APPENDIX G ABORIGINAL CULTURAL HERITAGE ASSESSMENT

Report Title	Aboriginal Cultural Heritage Assessment: Walla Walla Solar Farm
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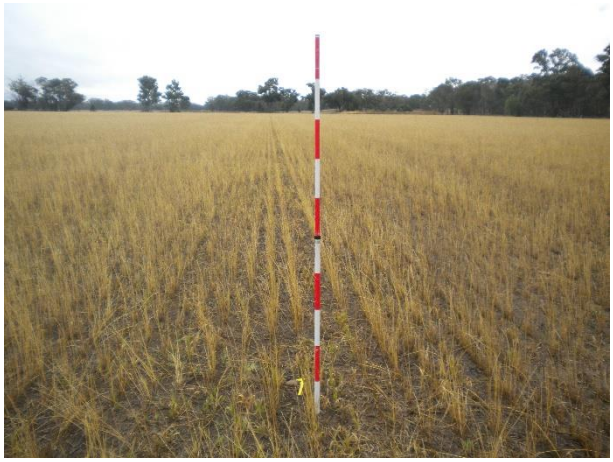

WALLA WALLA SOLAR FARM

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ABRIEVIATIONS

ACHA	Aboriginal Cultural Heritage Assessment
AHIMS	Aboriginal heritage information management system
BCS	Bundyi Cultural Services
BOM	Australian Bureau of Meteorology
DECCW	Refer to OEH
DP&I	(NSW) Department of Planning and Infrastructure
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
ha	hectares
Heritage Act	*Heritage Act 1977* (NSW)
km	kilometres
LALC	Local Aboriginal Land Council
LGA	Local Government Area
m	Metres
MWac	Megawatt
NPW Act	*National Parks And Wildlife Act 1974* (NSW)
NSW	New South Wales
OEH	(NSW) Office of Environment and Heritage, formerly Department of Environment, Climate Change and Water

EXECUTIVE SUMMARY

INTRODUCTION

FRV Services Australia Pty Ltd (FRV) propose to develop a utility scale solar farm at Walla Walla, approximately 4.3 km north east of the town of Walla Walla and 9.2 km south west of the town of Culcairn, New South Wales (NSW). The proposed solar farm would comprise of 605 hectares (ha) within Lots 16, 17, 20, 21, 87, 88, 89, 108, 109 and 118 DP753735, and Lot 22 DP1069452 on land primarily used for cropping and grazing.

NGH Environmental has been contracted by FRV to prepare an Aboriginal Cultural Heritage Assessment (ACHA) report to investigate and examine the presence, extent and nature of any Aboriginal heritage sites within the proposal area. This ACHA report will form part of a wider Environmental Impact Statement (EIS).

The Secretary of the DPE Environmental Assessment Requirements (SEARs) were issued on the 7th of March as part of the State Significant Development (SSD) proposal. The item relating to Aboriginal heritage was as follows:

> including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, including consultation with the local Aboriginal community in accordance with the *Aboriginal Cultural Heritage Consultation Requirements for Proponents* (Walla Walla Solar Farm 7/03/2019).

This ACHA Report was prepared in line with the following:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011);
- *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH 2010a), and
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (ACHCRP) (OEH 2010b) produced by the NSW Office of Environment and Heritage (OEH)

PROJECT PROPOSAL

The Walla Walla Solar Farm assessment area is approximately 605 ha and is primarily agricultural and pastoral land. The proposed development footprint comprises of approximately 493 ha.

The proposed Walla Walla Solar Farm would have a total installed capacity of up to 300 MW (AC), and would include the following components:

- Single axis tracker PV solar panels mounted on steel frames over most of the site.
- Electrical conduits and transformers.
- On site substation.
- Site office, parking access tracks and perimeter fencing.
- Electrical transmission infrastructure and overhead transmission line to connect the proposal to the existing 330 kilovolt (kV) transmission line.
- Internal access roads.
- On-site vegetative screening.
- Upgrade to existing creek crossing

The existing TransGrid Jindera to Wagga Wagga 330 kV transmission line runs across the western portion of the development site, which forms part of the electricity distribution network that originates at TransGrid's North Wagga Substation. The proposed solar farm will connect directly to the transmission line where it crosses the site, with a new substation required near this location within the proposal area.

ABORIGINAL CONSULTATION

The consultation with Aboriginal stakeholders was undertaken in accordance with clause *80C of the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010* following the consultation steps outlined in the (ACHCRP) guide provided by OEH.

The full list of consultation steps, including those groups and individuals that were contacted and a consultation log is provided in Appendix A.

As a result, two groups and an individual registered their interest in the proposal.

These registered Aboriginal parties were:

- The Albury and District Local Aboriginal Land Council (Albury LALC);
- Bundyi Cultural Services (BCS) - Mark Saddler; and
- Yalmambirra.

No other party registered their interest, including the entities and individuals recommended by OEH.

The fieldwork was organised, and two of the registered parties were asked to participate in the fieldwork.

A copy of the draft report was provided to all the registered parties for comment.

Yalmambirra replied on Monday 29th of July 2019 that he did not feel comfortable endorsing or contradicting the two RAP groups who were present on site by commenting on the draft report (Appendix A).

No further comments were received on the draft ACHA and the report was finalised.

ARCHAEOLOGICAL CONTEXT

The assessment included a review of relevant information relating to the landscapes within the proposal area. Included in this was a search of the OEH AHIMS database. No Aboriginal sites have previously been recorded within the proposal area.

Previous archaeological surveys in the local region demonstrate that there is a strong, complex and varied pattern of human use and movement through the landscape. This behaviour is recorded as a range of artefact and site types distributed and concentrated in specific landforms across the region. There appears to be a strong association between the presence of potential resources for Aboriginal use and the presence of archaeological sites. Areas directly associated with water and elevated ground appear to have the greatest potential for identification of Aboriginal cultural material.

Based on previous archaeological investigations in the region and knowledge of Wiradjuri cultural practices and traditional activities, the proposal area has a possibility of containing archaeological sites, especially given that Aboriginal people have lived in the region for tens of thousands of years. This would most likely be in the form of artefact scatters, isolated artefacts and scarred trees in remnant old growth vegetation areas bordering water sources within the proposal area and/or as isolated paddock trees.

SURVEY RESULTS

The proposed solar farm area is comprised primarily of cleared paddocks that have been subject to farming activities. Survey transects were undertaken on foot and traversed the entire proposal area. Visibility within the proposal area was variable however as a whole it generally had low-moderate visibility averaging 30% overall.

The effective visibility in the paddocks ranged from 95% in exposures and in recently ploughed paddocks to less than 5% in areas with a dense low grass cover. Between the survey participants, over the course of the field survey, approximately, 42 km of transects were walked, covering approximately 11.5% of the total proposal area.

Despite the variable visibility encountered during the survey, 11 artefact scatters, 23 isolated finds and two scarred trees were recorded. Two areas of potential archaeological deposit (PAD) were also identified. The Aboriginal community representatives also identified three cultural trees.

The results indicate that artefact scatters and Aboriginal objects can occur throughout the landscape, even in areas of highly disturbed farming activities. While Aboriginal sites may be expected through all landscapes there does appear to be a pattern of sites that relate to the presence of potential resources for Aboriginal use. The area was likely used intermittently over a period of time for camping, hunting and gathering resources. The sites are most likely representative of the use of country along Back Creek.

POTENTIAL IMPACTS

The proposal involves the construction of a solar farm which will result in the disturbance of approximately 493 ha. Of the 36 new Aboriginal sites recorded, nine artefact scatters and 15 isolated artefacts (n=24, 70.6%) are located within the proposed development footprint that will be directly impacted by the proposed solar farm works.

The sites that will be impacted include 15 isolated finds and nine artefact scatters all listed in Table 12 of this assessment (Section 6.3). A summary of the degree of harm and the consequence of that harm upon site types is provided in the table below.

Site Type	Type of Harm	Degree of Harm	Consequence of harm	No. of Sites	% of site type
Isolated Finds	Direct	Complete	Total loss of value	15	65
	Nil	Nil	Not Applicable	8	35
Artefact Scatters	Direct	Complete	Total loss of value	9	82
	Nil	Nil	Not Applicable	2	18
Scarred Trees	Nil	Nil	Not Applicable	2	100
Cultural sites	Nil	Nil	Not Applicable	3	100
PAD	Nil	Nil	Not Applicable	2	100

The impact to these 24 sites with stone artefacts is likely to be most extensive where earthworks occur, such as the installation of cabling, which may involve the removal, breakage or displacement of artefacts. This is considered a direct impact on the sites and the Aboriginal objects by the development in its present form.

Ten sites with stone artefacts, two scarred trees, three cultural trees and two PAD locations will not be impacted by the proposed development footprint.

The assessment of harm overall for this project is determined to be low.

While 24 sites with stone artefact sites are rated as having total loss of scientific value that will be impacted by the proposed development it is argued that there are likely to be a number of similar sites in the local area and therefore the impact to the overall local archaeological record is considered to be low. The stone artefacts within the development footprint have little research value apart from what has already been gained from the information obtained during the present assessment. This information relates more to the presence of the artefacts and in the development of Aboriginal site modelling, which has largely now been realised by the recording. Additionally, it should be noted that ten sites with stone artefacts will be avoided by the proposed works. The impact to the axe blank (Walla Walla SF IF 2) is considered to have low to moderate loss of scientific value given it is more uncommon artefact type. No other values have been identified that would be affected by the development proposal.

The extent to which the loss of the sites or parts of the sites would impact on the community is only something the Aboriginal community can articulate.

RECOMMENDATIONS

It is recommended that:

1. The development must avoid the two scarred tree sites (Walla Solar Farm 495495 and Walla Solar Farm 497946) and three cultural tree sites (Walla Solar Farm 496602, Walla Solar Farm 496812 and Walla Solar Farm 497199). A minimum 10 m buffer should be in place around each tree to prevent any inadvertent impacts to the canopy and root system.
2. If complete avoidance of the 23 isolated find sites and 11 artefact scatters recorded within the proposal area is not possible, the artefacts within the development footprint must be salvaged. The salvage of these objects must occur prior to the proposed work commencing. Until salvage has occurred a minimum 5 m buffer must be observed around all stone artefact sites.
3. The collection and relocation of the artefacts should be undertaken by an archaeologist with representatives of the registered Aboriginal parties and be consistent with Requirement 26 of the *Code of practice for Archaeological Investigation of Aboriginal Objects in New South Wales.* The salvage of Aboriginal objects can only occur following development consent that is issued for State Significant Developments and must occur prior to works commencing.
4. All objects salvaged must have their reburial location submitted to the AHIMS database. An Aboriginal Site Impact Recording Form must be completed and submitted to AHIMS following harm for each site collected or destroyed from salvage and/or construction works.
5. A minimum 5m buffer should be observed around all sites with stone artefact that are being avoided by the proposed development.
6. If the proposed development footprint is changed and either of the two areas of PAD will be impacted, a limited subsurface testing program must be conducted. Excavated material may need to be analysed off site and this is most likely to be undertaken in NGH offices, where the material will be analysed and then subsequently returned to site for reburial.
7. FRV should prepare a Cultural Heritage Management Plan (CHMP) to address the potential for finding additional Aboriginal artefacts during the construction of the solar farm and management of known sites and artefacts. The Plan should include the requirement for cultural awareness training inductions

and an unexpected finds procedure to deal with construction activity. Preparation of the CHMP should be undertaken in consultation with the registered Aboriginal parties.

8. In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH and the local police should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.

9. Further archaeological assessment would be required if the proposal activity extends beyond the area assessed as detailed in this report. This would include consultation with the registered Aboriginal parties and may include further field survey.

1 INTRODUCTION

FRV Services Australia Pty Ltd (FRV) proposes to develop a solar farm approximately 4.3 km north east of the township of Walla Walla and 9.2 km south west of the town of Culcairn, NSW in the Greater Hume Local Government Area (LGA). The Walla Walla Solar Farm proposal area comprises of 605 hectares (ha) including Lots 16, 17, 20, 21, 87, 88, 89, 108, 109 and 118 DP753735, and Lot 22 DP1069452 (Figures 1 and 2). The proposal involves the construction of a ground-mounted photovoltaic solar array generating approximately 300 MegaWatt (MWac) of renewable energy. The proposed development footprint extends over approximately 493 ha (Figure 3).

NGH Environmental has been contracted by FRV to prepare an Aboriginal Cultural Heritage Assessment (ACHA) report to investigate and examine the presence, extent and nature of any Aboriginal heritage for the proposed development footprint as part of an Environmental Impact Assessment (EIS).

The solar farm proposal would involve ground disturbance that has the potential to impact on Aboriginal heritage sites and objects which are protected under the NSW *National Parks and Wildlife Act 1974* (NPW Act). The purpose of the Aboriginal Cultural Heritage Assessment (ACHA) report is therefore to investigate the presence of any Aboriginal sites and to assess the impacts and provide management strategies that may mitigate any impact.

Throughout the project, the following codes and guides will be followed in relation to Aboriginal heritage assessment.

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf
- *Code of Practice for Archaeological Investigations of Objects in NSW* http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* http://www.environment.nsw.gov.au/resources/cultureheritage/commconsultation/09781ACHconsultreq.pdf

The above codes and guides are issued by the Office of Environment and Heritage (OEH) and are followed for most Aboriginal heritage assessments. The approach being undertaken by NGH Environmental will therefore be consistent with other heritage assessments undertaken in NSW.

Under the NSW Planning legislation an Aboriginal Heritage Impact Permit (AHIP) from OEH would not be required for the project because under the State Significant Development regime the Department of Planning provides the approval. However, Aboriginal heritage still needs to be considered in the EIS including conducting consultation with the Aboriginal community. The Walla Walla Solar Farm project is a State Significant Development (SSD) and is subject to approval by the Department of Planning. It is a requirement that Aboriginal heritage is considered in the EIS as part of SSD, including conducting consultation with the Aboriginal community. Where any project falls under the SSD regime an Aboriginal Heritage Impact Permit (AHIP), normally issued by Office and Environment and Heritage (OEH), is not required.

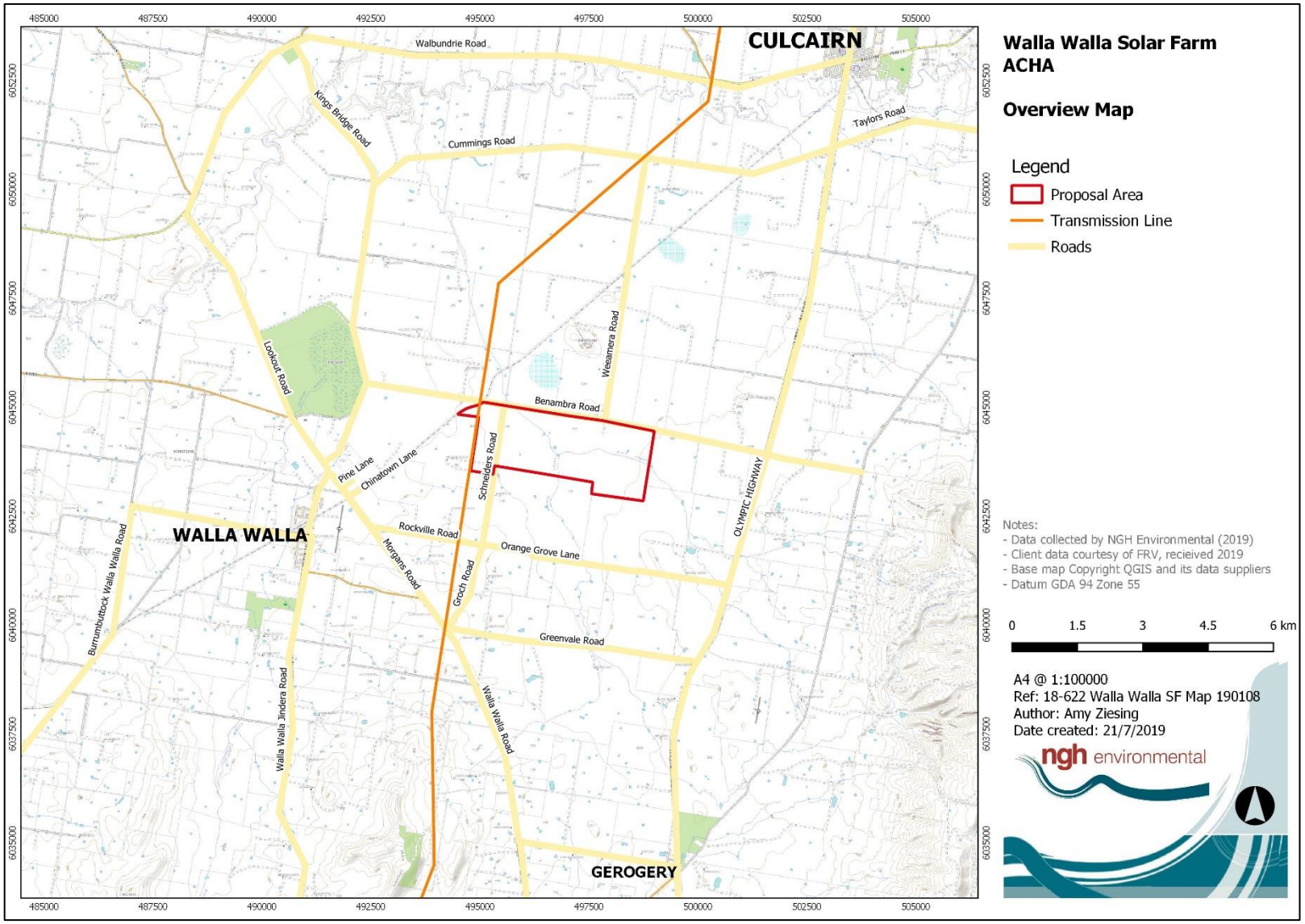

Figure 1 Location of Walla Walla Solar Farm proposal area.

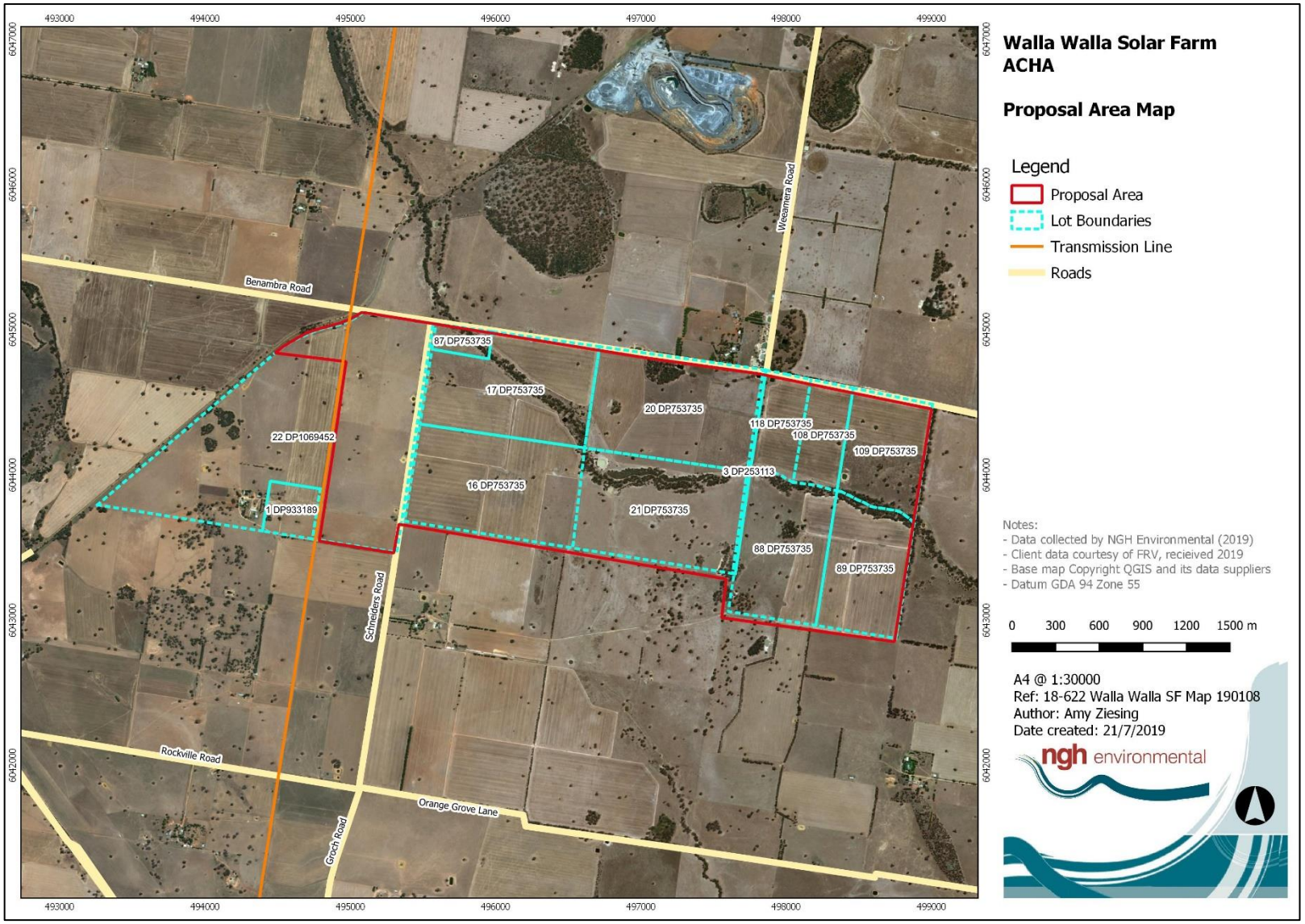

Figure 2 Proposed site layout and lot boundaries.

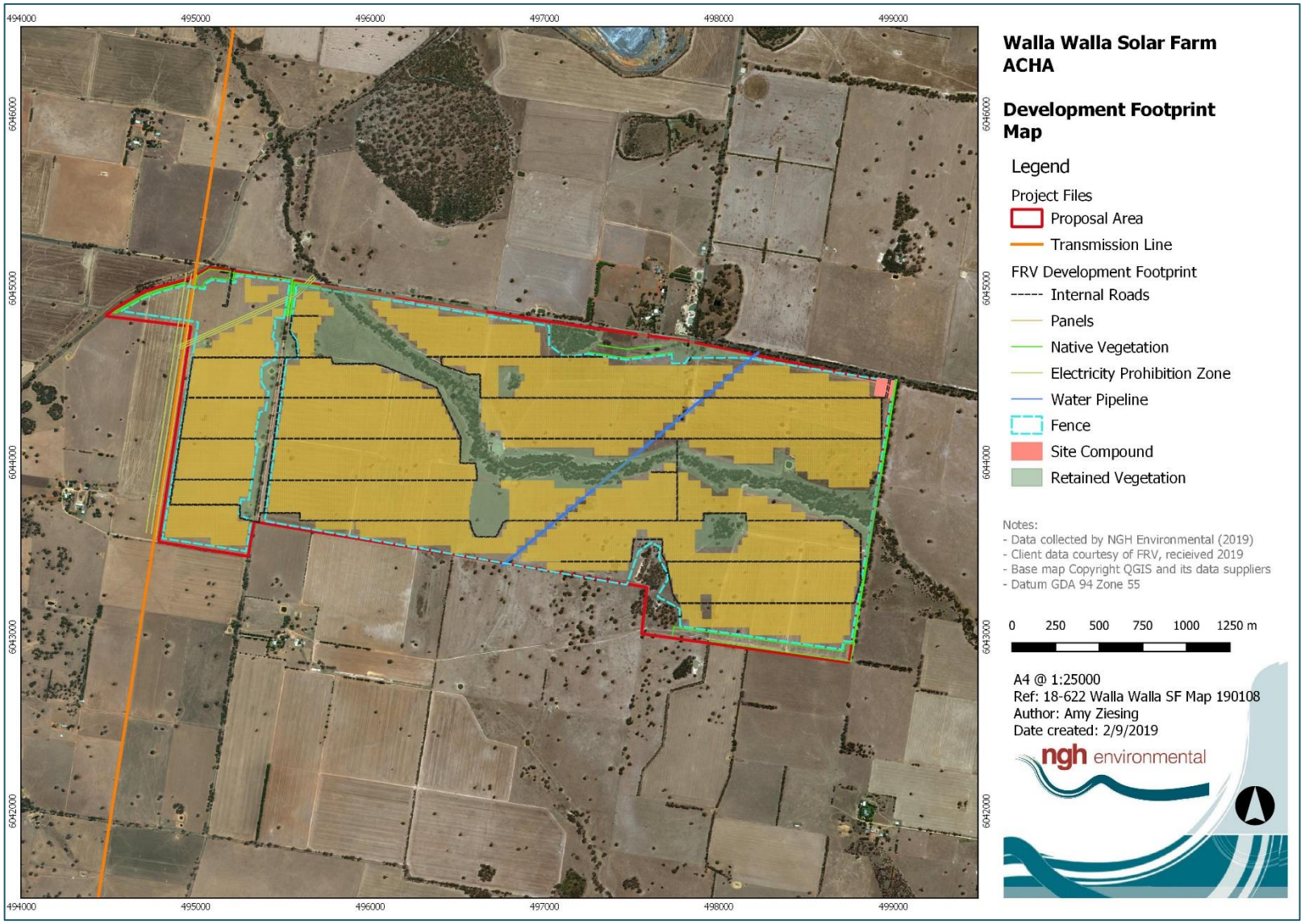

Figure 3 Proposed development footprint for the Walla Walla Solar Farm.

1.1 DEVELOPMENT CONTEXT

The development of renewable energy projects is one of the most effective ways to achieve the commitments of Australia and a large number of other nations under the Paris Agreement to reduce greenhouse gas emissions. The Walla Walla Solar Farm would provide the following benefits:

- Reduction in greenhouse gas emissions from energy generation (when compared with fossil fuel generating sources).
- Provision of embedded electricity generation to supply into the Australian grid close to a main consumption centre.
- Provision of social and economic benefits through the provision of direct employment opportunities.

The establishment of the Walla Walla Solar Farm would therefore have both local, National and International benefits.

As part of the development impact assessment process, the proposed development application will be assessed under part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The proposed solar farm is classified as "state significant development" (SSD) under Part 4 of the EP&A Act. SSDs are major projects which require approval from the Minister for Planning and Environment. The EIS has been prepared in accordance with the requirements of the Secretary of the Department of Planning and Environment (DPE).

The Secretary of the DPE Environmental Assessment Requirements (SEARs) relating to Aboriginal heritage were as follows:

> Include an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts of the development, including adequate consultation with the local Aboriginal community (SEARS for the Walla Walla Solar Farm 07/03/18).

For the purposes of this assessment only the proposal area as shown in Figure 2 was assessed.

1.2 PROJECT PROPOSAL

The Walla Walla Solar Farm proposal area is in Greater Hume LGA approximately 4.3 km north east of the township of Walla Walla. The Walla Walla Solar Farm proposal area comprises of 605 ha on Lots 16, 17, 20, 21, 87, 88, 89, 108, 109 and 118 DP753735, and Lot 22 DP1069452. The proposed development footprint comprises of approximately 493 ha as shown in Figure 3.

The proposal area is bound by Benambra Road to the north, the Olympic Highway to the east, Orange Grove Lane to the south and Cummings Road to the west. The site is intersected by Schneiders Road in the western portion of the proposal area.

The solar farm would have a total installed capacity of up to 300 MW (AC), and would include:

- Single-axis tracker photovoltaic solar panels mounted on steel frames.
- Battery storage.
- Inverters, a transformer and electrical conduits.
- On site substation.
- Site office, site compound, vehicle parking areas, access tracks and perimeter fencing.
- 33 kV electrical transmission line to connect the proposal to the existing Wagga Wagga to Jindera transmission line.

The existing TransGrid Jindera to Wagga Wagga 330 kV transmission line runs across the western portion of the development site, which forms part of the electricity distribution network that originates at TransGrid's North Wagga Substation. The proposed solar farm will connect directly to the transmission line where it crosses the site, with a new substation required near this location within the proposal area.

The development site would be accessed from the existing sealed section of Benambra Road, which runs along the northern boundary and intersects with the Olympic Highway (A41).

The proposed Walla Walla Solar Farm is expected to operate for at least 30 years. The construction phase of the proposal is expected to take 12 to 18 months. After the initial operating phase, the solar farm would either be decommissioned, removing all above ground infrastructure and returning the site to its existing land capability, or upgraded with new photovoltaic equipment, subject to landowner and planning.

1.3 PROJECT PERSONNEL

The assessment was undertaken by NGH Environmental archaeologist Amy Ziesing, including research, Aboriginal community consultation, field survey and report preparation. Kirsten Bradley also participated in the fieldwork. Kirsten Bradley and Matthew Barber reviewed the report.

Consultation with the Aboriginal community was undertaken following the process outlined in OEH's *Aboriginal cultural heritage consultation requirements for proponents 2010.* Two Aboriginal groups and an individual registered their interest in the proposal.

These registered Aboriginal parties were:

- Albury & District Local Aboriginal Land Council (Albury LALC)
- Bundyi Cultural Services (BCS); and
- Yalmambirra.

Representatives who participated in the survey fieldwork were:

- Mark Saddler (Representing BCS from the 25th – 29th March 2019);
- Andom Rendell (Representing the Albury LALC from the 25th – 29th March 2019); and
- Draie McGrath (Representing the Albury LALC on the 26th, 28th and 29th of March 2019).

Further details and an outline of the consultation process is provided in Section 2 and Appendix A.

1.4 REPORT FORMAT

For the purposes of this assessment of the Walla Walla Solar Farm, we have prepared the report in line with the following:

- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011);
- *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH 2010a), and
- *Aboriginal cultural heritage consultation requirements for proponents 2010* (ACHCRP) (OEH 2010b) produced by the NSW OEH.

The purpose of this ACHA Report is therefore to provide an assessment of the Aboriginal cultural values associated with the study area and to assess the cultural and scientific significance of any Aboriginal heritage sites. This conforms to the intention of the SEARs.

The objectives of the assessment were to:

- Conduct Aboriginal consultation as specified in clause 80c of the *National Parks and Wildlife Regulation 2009*, using the consultation process outlined in the ACHCRP*;*
- Undertake a field survey of the proposal area to identify and record any Aboriginal heritage objects;
- Undertake an assessment of the archaeological and cultural values of the proposal area and any Aboriginal sites therein;
- Assess the cultural and scientific significance of any archaeological material, and
- Provide management recommendations for any objects found.

2 ABORIGINAL CONSULTATION PROCESS

The consultation with Aboriginal stakeholders was undertaken in accordance with clause *80C of the National Parks and Wildlife Amendment (Aboriginal Objects and Aboriginal Places) Regulation 2010* following the consultation steps outlined in the ACHCRP guide provided by OEH. The guide outlines a four-stage process of consultation as follows:

- Stage 1 – Notification of project proposal and registration of interest.
- Stage 2 – Presentation of information about the proposed project.
- Stage 3 – Gathering information about cultural significance.
- Stage 4 – Review of draft cultural heritage assessment report.

The full list of consultation steps, including those groups and individuals that were contacted and a consultation log is provided in Appendix A. A summary of actions carried out in following these stages are as follows.

Stage 1. Letters outlining the development proposal and the need to carry out an ACHA were sent to the Albury & District LALC and various statutory authorities including OEH, as identified under the ACHCRP. An advertisement was placed in the local newspapers, the *Eastern Riverina Classifieds* on the 16th of January 2019, seeking registrations of interest from Aboriginal people and organisations. A further series of letters were sent to other organisations identified by OEH in correspondence to NGH Environmental. In each instance, the closing date for submission was 14 days from receipt of the letter.

As a result of this process, two Aboriginal groups and an individual registered their interest in the proposal.

These registered Aboriginal parties were:

- Albury & District Local Aboriginal Land Council (Albury LALC);
- Bundyi Cultural Services (BCS); and
- Yalmambirra.

No other party registered their interest.

Stage 2. On the 30st of January 2019, an Assessment Methodology document for the Walla Walla Solar Farm was sent to the three registered Aboriginal parties as listed above. This document provided details of the background to the proposal, a summary of previous archaeological surveys and the proposed heritage assessment methodology. The document invited comments regarding the proposed methodology and sought any information relating to known Aboriginal cultural significance values associated with the subject area and/or any Aboriginal objects contained therein. A minimum of 28 days was allowed for a response to the document. No comments were received on the methodology from the registered parties however all expressed an interest in participating in fieldwork.

Stage 3. The *Assessment Methodology* outlined in Stage 2 included a written request to provide any information that may be relevant to the cultural heritage assessment of the study area. It was noted that sensitive information would be treated as confidential. No responses regarding cultural information were received.

The survey fieldwork was organised, and the two registered groups with appropriate insurances were asked to participate in the fieldwork. The response from Yalmambirra is included in Appendix A. The survey fieldwork was carried out in late March 2019 by two archaeologists from NGH Environmental with local Aboriginal representatives.

Representatives who participated in the survey fieldwork were:

- Mark Saddler (Representing BCS on the 25th – 29th of March 2019);
- Andom Rendell (Representing the Albury LALC on the 25th – 29th of March 2019);
- Draie McGrath (Representing the Albury LALC on the 26th, 28th and 29th of March 2019).

Stage 4. In June 2019 a draft version of this *Aboriginal Cultural Heritage Assessment Report* for the proposal (this document) was forwarded to the RAPs inviting comment on the results, the significance assessment and the recommendations. A minimum of 28 days was allowed for responses to the document.

2.1 ABORIGINAL COMMUNITY FEEDBACK

2.1.1 Fieldwork feedback

Community consultation occurred throughout the project. Following the completion of the survey fieldwork in March 2019, Mark Saddler (BCS) provided a report on his participation in the survey which included a list of the sites he recorded and any additional comments on the proposal. The comments provided are summarised below and a copy the report is included in Appendix A.

- The place instantly felt welcoming and it was noted to be a place where Wiradjuri people would have camped and lived over a long period of time. A number of native fauna and flora species was also observed in the area.
- All care must be taken to minimise any further damage to the recorded Aboriginal sites and actions taken to stop any further damage occurring to Aboriginal sites.
- Two areas within the proposal area were requested to be subject to a subsurface testing program due to the number surface stone artefacts recorded in the area and the presence of a ring tree.
- Any Aboriginal items that have been recorded and that need to be moved should be done so in the presence of an Elder or community member.
- Any Aboriginal items that cannot be moved (ie scar trees/ ring tree) should have exclusions zones placed around them and all workers be given some cultural awareness training or education which should be conducted by local Elders or community members.
- Any items that must be moved will be returned and placed back onto country by local Elders.
- That while the Solar farm is under construction that local Aboriginal people be employed to assist in the work and to also look out, care for and record any other items that may surface due to construction work.

A summary of how the comments have been addressed by NGH is provided below and a copy of the letter response to Mark Saddler is provided in Appendix A.

NGH has agreed to incorporate most recommendations into the ACHA however NGH does not agree with the extent and need for testing as requested by Mark Saddler. This is based on the analysis of the land use history, an appraisal of the landscape, soil, level of disturbance, archaeological modelling for the area and the results from the field survey. This is also in line with discussions held during the field survey with all the Aboriginal community representatives. Additional justification and information detailing this assessment is provided in the response provided by NGH (see Appendix A).

The employment issue raised is not related to this archaeological assessment and the issue would be dealt with separately by FRV. NGH Environmental are unable to comment further on this particular matter.

2.1.2 Draft ACHA feedback

Community consultation occurred throughout the project. The draft report was provided to each of the Registered Aboriginal Parties (RAPs) and feedback was sought on the recommendations, the assessment and any other issues that may have been important.

Yalmambirra replied on Monday 29th of July 2019 that he did not feel comfortable endorsing or contradicting the two RAP groups who were present on site by commenting on the draft report (Appendix A).

No other comments were received on the draft ACHA and the report was finalised on the 27th of August 2019.

3 BACKGROUND INFORMATION

3.1 REVIEW OF LANDSCAPE CONTEXT

3.1.1 Geology, Topography and Climate

Located within the NSW portion of the Murray-Darling Basin, north of Albury, Walla Walla is dominated by a sub-humid climate, characterised by hot summers with no dry season (Gibbons, 2001). The geology of the Walla Walla area is dominated by a basal layer of schist from the Upper Ordovician and into the Silurian, characterised by low grade metasediments and sediments of slate, phyllite, greywacke, siltstone, mudstone and shale (Willis, 1974). The proposal area is characterised by the underlying Walla Walla Granite, a pink to white porphyritic biotite granite that can vary from being medium to coarse grained (Willis, 1974).

The topography of the region features low-gradient undulating and hilly ranges, wide valleys and isolated peaks (Goldsmith, Barker & Johnston, 1985). The topography of the Walla Walla region is comprised of the extensive flat alluvial Back Creek – Billabong Creek floodplains with sparse narrow drainage lines. Local relief is low at <5 m and elevation varies from 200-250 m in height. Hurricane Hill is the most prominent of three hills in the local area which is located 1.5 km north of the proposal area. Within the immediate proposal area, the landscape bears flat to gently undulating gradients with a low hill rising in the western portion of the proposal area.

Throughout the region, early to middle Palaeozoic Bedrock form local highlands, overlain with extensive areas of colluvium. Areas of unconsolidated Quaternary riverine sediments occur along the banks of tributaries which increase in density with proximity to the Murray River catchment (Spennemann, 1998). The bedrock in the region comprises mainly of Ordovician sediments and metasediments, granite and granodiorite (predominantly Silurian), Siluro-Devonian acid volcanics and Late Devonian sediments (Willis 1974). The Ordovician sediments and metasediments are represented by slate, silt stone, sandstone and greywacke, with some Quartz-mica schist and quartzofeldspathic biotite gneiss (Spennemann, 1998). Intruding these Ordovician sediments are Silurian and lower Devonian granites, while middle Silurian – early Devonian acid volcanics partially overlay them. Geological mapping (Surface Geology of Australia 1:5Million data set, 2018) places the proposal area within the Australian geological grouping Dg (Devionian Granites), including granite, syenite, granodiorite and tonalite from the Palaeozoic era.

The NSW 1500k simplified surface geology (available via the seed online portal) divides the proposal area into four types of surface geology;

- Devonian Sedimentary – variable sedimentary rocks including conglomerate, sandstone, siltstone and mudstone. Some intercalated volcaniclastic rocks.
- Silurian-Devonian sedimentary and volcanic rocks. Common minerals are quartz, feldspar, and spherulites.
- Silurian I-type granites – interpreted to form by melting of igneous rock sources. Common minerals are quartz, feldspar and biotite, characteristic of amphibole.
- The Cenozoic Shepparton Formation - a poorly consolidated clay, silt, sand and gravel commonly found in the Riverina between the Lachlan and Murray Rivers.

The landscape context for the proposal area is based on a number of classifications that have been made at national and regional level for Australia. These include the national Interim Biogeographic Regionalisation for Australia (IBRA) system, Mitchell landscapes, NSW soil landscapes and 1:250,000 scale

geological maps. The combination of these four differing resolutions of landform data provides a comprehensive and multi scaled understanding of the landscape within the proposal area and its immediate surroundings.

Interim Biogeographic Regionalisation for Australia

The national Interim Biogeographic Regionalisation for Australia (IBRA) system identifies the proposal area as being located in the South Western Slopes Complex (NSS) which is split into two subregions, the Upper Slopes (NSS01) and Lower Slopes (NSS02), outlined in Table 1 (DEE 2016). The proposal area is located across the barrier of the two subregions.

The NSW South Western Slopes Bioregion is an extensive area of foothills and isolated ranges comprising the lower inland slopes of the Great Dividing Range, extending from Albury in the south to Dunedoo in the north east, with an area of 8,657,462 hectares. Inland streams pass across the slopes in confined valleys with terraces and local areas of sedimentation. Soils and vegetation are complex and diverse but typified by texture contrast soils and a variety of eucalypt woodlands, making this bioregion the southern equivalent of the Nandewar Bioregion.

Table 1 South Western Slopes complex subregions after Morgan and Terry (1992).

Bioregion - Subregion	Geology	Landforms	Soils
South Western Slopes - Upper Slopes	Ordovician to Devonian folded and faulted sedimentary sequences with inter-bedded volcanic rocks and large areas of intrusive granites.	Steep, hilly and undulating ranges and granite basins. Occasional basalt caps, confined river valleys with terrace remnants.	Shallow stony soils on steep slopes, texture contrast soils grading from red subsoils on upper slopes to yellow subsoils on lower slopes. Alluvial sands, loams and clays.
South Western Slopes - Lower Slopes	As for the Upper Slopes but with larger areas of Tertiary and Quaternary alluvium.	Undulating and hilly ranges and isolated peaks set in wide valleys at the apices of the Riverina alluvial fans.	Similar to the Upper Slopes but with more extensive red-brown earths on undulating plains and more extensive grey clays on alluvium.

Mitchell Landscapes

Further landscape mapping as part of the Mitchell landscapes system (2002) divides the proposal area into three differing landscape types (see Figure 4). These landscapes are the Brokong Plains (Bro), Burrumbuttock Hills and Footslopes (Bbk) and Table Top Range (Ttr) (descriptions of the Mitchell Landscapes are provided in Table 2 below). The Mitchell landscapes provide more specific landform, soil and vegetation profiles for these three landscape areas.

Table 2 Description of the Mitchell Landscapes within the proposal (DECC 2002)

Mitchell Landscape	Landforms	Soils	Vegetation
Brokong Plains Landscape Code: Bro Ecosystem Meso grouping: NSS Lower Slopes	Quaternary alluvial plains with a general elevation of 170m, and a local relief of <10m.	Red-brown texture contrast soils (extensively cleared).	Vegetation has been extensively cleared and cropped, formerly grey box (*Eucalyptus microcarpa*), yellow box (*Eucalyptus melliodora*), Blakely's red gum (*Eucalyptus blakelyii*) and white cypress pine (*Callitris glaucophylla*) woodland to open forest.

Mitchell Landscape	Landforms	Soils	Vegetation
Burrumbuttock Hills and Footslopes Landscape Code: Bbk Ecosystem Meso grouping: NSS Lower Slopes Graintes	The landscape includes parts of two land systems: *Leaghur* and *Victoria.* Large active freshwater lakes and swamps frequently flooded by the river, generally round or kidney shaped. Often nested within larger relic Quaternary lake features. Beaches, sand and clay pellet lunettes and sand hills on the eastern margins. Relief of lakes and channels to 10m, lunettes to 20m.	Lake beds and associated channels of grey cracking clay, beaches of brown to white sands, lunettes of deep cemented yellow to white sands, with or without interbedded strata of pelleted clay.	Scattered black box *(Eucalyptus largiflorens*), river red gum *(Eucalyptus camaldulensis*), nitre goosefoot (*Chenopodium nitrariaceum*) and lignum (*Muehlenbeckia cunninghamii*) on lakebeds. Shallower swamps with cumbungi (*Typha orientalis*), common reed (*Phragmites australis*), spike rush (*Eleocharis* sp.) and water couch (*Paspalum paspalodes*). Numerous aquatic plants in standing water. Lunettes and sand hills with marginal river red gum, and stands of white cypress pine (*Callitris glaucophylla*), prickly wattle (*Acacia victoriae*), sandhill wattle (*Acacia ligulata*), bluebush (*Maireana* sp.) and grasses.
Table Top Range Landscape Code: Ttr Ecosystem Meso grouping: NSS Upper Slopes	Isolated hills with low to moderates slopes on Devonian conglomerate, sandstone and shale, general elevation 200 to 445m, local relief 100m.	Shallow sandy red texture-contrast soils.	Woodland and low forest of tumbledown red gum (Eucalyptus dealbata), red stringybark (Eucalyptus macrorhyncha), black cypress pine (Callitris endlicheri) and red ironbark (Eucalyptus sideroxylon), yellow box (Eucalyptus melliodora) on flats, river red gum (Eucalyptus camaldulensis) along larger streams.

Soil Landscapes

No soil mapping has been completed for the proposal area however, soil landscape mapping exists for the areas to the immediate east. The information below has been extrapolated to extend into the current assessment area.

Two soil landscapes likely occur within the proposal area: Culcairn and Gerogery (eSpade v.02). The area in general is characterised by grey cracking clay soils, with mud, silt and sand occurring in lake and swamp deposits. Residual deposits consist of alluvial and colluvial boulders, gravel and sand. The Culcairn and Gerogery soil landscapes are described in Table 3.

Table 3 Description of the Soil Landscapes relevant to the proposal (eSpade v.02).

Soil Landscape	Description
Culcairn	Extensive to broad plains with sparse narrow drainage lines and extensively cleared yellow box woodland, with slopes ranging from 0-2%. Local is <5 m and elevation between 200–250 m. The soils are comprised of clay, silt, sand and gravels. The topsoil is a brown to grey silty loam with no gravels, overlying a pale grey brown silty clay loam. Below this sits a yellow, grey or red sticky mottled clay.
Gerogery	Extensive very gently inclined plain with narrow poorly defined drainage channels and extensively cleared box woodland. Slope gradients are <5%, local relief ranges from 30-40 m and elevation varies from 200-290 m. Soils include a brown to pale yellow/orange sandy clay loam overlying a light to medium brown clay or sandy clay.

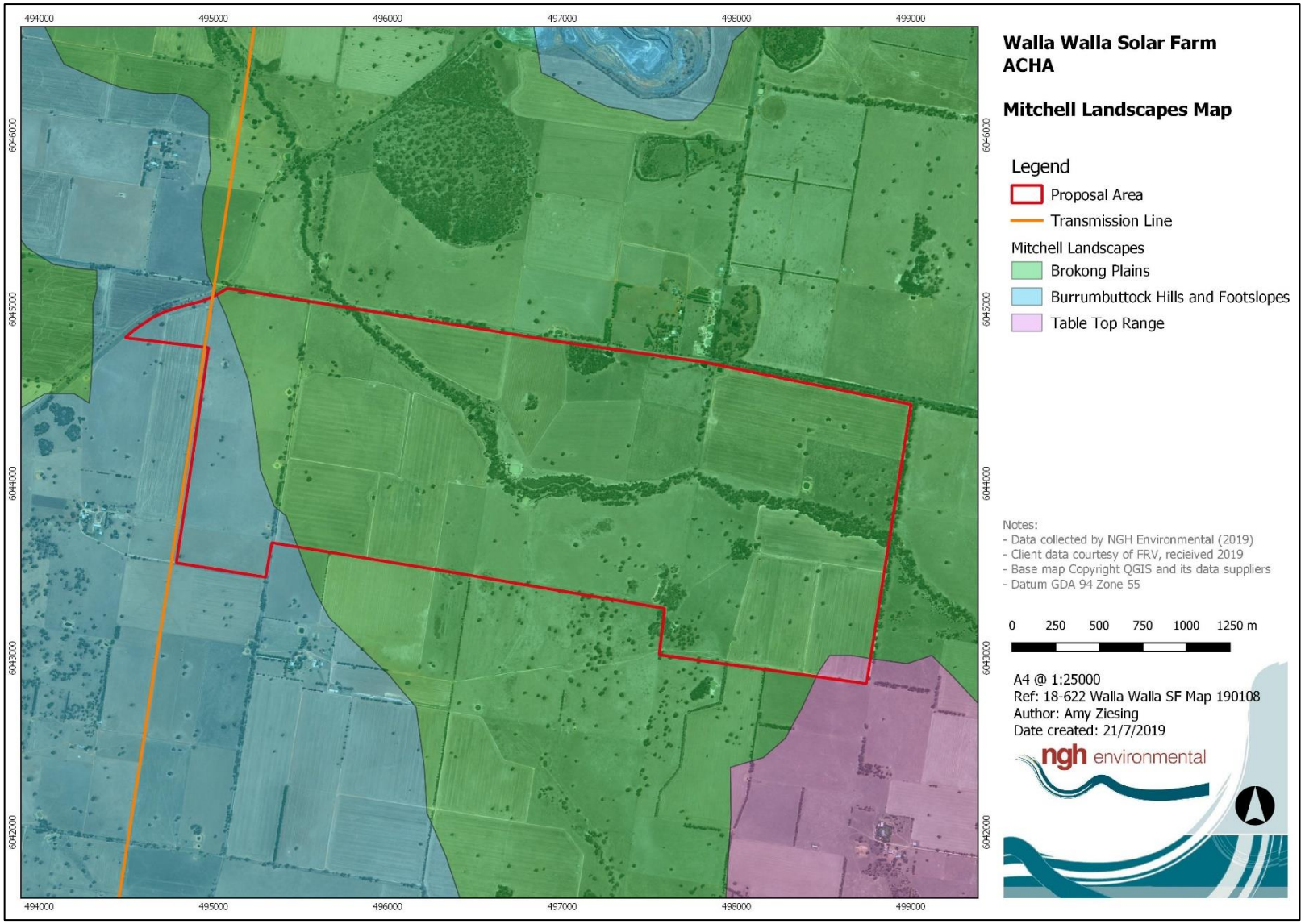

Figure 4 Mitchell Landscapes within the proposal area.

3.1.2 Hydrology

The proposal area is located within the Murray Catchment, about 36 km north of the Murray River. Two ephemeral water courses run through the proposal area: Back Creek and Middle Creek. These two water courses flow into Billabong Creek, which in turn flows into the Murray River. Back Creek is a small tributary flowing out from Billabong creek and terminating within Benambra National Park located south-east of the proposal area on the eastern side of the Olympic Highway.

Back Creek traverses the proposal area in a north-west to east direction while Middle Creek intersects Back Creek towards the centre of the site. A number of local wetland depressions which likely hold water following periods of heavy rain and/or inundation are also scattered across the proposal area

16 man-made dams are present across the proposal area.

Additionally, Back Creek Swamp is located approximately 530 m north of the proposal area. Gum Swamp is also located approximately 2.7 km west of the proposal area. Both these swamps are seasonal, mostly dry and perennial.

3.1.3 Flora and Fauna

The native vegetation in the landscape surrounding the proposal area is considered to be predominantly extensively cleared grassy woodland comprised of Yellow Box (*Eucalyptus melliodora*), Blakely's Red Gum (*E. blakelyi*) and Grey Box (*E. microcarpa*), which are seen generally as isolated paddock trees. Other species include Apple Box (*E. bridgesiana*), White Box (*E. albens*), River Red Gum (*E. camaldulensis*) along drainage channels and creeklines and Silver Wattle (*Acacia dealbata*) along roadsides. Shrubs include Gold-dust Wattle (*A. acinacea*) and Golden Wattle (*A. pycnantha*). Within creeks and soaks there are a variety of sedges (*Carex* spp.), rushes (*Juncus* spp.) and reeds (*Phragmites australis*).

The majority of the proposal area has been cleared for agriculture and is currently used for cereal and canola cropping and sheep and cattle grazing. The paddocks have been deep ripped and cultivated in past management practices. Exotic dominated pastures are heavily grazed by livestock and native groundcover has been entirely lost.

The native vegetation communities remaining in the proposal area have been excluded from the development footprint and occur primarily as clusters of open grassy woodlands or linear patches of vegetation along fence lines, creeks and roads. These remnant woodland vegetation communities provide numerous habitat types for fauna. These areas provide habitat features such as hollows and are likely to support habitats for a number of threatened bird species. The canopy trees also provide foraging and nesting/resting habitat for birds and arboreal fauna. The mid-storey provides foraging and nesting habitat for smaller birds, as well as refuge for small-medium sized mammals and reptiles. Ground cover plants, logs and fallen leaves also provide shelter and foraging habitat for terrestrial fauna. Where hollow-bearing trees are present, they may provide daytime resting habitat for bats and mammals, and roosting habitat for birds.

3.1.4 Land Disturbances

Land disturbances within the proposal area are largely those commonly associated with farming practices. There is a history of both low and high intensity farming practices across the landscape. High intensity farming practices include the heavy ploughing of field and initial creation of dams and paddocked areas, while lower intensity practices include pastoral. While quarrying activities have been recorded in the wider

area, particularly Hurricane Hill, there is no indication of quarrying within the proposal area. The region is also prone to severe gully erosion.

Significant land disturbances would have also occurred during the installation of a gas main that intersects the proposal area. The gas main extends across the north-eastern portion of the proposal area in a south-west/north-east direction, across Schneiders Road to the land immediately east of the fenceline. Wooden poles have also been installed for the current electricity transmission line that transverses the western boundary of the proposal area.

The construction and ongoing maintenance of Benambra and Schneiders Road, that boarder the proposal area are also noted to have likely disturbed areas near the road corridors. A historic, dis-used railway line also runs south-west to north-east along the north-western corner of the current assessment area. The historic construction of the railway line likely caused disturbance to the north-western portion of the proposal area.

3.1.5 Historic Land Use

European settlement of the Riverina area followed relatively rapidly after Hume and Hovell travelled through the area in 1824. By 1845 four stations, including Round Hill and Walla Walla had been gazetted. The Walla Walla area was settled by eight German Lutheran families from Ebenezer in South Australia in 1868, a few days after the settlement of nearby Jindera. The region has a long history of intensive agricultural and pastoral use. The proposal area is located within the Parish of Creighton, County of Hume. Parish maps dating back as far as 1905 provide an indication of the historical land use across the area. The proposal area was occupied from at least 1868, with the parish map showing a combination of private land grants, which by 1907 were owned by the Commercial Banking Company of Sydney Ltd. The area is indicated to be largely utilised for farming purposes (both agricultural and stock farming). The majority of the land was owned by Henry Henty and Jas Balfour, with small portions south of Back Creek owned by Samuel Müller and north by Charles Weyland. Remnant hand-made bricks and broken glass from the late 1800s were identified south of the creek however no evidence for a structure in this location was identified.

The location of the proposed Walla Walla Solar Farm is within pastoral and agricultural fields and therefore has been subject to considerable impacts from farming for many decades. Overall, the proposal area would be categorised as moderately disturbed through consistent farming practices over many decades, including ripping and ploughing.

3.1.6 Landscape Context

Most archaeological surveys are conducted in a situation where there is topographic variation, and this can lead to differences in the assessment of archaeological potential and site modelling for the location of Aboriginal archaeological sites. As already noted, the ephemeral creeks Back Creek and Middle Creek intersect the proposal area. Additionally, Back Creek Swamp is located within 530 m of the northern boundary of the proposal area.

The areas in close proximity to a water source on slightly raised flat areas and hill crests are likely to have been a major focus for Aboriginal people in the area. However, prior to European land modifications, this area as a whole may have provided resources, shelter, water and food for Aboriginal people.

The different soil and Mitchell landscapes noted above were not readily identifiable within the proposal area and were not used as a means of landscape differentiation. The landforms for the survey were instead determined to be five landforms based on topography identified during the visual inspection of the

proposal area during field survey and from the review of detailed contour and DEM mapping. These five landforms are shown in Figure 5 and listed below.

- Creeks and depressions;
- Flats;
- Gradual slopes;
- Hill Crest; and
- Elevated flats.

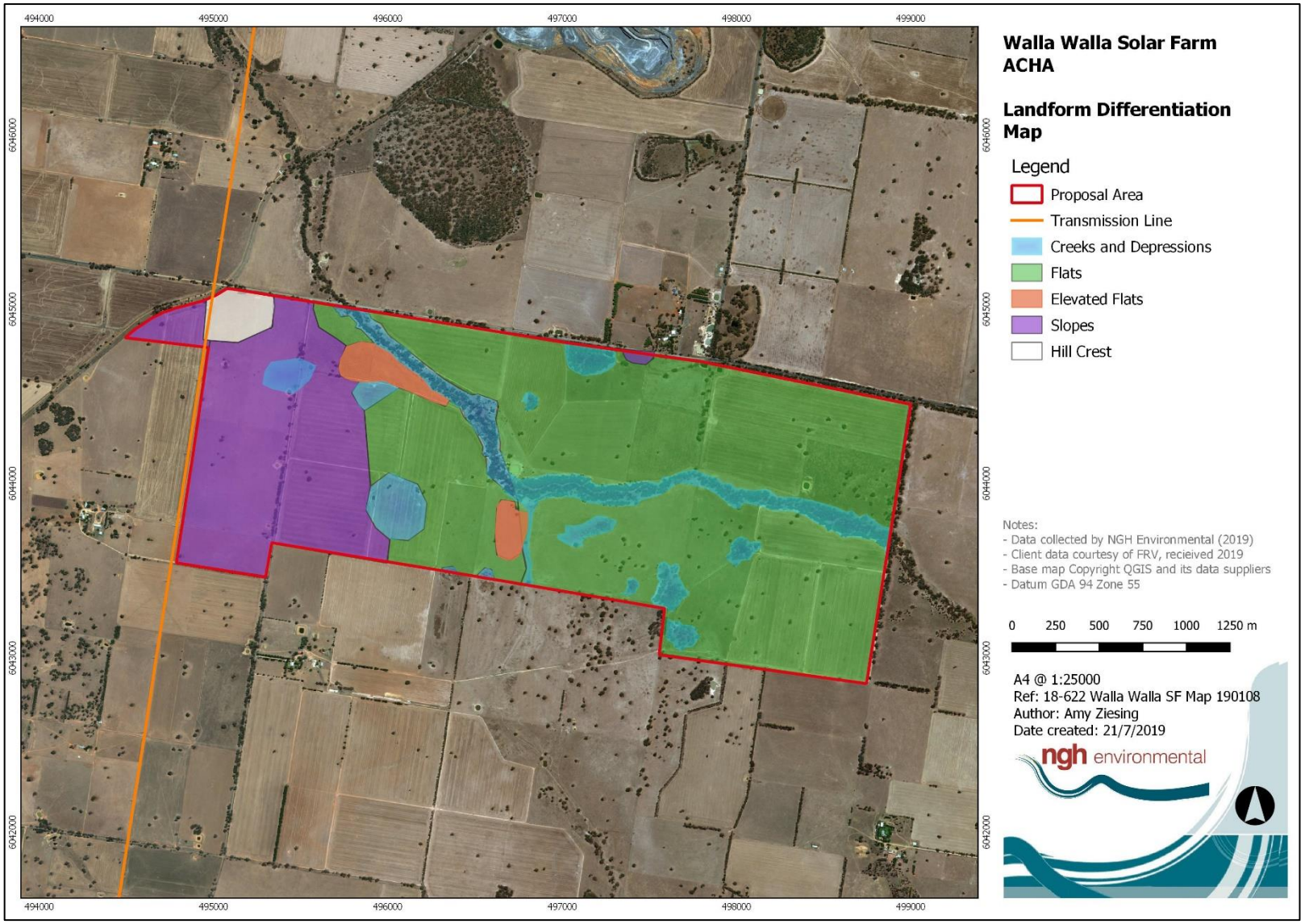

Figure 5 Landforms within the proposal area.

3.2 REVIEW OF ABORIGINAL ARCHAEOLOGICAL CONTEXT

3.2.1 Ethnohistoric Setting

There are several ethnographic recordings of Aboriginal life in the Riverina region from the 1800s that notably focus on the prevalence of Aboriginal people around waterways in the region. It is however important to consider that the Aboriginal people alive at the time of such observations were survivors of serious epidemics of infectious disease such as smallpox, bought by Europeans, that greatly affected the population sizes and distribution of people within the landscape. Consequently, European records may not necessarily reflect pre-contact population distributions and traditional ways of life (Dowling 1997, Littleton and Allen 2007).

The dispossession from traditional lands and acts of violence against the Aboriginal people caused great social upheaval meaning that access to traditional resource gathering and hunting areas, religious life, marriage links and sacred ceremonial sites were disrupted or destroyed. Despite this Aboriginal people continued to maintain their connections to sites and the landscape in a variety of ways. The Aboriginal people of the region continue to have a strong connection to their land.

Tribal Boundaries

Cultural areas are difficult to define and "must encompass an area in which the inhabitants have cultural ties, that is, closely related ways of life as reflected in shared meanings, social practices and interactions" (Egloff, Peterson & Wesson 2005, p.8). Depending on the culture defining criteria chosen - i.e. which cultural traits and the temporal context (historical or contemporary) - the definition of the spatial boundary may vary. In Australia, Aboriginal "marriage networks, ceremonial interaction and language have been central to the constitution of regional cultural groupings" with the distribution of language speakers being the main determinate of groupings larger than a foraging band (Egloff, Peterson & Wesson 2005, pp.8 & 16).

Early mapping of tribal boundaries by Tindale (1940; 1974) and subsequent mapping by Horton (1994) identified the Walla Walla proposal area as within the Wiradjuri language group. It should be noted however that today not all Aboriginal groups agree with the mapped boundaries presented in Tindale and other publications.

These borders were not static, they were most likely fluid, expanding and contracting over time to the movements of smaller family or clan groups. These boundaries ebbed and flowed through contact with neighbours, the seasons and periods of drought and abundance. The close proximity to each other also meant that people likely spoke multiple languages and dialects (Howitt 1904, Tindale 1974, MacDonald 1983, Horton 1994).

The Wiradjuri language group was the largest in NSW prior to European settlement extending from the east side of the Riverine plain to the Great Dividing Range and extended from the Murray River at Corowa/Albury north to Dubbo.

Social Structures

It was the small family group that was at the core of Aboriginal society and the basis for their hunting and gathering life. The immediate family camped, sourced food, made shelter and performed daily rituals together. The archaeological manifestations of these activities are likely to be small campsites, characterised by small artefact scatters and hearths across the landscape. Places that were visited more

frequently would develop into larger site complexes with higher numbers of artefacts and possibly more diverse archaeological evidence.

These small family units were part of a larger band which comprised a number of families. They moved within an area defined by their particular religious sites (MacDonald 1983). Such groups might come together on special occasions such as pre-ordained times for ceremonies, rituals or simply if their paths happened to cross. They may also have joined together at particular times of the year and at certain places where resources were known to be abundant. The archaeological legacy of these gatherings would be larger sites rather than small family camps. They may include large hearth or oven complexes, contain a number of grinding implements and a larger range of stone tools and raw materials.

Identification and differentiation of such sites are difficult in the field. A family group and their antecedents and descendants occupying a particular campsite repeatedly over a long period of time may leave a similar pattern of archaeological signatures as a large group camped over a shorter period of time.

Aboriginal population declined due to disease such as smallpox and influenza as well as dispossession from traditional lands and acts of violence against the Aboriginal people which meant that there was great social upheaval and partial disintegration of the traditional way of life. This meant that access to traditional resource gathering and hunting areas, religious life and marriage links and access to sacred ceremonial sites were disrupted or destroyed.

However, despite these disruptions, Aboriginal people continued to maintain their connections to sites and the land in the early days of European settlement. Where Aboriginal people were taken to places like Warangesda, a mission established near Darlington Point in 1880, Brungle Reserve between Gundagai and Tumut, or Moonahcullah mission approximately 50 km west of Deniliquin that was established in 1916, people were able to maintain at least some form of association with country and maintain traditional stories. Wiradjuri dreaming stories still survive to this day, being told in the oral tradition by elders to the next generation of Wiradjuri children.

Material culture

Accounts of the material culture of Aboriginal people in the Murray Darling Basin have been detailed extensively by Oxley (1820), Bennet (1834) and later Beveridge (1883) and include descriptions of tools kits, weapons and clothing.

Shelters were generally small and appear to have been widely utilised by families while moving around the landscape (Kabaila 1999:120). Their frames were constructed of boughs and sapling branches pulled tightly together, tied with leaves, bark or grass and forming a semi-circular structure (Kabaila 1999). Small campfires would sometimes be placed at the entrance of these shelters for heating and cooking. Evidence of these hearths is often found on elevated flats in close proximity to water sources.

Bennet (1834) detailed the manufacture of possum and kangaroo skin coats using mussel shell scrapers to render the skin pliable. Kangaroo tail sinew made into thread and bone awls were used to stitch the skins into cloaks, many of which had ornamental patterns scratched onto the inner side. The kangaroo sinew was also recorded as used to create head ornaments in the form of hair nets stained with ochre or pipeclay for both men and women (Bennet 1834). Both Oxley (1820) and Bennet (1834) observed that both sexes had the *septum naris* perforated in which a bone, straw or stick was worn. The adult men were also missing an upper incisor attributed to a marker of initiation (Oxley 1820, Bennet 1834) .

A range of tools and weaponry were recorded including spear throwers, parrying shields, broad shields, clubs, shovels, axes and varieties of throwing sticks (Oxley 1820, Bennet 1834, White 1986) as well as trapping nets made from plant fibre cord (Beveridge 1883).

Digging sticks were used by women to collect vegetable foods and 'grub shovels' or small wooden spades were described by Eyre (1845) as being used to dig up grubs, ants and Mallee roots. Skin bags and bark troughs were used to carry water and baskets were made from grasses, rushes and netting (Beveridge 1889, Lawrence 1967). Beverage (1883) describes a wooden trough placed over coals for cooking and 'flints, mussel shells, kangaroo bones and split reeds were used in cutting and skinning foods' (Lawrence 1967, p. 86). Grindstones and pestles were used to pound roots and mill seed and along the Darling River the deliberate cultivation and harvesting of wild millets was recorded (Mitchell 1839, Allen 1974).

In an archaeological context, few of these items would survive, particularly in an open site context. Anything made from bark and timber and animal skins would decay quickly in an open environment. However, other items, in particular those made of stone would survive where they were made, placed or dropped. Shell material may also survive in an archaeological context. Sources of raw materials, such as the extraction of wood or bark would leave scars on the trees that are archaeologically visible, although few trees of sufficient age survive in the modern context.

Food and Resources

There are a number of ethnographic recordings of Aboriginal life in the Riverina region from the 1800s. Most notably, the observations of Beveridge (1883) focused on the prevalence of Aboriginal people around water ways in the region. Early settlers and others who wrote about the Wiradjuri people and customs differentiated between the origin of some groups, referring to people as the Lachlan or Murrumbidgee tribes, or the Levels tribe for those between the two major rivers (Woolrych 1890). The extent of the Wiradjuri group means that there were many different environments that were exploited for natural resources and food. Like everywhere in Australia, Aboriginal people were adept at identifying and utilising resources either on a seasonal basis or all year round.

Historic accounts of Aboriginal people in the Riverine Plains of south eastern Australia reflect a group of people reliant on a range of both aquatic and terrestrial food resources. During certain seasons, fish, shellfish and waterfowl provided a significant part of the flesh diet and corresponds to periods where relatively small areas of land could support large groups of people. In other seasons, populations living along the rivers were greatly reduced and the focus on and acquisition of aquatic resources changed. It is during these periods that terrestrial resources became more important and food gathering activities diversified.

During the annual flooding of the rivers, swamps and river flats were inundated and billabongs filled. Under these conditions the netting and trapping of fish by large groups of people became prevalent. The base of a large fibre net would be weighted down with clay heat retainers and at the top of the net reed bundles would be attached as floats. One man would hold one end of the net on the shore while the other would wade into the lagoon gradually dropping the net, once he reached the shore, forming a semi-circle. The two people would start pulling the net back, moving towards one another, hauling the catch of fish towards them. Such activities were recorded to have produced very large volumes of fish (Sturt 1833, p. 92, Beveridge 1883, pp. 28–30). Within major billabongs log traps were also constructed to trap fish within a smaller area, for easier access and often associated with large gatherings of people (Gilmore 1934). Additionally, women were recorded catching crayfish, where two women would trawl a fine gauged net along the lagoon bottom.

The trapping of ducks and other waterfowl in lagoons using large nets has also been observed and Beveridge suggests that over a season hundreds of birds are caught in this manner (Beveridge 1883). Additionally, huge numbers of waterbird eggs during breeding season are collected using canoes (Beveridge 1883, p. 18). Bird species including ducks, emus, pelicans, crows, curlews, plains turkeys and

their eggs were hunted and gathered from areas set aside by the Wiradjuri as sanctuaries, ensuring the continued survival of the species as a reliable food resource (Gilmore 1934:165).

Beveridge (1883) observed canoes being manufactured from a single sheet of Red Gum bark that was propped and moulded into the desired shape and left to season in the sun for ten to fifteen days (Beveridge 1883, pp. 24–25). He details pronged fish spears that doubled as a means to pole and paddle the canoes, used to harpoon fish in areas of reedy shallow water (Beveridge 1883, Kabaila 1999). Lawrence (1967) suggests that these spears were probably only used when the reed beds were filled with water and consequently not as important during the remainder of the year.

As the flood waters began to subside, the number of people the land could support began to decline. People began to fish in the broader reaches of the rivers using short, stout spears (Lawrence 1967, p. 76) and women would create weirs made of wooden stakes to trap larger fish in pools as the waters receded (Beveridge 1883, p. 30). Other types of fish traps across rivers have been recorded such as the bridging of a watercourse with a tree trunk with interwoven brush or saplings forming a net beneath the tree preventing larger fish from moving on. As the river flow dwindled and the fish became concentrated in smaller and smaller pools, fish-poisoning could be effectively employed (Lawrence 1967, p. 76).

Collection of river mussels using the toes was recorded by Sturt (1833) and Balme suggested that mussels were the most common item in the remains of open midden sites along the Darling River and associated lakes in western NSW.

The range of methods employed to exploit aquatic resources were not a matter of random choice, but instead formed part of an annual cycle of fluctuations in river level and flow (Lawrence 1967).

A range of reptiles, other mammals and insects were also a common food type, in particular grubs and ants and ant eggs (Fraser 1892, Pearson 1981). Possums appear to have been a common part of the diet, weighing generally 3kg, they would be slowly roasted before eating (Kabaila 1999:126; Gammage 2012:226). Plant foods were equally as important and mostly consisted of roots and tubers, such as *Typha* or Cumbungi whose tubers were eaten in late summer and shoots in early spring. Other edible plants from the Wiradjuri region include the Yam Daisy or *Murnong*, eaten in summer and autumn, the Kurrajong seeds and roots, Acacia seeds and other rushes too (Gott 1982).

3.2.2 AHIMS Search

The Aboriginal Heritage Information Management System (AHIMS) is maintained by OEH and provides a database of previously recorded Aboriginal heritage sites. A search provides basic information about any sites previously identified within a search area. However, a register search is not conclusive evidence of the presence or absence of Aboriginal heritage sites, as it requires that an area has been inspected and details of any sites located have been provided to OEH to add to the register. As a starting point, the search will indicate whether any sites are known within or adjacent to the investigation area.

A search of the AHIMS database was conducted over an area approximately 10 km east-west x 10 km north-south centred on the proposal area on the 7th of December 2018. The AHIMS Client Service Number was: 387836. The search area extended from Lat, Long: -35.7911, 146.8976 to Lat, Long: -35.7077, 147.0298 with a 1 km buffer zone. There were 23 Aboriginal sites and no declared Aboriginal Places recorded in the search area. Figures 6 and 7 shows the locations of the AHIMS sites in relation to the assessment area and Table 4 shows a breakdown the of the site types.

Table 4 Breakdown of previously recorded sites in the region.

Site Type	Number
Modified Tree (Carved or Scarred)	16
Artefact (1 or more)	7
TOTAL	**23**

No registered sites lie within the Walla Walla Solar Farm proposal area. Two registered artefact scatters, or open campsites, are located according to their GPS coordinates between 60-200 m north of the proposal area along Back Creek (AHIMS# 55-6-0026 and #55-6-0027). However, further investigation of the archaeological reports associated with the sites AHIMS# 55-6-0026 and #55-6-0027 indicate that historically the GPS coordinate data is inaccurate and that AHIMS# 55-6-0026 is fact located on the southern bank of Back Creek directly north of Benambra Road and AHIMS# 55-6-0027 is located just the other side of AHIMS# 55-6-0026 on the northern bank of Back Creek, north of Benambra Road. While both sites are located outside the project area the proximity of the sites to the project area is in reality is approximately 60- 100 m north of the northern boundary of the project area as shown in Figure 7.

An additional five sites are located between 600-1800 m north of the proposal boundary (AHIMS #55-6-0032, #55-6-0033, #55-6-0028, #55-6-0012 and #55-6-0013). The remaining 16 sites are within 3 to 5 km of the proposal area and predominantly concentrated around Gum Swamp and Petries Creek to the west or other areas where previous archaeological investigation have occurred to the north.

There is a high proportion (69.5%) of scarred trees recorded in the area especially where there are remnant stands of native trees. Scarred trees provide a tangible link to the past and provide evidence of Aboriginal subsistence activities through the deliberate removal of bark or wood. It is likely that the high proportion of scarred trees in the 5 km area surrounding the proposal area is related to lack of surveys in the area and the more obtrusive nature of scarred trees when compared to small artefact scatters and isolated stone artefacts.

Based on the number of previously recorded sites in the relatively small search area, it is expected that a vast number of additional sites exist within this region that have not yet been recorded on the AHIMS database. This is not due to a lack of Aboriginal cultural sites, but instead reflects the nature of the archaeological investigations which have focused on targeted areas of development and not the general landscape.

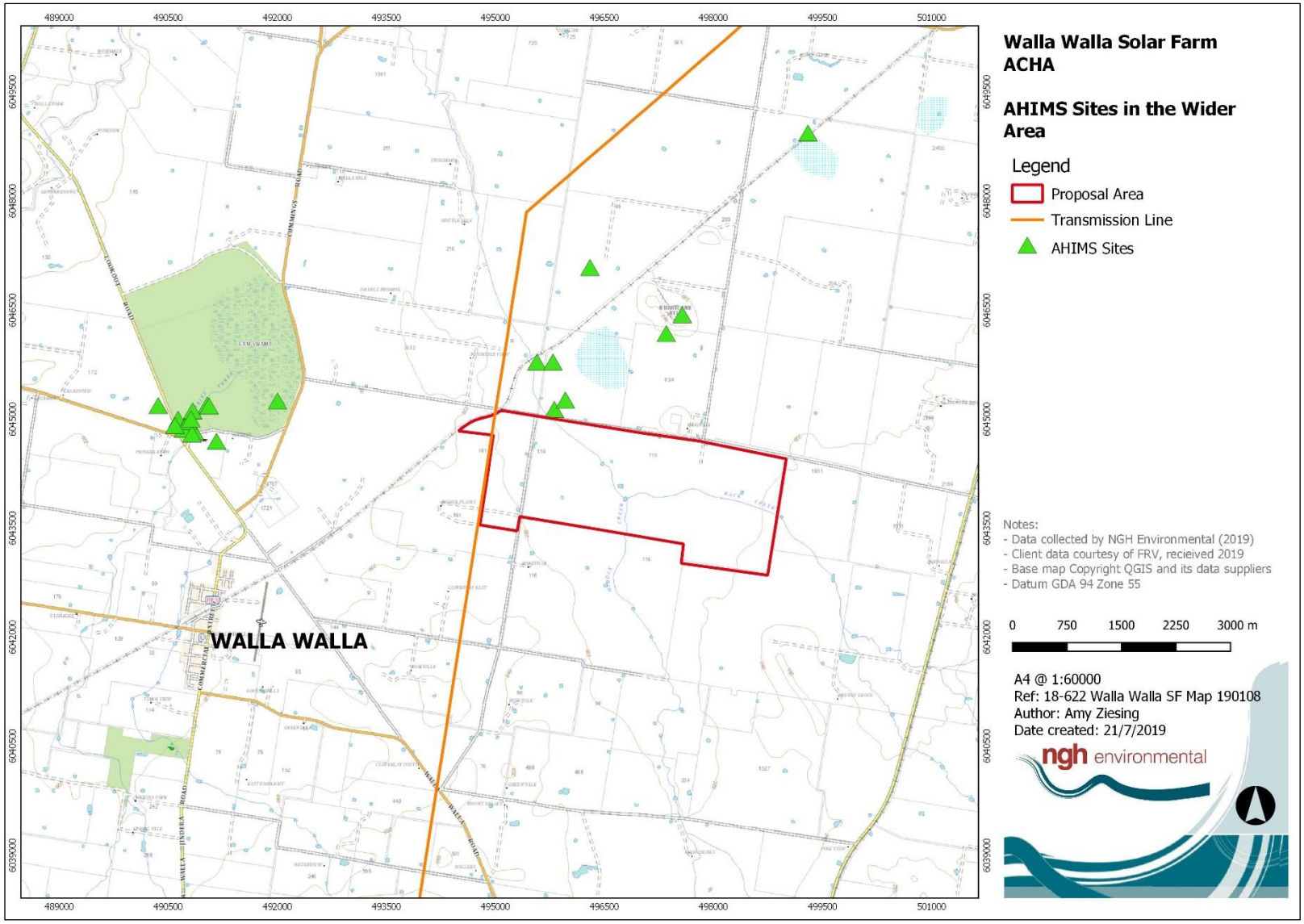

Figure 6. Location of AHIMS sites within 5 km of the proposal area (according to AHIMS GPS coordinate data).

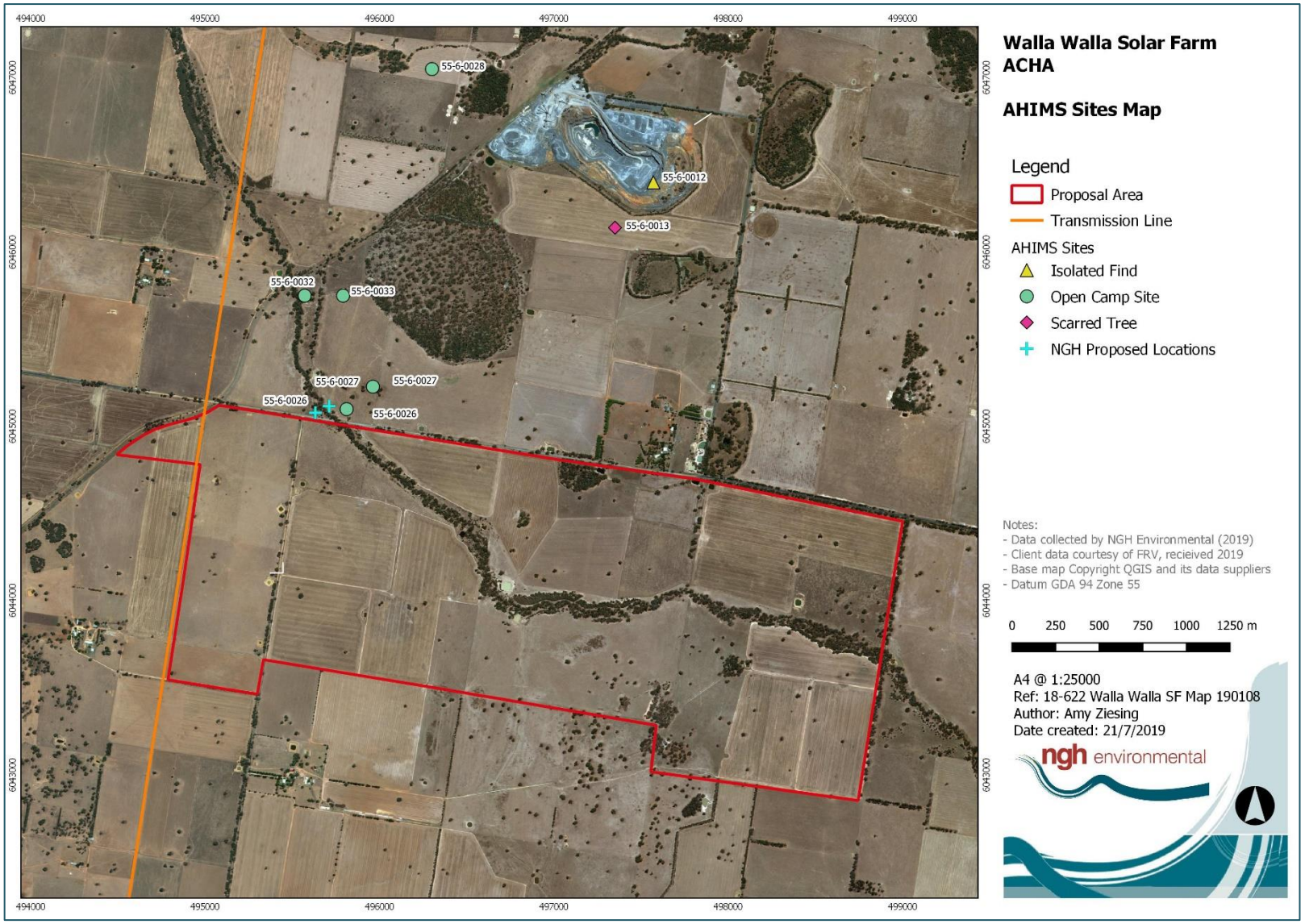

Figure 7 AHIMS Sites in the proposal area.

3.2.3 Historic Heritage

Other heritage register searches were also undertaken to identify any items or places in proximity to the proposal area, with a focus on the proposal site and surrounding landscape. The following resources were used as part of this assessment:

- The NSW State Heritage Inventory (SHI), this includes items on the State Heritage Register and items listed by state agencies and local Government, to identify any items currently listed within or adjacent to the proposal site.
- The Australian Heritage Database, this includes items on the National and Commonwealth Heritage Lists, to identify any items that are currently listed within or adjacent to the proposal site.

A search of the Australian Heritage Database was completed on 18th of January 2019. No places of historic heritage were listed in Walla Walla or Culcairn. The closest listed places were in Gerogery and Holbrook, approximately 8 km south east and 29 km east of the proposal area:

Table 5 Australian Heritage Database Search Results.

Scheme	Heritage Item	Status	Impact
Walla Walla Solar Farm	Holbrook Conservation Area	Indicative Place	None
	Woomargama Dora Dora Forest	Indicative Place	None
	Yarra Yarra Homestead and Outbuildings	Registered	None
	Tabletop Nature Reserve	Registered	None

Searches of the State Heritage Register for the Greater Hume Shire LGA were completed on 18th of January 2019, which found four items of identified state significance located near the proposal area. No items of state significance were located within the solar farm proposal area. The closest site of State significance is located approximately 8.5 km south east of the proposal area.

Table 6 NSW State Heritage Register Database Search Results.

Scheme	Heritage Item	Status	Impact
Walla Walla Solar Farm	Coppabella Blacksmith Shop, Stables and Burial Plot	Registered (#00620) – State Heritage Register	None
	Culcairn Railway Station and yard group	Registered (#01126) – State Heritage Register	None
	Gerogery Railway Station group	Registered (#01148) – State Heritage Register	None
	Henty Railway Station and yard group	Registered (#01169) – State Heritage Register	None

A search of the Greater Hume Local Environmental Plan 2012 was completed on 18th of January 2019, which found eight items of local significance near the proposal area. None of these items will be impacted by proposed solar farm with the closest site being over 8.5 km to the south east.

Table 7 Local Environmental Plan Listings

Scheme	Heritage Item	Status	Impact
Walla Walla Solar Farm	Morgan's Lookout	Registered - Local	None
	German pioneer wagon	Registered - Local	None
	Zion Lutheran Church and manse	Registered - Local	None
	First Lutheran School and cottage	Registered - Local	None
	Walla Walla Literary Institute and Memorial Hall	Registered - Local	None
	St Mary's Catholic Church	Registered - Local	None
	Walla Walla General Cemetery	Registered - Local	None
	"Walla Walla" homestead	Registered - Local	None

No items of historic heritage significance will be impacted by proposed Walla Walla Solar Farm. The closest site is over 3.7 km south east from the proposal area. All the historic heritage places identified in these searches are shown in Figure 8 below.

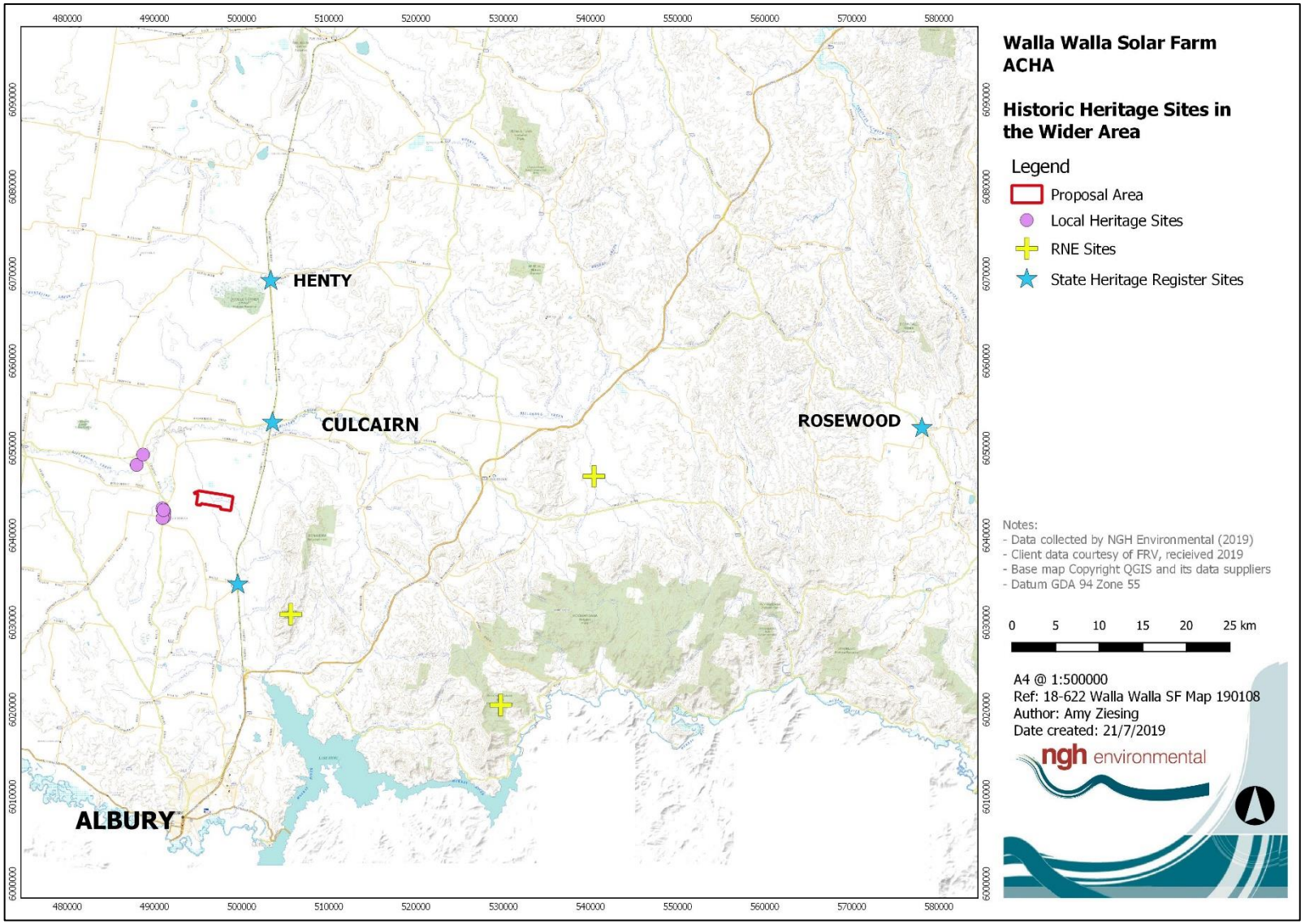

Figure 8 Historic Heritage Sites within the wider Greater Hume Shire area.

3.2.4 Previous archaeological studies

Aboriginal people have occupied what we now know as the Australian continent for at least 40,000 years and perhaps 60,000 years and beyond. There have been no known dated excavations in the Walla Walla or Albury area, although the archaeological evidence from Lake Mungo, 425 km to the north-west provides ample evidence of Aboriginal occupation dating back 40,00 years (Mulvaney and Kamminga 1999, Hiscock 2007). No regional synthesis of the archaeology has been completed for the Walla Walla or Albury area. The following are summaries of those archaeological survey reports that have been completed in the Albury region, these have been primarily driven by development and infrastructure requirements.

The following are summaries of those archaeological survey reports that have been completed in the surrounding areas and in relative proximity to the current assessment area.

A survey of the Albury area by Crosby (1978) identified that open camp sites and scarred trees are the most common site types in the Albury Region. Crosby (1978) noted that due to the limited range of usable stone outcropping in the region it is unlikely that Aboriginal quarries will occur however, areas where vein quartz occurs should be inspected. Additionally, due to geology and topography of the area and lack of large rock outcrops with shelters suitable for painting or banks suitable for carving it is very unlikely that art sites or ceremonial areas will be identified. Crosby's (1978) survey of six sites returned seven Aboriginal artefacts consisting of six scarred trees and a large volcanic cobble.

In 1978 Djekic undertook an archaeological survey for a proposed transmission line from the Wagga Wagga substation to Albury. The route covered approximately 120 km across well-established farming land and passed through approximately 600 m east of the proposal area. During the survey, six scarred trees were located, four of which were most likely the result of Aboriginal use in the area. Stone artefacts were also recorded on a property just outside Culcairn. The artefacts recorded included a small grinding stone, a hammer stone, a broken pebble and a small round stone of local material that appeared to have been pecked on either side. Djekic concluded that the small number of sites located during the survey was a direct result of over 100 years of environmental modification through the intensive development of agriculture in the region.

In 1980 Barz undertook an archaeological survey for a proposed transmission line from Jindera to Ettamogah with a 50-metre-wide easement. Numerous isolated artefacts were identified including quartz cores, flakes, thumbnail scraper and a granite flaked piece.

In 1980 Haglund undertook a field survey as one aspect of the Hume Shire Villages Water Supply Scheme approximately 24 km south east of the current assessment area. The survey area consisted of approximately 90 km of a 6-metre-wide easement for pipelines and five reservoir sites, each approximately 30 metres in diameter. A single scarred tree was recorded during the survey on the border of a pipeline easement. Haglund identified that several adjoining areas may have archaeological potential. The lack of identified sites may have been because of the previous disturbance of the land in the area.

In 1981 Presland completed a series of archaeological investigations throughout the Albury-Wodonga region as part of Victoria Archaeological Survey (VAS), approximately 36 km south of the current assessment area. The aim of these surveys was to record all Aboriginal heritage sites in 19 areas designated for tree planting and assess the impacts and significance of these sites. 22 isolated finds and 1 artefact scatter were identified across the inspected areas. Three planting sites were not inspected due to time restrictions. All but six isolated finds were in low-lying land that had been ploughed prior to inspection. Five finds were within Pleistocene terrace formation south-west of Wodonga. The artefact scatter was located on the edge of an eroding terrace, approximately 100 m from the northern bank of the Murray River.

In 1992 a site survey for a proposed tree plantation approximately 26 km to the south east of the current proposal area was undertaken by Smith and Upcher (1992). The study identified five scarred trees, nine open campsites, one open campsite and scarred tree complex and eleven isolated artefacts. All artefacts recorded, with the exception of a single isolated silcrete artefact, were manufactured on a milky quartz which appears to be the primary raw material type for the Albury area. Both box and river redgum were used for manufacturing wooden artefacts consistent with other studies in the region. This study observed that all open campsites were located within 50 m of creek lines and all, but one open camp was located on a creek bank. However, erosion into the creek bank to a depth of <10 cm was needed before archaeological material was exposed. Additionally, Smith and Upcher (1992) noted that despite the presence of erosion scars and recently ploughed paddocks on hill tops and slopes within the project area, no open camp sites were identified. Scarred trees however, occurred consistently across all of these landforms.

In 1994, Navin Officer undertook an archaeological survey for the proposed extension to the Culcairn Hard Rock Quarry, Hurricane Hill, located 1.5 km north of the current assessment area. The survey area consisted of approximately 7 ha on the upper and middle slopes of a locally prominent hill, Hurricane Hill. Hurricane Hill was noted to be a prominent low hill which rises above the relatively level and flat topography of the Back Creek- Billabong Creek flood plain. A single probable scarred tree and an isolated find were recorded within the study area. The isolated find was a quartz core which has been bifacially flaked. The scarred tree was a White Box tree. Additionally, a large mature Kurrajong tree was recorded within the study area that was noted to have been considered by locals to either be planted by the first European settlers in the area, or by the local Aboriginal people. Navin Officer deduced that the tree was likely to have been European in origin.

Between 1995 and 1997, Navin Officer completed a cultural heritage assessment for the proposed natural gas pipeline from Wodonga to Wagga Wagga, extending for 146 km that intersects the current proposal area. Twelve artefact scatters, three scarred trees and ten isolated finds were identified over the initial stage of the investigations. A further stage of survey was commissioned based on the preliminary results. A further 17 artefact scatters, six scarred trees and nine isolated finds were located in the additional investigation. Five historic sites were also recorded, and eight areas of PAD identified. Two of these PADS, PAD 3 and PAD 4, fall to the immediate north of the current Walla Walla Solar Farm proposal area. PAD 3 is associated with the southern bank of Back Creek and was assessed as having high archaeological potential due to its higher elevation and probable reduced level of disturbance. PAD 4 was on the western margin of an unnamed swamp basin that is generally referred to in subsequent reports as Back Creek Swamp. PAD 4 was assessed as having moderate archaeological potential given its elevated position adjacent to a food and water resource. The majority of the artefact scatters identified were associated with creek lines, meanders, wetlands and a low gradient spur line while scarred trees were recorded on flat valley floors, alluvial flats, basal slopes and wetland basins.

In 1998 Officer, Navin and Kamminga undertook a subsurface testing program for the proposed Wodonga to Wagga Wagga Natural Gas pipeline. The surveys, as noted above, identified a total of 39 sites, four isolated finds and eight areas of potential archaeological deposit (PAD). Four sites and seven PADs were unable to be avoided by the proposed development and the PAD to be impacted were consequently subject to further investigation in the form of a subsurface testing program (Figure 9). PAD 3, which is located to the immediate north of the current Walla Walla Solar Farm proposal area, was one of the PADs investigated during the subsurface testing program. Figure 9 below shows the areas identified for further survey in the initial 1995 survey in close proximity to the current assessment area and the refined PAD 3 and PAD 4 areas following the 1996 additional survey. The test pit locations excavated at PAD 3 (now site AHIMS# 55-6-0027) are shown in Figure 10 below. A summary of finds from the subsurface testing program undertaken at PAD 3 and PAD 4 is shown in Table 8.

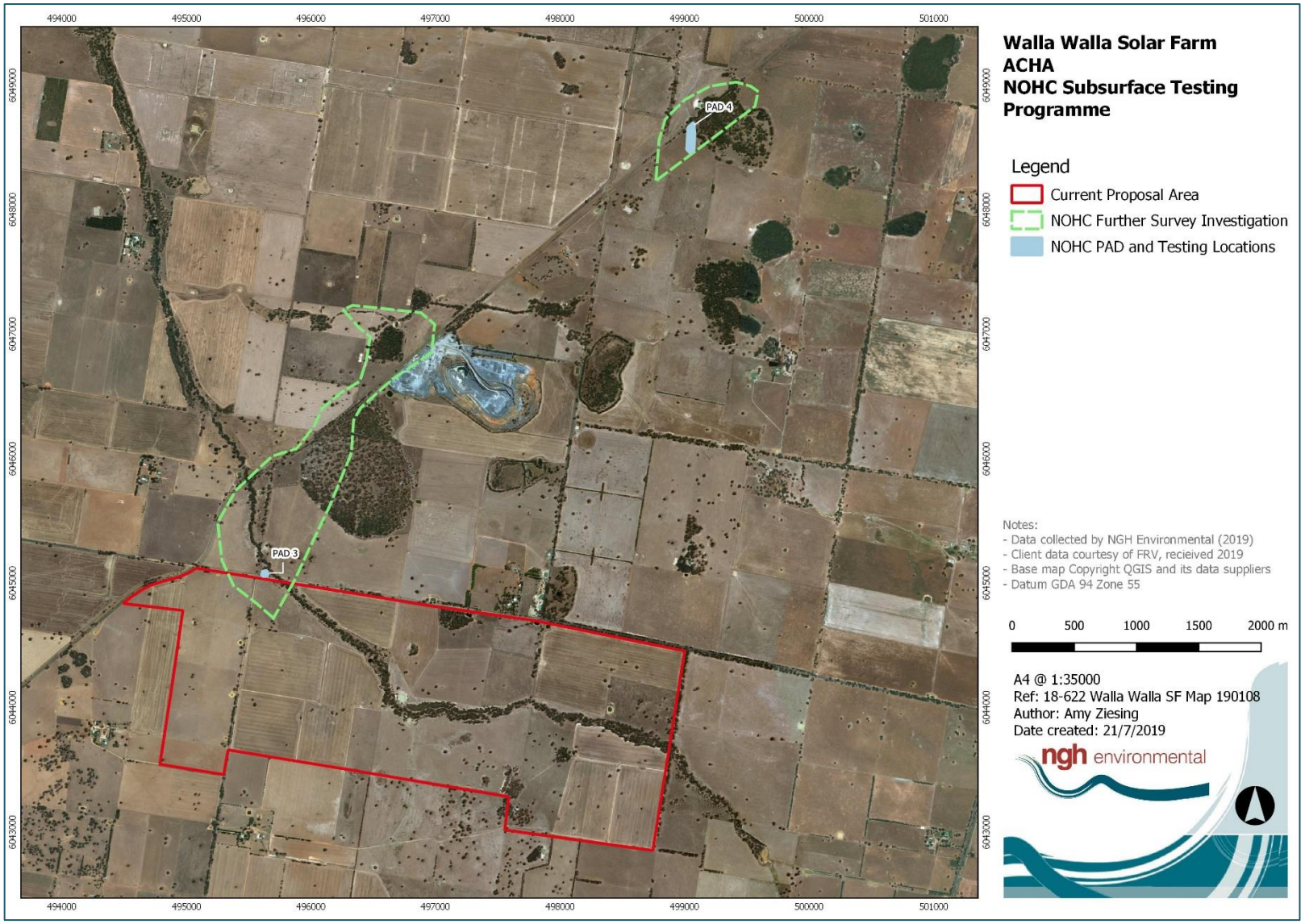

Figure 9 NOHC Subsurface Testing Program PAD and Testing Locations.

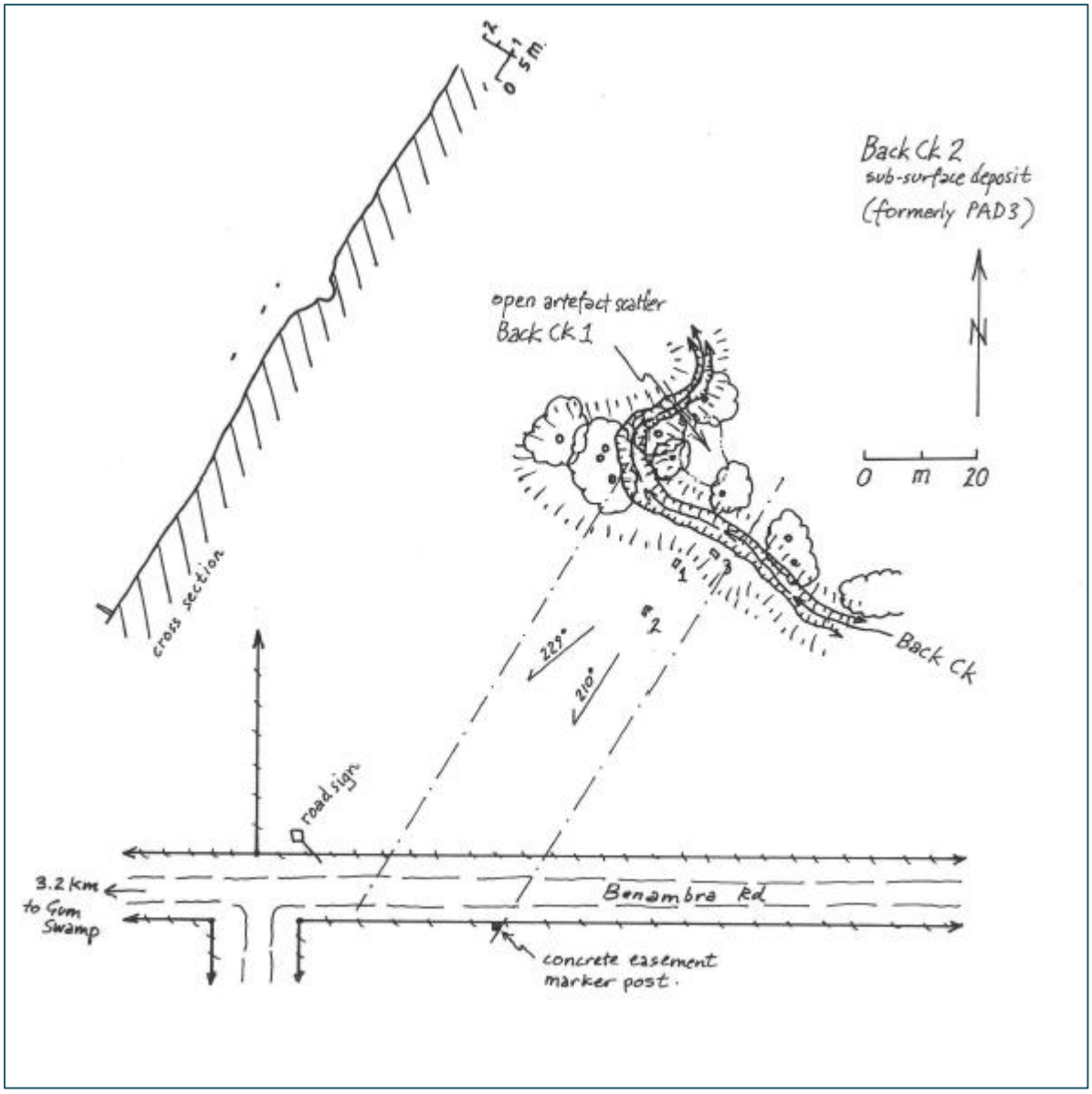

Figure 10 Diagram of the testing locations within PAD 3 (NOHC 1996: 84).

Table 8 Summary of finds for the Wodonga to Wagga Wagga Natural Gas Pipeline Testing Program in close proximity to the project area.

Site Name	PAD No.	Archaeological Potential	No of Test Pits	Finds	Find Type	Location
Back Creek 2	PAD 3	High	3 mechanical pits	1 artefact		Elevated southern bank of inside bend of streamline
Back Creek Swamp 2	PAD 4	Moderate	11 mechanical pits	18 artefacts	Microdebitage from microblade and bipolar flaking	Edge of wetland basin

PAD 3 was subject to limited subsurface testing in 1998 by Officer, Navin and Kamminga. A total of three mechanical pits measuring 2.5 m x 0.88 m were excavated across PAD 3 (see Table 9). Pits 1 and 2 were located adjacent to the break of the slope and encountered shallow soils and showed evidence of profile disturbance through the mixing of clays in the upper horizon (NOHC 1998: 81). Pit 3 was located to test the deposit on an apparently lower terrace adjacent to the creek. Only one artefact was recovered from the upper 15 cm of deposit (spit 1). Pit 3 at PAD 3 which has since been recorded as AHIMS# 55-6-0027/ Back Creek 2. No detailed analysis of the artefact was undertaken. Plate 1 below show the testing program undertaken Back Creek 2 (PAD 3).

Table 9 Summary of Pit Data & Soil Profile Descriptions at Back Ck 2 (modified from NOHC 1998: 81).

Pit Number	L x W x D (mm)	Number of Artefacts	Profile
1	2600 x 900x 600	Nil	Brown/ grey silty loam over mixed silty loamy clay. Then mixed mottled clays and silts. Increasing clay with depth then becomes a brown mottled clay.
2	2600 x 900x 350	Nil	
3	2600 x 900x 660	1	

While the PAD 3 area was initially identified as having potential archaeological deposit, the results of the subsurface testing program identified that high densities of subsurface cultural material were not present. Based on the results of the subsurface testing program at PAD 3 Officer, Navin and Kamminga noted that the northern bank and location of the artefact scatter Back Creek 1 was likely the preferred location for Aboriginal occupation in the immediate vicinity due to its position on the bend of the creek (NOHC 1998: 82). Following the completion of the testing program PAD 3 was given the site name Back Creek 2 (AHIMS# 55-6-0027) which was assessed as having low scientific significance due to its small size and low artefact density. The site type was also noted to be common for the region and the context to have been disturbed by agricultural land practices. In March 1998, a partial Consent to Destroy permit was granted for the portion of Back Creek 2 that existed within the gas pipeline development corridor (NOHC 1998: 82).

Plate 1. General view of Back Creek 2, looking south west from the creek bed. Pit 3 is in the near foreground (NOHC 1998: 152).

In 2006, Biosis surveyed the North-South Rail corridor for the Albury to Junee Passing Lanes. The southernmost section of Passing Lane 14 (Culcairn- Henty) is located approximately 10 km north-east of the current assessment area while the northern most section of Passing Lane 13 (Table Top – Gerogery) is located approximately 8.4 km south-east of the current assessment area. During the survey for Passing Lane 14, seven sites were identified, including two artefact scatters and five isolated finds. Four of the sites recorded for Passing Lane 14 were recorded between 5 and 11 km north of the township of Culcairn. The four sites located in close proximity to the township of Culcairn consisted primarily of quartz flakes and flake fragments. The sites were all recorded in moderately disturbed contexts within graded areas and fire breaks. During the survey for Passing Lane 13, four isolated finds were recorded. All four isolated finds were manufactured from quartz and noted to be fragmented artefacts recorded in disturbed contexts.

Survey and subsequent test pitting was undertaken by Border Archaeology (2006b, 2007a) of the Carsten Street Residential Development approximately 40 km south of the current proposal area. The original survey identified three quartz lithic scatters, one isolated find, one scarred tree and an area of high archaeological potential. Visibility was however very low and consequently test pitting was recommended. The 2007 excavations of the Carsten Street Residential Development used a grader to excavate three areas in 10 cm spits down to approximately 20 cm depth. A total of 303 artefacts were recovered from grader scrape 1 with 86.8% of artefacts recorded manufactured from plain quartz and 12.8% manufactured from crystal quartz, the remaining 0.4% was listed as pebble quartz. Based upon the authors experience in the Albury region they proposed that "Aboriginal archaeological deposits [are] strongly associated with terrace landform rather than current water course margins" (Border Archaeology 2007a, p.51).

In 2007, Border Archaeology undertook a survey of the proposed Hume Country Club Estate Residential Development, approximately 35 km south of the current proposal area. Eight previously unrecorded sites were identified and consisted primarily of quartz debitage (Border Archaeology 2007b). A previously recorded AHIMS site #60-3-0099 was relocated and was subsequently salvaged by Border Archaeology in 2008. During the salvage program 65 quartz artefacts were relocated, primarily consisting of debitage and angular fragments (<3 cm) with a small number of cores, flakes and flaked pieces. The site occurred within a heavily disturbed terrace landform (Border Archaeology 2008).

In 2008, Biosis undertook site survey of a proposed Albury waste management facility, approximately 44 km south of the current proposal area, and located a single smoky quartz isolated flake within the valley flat associated with a small creek line. Biosis (2008) assessed creek terraces within the project area as having moderate archaeological sensitivity and valley flats and lower and mid valley slopes as having low archaeological sensitivity.

In 2015, Associates Archaeology and Heritage undertook an ACHA for Lot 204 DP753345 on Drumwood Road, Jindera located approximately 30 km south of the current proposal area. The area consisted of a 41ha area on a gentle slope southward of Bowna Creek. The site was located within 200 m of water, but it was predicted by Associates Archaeology and Heritage that while artefacts were likely to be found, they would most probably be in relatively low density because the area was a low-lying creek flat, and more complex residential or tool-making sites are typically located on more raised terrace landforms adjacent to creeks. Two surface flaked stone artefacts were recovered during the initial survey which prompted the need for further investigation in the area. Test excavation was carried out across the proposed subdivision area with 82 test pits excavated. A total of eight subsurface artefacts were recovered from 20.5 m^2 of excavated material across the project area. This is an artefact density of 0.36 artefacts/ m^2. The artefacts recovered were all made from white milky quartz and were located on ridge crest, slope and flat topographic units. The artefact types identified during the survey and testing program were all flakes, flake fragments and angular fragments with no cores recorded. Associates Archaeology suggested that the wide

distribution of the eight artefacts across the site was considered to demonstrate that the area was subject to frequent land use by Aboriginal people in the past but was not the site of complex / residential activity. Given that the artefacts were spread from the creek flat up to the ridge crest covering an area of up to 500 m from water with very little significant apparent concentration Associates Archaeology noted this was suggestive of the relatively regular, dispersed use of the landscape by Aboriginal people during foraging, hunting and travel. Associates Archaeology concluded that the absence of notable concentrations of artefacts within the project area was consistent with the modelling in the area which suggests that complex moderate-high density lithic sites are found on elevated terraces near to water rather than on low lying flats.

In 2016, Envirokey completed a Review of Environmental Factors (REF) including an Aboriginal and historic heritage assessment for Stage 2 of the Riverina Highway upgrade, approximately 35 km south of the current assessment area. It was determined that the proposal was unlikely to impact on Aboriginal heritage and the works were designed to avoid areas of Native Title Claim. The Bethanga Bridge was identified as an item of historic heritage listed on the State Heritage Register (#1750) that may be impacted by the proposed works and an exemption should be sought for this item and interpretive signage should be erected to increase public understanding of the history and significance of the bridge.

In 2018, NGH Environmental undertook survey and subsurface testing for the proposed expansion of the Anderson Clay Mine extraction area, located approximately 40 km south of the current proposal area. The field survey identified two PADs in the subject area, termed Andersons PAD 1 and Andersons PAD 2. Under the development proposal disturbance to Andersons PAD 1 was unavoidable, and poor surface visibility meant the PAD was not fully assessed for its potential to contain Aboriginal objects. Therefore, a program of test excavation was undertaken to establish the presence of subsurface archaeological material. While 25 test pits were proposed for excavation, only 13 were excavated as it was determined that at the completion of the excavation of the 13 test pits that enough data had been gathered to conclude that the area of Andersons PAD 1 had very little topsoil deposit in place and no Aboriginal objects were identified in the excavated test pits. The lack of subsurface deposit may be the result of previous farming practices or that the area has a naturally thin profile however this was unable to be determined as there was also evidence of significant disturbance to the ridge crest. It was consequently determined that Andersons PAD 1 was highly disturbed and modified, and the likelihood of *in situ* archaeology occurring reduced to very low. Despite the highly disturbed area identified during the test excavation program an isolated quartz flake was recorded which indicated that despite the apparent surface disturbance, the area most likely contained an Aboriginal heritage site which has now been largely removed.

In 2019(a), NGH Environmental completed the Aboriginal Cultural Heritage Assessment for the proposed Jindera Solar Farm comprising 521 ha of land and approximately 20 km south east of the current proposal area. The survey of the Jindera Solar Farm proposal area identified seven artefact scatters and 15 isolated finds. The Aboriginal community representatives also identified three cultural trees. Four areas of archaeological potential were noted which included a crest landform in close proximity to water (PAD 1) and three slightly raised areas along spur landforms in close proximity water (PAD 2 – PAD 4). The four PADs were subject to subsurface testing program as part of the assessment. A total of 52 test pits were excavated across the four PADs with subsurface stone artefacts recovered from 25 pits. The artefacts densities for each of the pits excavated ranged from nil to 12 with a total of 80 subsurface quartz artefacts recovered. The subsurface testing program was noted to be characterised by discrete low-density clusters of artefacts interspersed with areas of very low or no artefactual material. The subsurface material recovered was recorded as three additional subsurface artefact scatters.

In 2019(b) (in prep), NGH Environmental conducted a survey for the proposed Culcairn Solar Farm comprising of 1,350 ha of land, approximately 4 km north of the current assessment area. A total of 25 isolated artefacts, 16 artefact scatters and three scarred trees, were identified across the area. Sites were noted to generally be in close proximity to a water source, including Back Creek which extends into the current assessment area. Ten cultural sites, predominantly possible modified trees with ambiguous origins, were also identified by Aboriginal representatives participating in the field survey. The field survey identified the presence of potential subsurface archaeological deposits at six locations within the proposed Culcairn Solar Farm development footprint. These areas were all slightly elevated ground adjacent to water sources including Billabong and Back Creek. Further investigation, in the form of subsurface testing was recommended given that the areas were likely unable to be avoided by the proposed development. The results of the testing program for the Culcairn Solar Farm are currently not available.

Based on the studies discussed above it is possible to suggest that while Aboriginal sites may be expected through all landscapes there does appear to be a pattern of sites that relate to the presence of potential resources for Aboriginal use. In the local area the dominant raw material type is quartz with lesser numbers of silcrete. Sites tend to be concentrated on elevated level ground associated with a water source and are noted to consistently occur on raised terrace landforms within 50 m of peripheral or seasonal creeks (Border Archaeology 2007a, 2008; Smith & Upcher 1992, NGH Environmental 2019a). Additionally, the presence of scarred trees is relatively common and can occur across all landscapes.

Based on site modelling and the prevalence of sites in the surrounding area the site types most likely to be encountered within the Walla Walla Solar Farm proposal area are quartz lithic scatters, isolated artefacts and scarred trees in remnant old growth vegetation areas along the creek lines and/or as isolated paddock trees.

3.2.5 Summary of Aboriginal land use

The results of previous archaeological surveys in the region show that there are sites and artefacts present throughout the landscape, albeit concentrated closer to water courses. There does appear however to be a pattern of site location that relates to the presence of potential resources for Aboriginal use with high density sites generally located in elevated areas adjacent to waterways. Lower density background scatters also occur across undulating plains in proximity to water. The dominate lithology within the area appears to be quartz with lesser quantities of silcrete artefacts. A number of scarred trees are recorded in the area, but this site type tends to occur in areas where old growth trees remain.

In addition, site densities in close proximity to the proposal area appear to be low. This may suggest the seasonal occupation of the area by Aboriginal people though it is more likely that there has been a lack of survey in the area or that land clearing and farming activities have disturbed or removed the cultural material evidence of Aboriginal occupation in the area.

A detailed understanding of Aboriginal land use of the region is lacking, as few in depth studies have been completed in close proximity to the proposal area. It is possible however, to ascertain that proximity to water sources and raw materials was a key factor in the location of Aboriginal sites. It is also reasonable to expect that Aboriginal people ventured away from these resources to utilise the broader landscape, but the current archaeological record of that activity is limited.

Archaeological Site Location Model

The Aboriginal site modelling for the region to date suggests that there is a strong association between the presence of potential resources for Aboriginal use and the presence of archaeological sites. Areas directly

associated with water and or elevated ground appear to have the greatest potential for identification of Aboriginal cultural material. There are exceptions to this however, and relatively lo-w lying floodplain areas also have potential for the identification of isolated artefacts or campsites.

Based on the results of the previous archaeological investigations in the general area, and through extrapolation of sites from the Walla Walla area, it is possible to provide the following model of site location in relation to the proposal area.

Isolated Artefacts – are present across the entire landscape, in varying densities. As Aboriginal people traversed the entire landscape for thousands of years, such finds can occur anywhere and indicate the presence of isolated activity, dropped or discarded artefacts from hunting or gathering expeditions or the ephemeral presence of short-term camps. This feature is likely to occur.

Stone artefact scatters – representing camp sites or flaking and maintenance activity can occur across the landscape, usually in association with some form of resource or landscape. Within the general region, artefact scatters tend to be dominated by quartz artefacts, with lesser number of silcrete, sandstone, quartzite and volcanic material. Artefact scatters are most likely to occur in well drained elevated, level or gently sloping contexts within riparian zones, flood plains and adjacent to water sources (Navin Officer 1996: 10). Water bodies, such as rivers, ephemeral creeks or clay pans can also be a focus of Aboriginal occupation. Given the location of Back Creek and Middle Creek within the proposal area low density artefact scatters are likely to occur.

Scarred Trees – these require the presence of mature trees and are likely to be concentrated along major waterways and around swamps areas. There are patches of remnant vegetation within and adjacent to the proposal area particularly adjacent to Back Creek. This feature is therefore likely to occur.

Hearths/Ovens – are identified by burnt clay used for heat retainers. Some are recorded in the district in association with resource locations. However, they could occur either independently or in association with other Aboriginal cultural features such as artefact scatters. Hearths are generally considered to be limited, one-off use or reused but few times and are smaller concentrations. Ovens are considered to represent larger features, often extending over a larger area and can include other material such as bone. No such sites have been recorded in the area and therefore such sites are less likely to occur.

Mounds- are accumulations of heat retainer ovens that have built up over time. They are typically round or oval in shape and range in length from just a few metres to over 100 m and range in height from 0.1 m to 2 m. They are identified by the presence of baked clay heat retainers, which have usually been brought to the location from a nearby source of natural clay such as a lake bed, swamp or drainage line. Mounds are generally found in proximity to wetland areas such as lakes, swamps and creeks, often elevated above these areas by being situated on sandy rises, lunettes, source bordering dunes and palaeo-channels. Mounds are likely to contain a range of other archaeological features such as bone, shell, stone artefacts and burials. No such sites have been recorded in the area and therefore such sites are less likely to occur.

Burials – are generally found within mound sites, in elevated sandy contexts or in association with rivers and major creeks. Given the proximity to Billabong Creek which is a major creek line in the area it is possible that this feature could occur.

Stone resources – are areas where people used natural stone resources as a source material for flaking. This requires geologically suitable material outcropping to be accessible. The proposal area contains no natural outcropping stone and therefore this feature is unlikely to occur.

Shell Middens – are the agglomeration of shell material disposed of after consumption. Such places are found along the edges of significant waterways, swamps and billabongs. Given that there are no significant waterways, swamps and billabongs in the proposal area it is unlikely that this feature could occur.

In summary, the topography and landscape features within the proposed Walla Walla Solar Farm indicate that this area would likely have been part of the Wiradjuri landscape and has a possibility of providing an archaeological signature. Nonetheless, given that Aboriginal people have lived in the region for tens of thousands of years, there is potential for archaeological evidence to occur throughout the area, this is most likely to be in the form of stone artefacts and modified trees.

3.2.6 Comment on Existing Information

The AHIMS database is a record of those places that have been identified and had site cards submitted to OEH. It is not a comprehensive list of all places in NSW as site identification relies on an area being surveyed and on the submission of site forms to AHIMS. There are likely to be many areas within NSW that have yet to be surveyed and therefore have no sites recorded. However, this does not mean that sites are not present.

Within the Walla Walla area there have only been a few archaeological investigations. The information relating to site patterns, their age and geomorphic context is little understood. The robustness of the AHIMS survey results are therefore considered to be only moderate for the present investigation. There are likely to be sites that exist that have yet to be identified although the scale of farming development has altered the natural landscape in some places. This activity has also greatly disturbed the archaeological record and there are unlikely to be many places that retain *in situ* archaeological material due to the scale of agricultural and pastoral development. The current study is the most comprehensive assessment of this locality and therefore the results outlined in this report are the most thorough and up to date available.

With regard to the limitations of the information available, archaeologists rely on Aboriginal parties to divulge information about places with cultural or spiritual significance in situations where non-archaeological sites may be threatened by development. To date, we have not been told of any such places within the Walla Walla Solar Farm proposal area however there is always the potential for such places to exist but insofar as the current proposal is concerned, no such places or values have been identified.

4 ARCHAEOLOGICAL INVESTIGATION RESULTS

4.1 SURVEY STRATEGY

The survey strategy was to cover as much of the ground surface as possible within the proposal area. Although the actual ground impact from the construction method for the proposed solar farm was likely to be low, the placement of solar arrays across the landscape has the potential to cover any cultural heritage sites.

The strategy therefore was to walk a series of transects across the landscape to achieve maximum coverage. Because the proposal site was generally cleared paddocks used for grazing livestock or recently ploughed crop fields, transects were spaced evenly with the survey team spread apart at 30 m intervals, walking in parallel lines. The cleared nature of the paddocks made this an ideal survey strategy. The team were able to walk in parallel lines, at a similar pace, allowing for maximum survey coverage and maximum opportunity to identify any heritage features. The survey team consisted of a minimum of four people and

a maximum of five people which allowed a 120 m to 150 m wide tract of the proposal area to be surveyed with each transect depending the number of people present. At the end of each transect, the team would reposition along a new transect line at the same spacing and walk back on the same compass bearing.

While the proponent has excluded areas of existing viable native vegetation remnants from the development footprint where possible, the areas of remnant vegetation, specifically along Back Creek, were deemed to have high archaeological potential for mature trees within the proposal area and were inspected for any evidence of Aboriginal scarring (Long 2005). Native paddock trees were also inspected for any evidence of Aboriginal scarring (Long 2005).

NGH believes that the survey strategy was comprehensive and the most effective way to identify the presence of Aboriginal heritage sites. Discussions were held in the field during each day between the archaeologists and Aboriginal community representatives to ensure all were satisfied and agreed with the spacing and methodology.

The proposal area was divided into five landforms based on contour mapping and visual inspection during field survey. The landforms are listed below and shown in Figure 5:

- Creeks and depressions;
- Flats;
- Gradual slopes;
- Hill Crest; and
- Elevated flats.

The survey for the Walla Walla Solar Farm proposal area was undertaken by the team over five days from the 25th to the 29th of March 2019. Over the course of the survey notes were made about visibility, photos taken, and any possible Aboriginal features identified were inspected, assessed and recorded if deemed to be Aboriginal in origin.

4.2 SURVEY COVERAGE

The solar farm area comprised primarily of cleared and ploughed paddocks that had been subject to farming activities. Survey transects were undertaken on foot and traversed the entire proposal area. Visibility within the proposal area was variable however as a whole it generally had low to moderate visibility averaging 30% overall. The effective visibility in the paddocks ranged from 95% in exposures and recently ploughed paddocks to 5% in areas with a dense low grass cover. Between the survey participants, over the course of the field survey, approximately, 42 km of transects were walked across the proposal area.

Table 10 below shows the calculations of effective survey coverage and Plates 2-13, show examples of the transects and landforms within the proposal area.

Allowing for an effective view width of 5 m for each person and given the variability in the ground visibility across the proposal site overall the survey effectively examined 11.5% of the proposed development footprint. It is considered that the survey of the Walla Walla Solar Farm proposal area had sufficient and effective survey coverage.

The discovery of a number of Aboriginal sites indicates that the survey technique was effective enough to identify the presence of Aboriginal occupation in the area. Therefore, the results identified are considered a true reflection of the nature of the Aboriginal archaeological record present within the proposal area.

Plate 2. View east of flats in the north eastern portion of the proposal area.

Plate 3. View south of flats in the looking towards Back Creek.

Plate 4. View west of Back Creek that crosses the proposal area.

Plate 5. View west of depression in south-eastern portion of the proposal area.

Plate 6. View west of wetland depression in the central northern portion of the proposal area.

Plate 7. View north of large depression in the proposal area.

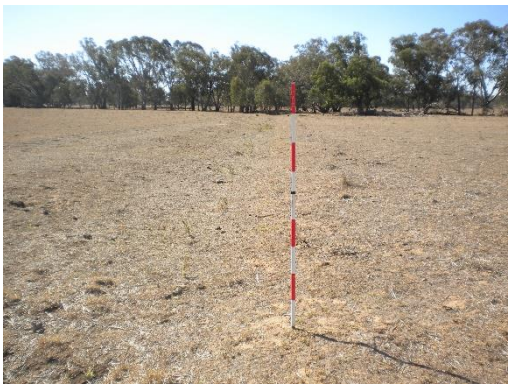

Plate 8. View north across the elevated flats associated for the convergence of Back and Middle Creek.

Plate 9. View north west across flat with the elevated flats associated for the convergence of Back and Middle Creek in the background.

Plate 10. View west up slope in paddocks adjacent to Schneiders Road, note high visibility.

Plate 11. View east down slope in paddocks adjacent to Schneiders Road, note high visibility.

Plate 12. View north along transmission line along the western boundary of the proposal area, note high visibility.

Plate 13. View west from hill low crest in north-western portion of the project.

Table 10 Transect information.

Survey Section/ Topography	Number of Survey Transects	Exposure type	Proposal Area ha	Surveyed area (length m x width m)	Survey Area m²	Visibility	Effective coverage (area x visibility) m²	Proposal Area surveyed (ha)	Percentage of Proposal area effectively surveyed	Survey Archaeological result
Creeks and depressions	16	Bare ground, vehicle and animal tracks, ploughed ground and disturbance areas	80	1,030 x 25 2, 620 x 20 885 x 20 1,160 x 25	119,700	10% average	11,970	1.2	1.5	4 Artefact scatters 4 Isolated finds 3 Cultural trees
Elevated Flats	8	Bare ground, vehicle and animal tracks, ploughed ground and disturbance areas	13	340 x 25 660 x 20	21,700	25% average	5,425	0.5	3.8	1 Isolated find 2 PADs
Gradual Slopes	10	Bare ground, vehicle and animal tracks, dam walls, ploughed ground and disturbance areas	154	1,620 x 25 1,150 x 25	69,250	60% average	41,550	4.2	2.7	1 Scarred tree
Hill Crest	10	Bare ground, vehicle and animal tracks, dam walls, ploughed ground and disturbance areas	10	380 x 25	9,500	20% average	1,900	0.2	2.0	No finds
Flats	30	Bare ground, vehicle and animal tracks, dam walls, ploughed ground and disturbance areas	357	2,840 x 20 975 x 25 890 x 20 710 x 20 960 x 25	137,175	40% average	54,870	5.4	1.5	7 Artefact scatters 18 Isolated finds 1 Scarred tree
Total	**84**	**NA**	**605**	**NA**	**357,325**	**NA**	**103,745**	**11.5**	**11.5**	**11 Artefact scatters** **23 Isolated finds** **3 Cultural trees** **2 Scarred trees** **2 PADs**

4.3 SURVEY RESULTS

Despite the variable visibility encountered during the survey 11 artefact scatters (Walla Walla SF AFT 1 to Walla Walla SF AFT 11), 23 isolated finds (Walla Walla SF IF 1 to Walla Walla SF IF 23) and two scarred trees (Walla Solar Farm 495495 and Walla Solar Farm 497946) were recorded. Two areas of potential archaeological deposit were also recorded in association with Back Creek (PAD 1 and PAD 2). The Aboriginal community representatives also identified three cultural trees (Walla Solar Farm 497199, Walla Solar Farm 496602 and Walla Solar Farm 496812). The details of these sites are outlined below, and their locations shown in Figure 11.

It should be noted that the Aboriginal representative Mark Saddler independently assigned a naming convention to the scarred and cultural tree sites he identified during the survey and submitted these to AHIMS. A total of five sites were submitted to AHIMS by Mark Saddler in March 2019. Mark Saddler has also provided NGH with a report on his participation in the survey which is provided in full in Appendix A. The remaining 31 sites were submitted to AHIMS by NGH, following the completion of the fieldwork and the commencement of this assessment.

A summary of all the cultural and archaeological Aboriginal sites recorded during survey within the Walla Walla proposal area is provided in Table 11. The artefact data is provided in full in Appendix C with detailed site descriptions provided in Appendix D.

Table 11 Summary of all cultural and archaeological sites recorded during survey of the Walla Walla Solar Farm proposal area.

AHIMS	Name	Type
55-6-0174	Walla Walla SF IF1	Isolated Find
55-6-0175	Walla Walla SF IF2	Isolated Find
55-6-0176	Walla Walla SF IF3	Isolated Find
55-6-0177	Walla Walla SF IF4	Isolated Find
55-6-0178	Walla Walla SF IF5	Isolated Find
55-6-0179	Walla Walla SF IF6	Isolated Find
55-6-0180	Walla Walla SF IF7	Isolated Find
55-6-0181	Walla Walla SF IF8	Isolated Find
55-6-0182	Walla Walla SF IF9	Isolated Find
55-6-0183	Walla Walla SF IF10	Isolated Find
55-6-0184	Walla Walla SF IF11	Isolated Find
55-6-0185	Walla Walla SF IF12	Isolated Find
55-6-0186	Walla Walla SF IF13	Isolated Find
55-6-0187	Walla Walla SF IF14	Isolated Find
55-6-0188	Walla Walla SF IF15	Isolated Find
55-6-0189	Walla Walla SF IF16	Isolated Find
55-6-0190	Walla Walla SF IF17	Isolated Find
55-6-0191	Walla Walla SF IF18	Isolated Find
55-6-0192	Walla Walla SF IF19	Isolated Find
55-6-0193	Walla Walla SF IF20	Isolated Find
55-6-0194	Walla Walla SF IF21	Isolated Find

AHIMS	Name	Type
55-6-0195	Walla Walla SF IF22	Isolated Find
55-6-0196	Walla Walla SF IF23	Isolated Find
55-6-0163	Walla Walla SF AFT1	Artefact Scatter
55-6-0164	Walla Walla SF AFT2	Artefact Scatter
55-6-0165	Walla Walla SF AFT3	Artefact Scatter
55-6-0166	Walla Walla SF AFT4	Artefact Scatter
55-6-0167	Walla Walla SF AFT5	Artefact Scatter
55-6-0168	Walla Walla SF AFT6	Artefact Scatter
55-6-0169	Walla Walla SF AFT7	Artefact Scatter
55-6-0170	Walla Walla SF AFT8	Artefact Scatter
55-6-0171	Walla Walla SF AFT9	Artefact Scatter
55-6-0172	Walla Walla SF AFT10	Artefact Scatter
55-6-0173	Walla Walla SF AFT11	Artefact Scatter
55-6-0144	Walla Solar Farm 495495	Scarred Tree
55-6-0148	Walla Solar Farm 497946	Scarred Tree
55-6-0145	Walla Solar Farm 497199	Cultural Tree
55-6-0147	Walla Solar Farm 496602	Cultural Tree
55-6-0146	Walla Solar Farm 496812	Cultural Tree

4.3.1 Consideration of potential for subsurface material

The field survey of the Walla Walla Solar Farm proposal area in conjunction with an assessment of contour data, archaeological modelling and consideration of the comments from the RAPs have resulted in the identification of two areas considered to have potential for *in situ* subsurface deposits that require further assessment. It is recommended that the two areas of Potential Archaeological Deposit (PADs) (PAD 1 and PAD 2) are subject to a limited subsurface testing program, if they are unable to be avoided by the proposed development footprint , to establish the true archaeological potential, significance and extent of sites within the proposal area. PAD 1 is associated with an elevated area of land to the south of Back Creek in the north western portion of the proposal area. PAD 2 is associated with an elevated area of land to the south west of the convergence of Middle and Back Creeks.

Discussions were held with FRV following the completion of the field survey and it was determined that the two PAD areas as noted above would not be impacted by the proposed development. The development footprint has been redesigned in these locations to ensure the PAD areas will not be impacted.

Based on the land use history, an appraisal of the landscape, soil, level of disturbance and the results from the field survey it was concluded that there was negligible potential for the presence of intact subsurface deposits with high densities of cultural material within the remainder of the proposal area outside the two PADs shown in Figure 11. This is further supported by the low-density results of a subsurface testing program conducted by NOHC in 1998 (see Section 3.2.4) in an area directly opposite the northern boundary of the proposal area along Back Creek which only recovered a single subsurface stone artefact. Consequently, subsurface testing is not warranted across the remainder of the proposal area beyond the two PADs identified.

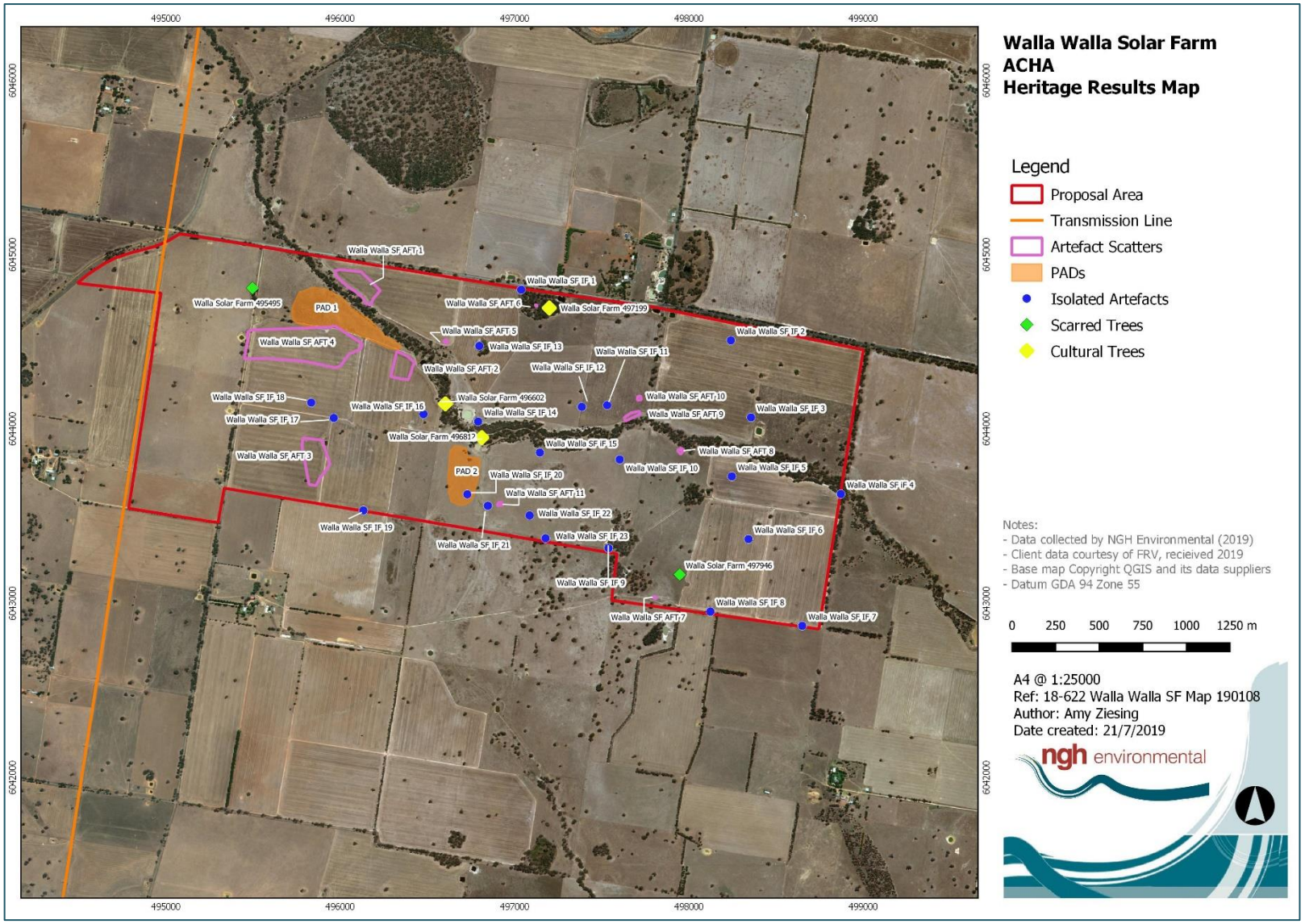

Figure 11 Results from the heritage survey.

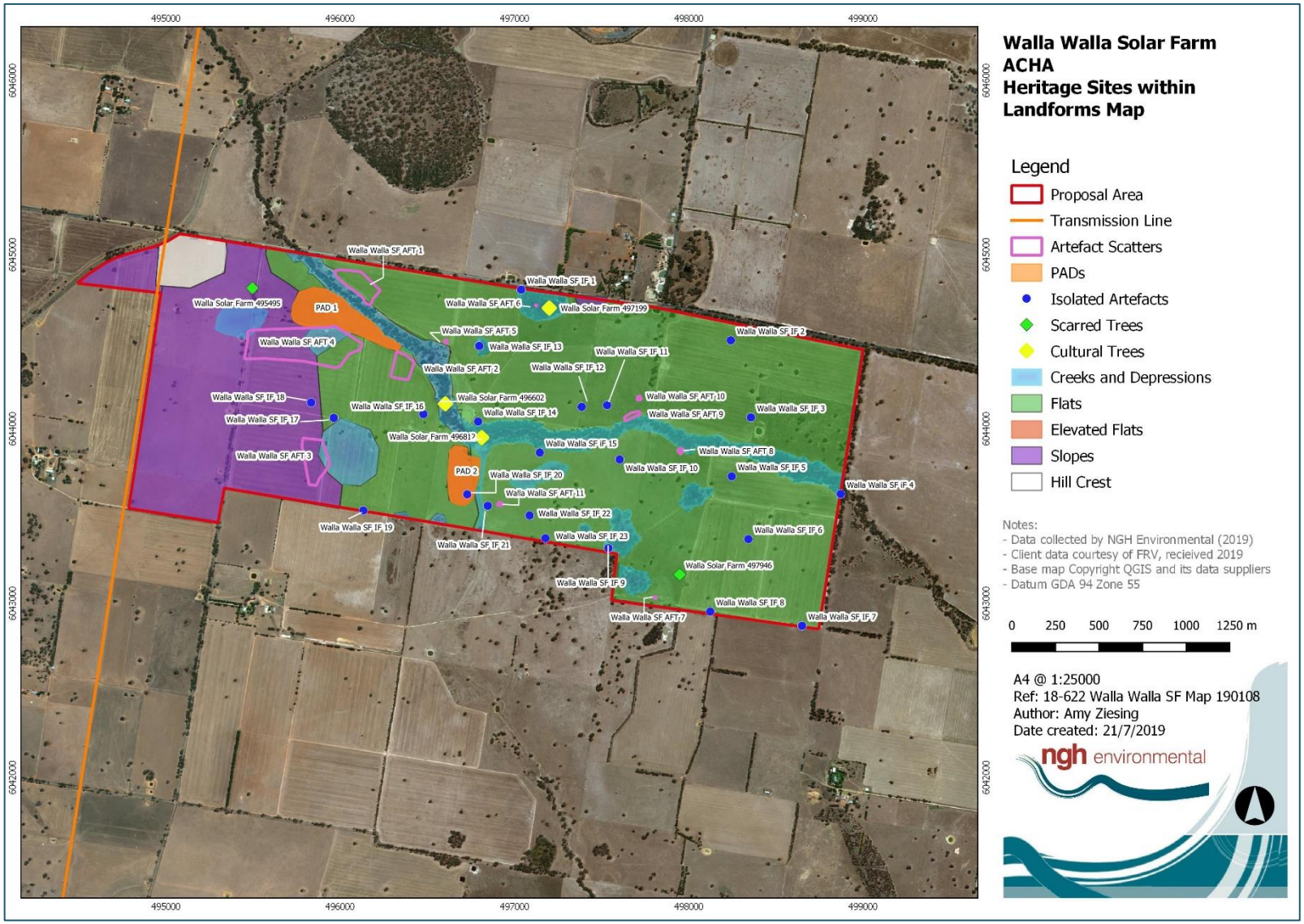

Figure 12 Heritage Sites within Landforms.

DISCUSSION

The predictions, based on modelling for the proposal area, were that isolated artefacts and artefact scatters consisting predominately of quartz objects were the most likely manifestation of Aboriginal occupation in the proposal area. The results indicate that artefact scatters and Aboriginal objects can occur throughout the landscape, even in areas of highly disturbed farming activities. While Aboriginal sites may be expected through all landscapes there does appear to be a pattern of sites that relate to the presence of potential resources for Aboriginal use.

The survey results have confirmed these predictions with two scarred trees, three cultural sites and 81 surface stone artefacts recorded as 23 isolated finds and 11 artefact scatter occurrences across the proposal area. The sites identified in this assessment are scattered across the proposal area and are representative of the opportunistic use and movement of people through the landscape. The area was likely used intermittently over a period of time for camping, hunting and gathering resources. The sites are most likely representative of the use of country along Back Creek which was may have been used as a travelling route for Wiradjuri people given that it joins onto Billabong Creek approximately 7 km north of the proposal area. Based on this assumption, there is every chance that there are similar artefact scatters or isolated artefacts across similar landforms in the Walla Walla area and Albury district and these site types, particularly stone objects, could be more prevalent in this area than previously envisaged.

The relatively low density of the surface assemblage across the proposal area indicates that small groups of Aboriginal people were occupying short-term camps for short periods of time across the proposal area with a focus along creek banks and on slightly elevated areas. No direct evidence of longer-term base camps was identified within the proposal area.

The majority of the artefacts recorded during the survey were manufactured from quartz which is common for the general region with a lesser number of basalt and volcanic artefacts also recorded. An axe blank, a hammerstone, cores, flakes, broken flakes and flaked pieces indicates that tool manufacture may have occurred onsite, although the presence of the axe blank and hammerstones may imply some completed or partially completed tools and materials were also brought to the site. The low number of cores (n=2; 2.5%) may be representative of the low discard rate of quality raw materials in the area. The lack of cores may also imply that artefacts were not being manufactured within the proposal area but were instead simply being transported through this landscape. Alternately, the lack of cores may also indicate that farming activities in the area have removed any larger stones from the paddocks given that the hammerstone was located along a paddock fence line.

The use of a volcanic material for the manufacture of the axe blank is common for the region, however it should be noted that no grinding groove sites have been recorded to date within the AHIMS search area near the proposal area.

Given the level of clearing within the proposal area, the presence of two possible scarred trees and two possible ring trees in the assessment area is considered high. Scarred trees provide a tangible link to the past and provide evidence of Aboriginal subsistence activities through the deliberate removal of bark or wood. Modified trees such as ring trees are generally seen as marker trees that have had the branches modified and joined together to make a ring or oval shape. This modification of trees would have occurred when the trees were young so the branches could be fused. It is likely that the dominance of scarred and modified trees as a site type in the local area is related to the more obtrusive nature of scarred trees compared to stone artefacts. It should also be noted however, that the results of this investigation have increased the number of scarred trees sites recorded in the local area.

It should also be noted that the results of this survey have significantly increased the number of stone artefact sites recorded in the local area from 7 to 41 with an additional 34 artefacts sites recorded during this assessment. There appears to previously be a bias towards more obvious site types in the AHIMS record, with scarred trees previously making up 69.6% (n=16) of the sites recorded in the area. This is something we consider anomalous in the typical pattern of site recording in Australia. The implications for this relate to significance assessments and the related appraisal of site representativeness. We would argue that there are likely to be many hundreds of such artefact sites in the local area, and that the previous relatively low number of artefact sites (n=7; 30.4%) in the area recorded on AHIMS is merely an indication that few surveys have been undertaken in the Walla Walla area and therefore they are yet to be found.

In terms of the current proposal, extrapolating from the results of this survey, it is likely that additional low-density surface artefacts could occur within the proposed development footprint. However, consideration must also be given to the level of disturbance of any such sites. Based on the land use history of the proposal area, and an appraisal of the results from the field survey, there is negligible potential for the presence of intact subsurface deposits with high densities of artefacts or cultural material within the Walla Walla Solar Farm proposal area beyond the two areas of PAD (PAD 1 and PAD 2) identified that will now be avoided by the proposed works (Figure 12).

5 CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNIFICANCE

The assessment of the significance of Aboriginal archaeological sites is currently undertaken largely with reference to criteria outlined in the ICOMOS Burra Charter (Marquis-Kyle and Walker 1994). Criteria used for assessment are:

- ***Social or Cultural Value*:** In the context of an Aboriginal heritage assessment, this value refers to the significance placed on a site or place by the local Aboriginal community – either in a contemporary or traditional setting.
- ***Scientific Value*:** Scientific value is the term employed to describe the potential of a site or place to answer research questions. In making an assessment of scientific value issues such as representativeness, rarity and integrity are addressed. All archaeological places possess a degree of scientific value in that they contribute to understanding the distribution of evidence of past activities of people in the landscape. In the case of flaked stone artefact scatters, larger sites or those with more complex assemblages are more likely to be able to address questions about past economy and technology, giving them greater significance than smaller, less complex sites. Sites with stratified and potentially in situ sub-surface deposits, such as those found within rock shelters or depositional open environments, could address questions about the sequence and timing of past Aboriginal activity, and will be more significant than disturbed or deflated sites. Groups or complexes of sites that can be related to each other spatially or through time are generally of higher value than single sites.
- ***Aesthetic Value*:** Aesthetic values include those related to sensory perception and are not commonly identified as a principal value contributing to management priorities for Aboriginal archaeological sites, except for art sites.
- ***Historic Value*:** Historic value refers to a site or place's ability to contribute information on an important historic event, phase or person.

- ***Other Values*:** The Burra Charter makes allowance for the incorporation of other values into an assessment where such values are not covered by those listed above. Such values might include Educational Value.

All sites or places have some degree of value, but of course, some have more than others. In addition, where a site is deemed to be significant, it may be so on different levels or contexts ranging from local to regional to national, or in very rare cases, international. Further, sites may either be assessed individually, or where they occur in association with other sites the value of the complex should be considered.

Social or cultural value

While the true cultural and social value of Aboriginal sites can only be determined by local Aboriginal people, as a general concept, all sites hold cultural value to the local Aboriginal community. An opportunity to identify cultural and social value was provided to the Aboriginal representatives for this proposal through the fieldwork and draft reporting process.

Feedback about the cultural value of the sites while in the field with representatives was that all sites hold cultural value to the Aboriginal community. It was clear from the conversations held in the field that the community view the stone artefacts as important and would like to see the surface artefacts collected before any development occurs. It was noted during the conversations that there was importance placed on collecting the artefacts and placing them in a safe location to avoid future disturbance. The axe blank was noted to be a particular stone artefact type that should be collected prior to damage or development as it was relatively uncommon for the area.

It was also clear that scarred and modified trees were viewed as important and a particular site type that should be avoided by development. Mark Saddler also noted this in the report he provided NGH (see Appendix A).

Three cultural sites were recorded by the Aboriginal representative Mark Saddler during the survey. One of these sites was a tree which had scaring that NGH archaeologists determined were not archaeological in nature however they were identified by Mark Saddler to be Aboriginal in origin. The remaining two cultural trees were possible ring trees. The origin of these rings was unable to be confirmed during the field work as the height at which the rings were located was unable to be adequality inspected and assessed. The possible ring tree located in the wetland depression (Walla Walla 497199) was noted to be particularly significant by Mark Saddler due to the potential age of the tree. These sites are therefore considered to be cultural sites the value of which may only be determined by the local Aboriginal community.

Scientific (archaeological) value.

The research potential of the sites located during this assessment is considered to be low. While the presence of the sites can be used to assist in the development of site modelling for the local landscape, their scientific value for further research is limited.

While the artefacts themselves are intrinsically interesting in terms of their base technical information their current lack of temporal context and the absence of information about local resources makes further conclusions about land use difficult. Their scientific value for further research is also limited due to the disturbed nature of the landscape and the subsequent movement of objects by clearing and ploughing activities. The axe blank artefact is considered of higher value due to the relative rarity of the artefact compared to common flaking material of cores and flakes. Axes are an indicator of a different tool use and activity, being mostly for the removal of wood from trees that could have been used for a variety of purposes such as carrying dishes, shields, spears and shelter as well as extraction of food such as possums and honey from tree hollows.

The two possible scarred trees most likely represent the opportunistic use of the landscape, but any further observations are restricted. The fact that the surrounding landscape has been cleared and modified means that as a representative example of this site type the two possible scarred trees have high value. The two possible scarred trees were both alive and healthy which enhances the viability of their medium-term survival; therefore, the integrity of these sites is also high. The fact that the survival of scarred trees is subject to natural factors such as death and decay and bushfires, as well as man-made threats such as land clearing, their long-term survival prospects are diminished. This leads to the conclusion that while scarred trees are a common site type in the area and relativity common within a 5 km radius of the proposal area the remaining scarred trees in the landscape have high value as examples of an ever-reducing Aboriginal cultural feature. The two possible scarred trees in the assessment area therefore are assessed overall as having high conservation value.

The cultural tree sites have no further research potential given that the scars and/or modification of the trees was unable to be unequivocally determined to be Aboriginal in origin by the NGH archaeologist. The Aboriginal community representatives however requested that they are not impacted by the proposed works.

The findings of this project have substantially increased the number of sites listed in the AHIMS database for the area. In terms of representativeness and rarity however, we would argue that there are likely to be many hundreds of such sites in the local area, the lack of sites in AHIMS is merely an indication that few surveys have been undertaken in the Walla Walla area and therefore they are yet to be found. The nature of Aboriginal occupation in almost any landscape in Australia is that stone artefact sites considerably outnumber any other site type, including scarred trees.

Aesthetic value

There are no aesthetic values associated with the archaeological site per se, apart from the presence of Aboriginal artefacts, scarred trees and cultural sites in the landscape. The modified and heavily disturbed landscape within the solar farm development area however detracts from this aesthetic setting.

Historic Value

There are no known historic values associated with the proposal area, the sites identified or links to known people.

Other Values

The area may have some educational value (not related to archaeological research) through educational material provided to the public about the Aboriginal occupation and use of the area, although the archaeological material is within private property and there is little for the public to see.

6 PROPOSED ACTIVITY

6.1 HISTORY AND LANDUSE

It has been noted above that historically the Walla Walla solar farm proposal area has been impacted through land use practices, in particular clearing, ploughing and grazing.

The implications for this activity are that the archaeological record has been compromised in terms of the potential for scarred trees to remain outside the areas of remnant vegetation. The implication for stone artefacts is that they may have been damaged or moved but they are likely to be present and remain in the general area they were discarded by Aboriginal people.

Despite these impacts, Aboriginal artefacts and cultural material remain in the area, indicating the presence of past Aboriginal people and providing indications of their use of this landscape.

6.2 PROPOSED DEVELOPMENT ACTIVITY

As noted in section 1.2, the proposal involves the construction of a solar plant with a capacity up to 300 MW (AC). The power generated will be fed into the National Electricity Market (NEM) via a 33kV transmission line that would connect to the existing TransGrid Jindera to Wagga Wagga 330 kV transmission line that intersects the western portion of the proposed development area.

Disturbances will largely be in the preparation of the ground for the solar farm. Piles would be driven or screwed into the ground to support the solar array's mounting system, which reduces the potential overall level of ground disturbance. Flat plate PV modules would be installed and mounted across the site. Each of them would be linked to an inverter and a transformer. Trenches would be dug for the installation of a series of underground cables linking the arrays across the proposal site.

Some internal access tracks would also be required, and typically these would comprise of a compacted layer of gravel laid on stripped bare natural ground.

Some ancillary facilities would also be required including parking facilities, operations and maintenance buildings, battery units and an electrical substation.

Electrical transmission infrastructure will be required to connect the solar arrays and substation to the existing 330 kV transmission line.

A perimeter fence would be constructed around the solar farm and several vegetation buffers will be planted in some areas for visual screening.

Upgrades will be made to the existing creek crossing located at latitude, longitude -35.4451, 146.5831. This area was covered by the assessment and has been previously disturbed from the installation of the existing creek crossing in this location. No heritage sites will be impacted by this activity.

In total, the construction phase of the proposal is expected to take 12 to 18 months. The Walla Walla Solar Farm is expected to operate for around 30 years. After the initial operating phase, the proposal would either be decommissioned, removing all above ground infrastructure and returning the site to its existing land capability, or upgraded with new photo voltaic equipment.

The development activity will therefore involve disturbance of the ground during the construction of the solar farm. Once established however, there would be minimal ongoing disturbance of the ground surface.

The final details and timing of the proposed construction activity have yet to be finalised.

6.3 ASSESSMENT OF HARM

As described in this report, 23 isolated finds, two scarred trees, 11 artefact scatter occurrences and three cultural trees were located within the assessment area. Table 12 and 13 provides a summary of sites to be impacted and avoided while Table 14 details the degree of harm and the consequence of that harm upon the heritage value of each site resulting from the proposed works. Figure 13 also shows the location of the sites and the proposed development footprint. It should be noted that design changes to the original layout have been made have avoided the scarred and cultural trees and the two area of PAD identified within the proposal area.

There is Aboriginal archaeological material present within the solar farm proposal area and the assessment is that there are likely to be other artefacts present as well, although in similar low densities. The proposed level of disturbance for the construction of the solar farm could impact the stone artefacts recorded during the field survey and others that may be present within other areas of the development site.

Of the 36 Aboriginal archaeological sites recorded, nine artefact scatters and 15 isolated artefacts (n=24, 66.7%) are situated within the area of the proposed solar arrays, tracks and fencing and would be impacted by the proposed development (see Figure 13). The remaining 10 sites with stone artefact, two scarred trees, three cultural trees and two PAD areas will not be impacted by the proposed development.

The impact to these 24 sites is likely to be most extensive where earthworks occur such as the installation of cabling and the transmission line poles, which may involve the removal, breakage or displacement of artefacts. This is considered a direct impact on the sites and the Aboriginal objects by the development in its present form.

The proposed construction methodology for the project will however result in only small areas of disturbance. The construction of access and maintenance tracks may involve some grading but given the flat nature of the majority of the terrain, this is likely to be minimal. The installation of the solar arrays involves drilling or screwing the piles into the ground and no widespread ground disturbance work such as grading is required to accomplish this. The major ground disturbance will be the trenching for cables and vehicle movement during construction.

The assessment of harm overall for the project is therefore assessed as low.

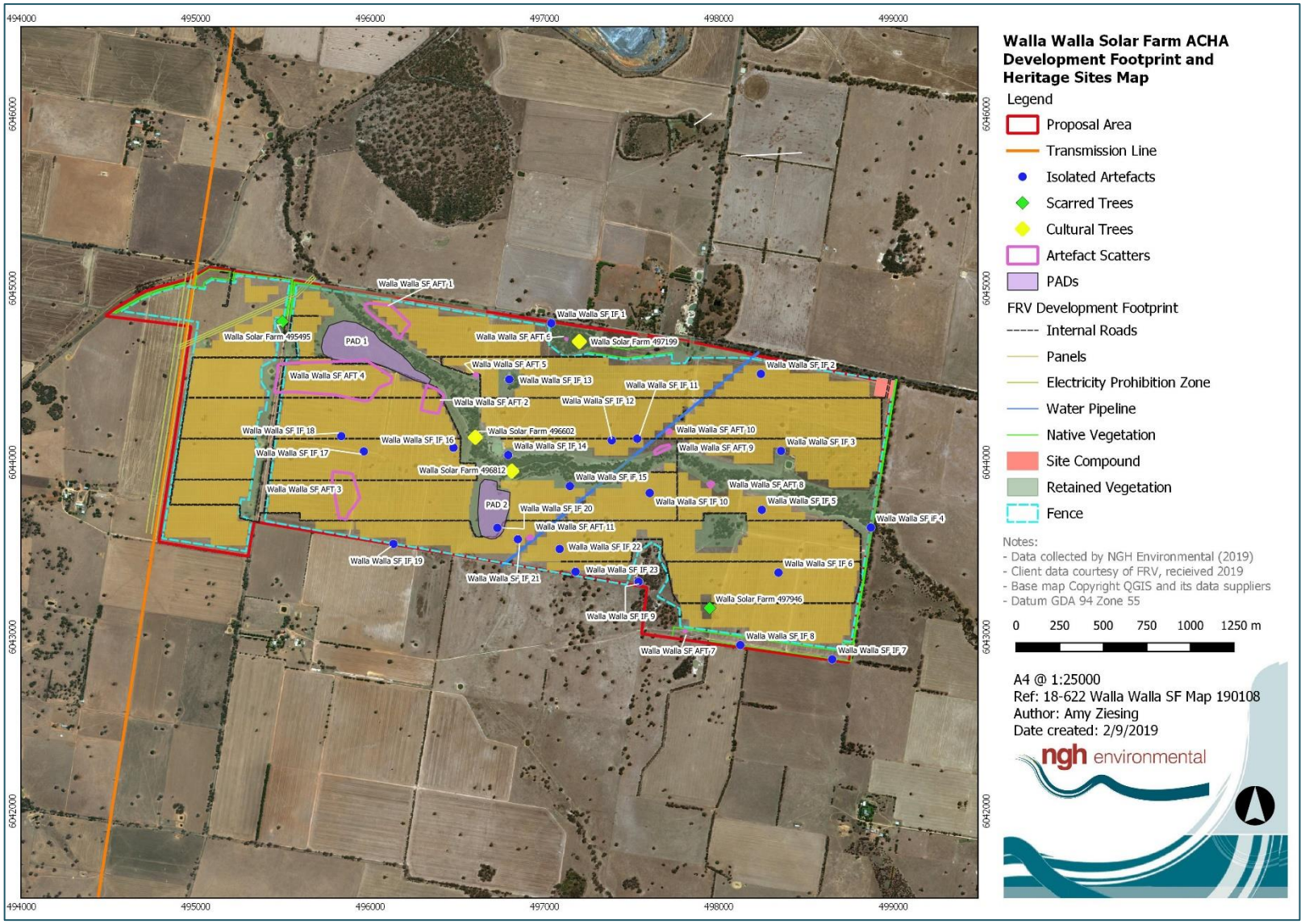

Figure 13 Heritage and Cultural Sites within the proposed development footprint.

Table 12. Summary of sites to be impacted and avoided by the proposed development

Sites impacted	Sites avoided
1. Walla Walla SF AFT 1 (artefact scatter)	1. Walla Walla SF AFT 6 (artefact scatter)
2. Walla Walla SF AFT 2 (artefact scatter)	2. Walla Walla SF AFT 7 (artefact scatter)
3. Walla Walla SF AFT 3 (artefact scatter)	3. Walla Walla SF IF 1 (isolated stone artefact)
4. Walla Walla SF AFT 4 (artefact scatter)	4. Walla Walla SF IF 4 (isolated stone artefact)
5. Walla Walla SF AFT 5 (artefact scatter)	5. Walla Walla SF IF 7 (isolated stone artefact)
6. Walla Walla SF AFT 8 (artefact scatter)	6. Walla Walla SF IF 9 (isolated stone artefact)
7. Walla Walla SF AFT 9 (artefact scatter)	7. Walla Walla SF IF 13 (isolated stone artefact)
8. Walla Walla SF AFT 10 (artefact scatter)	8. Walla Walla SF IF 14 (isolated stone artefact)
9. Walla Walla SF AFT 11 (artefact scatter)	9. Walla Walla SF IF 15 (isolated stone artefact)
10. Walla Walla SF IF 2 (isolated stone artefact)	10. Walla Walla SF IF 20 (isolated stone artefact)
11. Walla Walla SF IF 3 (isolated stone artefact	11. Walla Solar Farm 495495 (scarred tree)
12. Walla Walla SF IF 5 (isolated stone artefact)	12. Walla Solar Farm 495946 (scarred tree)
13. Walla Walla SF IF 6 (isolated stone artefact)	13. Walla Solar Farm 496602 (cultural tree)
14. Walla Walla SF IF 8 (isolated stone artefact)	14. Walla Solar Farm 497199 (cultural tree)
15. Walla Walla SF IF 10 (isolated stone artefact)	15. Walla Solar Farm 496812 (cultural tree)
16. Walla Walla SF IF 11 (isolated stone artefact)	
17. Walla Walla SF IF 12 (isolated stone artefact)	
18. Walla Walla SF IF 16 (isolated stone artefact)	
19. Walla Walla SF IF 17 (isolated stone artefact)	
20. Walla Walla SF IF 18 (isolated stone artefact)	
21. Walla Walla SF IF 19 (isolated stone artefact)	
22. Walla Walla SF IF 21 (isolated stone artefact)	
23. Walla Walla SF IF 22 (isolated stone artefact)	
24. Walla Walla SF IF 23 (isolated stone artefact)	

Table 13. Summary of the degree of harm and the consequence of that harm upon site types

Site Type	Type of Harm	Degree of Harm	Consequence of harm	No. of Sites	% of site type
Isolated Finds	Direct	Complete	Total loss of value	15	65
	Nil	Nil	Not Applicable	8	35
Artefact Scatters	Direct	Complete	Total loss of value	9	82
	Nil	Nil	Not Applicable	2	18
Scarred Trees	Nil	Nil	Not Applicable	2	100
Cultural sites	Nil	Nil	Not Applicable	3	100
PADs	Nil	Nil	Not Applicable	2	100

6.4 IMPACTS TO VALUES

The values potentially impacted by the development are any social and cultural values attributed to the artefacts and the sites by the local Aboriginal community. The extent to which the loss of the sites or parts of the sites would impact on the community is only something the Aboriginal community can articulate.

The impact to scientific values for this development are summarised in Section 5 and detailed in Table 14 with the stone artefact sites rated as having low loss of scientific value. While the majority of the stone artefact sites are rated as having total loss of scientific value (n=24, 70.6%) it is argued that there are likely to be a number of similar sites in the local area and therefore the impact to the overall local archaeological record is considered to be low. Additionally, there are a number of stone artefact sites that will not be harmed (n=10; 29.4)

The stone artefacts have little research value apart from what has already been gained from the information obtained during the present assessment. This information relates more to the presence of the artefacts and in the development of Aboriginal site modelling, which has largely now been realised by the recording.

The intrinsic values of the artefacts themselves may be affected by the development of the proposal area. Any removal of the artefacts, or their breakage would reduce the low scientific value they retain. The impact to the axe blank (AHIMS #55-6-0175/ Walla Walla SF IF 2) is considered to have low to moderate loss of scientific value.

The two scarred tree sites (Walla Solar Farm 495495 and Walla Solar Farm 476946) will not be impacted by the proposal as per the proposed design in this report. Ten of the stone artefact sites (Walla Walla SF AFT 6, Walla Walla SF AFT 7, Walla Walla SF IF 1, Walla Walla SF IF 4, Walla Walla SF IF 7, Walla Walla SF IF 9, Walla Walla SF IF 13, Walla Walla SF IF 14, Walla Walla SF IF 15 and Walla Walla SF IF 20) will also not be impacted by the proposal. The three cultural trees (Walla Solar Farm 496602, Walla Solar Farm 497199 and Walla Solar Farm 496812) identified by the Aboriginal community members will also not be impacted by the proposed development.

The proposed development design and the locations of the sites assessed in this report are shown in Figure 13 above. No other values have been identified that would be affected by the development proposal.

Table 14. Identified risk to known sites.

AHMIS #	Site name	Site integrity	Scientific significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
55-6-0163	Walla Walla SF AFT 1	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0164	Walla Walla SF AFT 2	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0165	Walla Walla SF AFT 3	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0166	Walla Walla SF AFT 4	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0167	Walla Walla SF AFT 5	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0168	Walla Walla SF AFT 6	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
55-6-0169	Walla Walla SF AFT 7	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
55-6-0170	Walla Walla SF AFT 8	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0171	Walla Walla SF AFT 9	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.

AHMIS #	Site name	Site integrity	Scientific significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
55-6-0172	Walla Walla SF AFT 10	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0173	Walla Walla SF AFT 11	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0174	Walla Walla SF IF 1	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
55-6-0175	Walla Walla SF IF 2	Poor – 100+ year history of agricultural and pastoral use.	Low to moderate	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0176	Walla Walla SF IF 3	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0177	Walla Walla SF IF 4	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
55-6-0178	Walla Walla SF IF 5	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0179	Walla Walla SF IF 6	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0180	Walla Walla SF IF 7	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site

AHMIS #	Site name	Site integrity	Scientific significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
55-6-0181	Walla Walla SF IF 8	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface objects prior to development of proposal area.
55-6-0182	Walla Walla SF IF 9	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
55-6-0183	Walla Walla SF IF 10	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0184	Walla Walla SF IF 11	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0185	Walla Walla SF IF 12	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0186	Walla Walla SF IF 13	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
55-6-0187	Walla Walla SF IF 14	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
55-6-0188	Walla Walla SF IF 15	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
55-6-0189	Walla Walla SF IF 16	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.

AHMIS #	Site name	Site integrity	Scientific significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
55-6-0190	Walla Walla SF IF 17	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0191	Walla Walla SF IF 18	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0192	Walla Walla SF IF 19	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0193	Walla Walla SF IF 20	Poor – 100+ year history of agricultural and pastoral use.	Low to moderate	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
55-6-0194	Walla Walla SF IF 21	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0195	Walla Walla SF IF 22	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0196	Walla Walla SF IF 23	Poor – 100+ year history of agricultural and pastoral use.	Low	Direct	Total	Total loss of value	Salvage surface object prior to development of proposal area.
55-6-0144	Walla Solar Farm 495495	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 10 m buffer around site
55-6-0148	Walla Solar Farm 497946	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 10 m buffer around site

AHMIS #	Site name	Site integrity	Scientific significance	Type of harm	Degree of harm	Consequence of harm	Recommendation
55-6-0147	Walla Solar Farm 496602	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 10 m buffer around site
55-6-0145	Walla Solar Farm 497199	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 10 m buffer around site
55-6-0146	Walla Solar Farm 496812	Poor – 100+ year history of agricultural and pastoral use.	Low	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 10 m buffer around site
N/A	Walla Walla PAD 1	Good – minimal disturbance from pastoral activities	Low to moderate	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site
N/A	Walla Walla PAD 2	Good – minimal disturbance from pastoral activities	Low to moderate	None-– outside of development footprint	None	None	Site will be avoided by proposed development. Ensure avoidance with 5 m buffer around site

7 AVOIDING OR MITIGATING HARM

7.1 CONSIDERATION OF ESD PRINCIPLES

Consideration of the principles of Ecologically Sustainable Development (ESD) and the use of the precautionary principle was undertaken when assessing the harm to the sites and the potential for mitigating impacts to the sites recorded during the survey for the proposed Walla Walla solar farm. The main consideration was the cumulative effect of the proposed impact to the sites and the wider archaeological record. The precautionary principle in relation to Aboriginal heritage implies that development proposals should be carefully evaluated to identify possible impacts and assess the risk of potential consequences.

In broad terms, the archaeological material located during this investigation is similar to what has been found previously within the region, comprising of isolated finds and low-density artefact scatters dominated by quartz lithology and scarred trees. The immediate local area previously had a dominance of scarred trees recorded. However, the identification of an additional 34 sites with one or more stone artefacts during this survey suggest that the dominance of scarred tree in the local area as a site types is the results of a lack of survey and not an accurate representation of the other site types in the area. The findings of this survey are therefore believed to accurately represent the Aboriginal cultural record of land use for the Walla Walla area.

While there have been archaeological investigations for other projects in the region, including subsurface investigations, there is no clear regional synthesis of the nature, number, extent and content for archaeological sites within the Greater Hume Shire LGA. Nevertheless, given the size of the geographical area, it is almost certain that there would be similar site types present within the region. The result of this Aboriginal heritage assessment supports the proposed model of site location and site distribution, whereby objects and sites could be expected to occur across all landscapes and in particular in close proximity to a water source, even in areas of highly disturbed farming activities. The results of this Aboriginal heritage assessment suggest that more sites could be expected to occur in the area than was previously envisaged.

The implications for ESD principles are that in fact more sites are likely to be present in the region than previously thought, which reduces the individual value of the particular sites within the proposal area, as they are likely to be represented elsewhere It must be recognised that large parts of the region have been heavily cleared, farmed and developed through the construction and maintenance of roads and residential structures and therefore other sites are also likely to have been disturbed.

As noted above, the archaeological values of the site within the development footprint, considering the scientific, representative and rarity values assigned to them was deemed to be low. In terms of representativeness and rarity the previous low number of overall sites, particularly stone artefact sites, in AHIMS for the local area was merely an indication that few surveys have been undertaken in the immediate Walla Walla area and therefore they are yet to be found. It is believed therefore that the proposed impacts to the stone artefact sites through the development of this particular solar farm proposal would not adversely affect the broader archaeological record for the local area or the region.

The principle of inter-generational equity requires the present generation to ensure that the sites and diversity of the archaeological record is maintained or enhanced for the benefit of future generations. We believe that the diversity of the archaeological record is not compromised by development of this solar farm proposal, particularly given that two scarred trees, three cultural trees sites, ten sites with stone

artefact and two areas of PAD will be avoided by the development. Further to this, the number of yet unknown sites in the wider region allow opportunity for identification by future generations.

We estimate, that while the current development proposal will impact the majority of the stone artefact sites identified, the overall cumulative impact on the archaeological record for the region is likely to be minimal, assuming a similar density of artefact sites remain across the wider region. Therefore, it is argued that the cumulative impacts of the proposal are not enough to reject outright the development proposal.

7.2 CONSIDERATION OF HARM

Avoiding harm to the 23 isolated finds, 11 artefact scatter sites, two scarred trees and three cultural trees identified within the proposed Walla Walla Solar Farm proposal area is technically possible through avoidance. However, the scattered nature of the stone artefact sites across the area would pose serious design constraints on the solar farm proposal. Where possible the design has already been altered to avoid remnant vegetation, two scarred trees, three cultural tree sites and two area of PAD.

Based on the assessment of the sites and in consideration of discussions with the Aboriginal representatives during the field survey, it is not considered necessary to prevent all development at the solar farm location, or for total avoidance of the stone artefact sites identified within the solar farm area. The stone artefact sites have been shown to be in highly disturbed contexts with little remaining scientific value. Aboriginal cultural value has been determined by the local Aboriginal community to be generally low enough to not prevent the development proposal proceeding.

A total of 24 sites with stone artefacts, comprised of nine artefact scatters and 15 isolated finds, are situated within the area of the proposed solar arrays, tracks and fencing that would be impacted by the proposed development (see Figure 13). The most likely cause of harm to these sites with stone artefacts will therefore be through ground preparation such as vegetation clearance, installation of the posts and solar arrays.

However, the question remains about possible occurrence of artefacts and cultural material within the balance of the solar farm site. It is possible and considered likely that additional artefacts will be present, most likely in the form of isolated artefacts or small low-density scatters. Without knowing their exact locations, it is difficult to manage the impacts. We do not consider that the risk of such disturbances means the development should be abandoned. The archaeological material identified in the survey, and potentially present in the balance of the development site is not of sufficient value to reject the development proposal.

Mitigation of harm to cultural heritage sites generally involves some level of detailed recording to preserve the information contained within the site. Mitigation can be in the form of minimising harm, through slight changes in the development plan or through direct management measures of the sites and Aboriginal objects.

Given the avoidance of the two scarred trees, three cultural trees, two PAD areas and 10 of the stone artefact sites it is argued here that mitigation in the form of alteration is not feasible or warranted within the remainder of the solar farm area in this situation. However, the stone artefact sites within the development footprint that will be impacted by the proposed works are conducive to salvage as a mitigation strategy as requested by the Aboriginal representatives during the field survey.

As identified above, it is recommended that the sites recorded within the proposed Walla Walla Solar Farm development footprint are salvaged by an archaeologist with representatives of the registered Aboriginal

parties prior to the proposed development commencing. The artefacts should be collected and moved to a safe area within the property that will not be subject to any ground disturbance.

The Aboriginal community representatives onsite during the field survey noted their preference for the surface artefacts to be relocated and buried outside the development footprint prior to development commencing.

Should there be any change to the development footprint that may impact the two PADs (PAD 1 and PAD 2) mitigation in the form of a limited program of subsurface testing is recommended to be undertaken. A limited program of subsurface testing in the two area of PAD if they will be impacted in the future may increase knowledge of the Aboriginal use of the area through a study of any subsurface stone artefacts recovered and possible dating of cultural deposits. However, this would be dependent upon a number of factors including the number of subsurface artefacts retrieved, the type of artefacts and raw materials; the integrity of the deposit and identification of dateable material.

8 LEGISLATIVE CONTEXT

Aboriginal heritage is primarily protected under the NPW Act and as subsequently amended in 2010 with the introduction of the *National Parks and Wildlife Amendment (Aboriginal Objects and Places) Regulation 2010*. The aim of the NPW Act includes:

> The conservation of objects, places or features (including biological diversity) of cultural value within the landscape, including but not limited to: places, objects and features of significance to Aboriginal people.

An Aboriginal object is defined as:

> Any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with the occupation of that area by persons on non-Aboriginal extraction and includes Aboriginal remains.

Part 6 of the NPW Act concerns Aboriginal objects and places and various sections describe the offences, defences and requirements to harm an Aboriginal object or place. The main offences under section 86 of the NPW Act are:

- A person must not harm or desecrate an object that the person knows is an Aboriginal object.
- A person must not harm an Aboriginal object.
- For the purposes of this section, "circumstances of aggravation" are:
    - that the offence was committed in the course of carrying out a commercial activity, or
    - that the offence was the second or subsequent occasion on which the offender was convicted of an offence under this section.
- A person must not harm or desecrate an Aboriginal place.

Under section 87 of the NPW Act, there are specified defences to prosecution including authorisation through an Aboriginal Heritage Impact Permit (AHIP) or through exercising due diligence or compliance through the regulation.

Section 89A of the Act also requires that a person who is aware of an Aboriginal object, must notify the Director-General in a prescribed manner. In effect, this section requires the completion of OEH AHIMS site cards for all sites located during heritage surveys.

Section 90 of the NPW Act deal with the issuing of an AHIP, including that the permit may be subject to certain conditions. This does not apply in this instance as the development is listed as a State Significant Development (SSD) and will be determined by the Department of Planning.

The EP&A Act is legislation for the management of development in NSW. It sets up a planning structure that requires developers (individuals or companies) to consider the environmental impacts of new projects. Under this Act, cultural heritage is considered to be a part of the environment. This Act requires that Aboriginal cultural heritage and the possible impacts to Aboriginal heritage that development may have are formally considered in land-use planning and development approval processes.

Proposals classified as State Significant Development or State Significant Infrastructure under the EP&A Act have a different assessment regime. As part of this process, Section 90 harm provisions under the NPW Act are not required, that is, an AHIP is not required to impact Aboriginal objects. However, the Department of Planning and Environment is required to ensure that Aboriginal heritage is considered in the environmental impact assessment process. The Department of Planning and Environment will consult with other departments, including OEH prior to development consent being approved.

The Walla Walla Solar Farm proposal is a State Significant Development and will therefore be assessed via this pathway, which does not negate the need to carry out an appropriate level of Aboriginal heritage assessment or the need to conduct Aboriginal consultation in line with the requirements outlined by the OEH *Aboriginal cultural heritage consultation requirements for proponents 2010* (OEH 2010b).

9 RECOMMENDATIONS

The recommendations are based on the following information and considerations:

- Results of the current archaeological survey of the area;
- Consideration of results from other local archaeological studies;
- Results of consultation with the registered Aboriginal parties;
- The assessed significance of the sites;
- Appraisal of the proposed development, and
- Legislative context for the development proposal.

It is recommended that:

1. The development must avoid the two scarred tree sites (Walla Solar Farm 495495 and Walla Solar Farm 497946) and three cultural tree sites (Walla Solar Farm 496602, Walla Solar Farm 496812 and Walla Solar Farm 497199). A minimum 10 m buffer should be in place around each tree to prevent any inadvertent impacts to the canopy and root system.
2. If complete avoidance of the 23 isolated find sites and 11 artefact scatters recorded within the proposal area is not possible, the artefacts within the development footprint must be salvaged. The salvage of these objects must occur prior to the proposed work commencing. Until salvage has occurred a minimum 5 m buffer must be observed around all stone artefact sites.
3. The collection and relocation of the artefacts should be undertaken by an archaeologist with representatives of the registered Aboriginal parties and be consistent with Requirement 26 of the *Code of practice for Archaeological Investigation of Aboriginal Objects in New South Wales.* The salvage of Aboriginal objects can only occur following development consent that is issued for State Significant Developments and must occur prior to works commencing.

4. All objects salvaged must be have their reburial location submitted to the AHIMS database. An Aboriginal Site Impact Recording Form must be completed and submitted to AHIMS following harm for each site collected or destroyed from salvage and/or construction works.
5. A minimum 5m buffer should be observed around all sites with stone artefact that are being avoided by the proposed development.
6. If the proposed development footprint is changed and either of the two areas of PAD will be impacted a limited subsurface testing program must be conducted. Excavated material may need to be analysed off site and this is most likely to be undertaken in NGH offices, where the material will be analysed and then subsequently returned to site for reburial.
7. FRV should prepare a Cultural Heritage Management Plan (CHMP) to address the potential for finding additional Aboriginal artefacts during the construction of the solar farm and management of known sites and artefacts. The Plan should include the requirement for cultural awareness training inductions and an unexpected finds procedure to deal with construction activity. Preparation of the CHMP should be undertaken in consultation with the registered Aboriginal parties.
8. In the unlikely event that human remains are discovered during the construction, all work must cease in the immediate vicinity. OEH and the local police should be notified. Further assessment would be undertaken to determine if the remains were Aboriginal or non-Aboriginal.
9. Further archaeological assessment would be required if the proposal activity extends beyond the area assessed as detailed in this report. This would include consultation with the registered Aboriginal parties and may include further field survey.

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APPENDIX A ABORIGINAL CONSULTATION

Newspaper advertisement in Eastern Riverina Chronicle on Wednesday the 16th of January 2019.

6 EASTERN RIVERINA CHRONICLE **Wednesday, January 16, 2019** easternriverinachronicle.com.au

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In Memoriam

CANDY
Bianca Anne
12.7.2000 - 17.1.2009

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but we have you
in our hearts.
We will always love
and miss you
and your beautiful
smiling face.
that would melt the
hardest of hearts.
Resting peacefully in God's garden
Loving you always
forgetting you not
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Development Applications

Greater Hume Council
greaterhume.nsw.gov.au

Notice is hereby given under Section 4.59, Environmental Planning & Assessment Act 1979

Advice is hereby given, pursuant to Section 4.48 of the Environmental Planning and Assessment Act 1979 for the purpose of activating Section 4.59 of the Act, that the following applications were determined during the month of October 2018.

DA	Property Description	Development
DA/2018/13	5 Enterprise DR OLDBROOK Lot: 11 DP: 1165767	Cemetery & Mortuary Crypt/s Facility - As Modified
DA/2017/[illegible]	10 River ST C... OA RA Lot: 2 DP: 803550	Demolition & erection Additions to existing School - As Modified
DA/2018/58	Bowler ST HOLBROOK Lot: 105 DP: 753340 Lot: 188 DP: 753340 Lot: 204 DP: 753340 Lot: 207 DP: 753340	New Changerooms Canteen & Function Area
DA/2018/85	33 Acacia ST MORVEN Lot: 1 Sec: 33 DP: 758711	Relocate Secondhand Dwelling
DA/2018/88	78 Wilshire ST BINDERA Lot: 2611 DP: 703894	Family Room Extension
DA/2018/10[illegible]	21 Cassia RD BINDERA Lot: 605 DP: [illegible]874	New Dwelling & Garage - As Modified
DA/2018/12[illegible]	1873 Coach RD MORVEN Lot: 106 DP: 753975	Extractive Industry Quarry <30000 Cubic Metres Per Annum of Extraction
DA/2018/129	7 Gordon ST CULCAIRN Lot: 1 Sec: 7 DP: 9027	One Shipping Container
DA/2018/130	145 Albury ST HOLBROOK Lot: 6 DP: 4245 Lot: 2 DP: 820773 Lot: 7 DP: 4245 Lot: 1 DP: 868676	Renovation & Extension of School Office & Staff Area
DA/2018/131	Fox ST HENTY Lot: 32 DP: 666594	Two Digital Banner Signs (NB Sign 2 has 2 Alternative Locations)
DA/2018/136	33 Acacia ST MORVEN Lot: 1 Sec: 33 DP: 758711	Dwelling Demolition
DA/2018/139	50 Commercial ST WALLA WALLA Lot: 2 DP: 1105586	Demolition of General Store and Shed
DA/2018/14[illegible]	87 Dunwandren LA... NDERA Lot: 22 DP: 1143963	New shed
DA/2018/147	14 Ivor ST HENTY Lot: A DP: 306440	New Deck
DA/2018/150	87 Adams ST... NDERA Lot: 2 DP: 1185234	Demolition of Existing Shed, New Garage & Granny Flat
DA/2018/[illegible]	77 Wilson ST BINDERA Lot: 6 DP: 260946	New Shed Workshop
DA/2018/157	37 Corner ST HENTY Lot: 10 D... 10937	New Garage
DA/2018/158	117 Pioneer DR BINDERA Lot: 2 DP: 1205703	New Patio
DA/2018/[illegible]	25 Ann RD BINDERA Lot: 350 DP: 1242303	New Dwelling & Garage
DA/2018/159	56-58 Gibson ST BINDERA Lot: 4 Sec: 5 DP: 758544	New Swimming Pool
CDC/2018/46	9 King S... CULCAIRN Lot: 6 Sec: 28 DP: 9695	New Dwelling & Garage
CDC/2018/47	75 Coogera CCT BINDERA Lot: 713 DP: 1202940	New Verandah
CDC/2018/48	7 Ann RD BINDERA Lot: 317 DP: 1242303	New Dwelling & Garage
CDC/2018/49	5 Henry ST MORVEN Lot: 6 Sec: 20 DP: 758711	New Dwelling & Garage
CDC/2018/50	126 Creek ST BINDERA Lot: 112 DP: 751423	New Dwelling & Garage

The relevant consents are available for public inspection without charge at Council's Culcairn Office, 10 Balfour Street Culcairn during office hours 8.30am to 5.00pm.

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Public Notices

Notification for registration of interest for Aboriginal stakeholders

NGH Environmental has been contracted by Bison Energy Pty Ltd to undertake an Aboriginal Cultural Heritage Assessment (ACHA) for a proposed solar farm that will be identified as Walla Walla Solar Farm. The proposed location for the Walla Walla Solar Farm is approximately 5km north-east of Walla Walla in the Greater Hume Shire Local Government Area (LGA).

The assessment area for the proposed solar farm comprises of Lots 16, 17, 20, 21, 87, 88, 89, 108, 109 and 118 DP753735, and Lot 22 DP1069452 which is currently in the process of subdivision from Lot 1 DP1069452. The transmission line will be located on the western boundary of Lot 22 DP1069452, leased by the proponent (Bison Energy Pty Ltd, Level 14/380 St Kilda Road, Melbourne, Vic, 3004).

The proponent is proposing to construct a utility scale solar farm including panels, electrical conduits, transformers, internal access tracks, a site office and perimeter fencing.

The purpose of this consultation, particularly with Aboriginal people, is to assist the proponent in the preparation of an ACHA for the proposal site and to be involved in consultation as part of the lodgement of a State Significant Development application.

In order to fulfil the requirements set out in the OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, NGH Environmental is seeking interested Aboriginal parties who hold cultural knowledge of the assessment areas to register their interest in the consultation process for the project and to assist in the determination of cultural significance of any Aboriginal objects or places located within the proposed Walla Walla Solar Farm area.

Registrations should be provided in writing to:

NGH Environmental
PO Box 5464
WAGGA WAGGA NSW 2650

Or via email to:
amy.z@nghenvironmental.com.au

Closing date for registration is **30 January 2018.**

Those registering an interest will be contacted to discuss the project further. Those who do register are advised that their details will be provided to OEH and the Local Aboriginal Land Council, unless they specifically advise in writing that their details are not to be forwarded.

LOCKHART SHIRE COUNCIL
DEVELOPMENT PROPOSAL

Lockhart Shire Council has received a development application under 4.12 of the Environmental Planning and Assessment Act 1979 (the 'Act') for the following:

Application No.	Proposal	Address
50/19	Service Station development	4760 Olympic Highway THE ROCK NSW 2655

The application is integrated development under section 4.46 of the Act, as it requires approval under the Roads Act 1993 and Rural Fires Act 1997.

The development application may be inspected at the Lockhart Shire Council Office, 65 Green Street, Lockhart during normal office hours, Monday to Friday.

Any person who makes a submission by way of objection must specify the grounds for objection. Written submissions must be made before 4.00 pm, 15 February 2019.

Any person lodging an objection to the proposed development and who is dissatisfied with the determination of the development application may appeal to the Land and Environment Court in accordance with Section 8.10 of the Act within 28 days of notification of the objection.

Peter Veneris
General Manager

PO Box 21
LOCKHART NSW 2656
Phone: 02 6920 5305
E-mail: mail@lockhart.nsw.gov.au

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Organisation	Contact	Action	Date Sent	Reply Date	Replied by	Response
OEH	Andrew Fisher and South West Branch	letter to OEH via email	07/01/2019	29/01/2019	letter via email	provided list of potential stakeholders
NTScorp		Letter to NTS Corp via email	07/01/2019			
National Native Title Tribunal		online search	07/01/2019 and 06/09/2019			No determination identified within the proposal area
Office of Registrar Aboriginal Land Rights Act	Elizabeth Loane	Letter to Office of the Registrar via email	07/01/2019	14/01/2019		Suggested contacting Albury & District LALC
Albury & District LALC	Sam Kirby	Letter to Albury LALC via email	07/01/2019	01/02/2018	via email	Registered for project
Wagga Wagga LALC	Lorraine Lyons					
Bundyi Cultural Services	Mark Saddler	Letter sent via email	07/01/2019	07/01/2019	Email	AZ acknowledged registration via email
Yalmambirra	Yalmambirra	Letter sent via email	07/01/2019	08/01/2019	Email	AZ acknowledged registration via email
Dan Clegg		Letter sent via email	07/01/2019			
Alice Williams		Letter sent via email	07/01/2019			
Mungabareena Aboriginal Corporation		Letter sent via email	07/01/2019			
Leonie McIntosh		Letter sent via email	07/01/2019			
Denise McGrath		Letter sent via email	07/01/2019			
Nancy Rooke		Letter sent via email	07/01/2019			
Murray Local Land Services	Gary Rodda	Letter to LLS via email	07/01/2019			
Greater Hume Shire Council		Letter sent via email	07/01/2019			
Local Newspapers	Newspaper advertisement	Eastern Riverina Chronicle News	16/01/2019			

OEH list of potential stakeholders						
All stakeholders already contacted						
Notification to OEH of stakeholders	Andrew Fisher and South West Branch	NGH via email	31/01/2019	31/1/2019	via email acknowledge received	Please note for the OEH records the registered Aboriginal Parties for the proposed Walla Walla Solar Farm project is the Albury LALC, Bundyi Aboriginal Cultural Knowledge and Yalmambirra. No other parties have registered for this project.
Methodology sent						
Bundyi Cultural Services	Mark Saddler	NGH sent methodology via email	1/2/2019	21/02/2019	Email	No comments on report. Provided insurances and rates for fieldwork on 21/2/19.
Yalmambirra		NGH sent methodology via email	1/2/2019	2/2/2019	Email	No comments on methodology. Unable to provide insurances for fieldwork.
Albury LALC	Sam Kirby	NGH sent methodology via email	1/2/2019			No comment received. Provided insurances and rates for fieldwork on 8/3/19.
Walla Walla Cultural Report						
Bundyi Cultural Services	Mark Saddler		30/04/19	30/0419	Email	NGH confirmed that Walla Walla Cultural Report was received.
NGH Response letter to Cultural Report recommendations						
Bundyi Cultural Services	Mark Saddler	Letter sent via email	05/06/19			

Draft Report						
Bundyi Cultural Services	Mark Saddler	NGH sent draft report for review and comment via email	27/07/19	N/A	No response	
Yalmambirra		NGH sent draft report for review and comment via email	27/07/19	29/07/19	Email	AZ acknowledged Yalmambirra's position on not wanting to comment further on the draft ACHA
Albury LALC	Sam Kirby	NGH sent draft report for review and comment via email	27/07/19	N/A	No Response	
Final Report						
Bundyi Cultural Services	Mark Saddler	Final report sent via email	27/08/19			
Yalmambirra		Final report sent via email	27/08/19			
Albury LALC	Sam Kirby	Final report sent via email	27/08/19			

Results of Native Title search on the 6th of September 2019

From: Geospatial Search Requests
To: Aarons, Adam
Cc: Forrai, Zachary
Subject: RE: SR6274 - Native Title Register - SR6274
Date: Friday, 6 September 2019 12:48:23 PM

UNCLASSIFIED

Native title search – *NSW Parcels – Multiple*
Your ref: *Walla Walla Native Title Search* - **Our ref:** *SR6274*

Dear Adam Aarons,

Thank you for your search request received on 04 September 2019 in relation to the above area. Based on the records held by the National Native Title Tribunal as at 05 September 2019 it would appear that there are no Native Title Determination Applications, Determinations of Native Title, or Indigenous Land Use Agreements over the identified area.

Search Results
The results provided are based on the information you supplied and are derived from a search of the following Tribunal databases:

- Schedule of Native Title Determination Applications
- Register of Native Title Claims
- National Native Title Register
- Register of Indigenous Land Use Agreements
- Notified Indigenous Land Use Agreements

At the time this search was carried out, there were **no relevant entries** in the above databases.

Parcel ID	Feature Area SqKm	NNTT file number	Name	Category	Percent Selected Feature
21//D753735	0.7882	No overlap			0.00%

Please note: Records held by the National Native Title Tribunal as at 05 September 2019 indicate that the identified parcels listed below appear to be freehold, and freehold tenure extinguishes native title.
The National Native Title Tribunal does not hold data sets for freehold tenure; consequently, we **cannot** conduct searches over freehold. For confirmation of freehold data, please contact the NSW Land and Property Information office or seek independent legal advice.

These items not found in NNTT non freehold data:

Parcel ID
1//D1069452
108//D753735
109//D753735
118//D753735
16//D753735
17//D753735
20//D753735
87//D753735
88//D753735
89//D753735

For further information, please visit our website.

Please note: There may be a delay between a native title determination application being lodged in the Federal Court and its transfer to the Tribunal. As a result, some native title determination applications recently filed with the Federal Court may not appear on the Tribunal's databases.

The Tribunal accepts no liability for reliance placed on enclosed information
The enclosed information has been provided in good faith. Use of this information is at your sole risk. The National Native Title Tribunal makes no representation, either express or implied, as to the accuracy or suitability of the information enclosed for any particular purpose and accepts no liability for use of the information or reliance placed on it.

If you have any further queries, please do not hesitate to contact us on the free call number 1800 640 501.

Regards,

Geospatial Searches
National Native Title Tribunal | Perth
Email: GeospatialSearch@nntt.gov.au | **www.nntt.gov.au**

From: Aarons, Adam <adam.aarons@hoganlovells.com>
Sent: Wednesday, 4 September 2019 10:20 AM

To: Geospatial Search Requests <GeospatialSearch@NNTT.gov.au>
Cc: Forrai, Zachary <zachary.forrai@hoganlovells.com>
Subject: SR6274 - Native Title Register

Hello,

Please find attached a completed request for search of the Native Title Registers in relation to crown land in the vicinity of some freehold title, which is listed in a table attached to the form.

Kind regards

Adam

Adam Aarons
Law Graduate

Hogan Lovells
Level 17
20 Martin Place
Sydney NSW 2000
Tel: +61 2 9093 3500
Direct: +61 2 9093 3508
Mobile: +61 4 3692 2445
Email: adam.aarons@hoganlovells.com
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Yalmambirra's response to Insurances Issue 4th of February 2019

From: yalmambirra yalmambirra <yalmambirra@outlook.com>
Sent: Monday, 4 February 2019 6:04 PM
To: Amy Ziesing <amy.z@nghenvironmental.com.au>
Subject: RE: 18-622: Walla Walla Solar Farm draft methodology for review

Thanks Amy

Unfortunately I have to take a stance on the insurance etc. I do not feel as though I should have to have insurance etc to work on country...

I thank you Amy for all that you have done and I hope that the project is successful.

Best wishes...please take care.

Yal

Sent from Mail for Windows 10

From: Amy Ziesing <amy.z@nghenvironmental.com.au>
Sent: Monday, February 4, 2019 9:36:32 AM
To: yalmambirra yalmambirra
Subject: RE: 18-622: Walla Walla Solar Farm draft methodology for review

Hi Yal,

Thanks for the response to the methodology.

Unfortunately, NGH and the Client requires you to have accident and injury insurance to take part in the proposed fieldwork as per the Consultation Guidelines.
If you are able to get this insurance prior to the fieldwork being locked in then we are more than happy to have you join us on the survey.

Please let me know if this is the case.

Cheers,
Amy

Amy Ziesing | Heritage Consultant

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From: yalmambirra yalmambirra <yalmambirra@outlook.com>
Sent: Saturday, 2 February 2019 2:16 PM
To: Amy Ziesing <amy.z@nghenvironmental.com.au>
Subject: RE: 18-622: Walla Walla Solar Farm draft methodology for review

Hullo Amy

Thank you for the information.

At this point in time I have no concerns with the methodology.

In relation to Insurances etc, could I refer you back to me email of Jan 7. I would like to add that I am willing to sign a waiver in relation to Insurances etc. I understand that my stance will/may be an obstacle in working with you on the project Amy.

If you need to contact me again, please do so whenever you need to.

Please take care and travel safely Amy.

Yal

Sent from Mail for Windows 10

From: Amy Ziesing <amy.z@nghenvironmental.com.au>
Sent: Friday, February 1, 2019 10:47:25 AM
To: yalmambirra yalmambirra
Subject: 18-622: Walla Walla Solar Farm draft methodology for review

Hi Yal,

Please see the attached draft methodology for the proposed Walla Walla Solar Farm.
The review and comment period for this document will close on the 1st of March 2019.

Please send any comments or information to me prior to this date and do not hesitate to contact me if you have any questions about this methodology.

I will be in touch again after the review period has ended to arrange the fieldwork and obtain a copy of your insurances and daily rates to provide to the Client.

Kind Regards,
Amy

Amy Ziesing | Heritage Consultant

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T (02) 6923 1548 M 0411 781 911

Cultural Report provided by Bundyi Cultural Services to NGH following field survey

Bundyi Cultural Services

Mark Saddler

Walla Walla Solar Farm, Walla Walla NSW.

25/03/2019

Bundyi Cultural Services, Mark Saddler

Artwork by Mark Saddler. (Copyright)

Artwork Title, Murrawarra (stand your ground, protect)

Contents:

This report was compiled by Bundyi Cultural Services, Mark Saddler.

Page 1: Title Page.
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Page 4: Objectives, Objects.
Page 5: Due Diligence.
Page 6: Due Diligence Flow Chart.
Page 7: AHIMS Data Base Search.
Page 8: Site Location Maps.
Page 9: Site Recordings, Site Information.
Page 10: Contacts,
Page 11: Site Report and Recommendations.
Page 12: Test Pit Areas
Page 13: References and End Report

"I would like to acknowledge the traditional custodians of this land, my land, "The Wiradjuri People"

What I record and find is dedicated to those who have gone before us, to those present and to those who will follow us"

Mark Saddler, Wiradjuri Gibirr (man)

Travelling Stock Reserves (TSRs)

Travelling Stock Reserves (TSRs) are parcels of Crown land reserved under legislation for use by travelling stock. Local Land Services is responsible for the care, control and maintenance of almost 500,000ha of TSRs in NSW.

TSRs provide pasture reserves for travelling or grazing stock. These reserves can be beneficial in times of drought, bushfire or flood. They are also used for public recreation, apiary sites and for conservation.

Local Land Services manages the land to strike a balance between the needs of travelling or grazing stock and the conservation of native species.

The role of Local Land Services role in managing TSRs includes:

- Authorising and monitoring stock, recreation and apiary site use
- Controlling noxious weeds
- Controlling pest animals and insects
- Provision and maintenance of fencing, watering points and holding yards
- Consideration of land management and animal health legislation.

Local Land Services has developed the first draft state-wide planning framework for TSRs to support the future management of this land. We are now keen to hear from the public with their opinions on how to manage TSRs in the future. We want to understand the values people hold important for TSRs, including biodiversity and Aboriginal cultural heritage values.

The draft state-wide framework allows for the development of TSR regional management plans to facilitate more consistent and transparent management, resourcing and reporting.

NSW Travelling Stock Reserves Draft State Planning Framework 2016-19
TSR State Planning Framework Fact Sheet
Frequently asked questions

3

Aboriginal objects:

Aboriginal objects are physical evidence of the use of an area by Aboriginal people. They can also be referred to as 'Aboriginal sites', 'relics' or 'cultural material'.

Aboriginal objects include:

* Physical objects, such as stone tools, Aboriginal-built fences and stockyards, scarred trees and the remains of fringe camps
* Material deposited on the land, such as middens
* The ancestral remains of Aboriginal people.

Handicrafts made by Aboriginal people for sale are **not** 'Aboriginal objects' under the NPW Act. Known Aboriginal objects and sites are recorded on OEH's Aboriginal Heritage Information Management System (AHIMS). If you find a site you should report it to us.

Protecting Aboriginal objects and places:

You will need to exercise due diligence in determining whether your actions will harm Aboriginal objects. The **Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW** http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf This link will explain and provide practical guidance about what due diligence means. Anyone who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability objects offence if they later harm an Aboriginal object.

An Aboriginal Heritage Impact Permit (AHIP) can be issued by OEH under Part 6 of the NPW Act where harm to an Aboriginal object or Aboriginal place cannot be avoided. An AHIP is a defence to a prosecution for harming Aboriginal objects and/or Aboriginal places if the harm was authorised by the AHIP and the conditions of that AHIP were not contravened.

Find out about AHIPs, due diligence and care agreements see **Information on Aboriginal Heritage Impact Permits.** http://www.environment.nsw.gov.au/licences/Section87Section90.htm

Purpose of code of practice for Due Diligence.

This code of practice is to assist individuals and organisations to exercise due diligence when carrying out activities that may harm Aboriginal objects and to determine whether they should apply for consent in the form of an Aboriginal Heritage Impact Permit (AHIP). The National Parks and Wildlife Act 1974 (NPW Act) provides that a person who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution for the strict liability offence if they later unknowingly harm an object without an AHIP.

The NPW Act allows for a generic code of practice to explain what due diligence means. Carefully following this code of practice, which is adopted by the National Parks and Wildlife Regulation 2009 (NPW Regulation) made under the NPW Act, would be regarded as 'due diligence'. This code of practice can be used for all activities across all environments.

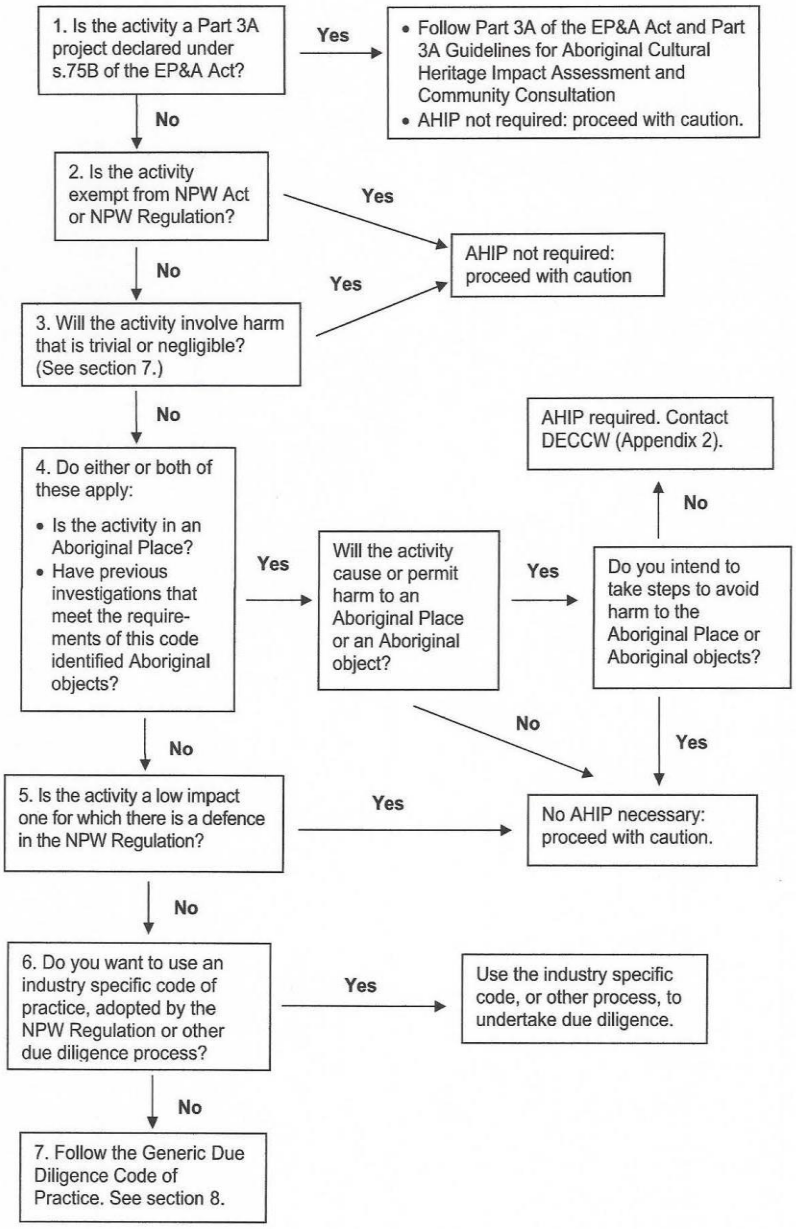
This code sets out the reasonable and practicable steps which individuals and organisations need to take in order to: 1 identify whether or not Aboriginal objects are, or are likely to be, present in an area 2 determine whether or not their activities are likely to harm Aboriginal objects (if present) 3 determine whether an AHIP application is required.

If Aboriginal objects are present or likely to be present and an activity will harm those objects, then an AHIP application will be required. Information about the permits and how to apply for them can be obtained through the Department of Environment, Climate Change and Water (DECCW) website at

www.environment.nsw.gov.au/licences/index.htm.

5

1 Do you need to use this due diligence code?



6

AHIMS Data Base Search.

Office of Environment & Heritage NSW

AHIMS Web Services (AWS)
Search Result

Purchase Order/Reference : 28.4.19
Client Service ID : 417116

Mark Saddler
[redacted]
Attention: Mark Saddler
[redacted]

Date: 28 April 2019

AHIMS Web Service search for the following area at Datum :GDA, Zone : 55, Eastings : 495206 - 498731, Northings : 6043887 - 6044583 with a Buffer of 1000 meters. Additional Info : Due Diligence, conducted by Mark Saddler on 28 April 2019.

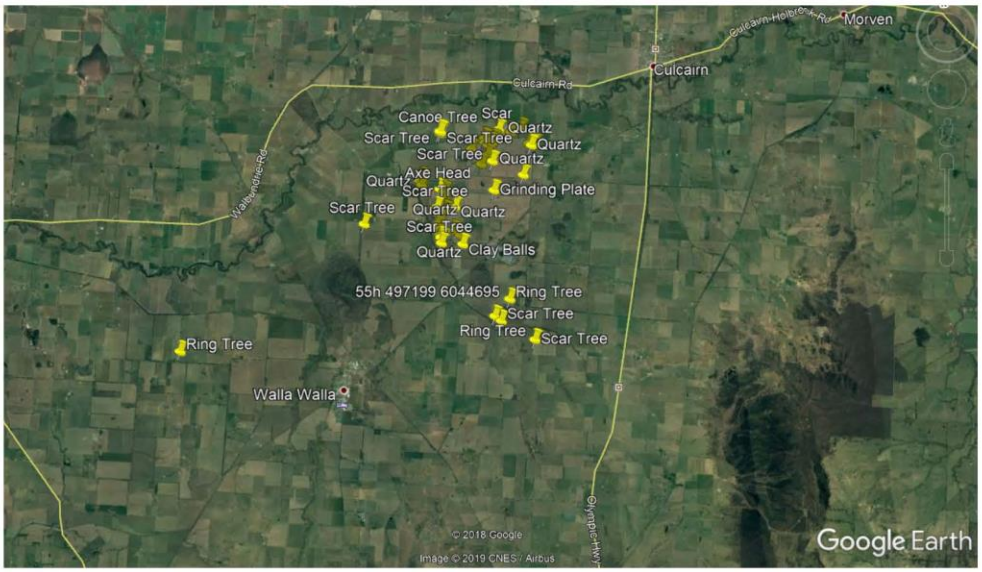
The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.

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

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

7

Map and reference location to site:



8

Site recordings and location of site cards relevant to this site:

Site name	Walla Walla Solar Farm, Walla Walla, Muwala NSW.		
Recorder	Mark Saddler		
Contact details	[redacted]	Email:	[redacted]
Date prepared	25/03/2019	Web:	http://www.bundyiculture.com.au/

AHIMS ID (Site Card ID)	Site Type	Location of Site Cards on Web Page.	Date Recorded
55-6-0144	Item	http://www.environment.nsw.gov.au/awssapp/login.aspx	25/03/2019
55-6-0145	Item	http://www.environment.nsw.gov.au/awssapp/login.aspx	25/03/2019
55-6-0146	Item	http://www.environment.nsw.gov.au/awssapp/login.aspx	25/03/2019
55-6-0147	Item	http://www.environment.nsw.gov.au/awssapp/login.aspx	25/03/2019
55-6-0148	Item	http://www.environment.nsw.gov.au/awssapp/login.aspx	25/03/2019

9

Contacts

Stakeholder details	Responsibilities	
Bundyi Cultural Services, Mark Saddler	Culture Advisor, Recorder, Knowledge Holder	[redacted]

To find out more about Cultural Site Management, rules and protection go to this these web page links for more in-depth information.

Do you need to use the due diligence code?

http://www.environment.nsw.gov.au/resources/cultureheritage/ddcop/10798ddcop.pdf

OEH **legislation** which ensures that Aboriginal cultural heritage must be considered as part of land management practices.

http://www.environment.nsw.gov.au/conservation/aboriginalculture.htm

Site Report and Recommendations.

25/03/2019

Walla Walla Solar Farm, Walla Walla, Muwala NSW.

On my site inspection on the 25/03/2019, I inspected a large property known as the "Walla Walla Solar Farm" near Walla Walla, NSW. The place instantly felt welcoming and with the feeling that many people have visited and lived at this inviting area. This area I believe was inhabited by Wiradjuri people and was a place where some camped and lived over a long period of time.

In this area, I noticed many species of bird including Grass Parrots, Willy Wag Tail, Eagles, Red Capped Robin, Galah, Cockatoo and White Winged Chough to name a few.

Kangaroo, Wombats and Foxes also live in this area.

The area also has some regrowth of salt bush, some native plants and young tree suckers.

This area has been heavily impacted by cattle and machinery. Some Aboriginal sites have been damaged and driven over, this needs to stop, and actions taken to stop this from happening again.

I would also ask that test pits be dug at two locations, the red marked areas on the following maps (page 12) are my proposed sites.

A large number of stone scatters and artefacts were found in this area when we performed the cultural survey. I would also ask for test pits to be also done at the location in map 2 (page 12) as It is very near an old wetlands and special ring tree.

Any Aboriginal items that have been recorded and that need to be moved should be done so in the presence of an Elder or community member, also any items that can not be moved (scar trees, etc) should have exclusions zones placed around them and all workers be given some cultural awareness training or education, also to be done by local Elders or community members.

Any items that must be moved will be returned and placed back into country by local Elders. Also, whilst the solar farm is under construction, I would ask that local Aboriginal people be employed to assist in the work and to also look out, care for and record any other items that may surface due to construction work.

I would be happy to assist as the plans are draw for the solar farm in the future with regards to Aboriginal site protection.

Procedures to work around Aboriginal sites can be found at this link,

http://www.aboriginalheritage.org/sites/legislation/

11

Maps for proposed Test Pit areas to be tested

12

References:

OEH, http://www.environment.nsw.gov.au/

Local Land Services, http://www.lls.nsw.gov.au/livestock/stock-routes

Mark Saddler, Cultural Advisor and Knowledge holder, www.bundyiculture.com.au

Goggle Earth Maps, https://www.google.com/earth/

Aboriginal Heritage, http://www.aboriginalheritage.org/sites/legislation/

Prepared by:

Mark Saddler, Bundyi Cultural Services

[redacted]

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NGH response letter to Bundyi Cultural Services regarding cultural report

ngh environmental

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ngh@nghenvironmental.com.au
www.nghenvironmental.com.au

31 May 2019

Mark Saddler
[redacted]es
Kooringal NSW 2650

marksad@live.com.au

Dear Mark,

RE – 18-622: Response to Cultural Report for Walla Walla Solar Farm

NGH received a cultural report from Bundyi Cultural Services on the 30th of April 2019 outlining the sites recorded during the recent heritage survey for the proposed Walla Walla Solar Farm. A number of recommendations for the project were also outlined in the report you provided. NGH would like to thank you for providing this report and the AHIMS site cards you submitted for the project.

Where applicable NGH will incorporate your recommendations into the ACHA draft report as detailed in this letter. Initially however I would like to address your recommendation, provided on page 11 of the cultural report, regarding the two areas you've requested to be subject to a subsurface testing program. Based on the analysis of the land use history, an appraisal of the landscape, soil, level of disturbance, archaeological modelling for the area and the results from the field survey it was concluded by NGH that there was negligible potential for the presence of intact subsurface deposits with high densities of cultural material within the two areas you have marked on page 12 of your report outside the PADs identified by NGH. NGH have therefore assessed that testing of the two areas you noted, outside the NGH PADs, to not be warranted in this instance. This is also in line with discussions held during the field survey with all the Aboriginal community representatives. Additional information detailing this assessment is provided below for you.

The area shown in Map 1 of your cultural report is a large area located on a slope that rises to the west. While several surface artefacts were identified in the southern portion of this area (see Figure 1 in Attachments), NGH believe that there is a low likelihood for high density subsurface deposits to be present in the majority of this location. This is due to the following reasons:

- The area west of the road corridor had high visibility and no associated surface artefact finds;
- The gradient of the slope landscape which encompasses the majority of the area you've put forward for further testing;
- Soil deposits in this area are likely to be shallow given the gradient of the slope;
- A portion of the area you suggested for testing has been previously disturbed during the installation of an underground gas main pipeline (minimum disturbances corridor of 20 m);
- This portion of the gas main pipeline was also assessed to not be archaeological sensitive or to require further testing during the previous gas pipeline survey that intersected the proposal area.

NGH Environmental Pty Ltd (ACN: 124 444 622. ABN: 31 124 444 622)

NGH notes however that a small portion of the PAD you identified has been included in the area identified by NGH as PAD 1. NGH agree that this overlapping portion does contain subsurface potential given it is a slightly elevated flat landscape in close proximity to the creek which is in line with the archaeological modelling for the area. We also note that the artefact scatter referred to as Walla Walla SF AFT 4 that was identified in a portion of the area you noted as requiring testing will be subject to a surface collection salvage program prior to any development.

The area shown in red in Map 2 of your cultural report was initially discussed as potentially requiring testing in the field due to the proximity of the wetland/depression however, upon review of the contour data NGH has determined that the slope of this area is too steep and did not contain sufficient flat ground suitable for camping. This area has also been highly disturbed during the construction of the dam and adjacent road. For these reasons it was determined that this area does not warrant further investigation.

In line with the conversation held in the field with yourself and the other RAPS and in consideration of the analysis of detailed mapping of the area NGH has identified two areas of PAD that differ from those suggested in your report. These PAD areas are shown in Figure 1 and include:

- A flat slightly raised area associated with the creek line that encompasses a portion of the area you also identified (referred to by NGH as PAD 1); and
- A flat raised area on the western bank at the junction of two creek lines outside an area highly disturbed by the construction of a farm dam (referred to by NGH as PAD 2).

Bison Energy have agreed to avoid impacting both PAD areas identified by NGH as detailed above and shown in Figure 1. Additionally, Bison Energy have confirmed that they will not impact the wetland/depression containing the ring tree you identified during the survey and noted in your report to be special. Bison Energy have also agreed to avoid all cultural and Aboriginal scarred trees recorded during the survey, including a minimum buffer zone of 10 m to ensure no inadvertent impacts occur to these trees.

NGH will incorporate the following recommendation into the ACHA report that are in line with the recommendations in your cultural report:

- The development avoids the cultural and modified trees within the proposal area. A minimum 10 m buffer should be in place around each cultural and/or modified tree to prevent any inadvertent impacts to the canopy and root system.
- If complete avoidance of the isolated find and artefact scatters recorded within the proposal area is not possible the surface stone artefacts within the development footprint must be salvaged. The salvage of these objects must occur prior to the proposed work commencing. Until salvage has occurred a minimum 5 m buffer must be observed around all stone artefact sites.
- The collection and relocation of the surface artefacts should be undertaken by an archaeologist with representatives of the registered Aboriginal parties and be consistent with Requirement 26 of the *Code of practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. The salvage of Aboriginal objects can only occur following development consent that is issued for State Significant Developments and must occur prior to any works commencing.
- A minimum 5 m buffer should be observed around all sites with stone artefact that are being avoided by the proposed development.
- Bison Energy should prepare a Cultural Heritage Management Plan (CHMP) to address the potential for finding additional Aboriginal artefacts during the construction of the solar farm and management of known sites and artefacts. The Plan should include the requirement for cultural awareness training inductions and an unexpected finds procedure to deal with construction activity. Preparation of the CHMP should be undertaken in consultation with the registered Aboriginal parties.

While preparation of the CHMP would be undertaken in consultation with the registered Aboriginal parties it would be at the discretion of Bison Energy who was engaged to provide cultural awareness training or education although it is noted to be best practice to engage with the local Aboriginal community for such cultural programs.

The employment issue raised is not related to this archaeological assessment and the issue would be dealt with separately by Bison Energy. NGH Environmental are unable to comment further on this particular matter.

If you have any further questions or require clarification on any of the points outlined above, please do not hesitate to contact me on [redacted]

Yours sincerely,

Amy Ziesing
Heritage Consultant
NGH Environmental

ATTACHMENTS

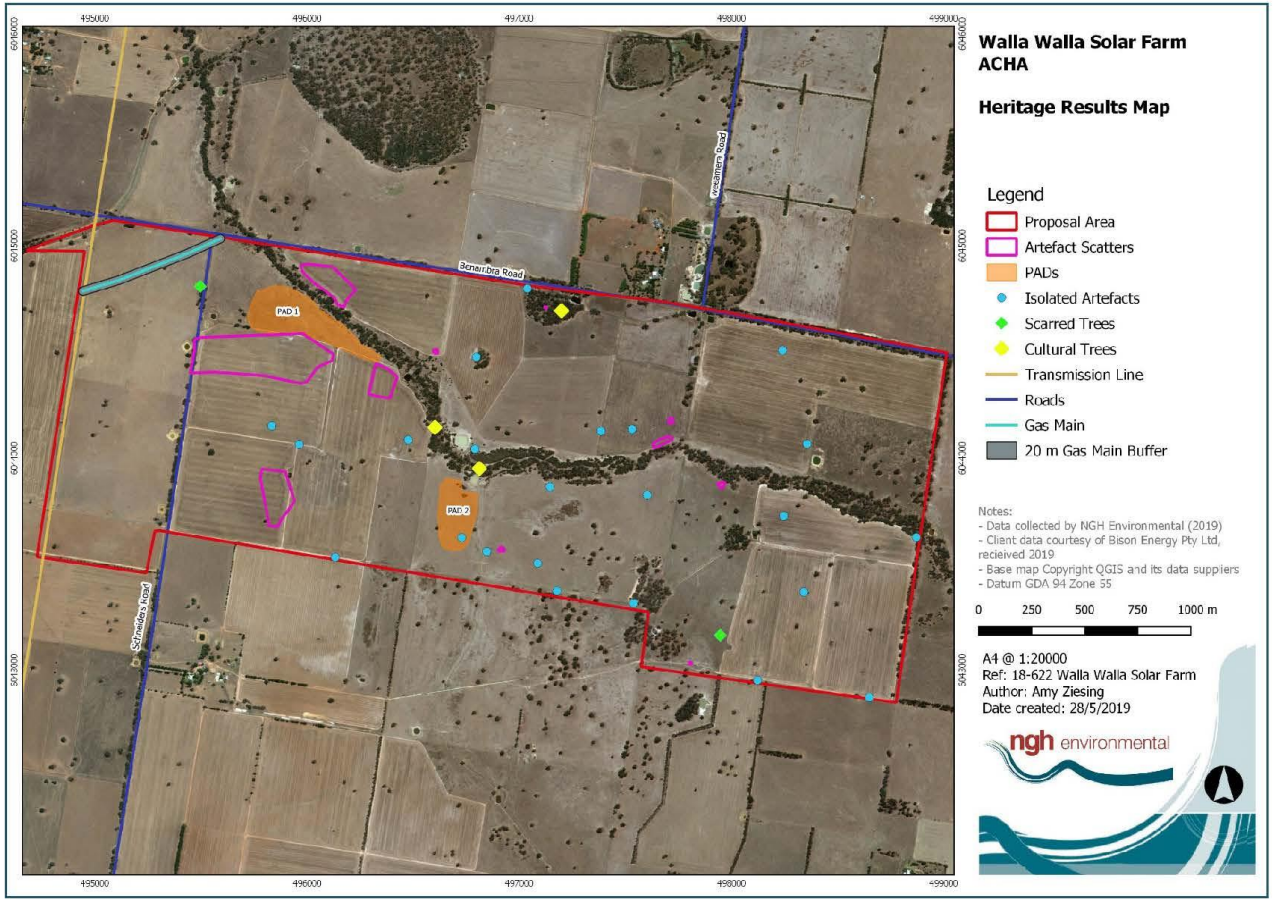


Figure 1 Heritage Survey Results Map for the Walla Walla Solar Farm proposal area.

Yalmambirra's response to draft report

From: yalmambirra yalmambirra
To: Amy Ziesing
Subject: RE: 18-622: Walla Walla Solar Farm draft ACHAR for review and comment
Date: Monday, 29 July 2019 10:52:20 AM

Hullo Amy

Given that two RAP's were present when the survey etc was undertaken, I do not feel as though I should comment, either to endorse or contradict them.

Hopefully we can catch up in the future. Thank you for inviting me to comment etc.

Yal

Sent from Mail for Windows 10

From: Amy Ziesing
Sent: Saturday, 27 July 2019 5:28 PM
Subject: 18-622: Walla Walla Solar Farm draft ACHAR for review and comment

Hi Yal,

NGH are pleased to provide you with the draft ACHAR report for the proposed Walla Walla Solar Farm.

Please be aware that the client is in the process of changing from Bison Energy to FRV however, this has not been made known to the public at this stage and is going to be announced at the next scheduled community meeting.

Please let me know if you have any comments or concerns with the draft report by the Monday the 26th of August 2019.

Kind Regards,
Amy

APPENDIX B AHIMS SEARCH

Cullurally sensitive information withheld

APPENDIX C SURFACE ARTEFACT DATA

Surface Find #	Site ID	Type	Raw Material	Length	Width	Thickness	Platform surface	Platform type	Termination	Reduction stage	Comments
1	Walla Walla SF IF 1	Flake	Quartz	20	15	7	Crushed	Broad	Feather	Secondary	50% Pebble Cortex in swamp wetland depression
2	Walla Walla SF IF 2	Axe	Basalt	87	76	22					Axe blank
3	Walla Walla SF IF 3	Flake	Quartz	20	24	9	Flake scar	Broad	Feather	Tertiary	Flats 20m nw of dam and fenceline
4	Walla Walla SF IF 4	Flake	Quartz	34	21	10	Flake scar	Broad	Feather	Tertiary	On edge of ploughed field approx 20m s of creek
5	Walla Walla SF IF 5	Flake	Quartz	17	11	4	Ridge	Focal	Feather	Tertiary	50m south of creek and fenceline
6	Walla Walla SF IF 6	Flake	Quartz	30	15	6	Flake scar	Broad	Feather	Tertiary	
7	Walla Walla SF IF 7	Flake	Quartz	16	24	5	Flake scar	Broad	Feather	Tertiary	Crystal quartz, adjacent ton fence in track devoid of vegetation 100 visibility
8	Walla Walla SF IF 8	Hammer-stone	Volcanic	120	90	50					35x18 hammered surface pitting, possible ground surface 16x15, 90% riverine cortex
9	Walla Walla SF IF 9	Flake	Quartz	22	14	6	Crushed	Focal	Feather	Tertiary	In western edge of depression in exposure
10	Walla Walla SF IF 10	Flake	Quartz	15	28	6	Flake scar	Broad	Feather	Tertiary	On flats near creek
11	Walla Walla SF AFT 11	Flake	Quartz	14	11	3	Flake scar	Focal	Feather	Tertiary	
12	Walla Walla SF IF 12	Flake	Quartz	16	19	5	Flake scar	Broad	Feather	Tertiary	In exposure 100m south of fenceline
13	Walla Walla SF IF 13	Core	Quartz	30	50	27				Tertiary	5m west of fence75m n of creek 3 plat 3 scars

Surface Find #	Site ID	Type	Raw Material	Length	Width	Thickness	Platform surface	Platform type	Termination	Reduction stage	Comments
14	Walla Walla SF IF 14	Flake	Quartz	38	20	5	Flake scar	Broad	Feather	Tertiary	
15	Walla Walla SF IF 15	Broken Flake	Quartz	21	16	8	Flake scar	Broad	Feather	Tertiary	On bank 30m n of creek area highly disturbed by dam and cattle
16	Walla Walla SF IF 16	Flake	Quartz	18	17	8	Flake scar	Broad	Feather	Tertiary	On bank of creek 30 m to north
17	Walla Walla SF IF 17	Flake	Quartz	17	13	5	Flake scar	Broad	Hinge	Secondary	50% vein cortex 50m west of creek
18	Walla Walla SF IF 18	Flake	Quartz	10	5	3	Flake scar	Focal	Feather	Tertiary	On fenceline in exposure of ploughed paddock
19	Walla Walla SF IF 19	Flake	Quartz	14	10	6	Flake scar	Focal	Feather	Tertiary	
20	Walla Walla SF IF 20	Flake	Quartz	9	6	2	Flake scar	Focal	Feather	Tertiary	On cattle track adjacent to fenceline
21	Walla Walla SF IF 21	Flake	Quartz	26	44	6	Flake scar	Focal	Feather	Tertiary	
22	Walla Walla SF IF 22	Distal Fragment	Quartz	10	19	5			Feather	Primary	Riverine cortex 100 % on eastern creek bank
23	Walla Walla SF IF 23	Flaked Piece	Quartz	22	11	8				Tertiary	
24	Walla Walla SF AFT 1	Flake	Quartz	18	12	4	Ridge	Focal	Feather	Secondary	Northern edge of drainage line 10% vein cortex
25	Walla Walla SF AFT 1	Flake	Quartz	22	16	4	Flake scar	Broad	Feather	Tertiary	In ploughed paddock
26	Walla Walla SF AFT 1	Flake	Quartz	24	20	10	Crushed	Focal	Feather	Tertiary	Crystal

Surface Find #	Site ID	Type	Raw Material	Length	Width	Thickness	Platform surface	Platform type	Termination	Reduction stage	Comments
27	Walla Walla SF AFT 1	Broken Flake	Quartz	21	14	6	Flake scar	Broad		Tertiary	
28	Walla Walla SF AFT 1	Flake	Quartz	17	10	3	Ridge	Focal	Feather	Tertiary	
29	Walla Walla SF AFT 1	Flake	Quartz	23	16	6	Flake scar	Broad	Feather	Tertiary	
30	Walla Walla SF AFT 1	Flake	Quartz	20	14	3	Flake scar	Broad	Feather	Tertiary	
31	Walla Walla SF AFT 1	Flake	Quartz	20	14	10	Flake scar	Focal	Feather	Tertiary	Adjacent to fenceline near creek line
32	Walla Walla SF AFT 2	Flake	Quartz	13	9	4	Flake scar	Broad	Feather	Tertiary	50m south of creek and fenceline
33	Walla Walla SF AFT 2	Flake	Quartz	15	11	4	Ridge	Focal	Feather	Tertiary	
34	Walla Walla SF AFT 2	Flake	Quartz	18	12	8	Flake scar	Broad	Feather	Tertiary	Near creekline
35	Walla Walla SF AFT 2	Flake	Quartz	11	10	2	Flake scar	Broad	Feather	Tertiary	
36	Walla Walla SF AFT 2	Flake	Quartz	9	9	3	Flake scar	Focal	Feather	Tertiary	
37	Walla Walla SF AFT 2	Distal Fragment	Quartz	18	14	5			Feather	Tertiary	
38	Walla Walla SF AFT 2	Flaked Piece	Quartz	15	22	10					
39	Walla Walla SF AFT 2	Flake	Quartz	8	5	2	Flake scar	Focal	Feather	Tertiary	

Surface Find #	Site ID	Type	Raw Material	Length	Width	Thickness	Platform surface	Platform type	Termination	Reduction stage	Comments
40	Walla Walla SF AFT 2	Distal Fragment	Quartz	10	14	3			Feather	Tertiary	
41	Walla Walla SF AFT 3	Flake	Quartz	13	12	3	Ridge	Focal	Feather	Tertiary	20m west of fenceline in exposure of ploughed paddock
42	Walla Walla SF AFT 3	Distal Fragment	Quartz	15	6	4			Feather	Tertiary	
43	Walla Walla SF AFT 3	Flake	Quartz	14	17	3	Flake scar	Focal	Feather	Tertiary	On fenceline
44	Walla Walla SF AFT 3	Flake	Quartz	32	20	8	Flake scar	Broad	Feather	Tertiary	In ploughed field
45	Walla Walla SF AFT 3	Core	Quartz	13	30	10				Tertiary	Single platform core 1 scar 15 x 6
46	Walla Walla SF AFT 3	Proximal Fragment	Quartz	12	13	5	Flake scar	Focal		Tertiary	Adjacent to cattle track possible broken by trampling
47	Walla Walla SF AFT 3	Flaked Piece	Quartz								
48	Walla Walla SF AFT 3	Core	Quartz	20	22	21				Tertiary	
49	Walla Walla SF AFT 3	Flake	Quartz	18	14	5	Flake scar	Focal	Hinge	Tertiary	
50	Walla Walla SF AFT 3	Proximal Fragment	Quartz	10	12	3	Flake scar	Focal		Tertiary	
51	Walla Walla SF AFT 4	Flake	Quartz	28	22	9	Ridge	Focal	Hinge	Tertiary	k
52	Walla Walla SF AFT 4	Flake	Quartz	18	15	6	Crushed	Focal	Step	Tertiary	

Surface Find #	Site ID	Type	Raw Material	Length	Width	Thickness	Platform surface	Platform type	Termination	Reduction stage	Comments
53	Walla Walla SF AFT 4	Proximal Fragment	Quartz	18	18	6	Flake scar	Broad		Tertiary	
54	Walla Walla SF AFT 4	Flake	Quartz	18	20	4	Flake scar	Focal	Feather	Tertiary	
55	Walla Walla SF AFT 4	Proximal Fragment	Quartz	18	14	5	Ridge	Focal		Tertiary	
56	Walla Walla SF AFT 4	Proximal Fragment	Quartz	20	15	4	Flake scar	Broad		Tertiary	
57	Walla Walla SF AFT 4	Flake	Quartz	15	11	3	Ridge	Focal	Feather	Tertiary	
58	Walla Walla SF AFT 4	Flake	Quartz	18	10	8	Flake scar	Focal	Feather	Tertiary	Adjacent to fenceline on gentle slope
59	Walla Walla SF AFT 4	Flake	Quartz	15	18	6	Flake scar	Broad	Feather	Tertiary	
60	Walla Walla SF AFT 4	Flaked Piece	Quartz								
61	Walla Walla SF AFT 4	Flake	Quartz	21	24	6	Flake scar	Focal	Feather	Tertiary	
62	Walla Walla SF AFT 4	Flake	Quartz	32	28	12	Flake scar	Broad	Feather	Tertiary	15m s of fenceline
63	Walla Walla SF AFT 4	Flake	Quartz	27	15	7	Flake scar	Broad	Feather	Tertiary	
64	Walla Walla SF AFT 4	Proximal Fragment	Quartz	16	24	10	Flake scar	Broad		Tertiary	
65	Walla Walla SF AFT 4	Flake	Quartz	15	11	3	Ridge	Focal	Feather	Tertiary	

Surface Find #	Site ID	Type	Raw Material	Length	Width	Thickness	Platform surface	Platform type	Termination	Reduction stage	Comments
66	Walla Walla SF AFT 5	Flake	Quartz	27	15	7	Flake scar	Broad	Feather	Tertiary	
67	Walla Walla SF AFT 5	Flake	Quartz	19	12	5	Flake scar	Focal	Feather	Tertiary	
68	Walla Walla SF AFT 6	Distal Fragment	Quartz	12	10	6			Feather	Tertiary	
69	Walla Walla SF AFT 6	Flake	Quartz	15	17	5	Ridge	Focal	Feather	Tertiary	
70	Walla Walla SF AFT 7	Proximal Fragment	Quartz	16	24	10	Flake scar	Broad		Tertiary	
71	Walla Walla SF AFT 7	Flake	Quartz	26	14	6	Flake scar	Focal	Feather	Tertiary	20m nw of depression
72	Walla Walla SF AFT 8	Flake	Quartz	20	14	8	Crushed	Broad	Feather	Tertiary	In exposure at edge of depression 20m north of creekline
73	Walla Walla SF AFT 8	Flake	Quartz	25	11	7	Flake scar	Broad	Step	Tertiary	
74	Walla Walla SF AFT 9	Flake	Quartz	17	9	6	Ridge	Focal	Feather	Tertiary	Along south fenceline 20m n of creek
75	Walla Walla SF AFT 9	Flake	Quartz	15	15	6	Flake scar	Broad	Feather	Tertiary	
76	Walla Walla SF AFT 9	Distal Fragment	Quartz	18	25	4			Feather	Tertiary	Adjacent to fenceline near creek
77	Walla Walla SF AFT 9	Broken Flake	Quartz	12	8	5	Flake scar	Focal		Tertiary	Adjacent to fenceline near creek
78	Walla Walla SF AFT 10	Flake	Quartz	18	14	8	Flake scar	Broad	Feather	Tertiary	In highly trampled soil near creek line

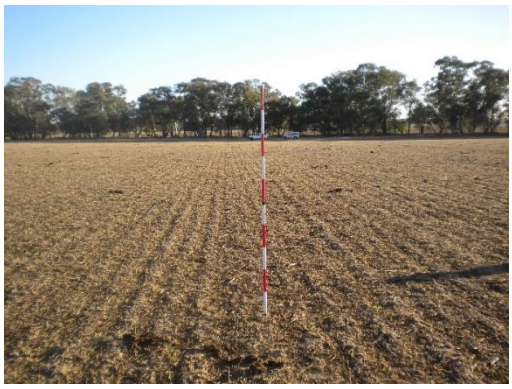
Surface Find #	Site ID	Type	Raw Material	Length	Width	Thickness	Platform surface	Platform type	Termination	Reduction stage	Comments
79	Walla Walla SF AFT 10	Flaked Piece	Quartz								
80	Walla Walla SF AFT 11	Flake	Quartz	28	30	10	Flake scar	Broad	Feather	Tertiary	
81	Walla Walla SF AFT 11	Flake	Quartz	18	14	3	Flake scar	Focal	Feather	Tertiary	In ploughed field on slight rise near creek line

APPENDIX D ARCHAEOLOGICAL AND CULTURAL SITE DESCRIPTIONS

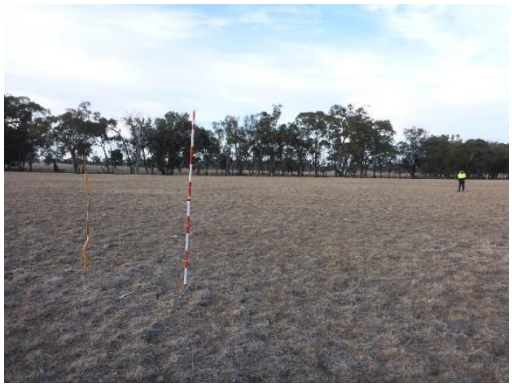
D.1.1 Archaeological Sites – Artefact Scatters

The details of the artefact scatters recorded are detailed in Table 15 below.

Table 15 Artefact Scatters

AHIMS #	Site Name	Comments	Pictures
55-6-0163	Walla Walla SF AFT 1	The site consisted of at least 8 quartz artefacts within a ploughed paddock 20m north east of Back Creek. The artefacts include 7 flakes and 1 broken flake. The deposits consisted of a reddish brown silty loam and visibility within the general area was approximately 40%.	
55-6-0164	Walla Walla SF AFT 2	The site consisted of at least 9 quartz artefacts on the slightly elevated flat south of Back Creek. The artefacts include 6 flakes, 2 distal fragments and 1 flaked piece. The deposits consisted of a brown silty loam and visibility within the general area was approximately 15%.	
55-6-0165	Walla Walla SF AFT 3	The site consisted of at least 10 quartz artefacts within a recently ploughed paddock 30 m west of a north-south running fenceline. The artefacts include 4 flakes, 2 proximal fragments, 1 distal fragment, 2 cores and 1 flaked piece. The deposits consisted of a heavily trampled reddish brown silty clay and visibility within the general area was approximately 60%.	

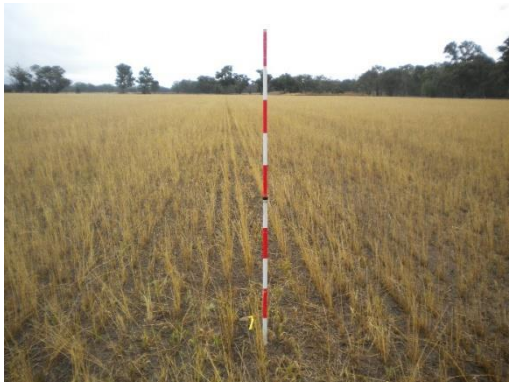
AHIMS #	Site Name	Comments	Pictures
55-6-0166	Walla Walla SF AFT 4	The site consisted of at least 15 quartz artefacts on the slope of a recently ploughed paddock extending from a north-south running fenceline west to Schneiders Road. The artefacts include 11 flakes, 3 proximal fragments and 1 flaked piece. The deposits consisted of a brown silty clay, exhibiting cracking in some areas of heavy trampling. Ground surface visibility within the general area was approximately 80%.	
55-6-0167	Walla Walla SF AFT 5	The site consisted of at least two quartz flakes located in a ploughed paddock 20 m north of a fenceline and 50 m north east of Back Creek. The deposits consisted of a reddish brown clay loam and visibility within the general area was approximately 65%. .	
55-6-0168	Walla Walla SF AFT 6	The site consisted at least two artefacts, a quartz flake and quartz distal fragment. The site is located within a wetland/depression approximately 80 m west of a cultural tree. The deposit consisted of a light brown silty loam and visibility within the general area was approximately 10%. .	
55-6-0169	Walla Walla SF AFT 7	The site consisted of at least two quartz artefacts including one flake and one proximal fragment. The site is located approximately 20 m south east of a depression. The deposits consisted of a light brown silty loam and visibility within the general area was approximately 35%.	

AHIMS #	Site Name	Comments	Pictures
55-6-0170	Walla Walla SF AFT 8	The site consisted of at least two quartz flakes in an exposure at the edge of a depression 20 m south of Back Creek. The deposit consisted of a light brown silty loam that was heavily eroded in this area and visibility within the general area was approximately 65%. .	
55-6-0171	Walla Walla SF AFT 9	The site consisted of at least four quartz artefacts. These included a broken flake, distal fragment and 2 flakes. The site is located along a fenceline approximately 20 m north of Back Creek. The deposit consisted of a light brown silty loam and visibility within the general area was approximately 25%.	
55-6-0172	Walla Walla SF AFT 10	The site consisted of at least two quartz artefacts, a flake and a flaked piece. These were located in a heavily trampled and ploughed paddock 100 m north of Back Creek. The deposit consisted of a light brown silty loam and visibility within the general area was approximately 35%.	
55-6-0173	Walla Walla SF AFT 11	The site consisted of at least two quartz flakes. These were located in a heavily trampled and ploughed paddock 300 m south of Back Creek. The deposit consisted of a light brown silty loam and visibility within the general area was approximately 45%.	

D.1.2 Archaeological sites- Isolated Finds

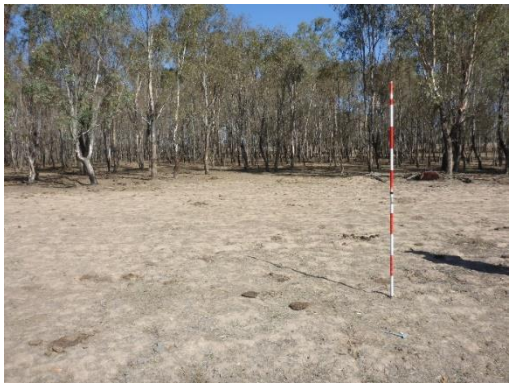
The details of the isolated finds recorded are detailed in Table 16 below.

Table 16. Isolated finds

AHIMS #	Site Name	Comments	Pictures
55-6-0174	Walla Walla SF IF 1	The site consisted of a single quartz flake on the edge of a wetland depression. The dimensions were 20 (l) x 15 (w) x 7 (t). It was recorded as a product of the secondary stage of reduction. The deposit consisted of a light brown silty loam and visibility within the general area was approximately 25%.	
55-6-0175	Walla Walla SF IF 2	The site consisted of a single basalt axe blank located within a ploughed paddock approximately 100 m south a fence line. The dimensions were 87 (l) x 76 (w) x 22 (t). It was recorded with at least two ground surfaces. The deposit consisted of a brown silty loam and visibility within the general area was approximately 25%.	 

AHIMS #	Site Name	Comments	Pictures
55-6-0176	Walla Walla SF IF 3	The site consisted of a single quartz flake in a cleared paddock with low dense grass cover approximately 20 m west of a fenceline and dam. The dimensions were 20 (l) x 24 (w) x 9 (t). It was recorded as a product of the tertiary stage of reduction. The visibility within the general area was approximately 45%.	
55-6-0177	Walla Walla SF IF 4	The site consisted of a single quartz flake on the southern bank of Back Creek. The dimensions were 34 (l) x 21 (w) x 10 (t). It was recorded as a product of the tertiary stage of reduction. The visibility within the general area was approximately 70%.	
55-6-0178	Walla Walla SF IF 5	The site consisted of a single quartz flake in a ploughed paddock approximately 120 m south of Back Creek and a fenceline. The dimensions were 17 (l) x 11 (w) x 4 (t). It was recorded as a product of the tertiary stage of reduction. The visibility within the general area was approximately 80%.	
55-6-0179	Walla Walla SF IF 6	The site consisted of a single quartz flake in a ploughed paddock approximately 430 m south of Back Creek and 200 m south of a fenceline. The dimensions were 30 (l) x 15 (w) x 6 (t). It was recorded as a product of the tertiary stage of reduction. The visibility within the general area was approximately 80%.	

AHIMS #	Site Name	Comments	Pictures
55-6-0180	Walla Walla SF IF 7	The site consisted of a single crystal quartz flake in a ploughed paddock approximately 800 m south of Back Creek along an east to west running fenceline on the southern boundary of the proposal area. The dimensions were 16 (l) x 24 (w) x 5 (t). It was recorded as a product of the tertiary stage of reduction. The visibility within the general area was 100% as the site is on a cleared track devoid of vegetation.	
55-6-0181	Walla Walla SF IF 8	The site consisted of a single red volcanic hammerstone with one pitted surface measuring 35 x 18 mm with one possible ground surface measuring 16 x 15 mm. The dimensions were 120 (l) x 90 (w) x 50 (t). It was recorded as a product of the secondary stage of reduction with 90% riverine cortex. The deposit consisted of a brown clay loam and visibility within the general area was approximately 100% as the track was devoid of vegetation. The site is along the same fenceline, 500 m west of Walla Walla SF IF 7.	
55-6-0182	Walla Walla SF IF 9	The site consisted of a single quartz flake on a farm track. The dimensions were 21 (l) x 25 (w) x 6 (t). It was recorded as a product of the tertiary stage of reduction. The visibility within the general area of the track was approximately 30%.	
55-6-0183	Walla Walla SF IF 10	The site consisted of a single white quartz flake in a ploughed paddock 120 m south west of Back Creek. The dimensions were 15 (l) x 28 (w) x 6 (d) cm. The flake was recorded as a product of the tertiary stage of reduction. The visibility within the general area was 40% and the deposit consisted of an light brown silty loam.	

AHIMS #	Site Name	Comments	Pictures
55-6-0184	Walla Walla SF IF 11	The site consisted of a single quartz flake in an exposure within a ploughed paddock 100 m north of a fenceline and 140 m north of Back Creek. The dimensions were 16 (l) x 19 (w) x 5 (t). It was recorded as a product of the tertiary stage of reduction. The visibility within the general area of the exposure was approximately 80%.	
55-6-0185	Walla Walla SF IF 12	The site consisted of a single quartz core in a ploughed paddock 5 m east of a fenceline and 130 m north of Back Creek. The dimensions were 30 (l) x 50 (w) x 27 (t). It was recorded as a product of the tertiary stage of reduction with three platforms and three negative flake scars. The visibility within the general area of the track was approximately 80%.	
55-6-0186	Walla Walla SF IF 13	The site consisted of a single quartz flake in a ploughed paddock on the western edge of a wetland depression approximately 230 m north east of Back Creek. The dimensions were 38 (l) x 20 (w) x 5 (t). The flake was recorded as a product of the tertiary stage of reduction. The visibility within the general area of ploughed paddock was approximately 40%. The deposit consisted of a grey brown cracking clay.	
55-6-0187	Walla Walla SF IF 14	The site consisted of a single quartz broken flake in a cleared area on the northern bank of Back Creek. The dimensions were 21 (l) x 16 (w) x 8 (t). The site has been heavily disturbed by cattle trampling and a nearby dam. The flake was recorded as a product of the tertiary stage of reduction. The visibility within the general area of ploughed paddock was approximately 60%. The deposit consisted of a grey brown cracking clay.	

AHIMS #	Site Name	Comments	Pictures
55-6-0188	Walla Walla SF IF 15	The site consisted of a single quartz flake in a cleared area on the southern bank of Back Creek. The dimensions were 18 (l) x 17 (w) x 8 (t). The site has been heavily disturbed by cattle trampling. The flake was recorded as a product of the tertiary stage of reduction. The visibility within the general area of cleared paddock was approximately 60%. The deposit consisted of a grey brown silty loam.	
55-6-0191	Walla Walla SF IF 16	The site consisted of a single quartz flake in a ploughed paddock 120 m from the southern bank of Back Creek. The dimensions were 17 (l) x 13 (w) x 5 (t). The site has been disturbed by cattle trampling. The flake was recorded as a product of the secondary stage of reduction with 50% vein cortex. The visibility within the general area of ploughed paddock was approximately 40%. The deposit consisted of a grey brown silty loam.	
55-6-0190	Walla Walla SF IF 17	The site consisted of a single quartz flake in a ploughed paddock 500 m south west of Back Creek in an exposure along an east to west running fenceline. The dimensions were 10 (l) x 5 (w) x 3 (t). The site has been disturbed by cattle trampling. The flake was recorded as a product of the tertiary stage of reduction. The visibility within the general area of the fenceline was approximately 90%. The deposit consisted of a grey brown silty loam.	
55-6-0189	Walla Walla SF IF 18	The site consisted of a single quartz flake in a ploughed paddock 580 m south west of Back Creek. The dimensions were 14 (l) x 10 (w) x 6 (t). The site has been disturbed by cattle trampling. The flake was recorded as a product of the tertiary stage of reduction. The visibility within the general area of the paddock was approximately 60%. The deposit consisted of a grey brown silty loam.	

AHIMS #	Site Name	Comments	Pictures
55-6-0192	Walla Walla SF IF 19	The site consisted of a single quartz flake in a ploughed paddock 680 m south west of Back Creek along an east to west running fenceline. The dimensions were 9 (l) x 6 (w) x 2 (t). The site has been disturbed by cattle trampling. The flake was recorded as a product of the tertiary stage of reduction. The visibility within the general area of the paddock was approximately 90%. The deposit consisted of a grey brown silty loam.	
55-6-0193	Walla Walla SF IF 20	The site consisted of a single quartz flake on an elevated flat in a cleared paddock 310 m south west of Back Creek and 80 m east of Middle Creek. The dimensions were 26 (l) x 44 (w) x 6 (t). The flake was recorded as a product of the tertiary stage of reduction. The visibility within the general area of the paddock was approximately 60%. The deposit consisted of a grey brown silty loam.	
55-6-0194	Walla Walla SF IF 21	The site consisted of a single quartz distal fragment on the eastern side of Middle Creek and 380 m south of Back Creek in a cleared paddock. The dimensions were 10 (l) x 19 (w) x 5 (t). The flake was recorded as a product of the primary stage of reduction with 100% riverine cortex. The visibility within the general area of the paddock was approximately 40%. The deposit consisted of a grey brown silty loam.	
55-6-0195	Walla Walla SF IF 22	The site consisted of a single quartz flaked piece approximately 265 m east of Middle Creek and 400 m south of Back Creek in a cleared paddock. The dimensions were 22 (l) x 11 (w) x 8 (t). The flaked piece was recorded as a product of the tertiary stage of reduction. The visibility within the general area of the paddock was approximately 40%. The deposit consisted of a grey brown silty loam.	

AHIMS #	Site Name	Comments	Pictures
55-6-0196	Walla Walla SF IF 23	The site consisted of a single quartz flake approximately 350 m east of Middle Creek and 530 m south of Back Creek in a cleared paddock along an east to west running fence line. The dimensions were 18 (l) x 12 (w) x 4 (t). The flake was recorded as a product of the secondary stage of reduction with 10% vein cortex. The visibility within the general area of the paddock was approximately 40%. The deposit consisted of a grey brown silty loam.	

D.1.3 Archaeological sites- Scarred Trees

The details of the scarred trees recorded are detailed in Table 17 below. The scarred trees were independently submitted to the AHIMS database by Aboriginal representative Mark Saddler, who also assigned a different naming convention to all tree sites recorded across the proposal area.

Table 17 Scarred Trees

AHIMS #	Site Name	Comments	Pictures
55-6-0148	Walla Solar Farm 497946	The site consisted of a dying Black Box on a spur above a depression associated with a swampy area. The trunk contains one east facing scar measuring 98x32x15cm. The scar sits 40cm above ground surface level and the tree has a diameter of 1.2m, circumference of 3m and is approximately 10m in height. The tree is standing but possesses some branch tear damage at the base of the scar and also a metal axe cut that measures 10cm in width.	

AHIMS #	Site Name	Comments	Pictures
55-6-0144	Walla Solar Farm 495495	The site consisted of a Eucalypt approximately 10m west of the fence line along Schneiders Road. The trunk contains one north western facing scar measuring 109x37x17cm. The scar sits 28cm above ground surface level and the tree has a diameter of 1.2m, circumference of 4m and is approximately 30m in height. The tree is alive and standing, but possesses some limb fall damage.	

D.1.4 Cultural sites

Three cultural sites (Walla Solar Farm 496602, Walla Solar Farm 496812 and Walla Solar Farm 497199) were recorded by the Aboriginal representative Mark Saddler. These sites were trees which had scarring that NGH archaeologists determined were probably not archaeological in nature however they were identified by Mark Saddler to be Aboriginal in origin. Therefore, Mark Saddler independently assigned a naming convention to these sites and submitted these sites to AHIMS. Mark Saddler requested that the trees be avoided by the development. Given these sites have been determined by NGH archaeologists not to be archaeological in nature they are noted in this assessment and shown in the mapping as cultural sites. The details of these cultural sites are outlined below, and their locations shown in Figures 9 to 11 (Section 4.3).

Walla Solar Farm 496602 (AHIMS #55-6-0147)

This site consists of a tree considered to have cultural significance to Aboriginal people (Plates 14 and 15). The tree is located within Back Creek and at the time of survey was alive, standing and noted to be in good condition.

Given the location of the potential ring on the tree, which was above a height that could be safely assessed, NGH archaeologists were unable to determine unequivocally if this ring was Aboriginal in origin. The

Aboriginal representative Mark Saddler, who was onsite during survey, considers the ring tree to have been Aboriginal in origin. Consequently, Mark Saddler has submitted a site card to AHIMS for this location and requested that the tree be avoided by the development.

Plate 14 View north of Cultural Tree Walla Walla Solar Farm 496602.

Plate 15 View north of overview of Walla Walla Solar Farm 496602 within Back Creek.

Walla Walla Solar Farm 496812 (AHIMS #55-6-0146)

This site consists of a tree considered to have cultural significance to Aboriginal people (Plate 16 and 17). The tree is located within Back Creek and at the time of survey was alive and standing but noted to be in poor condition from previous flood activity and was leaning significantly towards the southern creek bank.

While NGH archaeologist determined that the scar on the tree were not archaeological in nature and noted that it did not conform to the standard scarring morphology accepted for Aboriginal modification (cf. Long 2005) the Aboriginal representative Mark Saddler, who was onsite during survey, considers the tree to have a scar that is identified as being Aboriginal in origin. Consequently, Mark Saddler has submitted a site card to AHIMS for this location and requested that the tree be avoided by the development.

Plate 16 View north west of Cultural Tree Walla Walla Solar Farm 496812.

Plate 17 View north west of close up of cultural scar.

Walla Walla Solar Farm 497199 (AHIMS #55-6-0145)

This site consists of a tree considered to have cultural significance to Aboriginal people (Plate 18 and 19). The tree is located within a wetland depression and at the time of survey was alive, standing and noted to be in good condition.

The tree stood at such a height that it was possible to be safely assessed to determine unequivocally if the rings on the tree were Aboriginal in origin. The Aboriginal representative Mark Saddler, who was onsite during survey, considers the tree to have two rings that are identified as being Aboriginal in origin. Consequently, Mark Saddler has submitted a site card to AHIMS for this location and requested that the tree be avoided by the development.

Plate 18 View west of Cultural Tree Walla Walla Solar Farm 497199.

Plate 19 View west of close up of cultural rings.

APPENDIX E SITE CARDS

Culturally sensitive information withheld