Table 6: Duplicate and Triplicate samples RPD Calculations

Analyte	Limits	AD 9/ AD11 RPD	AD10/AD9 RPD
Chromium, Cr	No Limit	34	25
Copper, Cu	No Limit	21	37
Lead, Pb	No Limit	15	7.4
Nickel, Ni	No Limit	16	14
Zinc, Zn	No Limit	23	24

Limits: Result <10 times LOR: No limit;

Result between 10 and 20 times LOR: 0-50%;

Result > 20% LOR 0-20%.

The calculated RPDs were within the relevant RPD acceptance criteria.

Trip blanks were not collected as the samples were not expected to contain a significant level of volatile compounds and were transported in cooled insulated eskies. Based on the above and analytical results showing no volatile analytes were detected for the rinsate blank, any samples the absence of trip blanks are unlikely to impact on the results of the soil and water samples collected. Trip spikes were not collected as the samples were not expected to have high levels of volatile compounds and were transported in cooled, insulated coolers so any volatile loss should be minimal.

A field blank was collected for the site, identified as AD17. The sample was taken from an area that had not been cultivated over the history of the site and was not an area where mechanical repairs would have been carried out. The results show levels of OC/OP pesticides below the limit of reporting. Metals are within the expected the background levels for soils, with Cr 9.9mg/kg; Cu 12mg/kg; Pb 42mg/kg; Ni 1.9mg/kg: Zn 38mg/kg: Hg 0.11mg/kg.

8.2 Laboratory QA/QC SGS

Methods used for the analysis of samples are detailed in SGS 'Statement of QA/QC Performance' included in **Appendix G**. The method detection limits are listed in the Certificate of Analysis provided in **Appendix H**, which includes for the Laboratory Analysis Certificates with details of duplicate analysis and percent recoveries of surrogates. Samples were received in a good condition at the laboratories.

Laboratory Quality Assurance and Quality Control certificates are provided in **Appendix G**. An assessment of the Quality Assurance and Quality Control methods and procedures has been included in **Appendix I.**

From the assessment the following exclusions were noted:

- Matrix Spike Recovery failed acceptance criteria due to matrix interference for Arsenic
- Laboratory duplicates RPD failed acceptance criteria due to sample heterogeneity for phenanthrene, Nickle and Lead

These excursions by the laboratory would not have a significant impact on the laboratory results for the samples submitted for analysis.

Despite the excursions in QA/QC, the sampling and analysis procedures used provided accurate for all soil and water samples collected.

8.3 Laboratory QA/QC ALS

Methods used for the analysis of samples are detailed in ALS 'Quality Control Report' and 'QA/QC Compliance Assessment to assist with Quality Review' included in **Appendix G**. The method detection limits are listed in the Certificate of Analysis provided in **Appendix H**, which includes for the Laboratory Analysis Certificates with details of duplicate analysis and percent recoveries of surrogates. Samples were received in a good condition at the laboratories.

An assessment of the Quality Assurance and Quality Control methods and procedures has been included in **Appendix I**. From the assessment the no exclusions were noted.

9.0 BASIS FOR ASSESSMENT CRITERIA

The proposed use of the site is for large lot residential. The site was assessed using the Health Investigation Levels for setting A, Residential with garden/ accessible soil (home-grown produce contributing less than 10% of vegetable and fruit intake; no poultry).

As there are no current guidelines on Asbestos, a presence/absence assessment was conducted. Health Screening Levels (HSL) for Vapour Intrusion for Settings A and B (Low, and high density residential) were used for the TRH Fractions F1 and F2 and BTEXN. Management Limits for TPH Fraction F1-F4 for Residential, Parkland and public open space were used. Ecological Screening Levels (ESLs) for Urban residential and public open space were used for the TPH Fractions, BTEXN and Benzo(a)pyrene. Health screening Levels (HSL) for Direct Contact for Settings A (Low density residential) were used for the TRH C_6-C_{10}, >C_{10}-C_{16}, >C_{16}-C_{34}, >C_{34}-C_{40} and BTEXN.

These levels are reproduced below.

Table 7: Assessment levels- Health Investigation Levels

Substance	HIL-A level (mg/kg)
Arsenic	100
Cadmium	20
Chromium (IV)	100
Copper	6000
Lead	300
Nickel	400
Zinc	7400
Mercury (inorganic)	40
Carcinogenic PAHs (as BaP TEQ)	3
Total Polycyclic aromatic hydrocarbons (PAH)	300
Phenol	3000
Pentachlorophenol	100
Cresols	400

Substance	HIL-A level (mg/kg)
DDT+DDE+DDD	240
Aldrin and dieldrin	6
Chlordane	50
Endosulfan	270
Endrin	10
Heptachlor	6
HCB	10
Methoxychlor	300
Mirex	10
Toxaphene	20
Chlorpyrifos	160
PCBs	1

Table 8: Assessment Levels- Soil HSLs for vapour Intrusion

Substance	HSL-A & B level (mg/kg) 0 - <1m		
	Sand	Silt	Clay
Toluene	160	390	480
Ethylbenzene	55	NL	NL
Xylenes	40	95	110
Naphthalene	3	4	5
Benzene	0.5	0.6	0.7
F1 (C_6-C_{10} minus BTEX)	45	40	50
F2 (>C_{10}-C_{16} minus Naphthalene)	110	230	280

Table 9: Assessment levels- Ecological Screening Levels and Management Limits in soil

Substance	ESL level (mg/kg)		Management Limits (mg/kg)	
	Course Soil	Fine Soil	Course Soil	Fine Soil
C_6-C_{10}	180		700	800
>C_{10}-C_{16}	120		1000	1000
>C_{16}-C_{34}	300	1300	2500	3500
>C_{34}-C_{40}	2800	5600	10 000	10 000
Benzene	50	65		
Toluene	85	105		
Ethylbenzene	70	125		
Xylenes	105	45		
Benzo(a)pyrene	0.7	0.7		

Table 10: Assessment Criteria – Health Screening Levels- Direct Contact with Soil

Substance	HSL-A Residential (Low Density)
Toluene	14,000
Ethylbenzene	4,500
Xylenes	12,000
Napthalene	1,400
Benzene	100
F1 C_6-C_{10}	4,400
F2 >C_{10}-C_{16}	3,300
F3 >C_{16}-C_{34}	4,500
F4 >C_{34}-C_{40}	6,300

10.0 ANALYSIS RESULTS

Analysis results are included in **Appendix J**.

10.1 Appledore

10.1.1 Metals

Metal concentrations for the samples ranged from <0.01 to 76mg/kg. All metals were in the expected range for background soils.

10.1.2 Organic Compounds

One sample, AD2 contained detectable levels of PAHs- specifically, Fluoranthene, Pyrene, Chrysene, Benzo(b&f)fluoranthene, Benzo(a)pyrene. The calculated Carcinogenic PAHs BaP TEQ<LOR=LOR/2 was 0.2mg/kg and the total PAH for the sample was 1.1mg/kg. All results for PAH were significantly below the selected criteria for the site.

No samples contained detectible levels of BTEXN, petroleum products (TRH and TPH), Phenolic compounds, OP Pesticides, PCBs.

Three samples, AD 14, AD15 and AD16, located over the northern portion of the site in the vicinity of the historic and existing orchards, were found to have low levels of p,p`-DDE indicating the use of the chemical on site at some point, but the levels were significantly below the selected criteria for the site.

10.2 Littlebourne

10.2.1 Metals

Metal concentrations for the samples ranged from <0.01 to 1300mg/kg.

Three samples, LB1, LB2, and LB3, exceeded the exceed the Health Investigation Levels (HIL)–A low density residential HIL-A criteria for lead, 300mg/kg, recording levels of 720mg/kg, 330mg/kg and 470mg/kg respectively.

10.2.2 Organic Compounds

No samples contained detectible levels of BTEXN, Phenolic compounds, OP Pesticides, PCBs.

Two samples, LB1 and LB4 had Low levels of TRH C_{16}-C_{28} present. LB4 also contained TRH >C_{16}-C_{34} (F3) fraction present in low levels. These samples are around the existing homestead and sheds on site.

Four samples, LB1, LB2, LB3 and LB4 contained detectable levels of PAHs, specifically Acenaphthylene, Flourene, Phenanthrene, Anthracene, Pyrene, Benzo(a)anthracene, Chrysene,

Benzo(b&j)fluoranthene, Benzo(k)fluorabthene, Benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, and Benzo(ghi)perylene. Calculated Carcinogentic PAHs BaP TEQs ranged from 0.2-1.3mg/kg, below the HIL-A limits. The total PAH in the samples ranged from 3.0 to 14mg/kg, significantly below the HIL-A limits of 300mg/kg. Two samples, LB 3 and LB4 exceeded the ESL for Benzo(a)pyrene with 0.7 and 0.9mg/kg recorded.

Two samples, LB1 and LB11 were found to have low levels (1.2 and 0.1mg/kg) of p,p`-DDE, but the levels were significantly below the selected criteria. LB1 was found to have low levels of p,p`-DDT present of 0.2mg/kg

11.0 SITE CHARACTERISATION

11.1 Conceptual Site Plans

A conceptual site plan was developed for the site. The plan has been included in **Appendix K.** Plan 1 shows the potential impacts for soil, surface water, vapours and dust.

Contamination was top down contamination- no record of burying any waste on site or having underground tanks of any sort.

Chemicals used in agriculture were stored on site, as were chemicals used for maintaining and operating farm machinery in sheds around the site.

The "Guidelines for Assessing Former Orchards and Market Gardens" state the key areas to look for potential contamination include:

- Cultivated areas;
- Storage and machinery sheds and spray tank fill areas;
- Farm dams.

Further, the guidelines state "The greatest contamination concern comes from inadvertent pesticide spills or leaks…. Nonetheless, assessment should consider the possibility of over-application, such as in the vicinity of tractor turning circles at the end of cultivation rows, and whether more persistent organochlorine pesticides have been used in the past. "

As the soil is excavated for construction of the road and residential development, the main forms of exposure would be dust and vapours, with ingestion, inhalation and direct contact the main exposure paths. The residences on site are also potential receptors but good site hygiene and construction measure should minimise the off-site exposure.

Surface water may carry contamination across the site, into the drainage channel and into the farm dams. Exposure pathways include direct contact with the water and sediment for humans. This may be though ingestion or skin contact. The water may also have impacts on local ecology such as vegetation in and around the dam and animals using the dam water.

11.2 Appledore

All samples on this property were below the selected critera for low density residential housing. All samples were below the limits for HIL-A. All samples were below the HSL for both vapour and direct contact, ESL and management limits for the organics on site. No asbestos was found to be present in the samples selected for analysis.

11.3 Littlebourne

Three sample showed lead levels above the HIL-A residential limits. All of the samples are located in and around the current homestead and farm sheds, as shown in Figure 7.

Multiple samples showed the presence of TRH and other organic components. Two samples, LB3 and LB 4 exceeded the ESL for residential areas for Benzo(a)pyrene.

11.3.1 Tier One Assessment

Are site values greater than soil HSLs for assessing vapour intrusion risks?

No. All values are below the soil HSLs for fine soils.

Is biodegradation applicable?

Not limiting factor for analytes detected on site.

Are direct contact HSLs relevant?

Yes. Proposed residential land use, soil contamination at surface of soil. Given the soils are loam/clay, the soil type is fine. All samples are below direct contact limits.

Are ecological consideration relevant?

Yes, low density residential development with exposed areas of soil. Surface contamination was present. ESLs with soil type fine, limit is 0.7mg/kg for Benzo(a)pyrene. Two samples exceeded the limit.

Are management limits relevant?

Yes, historical orchard proposed for sensitive land use. Compared against relevant Management levels. All samples were below management levels.

Are aesthetics relevant?

Yes, sensitive land use proposed. No stains or odours were present on site at the time of sampling.

Are site values greater than HILs?

Three samples exceeded HIL-A for Lead. LB1, LB2 and LB 3 were all above the HIL-A limit of 300mg/kg. Elevated lead levels requires further health risk assessment.

Determine site Ecological Investigation Levels (EILs).

The site EILs are the sum of the Ambient Background Concentration (ABC) + Added Contaminant Limits (ACL) for aged contamination (>2 years old). From the NEPM, the added concentration limits for lead in an urban residential and public open space is 1100mg/kg. Using the mean of the lead concentrations for LB5, LB6, LB 8 and LB 12 the mean background levels is 45mg/kg. The EIL can be calculated to be 1100+45=1145mg/kg which is rounded to 1100mg/kg.

The samples are below the EILs for the site.

Figure 7 – Samples above the HIL-A levels for lead

MGA

N

Cadastre Layer: (Indicative Only. Survey must be undertaken to determine exact location of boundaries.)
Aerial Image: NSW LPI

FIGURE 7 - HIL-A EXCEEDENCES FOR LEAD

SCALE: 1 : 2,000

EXCEEDS HIL-A FOR PB

0m 25m 50m 75m 100m 125m

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Dubbo & Bathurst

Client: BATHURST REGIONAL COUNCIL

Project:
CONTAMINATION ASSESSMENT

Drawing Title:
FIGURE 7
A EXCEEDANCE FOR LEAD

Design:	Drawn:
.	GO
Check:	QA:
NR	NR

Drawing Sheet
A3 - Scales as noted

Rev	Date	Amendment
A	21.12.2015	

Sheet 07 of 07

Drawing Number 23479-A07

Revision A

11.3.2 Outcomes for Littlebourne

Three soil samples exceed the selected criteria, HIL-A for lead. Two samples exceed the ESL criteria for benzo(a)pyrene. All samples with exceedences are in the area immediately behind the Littlebourne homestead, among the surrounding sheds and outbuildings.

Possible contamination sources include lead paints, lead plumbing and solder, contaminated rainwater, batteries and leaded petrol used on site.

12.0 CONCLUSIONS AND RECOMMENDATIONS

12.1 General Site Information

Soil sampling was undertaken by an Environmental Scientist on 4th November, 2015. A judgemental sampling scheme was employed, with samples taken across the site.

Based on the potentially contaminating substances on site, samples were analysed by a NATA certified laboratory for heavy metals, Polynuclear Aromatic Hydrocarbons, Total Recovered Hydrocarbons, Benzene, Toulene, Ethylbenzene, Napthalene and Xylene, Phenolic Compounds, Organochlorine and organophosphorus pesticides, polychlorinated biphenyls and asbestos.

Conceptual site models identified top down contamination, primarily remaining on the surface and within the top 1m of soil. Identified exposure pathways include ingestion and inhalation of dust during construction, direct contact with the soil and vapour exposure. Surface water coming in contact with the soils may provide other exposure pathways including but not limited to direct contact with the water. Ecological concerns are most likely to be impacted by surface water runoff.

Both Appledore and Littlebourne are proposed for rezoning as from RU1 Rural Production zone to R5 Large Lot Residential zone.

Samples analysed for the sites were assessed against the HIL-A and HSL – A for Residential with garden/accessible soil (home grown produce<10% fruit and vegetable intake) and ESL limits for urban residential and public open space.

12.2 Appledore

Lot 14 of DP 1050220, "Appledore" 3991 O'Connell Road, Kelso NSW 2795 was established as an orchard for apples, cherries and other stone fruit in 1979. The site has been owned by Russ McCarthy since that time. Prior to the establishment of the orchard, the site was cleared and used for grazing land. The site is well maintained orchards, with some farm waste stored along the western side of the large packing and storage shed in the south east of the site.

The samples analysed taken from the Appledore site are all below the selected criteria for various potentially contaminating chemicals. The site appears to meet the requirements for use as low density residential housing. No further investigations for the site are required.

12.3 Littlebourne

Lot 1of DP 867504, "Littlebourne" 4031 O'Connell Road, Kelso NSW 2795 was built in 1835 by convict labour. The site has been owned by the Warren family since the early 1990s. Orchards have not been on site for 30 years. The site is well maintained cleared farmland, with some remnant plum orchard in the central northern part of the site.

Three samples, LB1, LB2, and LB3, exceeded the HIL-A criteria for lead.

Further investigations should be undertaken in the area surrounding the homestead and outbuildings. Lead levels are above the HIL-A residential limits. Given the above, further investigation would be required, with potential remediation, if the site is to be used for standard residential housing with accessible soil and garden.

Management measures such as those implemented in areas of high lead contamination in Broken Hill NSW and Port Pirie SA should be implemented for Littlebourne until further investigation is undertaken. Management measures may include:

- Regular hand washing with soap after outdoor play and gardening and especially before eating;
- Keep children's fingernails short and use a nail brush regularly;
- Discourage dirt eating, sucking fingers/toys;
- Keep children's dummies & bottles clean;
- Keep the house dust free as possible;
- Wash fruit and vegies before eating (home grown produce is fine as long it is grown in fresh soil and washed well);
- Wash blankets, bedding and toys;
- Remove old carpets;
- Use a good quality vacuum when vacuuming – avoid having children in the same room;
- Wet mop and wet wipe flors, furniture, toys and window sills regularly;
- Keep pets clean and outside and ensure young children wash hands after patting them;
- Leave dusty shoes outside;
- Seal cracks in walls and ceiling; and
- Rainwater can be contaminated with lead by dust on the roof, old pipes, old tanks and leaf matter. Levels of lead in rainwater tanks can change on a daily basis and is generally high.

(from http://www.leadnsw.com.au/#!hygiene/cn8w)

Two samples were found to exceed the ESL criteria for Benzo(a)pyrene. Offsite migration is not considered likely given the location of the soil samples. Good ground cover provides limited ecological exposure pathways.

At this point UCL calculations have not been conducted as the sampling pattern revealed a concentrated hotspot around the homestead, outbuildings and sheds.

13.0 LIMITATIONS

Refer to **Appendix L** for information regarding the undertaking of an environmental assessment, including limitations. It should be recognised that even the most comprehensive site assessments may fail to detect all contamination on a site. This is due to the fact that contaminants may be present in areas that were not previously surveyed or sampled, or may migrate to areas that showed no signs of contamination when sampled. Investigative works undertaken at the subject site by Barnson identified actual conditions only at those locations in which sampling and analysis were performed. Opinions regarding the conditions of the site have been expressed based on data obtained and interpreted from surface and subsurface investigations.

The recommendations provided in this report are based on data obtained from sampling locations investigated. It should be recognised that the condition of materials on the site may differ within areas adjacent and at differing depth ranges to locations sampled by Barnson as part of investigative works. Site conditions, including hydro geological conditions and concentrations of contaminants can also vary with time according to natural or human induced influences. However, in the opinion of the environmental professional responsible for assessment work at the site, the conditions encountered and documented in this report is representative of actual conditions. Barnson does not take responsibility for any consequences as a result of variations in site conditions.

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PLATES

Plate 1 – Appledore general site condition

Plate 2 – Appledore general site condition

Plate 3 – Appledore rubbish and waste near farm shed

Plate 4 – Littlebourne remnant plums

Plate 5– Littlebourne general site condition

Plate 6 – Littlebourne location of LB1 sample, 720mg/kg of lead

Plate 7 – Littlebourne location of LB 2 sample, 330mg/kg of lead

Plate 8 – Littlebourne location of LB3 sample, 470mg/kg lead and 0.7mg/kg of benzo(a)pyrene

Plate 9 – Littlebourne location of LB4 sample, 0.9mg/kg of benzo(a)pyrene

APPENDICES

VIEW OF LOT 14 DP 1050220 ILLUSTRATING HIGH LEVELS OF DISTURBANCE DUE TO AGRICULTURAL ACTIVITIES.

ABORIGINAL DUE DILIGENCE ARCHAEOLOGICAL ASSESSMENT

REZONING OF LOT 14 DP 1050220 AND LOT 1 DP 867504, KELSO NSW

BATHURST LOCAL GOVERNMENT AREA

NOVEMBER 2015

REPORT PREPARED BY

OZARK ENVIRONMENTAL & HERITAGE MANAGEMENT PTY LTD

FOR BATHURST REGIONAL COUNCIL

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Acknowledgement

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

EXECUTIVE SUMMARY

OzArk Environmental & Heritage Management (OzArk) was engaged by Bathurst Regional Council (the Proponent) to complete an Aboriginal Due Diligence archaeological assessment of Lot 14 DP 1050220 and Lot 1 DP 867504 (the Study Area), located in Kelso, Bathurst Local Government Area (LGA) NSW. The Study Area is are being considered for rezoning from RU1 Primary Production to R5 Large Lot Residential, enabling subdivision into fully serviced lots of a minimum size of 4000 square meters.

On Monday 19 October Dr Chris Lovell, OzArk Senior Archaeologist, conducted pedestrian and vehicular surveys across the Study Area. High amounts of vegetation prevented ground surface visibility (GSV) across the majority of the Study Area. High levels of ground surface disturbance were confirmed across the Study Area. All areas of exposure were checked for archaeological material and no new Aboriginal sites were recorded.

Recommendations concerning the Study Area are as follows:

1. No Aboriginal sites or objects are recorded within the Study Area and no landforms are assessed as having archaeological potential, therefore no further archaeological assessment is required;
2. There is low probability of ground disturbing work impacting upon Aboriginal cultural heritage within the Study Area, therefore the proposed rezoning can proceed;
3. All future land-disturbing activities must be confined within the assessed Study Area, and additional assessment may be required for proposals that impact areas outside of the Study Area; and
4. In the unlikely event that objects are encountered that are suspected to be of Aboriginal origin (including skeletal material), the Unanticipated Finds Protocol (**Appendix 2**) should be followed.

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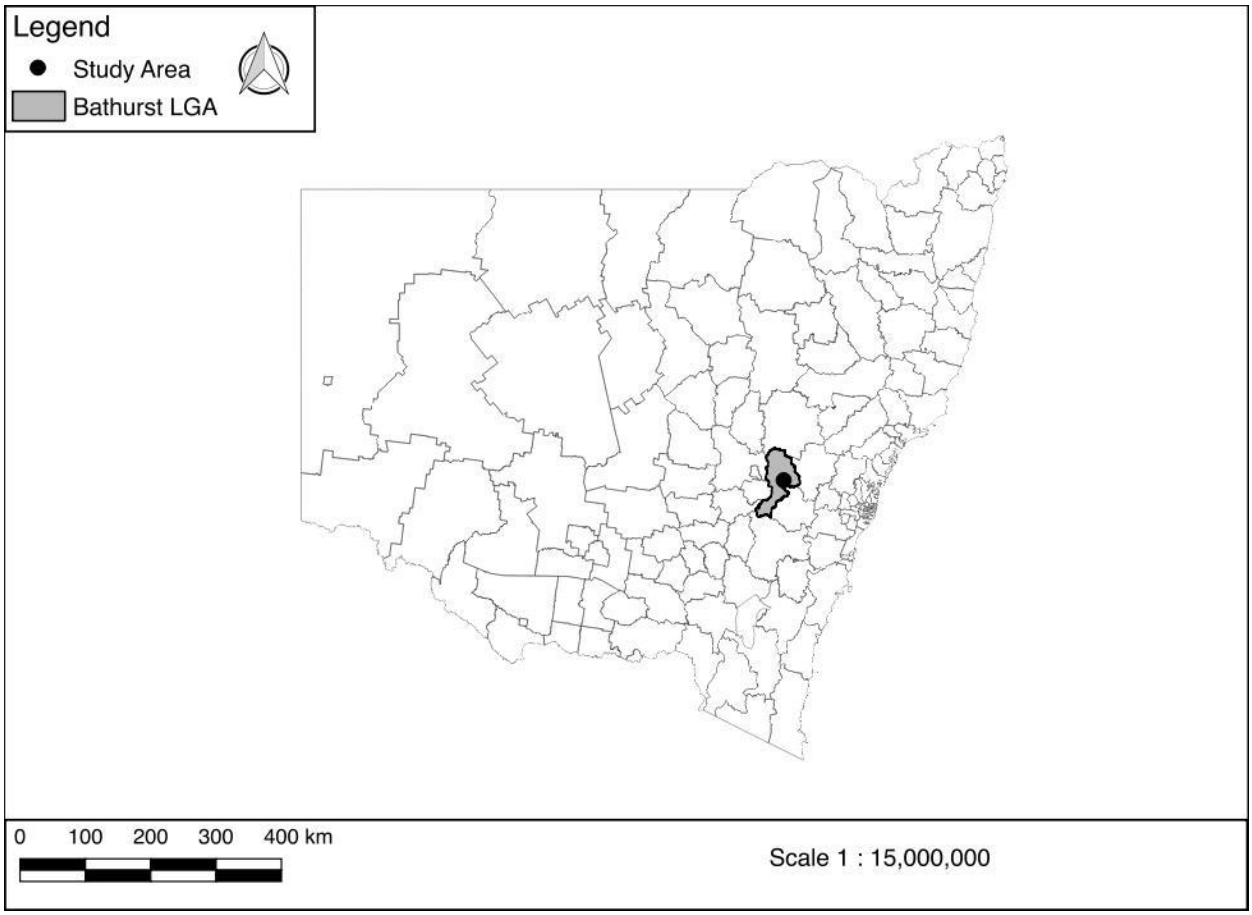
1 INTRODUCTION

1.1 BRIEF DESCRIPTION OF PROPOSAL

OzArk Environmental & Heritage Management (OzArk) have been engaged by Bathurst Regional Council (the Proponent) to complete an Aboriginal Due Diligence archaeological assessment of Lot 14 DP 1050220 and Lot 1 DP 867504 (the Study Area), located in Kelso, Bathurst Local Government Area (LGA) NSW, which are being considered for rezoning – see **Figure 1-1**.

Figure 1-1: Map showing the location of the Study Area.



1.2 PROPOSED WORK

The Proponent proposes to rezone Lot 14 DP 1050220 and Lot 1 DP 867504, currently zoned RU1 Primary Production under the Bathurst Regional Local Environment Plan 2014, to R5 Large Lot Residential. This would enable rural residential development to occur in a manner similar to the adjoining land, including subdivision into fully serviced lots of a minimum size of 4000 square meters.

1.3 STUDY AREA

The Study Area is located in Kelso, approximately five kilometres southeast of Bathurst, and comprises two rural lots: Lot 14 DP 1050220 and Lot 1 DP 867504 (see **Figure 1-2** and **Figure 1-3**).

Figure 1-2: Map showing the Study Area in regional context.

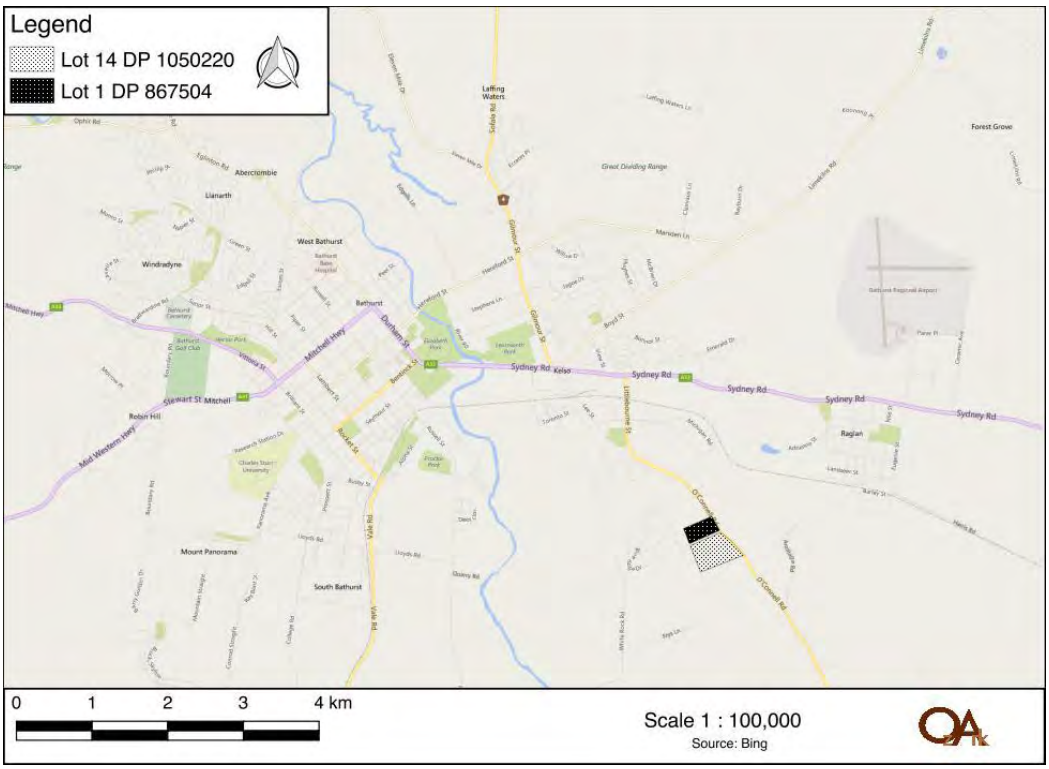


Figure 1-3: Map showing the Study Area in local context.

1.4 RELEVANT LEGISLATION

Cultural heritage is managed by a number of state and national acts. Baseline principles for the conservation of heritage places and relics can be found in the *Burra Charter* (Australia ICOMOS 2013). The *Burra Charter* has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The *Burra Charter* generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a state level.

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

1.4.1 State Legislation

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

This Act established requirements relating to land use and planning. The framework governing environmental and heritage assessment in NSW is contained within the following parts of the EP&A Act:

- **Part 4:** Local government development assessments, including heritage. May include schedules of heritage items;
- **Part 4.1:** Approvals process for state significant development;
- **Part 5:** Environmental impact assessment on any heritage items which may be impacted by activities undertaken by a state government authority or a local government acting as a self-determining authority; and
- **Part 5.1:** Approvals process for state significant infrastructure.

National Parks and Wildlife Act 1974 (NPW Act)

Amended during 2010, the NPW Act provides for the protection of Aboriginal objects (sites, objects and cultural material) and Aboriginal places. Under the Act (S.5), an Aboriginal object is defined as: any deposit, object or material evidence (not being a handicraft for sale) relating to indigenous and non-European habitation of the area that comprises NSW, being habitation both prior to and concurrent with the occupation of that area by persons of European extraction, and includes Aboriginal remains.

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

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

- The harm was authorised by and conducted in accordance with the requirements of an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the Act;
- The defendant exercised 'due diligence' to determine whether the action would harm an Aboriginal object; or
- The harm to the Aboriginal object occurred during the undertaking of a 'low impact activity' (as defined in the regulations).

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

1.4.2 Commonwealth Legislation

Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Amendments in 2003 established the National Heritage List and the Commonwealth Heritage List, both administered by the Commonwealth Department of the Environment. Ministerial approval is required under the EPBC Act for proposals involving significant impacts to National/Commonwealth heritage places.

1.4.3 Applicability to the Project

The current project will be assessed under Part 4 of the EP&A Act. Any Aboriginal sites within the Study Area are afforded legislative protection under the NPW Act.

1.5 ASSESSMENT APPROACH

The current assessment follows the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010a).

2 THE ARCHAEOLOGICAL ASSESSMENT

2.1 PURPOSE AND OBJECTIVES

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

2.1.1 Aboriginal Archaeological Assessment Objectives

The current assessment will apply Due Diligence (DECCW 2010b) in the completion of an Aboriginal archaeological assessment, in order to meet the following objectives:

Objective One: To ground-truth existing levels of ground surface disturbance within the Study Area;

Objective Two: To assess whether Aboriginal objects exist, or are likely to exist, within the Study Area;

Objective Three: To determine whether further archaeological investigation is required, as per the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a).

2.2 DATE OF ARCHAEOLOGICAL ASSESSMENT

The fieldwork component of this assessment was undertaken by OzArk on 19 October 2015.

2.3 ABORIGINAL COMMUNITY INVOLVEMENT

Aboriginal community consultation was not undertaken as part of this assessment.

2.4 OZARK INVOLVEMENT

2.4.1 Field Assessment

The fieldwork component of the current project was undertaken by:

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

2.4.2 Reporting

The reporting component of the current project was undertaken by:

- Report Author: Dr Chris Lovell;
- Reviewer: Dr Jodie Benton (PhD University of Sydney).

3 LANDSCAPE CONTEXT

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

According to the Interim Biogeographic Regionalisation of Australia (IBRA) described by NSW National Parks and Wildlife Service the Study Area falls in the northern parts of the South Eastern Highlands bioregion, within the Bathurst subregion (NPWS 2003). The South Eastern Highlands bioregion is located west of the Sydney Basin and east of the NSW South Western Slopes, and the northern parts of the bioregion encompass the towns of Bathurst, Orange and Lithgow.

3.1 TOPOGRAPHY

The South Eastern Highlands bioregion encompasses the ranges and plateau of the Great Dividing Range located northeast of (and at lower elevation to) the Australian Alps. The landforms of the Bathurst subregion are typically composed of rounded hills surrounded by steep slopes within a granite basin. Granite outcrops with tors occur near margins; chains of ponds linked by streams are found in the wide flat valley floors; and fluvial terraces exist along the Macquarie River (NPWS 2003: 208). The Study Area is located at an elevation of about 710 meters Australian Height Datum, on the gentle to moderate slopes and crests of rounded hills, becoming steep toward the drainage line that runs parallel to O'Connell Road.

3.2 GEOLOGY AND SOILS

The South Eastern Highlands are within the Lachlan Fold Belt and comprise a series of metamorphosed Ordovician to Devonian sandstones, shales and volcanic rock that have undergone four distinct episodes of folding, faulting and uplift, reflected in a strong north-south structural trend. Four centres of Tertiary basalt flows exist (NPWS 2003: 204). The Bathurst subregion is composed of Carboniferous granite, with formations of Tertiary basalt caps. Quaternary sands are found along the Macquarie River. Soils are generally composed of shallow red earths or silicious sands on ridges, gritty texture contrast soils with yellow clay subsoils on slopes, and deep coarse sands along streams and in terrace alluvium (Mitchell 2002: 142; NPWS 2003: 208).

3.3 HYDROLOGY

The Study Area is located about 2.8 kilometres east of the Macquarie River, about 50 metres west of an ephemeral tributary of the Macquarie River, which runs into Raglan Creek.

3.4 VEGETATION

At the time of European settlement vegetation would have woodlands of open forest composed of yellow box (*Eucalyptus melliodora*), broad-leaved peppermint (*Eucalyptus dives*), red stringybark (*Eucalyptus macrorhyncha*) and white box (*Eucalyptus albens*) on the ridges and slopes, and manna/ribbon gum (*Eucalyptus viminalis*) and river oak (Casuarina cunninghamiana) on the lower slopes, valleys and along streams. Patches of black cypress pine would have grown (*Callitris endlicheri*) in rocky outcrops. Grasslands with patches of snow gum (*Eucalyptus pauciflora*) woodlands would have existed in cold air drainage hollows (Mitchell 2002: 142; NPWS 2003: 208).

3.5 CLIMATE

The South Eastern Highlands bioregion has a predominantly temperate climate with warm summers and no dry season. Climate statistics from Bathurst Airport located about 4 kilometres northeast of the study area, also within the Bathurst subregion, indicate that temperatures range from a monthly mean maximum of 28.5°C in January to a monthly mean minimum of 0.8°C in July, and that average annual precipitation is 602.6 millimetres distributed fairly evenly throughout the year, with the highest rainfall occurring between November and February (BOM 2015).

3.6 LAND–USE HISTORY AND EXISTING LEVELS OF DISTURBANCE

Aboriginal people have sustainably harvested and managed resources throughout the South Eastern Highlands bioregion for tens of thousands of years. Europeans began to displace Aboriginal traditional custodians in the 1820s, with locally contingent Aboriginal responses characterised by fierce resistance, disease epidemics, economic hardship, resilience and opportunism (NPWS 2003: 206). In the interim, the bioregion has been subjected to a variety of landscape disturbances due to: pastoralism, plant cultivation, forestry, mining and the construction of associated dwellings and infrastructure (NPWS 2003:206-207). Visual inspection of the Study Area confirmed high levels of ground surface disturbance. The Study Area has been historically cleared of vegetation and subjected to grazing, ploughing, plant cultivation and building construction. No undisturbed land is considered to remain.

3.7 CONCLUSION

High levels of ground surface disturbance exist throughout the Study Area, with no undisturbed land considered to remain. The Study Area is located 800 metres from the nearest ephemeral water supply, and 2.8 kilometres from permanent water. As such, the Study Area could have

provided seasonally propitious locations for Aboriginal occupation with landforms, associated vegetation and fauna likely to have provided Aboriginal people with access to food, campsites, and perhaps other resources.

4 ABORIGINAL ARCHAEOLOGICAL BACKGROUND

4.1 ETHNO-HISTORIC SOURCES OF REGIONAL ABORIGINAL CULTURE

According to Tindale's (1974) and Horton's (1994) maps of tribal or ethno-linguistic boundaries, the Wiradjuri occupied the northern parts of the South Eastern Highlands bioregion, including the Bathurst subregion, with the Dharug and Gundungurra occupying the peripheral eastern and south-eastern areas of the Bathurst subregion. The Study Area falls within the Wiradjuri ethno-linguistic group. It is acknowledged that use of the term 'tribe' and the delineation of 'tribal boundaries' on maps is problematic. Nevertheless, distinctive ethno-linguistic groups are known to exist.

Early references to Aboriginal people in the Bathurst region are provided by John Oxley, who passed by Limestone Creek, south of Mt Canobolas, on 12 April 1817, describing the area as "a beautiful picturesque country of low hills and fine valleys well watered" (Whitehead 2003: 351). Further southwest, at the Lachlan River, Oxley met Aboriginal people carrying stone hatchets and possum skin cloaks. Oxley then returned to Bathurst along the Bell and Macquarie Rivers north of Orange in late August, noting abundant natural resources in areas adjacent to the Macquarie River, including: emus, ducks, swans, fish and freshwater muscles. Oxley notes that the country had an abundance of running water, and that on every hill was a spring (Rawson 1997: 8).

Several early first-hand local accounts of Aboriginal people are available, providing insights into aspects of daily life, although these accounts must be understood in terms of the language and ethos of the era in which they were written. For instance, Jane Piper, daughter of Captain Piper, owner of 'Alloway' and 'Westbourne' properties at Bathurst, wrote in her diary (cited in McBurney 1995):

> In the 1830's, there was a large camp of Aborigines near "Westbourne". Their shelters were made of bark under which an Aboriginal man, his mate and their piccaninnies slept at night. If they owned any dogs these would sleep with them in their 'gunyah' to help keep them warm. The men provided food, consisting of kangaroo, opossums, lizards, snakes and other delicacies. The women cooked them by throwing them on to hot coals, skinned but not disembowelled. When they were cooked, they were laid on a piece of bark and the man sat down to eat, his woman seated at his back. He tore the food to pieces with his fingers, and threw the bones over his shoulder to his lubra, who then gnawed them and passed them on to the dogs.

Piper describes a confrontation between local and non-local Aboriginal groups, which she understand to be due to the abduction of a woman (cited in McBurney 1995):

> They used spears, nulla nullas, boomerangs and womerahs. A European sympathiser persuaded one of the local tribe to allow him make the warrior of the home (local?) tribe into a devil. This he did by fastening two bullocks' tails to a thick cord, made from grass, tying them around the man's waist. His hair was plastered down with pipeclay, and he had

> red circles around his eyes and red streaks around his body. The Bathurst Tribe won, but the victory cost six lives. It is not known what happened to the woman, perhaps she escaped!
>
> The fallen heroes were buried with much ceremony, the bodies in a sitting position with their heads bowed on their knees. The war weapons of the dead were placed inside the opossum skin rug in which each body was buried. During the burial the women cried and wailed, the dead man's woman cut her head and body severely causing streams of blood to flow freely. The men and women joined in a sort of chant to tell of the deceased's virtues. When the women died they were buried anywhere.

Piper also recounts her understanding of local Aboriginal ceremonial practices (cited in McBurney 1995):

> The mystic rites of the Aborigine were frequently carried out in secrecy, but when a young man was initiated he had his front tooth knocked out, and was then considered to be eligible for matrimony.

4.2 REGIONAL ARCHAEOLOGICAL CONTEXT

Prior to 1979, no systematic regional archaeological studies had been undertaken in the Bathurst area, although some interested locals or amateurs had recorded some sites. In the 1960's Percy Gresser, a Bathurst shearer and amateur historian, described how the hilly land to the north of Bathurst contained numerous camp sites located on low ridges adjacent to creeks and springs. Gresser notes that, although most sites are located adjacent to creeks, occasionally they are located elsewhere, including elevated ridge tops.

Pearson (1981) analysed the patterns of Aboriginal and early European settlement within the Upper Macquarie Region, including some excavation. Three shelters were excavated, yielding occupation dates to around 7,000 BP. Pearson argued that archaeological sites could be divided into two main categories: occupation sites and non-occupation sites (which included grinding grooves, scarred or carved trees, ceremonial and burial sites, etc.). Pearson's analysis of site location yielded a site prediction model with occupation sites occurring in areas with:

- Access to water – site size decreased with distance from water;
- Good drainage and views over watercourses or river flats;
- Level ground;
- Adequate fuel; and
- Appropriate localised weather patterns for summer or winter occupation.

As such, occupation sites were most frequently found on low ridge tops, creek banks, gently undulating hills and river flats and usually in open woodland vegetation (Pearson 1981: 101). The location of non-occupation sites, meanwhile, depended on several factors relating to site function. For instance:

- Grinding grooves only occur where there is appropriate outcropping sandstone, but as close to occupation sites as possible;
- Scarred trees are variably located with no obvious patterning, other than proximity to watercourses, where camps are more frequently located;
- Burial grounds are generally in soft soils, as close to occupation sites as geological conditions permit; and
- Ceremonial sites, such as bora rings and stone arrangements, are located away from occupation sites.

Koettig (1985: 49-50) considers Pearson's findings preliminary, mainly due to the unsystematic nature of the recording of most sites used in the analysis. In her view, this would have skewed site types and locations. In addition, sample sizes are considered too small to yield significant results.

Pickering (1980) surveyed a proposed electricity easement between Bathurst, Ragland and Mount Panorama. Of the seven sites recorded, two are located about one kilometre north of the Study Area. One consists of a small quartzite flake, and the other a large bifacially flaked pebble. The other sites recorded include: several isolated finds, a lithic scatter and a possible scarred tree. In addition, Pickering attempted to relocate five previously recorded stone arrangements recorded by Gresser but found all of them had been destroyed via agricultural activities, or by campers.

OzArk (2005) conducted an archaeological assessment in Millthorpe, about 50 kilometres west the Study Area, recording a large, low-density artefact scatter on a slightly elevated terrace near an unnamed drainage line, including about 40 artefacts and an associated potential archaeological deposit (PAD). Materials present included fine grained volcanic material, quartz and green silcrete.

OzArk (2009) conducted an archaeological assessment of an area referred to as 'Area 51 Recreation Park', located approximately 40 kilometres northwest of the Study Area. Seven Aboriginal sites were recorded, including five open artefact scatters, one scarred tree, and one isolated find. Open artefact scatters were commonly located on valley floors, including creek banks and nearby terraces, and the gently sloping lower slopes of adjacent hills. Common stone artefact material types included: quartz, quartzite and fine-grained siliceous materials, with greywhacke, hornfels and chert also present in low quantities.

OzArk (2013) conducted an assessment at Trunkey Creek, about 60 kilometres southwest of the Study Area. A total of 22 sites were recorded and two previously recorded sites located. Twenty of the 24 sites were located on elevated terraces or knoll/spur crests. Most sites were artefact scatters and isolated finds, although scarred trees were also recorded. Unmodified flakes and debitage dominated artefact assemblages, with some cores and blades and one axe recorded.

Stone materials were diverse and included: quartz, mudstone, chert, a fine-grained unidentified material, silcrete, rhyolite and basalt.

4.3 LOCAL ARCHAEOLOGICAL CONTEXT

4.3.1 Desktop Database Searches Conducted

A desktop search was conducted on the following databases to identify any potential previously-recorded heritage within the Study Area. The results of this search are summarised here in **Table 4-1** and presented in detail in **Appendix 1**.

Table 4-1: Desktop-Database Search Results.

Name of Database Searched	Date of Search	Type of Search	Comment
Australian Heritage Database	23.11.15	Bathurst LGA	No Aboriginal places listed within Study Area
NSW Heritage Office State Heritage Register and State Heritage Inventory	23.11.15	Bathurst LGA	No Aboriginal places listed within Study Area
National Native Title Claims Search	23.11.15	Bathurst LGA	No Native Title Claims cover the Study Area.
OEH AHIMS	15.10.15	8 x 8 km centred on the Study Area	No Aboriginal objects or places listed within Study Area
Local Environment Plan	23.11.15	Bathurst LEP of 2014	None of the Aboriginal places noted occur near the Study Area.
S170 RMS Heritage and Conservation Register	23.11.15	Western Region	No places listed within Study Area

A search of the OEH administered AHIMS database returned two records for Aboriginal heritage sites within the designated search area (see **Table 4-2**).

Table 4-2: AHIMS Site Types and Frequencies.

Site Type	Number	% Frequency
Artefact	2	100
Total	**2**	**100**

4.4 PREDICTIVE MODEL FOR SITE LOCATION

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

permanent and ephemeral water sources, along access or trade routes or in areas that have good flora/fauna resources and appropriate shelter.

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

Knowledge of the environmental contexts of the Study Area and a desktop review of the known local and regional archaeological record, the most likely sites to be encountered are:

- *Scarred and carved trees:* are a dominant site type for the locality and are possible where mature trees of scar bearing type exist, however the potential for modified trees has been significantly reduced by large scale vegetation clearance within the Study Area;
- *Open camp sites:* are possible on elevated flat or gently sloping landforms within the Study Area, however due to the high level of disturbance this site type, if ever present, has a high likelihood of being disturbed and/or of low integrity; and
- *Isolated finds:* can occur anywhere, especially in disturbed locations, and may be recorded within the Study Area.

5 APPLICATION OF THE DUE DILIGENCE CODE OF PRACTICE

5.1 INTRODUCTION

In late 2010, changes were made to the NPW Act via the Omnibus Bill. As of October 2010, Due Diligence (DECCW 2010b) was instituted to assist developers to exercise the appropriate level of caution when carrying out activities that could cause harm to Aboriginal heritage.

5.2 DEFENCES UNDER THE NPW REGULATIONS 2009

The first step before application of the Due Diligence process itself is to determine whether the proposed activity is a "low impact activity" for which there is a defence in the NPW Regulation 2009. The exemptions are listed in Section 7.5 of the Regulations (DECCW 2010b: 6).

The activities of Bathurst Regional Council do not involve any work within the Study Area. However, rezoning to R5 Large Lot Residential will mean that development applications involving work that does not fall into any of these exemption categories can be lodged. Therefore the Due Diligence process will be applied.

Relevant to this process is the assessed levels of previous land-use disturbance. The NPW Regulation 2009 (DECCW 2010b: 18) defines disturbed land as follows:

> *Land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable.*
>
> *Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks.*

5.3 APPLICATION OF THE DUE DILIGENCE CODE OF PRACTICE TO THE PROPOSED DEVELOPMENT

To follow the generic Due Diligence process, a series of steps in a question answer flowchart format (DECCW 2010b: 10) are applied to the project impacts and Study Area and the responses documented.

The following paragraphs address this due diligence for the rezoning of Lot 14 DP 1050220 and Lot 1 DP 867504, Kelso NSW, Bathurst LGA.

Step 1: Will the activity disturb the ground surface or any culturally modified trees?

No. However, future development proposals will involve activities that disturb the ground. Go to Step 2.

Step 2: Are there any:

a) Relevant confirmed site records or other associated landscape feature information on AHIMS? and/or

b) Any other sources of information of which a person is already aware? and/or

c) Landscape features that are likely to indicate presence of Aboriginal objects?

a) There are no recorded Aboriginal sites within the Study Area. Two sites are recorded within 1.3 kilometres of the Study Area (see **Appendix 1**).
b) No. It is noteworthy that Aboriginal community consultation is not a formal requirement of the Due Diligence process (DECCW 2010b: 3), although it is noted that the Proponent may wish to consider undertaking consultation if it will assist in informing decision making.
c) Landscape features noted here include (DECCW 2010b: 11-12):

- within 200 metres of waters, or
- located within a sand dune system, or
- located on a ridge top, ridge line or headland, or
- located within 200 metres below or above a cliff face, or
- within 20 metres of or in a cave, rock shelter, or a cave mouth

and is on land that is not disturbed land (see **Section 5.2**) then you must go to Step 3.

Yes. The Study Area is located within 50 meters of an ephemeral water source. Landforms suitable for Aboriginal occupation may exist within the Study Area. Levels of ground surface disturbance are unknown.

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

No. Development applications under R5 Large Lot Residential zoning will involve activities that impact landforms within 200 metres of a waterway.

An answer of 'no' to Step 3 advances the process to Step 4.

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

No. Visual inspection confirmed that the Study Area has been significantly disturbed as previously described in **Section 4.6**. The visual inspection assessed that there is a very low possibility of the activity adversely impacting Aboriginal cultural heritage values.

A ‘no’ answer for Step 4, removes the project from the Due Diligence Process at this step, moving it through to this outcome (DECCW 2010a):

> *AHIP application not necessary. Proceed with caution. If any Aboriginal objects are found, stop work and notify OEH (Office of Environment and Heritage). If human remains are found, stop work, secure the site and notify NSW Police and OEH.*

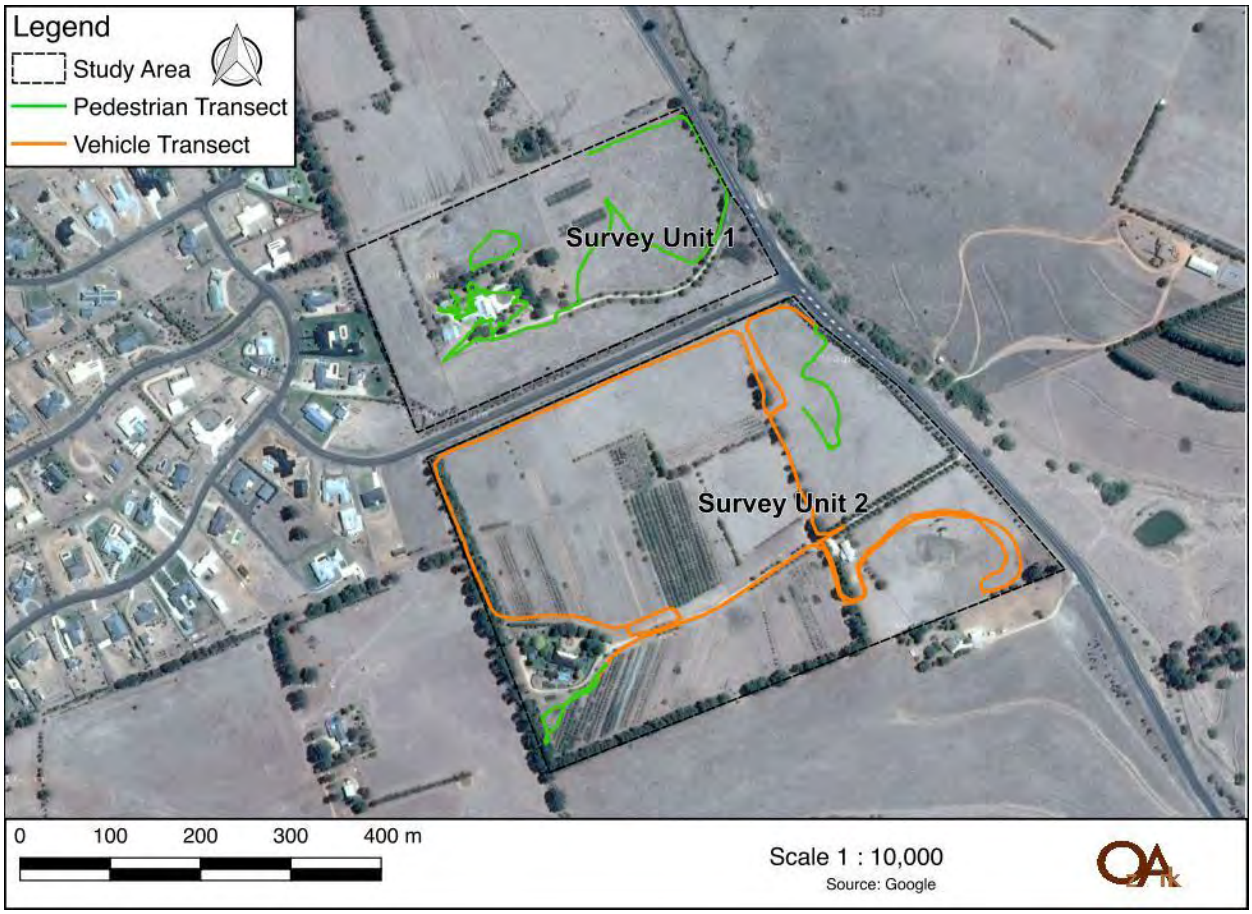
Details of the visual inspection of the Study Area are presented in **Section 6**.

6 RESULTS OF THE ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

6.1 SAMPLING STRATEGY AND FIELD METHODS

Standard archaeological field survey and recording methods were employed (Burke and Smith 2004) to ground-truth existing levels of disturbance and assess whether Aboriginal objects exist, or area likely to exist, in the Study Area. A combination of vehicle and pedestrian survey were utilised to inspect the Study Area (see **Figure 6-1** and **Plate 1** and **2**). Sections of the Study Area with landforms possessing archaeological potential were inspected on foot.

Figure 6-1: Map showing vehicular and pedestrian survey coverage and survey units within the Study Area



6.2 EFFECTIVE SURVEY COVERAGE

Two of the key factors influencing the effectiveness of archaeological survey are ground surface visibility (GSV) and exposure. These factors are quantified in order to ensure that the survey data provides adequate evidence for the evaluation of the archaeological materials across the landscape. For the purposes of the current assessment, these terms are used in accordance with the definitions provided in the Code of Practice (DECCW 2010a).

Ground surface visibility (GSV) is defined as:

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

Exposure is defined as:

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

GSV and exposure were poor across the Study Area, mainly due to thick grass cover (**Table 6-1** and **Plate 1** and **2**).

Table 6-1: Survey Coverage Data.

Survey Unit	Landform	Survey Unit Area (sq m)	Visibility %	Exposure %	Effective Coverage Area (sq m) (= Survey Unit Area x Visibility % x Exposure %)	Effective Coverage % (= Effective Coverage Area / Survey Unit Area x 100)	Number of Artefacts or Features
1	Hill	124,000	10	20	2480	2	0
2	Hill	285,000	10	10	2850	1	0

6.3 ABORIGINAL SITES RECORDED

No Aboriginal sites were recorded during the field assessment.

6.4 DISCUSSION

Visual inspection confirmed that high levels of ground surface disturbance exist across all parts of the Study Area. Vegetation cover obscured GSV throughout the Study Area. All suitable landforms and areas of exposure were checked for archaeological material. No Aboriginal sites were recorded during the field inspection and no landforms within the Study Area were assessed as being likely to contain subsurface archaeological deposits. As such, there is low potential for undetected isolated finds or small artefact scatters to be located within the Study Area. Should undetected sites exist, they are likely to have been disturbed by agricultural activities. As such, there is very little possibility of intact, extensive or complex sites existing. Further archaeological assessment of the Study Area is unlikely to substantially alter the assessment provided in this report.

7 RECOMMENDATIONS

Under Section 91 of the NPW Act (as amended in 1974) it is mandatory that all Aboriginal sites recorded under any auspices be registered with OEH AHIMS. As a professional in the field of cultural heritage management it is the responsibility of OzArk to ensure this process is undertaken.

To this end it is noted that no Aboriginal sites were recorded during the assessment, and no previously recorded sites are located within the Study Area.

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

- Legal requirements under the terms of the NPW Act (as amended in 1974) whereby it is illegal to damage, deface or destroy an Aboriginal place or object without the prior written consent of OEH;
- The findings of the current investigations undertaken within the Study Area; and

Recommendations concerning the Study Area are as follows:

1. No Aboriginal sites or objects are recorded within the Study Area and no landforms are assessed as having archaeological potential, therefore no further archaeological assessment is required;
2. There is low probability of ground disturbing work impacting upon Aboriginal cultural heritage within the Study Area, therefore the proposed rezoning can proceed;
3. All future land-disturbing activities must be confined within the assessed Study Area, and additional assessment may be required for proposals that impact areas outside of the Study Area; and
4. In the unlikely event that objects are encountered that are suspected to be of Aboriginal origin (including skeletal material), the Unanticipated Finds Protocol (**Appendix 2**) should be followed.

REFERENCES

Australia ICOMOS
2013 The Burra Charter: The Australia Icomos Charter for Places of Cultural Significance, 2013. In *Australia ICOMOS: International Council on Monuments and Sites* [electronic document]. Available from: http://australia.icomos.org/publications/charters/ [accessed 28th April 2015].

BOM
2015 Bureau of Meteorology [website]. Available from: http://www.bom.gov.au/ [accessed 29th April 2015].

Burke, Heather and Claire Smith
2004 *The Archaeologist's Field Handbook*. Sydney: Allen & Unwin.

DECCW
2010a *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. Sydney: Department of Environment, Climate Change and Water.

2010b *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*. Sydney: Department of Environment, Climate Change and Water.

Horton, David (ed.)
1994 *The Encyclopaedia of Aboriginal Australia*. Canberra: Aboriginal Studies Press.

Koettig, M.
1985 *Assessment of Aboriginal Sites in the Dubbo City Area*. Report to: Dubbo City Council.

McBurney, Yvonne
1995 *Road to Orange*. Dubbo: McBurney.

Mitchell, Peter
2002 *Descriptions for NSW (Mitchell) Landscapes, Version 2*. Department of Environment & Climate Change. Available from: http://www.environment.nsw.gov.au/resources/conservation/landscapesdescriptions.pdf.

NPWS
2003 *The Bioregions of New South Wales: Their Biodiversity, Conservation and History*. Hurstville: NSW National Parks and Wildlife Service.

OzArk
2005 *Indigenous Heritage Assessment – Proposed Millthorpe Rezoning Project of 90 Ha Rural Land*. Report to: Newplan.

2009 *Indigenous Heritage Assessment: Area 51 Recreation Park, 33 Km Northwest of Bathurst, NSW*. Report to: Ben Anderson.

2013 *Aboriginal and Historic Heritage Assessment: Kempfield Project*. Report to: R.W. Corkery & Co.

Pearson, M.
1981 *Seen through Different Eyes: Changing Land Use and Settlement Patterns in the Upper Macquarie River Region of NSW from Prehistoric Times to 1860*. [PhD thesis] Submitted to the Department of Prehistory and Anthropology, Australian National University, Canberra.

Pickering, Michael P.
1980 *An Archaeological Survey of the Proposed Electricity Commission Transmission Line between Bathurst-Raglan-Mount Panorama*. Report to: Electricity Commission of New South Wales.

Rawson, M.
1997 *A Management Plan for an Aboriginal Open Camp Site at Mt Canobolas Park Reserve, near Orange NSW*. Report to: NSW National Parks and Wildlife Service.

Tindale, Norman B.
1974 *Aboriginal Tribes of Australia: Their Terrain, Environmental Controls, Distribution, Limits, and Proper Names*. Berkeley: University of California Press.

Whitehead, John
2003 *Tracking and Mapping the Explorers: Volume 1*. Coonabarabran: John Whitehead.

PLATES

Plate 1: Survey Unit 1, view to northeast.

Plate 2: Survey Unit 2, view to east.

APPENDIX 1

Office of Environment & Heritage

NSW GOVERNMENT

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : Bathurst/Kelso #1288

Client Service ID : 195095

OzArk Environmental and Heritage Management

Date: 15 October 2015

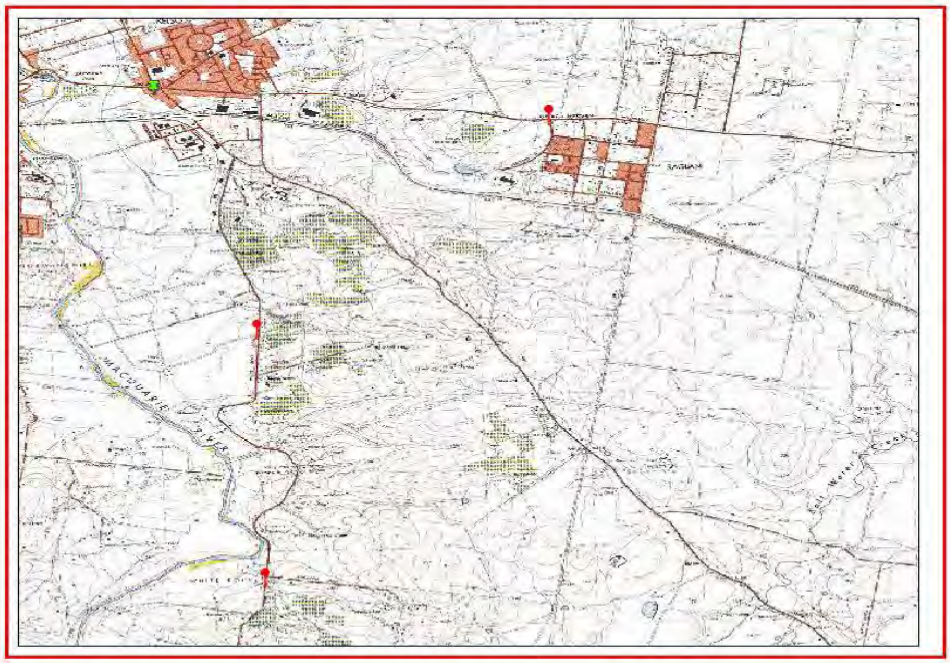
PO Box 2069
Dubbo New South Wales 2830
Attention: Jodie Benton

Email: jodie@ozarkehm.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 55, Eastings : 741000 - 749000, Northings : 6292000 - 6300000 with a Buffer of 0 meters, conducted by Jodie Benton on 15 October 2015.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of the Office of the Environment and Heritage AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

2	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

APPENDIX 2: UNANTICIPATED FINDS PROTOCOL

An Aboriginal artefact is anything that is the result of past Aboriginal activity. This includes stone (artefacts, rock engravings etc.), plant (culturally scarred trees) and animal (if showing signs of modification; i.e. smoothing, use). Human bone (skeletal) remains may also be uncovered while onsite.

Cultural heritage significance is assessed by the Aboriginal community and is typically based on traditional and contemporary lore, spiritual values, and oral history, and may also take into account scientific and educational value.

Protocol to be followed in the event that previously unrecorded or unanticipated Aboriginal object(s) are encountered:

1. All ground surface disturbance in the area of the finds should cease immediately the finds are uncovered.

a) The discoverer of the find(s) will notify machinery operators in the immediate vicinity of the find(s) so that work can be halted; and
b) The site supervisor will be informed of the find(s).

2. If there is substantial doubt regarding an Aboriginal origin for the finds, then gain a qualified opinion from an archaeologist as soon as possible. This can circumvent proceeding further along the protocol for items which turn out not to be archaeological. If a quick opinion cannot be gained, or the identification is positive, then proceed to the next step.
3. Immediately notify the following authorities or personnel of the discovery:

a) OEH; and
b) Relevant Aboriginal Community Representatives.

4. Facilitate, in co-operation with the appropriate authorities and relevant Aboriginal community representatives:

a) The recording and assessment of the finds;
b) Fulfilling any legal constraints arising from the find(s). This will include complying with OEH directions; and
c) The development and conduct of appropriate management strategies. Strategies will depend on consultation with stakeholders and the assessment of the significance of the find(s).

5. Where the find(s) are determined to be Aboriginal Objects, any re-commencement of construction related ground surface disturbance may only resume in the area of the find(s) following compliance with any consequential legal requirements and gaining written approval from OEH (as required).

LITTLEBOURNE HOMESTEAD, CIRCULAR DRIVEWAY AND NORTHEAST FRONTAGE.

STATEMENT OF HERITAGE IMPACT

REZONING OF LOT 1 DP 867504 LITTLEBOURNE HOMESTEAD

BATHURST LOCAL GOVERNMENT AREA

JANUARY 2016

REPORT PREPARED BY

OZARK ENVIRONMENTAL & HERITAGE MANAGEMENT PTY LTD

FOR BATHURST REGIONAL COUNCIL

Environmental and Heritage Management P/L

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DOCUMENT CONTROLS

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Client	Bathurst Regional Council		
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Acknowledgement

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

EXECUTIVE SUMMARY

OzArk Environmental & Heritage Management (OzArk) were engaged by Bathurst Regional Council (the Proponent) to complete a Statement of Heritage Impact for Lot 1, DP 867504 'Littlebourne Homestead' (the Study Area) located in Kelso, Bathurst Local Government Area (LGA) NSW. The Study Area contains an item of local heritage significance, Littlebourne Homestead, which has the potential to be impacted by rezoning from RU1 Primary Production to R5 Large Lot Residential. This would enable rural residential development to occur in a manner similar to the adjoining land, including subdivision into fully serviced lots of a minimum size of 4000 square meters.

This report considers the rezoning of the site from RU1 Primary Production to R5 Large Lot Residential and potential changes to the heritage curtilage for the listed item. No building work is proposed at this time, and any future proposed building work would be the subject of a separate Development Application. The future development of the site should be guided by the controls in the *Bathurst Local Environment Plan 2014* and *Bathurst Regional Development Control Plan 2014*. It is not within the scope of this report to provide planning advice to council.

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

- Legal requirements under the terms of the *Heritage Act 1977*(as amended in 2001);
- Guidelines presented in the *Burra Charter* (Australia ICOMOS 2013);
- The Bathurst LEP and Bathurst DCP planning controls;
- The findings of the current assessment; and
- The interests of the local community.

Recommendations concerning the Study Area are as follows.

1. Any proposed subdivision of Lot 1 DP 867504 should incorporate the recommended curtilage shown in **Figure 3-6** to mitigate possible negative impacts to the significance of Littlebourne Homestead;
2. A conservation policy should be prepared in support of any proposed development adjacent to Littlebourne Homestead;
3. For any proposed development, design consideration should be given to:
    a. Minimising any adverse impacts to the heritage significance of the item;
    b. Maintaining the recommended curtilage around the item;
    c. Minimising the potential for views to, and views from, the item to be negatively impacted;
    d. Producing designs that are sympathetic to the heritage item (e.g. in terms of form, siting, proportions and design, including landscape design);

e. Minimising the potential for new buildings and infrastructure to visually dominate the heritage item; and
f. Maintaining or enhancing public access to view and appreciate the significance of the heritage item.

4. The following recommendations are made in relation to these design considerations:

   a. For lots adjoining the Littlebourne curtilage, the heights of buildings should be restricted to one storey, with maximum building heights no greater than the ridge of Littlebourne Homestead measured from the finished ground level;

   b. A building envelope of 20 meters from the Littlebourne curtilage should be established on new lots adjoining the northern and southern boundaries of the Littlebourne curtilage (**Figure 3-7**), except where a new road is located between the new lot and Littlebourne Homestead, in which case the Bathurst DCP eight metre minimum setback applies and is considered sufficient;

   c. Sufficient curtilage is considered to exist along the western and eastern boundaries where the Bathurst DCP eight metre minimum setback applies;

   d. For lots adjoining the Littlebourne curtilage, the building envelopes and setbacks outlined above are considered sufficient to provide curtilage around new buildings for landscaping that is consistent with, and sympathetic to, the item;

   e. The future road network can include local access roads and minor cul-de-sacs that are parallel and/or adjacent to the Littlebourne curtilage boundaries;

   f. The future road network should include local access roads that are parallel and adjacent to both the northern and eastern boundaries of the Littlebourne curtilage.

5. If a change of use is part of the development proposal, consideration should be given to:
   a. How the existing use contributes to the significance of the heritage item;
   b. Why the use needs to be changed;
   c. What changes to the fabric are required;
   d. What changes to the site are required; and
   e. Any potential structural impacts to the heritage item.
6. In the event that previously unrecorded or unanticipated historical heritage object(s) are encountered, the unanticipated finds protocol should be followed (**Section 3.9**).

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FIGURES

TABLES

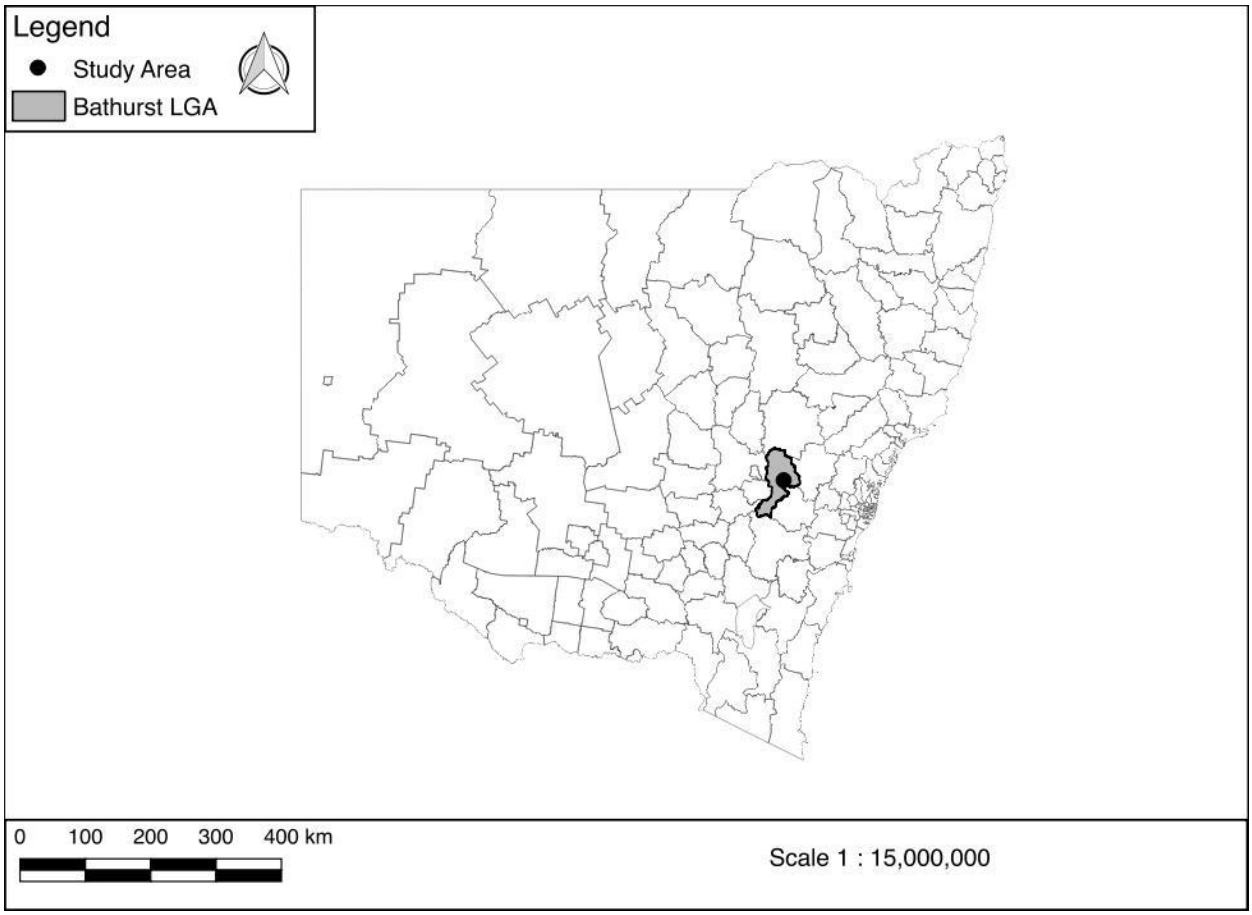
PLATES

1 INTRODUCTION

1.1 BRIEF DESCRIPTION OF PROPOSAL

OzArk Environmental & Heritage Management (OzArk) have been engaged by Bathurst Regional Council (the Proponent) to complete a Statement of Heritage Impact for rezoning of Lot 1, DP 867504 'Littlebourne Homestead' (the Study Area) located in Kelso, Bathurst Local Government Area (LGA) NSW. 'Littlebourne Homestead' is a listed heritage item under Schedule 5 of the Bathurst Local Environment Plan (2014) (**Figure 1-1**).

Figure 1-1: Map showing the location of the Study Area.



1.2 PROPOSED WORK

The Proponent proposes to rezone Lot 1 DP 867504 and neighbouring Lot 14 DP 1050220, currently zoned RU1 Primary Production under the Bathurst Regional Local Environment Plan 2014, to R5 Large Lot Residential. This would enable rural residential development to occur in a manner similar to the adjoining land, including subdivision into fully serviced lots of a minimum size of 4000 square meters.

As such, this report considers the rezoning of the site from RU1 Primary Production to R5 Large Lot Residential and potential changes to the heritage curtilage for the listed item. At this time, no building work is proposed. Any proposed building work would be the subject of a separate

Development Application. The future development of the site should be guided by the controls in the *Bathurst Local Environment Plan 2014* and *Bathurst Regional Development Control Plan 2014*. It is not within the scope of this document to provide planning advice to council.

1.3 STUDY AREA

The Study Area is located in Kelso, approximately five kilometers southeast of Bathurst, and comprises rural lot Lot 1 DP 867504 which encompasses Littlebourne Homestead (see **Figure 1-2** and **Figure 1-3**)

Figure 1-2: Map showing the Study Area in regional context.

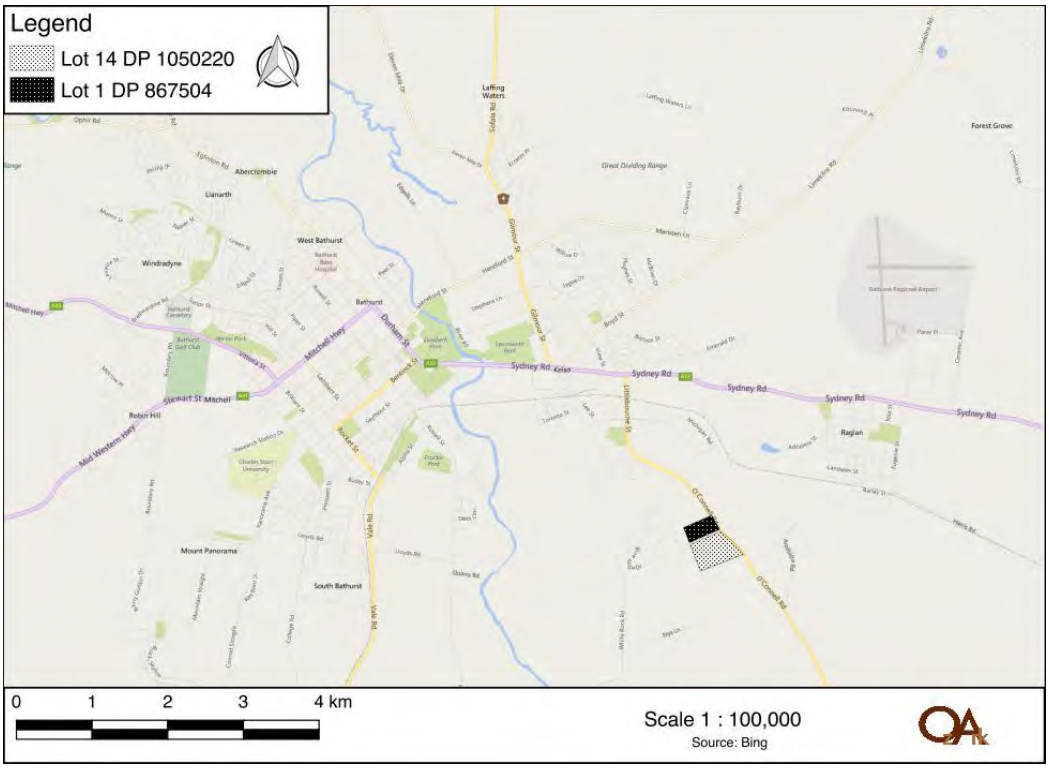


Figure 1-3: Map showing the Study Area in local context.

1.4 RELEVANT LEGISLATION AND PLANNING CONTROLS

Cultural heritage is managed by a number of national and state Acts and local government planning controls. Baseline principles for the conservation of heritage places and relics can be found in the *Burra Charter* (Australia ICOMOS 2013). The *Burra Charter* has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The *Burra Charter* generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a state level.

1.4.1 Commonwealth Legislation

Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act)

Amendments in 2003 established the National Heritage List and the Commonwealth Heritage List, both administered by the Commonwealth Department of the Environment. Ministerial approval is required under the EPBC Act for proposals involving significant impacts to National/Commonwealth heritage places.

1.4.2 State Legislation

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

This Act established requirements relating to land use and planning. The framework governing environmental and heritage assessment in NSW is contained within the following parts of the EP&A Act:

- **Part 4:** Local government development assessments, including heritage. May include schedules of heritage items;
- **Part 4.1:** Approvals process for state significant development;
- **Part 5:** Environmental impact assessment on any heritage items which may be impacted by activities undertaken by a state government authority or a local government acting as a self-determining authority; and
- **Part 5.1:** Approvals process for state significant infrastructure.

Heritage Act 1977 (Heritage Act)

The *Heritage Act 1977* (Heritage Act) is applicable to the current assessment. This Act established the Heritage Council of NSW. The Heritage Council's role is to advise the government on the protection of heritage assets, make listing recommendations to the Minister in relation to the State Heritage Register, and assess/approve/decline proposals involving modification to heritage items or places listed on the Register. Most proposals involving modification are assessed under Section 60 of the Heritage Act. Automatic protection is afforded to 'relics', defined as an archaeological deposit, resource or feature that has heritage significance at a local or State level. A person must not disturb or excavate land if they know, or have reasonable cause to suspect, that they might discover, expose, move or damage a 'relic', unless they have an excavation permit.

1.4.3 Bathurst Regional Council Planning Controls

Bathurst Regional Local Environment Plan 2014 (Bathurst LEP)

Clause 5.10 of the Bathurst LEP outlines the provisions relating to heritage conservation within the Bathurst LGA. Development consent is required when subdividing land that is within a heritage conservation area, or contains a heritage item. The consent authority may require a heritage management document to be prepared for: (i) land on which a heritage item is located, or (ii) land that is within a heritage conservation area, or (iii) land adjoining either (i) or (ii).

Bathurst Regional Development Control Plan 2014 (Bathurst DCP)

Section 3 of the Bathurst DCP outlines the provisions relating the subdivision of land. A number of additional standards, outlined in clause 3.7, apply to land being subdivided within a heritage conservation area, or that contains a heritage item. In these cases, Development Application plans must identify: (i) an appropriate curtilage for existing buildings affected by the subdivision; (ii) existing landscape features (e.g. significant trees); and (iii) a building envelope for each new lot that considers (i) and (ii) above. In addition, new lots must be of sufficient size to ensure that: a new building on that lot can achieve can appropriate bulk, scale and mass in relation to existing neighbouring buildings; sufficient curtilage exists that allows for new landscaping consisting with that of the locality. A Statement of Heritage Impact (SOHI) may be required with the application.

Section 10 of the Bathurst DCP outlines the provisions relating to urban design and heritage conservation. This section outlines the requirements for a SOHI or Conservation Management Plan under various development scenarios, and within specific heritage conservation areas, unless specifically exempt.

1.4.4 Applicability to the Project

The current project will be assessed under Part 4 of the EP&A Act. Any items of local or state historical heritage significance within the Study Area are afforded legislative protection under the Heritage Act. It is noted there are no Commonwealth or National heritage listed places within the Study Area, and as such, the EPBC Act does not apply. The relevant provisions within the Bathurst LEP and Bathurst DCP are summarised above.

1.5 ASSESSMENT APPROACH

The current assessment follows the *Statements of Heritage Impact* (NSW Heritage Office 2002) and *Assessing Heritage Significance* (NSW Heritage Office 2001) guidelines.

2 THE ARCHAEOLOGICAL ASSESSMENT

2.1 PURPOSE AND OBJECTIVES

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

2.1.1 Historical Heritage Assessment Objectives

The current assessment will apply the Heritage Council *Historical Archaeology Code of Practice* (Heritage Council of NSW 2006) in the completion of a historical heritage assessment, including field investigations, in order to meet the following objectives:

Objective One: To identify whether or not historical heritage items or areas are, or are likely to be, present within the Study Areas;

Objective Two: To assess the significance of any recorded historical heritage items or areas; and

Objective Three: Determine whether the activities of the Proponent are likely to cause harm to recorded historical heritage items or areas; and

Objective Four: Provide management recommendations and options for mitigating impacts.

2.2 DATE OF ARCHAEOLOGICAL ASSESSMENT

The fieldwork component of this assessment was undertaken by OzArk on Monday 19 October 2015.

2.3 OZARK INVOLVEMENT

2.3.1 Field Assessment

The fieldwork component of the current project was undertaken by:

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

2.3.2 Reporting

The reporting component of the current project was undertaken by:

- Report Author: Dr Chris Lovell;
- Reviewer: Karyn McLeod: BA Honours Archaeology, Sydney University, MA Cultural Heritage, Deakin University.

3 HISTORIC HERITAGE ASSESSMENT: BACKGROUND

3.1 BRIEF HISTORY OF BATHURST

The Bathurst region has been inhabited by Aboriginal people for over 40,000 years. The traditional custodians are the Wiradjuri people of the three rivers: the Wambool (Macquarie), Calare (Lachlan) and the Murrumbidgee. The Bathurst Wiradjuri are the most easterly group of the Wiradjuri nation. The Bathurst region was proclaimed by European setters in May 1815, establishing the oldest inland settlement on the Australian continent (BRC 2014). Following the discovery of a route through the Blue Mountains in 1813, Assistant Surveyor George Evans was sent by Governor Macquarie examine the route, and to describe the country. Following Evans' positive reports, Macquarie commissioned William Cox to build a road from Emu Plains to the Bathurst Plains, which Cox completed in February 1815. Macquarie travelled the road in 1815, reaching the Macquarie River on 4 May, where he formally established the town of Bathurst (McLaughlan 2013: 10-11). Bathurst historian, Robin McLauchlan (2014), recently rediscovered an early map of Cox's road to Bathurst, and of Macquarie's proposed town plan for Bathurst, produced by John Oxley in 1815, and held in the National Archives, London.

A limited number of small land grants were approved by the Colonial Office in 1818 to ten selected settlers on the north bank of the Macquarie River, effectively separating the government settlement from private settlers. Commissioner John Bigge visited the government settlement in 1819 and conducted Bigge's Enquiry, which uncovered various corrupt and questionable practices, particularly attributable to Macquarie's appointed 'superintendent', Richard Lewis and Commandant, William Cox (McLaughlan 2013: 11-12). Major James Morisset was appointed Commandant in 1823 by Governor Brisbane, who wanted the government settlement and adjacent lands at Bathurst developed for agriculture, contrary to Commissioner Bigge's recommendation to wind down the settlement (McLaughlan 2013: 14). Between 1822 and 1825 more than 1,000 convicts were deployed to Bathurst, three-quarters of which were assigned to private pastoralists, and the remainder to public work (Roberts 2014: 247).

In 1824 open war erupted between the Wiradjuri, under the leadership of Windradyne, and the government settlement, which declared martial law soon after (Roberts 1995: 618-624). With civil law suspended, violence was officially sanctioned, and Brisbane transmitted a proclamation to London that: "It hath been found that Mutual Bloodshed may be stopped by the Use of Arms against the Natives beyond the ordinary Rule of Law... and for this End resort to summary justice has become necessary" (cited in Roberts 1995: 622). On 14 October 1824 the *Sydney Gazette* reported that: "Bathurst [and] its surrounding district is engaged in an exterminating war" (cited in Roberts 1995: 623) and by October and November reports of Aboriginal people surrendering in groups of up to sixty were reaching Sydney. Martial law was repealed on 11 December 1824.

By 1826 the government settlement had become a diverse and extensive agricultural enterprise, including the production of grain, wool, vegetables, cattle, sheep and leather via convict labour. However, due to the poor profitability of this enterprise, Governor Darling instructed the Bathurst government settlement to cease operating as a government farm, and by 1829 only six convicts remained in public service (McLaughlan 2013: 16).

Bathurst's economy was transformed by the discovery of gold in 1851. Prospectors and settlers flooded to the region, triggering an era of prosperity and growth. Hotels, courts, police stations, post offices, schools and businesses, including Cobb & Co, were established. After the gold rush, Bathurst became a centre for coal mining and manufacturing. The Main Western railway line from Sydney reached Bathurst in 1876 and the town became an important railway centre, including workshops, locomotive depots and track and signal engineering offices. Today Bathurst hosts the railway regional engineering headquarters, including large manufacturing facilities. In 1885, Bathurst had a population of approximately 8,000 and a district population of an additional 20,000 people, mostly employed in agriculture and pastoralism. Bathurst is now a large regional centre for forestry, agriculture and industry. Education, tourism and manufacturing are important contemporary economic drivers (OzArk 2013).

3.2 BRIEF HISTORY OF LITTLEBOURNE HOMESTEAD

Littlebourne Homestead is one of a number of substantial homesteads built by successful early private pastoralists during the 1820s and 1830s, following Governor Brisbane's expansionary policy of encouraging free settlers to apply for land grants around Bathurst (OEH 2012a). These buildings originally provided accommodation for pastoralists and their families, servants, workers and (prior to the 1840s) assigned convicts. Early amendments to these buildings often tracked the successes of early pastoralists. A number of early colonial homesteads remain in the region today, generally comprising single storey buildings, sometimes Georgian in style, with adaptations to local climatic conditions. Surviving examples of early colonial residences in Bathurst LGA include: The Grange (1830s), Westham (ca. 1830), Blackdown homestead (1820s), Kelloshiel (1820s), Bathurst town house (ca. 1824), Macquarie homestead (1820s), Springdale (ca. 1826), Bunnamagoo (ca. 1831), Colonial Residence (ca. 1835), Fosters Valley (ca. 1832), Kelsoville (ca. 1840), Alloway Bank (ca. 1840) and Littlebourne Homestead (1830s).

Littlebourne homestead is an early colonial residence, situated on land originally granted to William Cox (OEH 2012b). The original house was built during the 1830s by Lieutenant Thomas Evernden, the last government appointed Police Magistrate. Evernden arrived in Bathurst in late 1825 as part of a division of mounted police sent to curb growing lawlessness and bushranging (McLaughlan 2013: 18). In 1830 he married Mary Jane Hawkins and, after purchasing the land, moved to the address. The original house was built with convict labour and comprised two front rooms – a drawing room and dining room – two 'best' bedrooms and two other bedrooms. Two

wings were built behind the house, forming a courtyard, although one wing has since been demolished. In 1844 the property was sold to politician Francis Lord who later became Mayor of Bathurst. A number people owned the house before E.T. Webb, another Bathurst Mayor, bought the property. Webb made significant additions to the house in 1896, adding a large billiard room and two bedrooms. In the 1930s J.H.C. Shutt made several alterations including building a kitchen onto the main house, demolishing one of the rear wings, infilling the veranda and rendering the building. In the 1950s the interior was redecorated and the laundry built in (OEH 2012b).

A Historical Parish Map from 1893 shows 'Little Bourne' situated upon a 600 acre portion of land (No. 59) attributed to Henry Cox (**Figure 3-1**). The same 242.8 hectare (i.e. 600 acre) portion of land is shown on a Status Branch Charting Map from 1974, also attributed to Henry Cox (**Figure 3-2**).**Figure 3-3** shows the location of Littlebourne Homestead within the current Lot 1 DP 867504 in relation to the previous extent of land portion No. 59 and current land divisions.

Figure 3-1: Historical Parish Map from 1893 showing 'Little Bourne' within a 600 acre portion of land (No. 59) attributed to Henry Cox (LPI 2015).

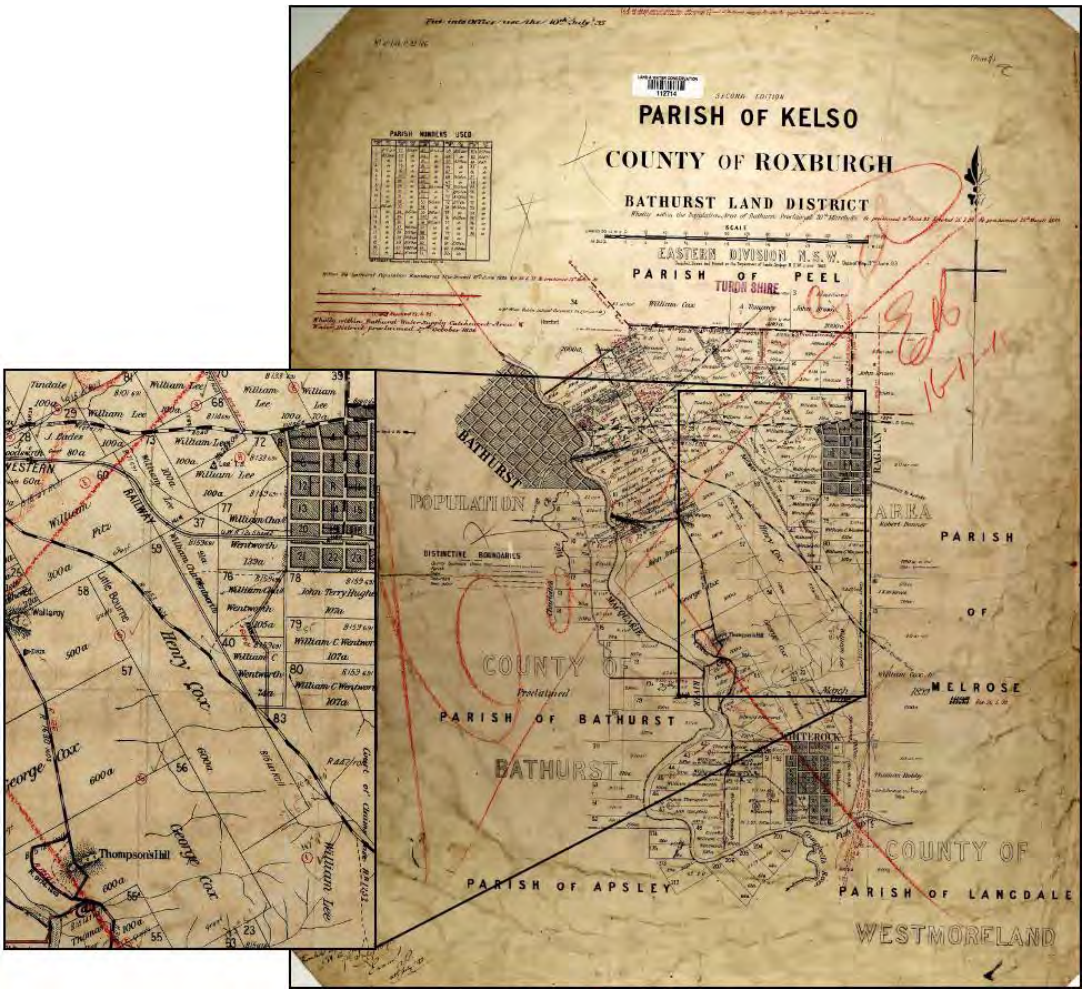


Figure 3-2: Status Branch Charting Map from 1974 showing the same 242.8 hectare (600 acre) portion of land (No. 59) containing Littlebourne Homestead attributed to Henry Cox (LPI 2015).

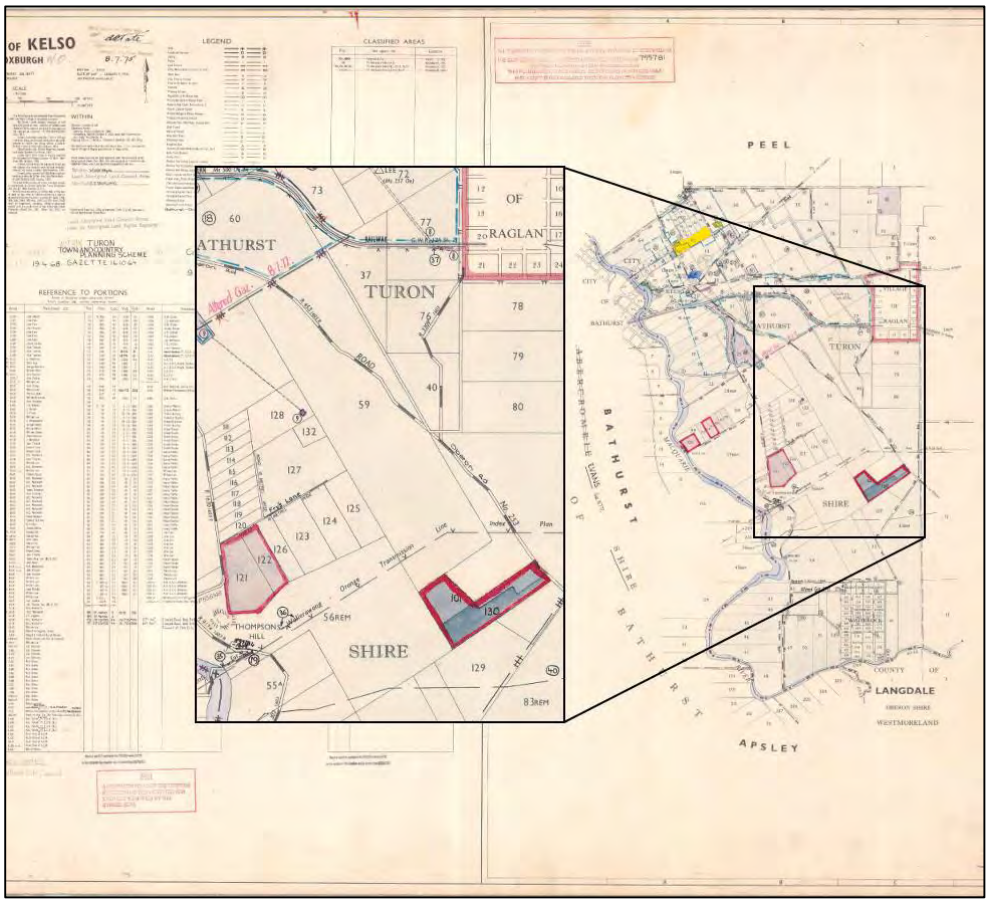
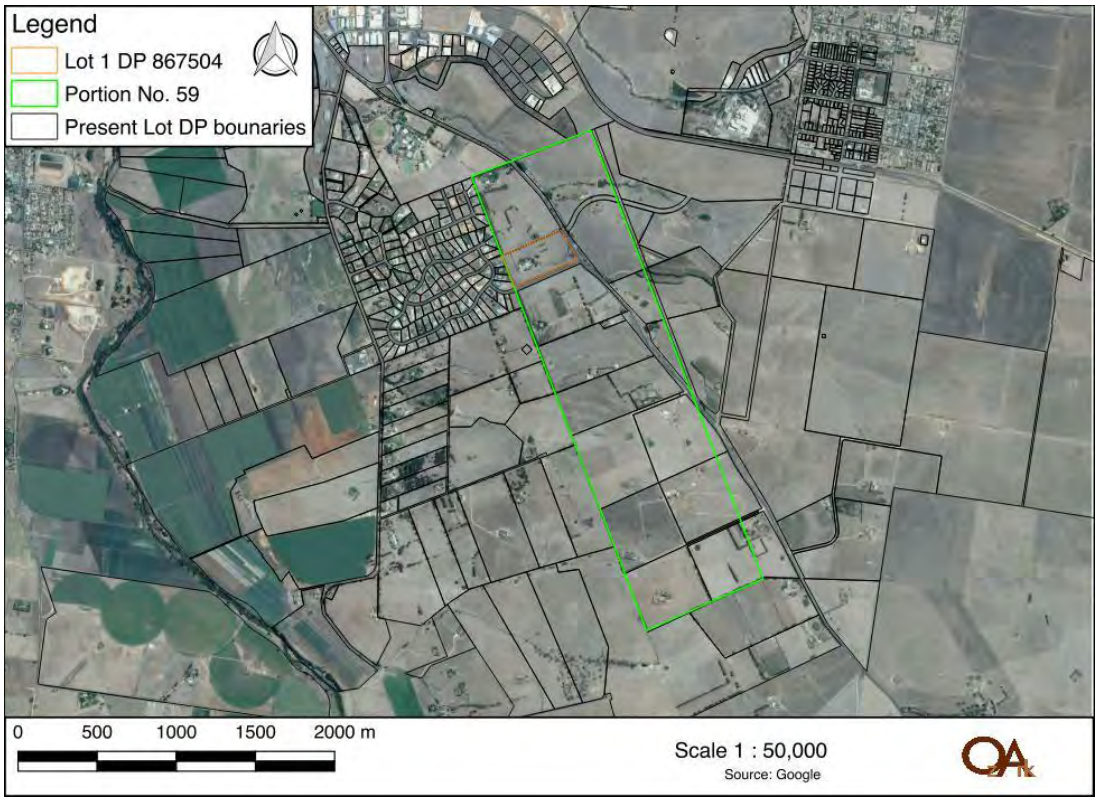


Figure 3-3: Map showing the Study Area (Lot 1 DP 867504) in relation land portion (No. 59) and present day Lot DP boundaries.



3.3 LOCAL CONTEXT

3.3.1 Desktop Database Searches Conducted

A desktop search was conducted to identify any potential previously recorded heritage items within the Study Area. The results are summarised in **Table 3-1**. Database searches included: the Heritage Council of NSW administered State Heritage Register and State Heritage Inventory, the Australian Heritage Database, the Bathurst LEP and S170 RMS Heritage and Conservation Register. One item of local significance is listed within the Study Area: Littlebourne Homestead (see **Appendix 1**). The item is listed in the Bathurst LEP Schedule 5. Littlebourne Homestead is not listed as State significant under the NSW Heritage Act.

Table 3-1: Desktop-Database Search Results.

Name of Database Searched	Date of Search	Type of Search	Comment
Australian Heritage Database	18.10.15	Bathurst LGA	No items listed within the Study Area
NSW Heritage Office State Heritage Register	18.10.15	Bathurst LGA	No items listed within the Study Area
Local Environment Plan (LEP)	18.10.15	Bathurst LEP	One item of local significance, item number I159 'Littlebourne Homestead', listed within the Study Area
S170 RMS Heritage and Conservation Register	26.11.15	Western region	No items listed within the Study Area

3.4 SURVEY METHODOLOGY

Standard archaeological field survey and recording methods were employed in this study (Burke and Smith 2004) to ground-truth existing levels of disturbance, photograph the current condition of Littlebourne Homestead, and to assess whether any other historic heritage items exist, or area likely to exist, in the Study Area. A pedestrian survey was utilised to inspect the Study Area (**Figure 3-4**).

Figure 3-4: Map showing survey coverage during the pedestrian survey.

3.5 RESULTS OF HISTORIC HERITAGE ASSESSMENT

No new historic heritage sites were recorded during the assessment. The assessment confirmed that Littlebourne Homestead is a single storey roughcast rendered early colonial brick residence. Buildings include the original house with one rear wing, including the extensions and renovations described in **Section 3.2**, a walled courtyard, stables and water well (**Plates 1** to **8)**. A walled courtyard encloses the single remaining wing. This part of the building retains shingles under the iron roof. The physical condition of the building is confirmed as very good.

Important views to Littlebourne Homestead are: from the east-northeast, toward the main frontage, including the circular driveway (**Plate 1**); and from the north-northwest, toward the veranda adjoining the main house (**Plate 2**). The most important views from Littlebourne Homestead are from the front veranda to the east-southeast spanning to the north-northwest, overlooking the circular driveway, garden and surrounding land. **Figure 3-5** shows the extent of these views from Littlebourne Homestead in relation to the veranda boundaries.

Figure 3-5: Map showing sight lines from Littlebourne Homestead in relation to the veranda boundaries.

Low levels of ground surface visibility (approximately 10%) and exposure (approximately 20%) placed limitations on the archaeological survey coverage around the house and in adjacent paddocks (see **Plate 9**). Nevertheless, high levels of ground surface disturbance were confirmed, particularly in the paddocks surrounding Littlebourne Homestead, which has been extensively cleared, grazed, ploughed and cropped. Areas of limited ground surface disturbance appear to exist within the fenced area enclosing the house – i.e. within the courtyard, former tennis court, circular driveway and garden areas surrounding the house. It is therefore considered that intact archaeological deposits potentially exist within this area.

3.6 ASSESSMENT OF HISTORIC HERITAGE SIGNIFICANCE

3.6.1 Assessment of Significance—General Principles

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

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

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

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

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

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

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

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

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

Items are categorised as having local or state level, or no significance. The level of significance is assessed in accordance with the geographical extent of the item's value. An item of state significance is one that is important to the people of NSW whilst an item of local significance is one that is principally important to the people of a specific LGA.

3.6.2 Assessment of Significance

Littlebourne Homestead has been previously assessed as an item of local significance. The State Heritage Inventory provides the following statement of significance for Littlebourne Homestead, dated 24 April 2007 (OEH 2012b):

> 'Littlebourne' is an early colonial residence on an original 20 acre grant to William Cox. Important connection to a number of important historical figures including Lieut. Thomas Everden, Francis Webb and E T Lord (Bathurst Mayors).

A full reassessment of the significance of Littlebourne Homestead was not conducted. However, **Table 3-2** provides a significance assessment in terms of the information presented in this report, and in accordance with the NSW Heritage Office guidelines and the *Burra Charter* (Australia ICOMOS 2013).

Table 3-2: Assessment of Heritage Significance for Littlebourne Homestead.

Criteria	Comments	Significance
a	Yes. Littlebourne Homestead is a good example of an early colonial homestead and is significant in terms of the early colonial history of Bathurst	Local
b	Yes. Littlebourne Homestead is associated with several people of historic importance to Bathurst, including William Cox, Thomas Evernden and two former Bathurst Mayors (Lord and Webb). The association with William Cox is not considered sufficient to justify State significance.	Local
C	Yes. Littlebourne Homestead demonstrates important aesthetic characteristics.	Local
d	No. The item does not have a special association with a particular community or cultural group.	Nil
e	Yes. Although no additional historic sites were recorded during the assessment, there is potential for archaeological deposits to exist within the vicinity of Littlebourne Homestead – e.g. within the courtyard, circular driveway, former tennis court and garden areas surrounding the house.	Local
f	No. A number of homesteads exist in Bathurst LGA from the early colonial period.	Nil
g	Yes. Littlebourne Homestead exhibits some of the principle characteristics of an early colonial residence.	Local

3.7 LIKELY IMPACTS TO HISTORIC HERITAGE FROM THE PROPOSAL

The proposed rezoning of Lot 1 DP 867504 and neighbouring Lot 14 DP 1050220 to R5 Large Lot Residential has the potential to impact Littlebourne Homestead in several ways: the lots could be subdivided into fully serviced lots of a minimum size of 4000 square meters; a new rural residential development could occur around Littlebourne Homestead; and the new development proposal could involve changing the use of Littlebourne Homestead from a residential dwelling to another use (e.g. community hub, bed and breakfast accommodation, kiosk, etc.).

Subdividing Lot 1 DP 867504 will significantly reduce the curtilage around Littlebourne Homestead. New road construction, utility installation and residential building and construction work could occur close to Littlebourne Homestead as new buildings are erected and infrastructure installed. Machinery and ground works have the potential to cause damage to the building that would diminish the overall value. If archaeological deposits are destroyed during the construction work, the scientific value of Littlebourne Homestead could also be diminished. The erection of buildings nearby could affect the aesthetic value of Littlebourne Homestead, which currently has relatively unobscured views of the item, and of the surrounding landscape. Likewise, a new development could enhance public access to Littlebourne Homestead, which is currently relatively inaccessible. A change of use could also affect the significance of Littlebourne Homestead, detracting from the significance of the item, or enhancing the significance. Indeed, public access to Littlebourne Homestead could be enhanced if the change of use involves greater public patronage and appreciation of the building.

3.8 MANAGEMENT AND MITIGATION OF LITTLEBOURNE HOMESTEAD

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

and desired outcomes, avoiding impact to any historical item is a preferred outcome. However, where a historical site has been assessed as having no heritage value, impacts to these items does not require any legislated mitigation. Three potential impacts have been identified from the current proposal: subdivision, new adjacent development, and change of use.

Subdivision

The Bathurst DCP requires that development applications identify appropriate curtilage for existing buildings, that existing landscape features are identified (e.g. significant trees), and that new lots consider the recommended curtilage and existing landscape features. Any proposed subdivision of Lot 1 DP 867504 should incorporate an appropriate curtilage around Littlebourne Homestead to mitigate possible impacts to the item's significance. Appropriate curtilage should encompass an area of land surrounding the item that is essential to retaining and interpreting its heritage significance.

In the case of Littlebourne Homestead, it is recommended that the curtilage encompass the homestead, all outbuildings, and all surrounding areas with historical archaeological potential – i.e. within the courtyard, former tennis court, circular driveway and garden areas surrounding the house. The recommended Littlebourne curtilage shown in **Figure 3-6** encompasses those areas and follows established fence lines along the northern, western and eastern boundaries. It is considered that this curtilage minimises the potential for any proposed development to compromise the significance of Littlebourne Homestead. This curtilage also minimises the potential for views to, and views from, the item to be negatively impacted by any proposed development. The curtilage follows historic fence lines and is associated with the use and development of the property. Following any subdivision of Lot 1 DP 867504, the Heritage Map (Sheet HER_11F) should be amended to reflect the newly demarcated lot containing Littlebourne Homestead.

The Bathurst DCP requires that new lots be of sufficient size to ensure that a new building on that lot can achieve an appropriate bulk, scale and mass in relation to Littlebourne Homestead, and that sufficient curtilage exists to allow for new landscaping consistent with that of the locality. A minimum size of 4000 square meters is required for R5 Large Lot Residential. This is considered sufficient for new neighbouring residential buildings to achieve appropriate bulk, scale and mass in relation to Littlebourne Homestead, and for new sympathetic landscaping to be constructed.

Figure 3-6: Map showing the recommended curtilage around Littlebourne Homestead

New adjacent development

A conservation policy should be prepared in support of any proposed development adjacent to Littlebourne Homestead. Design consideration should be given to: minimising any adverse impacts to the heritage significance of Littlebourne Homestead; maintaining the recommended curtilage around the item; minimising the potential for views to, and views from, the item to be negatively impacted; producing designs that are sympathetic to the heritage item (e.g. in terms of form, siting, proportions and design, including landscape design); minimising the potential for new buildings and infrastructure to visually dominate the heritage item; maintaining or enhancing public access to view and appreciate the significance of the heritage item; and maintaining a presence and address for the heritage item within any proposed subdivision.

The following recommendations are made in relation to these design considerations:

- For lots adjoining the Littlebourne curtilage, the heights of buildings should be restricted to one storey, with maximum building heights no greater than the ridge of Littlebourne Homestead measured from the finished ground level;
- A building envelope of 20 meters from the Littlebourne curtilage should be established on new lots adjoining the northern and southern boundaries of the Littlebourne curtilage (**Figure 3-7**), except where a new road is located between the new lot and Littlebourne Homestead, in which case the Bathurst DCP eight metre minimum setback applies and is considered sufficient;

- Sufficient curtilage is considered to exist along the western and eastern boundaries where the Bathurst DCP eight metre minimum setback applies;
- For lots adjoining the Littlebourne curtilage, the building envelopes and setbacks outlined above are considered sufficient to provide curtilage around new buildings for landscaping that is consistent with, and sympathetic to, the item;
- The future road network can include local access roads and minor cul-de-sacs that are parallel and/or adjacent to the Littlebourne curtilage boundaries;
- The future road network should include local access roads that are parallel and adjacent to both the northern and eastern boundaries of the Littlebourne curtilage.

Figure 3-7: Map showing the recommended building envelope or setback for lots adjoining the northern and southern boundaries of the Littlebourne curtilage

Change of use

If a change of use for Littlebourne Homestead is part of any development proposal, consideration should be given to: how the existing use contributes to the significance of the heritage item; why the use needs to be changed; what changes to the fabric are required; what changes to the site are required; and any potential structural impacts to the heritage item.

3.9 UNANTICIPATED FINDS PROTOCOL

Protocol to be followed in the event that previously unrecorded or unanticipated historical heritage object(s) are encountered:

1. All ground surface disturbance in the area of the finds should cease immediately the finds are uncovered.
2. The discoverer of the find(s) will notify machinery operators in the immediate vicinity so that work can be halted; and
3. The site supervisor will be informed of the find(s).
4. Gain a qualified opinion from an archaeologist as soon as possible.

4 STATEMENT OF HERITAGE SIGNIFICANCE

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

With the subdivision of Lot 1 DP 867504, a new development could enhance public access to Littlebourne Homestead, which is currently relatively inaccessible. Additionally, a change of use for Littlebourne Homestead could enhance public access, particularly if that change involves greater public patronage and appreciation of the building. It is recommended that a conservation policy be prepared in support of any proposed development adjacent to Littlebourne Homestead.

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

Littlebourne Homestead is assessed as being of local significance in terms of the criteria outlined in **Section 3.6**. Subdividing Lot 1 DP 867504 will significantly reduce the curtilage around Littlebourne Homestead. New development proposals could adversely impact the heritage significance of the item if new roads are constructed, utilities installed and residential buildings erected adjacent to Littlebourne Homestead. Archaeological deposits could be destroyed during the construction work.

These potential negative impacts could be minimised by establishing appropriate curtilage around the item. It is recommended that the curtilage encompass the homestead, all outbuildings, and all surrounding areas with historical archaeological potential – i.e. within the courtyard, former tennis court, circular driveway and garden areas surrounding the house. The recommended Littlebourne curtilage shown in **Figure 3-6** minimises the potential for structural harm to the item, and harm to any potential archaeological deposits.

The erection of buildings nearby could affect the aesthetic value of Littlebourne Homestead, which currently has relatively unobscured views to the item, and from the item to the surrounding landscape. The recommended Littlebourne curtilage minimises the potential for views to, and views from, the item to be negatively impacted by any proposed development. It is also recommended that design consideration be given to minimising the potential for views to, and views from, the item to be negatively impacted. Design consideration should also be given to: producing designs that are sympathetic to the heritage item (e.g. in terms of form, siting, proportions and design, including landscape design); minimising the potential for new buildings and infrastructure to visually dominate the heritage item; and maintaining or enhancing public access to view and appreciate the significance of the heritage item. Minimum lot sizes of 4000 square meters for R5 Large Lot Residential rezoning are considered sufficient for new neighbouring residential buildings to achieve appropriate bulk, scale and mass in relation to Littlebourne Homestead, and for new sympathetic landscaping to be constructed. R5 Large Lot

Residential rezoning is in keeping with other development in the area. In addition, the following recommendations are made in relation to these design considerations:

- For lots adjoining the Littlebourne curtilage, the heights of buildings should be restricted to one storey, with maximum building heights no greater than the ridge of Littlebourne Homestead measured from the finished ground level;
- A building envelope of 20 meters from the Littlebourne curtilage should be established on new lots adjoining the northern and southern boundaries of the Littlebourne curtilage (**Figure 3-7**), except where a new road is located between the new lot and Littlebourne Homestead, in which case the Bathurst DCP eight metre minimum setback applies and is considered sufficient;
- Sufficient curtilage is considered to exist along the western and eastern boundaries where the Bathurst DCP eight metre minimum setback applies;
- For lots adjoining the Littlebourne curtilage, the building envelopes and setbacks outlined above are considered sufficient to provide curtilage around new buildings for landscaping that is consistent with, and sympathetic to, the item;
- The future road network can include local access roads and minor cul-de-sacs that are parallel and/or adjacent to the Littlebourne curtilage boundaries;
- The future road network should include local access roads that are parallel and adjacent to both the northern and eastern boundaries of the Littlebourne curtilage.

If future development proposals involve changing the use of Littlebourne Homestead from a residential dwelling to some other use (e.g. community hub, bed and breakfast accommodation, kiosk, etc.) this could detract from its significance. This is particularly the case if: the existing use contributes more to the significance of the item than the new use; changes to the fabric of the item are required that detract from its significance; changes to the site are required that detract from its significance; and the proposed changes negatively impact upon the structure of the item. As such, consideration should be given to: how the existing use contributes to the significance of the heritage item; why the use needs to be changed; what changes to the fabric are required; what changes to the site are required; and any potential structural impacts to the heritage item.

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

No alternative sympathetic solutions have been considered and discounted.

5 RECOMMENDATIONS

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

- Legal requirements under the terms of the *Heritage Act 1977*(as amended in 2001);
- Guidelines presented in the *Burra Charter* (Australia ICOMOS 2013);
- The Bathurst LEP and Bathurst DCP planning controls;
- The findings of the current assessment; and
- The interests of the local community.

Recommendations concerning the Study Area are as follows.

1. Any proposed subdivision of Lot 1 DP 867504 should incorporate the recommended curtilage shown in **Figure 3-6** to mitigate possible negative impacts to the significance of Littlebourne Homestead;
2. A conservation policy should be prepared in support of any proposed development adjacent to Littlebourne Homestead;
3. For any proposed development, design consideration should be given to:
    a. Minimising any adverse impacts to the heritage significance of the item;
    b. Maintaining the recommended curtilage around the item;
    c. Minimising the potential for views to, and views from, the item to be negatively impacted;
    d. Producing designs that are sympathetic to the heritage item (e.g. in terms of form, siting, proportions and design, including landscape design);
    e. Minimising the potential for new buildings and infrastructure to visually dominate the heritage item; and
    f. Maintaining or enhancing public access to view and appreciate the significance of the heritage item.
4. The following recommendations are made in relation to these design considerations:

    a. For lots adjoining the Littlebourne curtilage, the heights of buildings should be restricted to one storey, with maximum building heights no greater than the ridge of Littlebourne Homestead measured from the finished ground level;

    b. A building envelope of 20 meters from the Littlebourne curtilage should be established on new lots adjoining the northern and southern boundaries of the Littlebourne curtilage (**Figure 3-7**), except where a new road is located between the new lot and Littlebourne Homestead, in which case the Bathurst DCP eight metre minimum setback applies and is considered sufficient;

    c. Sufficient curtilage is considered to exist along the western and eastern boundaries where the Bathurst DCP eight metre minimum setback applies;

d. For lots adjoining the Littlebourne curtilage, the building envelopes and setbacks outlined above are considered sufficient to provide curtilage around new buildings for landscaping that is consistent with, and sympathetic to, the item;

e. The future road network can include local access roads and minor cul-de-sacs that are parallel and/or adjacent to the Littlebourne curtilage boundaries;

f. The future road network should include local access roads that are parallel and adjacent to both the northern and eastern boundaries of the Littlebourne curtilage.

5. If a change of use is part of the development proposal, consideration should be given to:
    a. How the existing use contributes to the significance of the heritage item;
    b. Why the use needs to be changed;
    c. What changes to the fabric are required;
    d. What changes to the site are required; and
    e. Any potential structural impacts to the heritage item.
6. In the event that previously unrecorded or unanticipated historical heritage object(s) are encountered, the unanticipated finds protocol should be followed (**Section 3.9**).

REFERENCES

Australia ICOMOS

2013 The Burra Charter: The Australia Icomos Charter for Places of Cultural Significance, 2013. In *Australia ICOMOS: International Council on Monuments and Sites* [electronic document]. Available from: http://australia.icomos.org/publications/charters/ [accessed 28th April 2015].

BRC

2014 *Bathurst Region Heritage Strategy 2014-2017*. Bathurst: Bathurst Regional Council.

Burke, Heather and Claire Smith

2004 *The Archaeologist's Field Handbook*. Sydney: Allen & Unwin.

Heritage Council of NSW

2006 Historical Archaeology Code of Practice. In *NSW Office of Environment & Heritage* [electronic article]. Available from: http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/HistArchCodeofPractice.pdf [accessed 4th May 2015].

LPI

2015 Historical Land Records Viewer. In *NSW Land & Property Information* [online database]. Available from: http://images.maps.nsw.gov.au/ [accessed 26 November 2015].

McLaughlan, Robin

2013 Historical Background: The Government Settlement at Bathurst (1815-1840). In Edward Higginbotham (ed.) *The Government Settlement at Bathurst, NSW (1815-1840): Archaeological Management Plan* Report to: Balthurst Regional Council and the NSW Heritage Division.

2014 Old Map of Bathurst and Cox's Road Rediscovered. *Inside History Magazine* [online article]. Available from: http://www.insidehistory.com.au/2014/06/inside-history-exclusive-old-map-of-bathurst-and-coxs-road-rediscovered-2/.

NSW Heritage Office

2001 Assessing Heritage Significance. In *NSW Office of Environment & Heritage* [electronic guide]. Available from: http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/listings/assessingheritagesignificance.pdf [accessed 4th May 2015].

2002 Statements of Heritage Impact. In *NSW Office of Environment & Heritage*. Available from: http://www.environment.nsw.gov.au/Heritage/publications/ [accessed 18 October 2015].

OEH

2012a The Grange. In *Heritage Council of NSW, State Heritage Inventory* [online database]. Available from: http://www.environment.nsw.gov.au/heritage/index.htm [accessed 27 November 2015].

2012b Littlebourne Homestead. In *Heritage Council of NSW, State Heritage Inventory* [online database]. Available from: http://www.environment.nsw.gov.au/heritage/index.htm [accessed 27 November 2015].

OzArk

2013 *Aboriginal and Historic Heritage Assessment: Bridge and Creek Works, Perthville, NSW*. Report to: Barnson Pty Ltd.

Roberts, David

1995 Bells Falls Massacre and Bathurst's History of Violence: Local Tradition and Australian Historiography. *Australian Historical Studies* 26(105):615-633.

Roberts, David Andrew

2014 Beyond 'the Crossing': The Restless Frontier at Bathurst in the 1820s. *Journal of Australian Colonial History* 16:244-259.

PLATES

Plate 1: Littlebourne Homestead, original house (main frontage), circular driveway and veranda with 1896 additions (left), facing west.

Plate 2: Littlebourne Homestead, original house and veranda, facing south.

Plate 3: Littlebourne Homestead, original house with additions, facing east.

Plate 4: Littlebourne Homestead, original rear wing, facing south.

Plate 5: Littlebourne Homestead, original rear wing, facing north.

Plate 6: Littlebourne Homestead, courtyard wall, facing east.

Plate 7: Littlebourne Homestead, stables, facing north.

Plate 8: Littlebourne Homestead, well.

Plate 9: Littlebourne Homestead, paddock east of house, facing north.

APPENDIX 1: THE STATE HERTIAGE INVENTORY LISTING

Office of Environment & Heritage

Home > Heritage > Search for heritage

Littlebourne Homestead

Item details

Name of item: Littlebourne Homestead
Type of item: Built
Group/Collection: Residential buildings (private)
Category: Homestead building
Location: Lat: S 33.26.295 Long: E 149.37.456
Primary address: 4031 O'Connell Road, Kelso, NSW 2795
Parish: Kelso
County: Roxburgh
Local govt. area: Bathurst Regional

All addresses

Street Address	Suburb/town	LGA	Parish	County	Type
4031 O'Connell Road	Kelso	Bathurst Regional	Kelso	Roxburgh	Primary Address

Statement of significance:

'Littlebourne' is an early colonial residence on an original 20 acre grant to William Cox. Important connection to a number of important historical figures including Lieut. Thomas Everden, Webb and Lord (Bathurst Mayors).

Date significance updated: 24 Apr 07

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

Description

Construction years: 1830-

Physical description: Single storey rough caste brick rendered. Cast iron columns. One rear wing remaining, walled courtyard. Original house section still has shingles under iron roof.

Physical condition and/or Archaeological potential: Very good.

Date condition updated: 14 Feb 06

Modifications and dates: 1890s - extensions by ET Webb (Mayor of Bathurst) - large billiard room, two bedrooms.
1930 Extentions by JHC Shutt. - Kitchen into main house, 1 rear wing demolished, verandah infill, rendered.
1950 Laundry closed in. Interior redecorated.

Current use: Private home
Former use: Private residence

History

Historical notes:

The land was an original grant to William Cox.

Lieut. Thomas Everden, the last government appointed police magistrates was the man who had the house built in circa 1830. He married Mary Jane Hawkins, from Blackdown, in 1830, and he brought his wife to live at this address. He had bought the land for a small sum from P. McKenzie who was himself married to another Hawkin daughter, and they lived nearby. They were the Kelso families. The house was then much smaller than today, but most of the original rooms remain. Two existing front rooms were the drawing and dining rooms. There were two 'best' bedrooms and two other bedrooms, (as noted in the Bathurst Free Press in 1855. At the back two wings formed a courtyard. One has now been removed. There was also a cellar. The house was convict built; with Everden having convicts assigned to him.
1844 Sold to Francis Lord, politician and Mayor of Bathurst. There were quite a number of owners between Everden and Webb.

When the Webb family built on to the house in 1896, they added the front rooms with bay windows and appear to have incorporated a small bedroom that is a step above the rest of the wing.

The grave of Evenden, with one of his children, is located in Holy Trinity, Kelso. The only surviving child of the Evenden's was Sarah Louisa Evernden born 24 June 1834 and died in 1887. None of the other children lived to an old adult age.

Historic themes

Australian theme (abbrev)	New South Wales theme	Local theme
4. Settlement-Building settlements, towns and cities	Accommodation-Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Early Colonial House-

Listings

Heritage Listing	Listing Title	Listing Number	Gazette Date	Gazette Number	Gazette Page
Local Environmental Plan		113	12 Dec 97		
Heritage study					

Study details

Title	Year	Number	Author	Inspected by	Guidelines used
Bathurst Regional Council Heritage Review	2005	F/N 41	Hickson in assoc. with Bathurst Regional Council	Hickson and Croft	Yes
Bathurst City Council Heritage Study	1990	A764	Hughes Trueman Ludlow	Hughes Trueman Ludlow	No

BRC City Conservation Area Heritage Review	2006		Hickson in assoc with BRC	B.J. Hickson	Yes

References, internet links & images

Type	Author	Year	Title	Internet Links
Written	Margaret Mary Warren	1999	NSW State Heritage Inventory Form	

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

(Click on thumbnail for full size image and image details)

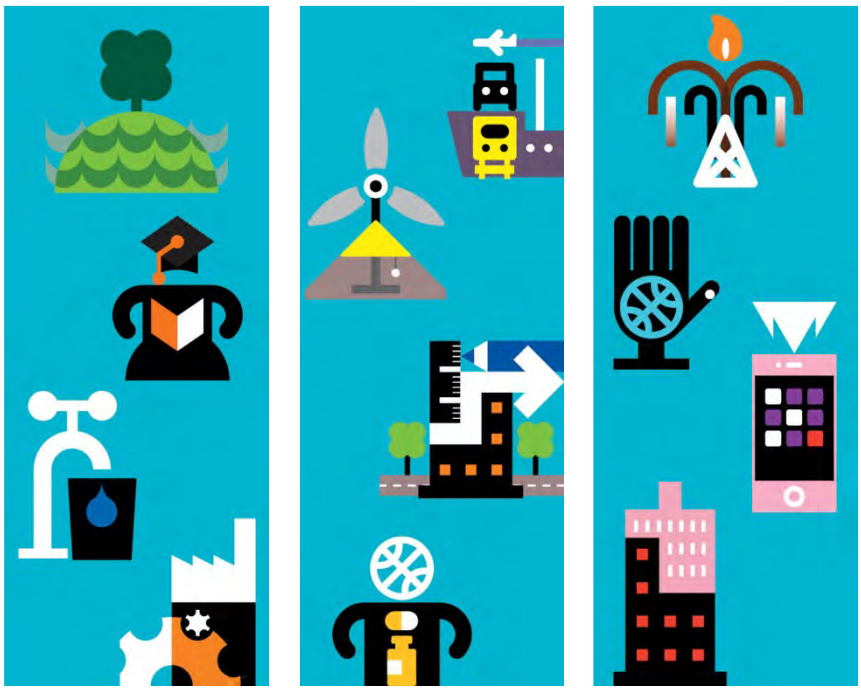
Data source

The information for this entry comes from the following source:

Name: Local Government

Database number: 1080348

Return to previous page



Bathurst White Rock Road development Options Report

April 2016

Bathurst Regional Council

BATHURST REGIONAL COUNCIL

Mott MacDonald

Bathurst White Rock Road development Options Report

April 2016

Bathurst Regional Council

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T +61 (0)3 9037 7575 **W** www.mottmac.com

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
0.1	18/03/2016	MD	SP	SP	White Rock road Development Option Assessment Draft Report
0.2	21/04/2016	MD	SP	SP	White Rock road Development Option Assessment Draft Report

Information class: Standard

Contents

1 Introduction

Mott MacDonald was commissioned to undertake the ability of the existing wastewater and water networks to cater for the anticipated population at the new development on White Rock Road.

Bathurst Regional Council has received a proposal for the area of land between the Blue Ridge Estate and O'Connell road. This new development proposal consists of a large lot residential development with subdivision below the 708m contour of 4,000m^2 lots.

The figure below shows a configuration example for the proposed new developments along with their approximate ground level.

Figure 1-1: White Rock road development proposal

Bathurst Regional Council commissioned Mott MacDonald in March 2016 to study the existing water system and present some options to feed the new development discussed above.

Mott MacDonald contacted the respective Bathurst Regional Council's staff to identify the Council's expectation for the project and confirmed the assumption water and wastewater consumption.

An EPANET hydraulic model was utilised to assist in assessment of new development's impact on the current water system. The existing Mike Urban hydraulic model was used to identify the needs for the wastewater network.

This report documents the system performance assessment and options investigations undertaken for both Bathurst systems. It provides a discussion on the system performance results for the study area, and proposes options to solve the major level of service issues identified if any.

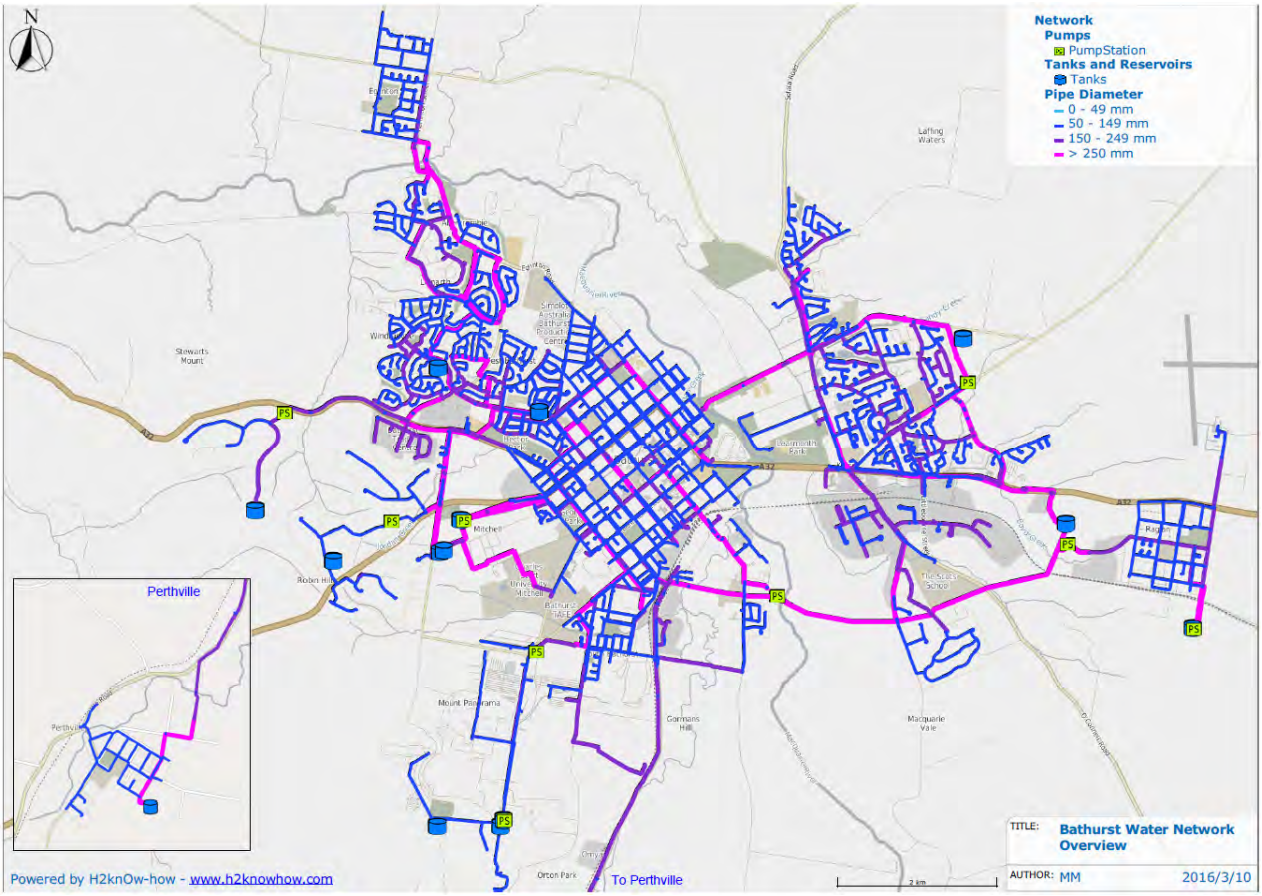
All system performance results are available on our web based platform h2knowhow.

2 Water Supply

The hydraulic model was utilised to assess the water distribution system behaviour and capability for the new proposed development. All scenarios were evaluated using a 24hr extended period simulation. Population and base demand projections for the project were prepared by Bathurst Regional Council staff and implemented in the model accordingly.

Prior to starting the assessment, the new system modifications were also incorporated based on the GIS data received form the council and model was updated. The current Bathurst model is shown in the figure below:

Figure 2-1: Bathurst Water Network Overview



2.1 Demand Allocation

Water consumption of the new developments was modelled by assigning a baseline water demand (base demand) representing the average rate of water consumption through a 24 hour simulation.

The total area of the proposed location for the new development is approximately 17.4 Ha. For the purpose of this exercise, it was assumed an average of approximately 4,000m^2 per lot, 2.5 people per lot and a base demand of 300 L/person/day.

A standard residential pattern has been applied to the base demand. Peak demands can be observed in the morning between 6:30am and 9:30am and in the evening between 5:30pm and 8:30pm with a peak factor of 2.7. Using demand patterns offers the most accurate water distribution and allows meeting the council's operating criteria under stress conditions.

2.2 System Performance

The objective of the system performance analysis is to assess potential deficiencies of the existing network when adding the demand from the proposed White Rock development. If any deficiencies are predicted they will be prioritised and discussed with the council's in order to meet Bathurst Regional Council' strategic goals.

2.3 System Performance Criteria

Bathurst system performance was assessed against the levels of service as described in the table below:

Table 2.1: Criteria for Hydraulic Performance Assessment

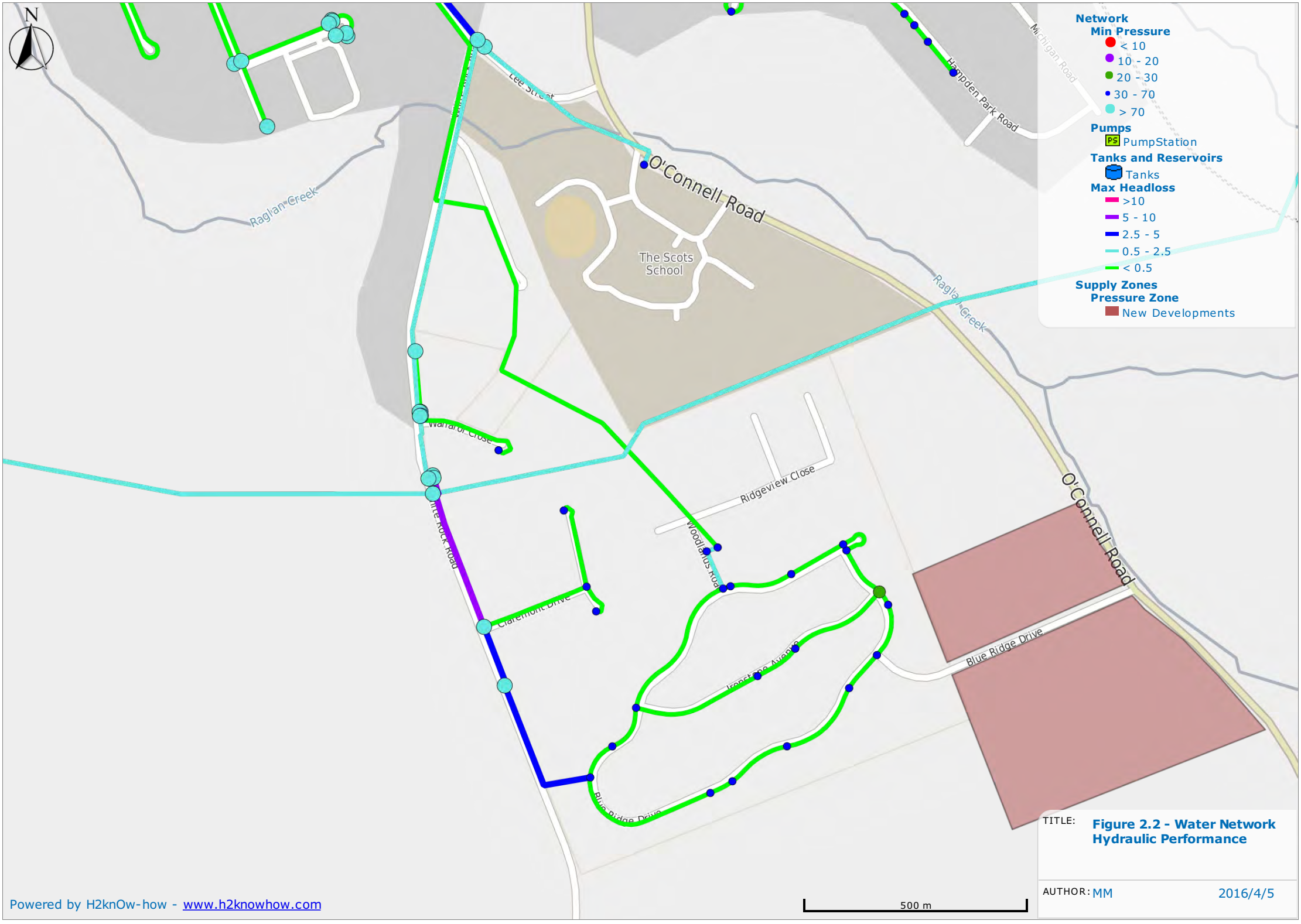
Criteria	Category	Threshold (Peak Hour Demand)
Pressure	Minimum pressure measured at the customer meter	20m with sensitivity to 15m
	Maximum pressure measured at the customer meter	60m with sensitivity to 80m
Local Main Head Loss	Maximum head loss	5m/km
Local Main Velocity	Maximum velocity	2.0m/s
Flow Reversals	Flow reversals	< 5 / day
Fire Flows	Minimum residual pressure	N/A
Security of Supply Criticality	No water / low pressure (<20m) / time to repair	Meet Bathurst Council Risk Criteria
Meet Future Demand	Flow and pressure	Meet Bathurst Council peak hour demand (population) projections

2.4 Bathurst Water Network System Performance Results

Figure 2.2 below shows the predicted hydraulic performance results in the vicinity of the White Rock proposed development.

The model predicted that the Bathurst water network presented a good performance in term of minimum pressure for current peak day conditions. All pressures within the network are predicted to remain above 20m. Pipes head losses were also compliant with the required level of services. Only the 100mm main along White Rock road is predicted to have headlosses above the recommended 5m/km, approximately 6 m/km. However this result is consistent with the existing operation and the addition of the proposed White Rock development is not predicted to deteriorate the head losses in this area.

This study showed that the Bathurst water network hydraulic performance will not be deteriorated and will remain complaint with all level of services if the proposed White Rock development as described above is to be built.


N
Network
Min Pressure
< 10
10 - 20
20 - 30
30 - 70
> 70
Pumps
PS PumpStation
Tanks and Reservoirs
Tanks
Max Headloss
>10
5 - 10
2.5 - 5
0.5 - 2.5
< 0.5
Supply Zones
Pressure Zone
New Developments
O'Connell Road
Raglan Creek
The Scots School
Hampden Park Road
Michigan Road
Lee Street
Warrior Close
Ridgeview Close
Woodlands Road
Claremont Drive
Blue Ridge Drive
Ironstone Avenue
Fire Rock Road
TITLE:
Figure 2.2 - Water Network Hydraulic Performance
AUTHOR: MM
2016/4/5
500 m
Powered by H2knOw-how - www.h2knowhow.com

3 Wastewater

3.1 Network Overview

A Mike Urban hydraulic model was used to assess the wastewater collection system behaviour and capability for the new proposed development.

Prior to starting the assessment, the new system modifications were also incorporated based on the GIS data received form the council and model was updated. The current Bathurst wastewater system is shown in Figure 3-1 below.

Figure 3-1: Bathurst Wastewater Network Overview

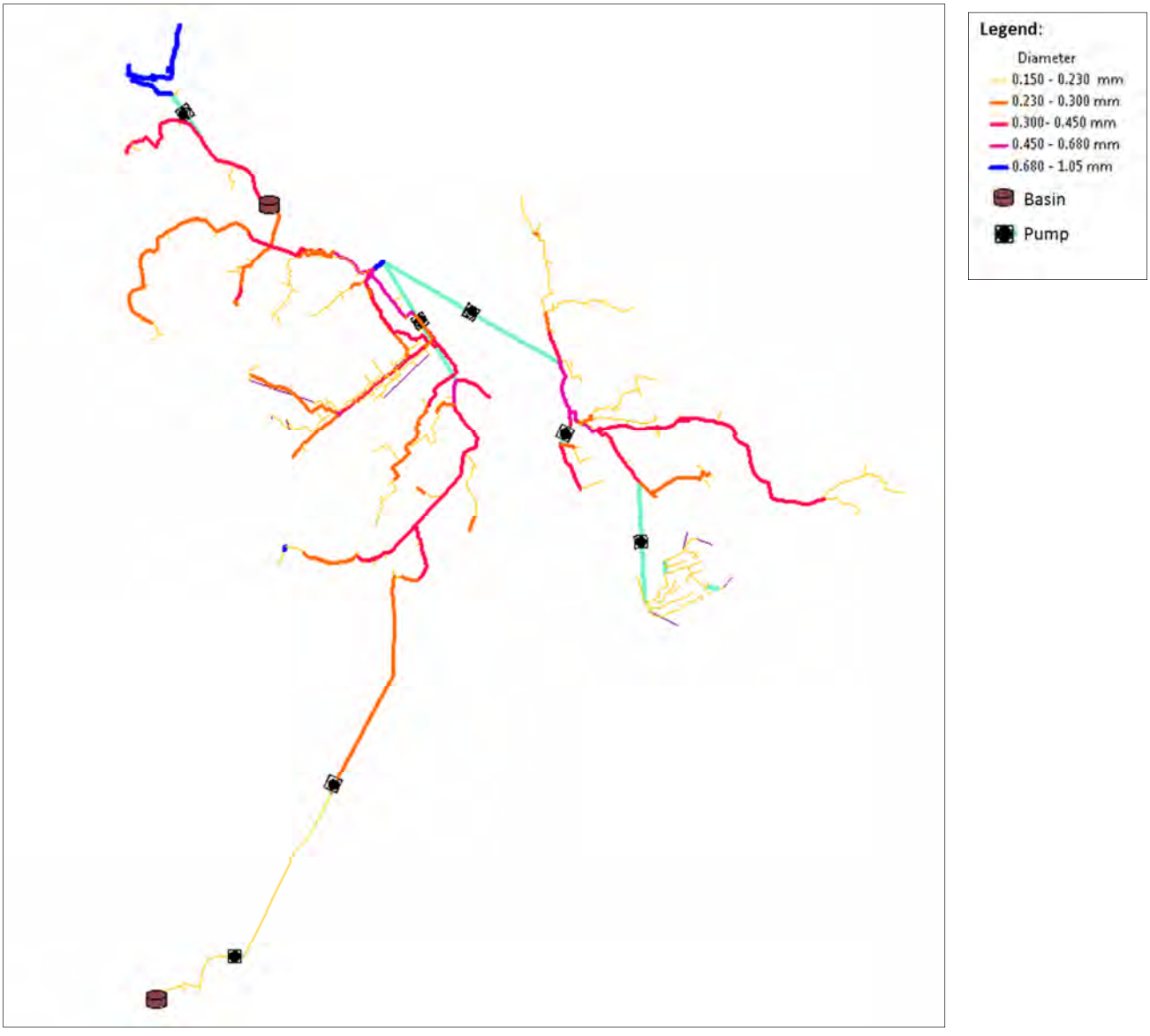


Figure 3.2 below shows the wastewater network in the vicinity of the proposed White Rock development. The development has been modelled as one catchment representing the demand for the forecast lots.

Figure 3-2: White Rock local wastewater network

Previous studies showed that the pump station downstream of the development – SPS 16, located at 103 White Rock Road – presented emergency storage issues in dry weather. As discussed with Bathurst Regional Council, it was therefore agreed a Sewer Pump Station (SPS) will be installed to collect all flows from the proposed development. For the purpose of this exercise, it was assumed that the proposed pump station had two identical pumps with a flow rate not higher than the SPS16 pumps rates. Both proposed pumps were therefore modelled with a flow rate of 2.5 L/s.

The following paragraphs discuss the storage requirements as well as the pump specifications

3.2 Dry weather flow results

It was agreed with Bathurst Regional Council that a minimum of 10hour of dry weather flow storage was required at the proposed SPS to minimise the impact of the additional flow on the downstream SPS16. Therefore the wastewater system hydraulic response to dry weather conditions was evaluated using a representative dry weather week.

It was assumed that an average of 2.5 people per lot and a design flow of approximately 300 L/person/day.

Table 3-1 below summarises the daily volume produced by the proposed White Rock development under dry weather conditions

Table 3.1: Dry Weather flow volumes

Simulation Day	Volume (m^3/d)	Volume (m^3/10hr)	Peak Flow (L/s)
1	76.8	43.0	4.85
2	79.3	42.5	4.62
3	79.3	47.8	4.87
4	77.2	49.6	4.91
5	78.7	48.2	4.57
6	78.6	45.5	4.73
7	77.3	41.7	4.56
Average	**78.2**	**45.5**	**4.7**
Maximum	**79.3**	**49.6**	**4.91**

The model predicted that an additional of approximately 78.2m^3/day will be conveyed by the local wastewater network. In the above table, the 10hour storage volume was calculated between 0600 and 1600 each day to capture the peak demand generally occurring between 0800 and 1000 in a residential area. The model predicted that the maximum volume in 10hour was approximately 49.6m^3.

The industry standards recommend designing wet wells to contain the dry weather peak flow. As shown in Table 3-1 above, the maximum dry weather peak flow is predicted to be approximately 4.9 L/s. For planning purposes Mott MacDonald assumed that peak flow lasted for 2hours continuously. This conservative value will allow for extra volumes that may occur on certain dry days of the year.

Given the above assumptions, it is recommended that the proposed SPS has an extra storage of approximately 29.5 m^3.

To meet Bathurst Regional Council requirements in storing 10hour of dry weather flow at the proposed SPS for the White Rock development, the extra storage needs to be at least 30m^3.

The sections below discuss extra storage options at the proposed SPS in White Rock.

3.2.1 Pump Station Storage Option 1 – Online Storage

This option is looking at using the pipe directly upstream of the pump station as a storage solution. It was assumed that the grade of the new network was 0.28%:

Table 3.2: Online storage summary

Online Storage	Option 1 - A	Option 1 - B
Diameter (mm)	450	375
Minimum length required (m)	200	280
Volume available (m^3)	31.8	31
Maximum velocity (m/s)	0.03	0.04
Unit cost (AUD/m)	900	750
Pipe work costs (AUD)	AUD 180,000	AUD 210,000

As shown in table 3-2 above, a 450mm diameter main for 200m is able to store the extra 30m^3 required.

Under dry weather peak flow conditions, the velocity is predicted to be under 0.1 m/s for both options. These velocities are not sufficient to have a self-cleaning process happening in the network. It is indeed recommended that velocities in the pipe should be higher than 0.6m/s to wash any potential silt/debris that could sit in the lines. Without cleaning process damages can be caused to the network due to high septicity.

3.2.2 Pump Station Storage Option 2 – offline storage

This option looks at building a storage tank next the proposed location of the SPS as an extra storage. Table 3-3 below summarises the estimated cost for the proposed SPS

Table 3.3: Storage Tank Estimated cost

Storage type	Size (m^3)	Unit Rate (AUD/ m^3)	Cost
White Rock SPS storage	30	AUD 3,400	AUD 102,000

The underground offline storage option is estimated to cost approximately AUD 102,000.

3.2.3 Pumps

As discussed above, the downstream pump station SPS16 represents a limitation to the network. To avoid congesting this pump and for best operation practices, the proposed White Rock pump station should not exceed the discharge pump rate. The model has a pump discharge of 25 L/s for the SPS16, therefore the maximum pump rate at the future White Rock PS should not exceed 25 L/s. One of this pump is estimated to cost approximately AUD 70,000 (price includes pump's pipelines). It is recommended to build two (2) pumps in each wet well with a stand by pump and a duty pump.

3.2.4 Pump station Costs Summary

Table 3.4 below summarises the estimated costs for the proposed sewer pumping station for the White Rock development:

Table 3.4: Pump station costs summary

	Option 1A	Option 1B	Option 2
Storage type	Online	Online	Offline
Storage cost (AUD)	180,000	210,000	102,000
Pumps costs (AUD)	140,000	140,000	140,000
Total (AUD)	**320,000**	**350,000**	**242,000**

3.3 Wet weather flow results

The hydraulic response to wet weather conditions was also assessed as part to this study to determine the maximum discharge required by the proposed SPS.

A number of ARI events were selected using the system response to historical rainfall data. Historical rainfall data is available at the permanent rain gauge at the Bathurst between 1995 and 2013 and used to identify statistical rainfall conditions. The hydrologic model was run continuously for the 18 year (1995-2013) period.

The recurrence of the events was quantified according to the peak flow and volume generated in the particular system analysed rather than the magnitude / intensity of the rainfall alone. The ARI events selected for the purpose of this study are presented in Table 3-2 below:

Table 3.5: ARI Storms Events

ARI Standard	Event dates	Total Rainfall (mm)	Peak Intensity (mm/hr)	Volume generated White Rock dvlp (m3)	Peak Flow (L/s)
3 month	05/02/2010 10:25 - 05/02/2010 11:58	12	48	3,110	13
6 month	29/09/2011 05:15 – 29/09/2011 10:30	24	24	17,936	14
1 year	27/01/2013 00:00 – 27/01/2013 09:00	45	24	54,020	16
2 year	08/11/2005 00:25 – 29/11/2005 09:30	64	72	60,733	21

The above table is to be used by Bathurst Regional Council as guidance for pump discharge requirements at the proposed White Rock SPS. If a pump with a 25 L/s duty point is to be installed for the White Rock development, it is predicted that it could contain flows up to the 2 year ARI event.

4 Conclusion and Recommendation

The impact of the proposed White Rock development on the local water and wastewater networks was assessed to help Bathurst Regional Council meeting their water plan strategy. The new development consisted of a 17.4 Ha lot in the vicinity of Woodlands Road in the South East area of Bathurst. It was assumed 2.5 people per household and 300 L/pers/day.

Water Network

The hydraulic performance assessment of the Bathurst water supply system was undertaken and assessed against level of services agreed with Bathurst Regional Council's representative.

For the purpose of this study, Mott MacDonald used the hydraulic modelling tool to achieve the better understanding of the water system after occurrence the proposed development. The model predicted that the additional flow occasioned by the development was not to deteriorate the hydraulic performance of the water network. No additional pipe work is required on the water network to service the proposed development.

Wastewater Network

The Mike Urban hydraulic model was used to assess the work required to service the new development. BRC notified that the pump station downstream of the new division – SPS 16 – has capacity limitation. The implementation of the new SPS to drain the additional flow produced was then assessed. To limit overflow at the downstream SPS16, storage options to contain 10hour of dry weather flow have been assessed and two options are presented in the table below:

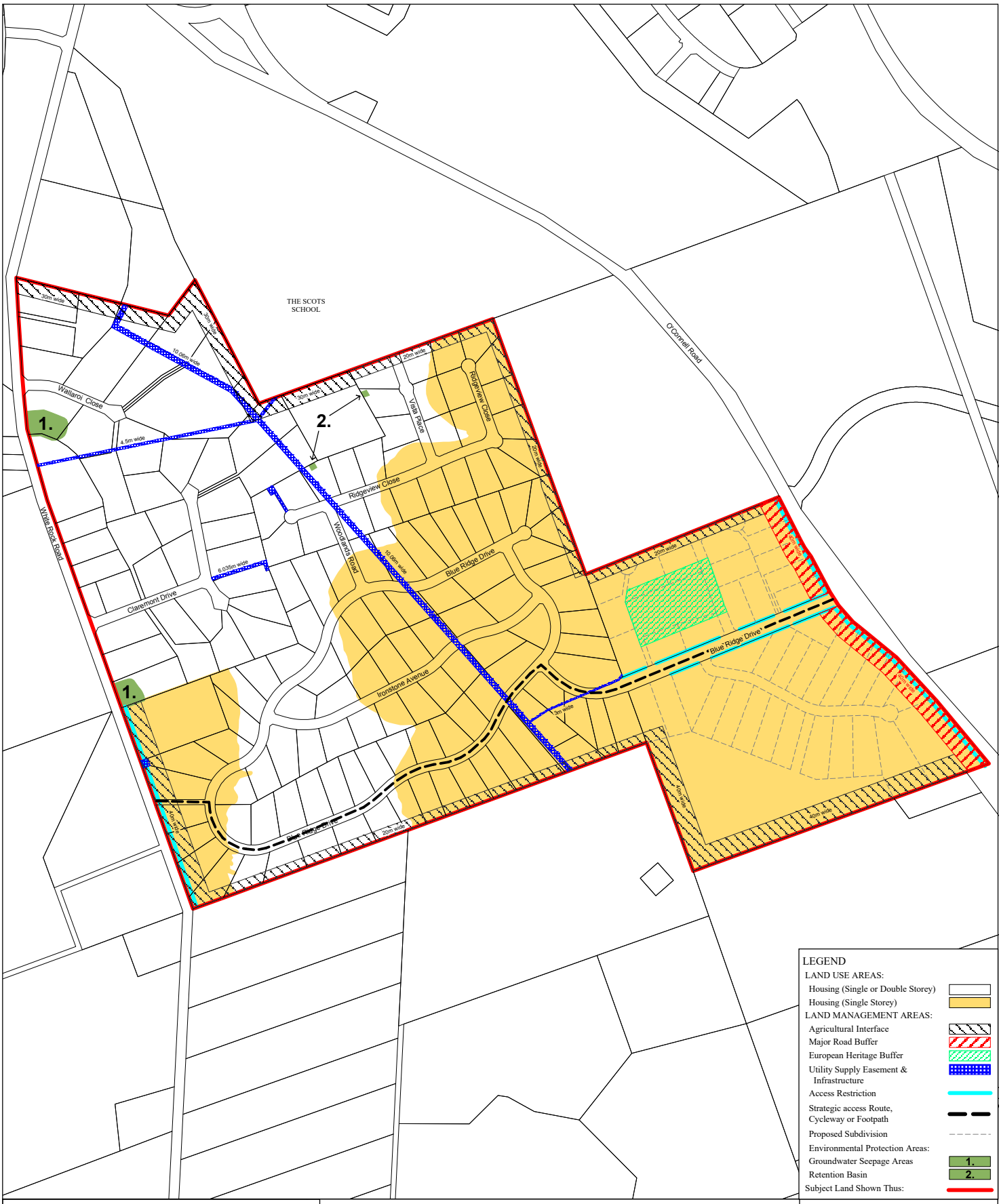
Table 4.1: SPS storage options summary

Storage type	Size	Volume (m^3)	Estimated Costs (AUD)
Online Storage – pipe option1 A	450mm	31.8	180,000
Online Storage – pipe option 1 B	375mm	31	210,000
Offline Storage – underground tank		30	102,000
Pump costs	2 pumps	25 L/s	140,000

The online storage option requires maintenance as oversized pipes for storage purposes will not meet water quality requirements and could cause septicity issues in the network. Mott MacDonald recommends therefore the offline storage option.

BATHURST REGIONAL DEVELOPMENT CONTROL PLAN 2014
MAP No. 14 - WHITE ROCK DRAFT

BATHURST REGIONAL COUNCIL



LEGEND

LAND USE AREAS:
- Housing (Single or Double Storey)
- Housing (Single Storey)

LAND MANAGEMENT AREAS:
- Agricultural Interface
- Major Road Buffer
- European Heritage Buffer
- Utility Supply Easement & Infrastructure
- Access Restriction
- Strategic access Route, Cycleway or Footpath
- Proposed Subdivision

Environmental Protection Areas:
- Groundwater Seepage Areas 1.
- Retention Basin 2.

Subject Land Shown Thus:

ADOPTION DATE:

AMENDMENTS

No.	DATE.	DESCRIPTION.
3.	--/--/----	Inclusion of 4031 O'Connell Road & 3991 O'Connell Road

LOCALITY: WHITE ROCK

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

BATHURST REGIONAL LOCAL GOVERNMENT AREA.

SCALE: 1:10,000

NORTH

CERTIFIED IN ACCORDANCE WITH THE ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 AND REGULATIONS

GENERAL MANAGER. DATE:

G:\Planning Data\DCP_2014\White_Rock_AmendDraft.WOR

BATHURST REGIONAL COUNCIL
PLANNING PROPOSAL – Blue Ridge LEP Extension
Bathurst Regional Development Control Plan 2014 Proposed Amendments

Chapter 3 Subdivision of Land

Insert new section

3.5.4 White Rock

3.5.4.1 Land to which this Section applies

This Section applies to the following lots:

- Lot 14 DP 1050220, 3991 O'Connell Road, KELSO
- Lot 1 DP 867504, 4031 O'Connell Road, KELSO

Development Standards

a) Council must not grant consent to the subdivision of land unless appropriate building envelopes have been shown to be at or below the 708m AHD.

b) Any application for subdivision is to indicate a building envelope at or below 708m AHD.

c) A maximum of 1m cut is permitted to a maximum 709m AHD.

Chapter 6 Rural and Rural Lifestyle Development

Section 6.9.4 Management of Land

Insert new Land Management Area

Land Management Area	Effect on Development
European Heritage Buffer	No dwellings or buildings may be erected. No works may be constructed other than driveways, drainage and fencing.

Insert new section

6.14 White Rock

6.14.1 Land to which this Section applies

This Section applies to the land shown on DCP Map 14 – White Rock.

6.14.2 Objectives

To protect the heritage qualities of the property known as 'Littlebourne' and to ensure adequate water services are available to all new lots.

6.14.3 Development Standards – Water Reticulation

a) The finished floor level of any new dwelling is to be no greater than 708m AHD.

b) The finished floor level of any new dwelling is to be shown on any plans submitted to Council for approval.

6.14.4 Development Standards - Littlebourne

This section applies to Lot 1 DP 867504, known as Littlebourne.

a) All buildings should have a height no higher than 713m AHD or the height of the ridge of Littlebourne Homestead as measured from the finished ground level.

b) Where visible from the street or adjoining Littlebourne Homestead, roof pitches are to be at least 30 degrees.

c) Roofing materials are to generally be steel sheeting of a traditional corrugated profile and are to be galvanized iron, zincalume, or pre-coloured metal sheet (provided the colour is sympathetic to the historic character of the Littlebourne Homestead). The proposed colour is to be nominated on any plans submitted to Council for approval.

d) Where visible from the street, new windows should be vertical in proportion or have regard to traditional or historic window proportions.

e) Fencing material is to be brick, timber and/or wire. Pre-coloured metal sheet fencing is not permitted.

f) Fencing is to be constructed so that it does not prevent the natural flow of storm water drainage.

g) Outbuildings are to be constructed of brick, timber or steel sheet metal of a traditional corrugated profile and are to include a roof pitch and colouring that complements the roof pitch and colouring of the surrounding dwellings. American barn style outbuildings will generally not be permitted.

Schedule 1

Insert address

Locality	Lot	DP	Property Address
Kelso	14	1050220	3991 O'Connell Road, KELSO
	1	867504	4031 O'Connell Road, KELSO

Heritage Council of New South Wales

Level 6, 10 Valentine Avenue
Parramatta NSW 2150

Locked Bag 5020
Parramatta NSW 2124
DX 8225 PARRAMATTA

Telephone: 61 2 9873 8500
Facsimile: 61 2 9873 8599

heritage@heritage.nsw.gov.au
www.heritage.nsw.gov.au

Bathurst Regional Council
Private Mail Bag 17
BATHURST
NSW 2795
Attention: Ms A Cutter
Send via e-mail: council@bathurst.nsw.gov.au

DOC16/303337

Dear Ms Cutter

RE: Blue Ridge Local Environmental Plan (LEP) Extension Planning Proposal and Bathurst Regional Development Control Plan (DCP) 2014 Amendment

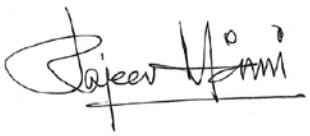
Thank you for referring the above planning proposal and DCP amendment for a subdivision of a locally listed heritage item known as 'Littlebourne Homestead' to the Heritage Division, Office of Environment & Heritage (OEH), for comment. As the delegate of the Heritage Council of NSW, I provide the following comments:

'Littlebourne Homestead' was listed within the LEP because it provided a link between past, present and future generations, and provided ' Littlebourne Homestead' and its setting with statutory protection vis-à-vis the heritage provisions of Clause 5.10. The heritage provisions also assist with the conservation and management of 'Littlebourne Homestead' and its setting.

It is noted that the subject property is not listed on the State Heritage Register. Therefore, the Heritage Council of NSW is not a consent authority in this instance. However, concern is raised with the proposed subdivision which not only seeks to amend the minimum allotment size for the property but also significantly reduces both its setting and curtilage. It is considered that if approved, the subdivision would have an irreversible adverse impact on the heritage significance of 'Littlebourne Homestead'.

If you have any further enquiries regarding this matter, please contact Bronwyn Smith, Heritage Planning Officer at the Heritage Division, Office of Environment and Heritage, on (02) 9873 8604 or via email to bronwyn.smith@environment.nsw.gov.au.

Yours sincerely



Rajeev Maini
Acting Manager, Conservation
Heritage Division
Office of Environment and Heritage
As Delegate of the Heritage Council of NSW
8 July 2016

Transport
Roads & Maritime
Services

29 June 2016

SF2016/136511; WST16/00137

General Manager
Bathurst Regional Council
Private Mail Bag 17
BATHURST NSW 2795

Dear Sir

Property: Lot 14 DP 1050220; 2991 O'Connell Road (MR253) Kelso
Property: Lot 1 DP 867504; 4031 O'Connell Road, Kelso;
Blue Ridge LEP Extension Planning Proposal
Bathurst Regional Development Control Plan 2014 Amendment

Thank you for your letter dated 14 June 2016 inviting a submission from Roads and Maritime Services in relation to the above-mentioned planning proposal.

It is noted the proposal involves rezoning land from RU1 Primary Production to R5 Large Lot Residential. The subject lands have frontage to O'Connell and Woodlands Roads. The amendment to the development control plan would include a restriction preventing direct access to O'Connell Road. Instead, vehicular access to future allotments on the land is proposed via Woodlands Road.

In the environmental assessment required for the planning proposal, and in early planning stages of the proposed new land use, Roads and Maritime requests Council consider:

- Clause 101 of *State Environmental Planning Policy (Infrastructure) 2007* which requires, where practicable, all vehicular access to the land be obtained via Woodlands Drive and not O'Connell Road. Details of the proposed encumbrance preventing direct access to O'Connell Road to be placed on future lots with frontage to O'Connell Road should be included
- The cumulative impacts of traffic generated by the proposed new land use and existing background traffic on the public road network, particularly at the intersection of Woodlands and O'Connell Roads. Details of measures developed to address these impacts should be included.

Please keep Roads and Maritime informed of the progress of this planning proposal. Should you require further information please contact Andrew McIntyre, Manager Land Use Assessment on 02 6861 1453.

Yours faithfully

Susie Mackay
Network & Safety Manager
Western
Roads and Maritime Services

Australian Government

Civil Aviation Safety Authority

STAKEHOLDER ENGAGEMENT GROUP

CASA Ref: GI16/547

21 July 2016

Ms Janet Bingham
Acting Director
Environmental, Planning & Building Services
Bathurst Regional Council
Private Mail Bag 17
BATHURST NSW 2795

Email: council@bathurst.nsw.gov.au

Dear Ms Bingham

I refer to your letter of 14 June 2016 addressed to the Civil Aviation Safety Authority (CASA) regarding Blue Ridge Local Environmental Plan Extension Planning Proposal and Bathurst Regional Development Control Plan 2014 Amendment.

CASA has reviewed the proposal and I am advised that, as the property is located to the southwest of Bathurst Aerodrome CASA does not have any objections to the proposed rezoning of the land at 3991 and 4031 O'Connell Road, Kelso.

However, CASA recommends that the Council ensure that the National Airports Safeguarding Framework (the framework) guidelines are used when assessing any development in the area. The framework consists of guidelines for managing aircraft noise, building-generated windshear, wildlife strike risk, wind turbine risk to aircraft, pilot lighting distractions and intrusions into protected airspace. Further information is available from the Department of Infrastructure and Regional Development:
https://infrastructure.gov.au/aviation/environmental/airport_safeguarding/nasf/framework_factsheet.aspx

Please do not hesitate to contact Ms Slavica Despotovic, from CASA's Air Navigation, Airspace and Aerodromes Branch, on 02 8651 3110 or by email: slavica.despotovic@casa.gov.au if you require further information.

I trust this information is of assistance.

Yours sincerely

Carolyn Hutton
Manager
Government and International Relations