been identified within the LGA, but which are likely to be found in the course of future investigations.

Table 2: Summary description of known sites and potential site types.

Site type	Description
Aboriginal Ceremony and Dreaming	Aboriginal Ceremony and Dreaming sites (previously referred to as mythological sites) are locations that have spiritual or ceremonial value to Aboriginal people, e.g. natural unmodified landscape features, ceremonial or spiritual areas, men's/women's sites, dreaming (creation) tracks, marriage places. These types of sites are usually identified by the local Aboriginal community as having cultural significance, and do not necessarily contain physical evidence of Aboriginal occupation or use. Aboriginal Ceremony and Dreaming sites are usually recorded on elevated landforms (ridges and hilltops), and are sometimes found in association with ceremonial rings and stone arrangements. Sites in the Bathurst Regional LGA known to the general public and recorded on the Interactive Wiradjuri Heritage Map include natural landscape features.
Aboriginal Resource and Gathering	These types of sites are related to everyday economic activities, including gathering food, hunting, procuring materials, and manufacturing goods for use or trade. Aboriginal Resource and Gathering sites in Bathurst Regional LGA have been identified near fresh water sources, swamps and in the immediate vicinity of major and minor creek lines.
Art	Art sites are places where visual images have been painted, drawn, engraved, etched or pecked onto rock surfaces. They are often found in areas where sandstone rock outcrops form suitable surfaces for painting or engraving. One art site has previously been identified on the AHIMS register; though, it is likely that others exist, particularly in the higher areas above the valley floor where the many rock outcrops create an abundant source of suitable canvases.
Artefact	Artefact sites contain objects such as stone tools, and associated flaked material, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating evidence of use of the area by Indigenous people. This site type usually appears as surface scatters of stone artefacts in areas where vegetation is limited and ground surface visibility is increased. Such scatters of artefacts are also often exposed by erosion, agricultural events such as ploughing, and the creation of informal, unsealed vehicle access tracks and walking paths. Isolated artefacts may represent a single item discard event or be the result of limited stone knapping activity. The presence of such isolated artefacts may also indicate the presence of a more extensive, in situ buried archaeological deposit, or a larger artefact scatter obscured by low ground visibility. Artefact sites are likely to be located on landforms associated with past Aboriginal activities, such as ridgelines that would have provided ease of movement through the area and on dry, relatively flat or gently sloping land with access to water, particularly creeks, swamps and rivers. Artefact sites are the most commonly registered Aboriginal site on the AHIMS database in the Bathurst LGA, and are the most commonly identified site on the Interactive Wiradjuri Heritage Map.

Site type	Description
Burial	This site type includes both traditional and contemporary burials. Soft sediments such as middens, dunes and estuary banks on, or close to, rivers, creeks and beaches, allowed for easier movement of earth for burial (Gay 1998:11); however, bodies were also wrapped in bark or placed in caves or rock shelters. Aboriginal burial sites can be marked by depressions, though many may occur outside designated cemeteries and may not be marked. Known Aboriginal burial sites in the Bathurst Regional LGA have been recorded on the Interactive Wiradjuri Heritage Map.
Ceremonial Ring	Ceremonial rings (bora grounds) are locations that have spiritual or ceremonial values to Aboriginal people, and are places where initiation occurred. They usually consist of a circular clearing defined by a raised earth circle, which is connected by a pathway to a second, smaller circle. Ceremonial rings may also have been accompanied by geometric designs carved on nearby trees. Unfortunately, the raised earth features are easily destroyed by agricultural and pastoral activities, vegetation growth and weathering. Within Bathurst Regional LGA, Bora grounds have been previously identified on level terrain and at all elevation ranges, from valley floors to hilltops. These are recorded on the Interactive Wiradjuri Heritage Map.
Conflict	Conflict sites are locations where confrontations occurred between Aboriginal groups, or between Aboriginal people and non-Aboriginal people. However, there is often very little detail recorded regarding specific events and locations; and often, sites are unmarked. Conflict sites are most likely to occur in places of Aboriginal and settler interaction, such as at the Potato Paddock.
Contact	Contact sites are locations involved in the first encounters between Aboriginal and European people, and as such may be closely related to Conflict sites and/or Mission sites. Given the length of time that European settlers have been living in the Bathurst area, Contact sites may be located across the LGA. At present, the only recorded Contact sites on the Interactive Wiradjuri Heritage Map are in the northern portion of the LGA away from Bathurst town.
Fish Trap	Fish traps are modified areas on watercourses where fish were trapped for short-term storage and gathering. These sites are most likely to occur along river banks, creeks and streams where fish resources were plentiful. Some however, made use of natural rock platforms and tidal processes. No fish trap sites have been identified on the Interactive Wiradjuri Heritage Map in the Bathurst LGA.
Grinding Groove	Grinding grooves sites are grooves in a rock surface resulting from the manufacture of stone tools such as ground edge hatchets and spears. Grinding grooves sites may also include rounded depressions resulting from grinding of seeds and grains. Often sandstone is chosen for grinding and water is used as the wetting agent. As a consequence these sites are generally located on sandstone outcrops in close proximity to water (OzArk Environmental & Heritage Management 2011:23). A single grinding groove site has been identified on the Interactive Wiradjuri Heritage Map in the Bathurst Regional LGA; though, given the geology and hydrology of the LGA this is considered likely to reflect the dearth of research, rather than accurately reflect spatial patterning.
Hearth	Hearth sites mark the location of fires made while camping or during movement across the landscape. They are identified by the presence of charcoal, hearth stones, burnt earth, and/or heat-treated stone pieces. Although hearth sites can be found at any location at which other Aboriginal activities were taking place, at present the only recorded hearth site on the Interactive Wiradjuri Heritage Map is in the hills north of Bathurst town.
Mission	Mission sites are those related to the government policies put in place at the end of the 19th century to control the movements of Aboriginal people and their interactions with places and people. Sites related to the mission period will be located primarily at historical locations and structures, although past camp sites that may have had importance as refuges during the onset and continuation of the mission period may also be culturally important sites. No mission sites have been recorded on the Interactive Wiradjuri Heritage Map.
Modified (Carved or	Modified trees are trees which show the marks of modification as a result of cutting bark from the trunk. Tree bark was utilised by Aboriginal people for various purposes, including the

Site type	Description
Scarred) Tree	construction of shelters (huts), shields and containers (coolamons), hafting axes, wrapping bodies for burial, as well as being beaten into fibre for string bags or ornaments. The removal of bark exposes the heart wood of the tree, resulting in a scar. Over time the outer bark of the tree grows across the scar (overgrowth), producing a bulging protrusion around the edges of the scar. Trees may also be scarred in order to gain access to food resources (e.g. cutting toe-holds for climbing trees in order to catch possums). Carved trees generally marked areas used for ceremonial purposes or the locations of hunting grounds or fishing waters. The Interactive Wiradjuri Heritage Map records modified trees throughout the Bathurst LGA, but their distribution is almost certainly tied to land modification and disturbances in recent and historical times.
Ochre Quarry	Ochre quarries are a source of ochre used for ceremonial occasions, burials, trade and artwork. Ochre quarries are only found where ochre occurs in the landscape and has been exploited in the past. There have been no previously identified ochre procurement sites recorded on the Interactive Wiradjuri Heritage Map in the Bathurst Regional LGA.
Potential Archaeological Deposit (PAD)	This type of site is an area in which subsurface artefacts or other cultural material is considered likely to occur, based on a review of the environmental and historical context of the area, and previous archaeological investigations. Physical evidence of the potential deposit may or may not be visible on the ground surface, or may be obscured by dense vegetation. Within Bathurst Regional LGA, PADs may be present across the landscape at any location where Aboriginal people once made use of the landscape, camped or travelled. In this region, PAD sites are likely to occur on ridgelines and spurs and along rivers, creeks, streams and swamps where suitable camping areas and pathways occur. They are also likely to occur in the valley at slightly elevated areas rivers.
Rock shelter	Rock shelters are caves or rock overhands suitable for human activity and/or protection from the elements. Rock shelters can be found anywhere with suitable geology for the formation of caves or overhangs, and particularly suitable locations are found in terrain made primarily of sandstone or limestone, or along the edges of escarpments. They are also commonly associated with art sites. Suitable geology in which rock shelters can form can be found throughout the Bathurst LGA. At present, there are only six recorded rock shelter sites on the Interactive Wiradjuri Heritage Map in the entire LGA, which is indicative of a relative absence of work in the areas away from the Bathurst plain.
Shell	Shell sites, previously known as shell middens, are an accumulation or deposit of shellfish from beach, estuarine, lacustrine or riverine species resulting from Aboriginal gathering and consumption. They are found in association with other objects such as stone tools, fish bones and burials. Midden deposits most often occur in close proximity to water sources within coastal, estuarine and riverine contexts, and are thus unlikely to occur in the Bathurst Regional LGA. No shell sites have been identified on the Interactive Wiradjuri Heritage Map.
Stone Arrangement	Stone arrangements usually consist of low stone cairns or heaps of stones, although some also include circles and pathways. They are often found in close spatial association with bora grounds and thus are often isolated from known camp sites. While the function stone arrangement sites is uncertain, they are thought to be ceremonial in nature. In the Bathurst LGA, stone arrangements have been primarily found in elevated areas above the Bathurst plain. The Interactive Wiradjuri Heritage Map illustrates that none are known from the southern half of the LGA, nor from the northernmost portion of the LGA, and in both cases this is most likely due to a lack of investigation, rather than an absence of sites.
Stone Quarry	Aboriginal stone quarry sites are sources of good quality stone that have been quarried and used for the production of stone tools. Such sites are often associated with stone tool artefact scatters and stone knapping areas. Loose or surface exposures of stone or cobbles may be coarsely flaked for removal of portable cores. Raw materials can be sourced to these sites and provide evidence for Aboriginal movement and/or exchange. Stone quarry sites are found where suitable raw materials occur within the landscape, and where these have been exploited in the past. Within Bathurst Regional LGA, quarry sites may

Site type	Description
	be located where rock outcrops in ranges or along watercourses with suitable pebble beds.
Waterhole	Waterhole sites are a source of water for Aboriginal groups, and were either natural or manmade. Besides offering sources of fresh water, they may also have had ceremonial or dreaming significance. A single waterhole site has been recorded on the Interactive Wiradjuri Heritage Map for the Bathurst Regional LGA, though others are likely to be located along ridges and on rocky outcrops.

5.3 Local Archaeological Context

5.3.1 OEH Aboriginal Heritage Information Management Systems (AHIMS) Database

OEH maintains the Aboriginal Heritage Information Management Systems (AHIMS) database, which includes spatial and compositional data for all the Aboriginal sites and objects previously recorded in academic and cultural resource management archaeological investigations. In June 2015, OEH searched the AHIMS database for data in and around the Bathurst LGA, and the search results were provided to Extent Heritage under an OEH Data License for use in this study.

Archaeological site types are distinguished in the AHIMS database in two ways: first, whether the site is an enclosed rock shelter or an open site; and, second, by which features (out of a list of twenty possible features that are found at the site. In the present study, 222 sites were registered in the LGA – and of these, 216 (nearly 98%) were open sites. **Table 3** lists the count and overall percentage for each type of feature in the Bathurst Regional LGA sites.

In general, sites in the Bathurst LGA mostly comprise open artefact scatters (including isolated finds), which were likely to have been camp sites or activity locales. These sites are distributed throughout the entirety of the LGA, and dominate the overall archaeological signature of the area. The next most common site feature are stone arrangements, all of which are found in the central north, on the higher terrain just above the Macquarie River valley floor. The third most common site type is modified trees, including carved and scarred trees, which are suggestive of the sorts of economic and subsistence activities taking place in the region. These sites are mostly found in the upland areas along the eastern boundary of the LGA, in the central north.

Table 3: Aboriginal sites in the Bathurst Regional LGA.

Site Features	Count	Percentage of Total (%).
Artefact Scatter	102	45.95
Isolated Find	20	9.01
Stone Arrangement	17	7.66
Modified Tree	16	7.21
Carved Tree	11	4.95
Scarred Tree	7	3.15
Artefact Scatter, Potential Archaeological Deposit	6	2.70
Rock Shelter with Deposit	6	2.70
Bora/Ceremonial	5	2.25
Burial, Carved Tree	5	2.25
Contact, Mission, Artefact Scatter	5	2.25
Quarry, Artefact Scatter	4	1.80
Burial	3	1.35
Potential Archaeological Deposit	3	1.35
Stone Arrangement, Artefact Scatter	3	1.35
Massacre, Artefact Scatter	2	0.90
Aboriginal Resource and Gathering, Aboriginal Ceremonial and Dreaming, Water Hole, Grinding Grooves, Artefact Scatter	1	0.45
Bora/Ceremonial, Natural Mythological (Ritual), Artefact Scatter	1	0.45
Engraving	1	0.45
Stone Arrangement, Hearth	1	0.45
Stone Arrangement, Mound (Oven), Artefact Scatter	1	0.45
Stone Arrangement, Quarry, Artefact Scatter	1	0.45
Stone Arrangement, Scarred Tree, Artefact Scatter	1	0.45
Total	**222**	**100**

6 MODELLING AND SENSITIVITY MAPS

6.1 Preamble

Archaeological predictive models are used to identify, locate and map areas where archaeological resources are likely to survive. Depending on how they are built, predictive models can apply to small or large areas, and can be simple mental models or complex spatial models built inside of a Geographic Information System (GIS).

GIS-based archaeological predictive models are primarily used in development and land use planning contexts to strategically identify constraints. Identifying such constraints decreases the risk associated with archaeological resources and sites and also streamlines planning processes. These efficiency gains occur because GIS-based predictive models allow information about the location, likely type and heritage value of archaeological sites to be correlated with environmental and cultural information in order to inform the overall planning process. Such models can support developers and planners in making decisions that allow for areas with a higher potential of surviving cultural resources to be avoided, or for sites to be located and documented prior to their disturbance.

This study includes the development of an archaeological predictive model to identify areas of archaeological probability within the Bathurst LGA. The model combines known archaeological information (**Section 5**) and key environmental variables (**Section 3**) within a GIS framework to characterise the natural and cultural landscape and 'predict' where archaeological resources are likely to occur and survive.

This section summarises the rationale, methods, framework and results of the development of an Aboriginal archaeological predictive model for the Bathurst LGA. This model was used to identify areas of likely Aboriginal archaeological heritage sensitivity and Aboriginal heritage risk across the Bathurst LGA by highlighting relevant environmental factors (such as proximity to water, elevation etc.) and classifying them according to an archaeologically informed system of ranking.

6.2 Methods

6.2.1 General

The development of the GIS-based archaeological predictive model included:

- Collating environmental GIS layers (including hydrology, elevation, slope, soils, geology, geomorphology, vegetation, archaeological sites, and ethnographic spatial information).
- Rasterizing environmental variables and their components to allow for equal comparison between vector and raster based environmental variables.
- Numerically ranking or weighting each environmental variable component, depending on the component's ability to influence cultural heritage site distribution.
- Adding selected environmental GIS layers together through their mathematical weightings.
- Manually classifying the resulting summed GIS layer into high, moderate, low or nil archaeological potential.

6.2.2 The Dataset

The development of the model included all previously documented archaeological sites within the Bathurst LGA (n=222), with the exception of isolated finds (**Section 5.3**). Isolated finds (n=20) are ubiquitous across Australia, and experience has demonstrated that using these in models can result in poor results.

6.2.3 Environmental Variable Rankings

The development of a model involves correlating information about known and documented archaeological sites (available from the AHIMS database) with environmental data, in order to extrapolate (or 'predict') where other, unknown sites were likely to occur. Environmental variables include distance to water, geology, soil, elevation, slope, aspect, landform and vegetation.

As an example, say there is a region in which the environmental variables that are most significant to archaeological site distribution are ‘lower slopes’, ‘100 m from a creek line’ and ‘on sandy soils’. Where any of these three variables overlap in the given region, it is likely that there is a high potential for archaeological sites to be present. If only two of the environmental variables overlap in an area, there is a still a likelihood of archaeological material occurring, but the overall potential will be lower than in the area with three converging variables. In areas where only one variable is present, the potential will be even lower. Although this example only uses three variables, models will often incorporate many more, together with the location information for known archaeological sites, in order to develop a comprehensive model of archaeological potential across a region.

6.2.4 GIS Layers Used

The quality of predictive models is directly related to the content and accuracy of the data used to develop them. Because the data that are used are often those that are best for the specific area -- but perhaps not best for a different region -- information regarding the source of the data and the ways in which they were adapted to the model is essential, both for transparency and to provide a basis from which others can make future improvements.

The data layers used to develop the model were sourced from government agencies, provided by Bathurst Regional Council, or developed by Extent Heritage. Most environmental data were downloaded from the NSW Office of Environment and Heritage; Bathurst Regional Council provided detailed contour and hydrologic data; and Extent Heritage generated terrain information from the contours. **Table 4** outlines the data, their source and how they were used in the archaeological probability model. The landform data was generated by Extent Heritage and is covered in a separate discussion, below.

Table 4. GIS data and environmental attributes used for the archaeological predictive model.

Attribute	Source	Use in Model
Hydrology	Bathurst Regional Council	• Land within 200m of watercourses with NSW Topographic Data Model Hydro Line relevance 4: Very High (4) • Land within 200m of watercourses with NSW Topographic Data Model Hydro Line relevance 5 or 6: High (3) • Land within 200m of watercourses with NSW Topographic Data Model Hydro Line relevance 7, 8 or 9: Moderate (2) • Land within 200m of a watercourse rated in the NSW Topographic Data Model Hydro Line dataset as "NonPerennial": Reduction by one sensitivity rating (but not below Low) • Land more than 200m from a watercourse: Low (1)
Hydrologic Landforms	NSW OEH	Areas within 200m of land classified as either of the following were promoted to the next higher sensitivity rating (but not above Very High): • River & Drainage System: Lagoon or inland lake • Wetland: Swamp
Landform	EXTENT HERITAGE, derived from Bathurst LGA contour data	On land with slopes greater than 15 degrees: Reduction by one sensitivity rating (but not below Low).
Land Disturbances	NSW OEH	Land classified as the following was assigned a rating of Nil (0): • Mining & Quarrying: Derelict mining land • Mining & Quarrying: Fly ash dam / dump site • Mining & Quarrying: Mine site • Mining & Quarrying: Quarry • Mining & Quarrying: Quarry within a state forest • River & Drainage System: Farm dam • River & Drainage System: Reservoir • Urban: Landfill (garbage) • Urban: Sewage disposal ponds Land classified as the following was assigned a rating of Low (1): • Horticulture: Turf farming • River & Drainage System: Lagoon or inland lake • Urban: Cemetery • Urban: Urban recreation (golf courses only) • Wetland: Swamp Land classified as the following was assigned a rating of Very High (4): • Special Category: Cliff/rock outcrop All other land classifications were assigned a base rating of Moderate (2).

Vegetation	NSW OEH	Areas of moderate to high urbanisation were classified as disturbed for both models. This received a nil rating
Soil	NSW OEH	Areas classified as "shallow soils": Very High (4) Areas classified as "alluvial soils": Low (1) All other soils: Moderate (2)

6.2.5 Data-Mining

The data were selected and ranked via a deductive modelling process. Information obtained during our detailed desktop review of previous archaeological literature about Bathurst region was used to identify the factors that are the best predictors of archaeological site location in the region.

In addition, some data mining analysis of the AHIMS site data was done using the statistical package 'R' to find statistically significant differences between the types of land on which archaeological sites were found, in comparison with random non-site points taken from throughout the LGA.

This analysis resulted in a few findings used in the final model. First, it indicated that archaeological sites in the LGA were much less likely to be on areas of steep slope. Given the amount of land with slope greater than 15 degrees in the LGA, there was a statistically significant difference in the number of sites on that land. In addition, it also revealed that sites were much more likely to be located within close proximity to major waterways. Finally, the analysis also showed that the sites were also far more likely to be on land classified as "shallow soil", compared with the amount of land with that classification.

At the same time, this analysis revealed that there was no meaningful distribution of AHIMS sites across the available geological data. Although geology is often an important environmental determinant in archaeological predictive models, there was no way of statistically separating the distribution of sites across the available geological data from a distribution of random data. As a result, geology was omitted from the model analysis.

Factors included in the Predictive Model

Proximity to Watercourses

Proximity to water is one of the key determinants of archaeological potential. In general, sites are larger, more complex and more frequently found in close proximity to water sources. Levels of sensitivity are predicted to increase with proximity to higher order drainage lines and more permanent wetlands. It is important to note, however, that drainage and hydrology patterns have been significantly altered since European settlement, particularly through the creation of agricultural storage dams and the draining of wetland areas for the purposes of grazing and cultivation.

High slopes

Data analysis revealed that areas of high slope gradient contained fewer archaeological sites. Although high slope areas can be more correlated with the types of terrain that contain rock shelters, there was insufficient evidence in the AHIMS database to support the idea that this was the case in the LGA.

Remnant vegetation

Areas of remnant native vegetation are often associated with higher than usual frequency of archaeological deposits and these areas are also likely to contain sites with a higher degree of integrity and research potential. This is because these are areas that have often been untouched (to a greater or lesser extent) by European development and land clearance.

Areas of cut and fill disturbance:

These areas are considered unlikely to contain Aboriginal archaeological deposits because the topsoil units in which Aboriginal artefacts are likely to be found (i.e. artefact bearing soil units) have been removed. These areas include roads, dams, building platforms for houses and sheds, etc., and are considered to have negligible archaeological sensitivity.

6.2.6 Development of the Models

Following the data-mining (**Section 6.2.5**), the model was compiled using the environmental variable components identified in **Table 4**. The variables comprise two classes: in one, a rating is defined for an area (e.g., areas classified as 'cliff/rock outcrop' are assigned a rating of Very High (4)) and in the second, the rating for an area is modified (e.g., areas of land with remnant vegetation have their rating increased by 1). For any piece of land, these variable ratings were combined in the following manner:

(Note that in the following, no rating modifier of +1 could push a land rating above Very High (4), and no rating modifier of -1 could lower a land rating below Low (1))

First, the data that related to land classification, use and modification of the land were combined:

1. The land was assigned an initial rating from the land use variable. Note that if the land use rating was 'nil', then the rating for that area stayed 'nil' throughout the rest of the modelling steps.
2. If the land contained remnant vegetation, the vegetation modifier was applied to the rating established in step 1.
3. If the land was within 200 metres of land classified as swamp or wetland, another modifier was applied.

Next, the data related to hydrologic flow were combined:

1. The land was assigned a hydrologic rating based on its proximity to watercourses.
2. If the watercourse the land was close to was non-perennial, a modifier was applied.

Finally, the data related to ground surface was combined:

1. The land was assigned a surface rating based on the type of soil found.
2. If the slope was too great, a slope modifier was applied.

The results from the above steps were three separate ratings: land use, hydrology, and surface. These ratings were summed, and then the resulting range of 0 to 12 was normalised to 0 to 4 via a non-linear process. Note that if the rating from the land use was 'nil', due to mining or other major activities, the final result for that piece of land was nil, no matter what the hydrologic or surface ratings were.

The final model divided every piece of land into five values:

- Very High: the highest probability of finding archaeological materials.
- High: above average probability of finding archaeological materials.

- Moderate: average-to-below-average probability of finding archaeological materials.
- Low: unlikely probability of finding archaeological materials.
- Nil: land considered to have been so damaged by modification that there is essentially no possibility of finding archaeological materials.

6.3 Predictive Archaeological Model

The predictive model for the Bathurst Regional LGA is shown in **Figure 12**.

It should be noted that, due to the available data, there are a number of limitations in the model. In more detail, the limitations are the following:

- Paucity of AHIMS data: Few AHIMS sites have been recorded in the Bathurst Regional LGA given its size. For instance, the site density of the Bathurst region (without including isolated finds) has been calculated at one site per 19 km². This information is considered to reflect a lack of archaeological research within the region, as opposed to a reflection of the distribution of sites across the region. Given the many pieces of ethnographic and historic evidence for Aboriginal people in the region, this is clearly a data gap -- and no model based on AHIMS data can ever be very accurate until more sites are found and added to the database.

- Hydrologic data: although the hydrologic dataset contains many streams, it mostly comprises small and non-perennial waterflows. Another method of modelling proximity to water must be added to the analysis, because the understanding of waterflow and Aboriginal proximity to streams derived from other parts of the state appears to have limited utility in the Bathurst LGA.

Although detailed local assessments for a large proportion of the subject area are not readily available, the model can be compared with the predictive modelling of the region undertaken by OEH. OEH's modelling is designed to assist proponents and landowners in their due diligence processes under OEH's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW, 2010). The models are referred to as the Aboriginal Sites Decisions Support Tool (ASDST), and although due to their scope and purpose they are not as detailed as the model presented here, the ASDST still provides a rough indication as to Aboriginal heritage issues within a given area. Compared to the ASDST, the model shown here shows broad similarity, although this model tends to give greater weight to the potential for archaeological sites to occur along river flats and upland areas, particularly in the northeast of the subject area.

6.4 Limitations

Due to the theoretical and mathematical approaches to the development of the models, there were several limitations that apply, as follows:

- The model outlined in **Section 6.3** is a scientific model based on environmental variables and landforms known to be important for Aboriginal populations. However, there are cultural and ritual sites (such as bora rings, initiation and birthing sites) that do not necessarily correlate to environmental data, as their location is determined more by cultural choice than environmental situation. These sites will be more likely than other site types to be model outliers. Thus, relying on the model without considering the possibility and distribution of cultural sites may lead to poor conservation outcomes.

- The development and nature of a model requires data averaging in order to provide a holistic perspective for a given area. Such averaging introduces error and reduces accuracy in predicting archaeological resources. For this reason, the models will not explain all of the archaeological data, nor will any model ever be 100% effective in predicting archaeological sites.
- The model only provides information on the probability of Aboriginal archaeological materials occurring. The models do not provide any information on or consideration of the significance or integrity of archaeological sites or deposits within these probability areas.
- Due to the nature of consulting archaeology, the archaeological knowledge and documented sites are often constrained to areas of proposed development. This means that specific landform testing or research type analysis has not generally been undertaken, and so there will be bias in the data, in relation to the location and landform type where archaeological material occurs. In the Bathurst LGA, for example, there has clearly been insufficient archaeological research and investigation in the higher forest, steeper slopes, and areas away from the valley floor.
- The models were both developed and tested with existing and known Aboriginal site data from OEH's AHIMS database. However due to the size of the project no quality control of the AHIMS data (e.g. confirming site location or site types) could be undertaken.
- AHIMS sites are frequently assigned erroneous co-ordinates and locations. The development of a model based on site co-ordinates, therefore will not necessarily accurately represent the actual site's location.
- The AHIMS data provides one co-ordinate or 'point' for each Aboriginal site in the subject area. However, it provides no contextual information on the size or extent of the site. Hence while the models have been developed and tested on these 'points', sites may extend beyond the co-ordinate in question and thereby affect the accuracy and/or effectiveness of the model.
- Recent disturbance and development is under-represented in the model. Although the OEH has a data layer related to land use activities, the data comprising this layer were gathered between the early 1990s and 2001. As a result, more recent land use activities or major development projects will not be properly taken into account.
- There are some limitations in the application of the archaeological modelling within a GIS framework. For example, this model rates areas within 200 m of creeks in certain ways. For archaeological modelling purposes, the 200 m should be considered from the top of the creek bank, but due to the design of the GIS data, the 200 m buffer originates from the creek centerline, instead.
- The nature of GIS requires every environmental variable to be defined accurately, but in reality this cannot always be the case. For example, the soil data was collected through spot checks by geologists, leaving large portions of the study area that may not have been surveyed completely -- but which have been filled in through extrapolation. Therefore, the simplicity of GIS in some areas creates limitations and spatial constraints.
- This model has been developed based on existing data and desktop review. No field investigations have been undertaken to verify or ground-truth this model. Section 8 presents recommendations regarding ways in which the model can and should be tested in order to demonstrate its effectiveness or failings in reality. Caution should be exercised when considering the effectiveness and accuracy of the models until such investigations are undertaken.
- The model presented here are first-order attempts at predicting the likely locations of unrecorded archaeological material in the subject area. The model is not intended to be the final determinant of archaeological resource distribution in the Bathurst region. Additional

investigations, studies, excavations and assessments undertaken in these areas should be used to provide input into and revise the models as appropriate.

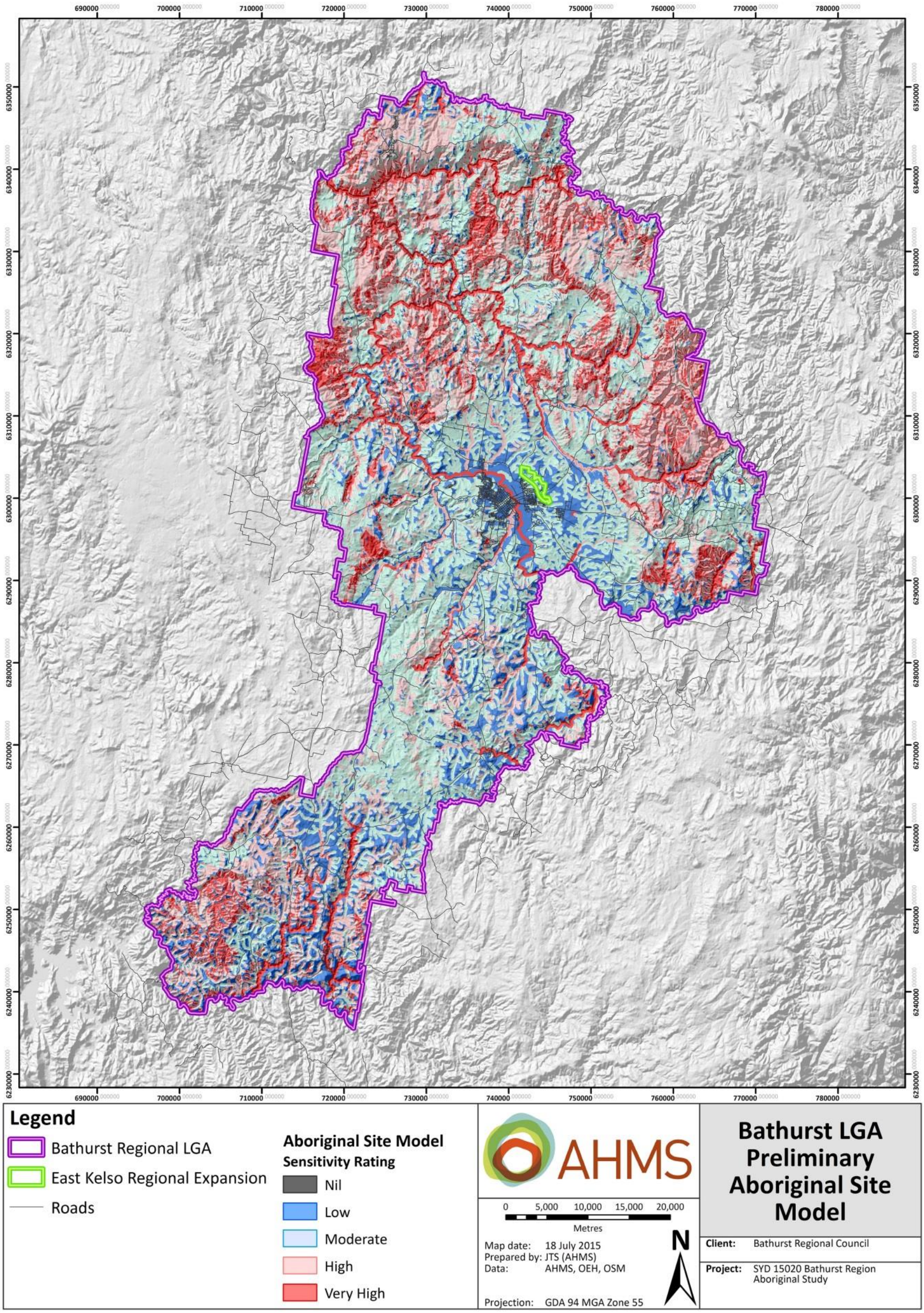

Figure 12. Predictive model of Aboriginal heritage sensitivity within the Bathurst Regional LGA.

7 ABORIGINAL STAKEHOLDER CONSULTATION & CULTURAL VALUES MAPPING

Consultation with local Aboriginal community stakeholders and Wiradjuri traditional knowledge holders was undertaken in the preparation of this heritage study to identify and map cultural values and places, and to incorporate the views and opinions of the Aboriginal community in the development of Council policy for the management and protection of Aboriginal cultural values, places and sites.

This included liaison with Local Aboriginal Land Councils, community organisations and Wiradjuri traditional owners, as well as the Office of Environment and Heritage and other agencies and departments.

The project was undertaken in accordance with the *Aboriginal cultural heritage consultation requirements for proponents 2010* (DECCW 2010) and *Ask First: A Guide to respecting Indigenous heritage places and values* (Australian Heritage Commission 2002). The consultation process that was undertaken is outlined below and is summarised in Appendix 1.

7.1 The Process

To initiate the consultation process, letters introducing the Bathurst Regional heritage study project were addressed to a number of key organisations:

- Office of Environment and Heritage, Environment Protection and Regulation; Country, Culture and Heritage, Dubbo (OEH);
- National Native Title Tribunal (NNTT);
- Native Title Services Corporation Ltd (NTSCorp);
- Office of the Registrar, *Aboriginal Land Rights Act 1983* (NSW);
- Central West Local Land Services (CWLLS);
- Bathurst Regional Council;
- Bathurst Local Aboriginal Land Council;
- Cowra Local Aboriginal Land Council;
- Orange Local Aboriginal Land Council; and
- Pejar Local Aboriginal Land Council.

Requests were made to identify Aboriginal people, organisations and other stakeholders who might hold cultural knowledge of the area. At the same time, a notice was placed in the *Western Advocate* on Thursday 25 June 2015. This process identified 24 parties as likely to have an interest in the Aboriginal Heritage Study (**Table 5**). Each of these parties or their representatives was contacted, an explanation of the Study was provided, and they were invited to be consulted and involved in the Study.

During the consultation process, it became clear that large volumes of data would be required from the OEH AHIMS database, which required endorsement from each of the Local Aboriginal Land Councils affected. A letter requesting endorsement was sent to the Bathurst LALC on 5 June 2015. Endorsement for the Aboriginal Heritage Information License Agreement was received from the Bathurst LALC on 10 June 2015. OEH subsequently provided the AHIMS data in July 2015.

Table 5. Groups identified during the consultation process.

Organisation
Bathurst Wiradyuri Aboriginal Community Elders
Bathurst Local Aboriginal Land Council
Bathurst Buunji Interagency Group
Gundungurra Aboriginal Heritage Association Inc.
Gundungarra Tribal Council Aboriginal Corporation
Mingaan Aboriginal Corporation
Mooka
North East Wiradjuri
Wiradjuri Council of Elders
Wiradjuri Traditional Owners Central West Aboriginal Corporation
Warrabinga NTCAC
Cowra Local Aboriginal Land Council
Dhuuluu-Yala Aboriginal Corporation
Orange LALC
Pejar LALC
Towri MASCS (Child Care Servce)
Wambigi (Community Support Service)
Warrabinga Native Title Claimants Aboriginal Corporation (Warrabinga NTCAC)
Windradyne
Wiradjuri Interim Working Party

7.2 Information Gathering

7.2.1 Aboriginal Community Stakeholder and Cultural Values workshop

An Aboriginal Community Stakeholder and Cultural Values workshop was organised for Tuesday 28 July 2015 and all identified organisations and individuals were invited to attend. The aims of the workshop were to introduce the Bathurst Regional Heritage Study and subsequent East Kelso land release survey, to report on the level of research undertaken to date, to identify and map cultural values, places and stories, and to discuss Aboriginal heritage management strategies for the Bathurst LGA. Four stakeholders representing three Aboriginal groups attended the Cultural Values workshop (**Table 6**).

Table 6. Community stakeholders who attended the Cultural Values Workshop.

Organisation
Bathurst Wiradyuri Aboriginal Community Elders
Bathurst Buunji Interagency Group
Wiradjuri Traditional Owners Central West Aboriginal Corporation

As part of the workshop, Extent Heritage asked Aboriginal stakeholders to write down information about places or specific sites that they valued about their country. Stakeholders were also asked to mark the locations of these values, places or specific sites on large A1 aerial maps of the Bathurst LGA. These exercises were intended to be used as a memory aid, to assist the local community in remember places, people and events associated with the Aboriginal history of the Bathurst Regional LGA, and to identify places within the LGA that have Aboriginal cultural heritage significance, or are cultural sensitive. A few significant sites and culturally significant places in the Bathurst Region were visited on the afternoon of the 28 July by members of the Bathurst Regional Council and Extent Heritage.

During the Cultural Values workshop, Aboriginal community stakeholders stressed the importance of conducting further archaeological investigation in areas of Aboriginal importance, in consultation with

the local Aboriginal community, prior to development approval. Community members felt that some sites had already been erased by development. Broadly, three site types were identified by community members in the LGA as having cultural significance and value. These included sites of mythological and ceremonial value, including story lines; resources gathering and procurement sites; and sites of interaction between white settlers and Aboriginal people.

7.2.2 Bathurst Buunji Interagency Working Party meeting

A number of community stakeholders were unable to attend the scheduled cultural values workshop day and suggested that Extent Heritage attend a meeting of the Bathurst Buunji Interagency Working Party on 20 August 2015; to further discuss the project with community members (**Table 7**). The working party recognised the importance of the Bathurst Heritage Study in educating both the Aboriginal and wider community about Bathurst's Aboriginal cultural heritage; and supported the future use of the research information in education material and public interpretation and other community programs. The working party identified the need to adopt a structured and open process of regular dialogue between the Bathurst Regional Council and local Aboriginal groups. The party nominated the Bathurst Local Aboriginal Council as a major stakeholder with the right to represent the interests of the Aboriginal community; both with respect to the East Kelso Residential Expansion area survey and broader community consultation.

Table 7. Community stakeholders and organisations who attended the Bathurst Buunji Interagency Working Party meeting.

Organisation
Aboriginal Affairs
Bathurst Local Aboriginal Land Council
Bathurst Refuge
Chifley Local Area Command
Community Services
Family and Community Services
Housing NSW
Murdi Paaki Regional Enterprise Centre
Towri MASCS (Child Care Service)
Wattle Tree House

7.3 Aboriginal Heritage Places and Cultural Values

A major aim of the consultation process was to identify places of cultural value to the local Aboriginal community and Wiradjuri traditional knowledge holders. These include sites of both historic and contemporary significance.

The results of the ethnohistorical and archaeological research, together with the information provided by the local Aboriginal community and Wiradjuri traditional knowledge holders was then combined to provide a holistic overview of Aboriginal cultural heritage places and values in the entire Bathurst LGA. Again, this data was provided in an openly-accessible spatial format, and provides further clarity for Council in the decision making process with regards to the management and protection of known and potential Aboriginal archaeological sites and places of cultural value.

Aboriginal cultural sites identified during the study are culturally sensitive and information about their location and extent is not for public access. If you are concerned your property or proposed development proposal may be located within or near an Aboriginal cultural site, please contact Bathurst Regional Council.

8 ABORIGINAL CULTURAL HERITAGE MANAGEMENT STRATEGY

8.1 General Principles

Bathurst Regional Council, on behalf of the people of the Bathurst Regional Local Government Area, should recognise that:

- The Aboriginal cultural heritage of the Bathurst region is a finite and valuable resource that is important to the history and identity of Aboriginal people.
- The Aboriginal heritage of the Bathurst region can include places of spiritual, traditional, historical or contemporary cultural significance. They need not contain material evidence of Aboriginal use or occupation.
- The Aboriginal cultural heritage of the Bathurst region should be conserved and managed according to its heritage significance to Aboriginal people.
- The Aboriginal community has a primary right to identify how its cultural heritage is identified, assessed, recorded and managed and to determine its cultural significance.
- The community of the Bathurst region and Bathurst Regional Council as well Aboriginal people are jointly responsible for the proper care, conservation and management of the Aboriginal heritage of the Bathurst region.
- Bathurst Regional Council will meet all its statutory obligations and will strive to meet all community expectations to manage and appropriately conserve the Aboriginal heritage of the Bathurst region.
- Bathurst Regional Council will actively promote the importance of the Aboriginal cultural heritage of the Bathurst region to the broader community.

8.2 Land use and Development Planning

The environmental planning instrument that requires consideration of development and land use impacts on Aboriginal heritage in the Bathurst Regional LGA is the Bathurst Regional Local Environmental Plan 2014. This planning instrument requires Council to consider the impact of proposed development on known or potential Aboriginal heritage places and archaeological sites within its LGA boundaries.

The archaeological sensitivity map produced as part of this project is designed to inform Council planning and development approval decision making processes with respect to Aboriginal heritage. It should also be used to inform design and planning work within the East Kelso Residential Expansion area. The sensitivity map is also designed to provide landowners and development proponents with a guide to archaeological sensitivity within various parts of the LGA to assist in gauging risk and making informed decisions about development design.

In general terms, the risk of impact on significant archaeological and Aboriginal cultural heritage values is likely to increase in accordance with sensitivity level. Therefore, areas that are in the very high sensitivity zones are likely to have the highest level of archaeological significance and as a result these areas are also likely to have the highest level of risk for development proponents. Likewise, areas of negligible sensitivity have a very low risk level.

We would recommend Council consider the following planning design responses with reference to the sensitivity zones shown on the sensitivity map:

The sensitivity map shows the location of sensitive Aboriginal sites and cultural values places and is therefore not appropriate for public release. If you are concerned that your property or development proposal may be located in or near an Aboriginal site, place or area of sensitivity, please contact Bathurst Regional Council and they can search the sensitivity map to advise whether or not there are any potential issues and/or legal requirements you need to consider.

Very High Sensitivity: The aim of Council planning should be to minimise future development impact on these areas and where possible, to retain these areas in their current form. This approach will protect areas with high potential for significant archaeological deposits and cultural values.

Options for retention could include inclusion of parts of the very high sensitivity land within open space, riparian, bio-link, set-backs and/or asset protection zones. Where possible, the landscape integrity and amenity of these areas should be retained, including appropriate set-backs where this is relevant. Appropriate and robust planning provisions should be established during the Council planning and re-zoning process for areas that are proposed to be retained. Provisions for retention could include specific measures that limit ground disturbance or erosion into the future.

Where development impact must occur within the areas of Very High Sensitivity, Council should require an Aboriginal Cultural Heritage Assessment (ACHA) in accordance with OEH standards and guidelines, prior to approval of re-zoning or development approvals. If an activity area includes a cultural place identified by the Aboriginal community during the current study, Council should ensure adequate consultation with the knowledge holders who identified the place to ensure its values are given due consideration in development and planning decision making.

High and Moderate Sensitivity: where there is an opportunity, development impact should be minimized where practicable through Council development application processes. For instance, where there are opportunities to establish open space, these could be placed on areas of high / moderate sensitivity rather than areas of low sensitivity to protect Aboriginal heritage. Areas of high sensitivity should take precedence over areas of moderate sensitivity.

Where development impact is proposed within the areas of High Sensitivity, Council should require an Aboriginal Cultural Heritage Assessment (ACHA) in accordance with OEH standards and guidelines prior to approval of development approvals. If an activity area includes a cultural place identified by the Aboriginal community during the current study, Council should ensure adequate consultation with the knowledge holders who identified the place to ensure its values are given due consideration in development and planning decision making.

Where development impact is proposed within the areas of Moderate Sensitivity, Council should require a Due Diligence Assessment in accordance with the OEH Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales prior to approval of development applications.

Very Low and Low Sensitivity: no design and planning recommendations. These areas are essentially 'neutral' from a planning and protection perspective and are generally compatible with residential subdivision and development.

Unless there are known Aboriginal places or sites within a proposed development area or proposed land use activity area, development may generally 'Proceed with Caution' in these areas. Council should however assess each development proposal on a case by case area in accordance with the

OEH Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales process.

Negligible Sensitivity: these areas could be the focus of future development, particularly high impact features of a subdivision like a town centre, medium or high density residential, industrial or commercial.

Unless there are known Aboriginal places or sites within a proposed development area or proposed land use activity area, development may generally 'Proceed with Caution' in these areas. Council should however assess each development proposal on a case by case area in accordance with the OEH Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales process.

8.3 Statutory Provisions

8.3.1 Aboriginal Heritage

The current environmental planning instrument for Bathurst Regional LGA is the Bathurst Regional Local Environment Plan 2014, which is based on the current Standard Instrument Local Environmental Plan. The LEP contains standard Clause 5.10 Heritage Conservation, which aims to conserve environmental heritage of the Bathurst Regional LGA. Subsections 2 and 8, in particular, address Aboriginal heritage (see **Section 2.3.5** above).

8.3.2 Historic Heritage with Aboriginal Heritage Value

Though none have previously been identified, it is likely that a number of historic heritage items listed on Schedule 5, 'Environmental heritage' of the Bathurst Regional LEP have, or have the potential to have, Aboriginal heritage significance. These particularly relate to contact sites, missions or historic burial grounds, and may include places such as:

The Old Government House Group (Item I23);
The Bicentennial, Ohkuma and Peace Parks, Macquarie River and Bathurst Flagstaff site (Item I67); and
The Georges Plains Native Home (Item I139).

Changes to these items may require an AHIP under the NPW Act, even if the item is not currently registered on the OEH AHIMS database. Where a proposed development has potential to impact on the Aboriginal heritage significance of an historic heritage item, development applications should be referred to OEH for advice by specialists in Aboriginal heritage matters.

Development applications for historic heritage items that are listed on the SHR and are of significance to Aboriginal people should be referred to the OEH for assessment in consultation with the Aboriginal Heritage Committee of the Heritage Council. The Standard Exemptions for works requiring Heritage Council approval do not apply to anything affecting objects, places, items or sites of heritage significance to Aboriginal people or which affect traditional access by Aboriginal people (Heritage Council of NSW 2009:8).

8.3.3 Development Applications

When considering applications for development, Bathurst Regional Council must determine whether an Aboriginal Cultural Heritage Assessment has been undertaken, and whether there is any potential for an Aboriginal object or place of heritage significance to be affected by the development.

If no such assessment has been undertaken, and it is clear that a known Aboriginal site, object or place may be affected, Council should request an Aboriginal Cultural Heritage Assessment be prepared, in consultation with the local Aboriginal community and in accordance with the *Code of*

Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) and the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010).

If no such assessment has been undertaken and in Council's view there is potential that Aboriginal cultural heritage may be subject to development impact, Council should request a Due Diligence Assessment in accordance with the OEH *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* process.

Council should refer to **Section 8.3** below in combination with the sensitivity mapping as a guide to whether or not a development project is located in an area likely to contain Aboriginal cultural heritage. As discussed in detail below, the following general approach is recommended:

- Development that will or may impact on a known Aboriginal site, object or place. An ACHA and AHIP application to OEH will be required before development approval can be given.

- Development in areas of Very High Sensitivity: Avoid development impact where possible. If impact is unavoidable, Council should ask the proponent to prepare an ACHA.

- Development in areas of High Sensitivity: Development impact should be minimised if possible. Council should ask the proponent to prepare an ACHA.

- Development in areas of Moderate Sensitivity. Where there is an opportunity, development impact should be reduced if possible. Council should ask the proponent to prepare a Due Diligence Assessment in accordance with OEH guidelines to determine risk level and whether or not an ACHA is required.

- Development in areas of Low and Negligible Sensitivity: Unless there are known Aboriginal places or sites within a proposed development area or proposed land use activity area, development may generally 'Proceed with Caution' in these areas. Council should however assess each development proposal on a case by case area in accordance with the OEH Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales process.

- Development in areas of identified cultural value: If an activity area includes a cultural place identified by the Aboriginal community during the current study, Council should require the proponent to prepare an ACHA and ensure the assessment includes adequate consultation with the knowledge holders who identified the place to ensure its values are given due consideration in development and planning decision making.

8.3.4 Integrated Development

Where a Development Application (DA) proposes harm to an Aboriginal object or Aboriginal place of heritage significance, it must be dealt with as Integrated Development under Section 91 of the EP&A Act. Such applications must be forwarded to OEH to determine whether the Director General of OEH is prepared to issue an Aboriginal Heritage Impact Permit. The DA cannot be approved by Council without the approval of OEH, if an Aboriginal Heritage Impact Permit is required to enable the development to proceed.

In cases of Integrated Development, it is recommended that an Aboriginal Cultural Heritage Assessment be undertaken, in consultation with the local Aboriginal community in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010).

8.3.5 Development that does not require DA Consent

The Bathurst Regional LEP does, in some instances, allow development to proceed without consent and without requiring a detailed assessment to determine if Aboriginal cultural heritage will be adversely affected (Clause 5.10(3)).

However, development consent under this clause is not required if:

a) the applicant has notified the consent authority of the proposed development and the consent authority has advised the applicant in writing before any work is carried out that it is satisfied that the proposed development:
    i. is of a minor nature or is for the maintenance of the heritage item, Aboriginal object, Aboriginal place of heritage significance or archaeological site or a building, work, relic, tree or place within the heritage conservation area, and
    ii. would not adversely affect the heritage significance of the heritage item, Aboriginal object, Aboriginal place, archaeological site or heritage conservation area, or
b) the development is in a cemetery or burial ground and the proposed development:
    i. is the creation of a new grave or monument, or excavation or disturbance of land for the purpose of conserving or repairing monuments or grave markers, and
    ii. would not cause disturbance to human remains, relics, Aboriginal objects in the form of grave goods, or to an Aboriginal place of heritage significance, or
c) the development is limited to the removal of a tree or other vegetation that the Council is satisfied is a risk to human life or property, or
d) the development is exempt development.

Council have significant scope in how they might interpret and implement these LEP requirements. We would recommend Council adopt the approach described above in Section 9.3.3. with respect to Development Applications – the sensitivity mapping should be used as a guide to the level of risk that an activity may impact on Aboriginal cultural heritage and should be considered along with the nature of the activity and level of likely impact that might be caused.

Where there is a potential risk of development impact on Aboriginal cultural heritage, Bathurst Regional Council should require the proponent to prepare a due diligence assessment, in order to satisfy itself that the proposed development would not adversely affect the heritage significance of Aboriginal objects or places, in accordance with the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010) or an industry specific code of practice adopted by the NPW Regulation. Should a person later unknowingly harm an Aboriginal object without an AHIP, following a due diligence process will constitute a defence against prosecution for the strict liability offence under Section 86(2) of the NPW Act.

We also recommend Council consider amending the LEP to include the following additional subsection after the current Section a) i and before Section a ii) shown above:

a) ii is not located within an area of Very High or High Aboriginal Heritage Sensitivity, or in an area that contains known Aboriginal sites or places shown on the Aboriginal Heritage Information Management System and/or in the Bathurst Regional Aboriginal Heritage Study 2016; and

Council should also note that in the event that any Aboriginal objects are uncovered during development works for an activity that is not covered by an AHIP approval, the activity must cease until the proponent has obtained an AHIP approval from OEH.

8.4 OEH Assessment Requirements

The NSW National Parks & Wildlife Act 1974 and the Office of Environment and Heritage (OEH) codes, policies and guidelines set the legal parameters for impact assessment and management of Aboriginal heritage in NSW.

The OEH has established a tiered risk management approach to determining when detailed archaeological and Aboriginal heritage assessment is required for specific activities. The process is set out in the *DECCW 2010 Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf (OEH Code).

The OEH due diligence process is designed to triage activities that are unlikely to cause harm to Aboriginal heritage and can 'proceed with caution' from activities that may or are likely to cause harm to Aboriginal heritage and therefore require further detailed assessment work.

In the first instance, Part 3A Major Projects (now repealed) / Part 4 (Division 4.1) State Significant Developments are exempt from the OEH Code as environmental and heritage requirements are set out in specific Statement of Commitments.

If the project falls under standard Part 4 or Part 5 approval processes under the Environment Planning and Assessment Act 1979, the activity will require completion of an Aboriginal Cultural Heritage Assessment (ACHA) and approval of an Aboriginal Heritage Impact Permit (AHIP) if it will impact on a known Aboriginal object, site or place.

If there are no known Aboriginal sites, places or objects within the footprint of the proposed activity, the provisions of the OEH Due Diligence Code are relevant. Firstly, a range of 'low impact activities' are set out in Clause 80B, Section 87(4) of the NPWS Act 1974:

*(a) was **maintenance work** of the following kind on land that has been disturbed:*
(i) maintenance of existing roads, fire and other trails and tracks,
(ii) maintenance of existing utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines), or

*(b) was **farming and land management work** of the following kind on land that has been disturbed:*
(i) cropping and leaving paddocks fallow,
(ii) the construction of water storage works (such as farm dams or water tanks),
(iii) the construction of fences,
(v) the construction of irrigation infrastructure, ground water bores or flood mitigation works,
(vi) the construction of erosion control or soil conservation works (such as contour banks), or

*(c) was **farming and land management work** that involved the maintenance of the following existing infrastructure:*
(i) grain, fibre or fertiliser storage areas,
(ii) water storage works (such as farm dams or water tanks),
(iii) irrigation infrastructure, ground water bores or flood mitigation works,
(iv) fences,
(v) erosion control or soil conservation works (such as contour banks), or

*(d) was the **grazing of animals**, or*

*(e) was an **activity on land that has been disturbed that comprises exempt development or was the subject of a complying development certificate issued under the Environmental Planning and Assessment Act 1979**, or*

*(f) was **mining exploration work** of the following kind on land that has been disturbed:*

(i) costeaning,
(ii) bulk sampling,
(iii) drilling, or

*(g) was **work of the following kind**:*
(i) geological mapping,
(ii) surface geophysical surveys (including gravity surveys, radiometric surveys, magnetic surveys and electrical surveys), but not including seismic surveys,
(iii) sub-surface geophysical surveys that involve downhole logging,
(iv) sampling and coring using hand-held equipment, except where carried out as part of an archaeological investigation, or

***Note.** Clause 3A of this Regulation provides that an act carried out in accordance with the Code of Practice for Archaeological Investigation in NSW is excluded from meaning of harm an objects or place for the purposes of the Act.*

*(h) was **the removal of isolated, dead or dying vegetation**, but only if there is minimal disturbance to the surrounding ground surface, or*

*(i) was **work of the following kind on land that has been disturbed**:*
(i) seismic surveying,
(ii) the construction and maintenance of ground water monitoring bores, or

*(j) was **environmental rehabilitation work** including temporary silt fencing, tree planting, bush regeneration and weed removal, but not including erosion control or soil conservation works (such as contour banks).*

With the exception of impact on Aboriginal culturally modified trees (scarred and carved trees), if an activity is included in the above 'low impact' categories, the proponent is not required to undertake the OEH Due Diligence Assessment process and may 'proceed with caution'. Using these low impact exemptions, a proponent has a defence to prosecution for an offence under section 86 (2) of the Act, if the defendant establishes that the act or omission occurred while undertaking one of the above activities. However, if any Aboriginal objects or sites are found during the activity, the proponent must cease work, notify OEH and apply for an AHIP if further harm is intended.

If the activity is not included on the list of low impact activities described above, the proponent should undertake a Due Diligence Assessment in accordance with the requirements of the OEH Code to determine if their activity is likely to harm an Aboriginal site, object or place. The OEH due diligence assessment process is shown on the Flowchart overleaf on **Figure 13**. The Due Diligence process may require engagement of a suitably qualified Aboriginal heritage consultant / archaeologist to undertake desktop assessments and site inspections.

If the Due Diligence Assessment concludes that the activity is not likely to harm Aboriginal heritage then the activity may 'proceed with caution'. If any Aboriginal sites, objects or places are found during the activity, the proponent must stop work, contact OEH and may need to obtain an AHIP before recommencing work.

If the Due Diligence Assessment concludes the activity will or is likely to harm Aboriginal heritage, the proponent will need to commission a suitably qualified Aboriginal heritage consultant / archaeologist to undertake a formal Aboriginal Cultural Heritage Assessment (ACHA) in accordance with OEH standards and guidelines.

If the ACHA assessment identifies Aboriginal heritage, the proponent will need to apply to OEH for an AHIP before the activity can commence.

8 The generic due diligence process

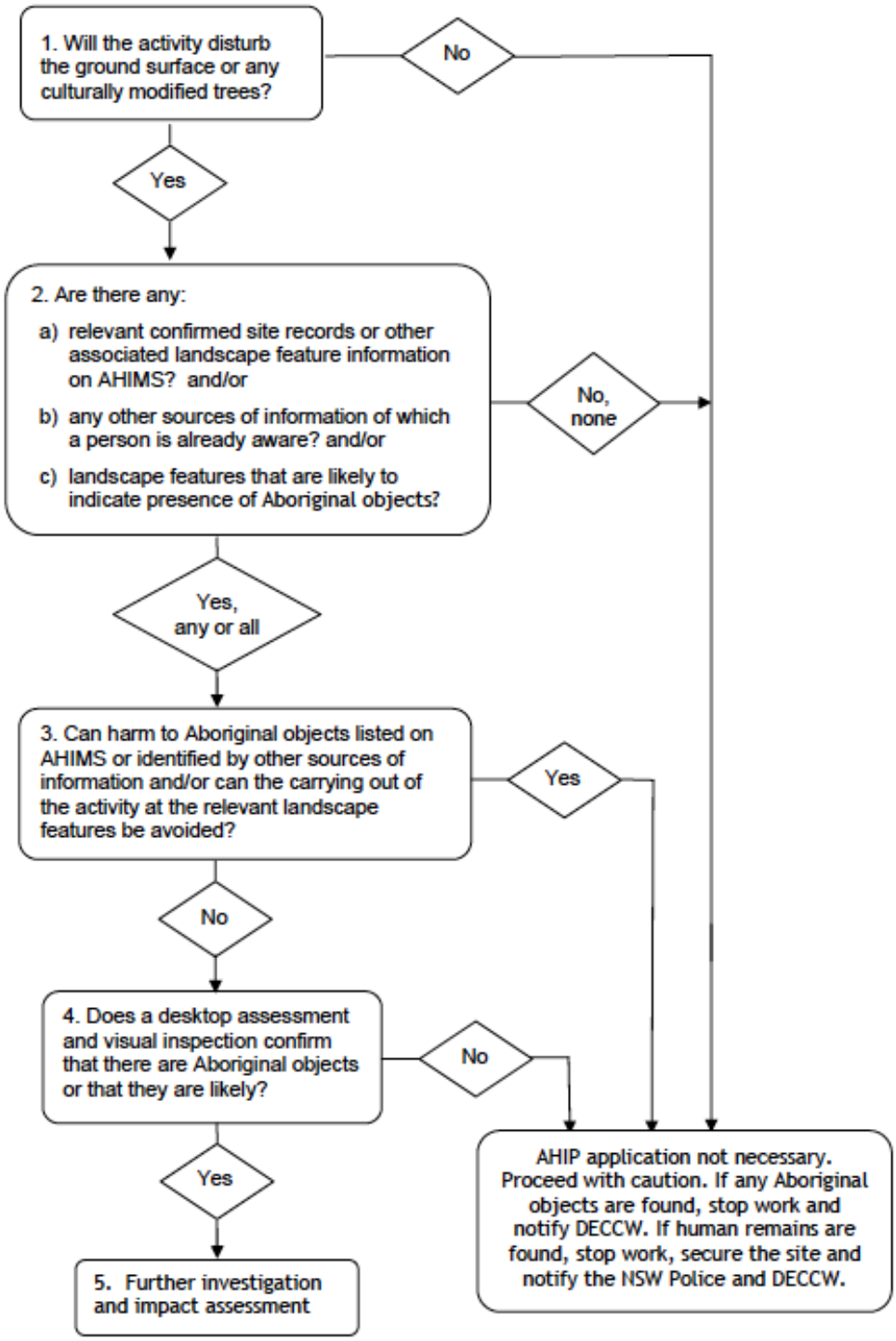

Figure 13. OEH Due Diligence Assessment Process (DECCW 2010).

8.5 Aboriginal Cultural Values and Stakeholder Consultation

Council should consider the following recommendations regarding Aboriginal cultural values and future consultation and engagement with the Aboriginal community:

- The cultural values mapping must be kept confidential and secure on Councils spatial database and strictly limited to internal use by Councils planners for the purpose of determining whether proposed landuse and development applications require Aboriginal Cultural Heritage Assessments. The information may be culturally sensitive and Council should obtain specific approval from the Aboriginal stakeholders who provided the information during the assessment before any public release of that information or use in interpretation;

- The Aboriginal community were generally supportive of using elements of research obtained as part of this study (particularly the ethnohistorical spatial mapping) for interpretation and education purposes. Extent Heritage would strongly support this, but would note as above, that permission from the Aboriginal community stakeholders consulted as part of this study must be obtained before any use of the information in public interpretation or for educational purposes;

- Council should consider establishing a formal process of regular engagement and consultation with the Bathurst Wiradjuri Elders (representing key traditional owners and knowledge holders) and with the Bathurst Buunji Koori Interagency Working Party (an umbrella organisation representing key Aboriginal community agencies, Land Council and Aboriginal representatives on government and statutory bodies based in the Bathurst Region). Both organisations believe current Council consultation is ad hoc and would benefit from a regular structured process of engagement and consultation. Rather than attempt to establish a Council-based consultation body, we would recommend that Council attend the regular meetings of the Bathurst Buunji Koori Interagency Working Party and also establish regular one on one meetings with the Bathurst Wiradjuri Elders;

- The Aboriginal community stakeholders who participated in the study should be provided the opportunity to review and comment on the draft version of this report and should be specifically invited to indicate any relevant sections that should remain confidential, not for public release or under restricted use protocols.

8.6 Aboriginal Heritage Management Requirements

The following recommendations set out the key legal requirements that apply to development planning within the Bathurst Regional LGA and within the East Kelso Residential Expansion area:

1. If a proposed activity will or is likely to harm a known Aboriginal site, object or place registered on the OEH *Aboriginal Heritage Information Management System* (AHIMS), the proponent must obtain an Aboriginal Heritage Impact Permit (AHIP) from the Office of Environment and Heritage (OEH) before the activity may commence.

2. If a proposed activity will not impact on any known Aboriginal sites, objects or places:

    c. If the activity is a 'low impact activity' described under Clause 80B, Section 87(4) of the National Parks and Wildlife Act 1974, it may proceed with caution without the need for a formal Aboriginal Cultural Heritage Assessment, provided the activity does not impact on an Aboriginal carved or scarred tree and provided that work ceases in the event any Aboriginal sites or objects are discovered during the activity and OEH are notified for advice before work recommences.

d. If the activity is not a 'low impact activity' the proponent must undertake a Due Diligence Assessment in accordance with the OEH *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW.* If the assessment finds the activity is likely to harm Aboriginal heritage, a formal Aboriginal Cultural Heritage Assessment (ACHA) will be required before the activity can commence.

3. **Known Aboriginal Places** – registered on the OEH Aboriginal Heritage Information Management System (AHIMS) are protected by the *NSW National Parks & Wildlife Act 1974*. It is an offence to disturb or destroy these places without first obtaining an Aboriginal Heritage Impact Permit (AHIP) from OEH.

4. **Blanket Protection** – The *NSW National Parks & Wildlife Act 1974* provides blanket protection for all Aboriginal sites, objects and places. If any Aboriginal objects (artefacts), sites, places or skeletal remains are identified at any time before or during development works, they cannot be harmed until an Aboriginal Heritage Impact Permit (AHIP) that specifically permits harm to that place has been approved by OEH.

5. The **Aboriginal Sites and Places** identified in this study should be recorded on the OEH Aboriginal Heritage Information Management System.

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