PastTraces
Heritage Consultants

Residential Subdivision –Archaeological Report

515 Crookwell Road, Kingsdale – Eastern Section.

Report Prepared for Precise Planning

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LGA: Goulburn - Mulwaree

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- Maps, Mapping Grid Reference Co-ordinates or images for Aboriginal heritage sites, places and objects.
- Location or detailed information regarding places of Aboriginal cultural significance, as expressed or directed by Representative Aboriginal Organisations, Aboriginal elders, or members of the wider Aboriginal community.
- Other culturally appropriate restricted information as advised by Aboriginal representatives and traditional knowledge holders.

Information in the report covered by the above categories should be redacted before being made available to the general public. This information should only be made available to those persons with a just and reasonable need for access.

ACKNOWLEDGEMENTS

Past Traces acknowledges the assistance of the following people and organisations in the preparation of this report:

- Murrabidgee Mullangari Aboriginal Corporation
- Didge Ngunawal Aboriginal Corporation
- Corroboree Aboriginal Corporation
- Goobah
- Thunderstone
- Muragadi Aboriginal Corporation
- Yurwang Gundana
- Pejar LALC
- Freeman and Marx
- Konnango
- Woka

ABBREVIATIONS

ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AR	Archaeological Report
DECCW	NSW Department of Environment, Climate Change and Water now NSW Heritage
GPS	Global Positioning System
GSV	Ground Surface Visibility
LALC	Local Aboriginal Land Council
MGA	Map Grid of Australia
PAD	Potential Archaeological Deposit
RAP	Registered Aboriginal Party
SU	Survey Unit

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EXECUTIVE SUMMARY

Precise Planning have commissioned an Aboriginal Cultural Heritage Assessment and Archaeological Report for the proposed development of the 54.68ha eastern portion of 515 Crookwell Road, Kingsdale NSW (Lots 103 & 104 DP1007433) into residential lots. The land parcel is currently used as pastoral and agricultural land, located on Crookwell Road, to the north of Goulburn.

The property has been moderately impacted by the construction of farming related infrastructure and the ongoing use of the property. The study area is shown on Figure 1 in a regional context with the project boundary in Figure 2.

Residential development would involve the following impacts:

- Development of the land for residential purposes
- Construction of housing foundations involving removal of top and subsoils within Building envelopes
- Construction of access roads into the development and through housing lots
- Connection to infrastructure, such as water, communications, sewerage, and electricity
- Installation of boundary fencing and potential impacts from landscaping

Based on an Aboriginal Heritage Information Management System (AHIMS) search and background reports for the area there are no previous registered sites in the project area.

Development holds the potential to impact on unrecorded Aboriginal heritage located within the project area and to address this an Aboriginal heritage assessment was undertaken to determine the extent of impacts from the project. This assessment included background research, field survey of the project area and consultation with the Aboriginal community.

Consultation with the Aboriginal community has been undertaken to assist the heritage team in assessing significance of any identified heritage sites and to provide guidance in the development of culturally appropriate management strategies. Consultation was in accordance with the Consultation Guidelines for Proponents NSW (DECCW 2010a).

Aboriginal representatives participated in the field survey undertaken in January 2022 in accordance with the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b). The field survey covered the extent of the developable area. Ground visibility was low at the time of field survey, with thick grassed groundcover and tall grass in areas. Areas of exposure were limited to fence lines, gates, vehicle tracks and areas of erosion.

The field survey identified four new heritage sites and two areas of Potential Archaeological Deposit (PAD) within the project area.

As a result of the field survey and background research completed for the project, the following recommendations have been developed:

- No impacts may occur to any of the identified Aboriginal Heritage sites unless an Aboriginal Heritage Impact Permit (AHIP) has been granted allowing harm to occur.

- Two areas of PAD are located within the project area. If these two areas are to be impacted subsurface testing should be undertaken in accordance with the Code of Practice. These investigations can be undertaken without any approvals. Subsurface testing should be undertaken in line with the methodology provided in Section 8. This applies to CWRPAD1 and CWRPAD2. The results of the subsurface testing will then inform the ACHAR and AHIP application.
- The project area contains four Aboriginal heritage sites (CWR1, CWR2, CWR3 & CWR4). If the heritage sites are to be impacted, an AHIP approved by NSW Heritage covering the area will be required. An application for an AHIP should be submitted to NSW Heritage and must be approved prior to any works commencing in the area of the heritage sites. The AHIP area is shown in Figure 8.
- Conditions of the AHIP should include the salvage collection of all surface artefacts within the impacted site locations, in line with the methodology provided in Section 8.
- The recovered artefacts following analysis should be placed in the care of the Pejar LALC under a care and control agreement or returned to country under a return to country protocol. The relevant option will be decided upon by the RAPs for the project.
- It is an offence to disturb an Aboriginal site without an AHIP as all Aboriginal objects are protected under the NSW *National Parks and Wildlife Act 1974*. Should any Aboriginal objects be encountered during works then works must cease and a heritage professional contacted to assess the find. Works may not recommence until cleared by NSW Heritage.
- In the unlikely event that human remains are discovered during the construction, all work must cease. NSW Heritage, the local police and the appropriate Local Aboriginal Land Council (LALC) should be notified. Further assessment would be undertaken to determine if the remains are Aboriginal or non-Aboriginal.
- Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the RAPs for the project and may include further field survey.
- Further archaeological assessment will be required for future stages of the development to determine the extent of impacts.
- Continued consultation with the RAPs for the project should be undertaken. RAPs should be informed of any major changes in project design or scope, further investigations or finds.
- No further heritage investigations are required, other than those listed, should the AHIP be approved, except in the event that unanticipated Aboriginal Objects and/or human remains are unearthed during any phase of the Project.

1 INTRODUCTION

1.1 PROJECT BRIEF

Precise Planning have commissioned an Archaeological Report for the proposed development of 54.68ha eastern portion of 515 Crookwell Road, Kingsdale NSW (Lots 103 & 104 DP1007433). The land parcel is currently used as pastural and agricultural land, located on Crookwell Road, to the north of Goulburn. The property has been moderately impacted by the construction of farming related infrastructure and the ongoing use of the property The study area is shown on Figure 1 in a regional context with the project boundary in Figure 2. The proposed subdivision is shown in Figure 2a.

As a major residential development, impacts are widespread across the development area with soils being impacted for the following:

- Development of the land for residential purposes
- Construction of housing foundations involving removal of top and subsoils within Building envelopes
- Construction of access roads into the development and through housing lots
- Connection to infrastructure, such as water, communications, sewerage, and electricity
- Installation of boundary fencing and potential impacts from landscaping

Development holds the potential to impact on unrecorded Aboriginal heritage located within the project area and to address this an Aboriginal heritage assessment was undertaken to determine the extent of impacts from the project.

The proposed works will involve the substantial displacement and removal of soil and the importation of materials. Ground disturbance has the potential to impact on Aboriginal heritage sites and objects which are protected under the NSW *National Parks and Wildlife Act 1974* or historical sites which are protected under the *NSW Heritage Act 1977*. The purpose of the assessment is therefore to investigate the presence of any heritage sites and to assess the impacts and management strategies that may mitigate any impacts, including application for an Aboriginal Heritage Impact Permit (AHIP) if heritage impacts are unavoidable.

The aim of this assessment is to inform the proponent of their responsibilities in regards to cultural heritage sites that exist within the project area and allow for design to minimise or avoid impacts. This report will provide supporting documentation if an AHIP is required. The Archaeological Report (AR) details the investigation and assessment of cultural heritage undertaken for the project. Reporting will follow the guidelines of NSW Heritage, in particular the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010a).

Preparation of the ACHAR for the project has been undertaken in accordance with the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011).

Consultation with Aboriginal representatives for the project has been undertaken in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (DECCW 2010).

1.2 PROJECT OBJECTIVES

The following is a summary of the major objectives of the assessment:

- Identify and consult with Registered Aboriginal Parties (RAPs).
- Search NSW Heritage Aboriginal Heritage Information Management System (AHIMS) register to identify listed Aboriginal cultural heritage sites within the project area
- Review previous heritage reports in the vicinity of the project area in order to recognise any pattern in Aboriginal site distribution.
- Develop a predictive site location model.
- Conduct a site visit across the project area to confirm the previously assessed area of archaeological potential, recorded sites and levels of previous disturbance.
- Through consultation with the Aboriginal community assess the significance of identified heritage sites.
- Undertake sub surface testing of the identified sensitive landforms that occur within the project area to determine their archaeological potential.
- Identify the impacts of the proposed development on heritage sites within the project area.
- Develop management strategies for the identified heritage sites within the project area

1.3 RESTRICTED AND CONFIDENTIAL INFORMATION

Information in this report is restricted due to cultural sensitivities. Appendix 1 contains information which is confidential and not to be made public. Any figures within the report which show the location of heritage sites is restricted and not to be made available to the general public. If required to be displayed, this information should be redacted.

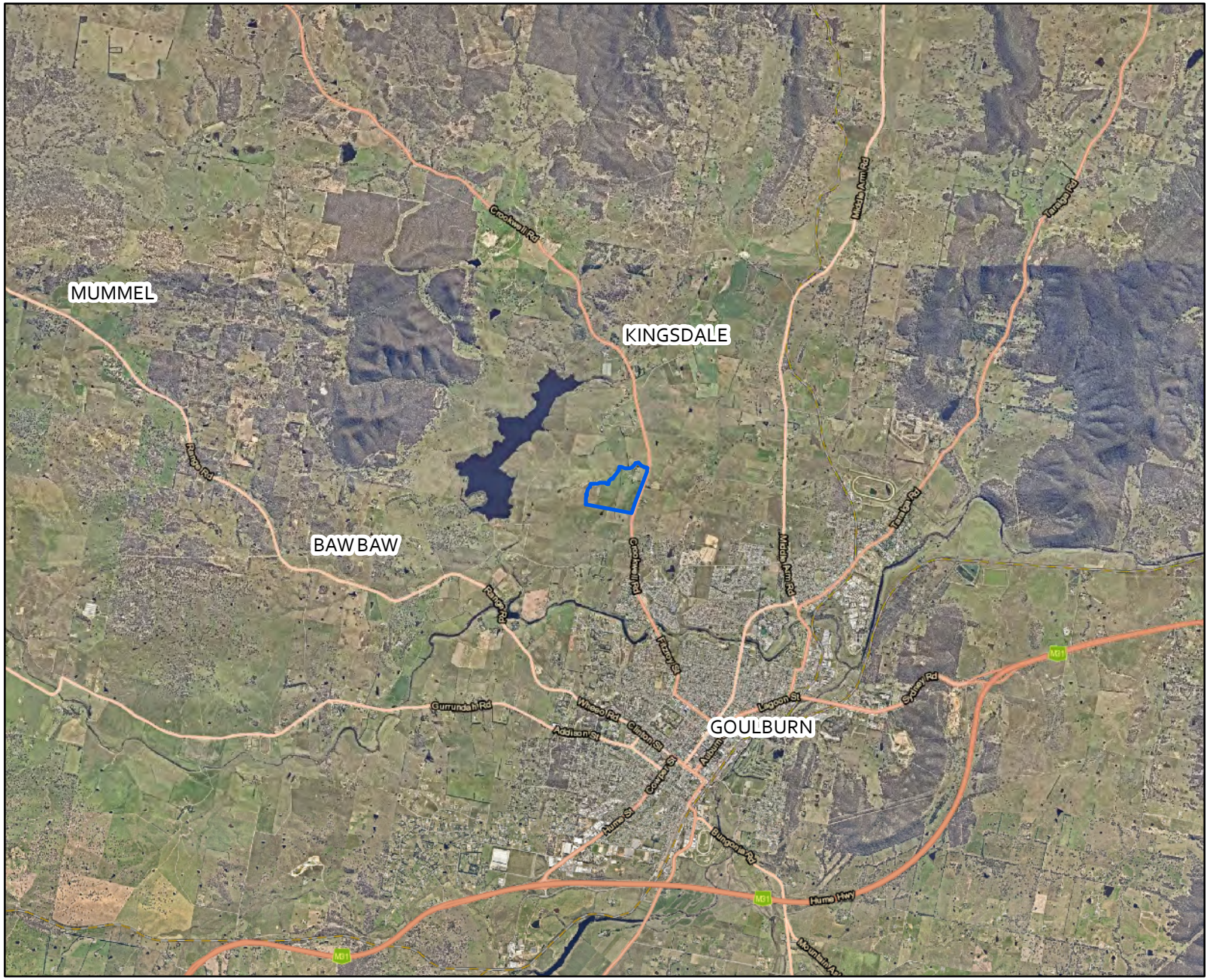

Figure 1: Regional Context

Legend

Project

N

1:100,000

0 1.25 2.5 5

Kilometers
Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

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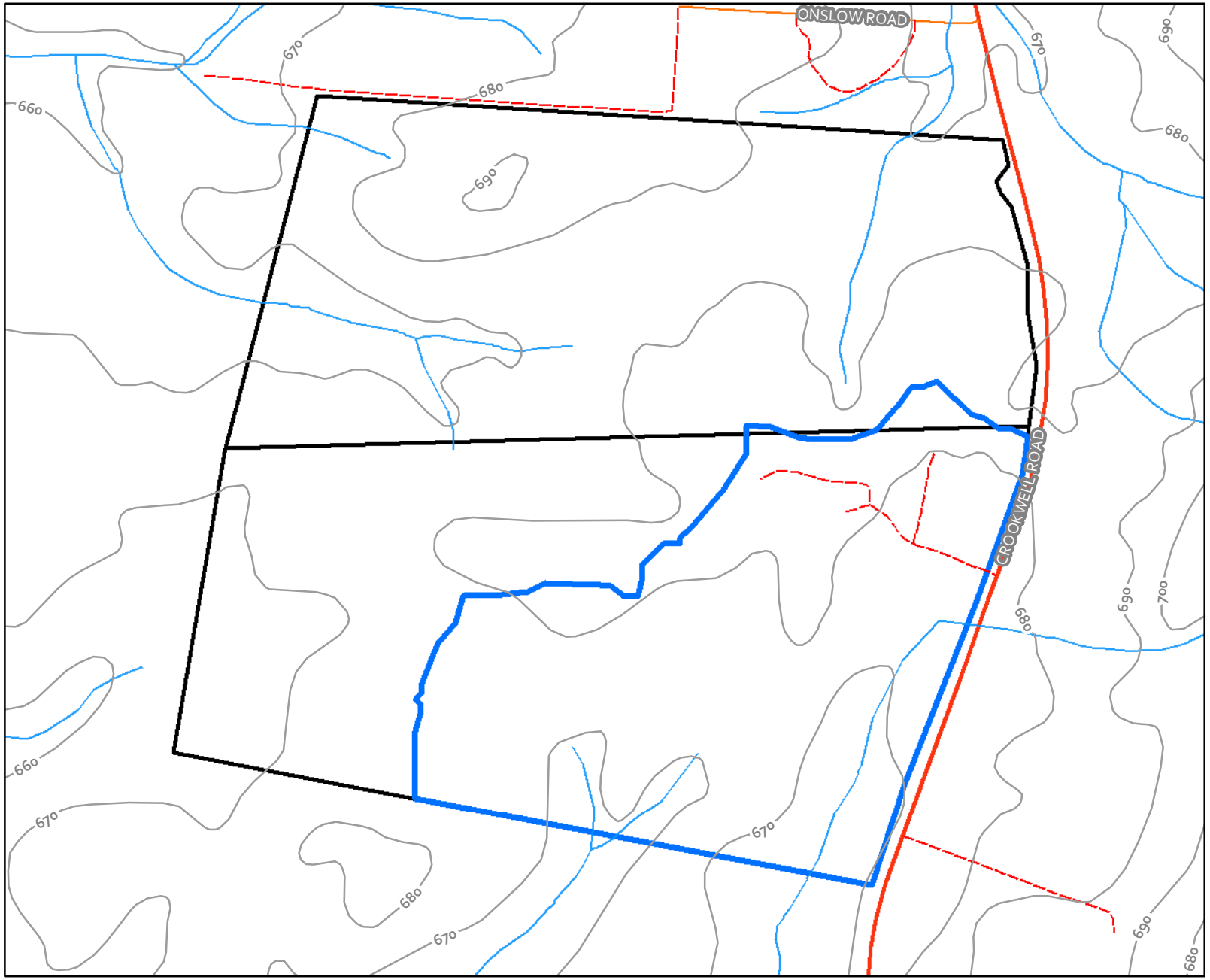

Figure 2:Project Area

Legend

- Contour -10m
- Watercourse
- Major Road
- Minor Road
- Track-Vehicular
- Project Area
- Property Boundary

N

1:10,000

0 100 200 400

Meters
Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

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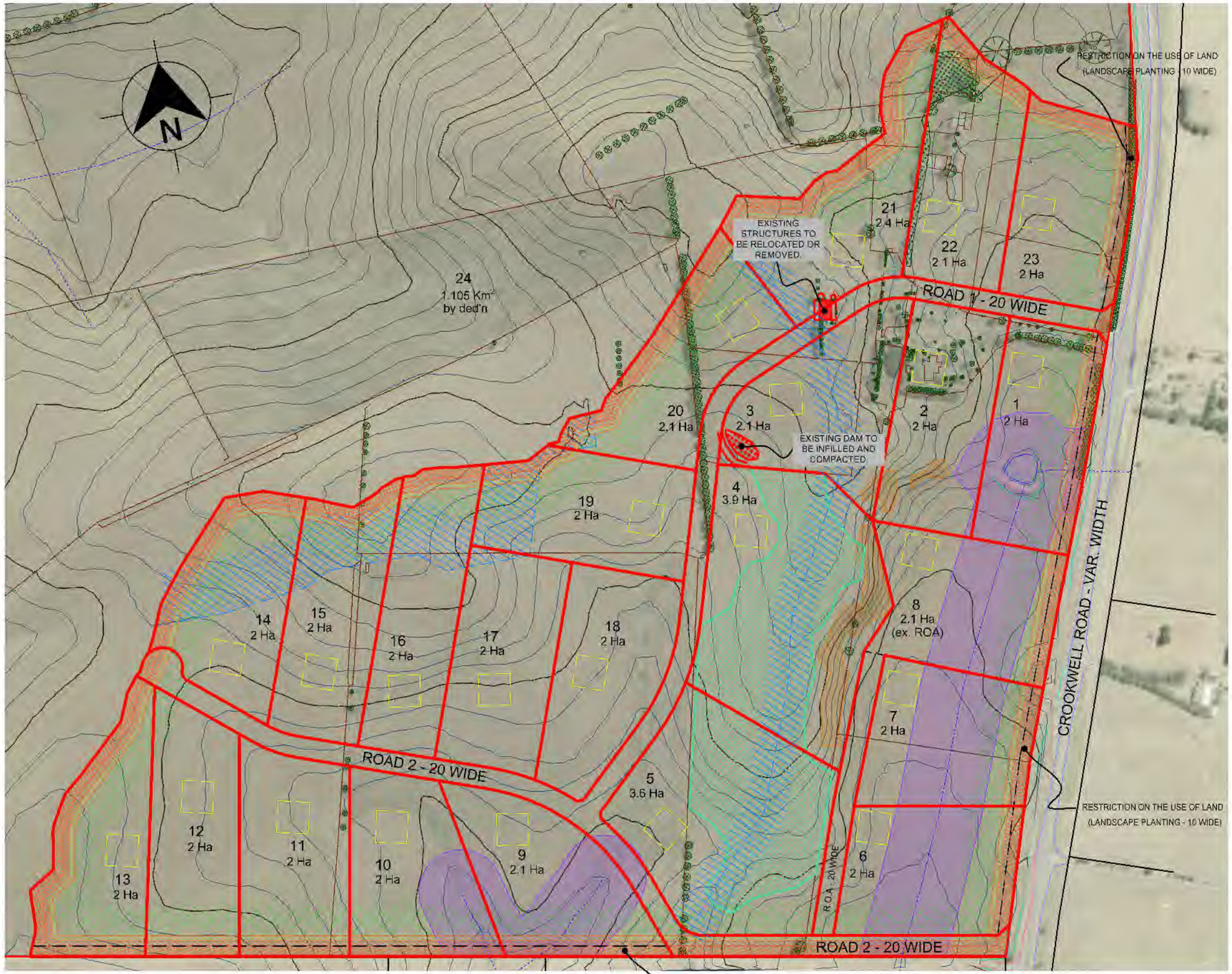
1 SK1 **LOT PLAN** NTS

KEY

- 40m EFFLUENT MANAGEMENT EXCLUSION ZONE & RIPARIAN BUFFER
- SLOPE > 20%
- SCENIC PROTECTION ZONE/ RIDGE LINE (DASHED)
- AREA OF ENDEMIC NATIVE GRASS SPECIES
- NOMINAL BUILDING LOCATION (30m X 30m) (CONTOUR INTERVAL 1m)
- AREA OF NO BUILDING (FLAME ZONE APZ)
- BAL 29 CONSTRUCTION REQUIRED
- BAL 19 CONSTRUCTION REQUIRED
- BAL 12.5 CONSTRUCTION REQUIRED



2 SK1 **PROPOSED SUBDIVISION** 1:500

NOTE:

This subdivision design was prepared as a plan to accompany a planning application. This plan is not a "Survey" as defined by the Surveying Act, 2002. If any construction and /or building location/ area computations are planned, it would be advisable to carry out further survey work to determine the boundary dimensions.
The plan should be treated as conceptual only. Lot dimensions and areas are subject to final survey. Variations may also occur dependent on requirements by council and any other authorities which may have requirements under the relevant legislation. In particular, no reliance should be placed on this plan for any financial dealings involving the proposed lot(s) and this plan should not be used for the purposes of a sales contract.
The proposed lot(s) shown may also be subject to proposed easements, either for surface, sub-surface or stratum services, and/or restrictions/ positive covenants, subject to engineering design, requirements by council and any other authority which may have requirements under the relevant legislation. This note is an integral part of this plan.

CLIENT: Mr. FRANKO PIROVIC
DRAWING TITLE: SITE DEVELOPMENT PLAN
STREET ADDRESS: 515 CROOKWELL ROAD, KINGSDALE 2580
LOT AND DEPOSITED PLAN NO: LOT 103 & 104 DP 1007433

PRECISE PLANNING
152 SAILORS BAY RD, NORTHBRIDGE NSW 2063
PH: 1300 438 232

JOB NUMBER	DRAWING NUMBER	AMENDMENT ISSUE
100113	100113-Sk1	B
SHEET SIZE: A3 SHEET	DRAWING ISSUE DATE: 11-Feb-2022	PLAN APPROVED BY: JEFF BULFIN

DRAWING SCALE: 0 5 10 15 20 25 SCALE:- 1:500

REV.	DATE	DESCRIPTION	BY
A	15/03/22	INT AL ISSUE	BW
B	02/05/22	ADD ADDITIONAL EGRESS, REDUCE LOTS	BW

1.4 INVESTIGATORS AND CONTRIBUTORS

1.4.1 Lyn O'Brien

This report has been prepared by Lyn O'Brien, Director of Past Traces Pty Ltd with over 20 years' experience in the heritage profession. Since completing her BA (Hons) in Archaeology at the Australian National University (ANU) in 1996, Lyn has held a variety of consulting positions, from field assistant through to regional manager/senior archaeologist. As a senior archaeologist Lyn has extensive experience managing major and small scale projects, conducting numerous field surveys and excavations and authoring reports across both Aboriginal and Historical archaeology.

1.4.2 Georgia Scully

Georgia is a graduate of the University of Sydney (Bachelor of Arts majoring in Archaeology 2016) and the Australian National University (Graduate Certificate of Studies, specialising in Forensic Archaeology and Paleopathology 2017). Georgia is a current Master candidate at the Australian National University. She has experience in field mapping, test excavations, salvage, artefact recording and section recording and has assisted with excavations in NSW and the ACT.

1.4.3 Nathaniel Cracknell

Nathaniel is a graduate of the University of Wollongong (Bachelor of Arts (Hons) majoring in History 2017). In 2021 he graduated with a Masters of Archaeological and Evolutionary Science, specialising in Bioarchaeology and Forensic Anthropology from the Australian National University. He has experience in field mapping, test excavations, salvage, and has assisted with excavations in NSW and the ACT.

2 ABORIGINAL CONSULTATION

Consultation with the Aboriginal community has been undertaken to assist the heritage team in assessing significance of any identified heritage sites and to provide guidance in the development of culturally appropriate management strategies. Consultation was in accordance with the *Consultation Guidelines for Proponents NSW* (DECCW 2010a). The *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* guideline (DECCW 2010a) outlines the following process to be undertaken:

- Notification of project proposal to Aboriginal stakeholders and invitation to register interest.
- Presentation of information about the proposed project and methodology to be followed.
- Gathering information about cultural significance from registered stakeholders by inviting comments, and input into management recommendations and significance
- Completion of any field work or site visits
- Review of draft cultural heritage assessment report to ensure views are adequately captured and recommendations incorporated into report.

The consultation log for the project detailing the consultation steps completed and a full list of RAPs is provided in Appendix 1. Documentation and RAP responses are provided in the Aboriginal Cultural Heritage Assessment Report (ACHAR) to which this AR is appended.

As outlined above, Aboriginal community feedback has been sought during the design of the heritage assessment methodology and findings. The RAPs for the project provided information in relation to cultural values and site significance.

The consultation steps completed are provided in the consultation log for the project attached at Appendix A. A full list of the RAPs is also provided within the consultation log. Details of the steps completed for each of the stages are provided below.

Step 1. A public notice was placed in the local newspapers, the Goulburn Post (6/10/2021) and the Crookwell Gazette (5/10/2021) seeking registrations of interest from Aboriginal stakeholders. A copy of this public notice is attached at Appendix A.

Notification letters detailing the project with a request for Aboriginal stakeholders were sent to the Pejar Local Aboriginal Land Council (LALC), and various statutory authorities including NSW Heritage and Goulburn Mulwaree Council, as identified under the consultation requirements on the 29/9/2021. Following feedback from NSW Heritage, notification letters were then sent to identify stakeholders on the 2/11/2021 with a 14-day registration period of interest ending on 16/11/2021.

In response to the public notice and notification letters, eleven (11) groups registered their interest in participating in the project and holding cultural connection to the project area. The Aboriginal stakeholders who registered for the project (the Registered Aboriginal Parties – RAPs) and the date of their registrations are as follows:

- Murrabidgee Mullangari Aboriginal Corporation (8/11/2021)
- Didge Ngunawal Aboriginal Corporation (2/11/2021)
- Corroboree Aboriginal Corporation (2/11/2021)
- Goobah (8/11/2021)
- Thunderstone (10/11/2021)
- Muragadi Aboriginal Corporation (5/11/2021)
- Yurwang Gundana (8/10/2021)
- Pejar LALC (2/11/2021)
- Freeman and Marx (2/11/2021)
- Konnango (3/11/2021)
- Woka (2/11/2021)

Step 2. Project pack containing further details and mapping of the project was sent to each RAP on the 22/11/2021.

Step 3. A Methodology Pack outlining the proposed methodology to be followed for the project was sent to all RAPS for review on the 25/11/2021 with a closing date of 16/12/2021. RAPs were invited to provide comments on the proposed methodology and to provide any information that they may hold in relation to the cultural values of the project area.

Step 4: Field survey was undertaken on the 17/01/2022 to 19/01/2022 with the participation of the Pejar LALC and Yurwang Gundana.

Step 5. A draft version of this report was supplied on the xx to the RAPs with a timeframe of 28 days to provide feedback on the report and suggest amendments.

2.1 ABORIGINAL COMMUNITY FEEDBACK

Throughout the life of the project Aboriginal community feedback has been sought in regards to the methodology to be undertaken and the results of the heritage assessment. No information has been provided showing that the project area holds specific cultural values or that known heritage sites are located within the project area that have not been identified during the heritage assessment or by previous studies.

All responses received from the RAPs have been incorporated into the final report, with RAPs making the determination on the long-term curation of artefacts and ongoing mitigation measures.

3 ABORIGINAL ARCHAEOLOGICAL CONTEXT

A desktop assessment has been undertaken to review the existing archaeological record for the project area, and the wider Goulburn region in accordance with Requirements 1 to 4 of the Code of Practice. This information has been used to identify previously recorded sites and to develop an Aboriginal site prediction model for the project area.

3.1 ABORIGINAL GROUPS WITHIN THE PROJECT AREAS

Within the Goulburn region two major language groups were identified by Norman Tindale in his seminal work on Aboriginal tribal boundaries. There were the Gundungurra (Gandangara) to the north of Goulburn, and the Ngunawal (Ngunnawal) also known as the Yass tribe, Lake George Blacks or Molonglo tribe to the south. The boundaries of the Ngunawal ran to the south-east where they met the Ngarigo at the Molonglo and the Wiradjuri in the Yass region (Tindale 1974). This distribution with minor amendments is still accepted and the review of tribal boundaries undertaken in the 1990s (Horton 1996) confirmed these earlier boundary locations.

The Ngunawal and Gundungurra languages are closely related with a shared majority of words but with a difference in syntax (Koettig and Lance 1986:13). This similarity can either be a result of long contact between the two groups or as a result that Matthews, one of Tindale's main source of information, was not working in the region until the 1890s when the Aboriginal people of the area had already been impacted by the results of white settlements and groups had merged together following the impacts of disease and disruption of traditional lifeways (Flood 1980:27).

The Goulburn region has many early settlers accounts of the traditional lifeways of the aboriginal community. These recorders lived in the area during the early 1830's and recorded many aspects of Aboriginal life. Some of the best sources for observations of the Indigenous inhabitants of the region are Bennett (1834). MacAlister (1907) and Govett (1977). Their observations must be viewed as from a white perspective and filtered through their cultural traditions but they provide a glimpse of a functioning hunter and gatherer lifestyle with a cycle of repeated visits to areas at times of seasonable resource availability and a ceremonial life that imposed duties and responsibilities on members of the group.

MacAlister records that three tribes resided in the district, the Cookmai or Mulwarrie (Mulwaree), the Tarlo, and the Burra Burra (MacAlister 1907:82). MacAlister notes that Aboriginal people travelled from the Lachlan River to visit Goulburn (1907:82). Larger gatherings of Aboriginal people were recorded at Rocky Hill near the East Goulburn Church of England, the old railway quarry on the Wollondilly River, Mulwaree Flats near the historic brewery, the All Saints church in Eastgrove and the Goulburn Railway Station (AMBS 2012:13, Tazewell 1991:243, Wyatt 1972:111-112).

The flat, rolling topography of the Goulburn region and the lack of natural physical barriers would have facilitated contact and movement through the region and the surrounding Aboriginal people. Lhotsky in 1834 crossed the Breadalbane Plains meeting a party of approximately 60 Aboriginal people at Fish River. This group told Lhotsky that they travelled as far as Goulburn and Yass Plains but not so

far as Limestone (Lhotsky 1979:104-105). At a large gathering at Bathurst in c.1837 Aboriginal people were present from Goulburn, the Monaro and as far away as the Hunter Region (Boswell 1890:7-8).

Disease followed the settlement of the area and may have preceded it with the smallpox epidemic originating in Sydney in 1789 possibly spreading throughout the region (Flood 1980:32). This disease would have decimated the Aboriginal population and was followed by Influenza in 1846. The notable decline of the number of the Aboriginal people was noted in 1845 at Bungonia and in 1848 at Goulburn by the Bench of Magistrates (Tazewell 1991: 244).

3.2 PREVIOUS ARCHAEOLOGICAL WORK

Heritage assessments have been undertaken in increasing frequency due to the level of increased development within the Goulburn region and increased legislative requirements within NSW. As a result a number of cultural heritage surface surveys and sub-surface excavations have been conducted throughout the Goulburn region. Review of this body of work allows for the development of regional settlement models; landscape usage; the use of resources; group movements; and site locations for the region.

3.2.1 Regional Overview

The Project Area is located in the Goulburn Plains within the Southern Tablelands. Regional models of Aboriginal landscape and resource use, along with models of intensity of utilization and number of Aboriginal occupants have been developed for the Goulburn region (Koettig and Lance 1986, Fuller 1989).

A number of Aboriginal cultural heritage investigations have been conducted for the Goulburn region. Models for predicting the location and type of Aboriginal sites with a general applicability to the Goulburn region and thus relevant to the Project Area have been formulated. These assessments have shown a general concentration of large sites adjacent to water bodies and sand bodies with smaller sites distributed in proximity to permanent water ways (Fuller 1989, Packard 1986, Koettig 1983). Due to the large number of studies, only the most relevant of these studies are summarised below.

Koettig in 1983 completed a large-scale surface survey for the Hume Highway bypass of Goulburn, locating 22 artefact scatters and 17 isolated finds. All of Koettig's sites were located within 200m of a watercourse and it was concluded that small sites tended to be located near smaller creeks with larger sites at the verges of larger watercourses. Fifty-four percent of sites were located on slopes with 23% on ridges and creek flats.

Koettig and Lance in 1986 undertook the Aboriginal Resources Planning Study for the City of Goulburn. Based on all available data they developed an Aboriginal site location model for Goulburn. Four landscape zones based on topography (major watercourse, undulating hills and plains, hills and residential areas) were assigned archaeological sensitivity ratings. A review of previously identified sites within the Goulburn region found the majority of these sites are located on basal slopes close to major waterways, with most sites consisting of small artefact scatters.

Fuller in 1989 was engaged by Goulburn City Council to test Lance and Koettig's 1986 model by undertaking sub surface testing at areas designated high sensitivity by the model. The results of this large excavation program, although supporting the overall model, concluded that all areas apart from major watercourses were of low potential and that further subdivisions were necessary in the undulating hills category if it was to be useful for predicting site locations. Fuller's refined model is shown in table 1.

Paton in 1990 undertook investigations for the Goulburn By pass and excavated site 51-6-0021, recorded by Koettig in 1983 as G17, on the eastern banks of the Mulwaree River. He excavated in excess of 15,000 artefacts within a section of the site due to be destroyed by the construction of the Hume Highway. His analysis concluded that Quartz made up 85% of the assemblage with silcrete (10%), chert, quartzite and volcanics making up the remainder. He interpreted the site to be a regularly visited base camp on the banks of the river providing access to resources across the region. The location of a large site within this context conformed to the revised model of Fuller (1989).

Table 1: Fullers 1989 Site Distribution Model

Zone	Landform	Sensitivity	Significance
1	Major Watercourses	High	High
2a	Lower slopes adjacent to major watercourses	High	Moderate
2b	Gently undulating land or plains	Low	Low
2c	Hills – Low (<700m AGD)	Medium	Low
2d	Hills – Moderate (700-750m AGD)	Low	Low
2e	Hills – High (>750m AGD)	Low	High
3	Hill Tops	Low	High
4	Built up areas	Medium	Low

Fuller's system can best be explained in that sensitivity refers to the likelihood of a site occurring, and significance refers to the importance of the site when identified.

Australian Archaeological Survey Consultants (AASC) in 1993 undertook the archaeological assessment of the proposed Telstra optical fibre cable route from Goulburn to "the Forest" covering a total distance of 5km of linear survey. This survey crossed a variety of landforms consisting of Marys Mount AR 11 undulating hills, creek lines and flats. The survey resulted in the identification of three surface scatters, four isolated finds and one possible scarred tree. The majority of artefacts were flakes constructed on quartz and chert with a small proportion of silcrete.

Bowen Heritage Management (BHM 2000) undertook surveys for the proposed 11ha industrial estate in Ross Street Goulburn locating one small artefact scatter of two artefacts. These were located approximately 20m above the Wollondilly River in the river flats on a walking track linking the Wollondilly River to the powerline easement. BHM classified the area as holding moderate potential but as highly disturbed by its previous use as a golf course.

Navin Officer (2003) conducted cultural heritage assessment for the proposed Pictura Tourist Complex in Goulburn. The study area was located on a broad spur line and ridge and consisted of mid and upper slopes. A creekline bisected the northern corner of the 17 ha property. One low density surface scatter was located on the spur line upper slopes and over 700m from the watercourse.

Williams in 2004 undertook a surface survey for the Tall Timbers Residential Development in south east Goulburn for the Greater Argyle City Council. He located one large surface scatter (51-6-0123) with approximately 300 artefacts. The site consisted of dispersed artefacts across the entire study area. Being on upper undulating slopes close to a watercourse Williams considered the area to possess high potential for sub surface artefacts but since these artefacts were in a disturbed location, they had low archaeological significance. This disturbed context was the result of the installation of below ground services for the residential development prior to the survey and assessment being undertaken. The area overlooks the Mulwaree River Flats, a rich resource area and was noted to be an attractive place to camp.

Heritage Concepts in 2004 completed a Cultural Heritage Risk Assessment for a development at 48 Common Street Goulburn on behalf of Parsons Brinckerhoff. Three low density artefact scatters and two isolated finds were identified across the 15ha study area. Heritage concepts followed the predictive modelling of Fuller 1989 following review of work undertaken since the 1980s when the model was formulated. They concluded that the model was vaild and the sites were located within Fullers (1989) category 2a – Undulating Hills and Plains – Lower Slopes. No sub surface testing was undertaken to confirm the presence or absence of sub surface deposits and the sites were classified as low significance.

New South Wales Archaeology was commissioned by Laterals Planning in 2007 to undertake an Aboriginal archaeological assessment of a proposed subdivision of five rural residential lots in Kingsdale. During a survey that was conducted across a range of landforms, total of 13 Aboriginal artefact locales were recorded with 153 artefacts. The predictive model followed from Fuller (1989). The majority of artefacts were found on either spur or ridge crests, and small artefact locales were located on basal slopes and creek margins. Overall low density artefact distribution was explained by most likely people moving through country for a variety of purposes including hunting and gathering forays, but not on long term or repeated basis.

Mills Archaeological and Heritage Services Pty Ltd undertook an Indigenous Heritage Assessment of a Powerline easement from the Rocky Hill Substation to the North Goulburn Sub station in 2009. This assessment identified eight Aboriginal sites and five European sites. The assessment explicitly states that it follows the landform predictive model of Lance and Koettig (1986) and Fuller (1989). The study area ran to the east of the Marys Mount Project Area approximately 2km distance. This study was

followed by sub surface testing of the proposed route with additional small density sites being located within the footslopes above a tributary of Gundary Creek, within 600m of the creekline.

Ironbark heritage in 2010 undertook field survey and research over the area of proposed development at Marys Mount Road in Goulburn. The original surveys were undertaken in 2005 but then the project halted. They completed the 2010 survey without relocating the 2005 sites and concluded that the area held moderate potential along the creek line for subsurface deposits.

AMBS in 2012 undertook an Aboriginal Heritage Study for the entire Goulburn Mulwaree LGA for the Goulburn Mulwaree Council. This study followed on from the work of Lance and Koettig (1986) and Fuller (1989) and assessed the general importance of different landforms to the Aboriginal community and their sensitivity for archaeological potential. Previous work undertaken within the Goulburn region was concluded to support the predictive model of Fuller, finding that the model was still applicable. The findings of Fuller were used as the basis for classification of landform potential for predictive archaeological sensitivity mapping within the boundaries of the LGA.

Following the Ironbark 2010 assessments, Biosis in 2013 completed a program of field survey and test excavations through the current project area for residential development. The field survey did not identify any heritage sites and could not relocate the previously identified three sites recorded in 2005 by Ironbark. Areas of potential along the creek flats were sub surface tested with nil deposits in all testpits. As a result of this extensive testing, it is known that no areas of PAD are present within the project area. A finding of low potential for any harm resulted and an AHIP was granted allowing impacts to occur to the three previously recorded sites.

In 2021, Past Traces was commissioned to survey and investigate the proposed development of Lot A DP 912692 and Lot 11 DP912247 on Marys Mount Road, Goulburn NSW. Three Aboriginal Heritage sites were identified (51-5-0684, 51-5-0685, 51-5- 0686) all consisting of isolated finds or small artefact scatters above a tributary creekline within the project area.

Numerous other development-based assessments have been completed for the Goulburn area. These numerous studies have over the years provided a body of work supporting the broadscale predictive model ground tested and refined by Fuller (1989) for the Goulburn Plains.

3.3 AHIMS SEARCH AND SITE ANALYSIS

A search of the NSW Heritage AHIMS database was undertaken on the 28 January 2022 covering the GDA94 coordinates 745416. 6154736 to 748194. 6155772. This area includes the approximate 1km surrounding area centered on the project area. The extensive search revealed no previously recorded heritage sites within the project area with no sites identified in the wider search area of 1km.

4 LANDSCAPE CONTEXT

4.1 GEOLOGY AND TOPOGRAPHY

The Project Area covers an area of lower slopes and valley flats and is bisected by an ephemeral drainage line. No running water crosses this area and no incised creek line is present. This drainage line drains into the Wollondilly River, and forms part of the Wollondilly catchment area. During wet periods this is a wet marshy area which dries quickly after rain and is dry through summer. It does not provide a water source except in times of floods. The underlying geology of the Project Area consists of the Silurian aged Forest Lodge Quartz overlaying the Rhyanna Formation of the Mount Fairy Group. The Mount Fairy Group is a term used to describe an undifferentiated sequence of shale, greywacke, sandstone, tuff and limestone. The Rhyanna Formation is a Silurian intrusion and consists of thin to medium bedded siltstone interbedded with silicified vitric and felsic tuff (Thomas et al 2002). The Silurian intrusion is embedded within Ordovician and Devonian extrusions. The Geology of the project area is shown on Figure 3.

4.2 SOILS

The soil of the Project Area is classified by Hird (1991) as Sooley and occurring between Goulburn City and Sooley Dam. Alluvial soils are present on the lower slopes and along the creek flats. Within these alluvial soils the upper horizons consist of a weak clay loam lithosol, underlain with mottled reddish brown strongly structured clay and mottled dark brown clay. These soils are alkaline to neutral and are not highly erodible. Soils have formed *in situ* and from alluvial-colluvial material derived from the parent rock and are considered to be stable (Hird 1991). A process of aggradation on the creek flats and lower slopes with these alluvial and colluvial inflows along the area of stream flows. The soil landscapes of the Project Area are shown in Figure 4.

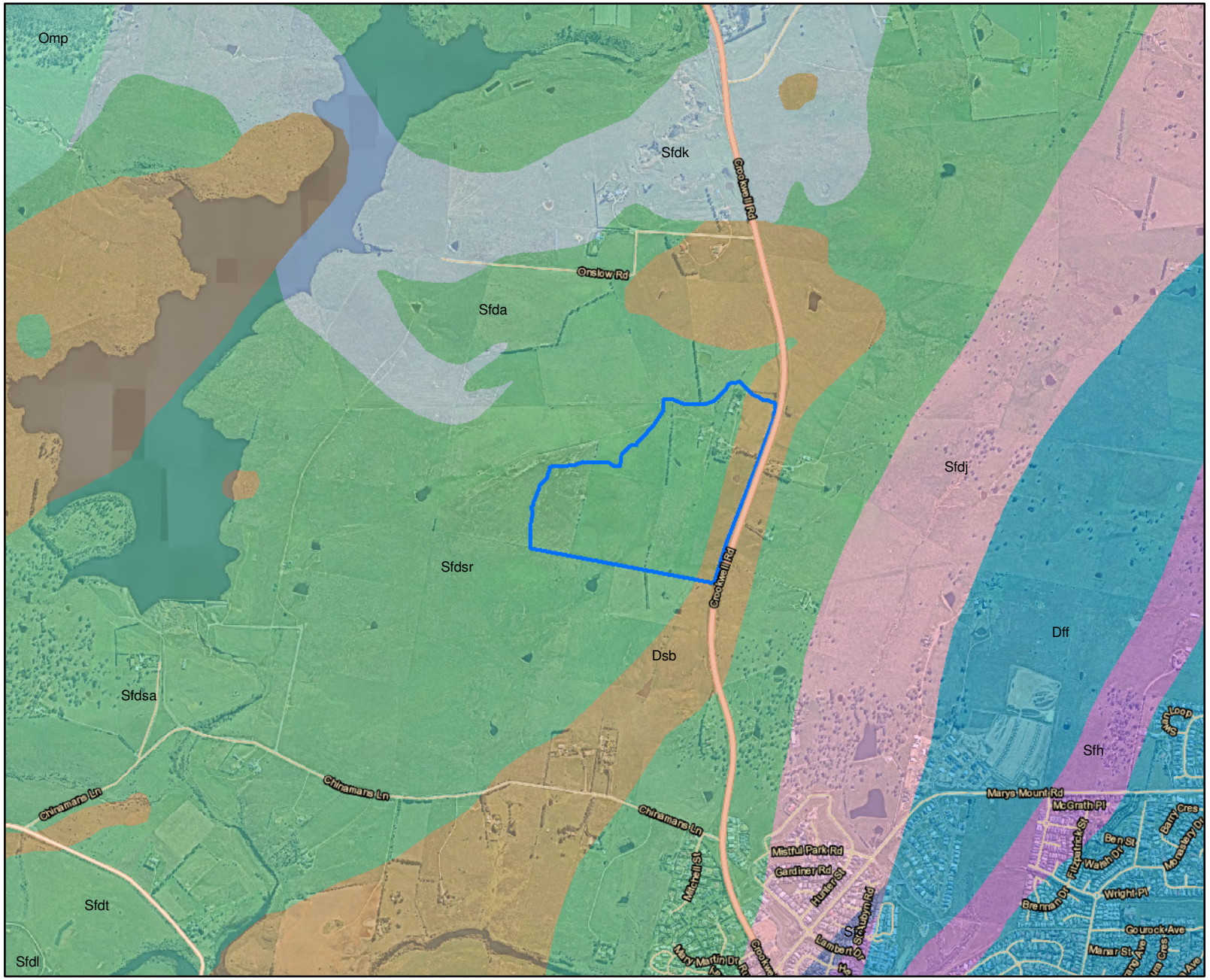


Figure 3: Geology

Legend

- Project Area

Geology

- Kingsdale Limestone Member
- Poidevins Sandstone
- Bishopthorpe Dolerite
- Covan Creek Formation
- Forest Lodge Quartz
- Joppa Siltstone Member
- Rhyanna Formation
- Unnamed

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Kilometers
Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

PastTraces Heritage Consultants

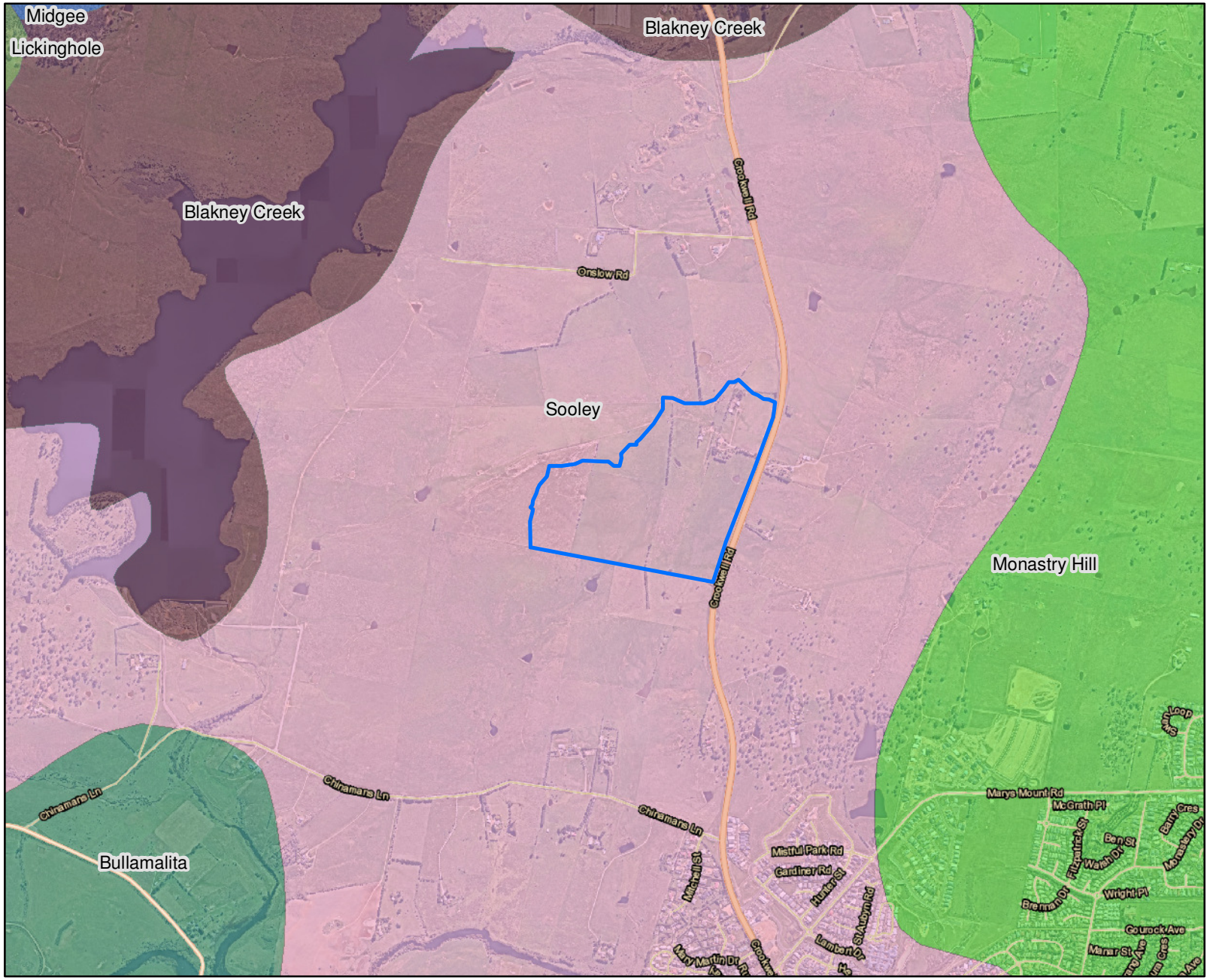

Figure4: Soils

Legend

- Project Area

Soil Landscape

- Blakney Creek
- Bullamalita
- Lickinghole
- Midgee
- Monastry Hill
- Sooley

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Kilometers
Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

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4.3 FLORA AND FAUNA

The Project area is a highly modified landscape currently consisting of improved pasture grasses, weed species and cleared native trees. A drainage line runs north to south through the east portion of the project area which may hold water following wet weather but generally is dry with wetter areas. In the past this area, may have supported a wet tussock grassland community.

Prior to clearance areas close to the drainage line would have consisted of grasslands as would have the lower slopes. On the mid to upper slopes, previous woodlands would have provided shelter for Aboriginal groups and a wider range of resources would have been present. Prior to clearing of these mid to upper slope areas, the landscape would have supported savannah woodland communities. As a result of this landscape the project area would have provided resources utilised by the Aboriginal community, with higher areas of resource and focus located away from the project area in closer proximity to the Wollondilly River and Lake Sooley, located to the south and west respectively.

4.4 LANDSCAPE CONTEXT

The Project Area has been used historically as a part of larger pastoral holdings. Pastoral impacts in the form of vegetation clearance, ploughing, pasture improvements, stock impacts, dam construction, irrigation infrastructure and increased erosion followed routinely from the inception of pastoral practices and will have affected the preservation of archaeological sites and deposits.

The project area conforms to a low potential area based on Aboriginal site distribution modelling by Fuller (1989). Fuller's model, which has been shown by numerous studies to be valid, indicates that Aboriginal occupation was focused around major watercourses and nearby landforms, such as lower slopes, with cultural material appearing less frequently on other landforms. As a result, the context of the landscape of the project area would be of infrequent visitation or passing impacts as groups travelled through to areas of denser resources.

4.5 PREDICTIVE MODEL

Predictive modelling has been undertaken to broadly predict the type and location of Aboriginal cultural heritage sites within the boundaries of the project area. The model is based primarily on Fuller's (1989) prediction models, the landforms present within the project area and the degree of disturbance which has occurred historically. Based on this information, a predictive model has been developed for the project area (Table 2). The definition of each site type is described firstly, followed by the predicted likelihood of this site type occurring within the Project Area.

Table 1 Site Prediction Model

Probability	Site Type	Definition	Landform
Moderate to low	Isolated finds and surface scatters of stone artefacts	Stone artefacts ranging from single artefact to high numbers	Creek lines and spur crests – Several ephemeral watercourses present
Moderate to low	Potential Archaeological Deposits (PADS)	Area considered on landform to hold higher potential for unidentified subsurface deposits	Varies, but most frequent on elevated terraces along creek lines and spurlines.
Low	Culturally Modified Trees (CMTs)	Trees which have been modified by scarring, marking or branch twining	May be present on old remaining trees - previous clearing has removed most old-growth trees
Nil	Rock Engravings	Images engraved on flat rock surfaces	Escarpments, rock platforms or rock shelters - not present
Nil	Stone arrangements	Arrangements of stones by human intention, including circles lines or patterns.	Crest lines or large ceremonial areas on creek flats - not present
Nil	Stone quarries/Ochre sources	Quarry sites where resources have been mined.	Any landform that has not been disturbed – not present
Nil	Axe grinding grooves	Grooves in stone caused by the grinding of stone axes	Usually in creek lines, as water is used as abrasive with sand - not present
Nil	Burials	Burials of Aboriginal persons	Usually requiring deep sandy soils on eastern facing slopes – not present
Nil	Aboriginal places	A place that hold spiritual, traditional or historical significance to Aboriginal people	Any landform, identified through consultation with RAPs and historical sources

Areas of moderate potential may be present in the sections of the project area overlooking the creek lines (terraces or spur lines) and in the vicinity of spur line crests (if broad). Determination of the area of potential and degree of disturbance in these areas was one of the major aims of the site visit and field survey.

4.6 LANDFORM AND DISTURBANCE LEVEL ASSESSMENT

The landforms within the project area consist of gently undulating hillslopes. Descending spurline crests (ridgelines) are present in the southern section of the eastern portion. Water sources are present in the form of drainage lines which eventually feed into the Wollondilly River (a central 1st order waterway) at the base of slopes. Within the project area no permanent water source is present.

The project area has been impacted by European settlement from the mid nineteenth century. The project area has as a result been under continual grazing and pastoral regimes over a lengthy period of time. These past use impacts are typical for the Goulburn and Southern Tablelands region and consist of the following:

- Vegetation and tree clearance
- Stock impacts
- Fencing
- Vehicle tracks – some consisting of minor roads, other of impact trails
- Extensive impacts in areas of housing including landscaping
- Construction of dams, sheds, outbuildings and yards
- Ploughing of topsoils for pasture improvement or light cropping.

All of these landscape and soil impacts reduce the potential for archaeological or heritage sites to remain intact within the landscape. Confined areas of disturbance are present at gates and along fence lines. Exposed ground is present in areas of stock impact, vehicle tracks, fence lines, under trees and large areas of erosion.

Review of previous reports and Aboriginal sites located in the vicinity indicates a site location model based on level areas in proximity to water resources such as creek lines with smaller sites located on hilltop ridgelines. The study area consists of undulating hill slopes classified as holding a low overall potential for heritage sites. A ridgeline above a drainage line is present in the eastern section which is assessed to hold moderate potential for unrecorded heritage sites based on predictive modelling.

As a result of the landform assessment the study area contains low potential to contain any unrecorded heritage sites or areas of PAD and has suffered a high to moderate degree of previous impact.

5 ARCHAEOLOGICAL FIELD SURVEY

A field survey of the project area was undertaken on the 17th to 19th January 2022 by Georgia Scully and Nathaniel Cracknell (Past Traces) to verify the findings of the desktop review of landforms and disturbance.

Pejar LALC & Dean Bell (Yurwang Gundana) attended, but due to circumstances, Mr. Bell could not be present on the third day. The aim of the investigation was to identify heritage objects or places of potential archaeological Deposit (PAD) located within the project area and assess the potential impacts from the project.

All surveyed areas and items of interest were recorded on a topographic map of the study area (using a GPS and GDA 94 coordinates), along with levels of visibility, erosion, soil conditions, and evidence of land disturbance.

Ground surface visibility (GSV) is the percentage of ground surface that is visible during the field inspection through the grass and vegetation coverage. GSV increases in areas of exposures such as stock impact trails, roads, gates and along areas of erosion such as creek banks and dam walls. As a result surveys undertaken in areas with high exposure rates result in a more effective survey coverage.

The field survey aims and sampling strategy are provided below.

5.1 ARCHAEOLOGICAL SURVEY AIMS

The principle aims of the survey were to:

- Provide an opportunity to view the Project Area and to identify/confirm landforms, areas of potential and levels of previous disturbance.
- Complete pedestrian transects of the Project Area visually inspecting areas and landforms with the potential for Aboriginal heritage.
- Identify and record any heritage sites visible on the ground surface.
- Identify and record areas of potential archaeological deposits (PADs).

5.2 FIELD SURVEY SAMPLING STRATEGY

The project area covers a range of landforms. The predictive model indicates a significant difference in the potential among the different land forms, particularly with distance from small creek ephemeral creek lines and lower potential along the long side slopes. Despite this difference, the survey aimed to achieve the greatest coverage possible of all landforms and Survey Units (SU). All landforms within the project area were sampled during the field survey though ground surface visibility (GSV) varied due to grass length and erosional exposures at the time of survey.

The project area consists of undulating lower, middle and upper slopes with descending spur crests across the upper and middle slopes, as well as an area of creek flats in SU 7 & 8 to the east. Two first

order drainage lines (ephemeral) run south before converging and continuing to a constructed farm dam.

Survey Units were based on fence lines divisions. The commencement point of each SU was accessed by pedestrian transects completed (walked) across the SU returning to the vehicle location. As a result the project area was divided into 11 main survey units. The distribution of survey units, landforms and pedestrian transects is shown in Figures 5 and 6.

The distribution of landforms within the project area is provided in Table 3 and Figure 6.

Table 3. Landforms across the Project Area

Landform	%	Grand Total (m2)
Drainage Line	1.81%	10,080
Lower Slope	16.61%	92,280
Middle Slope	81.58%	453,340
Grand Total	**100%**	555,700

5.3 FIELD SURVEY METHODS

The archaeological survey was conducted on foot in accordance with the archaeological survey requirements of the Code of Practice (DECCW 2010) by Georgia Scully & Nathaniel Cracknell (Past Traces) with the participation of two members of the RAPs. Pedestrian transects covered all sections of the study area and participants were spaced at approximately 10m distance.

Close attention was given to areas of higher potential based on landform and erosional exposures during the survey. All surveyed areas and items of interest were recorded on a topographic map of the study area, along with levels of visibility, erosion, soil conditions, and evidence of land disturbance.

Information that was recorded during the survey included:

- Aboriginal sites identified during the survey
- Survey coverage.
- Natural resources utilised by Aboriginal people.
- Landforms
- Photographs of the project area
- Ground surface visibility (GSV) and areas of exposure.
- Levels of disturbance

5.4 ARCHAEOLOGICAL SURVEY RESULTS

Field survey was conducted during January 2022 with pedestrian transects aimed to cross different landforms and provide coverage of all landforms and areas of identified potential. The survey was undertaken at a time when surface visibility was extremely low across the project area and grass length was extensive and high, in some sections over hip height. Regular exposures were only present along the vehicle tracks and gates. Various confined stock impact tracks were present across the grassed areas with stock present at the time of survey. In the west of SU11, an ephemeral drainage line provided an erosional exposure. The locations of the pedestrian transects and landforms across the project area are shown in Figures 5 and 6.

5.4.1 Ground Surface Visibility (GSV) and Levels of Disturbance

Ground Surface Visibility (GSV) is the percentage of ground that can be visibly assessed. GSV varies by the degree of grass coverage across the ground surface, presence of leaf litter, branches and the presence of natural gravels. Exposures are areas that provide high levels of GSV and usually result from erosion, stock impacts, clearing, previous construction or vehicle trails. The higher the rate of exposures and the background GSV of a survey unit the higher the effectiveness of the field survey. The GSV and exposure rates were estimated based on the guidelines in the *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010b).

Background GSV varied through the project area, due to the degree of erosion and grass coverage. GSV was highest along the areas of vehicle access. GSV was lowest along the slopes and descending spur lines and crest features. Grass coverage was extensive and GSV was generally estimated at 20%. Areas of erosion were present in association with dam features, due to stock impacts and along vehicle tracks, particularly in SU4. Small areas of exposure were present at gate locations as well as along the vehicle access tracks, but outside of these small sections, the project area consisted of long, extensive grass coverage.

The GSV, degree of disturbance and rate of exposures for each Survey Unit is provided in Table 4. Plates 1 to 6 show indicative areas of landforms and exposures within the project area.

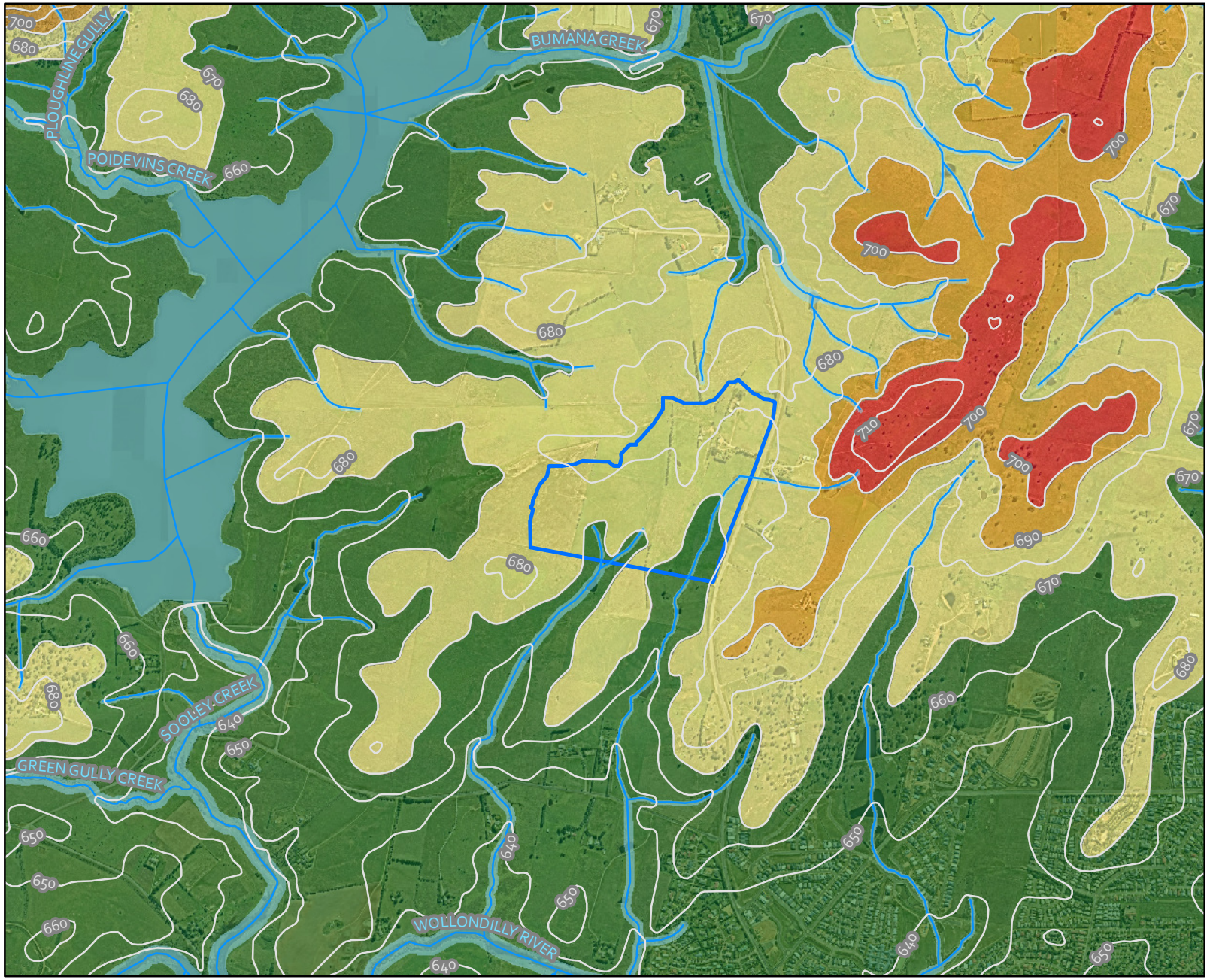

Figure 5: Landforms

Legend

- Contour -10m
- Watercourse
- Project Area

Landform

- Crest
- Upper Slopes
- Middle Slopes
- Lower Slopes
- Drainage

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Kilometers
Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

PastTraces Heritage Consultants

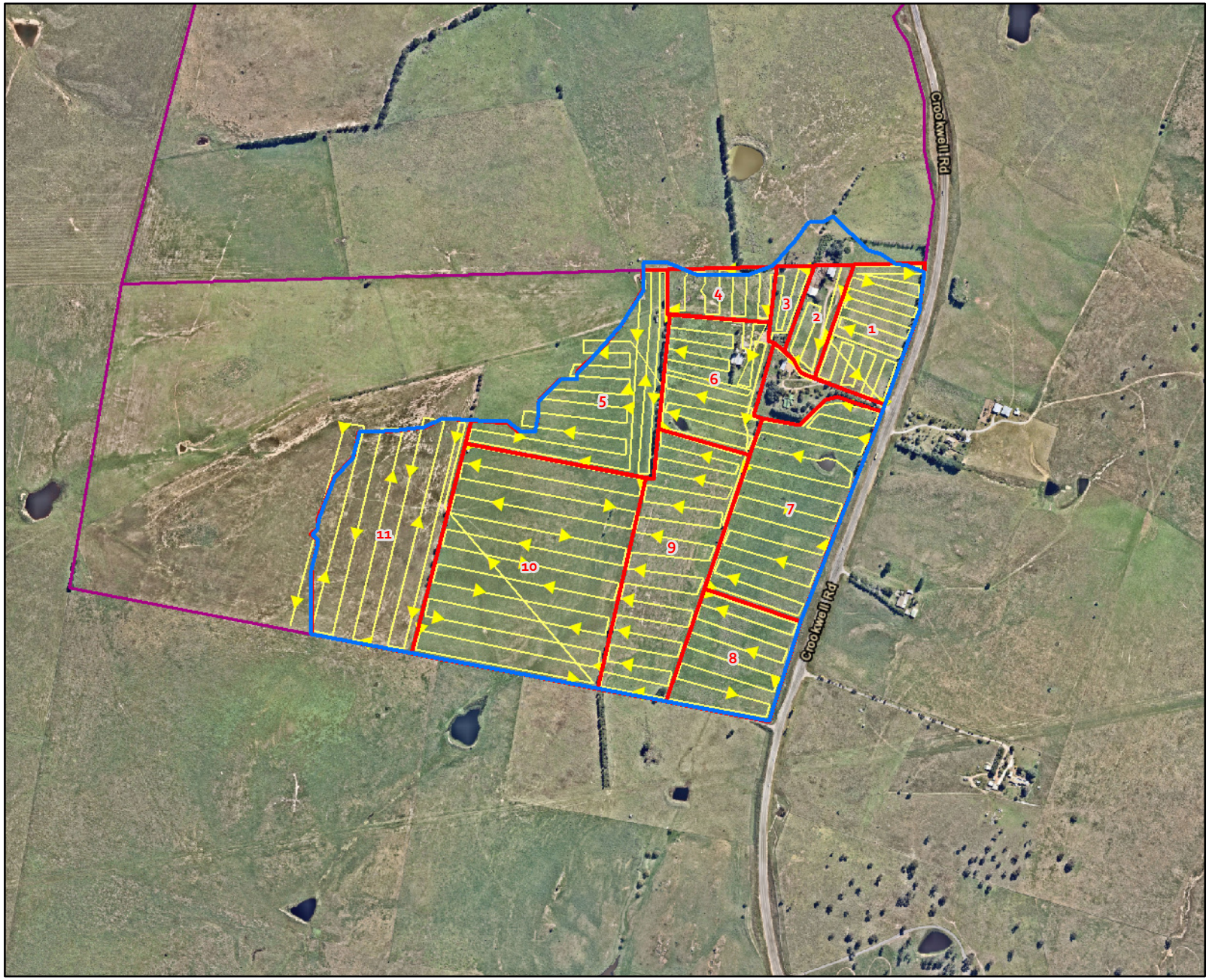

Figure 6: Survey Units and Transects

Legend

- Transect Survey
- Survey Units
- Project Area
- Property Boundary

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0 100 200 400

Meters
Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

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Table 2. Ground Surface Visiblity Rating

Survey Unit	GSV	Exposure Rate	Degree of Disturbance	Mechanism of disturbance
SU1	20%	10%	Moderate	Vegetation clearing in past, animal impacts, previous grating and moving of large rocks
SU2	20%	30%	High	Shearing shed, stock yards, farming infrastructure and introduced gravel road-base
SU3	30%	30%	High	Vegetation clearing in past, animal impacts, with small sheds
SU4	50%	50%	High	Eroded vehicle tracks, farming equipment, burn piles and piles of debris
SU5	40%	10%	Moderate	Piles of introduced dirt in the north, with the rest of the SU impacted by animal impacts and vehicle tracks
SU6	10%	20%	High	Vegetation clearing in past. Grass coverage with several erosion exposures. Numerous stock impact trails, vehicle tracks, a dam as well as sheds
SU7	10%	30%	Moderate	Numerous stock impact trails and erosion on western slopes with a concrete foundation, steel structure irrigation tower
SU8	10%	30%	Moderate	Vegetation clearing in past, confined areas of erosion on western slopes, animal trails evident.
SU9	20%	10%	Moderate	Vegetation clearing in past. Rock outcrops present in some locations – extensive grass. Limited areas of stock impact trails.
SU10	10%	10%	Moderate	Vegetation clearing in past, extensive grass coverage, stock trails.
SU11	20%	10%	Moderate	Vegetation clearing in past, extensive grass coverage, stock and vehicle trails.

Plate 1. Lower slopes SU1 southern boundary near the driveway (Facing North).

Plate 2. SU6 GSV example, following grass clearing by stock (North)

Plate 3. SU7 looking over creek flats towards the ridgeline (West)

Plate 4. Portion of erosional exposure stemming from crest in SU4 (North)

Plate 5. From southern boundary GSV example for SU11 (North)

Plate 6. SU10 view of the rise between the two drainage lines (East)

Transects were positioned to cover all landforms present within the Project Area. Landforms consisted of crests (spurlines), simple slopes (upper, middle and lower) and open creek flats in the vicinity of the eastern drainage line. Due to the low effectiveness of the pedestrian survey, due to the low levels of GSV, additional transects were not undertaken with an increased focus on the landform modelling and testing of areas of potential.

The pedestrian transects, and landforms within the Project Area are shown on Figures 5 and 6.

5.5 NEW HERITAGE SITE RECORDING

The pedestrian field survey completed for the current assessment identified four Aboriginal heritage sites and two areas of potential archaeological deposit (PAD). No historical heritage sites were noted within the project area.

The Aboriginal heritage sites identified by the field survey are detailed below under their site designations with the site locations shown on Figure 7.

5.5.1 CWR1: MGA Zone 55, 0747366. 6155729

Site CWR1 consists of an isolated find of a silcrete flake found in a large area of erosion on the crest of SU4. Flake features possible retouch on the right lateral margin with usewear on the left lateral margin. The area of exposure is littered with natural gravels eroding out of the surface. The site location and artefact are shown in Plates 7, 8 & 9.

Plate 7. Lower slopes SU1 southern boundary near the driveway (Ventral).

Plate 8. SU6 GSV example, following grass clearing by stock (Dorsal)

Plate 9. Site location within erosional exposure stemming from crest in SU4 (East)

5.5.2 CWR2: MGA Zone 55, 0747255. 6155159

Site CWR2 consists of an artefact scatter of 4 tuff flakes located on a small exposure on the upper slope of a spur line in the southern half of SU9. These artefacts do not appear to be in situ, and are probably in a secondary context. A selection of the identified artefacts and the site location are showin in Plates 10 – 12.

Plate 10. One of the artefacts from the scatter (Ventral Surface)

Plate 11. One of the artefacts from the scatter (Dorsal)

Plate 12. Location of the artefacts in very small exposure

5.5.3 CWR3: MGA Zone 55, 0747259. 6155302

Site CWR3 consists of an isolated find of a tuff flake in a small exposure on the west side of the ridgeline of SU9. The artefact is shown in plates 13 and 14.

Plate 13. The isolated flake (Ventral)

Plate 14. The isolated flake (Dorsal)

5.5.4 CWR4: MGA Zone 55, 0747340. 6155362

CWR4 consists of an artefact scatter of 18 flakes along the central mid-slope spur line crest in the north-east portion of SU9. A selection of the artefacts for example are displayed below in plates

Plate 15. An artefact from the scatter (Ventral)

Plate 16. An artefact from the scatter (Dorsal)

Plate 17. An artefact from the scatter (Dorsal)

Plate 18. An artefact from the scatter (Ventral)

Plate 19. An artefact from the scatter (Dorsal)

Plate 20. An artefact from the scatter (Ventral)

Plate 21. An artefact from the scatter (Ventral)

Plate 22. An artefact from the scatter (Dorsal)

5.5.5 CWR PAD1: MGA Zone 55, 0747269. 6155213

SU9 features a ridge line/extended crest running north-south with the eastern slope facing the parallel creek flats of SU7 and 8. This ridge line featured several artefact scatters (CWR2, CWR3 and CRW4) and with proximity to the creek flats this portion of the ridge has moderate potential for artefactual deposits. The location of the area of PAD is shown in Figure 7.

Plate 26. Lower slopes SU9 towards the southern boundary, with a vehicle track to the east(Facing Northwest) CWRPAD1.

5.5.6 CWR PAD2: MGA Zone 55, 0747032. 6155212

SU10 features upper slopes to the north-west that descend towards the south of the paddock. There are slight rises in the south-west and south-east corners of the paddock as well as a descending spur line in the center. The drainage lines either side of this spur create a 'Y' shape with their confluence in the next paddock to the south. This spur feature is considered to hold moderate potential for subsurface deposits. The PAD location is shown in Figure 7.

Plate 27. SU10 taken from the south-east looking towards the rise between the two drainage lines at PAD3 (East).

Plate 28. SU10 looking towards PAD3 with drainage line confluence to the right in the next paddock (East)

5.6 SUMMARY OF ARCHAEOLOGICAL SURVEY RESULTS

The survey and review of landforms resulted in the following findings:

- Four Aboriginal heritage sites are recorded within the project area
- GSV was generally low across the project area due to very high levels of grass coverage and confined small areas of erosion scours and vehicle impact tracks.
- Two areas of PAD are present within the project area consisting of a spur descending between two drainage lines, and a ridgeline overlooking creek flats based on regional modelling to hold potential.
- Subsurface testing is therefore required in the identified areas of PAD to determine the presence, extent, and significance of any deposits in these areas if impacts are planned to occur within their boundaries.

Based on the predictive modelling, any identified Aboriginal sites are likely to be small in area and to contain low densities of common materials and artefact types on crest landforms with larger sites potentially located on level areas (terraces, raised contexts) near creek confluences.

The results of the field survey are displayed in Figure 7.

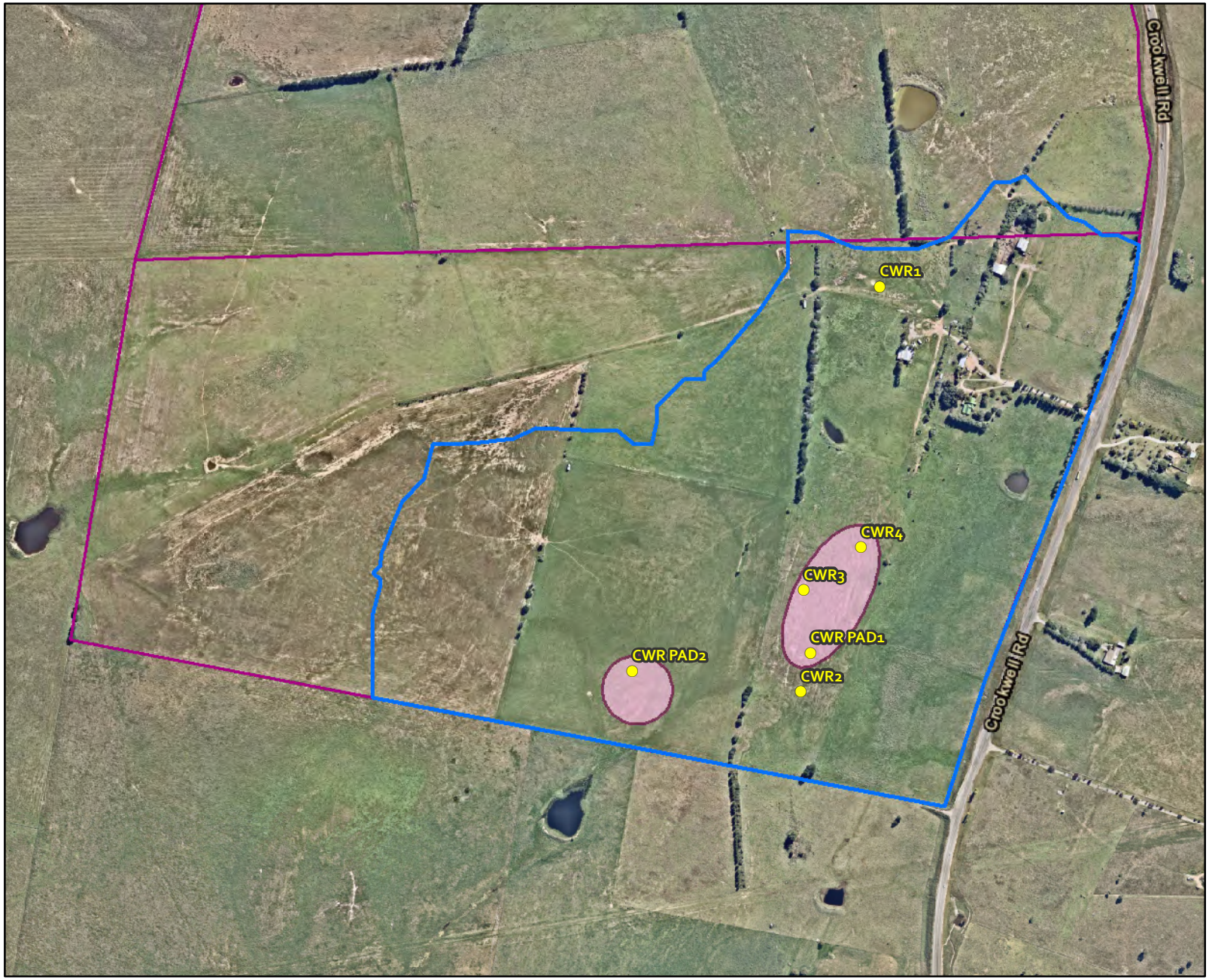

Figure 7: Survey Results

Legend

- Heritage Site
- Pad
- Project Area
- Property Boundary

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Meters

Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

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6 SIGNIFICANCE ASSESSMENT

6.1 INTRODUCTION TO THE ASSESSMENT PROCESS

The NSW heritage assessment criteria is set out in the NSW Heritage guideline Assessing Heritage Significance (NSW Heritage 2001) and requires assessment against the four values in the Australia ICOMOS Burra Charter (2013) generally accepted as heritage best practice.

These values are (as defined in NSW Heritage 2001):

- Historical significance refers to items which demonstrate strong associations to a particular event, historical theme, people or philosophies, regardless of the intactness of the item or any of its structures.
- Aesthetic significance refers to items which demonstrate creative, aesthetic or technical excellence, innovation or achievement. Aesthetic items may also have been the inspiration for creative achievement.
- Social/cultural significance refers to items which are esteemed by the community for their cultural values; which if damaged or destroyed would cause the community a sense of loss; and/or items which contribute to a community's sense of identity.
- Scientific significance refers to the assessment of whether a site has the ability to reveal valuable archaeological, technical, or scientific information.

For assessing the significance of Aboriginal sites the two main sections that are applicable are cultural values to the Aboriginal community and archaeological (scientific) values (ICOMOS 2013).

There are two criteria generally used in assessing the scientific significance of heritage sites:

- Research potential – the potential of a site to provide information which is of value in the scientific analysis of research questions.
- Representativeness – an assessment of whether the artefact or place is a good representative of its type within its regional or local setting.

Cultural value to the Aboriginal community can only be assessed by discussion with RAPs and feedback provided in response to the site identifications.

6.2 SCIENTIFIC SIGNIFICANCE ASSESSMENT

The following archaeological significance assessment is based on Requirement 11 of the *Code of practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010). Using the Burra Charter assessment criteria of representativeness, condition and research potential, a rating of scientific significance was determined for the identified heritage sites. Table 5 provides the results of the archaeological significance assessment.

Table 5 : Scientific significance assessment of archaeological sites recorded within the Project Area.

AHIMS	Site name	Research Potential	Representativeness	Condition	Scientific Significance
Pending	CWR1	Low	Common	Fair	Low
Pending	CWR2	Low	Common	Good	Low
Pending	CWR3	Low	Common	Fair	Low
Pending	CWR4	Low	Common	Fair	Low
Pending	CWR PAD1	Low	Common	Good	Low
Pending	CWR PAD2	Low	Common	Good	Low

6.3 CULTURAL SIGNIFICANCE

All heritage sites are important to Aboriginal people and all represent the past occupation and use of the region by Aboriginal people. As a reminder of the widespread nature of Aboriginal occupation, sites provide a physical guide to usage, and points for education, discussion and if important enough cultural transmission of knowledge.

The sites within the project area are small and common in their nature. They conform to the known preferred camping locations of past peoples and confirms landscape use. The information they provide will further support existing information but will not provide new or innovative research themes. Aboriginal communities do not accept the western view of site importance with all sites being considered to be of overall importance within the landscape.

The Aboriginal RAPs have stated that all of the sites hold significance and that impacts should be minimised and if unavoidable surface artefacts collected and reburied to maintain their connection to country.

6.4 STATEMENT OF ARCHAEOLOGICAL SIGNIFICANCE

The Project Area overall has four Aboriginal heritage sites consisting of isolated finds, artefact scatters and two areas of PAD. All of these six sites are within the area of proposed impacts. Site locations are mainly confined to the slopes and crests of descending spur lines overlooking ephemeral creek lines.

The stone artefact sites located within the study area represent common site types found throughout New South Wales and consist of common materials and artefact types for the Goulburn region. The majority of the recorded sites are considered to hold low cultural and scientific values. Recording of these sites will assist in regional studies aimed at assessing Aboriginal usage of the landscape, technology and raw material trade and sourcing. Due to the nature of the sites they are considered to hold a local level of significance not warranting conservation within the disturbed areas.

Any recovered artefacts should be curated by the Aboriginal community to aid in the continuation of cultural and traditional knowledge, however it is the stated wish of the RAPs, that a return to country protocol be investigated to maintain the cultural connection to country. In line with these wishes, this option is currently being investigated with the proponent and Council.

7 IMPACT ASSESSMENT

7.1 DEVELOPMENT IMPACTS

The proposed development requires a high level of disturbance within the Project Area. The proposed residential subdivision will cause disturbance in the form of soil excavation, vegetation removal, infrastructure installation, heavy vehicle and plant movement across the site and revegetation following completion of works. Impacts will be extensive across the areas of building envelopes, access roads and associated infrastructure.

The types of activities that will impact the ground surface and sub-soils include:

- Excavation of house footings
- Installation of underground services, such as sewerage, water, gas and telecommunications
- Construction of access roads and fire trails

Areas away from the proposed construction areas will continue under their current usage with no additional impacts from the proposed subdivision. Heritage sites in these locations will not be impacted by the development.

Design of the development will be undertaken to try to avoid impact to the heritage sites. However, due to the nature of residential development, impacts will be extensive and harm may occur to the identified Aboriginal sites.

Based on the extensive impacts from residential development, the assessed statement of impact for the Aboriginal archaeological sites in the Project Area has been summarised in Table 6.

Table 6: Summary of potential archaeological impact

AHIMS	Site name	Type of Harm	Degree of Harm	Result of Harm
Pending	CWR1	Direct	Total	Removal of value
Pending	CWR2	Direct	Total	Removal of value
Pending	CWR3	Direct	Total	Removal of value
Pending	CWR4	Direct	Total	Removal of value
Pending	CWR PAD1	Direct	Total	Removal of value
Pending	CWR PAD2	Direct	Total	Removal of value

7.2 SUSTAINABLE DEVELOPMENT PRINCIPLES

Australia's *National Strategy for Ecologically Sustainable Development (1992)* defines ecologically sustainable development as: 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'.

7.2.1 Intergenerational Equity

The concept of Intergenerational equity can be explained as the concept that resources (such as heritage sites) do not belong to any generation but are to be administered in trust for all future generations.

Within Aboriginal communities, intergenerational equity is maintained by the conservation of sites, continuation of cultural knowledge, traditions and continued access and visitation to cultural sites. Loss of cultural knowledge, heritage sites or access to sites is detrimental to the current and future communities.

Destruction of cultural heritage sites may impact on future generations if by the action the cultural record is significantly altered or a continuing traditional link is broken. Assessing these impacts can be addressed by understanding the significance of sites, the range and variety of the site type that is present in the area and the role that the site plays with the Aboriginal community. Sites may play various roles as teaching sites, ceremonial areas or areas for cultural traditions (birthing trees, scarred trees, rock shelters for example).

These issues have been discussed with the RAPs for the project and what the effect of the development would be to the Aboriginal community. Responses to this question were that the sites were all located on private land and not accessible to the community. All of the sites were of a type that is relatively common and the use of the area was well known to the community and this would continue to be passed on. The destruction of any site should be avoided where possible and the loss of information from the sites must be countered by their recording and curation/return to country of artefacts.

No additional mitigation measures or options have been suggested by the community. Comments on the recommendations developed for the project have been sought from the RAPs and when comments have been provided have been incorporated into the management actions.

7.2.2 Cumulative Impacts

Developments in the Goulburn area are planned for the future and the cumulative impacts by the continued destruction of sites is of concern to the community which should be addressed by continued assessments and focus on preserving sites that are either intact, contain many artefacts, or are significant to the community. The determination of which sites warrant conservation should be undertaken by heritage professionals and the Aboriginal community through a process of consultation and involvement.

Cumulative impacts from development in the loss of sites may be marginally mitigated through an increased understanding of landscape use and increased knowledge in the wider community of the extent of Aboriginal occupation and use of the land. This does not justify destruction where mitigation actions can be undertaken to prevent or decrease loss of heritage sites. Current and previous developments have resulted in a large increase in the available knowledge of site location, use of area and size of sites in the region. Though these sites have been impacted by developments, they have

contributed to educating the Aboriginal and wider community of the past role of the landscape and importance of the region for Aboriginal people.

Through the assessment and planning process, if heritage sites can be identified prior to construction then a conservation approach can be applied to reduce or remove development impacts and conserve sites of importance.

8 MANAGEMENT AND MITIGATION STRATEGY

Avoidance of impact to archaeological and cultural heritage sites through design of the development is the primary mitigation and management strategy and should be implemented where practicable. In cases where avoidance and conservation is not practical, the salvage of artefacts, gathering of information through collection (especially where impact cannot be avoided) and interpretation are suggested mitigation options.

8.1 AVOIDANCE OF IMPACTS

For this project, the small size of the surface sites and the low significance of these site contents within the boundaries of the project area do not warrant exclusion from the area of impact in the form of a conservation area. The contents of the sites are considered to be common, consisting of common artefact types and materials. Salvage should be undertaken if impacts cannot be avoided. An AHIP should be sought to allow for salvage and destruction of the sites.

8.2 MITIGATION MEASURES

For the six sites that are to be impacted under an AHIP (Table 6), mitigation measures should be applied to retain the maximum amount of archaeological and cultural information possible. The mitigation measures have been discussed with the RAPs whilst on site and provided to each of the RAPs for their comments in the form of the draft report.

RAPS should be provided with an opportunity to participate in each of the below listed mitigation measures which will be undertaken under the guidance of a qualified heritage consultant. An Aboriginal Heritage Impact Permit will be required for these mitigation measures to be undertaken.

The following mitigation measures have been developed for the impacted sites:

1. Surface collection of all impacted surface sites should be undertaken. This would require approval of an Aboriginal Heritage Impact Permit (AHIP) to allow for collection. The methodology to be followed would consist of:
    - Returning to GPS location and flagging all surface artefacts within a 10m radius of site location
    - Each artefact to be collected, given a number and bagged individually with their GPS location
    - Artefacts to be analysed (noting materials, basic technological attributes) and an AHIP Compliance works report submitted to NSW Heritage including the results of the surface collection
2. Subsurface investigation of the areas of PAD impacted by the project should be undertaken to ensure that all significant information has been recovered prior to impacts. This applies to PADs CWRPAD 1 and CWRPAD2. The excavation should be undertaken in line with the following methodology:

- Field team to return to PAD location and excavate a series of 50 x 50cm test pits on a 10m grid or on transects across the areas of PAD. Excavation will be by hand and in accordance with the Code of Practice.
- Excavation will be sieved through 5mm mesh.
- All artefacts will be bagged, labelled with their provenance and analysed with recording of technical attributes.
- Test pit photos, soil samples will be taken for each square.
- At the completion of excavation, sieved soil will be returned to the excavated area.

3. The recovered artefacts from the surface collection and the test pitting program will be returned to country following their analysis. A return to country protocol is under discussion with the proponents and RAPs and is the preferred option of the majority of the RAPs. The return to country protocol will be decided by RAPs pending the results of the surface collection and subsurface testing programs so that the number and type of artefacts to be returned is known.

The area of the AHIP will cover the entire area of the project area, as construction impacts will be widespread and extensive. Areas of sites avoided by the construction works will be impacted in the future in the form of landscaping and associated infrastructure such as underground services. Exclusion of areas is therefore not a workable strategy in this context. The area of the proposed AHIP area is shown in Figure 8.

8.3 MANAGEMENT RECOMMENDATIONS

Based on results of the archaeological program and consultation with the Registered Aboriginal Parties the following recommendations have been developed in regards to Aboriginal Cultural Heritage values and heritage sites located within the Project Area. .

The management recommendations for the project are:

- No impacts may occur to any of the identified Aboriginal Heritage sites unless an Aboriginal Heritage Impact Permit (AHIP) has been granted allowing harm to occur.
- Two areas of PAD are located within the project area. If these two areas are to be impacted subsurface testing should be undertaken in accordance with the Code of Practice. These investigations can be undertaken without any approvals. Subsurface testing should be undertaken in line with the methodology provided in Section 8. This applies to CWRPAD1 and CWRPAD2. The results of the subsurface testing will then inform the ACHAR and AHIP application.
- The project area contains four Aboriginal heritage sites (CWR1, CWR2, CWR3 & CWR4). If the heritage sites are to be impacted, an AHIP approved by NSW Heritage covering the area will be required. An application for an AHIP should be submitted to NSW Heritage and must be approved prior to any works commencing in the area of the heritage sites. The AHIP area is shown in Figure 8.

- Conditions of the AHIP should include the salvage collection of all surface artefacts within the impacted site locations, in line with the methodology provided in Section 8.
- The recovered artefacts following analysis should be placed in the care of the Pejar LALC under a care and control agreement or returned to country under a return to country protocol. The relevant option will be decided upon by the RAPs for the project.
- It is an offence to disturb an Aboriginal site without an AHIP as all Aboriginal objects are protected under the NSW *National Parks and Wildlife Act 1974*. Should any Aboriginal objects be encountered during works then works must cease and a heritage professional contacted to assess the find. Works may not recommence until cleared by NSW Heritage.
- In the unlikely event that human remains are discovered during the construction, all work must cease. NSW Heritage, the local police and the appropriate Local Aboriginal Land Council (LALC) should be notified. Further assessment would be undertaken to determine if the remains are Aboriginal or non-Aboriginal.
- Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation. This would include consultation with the RAPs for the project and may include further field survey.
- Further archaeological assessment will be required for future stages of the development to determine the extent of impacts.
- Continued consultation with the RAPs for the project should be undertaken. RAPs should be informed of any major changes in project design or scope, further investigations or finds.
- No further heritage investigations are required, other than those listed, should the AHIP be approved, except in the event that unanticipated Aboriginal Objects and/or human remains are unearthed during any phase of the Project.

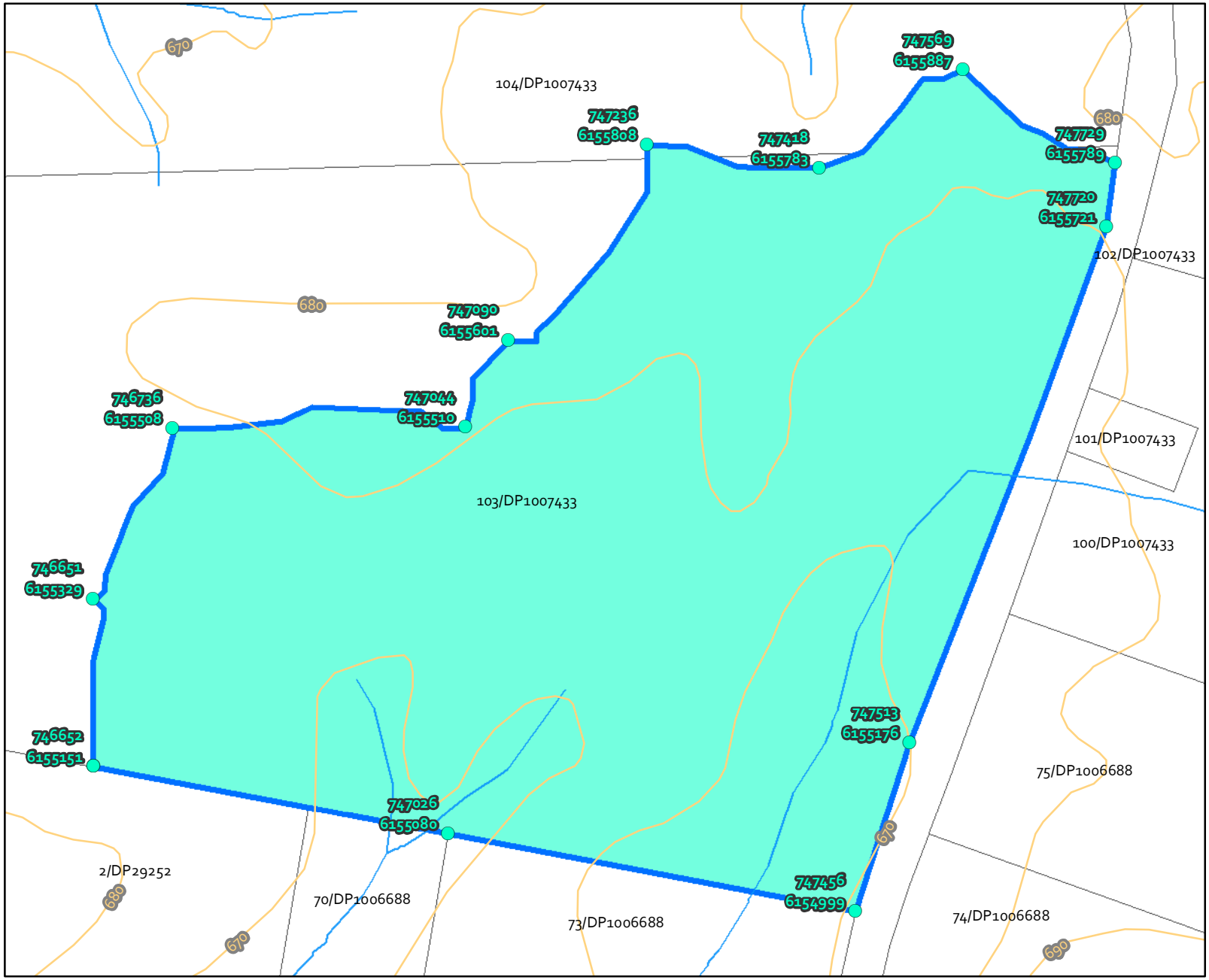

Figure 8: AHIP

Legend

- Contour -10m
- Watercourse
- Project Area
- AHIP
- Cadastre

N

1:6,000

0 50 100 200

Meters

Coordinate System:
GDA 1994 MGA Zone 55

Imagery: © Nearmap

PastTraces Heritage Consultants

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A.1 CONSULTATION LOG AND DOCUMENTATION

Date/Time	Type of Consultation		
	Step 1 – Public Notice end registration period 16/11/2021 **Goulburn Post – 6/10/2021** **Crookwell Gazette – 5/10/2021**		
29/9/2021	**Step 2 – Notice to Regulators**	**Response**	
	Pejar LALC		
	Goulburn-Mulwaree Council		
	NSW Heritage		
2/11/2021	**Step 3 – letter/email to identified stakeholders from NSW Heritage list with project pack outlining project details and requesting registration– end registration period 16/11/2021**		
	Step 4 – List of Registrations		
2/11	Pejar LALC		
8/11	Murrabidgee Mullangari Aboriginal Corporation		
2/11	Didge Ngunawal Aboriginal Corporation		
2/11	Corroboree Aboriginal Corporation		
8/11	Goobah		
2/11	Woka Aboriginal Corporation		
10/11	Thunderstone		
5/11	Muragadi Aboriginal Corporation		
8/11	Yurwang Gundana		
2/11	Freeman and Marx		
3/11	Konnango		
	Step 5 – Methodology pack - End review 16/12/2021 Email or letter to each of the registered parties		
25/11/2021	All RAPs.		
	Responses		
	Step 6 - List of RAPs to NSW Heritage and Pejar LALC (by 28 days from Step 4)		
5/12/2021	Pejar LALC and NSW Heritage		
	Step 7 – Fieldwork notifications		
16/01/2022	Pejar LALC and Yurwang Gundana		
17/1/2022	**Step 8 – Fieldwork with participation of RAPs**		
	Pejar LALC		
	Yurwang Gundana		
	Step 9 - Draft Reports emailed to all RAPs – end review period		
17/03/2022	**All RAPS**		