



VIRTUSHERITAGE



Narrabri Solar Farm
115 Airport Road
Narrabri, NSW

DUE DILIGENCE ABORIGINAL ARCHAEOLOGICAL ASSESSMENT

FINAL ♦ February 2021

Prepared for SLR Consulting on behalf of Providence Asset Group

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All queries related to the content, or to any use of this report must be addressed to Dr Mary-Jean Sutton.

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EXECUTIVE SUMMARY

Virtus Heritage was engaged by SLR on behalf of Providence Asset Group to prepare an Aboriginal archaeological due diligence assessment for the Narrabri Solar Farm. The project is located at 115 Airport Road (Lot 489 DP754944), Narrabri within the Narrabri Shire local government area (LGA). Proposed works include the development of a grid-connected 4.95 MVA solar PV farm with a 4-metre wide access gate and road connecting the proposed solar farm to Airport Road in the southeastern corner of the development. The proposed solar farm will include 11,592 panels, 142 single axis solar trackers, two 2475kVA inverters, and a medium voltage power station unit.

Consultation

The project area lies within the boundaries of the Narrabri Local Aboriginal Land Council (LALC). Kristie Toomey and Kenneth Mason (Site Officers, Narrabri LALC) attended the site survey to assist with identifying Aboriginal sites and objects and to provide cultural information about the project area. Comments made during fieldwork were recorded (refer to **Section 5**). A copy of this draft report was provided to Narrabri LALC for review and comment and a detailed consultation log for the project is included (refer to **Appendix A**). No comments have been received to date, and any comments or reviews of the due diligence assessment report in the future will be appended to the consultation log and addressed where possible by PAG.

Environmental Context

The landscape of Narrabri around the project area has been largely cleared for agriculture. Prior to European settlement, however, the open mixed woodland and grassland landscape would have provided Aboriginal people with a rich and diverse range of terrestrial resources. Eucalyptus species would have been abundant in these woodlands, with a thick understorey of varying grass types. The subhumid climate would have been warm and habitable all year round. The current mean annual temperature in the region is between 10 – 19°C, with a mean annual rainfall between 449 – 1,015mm.

In terms of major waterways, the project area is situated approximately 3 km northeast of the confluence between the Namoi River and Narrabri Creek. Smaller permanent and ephemeral creeklines would have stemmed from these two major waterways, likely traversing the alluvial plains landscape around the site, giving access to aquatic resources such as fish, turtles, sea birds, eels, rays and shellfish. The topography is characterised by coalescing systems of alluvial fans on long pediment footslopes below Permian and Triassic sandstone hills, which would have additionally been easy to traverse on foot through the open wooded landscape.

The project area is situated within Quaternary alluvial plains with outwash fans derived from Tertiary basalts. It is part of the Mitchell (2002) Liverpool Alluvial Plains landscape, characterised by undulating hills and sloping plains with channels and associated floodplains. The landscape around the project area is dominated by grey, brown and red clays, with potential for deep vertosols and cracking clays. The surface geology and associated soils of the region would have supported a dense and diverse ecosystem with vegetation such as plains grass, panic grass, windmill grass and blue grass. In terms of biodiversity, extant communities in the Brigalow Belt South Bioregion include both terrestrial and wetland species such as amphibians, reptiles, birds, mammals, and riverine species such as fish, turtles and rays.

In normal circumstances, this combination of environmental factors would have resulted in high potential for the area to contain cultural materials. While high biodiversity and ease of access to resources in the landscape may have allowed for dense occupation and land use by Aboriginal people in the past, heavy clearance of the wooded areas and intensive agricultural use of the alluvial plains and footslopes since

European settlement has greatly impacted on the potential for preservation of cultural remains. The land immediately around the project area has been completely cleared for cropping and animal grazing and continues to function as a farmed rural plot.

Archaeological Context

The results of the background archaeological research, including heritage searches and a review of previous assessments in the region indicate that the most common site type are low density artefact scatters. The potential for scarred trees, though common in the region, is very low due to heavy deforestation and land clearance around the project area for cultivation and grazing. The archaeological context of the project area indicates that evidence of Aboriginal occupation is most likely to occur on the alluvial plains and in low catchments in close proximity to permanent water sources outside of the project area. Survival of evidence of Aboriginal occupation is, however, dependent on the impacts of previous land use history.

Site Inspection Results

The site inspection was undertaken on the 13 January 2021 on lands within the Narrabri LALC area. The site inspection was undertaken by Elaine Lin, Senior Archaeologist (Virtus Heritage) and two site officers from Narrabri LALC, Kristie Toomey and Kenneth Mason. The field survey was completed over one field day. The proposal area was inspected via pedestrian survey in four transects, targeting all areas of exposure. The survey included an inspection of all mature trees within the project area, and no drainage lines were identified during the inspection (refer to **Appendix D** for photographs of the site inspection).

There are no previously recorded sites within the project area based on heritage searches and background research of previous archaeological investigations to date. No Aboriginal objects or sites were observed in the project area and given the disturbance and lack of any undisturbed soils or sensitive landforms identified during survey, the project area is deemed to have a very low potential for archaeological deposits. Comments from Narrabri LALC Site Officers, Kristie Toomey and Kenneth Mason support the assessment of low archaeological potential.

Recommendations

The following recommendations have been made based on the information provided on project impacts, consultation to date, relevant archaeological and environmental background research, and the results of the site inspection.

1. No Aboriginal objects were identified during the site inspection. No Aboriginal places are registered within the project area. No areas of archaeological potential are identified within the project area requiring archaeological testing, salvage or mitigation.
2. All site workers and personnel involved in site impact works associated with the proposal should be inducted and briefed on the possible identification of Aboriginal sites and objects during construction and their responsibilities according to the provisions of the *NPW Act 1974*, in case any additional unknown objects or items are uncovered during proposed works.
 - a. As part of this induction, the contact phone numbers of the Heritage NSW regional archaeologist and EnviroLine 131 555, the relevant Environmental Officer responsible for this project should also be given to all site workers and personnel, in case unknown objects or items are uncovered during excavation.
 - b. Site workers should be made aware of the location of any Aboriginal sites that may at any stage occur within the proposal site and their scientific significance and their legal obligations in relation to the protection and management of these Aboriginal sites under the *NPW Act 1974*, and 2010 ancillary provisions and amendments.

- c. As part of this induction, workers should be made aware that in the event that any unexpected human remains are uncovered on site, the area of the suspected remains must be secured and cordoned off and the NSW Police notified. No further works can be undertaken until the NSW Police provide written advice. If these remains are deemed to require archaeological investigation by the NSW Police or NSW Coroner, then Heritage NSW and the relevant Aboriginal parties must be notified. A plan of management for the preservation of any identified Aboriginal human remains or for their salvage must be put in place or conducted under an AHIP methodology and variation developed in consultation with all relevant Aboriginal parties and Heritage NSW.
 - d. Providence Asset Group or delegated authority may wish to consider the input and engagement of interested Aboriginal stakeholder groups and Narrabri LALC in the development of inductions and toolbox talks for this project.
3. A copy of the final report has been made available to Narrabri LALC for comment and review. Any additional comments by the LALC will be considered where possible in the future by PAG.

1. INTRODUCTION

Virtus Heritage was engaged by SLR on behalf of Providence Asset Group to prepare an Aboriginal archaeological due diligence assessment for the Narrabri Solar Farm Project. The project is located at 115 Airport Road, Narrabri, within the Narrabri Shire local government area (LGA) (refer to **Figure 1**).

1.1 Project Description

This project proposes the development of a solar PV farm at Narrabri, including a grid-connected solar PV installation with a total PV plant capacity (DC) of 6.26 MWp. It is proposed to connect into the electrical transmission grid via the existing transmission lines which run along the northern boundary of the site. The solar PV farm will include the following components:

- 11,592 x 540w solar PV panels;
- 142 x single axis solar trackers;
- 2 x 2475kVA inverters; and
- 1 x medium voltage power station unit.

A 4m wide gate and access road is proposed to connect the solar farm to Airport Road at the south eastern corner of the lease area. The solar farm will be fully fenced with emergency access gates and temporary construction office. The proposal is indicatively located on the Development Plan (refer to **Figure 2**).

1.2 Report Aims and Statutory Requirements

This report was compiled with reference to the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW 2010a) and where applicable, the requirements of the *Code of Practice for Archaeological Investigation of Aboriginal Objects, NSW* (hereafter referred to as the 'Code of Practice') (DECCW 2010b). The purpose of this report is to provide advice on Aboriginal archaeological (scientific) values of the project area in relation to the proposed works to guide the client in its decision-making process.

In general, the aims of a due diligence assessment are to:

- identify whether or not Aboriginal objects are, or are likely to be, present in the area;
- if objects are present or likely to be present, determine whether the proposed development activities are likely to harm Aboriginal objects; and
- determine whether further assessment or an Aboriginal Heritage Impact Permit (AHIP) is required.

The *National Parks and Wildlife Act 1974* (NPW Act), the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Heritage Act, 1977* are the relevant statutory controls protecting Aboriginal heritage within New South Wales.

1.2.1 National Parks and Wildlife Act 1974

Under the provisions of the NPW Act, all Aboriginal objects are protected regardless of their significance or land tenure. Aboriginal objects are defined as '*any deposit, object or material evidence (not being a handicraft made for sale) relating to Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with the occupation of that area by persons of non-Aboriginal extraction and includes Aboriginal remains*'.

Aboriginal objects are therefore limited to physical evidence and may also be referred to as ‘Aboriginal sites’, ‘relics’ or ‘cultural material’. Aboriginal objects can include pre-contact features such as scarred trees, middens and artefact scatters, as well as physical evidence of post-contact use of the area such as Aboriginal built fencing or stockyards and missions.

The NPW Act also protects Aboriginal Places, which are defined as ‘*a place that is or was of special significance to Aboriginal culture. It may or may not contain Aboriginal objects*’. Aboriginal Places can only be declared by the Minister administering the NPW Act. The NPW Act protects Aboriginal objects and Aboriginal places in NSW. Under the *National Parks and Wildlife Act 1974* (NPW Act), including the 2010 amendments, it is an offence to harm an Aboriginal object:

- Which the person knows is an Aboriginal object (a ‘knowing offence’); and
- Whether or not a person knows it is an Aboriginal object (a ‘strict liability offence’).

The maximum penalty for a knowing offence is \$550,000 for an individual or \$1.1 million for a corporation and a 2 year gaol term. The maximum penalty for a strict liability offence is \$110,000 for an individual or \$220,000 for a corporation (DECCW 2010b: 5). A person or organisation who exercises due diligence in determining that their actions would not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP (DECCW 2010b, 2010:5). The due diligence defence is not available for activities which harm Aboriginal places. The Code of Practice sets out a procedure which, when followed, will satisfy the due diligence requirement. If a person or company can demonstrate that they exercised due diligence and determined that it was unlikely that Aboriginal objects would be harmed, then they have a defence to prosecution under the strict liability offence under Section 86(2) of the NPW Act (DECCW 2010b 2010: 5).

Harm includes activities that destroy, deface or damage an Aboriginal object or Aboriginal place, and in relation to an object; move the object from the land on which it has been situated. Under Section 91 of the Act, Heritage NSW must be informed upon the identification of all Aboriginal objects. Failure to do this within reasonable time is an offence under the Act. Under Section 90 of the Act, it is an offence for a person to destroy, deface, damage or desecrate an Aboriginal Object or Aboriginal Place without the prior issue of AHIP. AHIPs may only be obtained from Heritage NSW. Part 6 of the NPW Act provides specific protection for Aboriginal objects and places by making it an offence to harm them. If harm to Aboriginal objects and places is anticipated an Aboriginal Heritage Impact Permit (AHIP) is required.

The Act also provides for stop-work orders under Section 91A if an action is likely to significantly affect an Aboriginal object or Aboriginal Place. The order may require that an action is to cease or that no action is carried out in the vicinity of the Aboriginal object or Aboriginal Place for a period of up to 40 days.

1.2.2 *Heritage Act, 1977*

The *Heritage Act, 1977* (as amended in 2009) protects and aims to conserve the environmental heritage of New South Wales. *Environmental heritage* is broadly defined under Section 4 of the *Heritage Act* as consisting of “those places, buildings, works, relics, moveable objects, and precincts, of State or local heritage significance” (Heritage Branch, DoP 2009: 4). Aboriginal places or objects that are recognized as having high cultural value (potentially of local and State significance) can be listed on the State Heritage Register and protected under the provisions of the *Heritage Act*.

Amendments to the *Heritage Act* made in 2009 have changed the definition of an archaeological 'relic' under the Act, so that it is no longer based on age. A relic is now an archaeological deposit, resource or feature that has *heritage significance* at a local or State level. This significance-based approach to identifying 'relics' is consistent with the way other heritage items such as buildings, works, precincts or landscapes are identified and managed in NSW (Heritage Branch, DoP 2009: 1). Section 4(1) of the *Heritage Act* (as amended 2009) defines 'relic' as follows:

Relic means any deposit, artefact, object or material evidence that:

(a) relates to the settlement of the area that comprises New

South Wales, not being Aboriginal settlement, and

(b) is of State or local heritage significance (Heritage Branch, DoP, 2009: 6).

Other relevant State and Commonwealth legislation are discussed below.

1.2.3 *Environmental Planning and Assessment Act 1979*

The EP&A Act requires that consideration be given to environmental impacts as part of the land use planning process. In NSW, environmental impacts include cultural heritage impacts. Part 3 of the Act relates to planning instruments including those at local and regional levels, Part 4 of the Act controls development assessment processes and Part 5 of the Act refers to approvals by determining authorities.

1.2.4 *Native Title legislation*

The Native Title Act 1993 (NTA) provides the legislative framework to:

- recognise and protect native title;
- establish ways in which future dealings affecting native title may proceed and to set standards for those dealings, including providing certain procedural rights for registered native title claimants and native title holders in relation to acts which affect native title;
- establish a mechanism for determining claims to native title; and
- provide for, or permit, the validation of past acts invalidated because of the existence of native title.

The *NSW Native Title Act 1994* was introduced to make sure the laws of NSW are consistent with the Commonwealth's NTA on future dealings. It validates past and intermediate acts that may have been invalidated because of the existence of native title.

The National Native Title Tribunal has a number of functions under the NTA, including maintaining the Register of Native Title Claims, the National Native Title Register and the Register of Indigenous Land Use Agreements and mediating native title claims.

1.2.5 *Other Acts*

The Australian Government *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* may be relevant if any item of Aboriginal heritage significance to an Aboriginal community or historical heritage is under threat of injury or desecration and state-based processes are unable to protect it. The *Environment Protection and Biodiversity Conservation Act 1999* is relevant to projects where there are heritage values of national significance present.

1.3 Consultation

Aboriginal people are the primary determinants of their culture and heritage, and cultural values can only be assessed and advised by the relevant Aboriginal parties for the locality. It should be noted that Aboriginal heritage refers both to Aboriginal archaeological sites and sites/places of cultural value to Aboriginal people, protected under the *National Parks and Wildlife Act, 1974* (NPW Act, 1974) as “Aboriginal objects” and “Aboriginal places”. Sites and places of Aboriginal cultural significance can only be identified by the relevant local Aboriginal people and are likely in many cases (for example, song lines and story places) to not contain any archaeological evidence.

This assessment was conducted by an archaeologist providing advice on the archaeological (scientific) values of the project area. The cultural values of the project area were assessed by the Narrabri Local Aboriginal Land Council (LALC). Kristie Toomey and Kenneth Mason from Narrabri LALC did not know of any sites within the vicinity relating to the project area and did not think the area bore any cultural significance during the site inspection. No other comments have been provided to date.

Further comment may be received by the LALC and will be considered where possible in the future by PAG.

A consultation log for the project is included (**Appendix A**), which will be appended with comments if any are received in the future from Narrabri LALC.

1.4 Limitations

This report is limited to the assessment of project impacts described in information provided by SLR on behalf of Providence Asset Group and mapped in this report. Virtus Heritage takes no responsibility for errors within the Department of Premier and Cabinet, Heritage NSW (Heritage NSW) Aboriginal Heritage Information Management Systems (AHIMS) data, and the Heritage NSW listings. Virtus Heritage has assumed information provided by Heritage NSW is accurate.

The site inspections undertaken were confined to the area of proposed works illustrated in **Figure 1**. Visibility on site was generally very poor. Nevertheless, access on foot to the entire project area was unhindered.

1.5 Project Team and Qualifications

This report was compiled by Elaine Lin, Senior Archaeologist (M.Arch.Sci. (Adv) Hons., Australian National University; B.Arts (Hons.) Archaeology, University of Sydney), with quality review undertaken by Dr Mary-Jean Sutton, Principal Archaeologist and Director (PhD, Archaeology, University of Queensland; B.Arts, Hons. Prehistoric and Historical Archaeology, University of Sydney). Project information and description of works was provided by SLR.

1.6 Acknowledgements

We would like to acknowledge the assistance of the following individuals for the completion of this report:

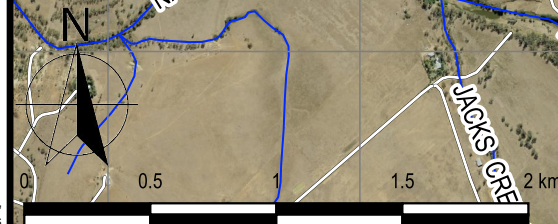
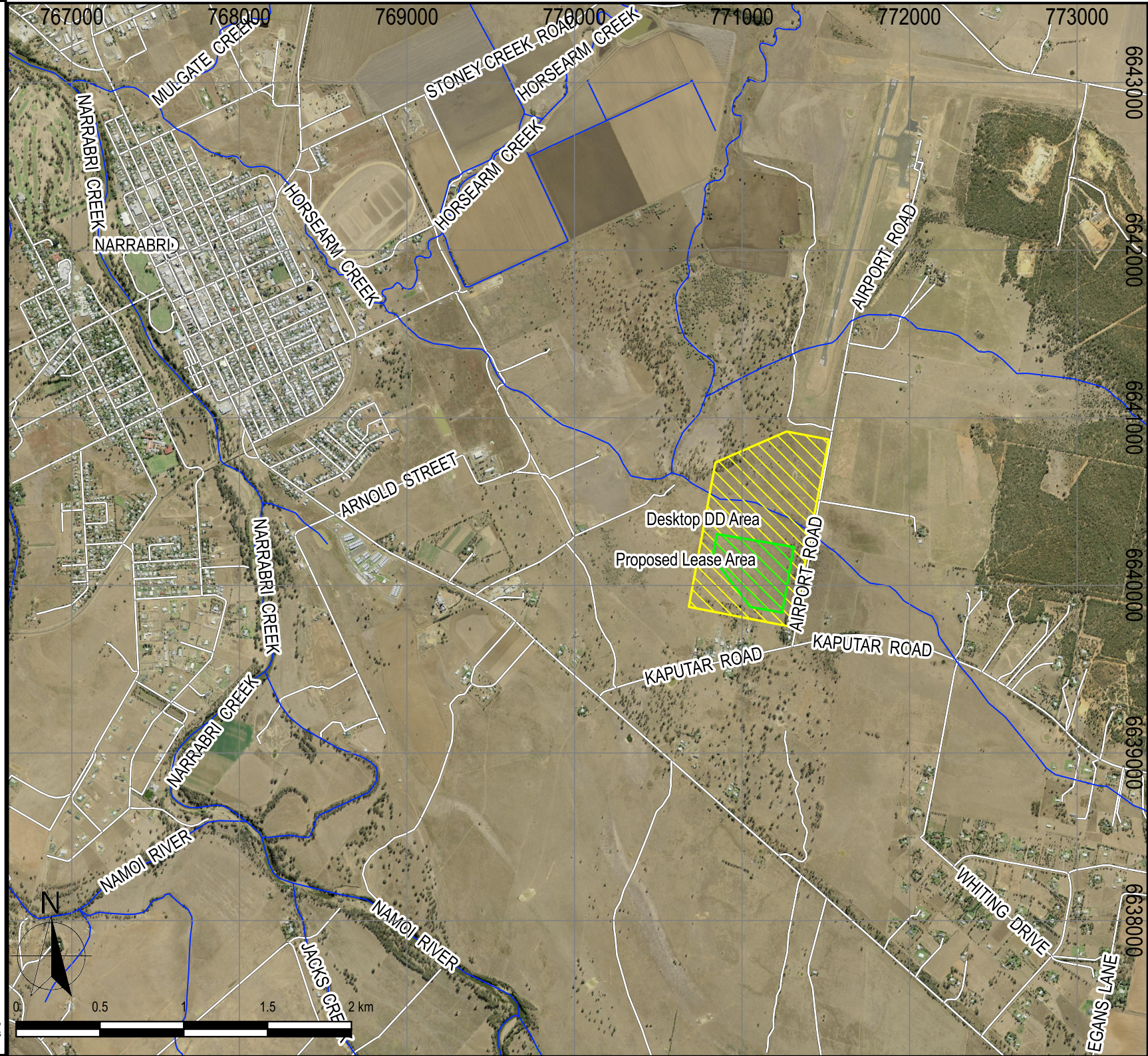
- Kristie Toomey, Narrabri LALC
- Kenneth Mason, Narrabri LALC
- Rachel Pettitt, SLR



Figure 1
Locality Plan and Project Area

Legend

- Major Towns & Cities
- Water Courses
- Roads
- Desktop DD Area
- Proposed Lease Area



LEGEND

- TREE (EXISTING)
- TREE (FOR REMOVAL)
- LOT BOUNDARY
- 400 MAJOR CONTOUR
- MINOR CONTOUR
- SECURITY FENCE
- FENCE (EXISTING)
- LEASE BOUNDARY (PROPOSED)
- PV TABLE
- O/H 22kV POWERLINE
- O/H 132kV POWERLINE
- WATERCOURSE

SYSTEM SUMMARY

ELECTRICAL CONFIGURATION:

TOTAL PV PLANT CAPACITY (DC): 6.260 Mwp
 TOTAL INVERTER CAPACITY (AC): 4.95MVA
 PV PLANT MAXIMUM EXPORT CAPACITY (AC): 4.95MW
 DC:AC RATIO: 1.265
 STRINGS OF 28 PV MODULES.
 207 PV STRINGS PER INVERTER.
 414 PV STRINGS TOTAL.

PV MODULES:

MFR: LONGI SOLAR
 MODEL: LR5-72HPH-540M
 NAMEPLATE: 540Wp
 QUANTITY: 11,592 MODULES

INVERTERS:

MFR: SUNGROW
 MODEL: SG2475HV-MV
 NAMEPLATE: 2475kVA
 QUANTITY: 2

MV POWER STATION:

MFR: SUNGROW
 MODEL: SG4950HV-MV
 QUANTITY: 1

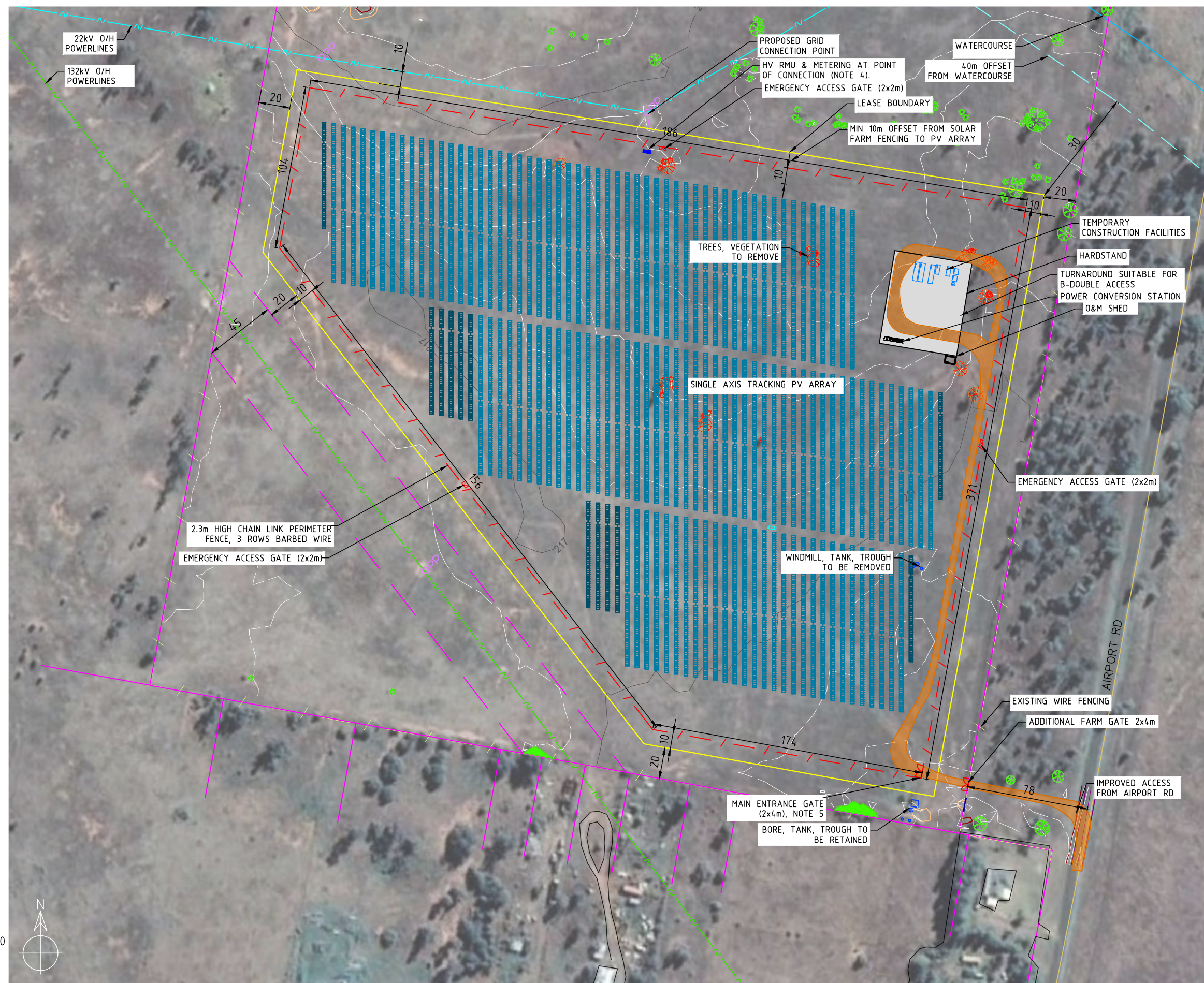
TRACKER ARRAY:

TYPE: GROUND MOUNT SINGLE AXIS TRACKING
 CONFIGURATION: INDEPENDENT TYPE
 RANGE OF MOTION: $\pm 60^\circ$
 PITCH: 6.25m
 GCR: 36.096%
 QUANTITY: 142 TABLES

FENCED AREA: 132,821 m²
 LEASE AREA: 148,223 m²

GENERAL NOTES:

1. DETAIL SHOWN IS PRELIMINARY, MAY CHANGE IN DETAILED DESIGN.
2. ENTRY FROM AIRPORT ROAD.
3. CLEARANCE BETWEEN SOLAR TRACKER ARRAY & SITE SECURITY FENCE TYPICALLY 10m
4. HV RMU & METERING (LOCATION AND TYPE TO BE DETERMINED, IS SUBJECT TO ESSENTIAL ENERGY FEEDBACK).
5. FOR SECURITY GATE DETAILS REFER TO DRAWING 10100-C-DET-02-1.
6. WATERCOURSE, WATERBODY DETAIL FROM SIXMAPS, MGA ZONE 55 PROJECTION
7. FOR ON SITE STORMWATER DETENTION DETAIL REFER TO DRAWING 10100-C-DET-01-1 (TBC).



REVISED

REVISIONS

REV	DATE	DESCRIPTION	DRWN.	DESIGNED	CHKD.	APPR.
A	2021.01.14	FIRST ISSUE	JM	JM	SS	JM

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TITLE
 PROVIDENCE ASSET GROUP
 NARRABRI SOLAR FARM
 GENERAL ARRANGEMENT
 SYSTEM DETAIL

DWG No. 10100-G-GAD-02-2

SCALE

1:2,500

REVISION

A

PAPER SIZE

A3

2. ENVIRONMENTAL CONTEXT

This section of the report describes the environmental context of the project area spanning previous land-use history, topography and landforms, soils and geology, and fauna and flora. These factors are integral influences of Aboriginal land use, the resultant patterning of archaeological sites, and the survival of sites in the modern landscape.

2.1 Previous Land Use History

The township of Narrabri developed on the banks of Narrabri Creek, directly northeast from the Namoi River and immediately north of the confluence between the river and the creek. The town was first settled by explorer John Oxley in 1832, with settlers in the first squatting run 'Nurrabry' soon to follow in 1834 (DPIE Website, accessed 21st January 2021). It has historically been a province of the pastoral industry, later associated with large scale forestry and agriculture. Between the 1830s and the 1880s, the region was largely settled for sheep and cattle grazing (Hunt 1980). Narrabri also has a long history of coal mining, with a more recent intensification of gas interests (Askland *et al.* 2016: 20). Intensive European settlement due to intensifying agriculture and pastoralism in the Narrabri region by the mid-19th Century had drastically changed the landscape, impacting the movement of people, culture and subsistence practices of the local Kamilaroi people (OzArk Environment & Heritage 2020: 22 – 23).

While the Narrabri region near the Namoi River was extensively cleared and was used for cultivation and cattle farming, the nearby Pilliga Forest was the focus of large-scale forestry. By the late 1870s, a fully fledged timber industry was thriving in the region, with gazetted timber reserves following soon after (AECOM Australia Pty Ltd 2016: 15). Rail infrastructure was introduced to accommodate the booming agricultural and forestry industries, with the railway line reaching Narrabri in 1882 (Rolls 1981: 11, 187). Most of the landscape around the township of Narrabri had historically been cleared for cultivation. The land around the project area has been cleared for cropping, where it remains a rural plot that is intensively farmed and cultivated.

2.2 Topography, Hydrology and Climate

The proposed area of works is situated within the Brigalow Belt South Bioregion (BBSB). It is part of the Namoi subregion. Geologically, the BBSB comprises of horizontally bedded Jurassic and Triassic quartz with limited areas of conglomerate or basalts. The town of Narrabri is part of the southern extremity of the Queensland Brigalow Belt, though is not covered in brigalow as the name suggests. The landscapes of this region derive from a combination of extensive basalt lava flows and quartz sandstones, with variable vegetation, geology and soils (NSW NPWS 2003: 131). It is situated within the subhumid eastern zone of Australia (NSW NPWS 2003: 131). The mean annual temperature is 10 – 19°C, with a mean annual rainfall between 449 – 1015mm (NSW DPIE website, accessed 22 January 2021).

The project area is situated within Quaternary alluvial plains with outwash fans derived from Tertiary basalts. It is part of the Mitchell (2002) Liverpool Alluvial Plains landscape, characterised by undulating hills and sloping plains with channels and associated floodplains. The general elevation is 300 – 350 metres, with local relief less than 10 metres (Mitchell 2002: 11).

The Namoi River and Narrabri Creek are the nearest major permanent water sources to the project area, which is situated approximately 3 kilometres northeast of their confluence. The palaeo channels of the river remain distinguishable over the surface of the alluvial plain landscape and tell the story of a dynamic and continually changing river system (Jakovljevic 2018: 11). These smaller permanent and ephemeral creeklines stemming from these two major waterways would have likely traversed the plains landscape around the

project area. As such, it can be inferred that access to ephemeral and permanent waterways across the entire floodplain would have provided ample resources to Aboriginal people living in the area.

2.3 Geology and Soils

The project area is within the Gunnedah Basin and is characterised by horizontally bedded Jurassic and Triassic quartz, sandstone and shale with minor volcanic basalt caps (Totterdell 2009). The basin has Permian Triassic stratigraphic units which are overlain by Tertiary volcanic and laval units from intrusive shield volcanoes (Jakovljevic 2018: 11). The landscape today is dominated by alluviums in the form of large fans and outwash slopes that provide evidence of larger stream courses of Quaternary age which occurred in the long, sand-filled channels and clay plains between ridges (NSW NPWS 2003: 132).

Soils vary greatly across the Brigalow Belt South Bioregion. In areas with underlying sandstone, texture contrast soils are most common downslope. Increasing clay content with depth is common; as such, these soils are often found with harsh clay sub-soils. Valley floor sediments, however, tend to be sorted into deep sands with yellow earthy profiles, harsh grey clays, or more texture contrast soils with a greater concentration of soluble salts (NSW NPWS 2003: 132). The project area contains grey, brown and red clays (Stace *et al.* 1968) and/or vertosols (DPIE 2020) in a quaternary alluvial landscape (NSW NPWS 2003: 132; Mitchell 2002: 11).

Table 1. Soil Landscape Group

AUSTRALIAN SOIL CLASSIFICATION	AUSTRALIAN GREAT SOIL GROUP	PROVINCE	GEOLOGY
Vertosols	GC_BC_RC: Grey, Brown and Red Clays	Gunnedah Basin (Totterdell <i>et al.</i> 2009)	Permo-Triassic Basin (Colquhoun <i>et al.</i> 2019) with Quaternary Alluviums (NSW NPWS 2003)

2.4 Flora and Fauna

The landscape around the project area, including the nearby township of Narrabri, has largely been cleared for agriculture. Where native vegetation is extant in basaltic areas, however, remnant species may include brigalow, belah, whitewood, wilga, budda and poplar box on the hills, with river red gum, belah, Acacia pendula and poplar box on the flats. In alluvial clay landscapes such as that of the project area, white box, silver-leaved ironbark, white wood, bull oak and brigalow are supported where there is extant native vegetation. River red gum occurs on streams in this bioregion (NSW DPIE Website, accessed 22nd January 2021). Diverse grasslands dominate the Liverpool Alluvial Plains, within which the project area is situated. Common species include plains grass (*Stipa* sp.), panic grass (*Panicum* sp.), windmill grass (*Chloris* sp.) and blue grass (*Dicanthium* sp.) on black earths (Mitchell 2002: 11).

The Brigalow Belt South Bioregion has a high biodiversity in terms of terrestrial and wetland species of animals. This landscape currently supports 18 amphibian species, 68 reptiles, 281 birds and 82 mammal species (NSW DPIE Website, accessed 22nd January 2021). These may have included forest canopy, grassland and wetland birds, lizards, snakes, and small terrestrial mammals. Additionally, the proximity of the site to the Namoi rivers and major permanent creeks would have provided easy access across the alluvial plains and valleys to aquatic species of animals such as fish, turtles, and rays. While the area has been heavily cleared and stripped of soil and vegetation since European settlement, it would have, in the past, been an abundant source of floral and faunal resources to local Aboriginal people.

2.5 Summary

The alluvial plains landscape and long footslopes in the vicinity of the project area would have provided an easily traversable region of high biodiversity, with abundant woodland nearby in the Pilliga, diverse grasslands, and numerous aquatic species associated with the Namoi River and Narrabri Creek. The landscape would have provided many nearby permanent water sources as well as ephemeral creeks and drainage channels over the surrounding alluvial plains. The situation of the project area in a landscape on deep Quaternary alluviums would have in the past provided catchments of deposits and cultural remains.

Due to heavy disturbance since European settlement, however, preservation of evidence for Aboriginal cultural occupation and land use is unlikely. Extensive land clearance around Narrabri and the proposed area of works has largely stripped the area of all topsoil, as demonstrated in the field survey for this project. The potential for scarred trees is also very low due to heavy deforestation for cultivation and grazing beginning from the earliest European pastoral settlement of the site. The maintenance of this degraded rural landscape continues to the present day.

3. ARCHAEOLOGICAL CONTEXT AND ETHNOHISTORY

This section presents the ethnohistorical and archaeological context for the evaluation of the project area, specifically known archaeological sites identified by previous archaeological investigations, and the understanding of Aboriginal heritage developed by previous archaeological and heritage studies.

3.1 Ethnohistorical Context

This ethno-historical context is drawn from review of accessible sources including:

- *Australian Dictionary of Biography*,
- a review of primary sources including parish maps and newspaper articles,
- sources identified on the National Library of Australia's *Trove* database,
- consultation with Aboriginal community organisations in the locality,

The Narrabri area has a long-documented history of Aboriginal settlement by Kamilaroi people, who occupied large parts of the now Brigalow Belt South Bioregion and the nearby Nandewar Bioregion, which includes towns such as Tamworth and Barraba. For most of the year, small groups divided up to hunt and gather, focusing on the Namoi and Mooki Rivers. In the mid-1700's however, a large flood along the Namoi and Mooki is believed to have significantly reduced the Aboriginal population. Their arrival additionally brought disease and conflict, resulting in the death or displacement of many of the local Aboriginal people in the area at the time (Berry 2018: 91).

While accounts of the broader Kamilaroi group are abundant in the early historical literature, the focus was largely around later larger population centres such as Tamworth. Little else is known specifically about the the Kamilaroi in the Narrabri area, and much of our inferences about Aboriginal settlement and culture rely on the archaeological record for the area. Through these investigations of sites around the Liverpool Plain and the nearby Pilliga area, however, a rich history of settlement and land use has been revealed (Jakovljevic 2018: 15). Previous archaeological investigations in this region will be addressed later in this section.

3.2 Heritage Register and Database Searches

The following heritage registers and database searches were undertaken as part of this preliminary assessment:

- National Native Title Tribunal (NNTT);
- Aboriginal Heritage Information Management System (AHIMS);
- The Australian Heritage Database (AHD);
- State Heritage Register (SHR) and Inventory (SHI); and
- Narrabri Local Environmental Plan (2012).

3.2.1 National Native Title Tribunal

A search was undertaken of the National Native Title Register maintained by the National Native Title Tribunal (NNTT) on 3 November 2020 of the project area to identify if Native Title exist over the project area. The searches identified that no Native Title issues exist for the site. The project area is, however, within an Active Native Title Application claim area by the Gomeroi People (refer to **Appendix B**).

3.2.2 Aboriginal Heritage Information Management System (AHIMS search)

Searches were conducted of the AHIMS register on 3 November and 7 December 2020 for any Aboriginal heritage sites recorded within and adjacent to the project area. The search covered the area datum: GDA, Zone: 55, Eastings: 766080 – 776080, Northings: 6635078 – 6645078 (approximate 5km radius around project area). A total of 7 Aboriginal sites and 0 Aboriginal places were listed (refer to **Appendix C, Table 2** and **Figure 3**).

Table 2. AHIMS Search Results

AHIMS Site ID	Site Name	Site Type	Features	Number of Sites	Sites Within Project Area
19-3-0184	Namoi River Scar Tree	Modified Tree	Open site with one modified tree	1	0
19-3-0185	Namoi River IF	Artefact	Open site with isolated artefact	1	0
19-3-0186	Namoi River IF2	Artefact	Open site with isolated artefact	1	0
19-3-0187	Namoi River Artefact with Pattern	Artefact	Open site with isolated artefact	1	0
19-3-0007	Narrabri Junction; Namoi Farm	Artefact	Open campsite – surface scatter of artefacts eroding out of a terrace adjacent to a billabong – flakes of various kinds, some cores, a broken ground edge tool, a blade, and some broken pieces of European artefacts dumped nearby	1	0
19-3-0133	Collins Park site 2 artefacts	Artefact and Modified Tree	Open site with five artefacts and one modified tree	1	0
19-3-0136	Collins Park site 1 artefact	Artefact	Open site with isolated artefact	1	0

Seven sites were identified within 5km of the project area. Of these, five sites were artefact scatters or isolated artefacts, with one modified tree site and one site with both a modified trees and numerous artefacts (refer to **Table 2**). None of these sites occur within or adjacent to the proposed project area (refer to **Figure 3**).

3.2.3 Australian Heritage Database

The Australian Heritage Database (AHD) is a Commonwealth administered heritage database that includes entries from the former Register of the National Estate and the current Commonwealth and National Heritage Lists. This database was searched on the 3 November 2020 for all Indigenous heritage items within the Narrabri Local Government Area. The AHD search listed 12 results within the Narrabri Shire LGA for heritage places, including three Indigenous Places. None of these are within or adjacent to the project area. No other items on the AHD are within the project area.

3.2.4 NSW State Heritage Register and NSW State Heritage Inventory

The State Heritage Register is a heritage database administered by the NSW Heritage Branch of the Office of Environment and Heritage. This database includes heritage listings for State significant heritage items. This database was searched on the 3 November 2020 for all heritage items within the Narrabri Local Government Area.

The results indicate 1 item listed on the register, and no Aboriginal places in the LGA nor within the project area. The Narrabri Gaol and Residence is not within or adjacent to the project area.

The State Heritage Inventory is a heritage database administered by the NSW Heritage Branch of the Office of Environment and Heritage. This database includes heritage listings from local and regional planning instruments and heritage studies and state significant heritage items. This database was searched on the 3 November 2020 for all Indigenous heritage items within the Narrabri Shire Local Government Area.

The results of the search identified 75 historical items, of which 39 are in Narrabri. However, none of these items are within or adjacent to the project area.

3.2.5 Narrabri Local Environmental Plan (2012)

The Narrabri Local Environmental Plan (LEP) is a planning instrument administered by Narrabri Shire Council, which contains provisions and listings of items of environmental heritage including heritage, conservation areas and archaeological sites within Schedule 5. The LEP was searched on 3 November 2020. There were 40 items listed within the Narrabri LGA, of which 21 were listed in the town of Narrabri.

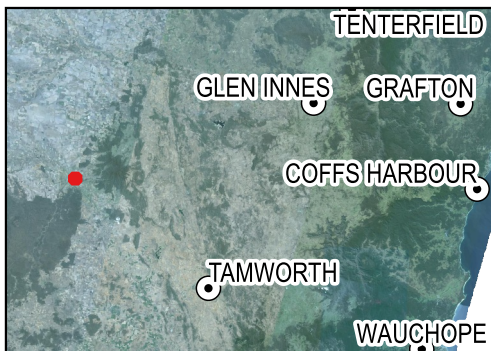
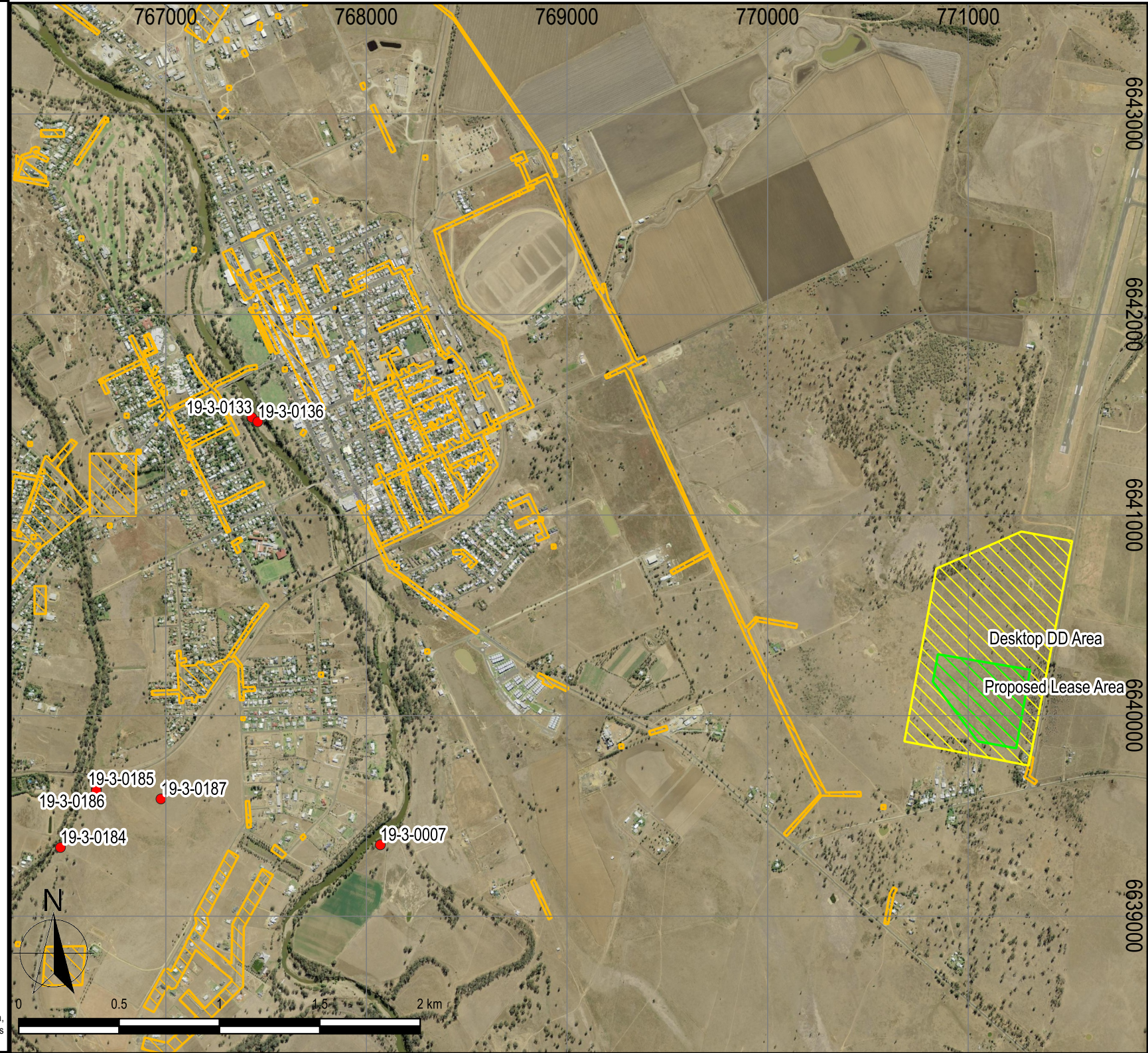
The results of the search identified no registered Indigenous heritage items within the project area.



Figure 3
Project Area and Known
Aboriginal Heritage Sites

Legend

- Major Towns & Cities
- AHIMS Sites
- Desktop DD Area
- Proposed Lease Area
- Preliminary Construction Plan



Source: NSW Spatial Services, AHIMS, KDC
Projection: GDA94

Document Set ID: 1845825
Version: 1. Version Date: 09/03/2021
Map content may be based on third party data, may not be to scale and are intended for use as a guide only. Virtus Heritage does not warrant the accuracy of such maps or figures.

3.3 Previous Archaeological Research

A review of the AHIMS library and online searches were undertaken to obtain copies of previous Aboriginal heritage studies and archaeological investigations within the locality of the project area. No investigations have been published from the immediate surrounds of the proposed site (5km radius). As such, other sources for archaeological reports were consulted to gain a better understanding of the archaeological research near Narrabri and the project area (refer to **Table 3**). This section outlines the studies in the locality that can assist in building up a picture of the potential archaeology of the region. This in turn can help to predict the types of sites that may be expected to be present within the project area.

Table 3. Previous Archaeological Surveys within the Locality

AUTHOR/ DATE	LOCALITY	INVESTIGATION AND DISTANCE TO PROJECT AREA	NO. RECORDED SITES	SITE TYPES	SITES WITHIN PROJECT AREA
OzArk Environment & Heritage 2020	Narrabri LGA	LGA Wide Aboriginal Cultural Heritage Study with oral history survey and regional consultation to recommend sites for future inclusion in the Narrabri LEP.	N/A	N/A	N/A
Trindall 2007	Narrabri	Aboriginal Cultural Heritage Assessment and field survey for Narrabri Coal Seam Gas Development (approx. 15km WSW of project area)	1	One scarred tree in a slightly wooded section of the northern Pilliga East State Forest	0
CQCHM 2015	Narrabri	Aboriginal Cultural Heritage Assessment and field survey for Narrabri Gas Project (approx. 12km west and 11km south of project area).	4	Two living scarred trees with single scars, and two isolated artefacts (both unmodified quartz flakes)	0
AECOM 2011	Narrabri	Archaeological constraints analysis with field survey for Eastern Star Gas	20	11 scarred trees, five artefact scatters and four isolated artefacts	0
NSW NPWS 2002	Brigalow Belt South Bioregion	Entire bioregion; survey focusing on Pilliga Forest (northern boundary approx. 6km south of project area).	1110	Shelter sites with rock art, rock engraving, ochre quarry, stone arrangements, stone quarry. Full results excluded from report at the request of Aboriginal communities.	0

A major Aboriginal cultural heritage assessment was conducted by NSW National Parks and Wildlife Service (2002) of the broader Brigalow Belt South Bioregion. Field survey, oral history collection, landform mapping, and cultural plant recording was undertaken over an area of 52,409 km² including regions near

Narrabri such as the Pilliga forest. While no sites in the immediate vicinity of the project area was found, results indicated intensive Aboriginal settlement of the area, particularly around sources of water. A total of 1,110 sites were recorded, of which 50% were within 200 metres of water. The most common site types were surface artefact scatters, with culturally modified trees also well represented in areas where communities of native mature vegetation survive (NSW NPWS 2002). Of particular interest to this study are the results from the alluvial floodplains and landforms, which indicated that in these areas, a variety of Aboriginal site types existed up to 4km away from water, and on average, a distance of 410m from water (Jakovljevic *et al.* 2018).

3.4 Regional Character

The Kamilaroi people had a prior presence in the New England area for many thousands of years. They formed part of a wider indigenous nation which extended from around Singleton in the Hunter Valley to the Warrumbungle Mountains in the west and up through Narrabri, Walgett, Moree and Mungindi in NSW to Nindigully in south-western Queensland (TRC 2006: 5). A large variety of sites containing physical evidence of past Aboriginal land use remain within the wider region. Site types include bora grounds/ceremonial grounds, campsites, rock art and engravings, rock shelters, artefact scatters, stone quarries, ochre quarries, isolated finds, and scarred or carved trees.

The earliest dates for human occupation in the Brigalow Belt South Bioregion (BBSB) are 4,950 BP from Bendemeer rock shelter on Glendon Station and 3,600 BP from Moore Creek 4 rock shelter. In their *Tamworth Aboriginal and Archaeological Study*, Wilson and McAdam (2000) suggest that in light of the dates for the wider region, it is likely that the Kamilaroi have occupied their country for at least 20,000 years, and these dates may be extended with further excavations in the area (Boileau 2007: 8).

Within the surrounds of Narrabri and the project area, archaeological sites generally occur as open camp sites, surface artefact scatters and modified tree sites in alluvial plains and forested slopes, or as rock shelters and grinding grooves around the margins of the plain where underlying sandstone or sandstone cliffs are dominant such as in the Pilliga (NSW NPWS 2002). Within the plains, elevated platforms along the margins of creeks and rivers offering abundant water and aquatic resources, would have been favourable for Aboriginal occupation. This is reflected in the archaeological record, with higher artefact and site densities recorded near alluvial margins such as the Namoi River and Narrabri Creek (refer to AHIMS site types on **Figure 3**).

The region's vicinity to sources of wood and lithic material, such as in the Pilliga forest south of the project area, would have additionally been favourable to the Kamilaroi people (NSW NPWS 2002). Materials such as fine-grained claystone, basalt, quartz, siltstone, tuff and other volcanic materials would have been available in the Liverpool Plains landscape within which the project area is situated (Mitchell 2002; Bioregional Assessments Website, accessed 22nd January 2021).

3.5 Summary

The results of the background archaeological research, including heritage searches and a review of previous assessments in the region indicate that the most common site type is low density artefact scatters. The potential for scarred trees, though common in the region, is very low due to heavy deforestation and land clearance around the project area for cultivation and grazing. The archaeological context of the project area indicates that evidence of Aboriginal occupation is most likely to occur on the alluvial plains and in low catchments in close proximity to permanent water sources outside of the project area. Survival of evidence of Aboriginal occupation is, however, dependent on the impacts of previous land use history.

4. PREDICTIVE MODEL AND ARCHAEOLOGICAL POTENTIAL

Based on the known archaeological, environmental and landscape context of the locality, a predictive model for evidence of Aboriginal occupation for the project area is presented below:

Scarred trees and **carved trees** contain evidence of scars and carved patterns which can be attributed as having Aboriginal cultural origin. Scarred trees are typically created by the removal of bark from the trunk of the tree (usually with a stone axe) to make shields, canoes, implements and other types of items which leave a wound on the tree trunk. Carved trees contain carved patterns on the tree trunk and are often found in association with ceremonial grounds, burials or cultural sites. Carved trees are a moderately common site type in the Narrabri region as indicated by the AHIMS search results. They may be found where areas of mature trees are extant within the project area. Due to the previous land use history of the area, however, potential is low in the proposed area of works.

Isolated artefacts and **open campsites (artefact scatters)** are the locations of discarded stone artefacts, often material that has been discarded as part of making stone tools or over frequent episodes of occupation/visitation in an area. The objects are most likely to be found within 100 metres of a major water course, well drained alluvial flats, lower slope adjacent water courses, crests, and areas near the lake foreshore where the landscape has not been heavily modified. The potential for artefact scatters and isolated artefacts is low to moderate. They are the most common site type in the region, though potential has been limited due to heavy impacts to the landscape associated with intensive agriculture.

Middens are the accumulation of debris from fish, crustaceans and shell fish (shells, fish bones) consumed as part of Aboriginal people's diet. Middens also often contain charcoal, stone artefacts, bone and other types of material used by Aboriginal people. Middens often occur within close proximity to freshwater and saltwater sources which have potential to contain mussels, oysters and other types of edible shellfish. The potential is low due to the absence of permanent or major water sources within the project area.

There are no known **burial sites**, **bora grounds** or **stone arrangements** within the project area based on Aboriginal consultation to date and preliminary previous archaeological and historical research for this assessment. Burial sites, which are a very rare site type, are also unlikely to be found within the project area in areas of high modification. While burials are more likely within shell middens, no known middens have been recorded within the vicinity.

Petroglyphs (also referred to as Rock Engravings) are art sites where marks have been made in stone by Aboriginal people (for example, spirit figures, animals, implements and footprints). **Rock shelter sites with art** consist of rock overhangs used for shelter by Aboriginal people and where smooth surfaces on the walls of the shelter (sandstone surfaces) are painted with ochres and pigments). **Rock shelter sites with occupation deposits** include sediment deposits that potentially retain archaeological material. No known landforms supportive of rock shelters have been recorded in the vicinity of the project area.

Aboriginal axe grinding grooves are grooves most often found in sandstone where Aboriginal people have sharpened or manufactured stone axes and other implements, and in some cases, ground seed and grains in the sandstone forming 'bowls'. This site type may occur if suitable geology is present such as outcropping sandstone or suitable sandstone shelves in creek beds. The potential for this site type within the project area is low due to a lack of suitable geology. No outcroppings of stone nor grinding groove sites were identified during site survey.

Potential Archaeological Deposits refer to soil profiles within landforms which are predicted to contain buried evidence of Aboriginal occupation. This buried evidence is most often stone artefact scatters which survive frequently in the archaeological record and may occur in both primary and secondary depositional environments. Nearly all soil landscapes and landform types in Australia are connected to Aboriginal occupation and have potential to contain evidence of such.

Artefacts are most commonly recorded in A unit soils (topsoils) and at great depth in B unit alluvial deposits. They occur also in other types of B unit subsoils and deposited between the cracks of C unit cracking clays, where artefacts have moved down the soil profile. Evidence of Aboriginal occupation occurs commonly in both natural secondary deposits as well as in many types of disturbed contexts. Due to the large number of environments and soils where artefacts can occur, deposits are considered to have archaeological potential unless the absence of artefacts is anticipated as a result of post-depositional factors. How archaeological potential is defined and to be assessed in this report is provided in **Table 4**.

Table 4. Definitions of Archaeological Potential

ARCHAEOLOGICAL POTENTIAL	DEFINITION
Low to Zero	Landforms that have been totally modified and have low to zero potential for any remaining original soil profile or intact archaeological deposits. This is infrequent as usually disturbed sites remain redeposited or partially redistributed in the landscape. In order to designate areas as having low to zero potential, complete stripping of original soil profiles down to or through bedrock must be evident. Sites of that description are rare and are usually deep quarries or open cut mines.
Low	Landforms that may have been utilised by Aboriginal people in the past, but at a lower intensity relative to all surrounding landforms, resulting in a lower artefact density than all surrounding landforms. This category also includes landscape areas of low terrain integrity, where geomorphic processes or human action may have redistributed artefacts from their deposited locations, such as stripping of soil or excavation to create culverts or dams, resulting in site disturbance or destruction.
Moderate	Landforms that are predicted to have been utilised by Aboriginal people in the past, but not intensively or repeatedly. There is therefore potential for artefactual deposition, but at a lower frequency and density than in areas of high archaeological potential. This category may also refer to landforms known to be sensitive for higher levels of Aboriginal occupation but where prior ground surface disturbances has decreased the archaeological integrity and potential of finding evidence of Aboriginal occupation (for example, creek confluences, alluvial terraces and riverbanks, where stratigraphic integrity may have decreased due to previous land use).
High	Landscape areas predicted to have been intensively or repeatedly utilised by Aboriginal people in the past, such as creek confluences, Pleistocene terraces, floodplains or elevated landforms above major watercourses (high stream order tributaries) or floodplains. In these areas, site and artefact density are expected to be higher than the surrounding landscape, and sites in these areas may

	possibly be more complex. Though terrain integrity in these areas may be variable, the high archaeological potential of these areas give the associated deposits research potential, or the capacity to provide valuable information on past Aboriginal land use.
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No Potential Archaeological Deposits were recorded during the survey. The area has been identified as having low potential for intact archaeological deposits and low sensitivity in terms of landform. Intensive clearing and farming appears to have stripped the majority of topsoil from the property, which in conjunction with the lack of mature trees and the high visibility over the site's entirety, revealed no archaeological materials during the site inspection to indicate potential for preserved cultural materials.

4.1. Summary

The project area is in a heavily disturbed landscape, whereby remnant A1 topsoils may have been re-distributed or almost entirely removed, limiting the potential for intact Aboriginal objects and sites to occur. During the site inspection no outcroppings of stone and no evidence of grinding grooves were identified. Mature trees were also uncommon in the landscape due to heavy land clearance and deforestation for intensive agriculture. As such, the potential for axe grinding grooves and scarred or modified trees is low.

The landforms in the area may be suitable for artefact scatters or isolated artefacts to occur dependent on the level of disturbance and modification, though the potential is low due to previous land use history and the lack of vegetation required for topsoil retention. While the potential is low, these site types have been demonstrated to occasionally occur within cracks in clayey subsoil horizons, or in remnant pockets of topsoil within undulating parts of otherwise disturbed landscapes. Other site types such as stone arrangements, art sites, burials and ceremonial sites such as bora rings are unlikely to occur in the project area.

5. SITE INSPECTION AND RESULTS

The site inspection was undertaken on the 13 January 2021 on lands within the Narrabri LALC area. The site inspection was undertaken by Elaine Lin, Senior Archaeologist (Virtus Heritage) and two site officers from Narrabri LALC, Kristie Toomey and Kenneth Mason. The field survey was completed over one field day. The proposal area was inspected via pedestrian survey in four transects, targeting all areas of exposure. The survey included an inspection of all mature trees within the project area, and no drainage lines were identified during the inspection (refer to **Appendix D** for photographs of the site inspection).

5.1 Site Inspection Results

General visibility was low over the project area as the entire paddock was overgrown with thick, tall grass and numerous exotic pasture grass, small shrub and weed species. The general exposure ranged between 0 – 20%, with rare areas of exposure with visibility ranging between 80 – 95%. The project area has been heavily disturbed by European farming activities for plant cultivation and animal grazing, such as ploughing and tree clearing. The soil across the project area, where visible, was a red loamy to fine sandy clay with an occasional fine layer of dark brown to black silty loam topsoil. These soils accounted for less than 20% of exposed areas with visible soil. No outcroppings of stone nor drainage lines were identified during the site inspection.

Trees located on the property were scarce, and no scarring was identified on any potential mature or native tree species within the project area. No cultural material was observed during the survey. The study area has been identified as having very low potential for intact archaeological deposits to occur. Intensive clearing and farming appears to have stripped the majority of topsoil from the area, which in conjunction with the lack of mature trees and the lack of materials in the occasional large areas of exposure, has produced no archaeological materials to indicate any potential for preserved cultural materials.

5.1.1 Cultural Comments and Potential for Archaeological Deposits

During the site inspection, Narrabri LALC Site Officers, Kristie Toomey and Kenneth Mason supported the assessment of the proposed works area as having low potential for evidence of Aboriginal occupation due to heavy disturbance of the site. The Site Officers also noted a lack of sensitive landforms in the vicinity. Neither Kristie nor Kenneth knew of any sites within the immediate area and were unaware of any areas of cultural significance near the proposed development. *We note these comments must be reviewed and finalised in consultation with Narrabri LALC during the review of this final report, as all comments have been verbal to date.*

5.2 Summary of Site Inspection

There are no previously recorded sites within the project area based on heritage searches and background research of previous archaeological investigations to date. No Aboriginal objects or sites were observed in the project area and given the disturbance and lack of any undisturbed soils or sensitive landforms identified during survey, the project area is deemed to have a very low potential for archaeological deposits. Comments from Narrabri LALC Site Officers, Kristie Toomey and Kenneth Mason supported the assessment of low archaeological potential on site during fieldwork.

6. RECOMMENDATIONS

The following recommendations have been made based on the information provided on project impacts, consultation to date, relevant archaeological and environmental background research, and the results of the site inspection.

4. No Aboriginal objects were identified during the site inspection. No Aboriginal places are registered within the project area. No areas of archaeological potential are identified within the project area requiring archaeological testing, salvage or mitigation.
5. All site workers and personnel involved in site impact works associated with the proposal should be inducted and briefed on the possible identification of Aboriginal sites and objects during construction and their responsibilities according to the provisions of the *NPW Act 1974*, in case any additional unknown objects or items are uncovered during proposed works.
 - a. As part of this induction, the contact phone numbers of the Heritage NSW regional archaeologist and EnviroLine 131 555, the relevant Environmental Officer responsible for this project should also be given to all site workers and personnel, in case unknown objects or items are uncovered during excavation.
 - b. Site workers should be made aware of the location of any Aboriginal sites that may at any stage occur within the proposal site and their scientific significance and their legal obligations in relation to the protection and management of these Aboriginal sites under the *NPW Act 1974*, and 2010 ancillary provisions and amendments.
 - c. As part of this induction, workers should be made aware that in the event that any unexpected human remains are uncovered on site, the area of the suspected remains must be secured and cordoned off and the NSW Police notified. No further works can be undertaken until the NSW Police provide written advice. If these remains are deemed to require archaeological investigation by the NSW Police or NSW Coroner, then Heritage NSW and the relevant Aboriginal parties must be notified. A plan of management for the preservation of any identified Aboriginal human remains or for their salvage must be put in place or conducted under an AHIP methodology and variation developed in consultation with all relevant Aboriginal parties and the Heritage NSW.
 - d. Providence Asset Group or delegated authority may wish to consider the input and engagement of interested Aboriginal stakeholder groups and Narrabri LALC in the development of inductions and tool box talks for this project.
6. A copy of the final report has been made available to Narrabri LALC for comment and review. Any additional comments by the LALC will be considered where possible in the future by PAG.

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APPENDIX A

CONSULTATION LOG

APPENDIX B

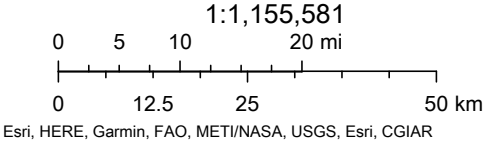
NATIONAL NATIVE TITLE TRIBUNAL SEARCH

Native TitleVision Web Map



11/3/2020, 2:08:25 PM

Applications (Schedule)



Gomeroi People


Gomeroi People

NOTE: To determine areas subject to claim within the external boundary, reference to the application description is necessary.
Application boundary data compiled by the NNTT from data sourced from DOL (NSW).


Topographic image data is © Commonwealth of Australia and is used under licence from Geoscience Australia 2008
NOTE: Topographic images should be used as a guide only.

Map created by: Geospatial Services, National Native Title Tribunal (09/12/2011)

Register Attachment:
NSD37/2019 (NC2011/006)
Map of the area covered by the application
Attachment C of the Application
Page 1 of 1, A4, 20/01/2012



National Native Title Tribunal



NORTH
0 25
KILOMETRES

Latitude and Longitude based on Geocentric Datum of Australia 1994
Non Projection

© Commonwealth of Australia 2011

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APPENDIX C

AHIMS SEARCH

Elaine Lin

Date: 07 December 2020

17/469-475 Parramatta Road
Leichhardt New South Wales 2040

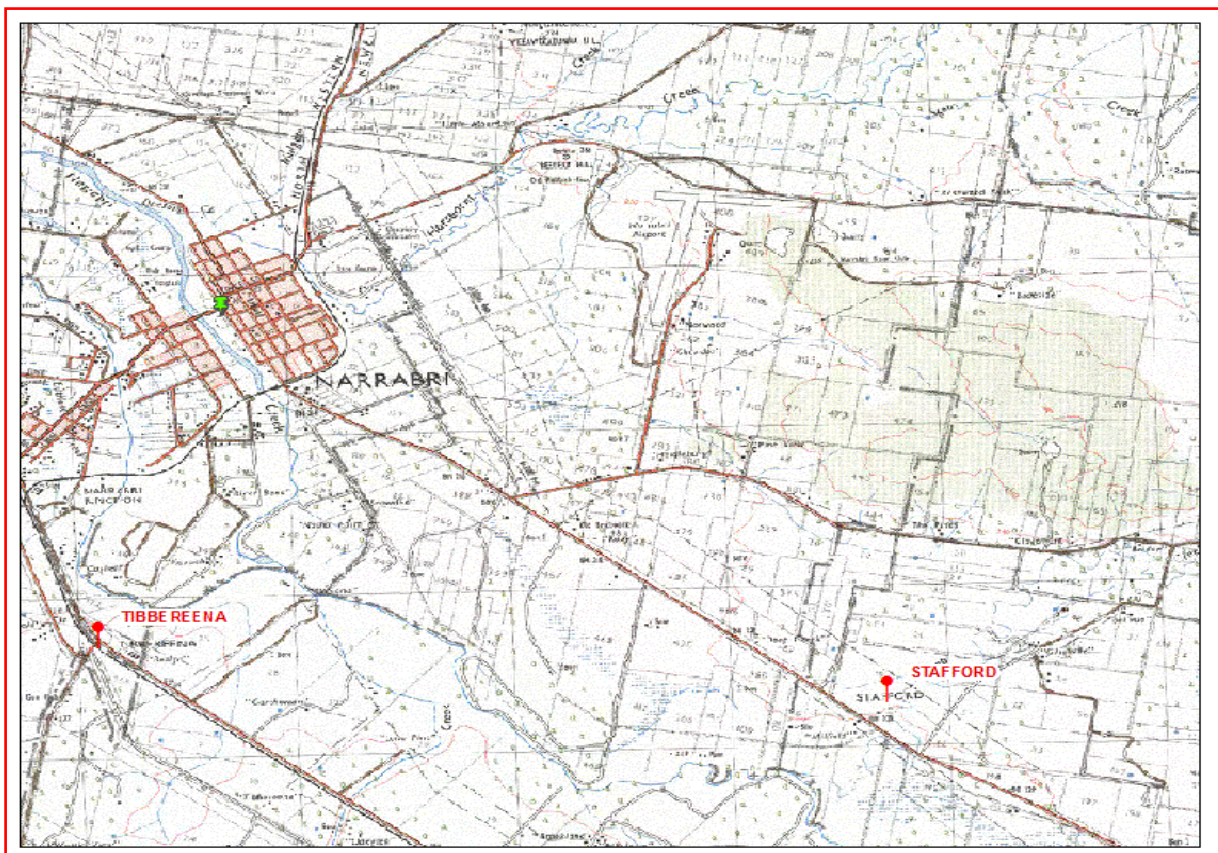
Attention: Elaine Lin

Email: e.lin@virtusheritage.com.au

Dear Sir or Madam:

AHIMS Web Service search for the following area at Datum :GDA, Zone : 55, Eastings : 766080 - 776080, Northings : 6635078 - 6645078 with a Buffer of 0 meters. Additional Info : Redoing search as per advice from Eva due to mapping issue with AHIMS system - fee to be waived, conducted by Elaine Lin on 07 December 2020.

Result 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:

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

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the [NSW Government Gazette \(http://www.nsw.gov.au/gazette\)](http://www.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Office of Environment and Heritage's Aboriginal Heritage Information Unit upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Office of Environment and Heritage and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date .Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : 221 - Narrabri Solar

Client Service ID : 555629

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
19-3-0184	Namoi River Scar tree	GDA	55	766474	6639342	Open site	Valid	Modified Tree (Carved or Scarred) : 1		
	<u>Contact</u>	<u>Recorders</u>	Paul Houston,Mr.Steven Booby					<u>Permits</u>		
19-3-0185	Namoi River IF	GDA	55	766653	6639633	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Paul Houston,Mr.Steven Booby					<u>Permits</u>		
19-3-0186	Namoi River IF 2	GDA	55	766653	6639625	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Paul Houston,Mr.Steven Booby					<u>Permits</u>		
19-3-0187	Namoi River Artefact with Pattern	GDA	55	766975	6639584	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Paul Houston,Mr.Steven Booby					<u>Permits</u>		
19-3-0007	Narrabri Junction;Namoi Farm;	AGD	55	767955	6639171	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Brown					<u>Permits</u>		
19-3-0133	Collins Park site 2 artefacts	GDA	55	767429	6641486	Open site	Valid	Artefact : 5, Modified Tree (Carved or Scarred) : 1		
	<u>Contact</u>	<u>Recorders</u>	Mr.Allison Stewart					<u>Permits</u>		
19-3-0136	Collins Park site 1 artefact	GDA	55	767458	6641465	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	Mr.Allison Stewart					<u>Permits</u>		

Report generated by AHIMS Web Service on 07/12/2020 for Elaine Lin for the following area at Datum :GDA, Zone : 55, Eastings : 766080 - 776080, Northings : 6635078 - 6645078 with a Buffer of 0 meters. Additional Info : Redoing search as per advice from Eva due to mapping issue with AHIMS system - fee to be waived. Number of Aboriginal sites and Aboriginal objects found is 7

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

APPENDIX D

PLATES



Plate 1. Access to proposed solar farm lease area from 115 Airport Road, Narrabri, NSW.



Plate 2. Entrance gate into lease area for proposed solar development and start of transect one; facing west.



Plate 3. Start of transect two showing completely overgrown paddock with exotic pasture species; facing south.



Plate 4. End of transect three showing completely overgrown paddock with exotic grass and weed pasture species and horses in paddock; facing north.



Plate 5. Start of transect four showing one of two major areas of exposure with approximately 80% visibility; facing west.



Plate 6. Example of rare large area of exposure with approximately 80% visibility; facing northwest.