

Aboriginal Cultural Heritage Assessment

WHITE ROCK WIND FARM – STAGE 2



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EXECUTIVE SUMMARY

NGH Environmental has been contracted by Goldwind Capital (Australia) Pty Ltd (Goldwind), on behalf of White Rock Wind Farm Pty Ltd (WRWFPL), to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed White Rock Wind Farm (WRWF) Stage 2 works. WRWF Stage 2 (the Project) would be located in the New England Tablelands approximately 20 km south-west of Glen Innes, about 500 km north of Sydney and 400 km south-west of Brisbane, NSW (Figure 1). WRWF Stage 1 involved the construction of 70 of the 119 originally consented wind turbines.

The proposed modification to the approved WRWF development, MP10_160, will consist of up to 48 turbines, comprised of 28 consented locations and an additional 20 new locations with associated access tracks and cabling connections which were not in the original consent. The Project 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*. The purpose of the ACHAR is therefore to investigate the presence of any Aboriginal sites and to assess the impacts and management strategies that may mitigate any impact.

Consultation with the Aboriginal community has been undertaken in accordance with the Consultation Guidelines for Proponents NSW (OEH 2010) and field survey was completed in May 2017 in accordance with the Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (OEH 2010).

Three Aboriginal heritage sites, and areas of Potential Archaeological Deposit (PAD) were identified within the project area. Mitigation measures will be required at the three heritage sites if impacts cannot be avoided and subsurface investigations are recommended at the identified areas of PAD at turbine locations. The subsurface investigations may consist of test excavations or monitoring of topsoils removals by the heritage team.

As a result of the field survey and consultation with the local Aboriginal community, it recommended that prior to any impacts occurring, that:

1. Areas of the project footprint not surveyed by the current assessment must be subject to archaeological assessment prior to construction. This must involve representatives of the registered Aboriginal parties.
2. Heritage sites have been identified within the proposed access corridors for the turbine locations. These sites are WRWF1, WRWF2 and WRWF3. Avoidance of impacts should be undertaken by design and placement of the access alignment.
3. WRWF1 consists of a possible scarred tree, impacts to this site should be avoided. Barrier fencing will be required during construction in the vicinity.
4. If impacts cannot be avoided to the identified heritage site WRWF2 and WRWF3 mitigation measures will be required. Mitigation measures would consist of collection of surface artefacts.
5. Areas of PAD have been identified at three turbine locations (123, 124, 129). These areas of PAD require investigation as part of the post approvals process. The investigation may consist of subsurface testing prior to construction or controlled monitoring of topsoil removals by the heritage team during the initial phase of construction.
6. In all areas other than those listed above the development proposal should be able to proceed with no additional archaeological investigations. In the event of any finds being discovered during the construction process the protocol in the CHMP for the project should be followed.
7. All Aboriginal objects are protected under the NSW *National Parks and Wildlife Act 1974*. Should any Aboriginal objects be encountered during works then works must cease and the find should

not be moved until assessed by a qualified archaeologist. Adherence to the unexpected finds protocol in the CHMP is required.

8. In the unlikely event that human remains are discovered during the construction, all work must cease. OEH, the local police and the appropriate LALC should be notified. Further assessment would be undertaken to determine if the remains are Aboriginal or non-Aboriginal.
9. Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation (including 'unsurveyed areas' shown on Figure 2). This would include consultation with the RAPs for the project and may include further field survey.
10. Continued consultation with the RAPs for the project should be undertaken. RAPs should be informed of any major changes in project design or scope, further investigations or finds.
11. White Rock Wind Farm Pty Ltd should consider conducting an on-site meeting with the registered Aboriginal parties to discuss heritage management issues and the ongoing development of the project.

1 INTRODUCTION

NGH Environmental has been contracted by Goldwind Capital (Australia) Pty Ltd (Goldwind) on behalf of White Rock Wind Farm Pty Ltd (WRWF) to prepare an Aboriginal Cultural Heritage Assessment Report (ACHAR) for the proposed Stage 2 works for the White Rock Wind Farm (WRWF) off Maybole and Kelley's Roads approximately 20 km south-west of Glen Innes, NSW (Figure 1). The ACHAR will investigate and examine the presence, extent and nature of any Aboriginal heritage sites within the proposed Stage 2 works area.

Goldwind is seeking to undertake works that may impact Aboriginal heritage objects, as defined under the NSW *National Parks and Wildlife Act 1974*. The ACHAR for White Rock Wind Farm Stage 2 (the Project) works would form part of a modification application that will be assessed by the NSW Department of Planning and Environment under Part 3A of the *Environmental Planning and Assessment Act, 1979* and it is expected to be referred to OEH. The purpose of the ACHAR is therefore to investigate the presence of any Aboriginal sites and to assess the impacts and management strategies that may mitigate any impact.

The project is a State Significant Development under the now-repealed Part 3A planning process and therefore approval is provided by the Department of Planning and Environment (DPE), negating the need for an Aboriginal Heritage Impact Permit (AHIP).

1.1 PROJECT PROPOSAL

The Project works (Figure 1) involves several modifications to the approved WRWF development, MP10_160. The assessment areas comprise of a number of Lots in both the Glen Innes Severn Local Government Area (LGA) and the Inverell Shire LGA.

The proposed modifications to the approved WRWF development, MP10_160, for the proposed WRWF Stage 2 works include the following variations:

- Up to 48 turbines (the existing approval allows for 49 approved turbines sites), of which 20 would be new locations not consented under the original approval;
- A larger turbine model (GW140) is being considered for all 48 sites in this assessment;
- Variations to the on-site 33kV/132kV grid connection facility located south of White Rock Mountain, involving a marginally extended 132kV switchyard and 33kV/132kV substation. This includes an additional 33kV/132kV transformer, switchgear and other components;
- Some additional access tracks for the new turbine sites and minor modifications to approved access track routes to improve constructability;
- Additional 33kV collection circuits, including six overhead 33kV lines (four assessed under the original proposal) and either an upgrade to or a potential parallel line installation for the existing 33kV overhead line between T62 and T35, for the new wind turbine sites.
- Temporary construction facilities including temporary compounds and site offices, crushing facilities, concrete batching plants, storage sheds or storage containers, laydown areas and amenities facilities. Where possible, Stage 1 ancillary facilities may be used for Stage 2 construction.

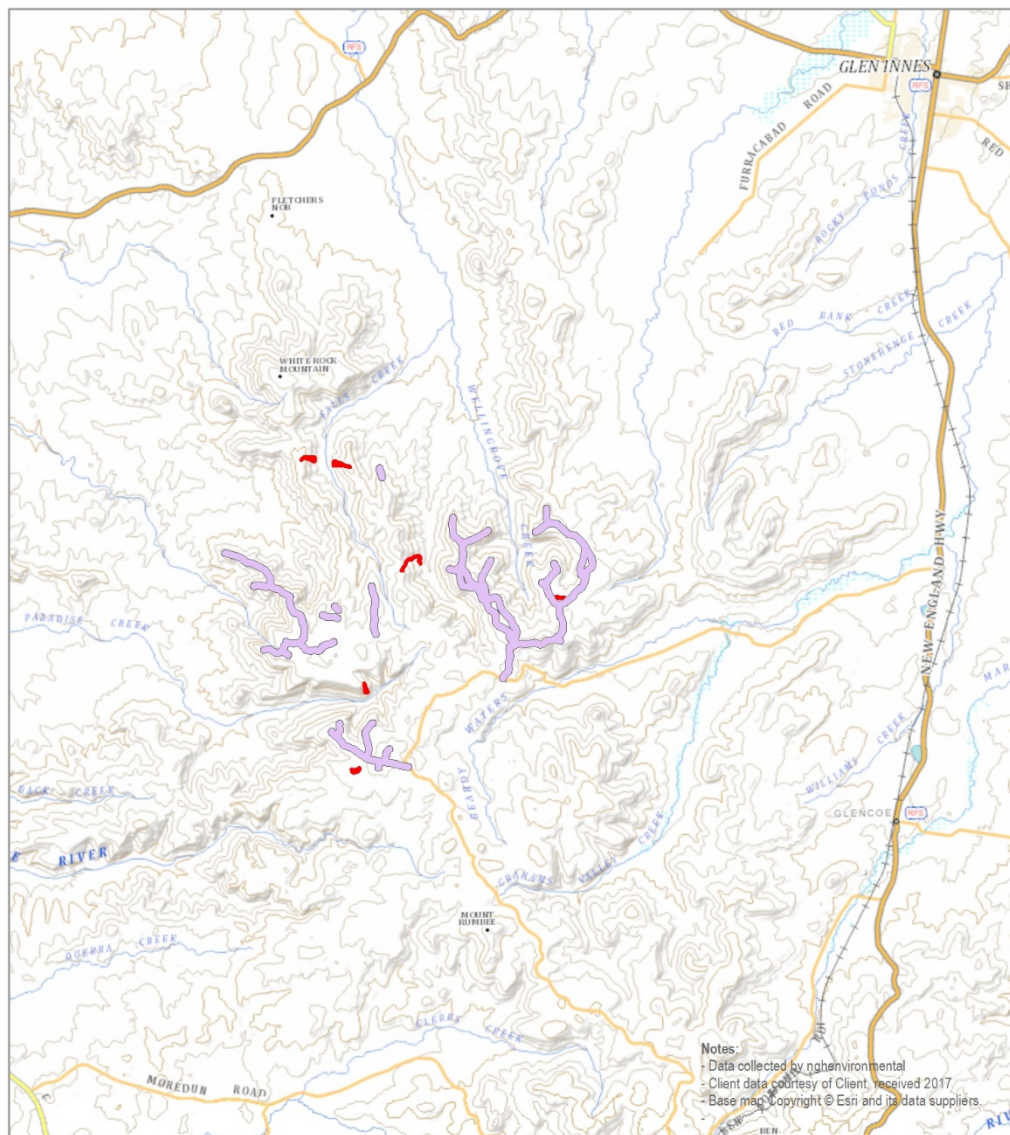
In terms of the location of the additional infrastructure, four additional properties would be required, adjacent to the existing proposal site. Three are additional private land holdings. One of these would only involve an access easement and is owned by WRWF.

A summary of proposed impacts included in the is BAR is as follows;

- Cut-and-Fill Batters (plus 5m disturbance buffer)
- Access Tracks (6m width, plus 5m disturbance buffer)
- Hardstands, blade laydown and crane erection area (50 x 80m)
- Blade Laydown/Assembly Overhang (70m blade. 85m blade would be single blade lift)
- Reticulation (12m + 3m per extra parallel cable)
- OHL (24m for full clearance, or tower cone clearance for spanning large gullies)
- OHL Towers (20 x 20m)
- OHL Tower Access Tracks (5m, upgrade of existing farm tracks)

The infrastructure layout assessed in this report is provided in Figures 1 and 2.

Construction of Stage 2 will include the siting of some turbines and associated infrastructure within the same footprint as Stage 1. For example, where Stage 2 cabling aligns with existing Stage 1 cable routes, the additional cables will be situated within, or as close as possible to, the disturbance footprint created during the construction of Stage 1. As Stage 1 has been assessed previously, our report only covers those areas of Stage 2 that lie outside the stage 1 assessment area, although subsequent changes post fieldwork have not been assessed and are noted as 'unsurveyed areas' in Figure 2.



Location of Assessment Area

White Rock Wind Farm Stage 2

- 16321_Stage2_Tracks_buffer_dissolve_040517
- 16321_unassessed_areas_260717

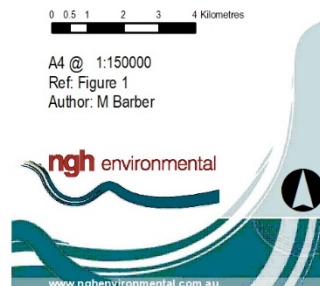


Figure 1 WRWF Project Location.

Only those components of the proposed Stage 2 works that have not previously been investigated were examined for this current assessment. These consists of 19 of the 20 new turbine locations and associated additional or re-aligned access tracks. The area surveyed for the project is shown in Figure 2. Note there were last minute changes to the layout post field survey that have not been assessed (identified as 'unsurveyed areas' on Figure 2).

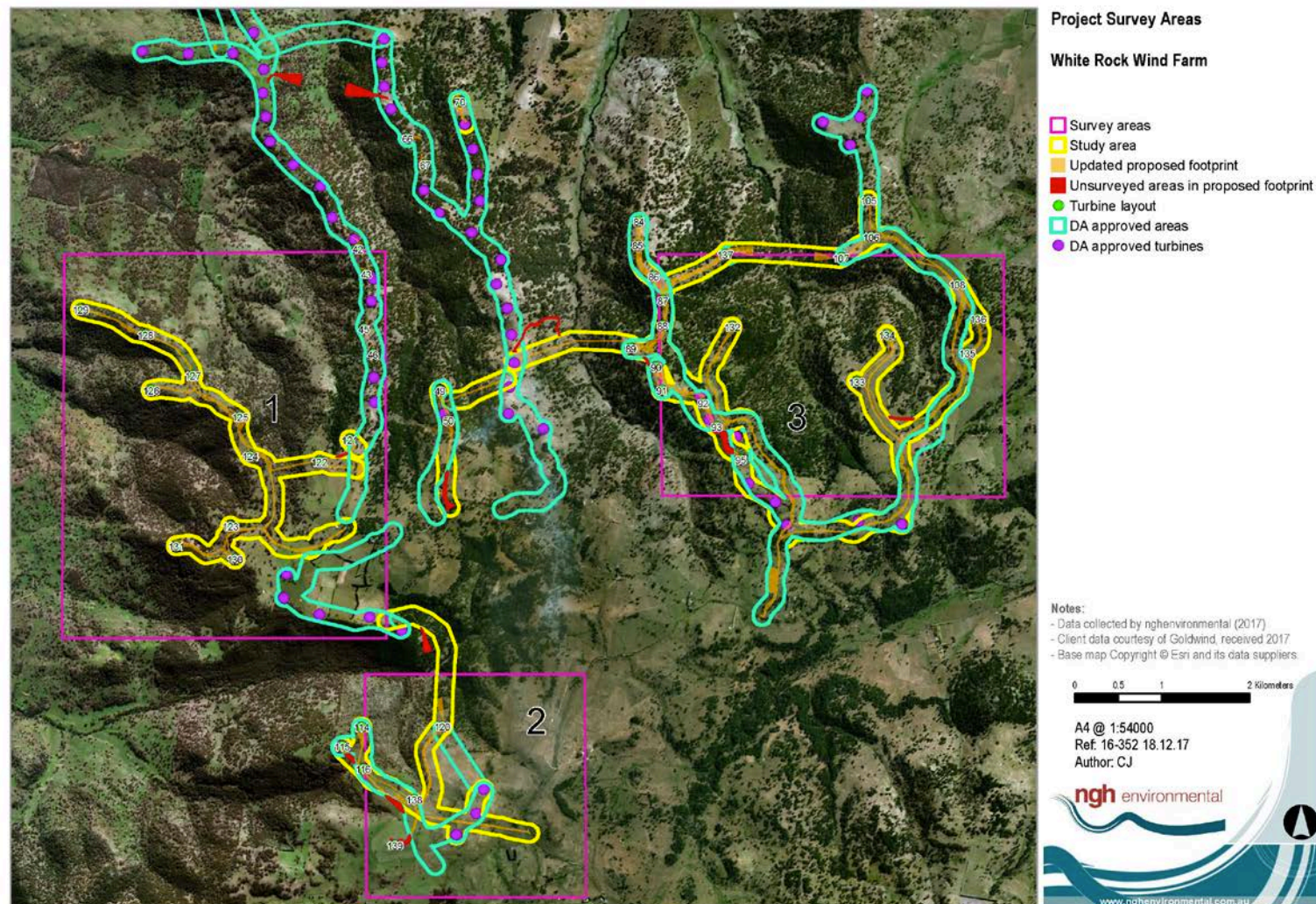


Figure 2. Project survey area.

1.2 PROJECT PERSONNEL

The assessment, including research and Aboriginal community consultation was undertaken by archaeologists Lyn O'Brien and Matthew Barber of NGH Environmental while the field survey and report preparation was undertaken by Lyn O'Brien with Matthew Barber providing peer review

Consultation with the Aboriginal community was undertaken following the process outlined in OEH's *Aboriginal cultural heritage consultation requirements for proponents 2010*. Consultation has included the following steps:

- Advertising for interested parties by placing a public notice advertisement in *Koori Mail* on the 8th February 2017, the *Inverell Times* on the 7th of February 2017 and the *Glen Innes Examiner* on the 7th of February 2017
- Writing to required agencies, including OEH, advising of the project and seeking known interested parties, and
- Writing to any additional identified parties from OEH seeking their interest.

Eight Aboriginal groups or individuals registered their interest in the project. The fieldwork component was undertaken with assistance from the Aboriginal community in May 2017. Once fieldwork was completed, a draft Aboriginal Cultural Heritage Assessment Report was provided to all Registered Aboriginal Parties (RAPs) with feedback incorporated into the final report.

Further details on the consultation process are provided in Section 2.

1.3 REPORT FORMAT

This Aboriginal Cultural Heritage Assessment Report (ACHAR) 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* (OEH 2010b) produced by the NSW Office of Environment and Heritage (OEH).

The purpose of this ACHAR is to provide an assessment of the Aboriginal cultural values associated with the project area and to assess the cultural and scientific significance of any identified Aboriginal heritage sites.

The objectives of the assessment were to:

- Conduct Aboriginal consultation as specified in clause 80c of the *National Parks and Wildlife Regulation*, using the consultation process outlined in the *Aboriginal cultural heritage consultation requirements for proponents 2010*;
- Undertake an assessment of the archaeological and cultural values of the project 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 *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (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 Anaiwan and Glen Innes Local Aboriginal Land Council (LALC), and various statutory authorities including OEH, as identified under the ACHCRP.

An advertisement for interested parties was placed as a public notice advertisement in *Koori Mail* on the 8th February 2017, the *Inverell Times* on the 7th of February 2017 and the *Glen Innes Examiner* on the 7th of February 2017. Additional letters were then sent to all identified parties from OEH seeking their interest.

As a result of this process, eight groups or individuals contacted the consultant to register their interest in the proposal. The Registered Aboriginal Groups (RAPs) who registered interest were:

- Anaiwan Local Aboriginal Land Council.
- Anaiwan Traditional Owners Aboriginal Corporation.
- Olivia Connors Family.
- Gomeroi Native Title Representative.
- Northern Tablelands Local Land Services Aboriginal Reference Advisory Group.
- Nyakka Aboriginal Corporation.
- Ricky Pascoe.
- Glen Innes Local Aboriginal Land Council.

Some of the parties registered an interest in the project after the advertising period or the letter deadlines had closed (Olivia Connors, Ricky Pascoe and Glen Innes LALC). However, with a view to being inclusive, all parties were provided the methodology for comment and the report for review.

Stage 2. An *Assessment Methodology* document for the White Rock Wind Farm was sent to the RAPs and other Aboriginal stakeholders named by OEH. This document provided details of the background to the proposal, a summary of previous archaeological surveys and the proposed heritage assessment methodology for the proposal. The document invited comments regarding the proposed methodology and also sought any information regarding known Aboriginal cultural significance values associated with the subject area and/or any Aboriginal objects contained therein. No written responses were received but Greg Livermore (CEO Anaiwan LALC), and David Ahoy (Anaiwan Traditional Owners) indicated by phone that they were satisfied with the methodology and were happy to proceed to conducting fieldwork. Ricky Pascoe indicated by phone that he was unhappy with the methodology as there was no detail regarding Aboriginal consultation and didn't want the wrong people on country. He did indicate that the Connors name was known to him and that they were from the area.

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 response regarding cultural information was received.

At this stage, the fieldwork was organised and the RAPs were asked to participate in the fieldwork. The Glen Innes LALC were not able to participate in field work but Steven Ahoy (Anaiwan Traditional Owners) and Olivia Connors (Connors Family) assisted with the field surveys and on site assessments, providing input into cultural significance and culturally appropriate mitigation options.

Stage 4 In May 2017 a draft version of this *Aboriginal Cultural Heritage Assessment Report* for the project (this document) was forwarded to the RAPs and a timeframe of 28 days has been provided to allow for responses to the document.

2.1 ABORIGINAL COMMUNITY FEEDBACK

Aboriginal community feedback was sought during the design of methodology and field work stages. No specific information in respect of the project area holding cultural values or known heritage sites being located within the project boundaries has been provided, although it was noted by several RAPs that the general area was known and frequented by community members and that it was an important area.

The use of ridgelines as pathways through the country and the past practise of camping overnight and/or resting places along the route during the day along the ridgelines was discussed and confirmed with the participants. The project area is close to known pathways to Ben Lomond and beyond.

Representatives of the Aboriginal community were present during the fieldwork and provided feedback on the project with no objections being recorded.

A draft of this report was forwarded on its completion to the RAPs and responses received will be included at Appendix A.

In summary, Olivia Connors provided evidence that she participated in the survey and indicated that the area and the archaeological material found was very significant to Aboriginal people.

Ricky Pascoe provided feedback about his personal affiliation to the New England Tablelands including the Ngarabal people and particular places of importance to him, although these were not directly within the White Rock Wind Farm project area. While not commenting specifically on the results of the survey or the project, he indicated he thought that the consultation should have included community meetings and would like to see a communication strategy in place for any future projects. He also noted that he would like to see broader inclusion of Ngarabal people for projects on Ngarabal land in the future.

Anthony Munro of the Gomeroi Native Title group also responded to the report by phone. He identified his connection to the New England region and noted that he was a descendant of people who were born in the area. Anthony noted that there were a number of sites recorded during the surveys for Stage 1 and Stage 2 and that he would like the opportunity to meet and view the sites with his elders. He noted that although he was not against the project and saw wind projects as the way of the future, he would also like to be able to discuss the future of the area with the proponent and to understand what future development would occur and what impacts this may have on heritage sites.

3 BACKGROUND INFORMATION

3.1 REVIEW OF LANDSCAPE CONTEXT

3.1.1 *Geology and Topography*

The topography of the project area is best characterised by sloping to undulating hilly country to the west, with extensive, agriculturally rich, gently undulating to flat black soil plains and creek flats in the eastern section. There is only minor topographic variation within the land for the proposed Wind Farm which is proposed to be located in the eastern section of the project site. The ground is situated along almost level or gently sloping areas of creek flats/plains. The lower and middle slopes then rise gradually westwards to the north-south running ridgeline which exhibits more variation in elevation.

This topographical setting incorporates a variety of landforms which have been classified in this assessment according to the definitions set out in Speight (2009). Speight (2009) states that a landscape can be classified by its landform pattern, and then further classified by individual landform elements. The wider landform pattern, for instance, could be one of flood plains or hills. These landscapes can be further categorised into individual landform elements within the wider landform pattern, for instance cliff, footslopes or valley flats. According to these definitions, topographic mapping conducted for this Project indicates that the PA is comprised of several landforms that include crests, ridges, open depressions, simple slopes, upper, mid and lower slopes and flats (Speight 2009). These landforms would have provided suitable areas for hunter gatherers to undertake a range of subsistence activities (for example camping, hunting and tool making).

Certain landforms such as flat or gently sloping areas near a water source may have been more frequently occupied than others such as areas away from water, where land use may have been more transient in nature. The PA is dominated by a gently undulating landscape to the south, forming steep slopes to the north and west with valleys and ridges that are locations for minor permanent and ephemeral water courses. Based on a review of topographic maps and aerial imagery, landforms present within the survey area include drainage depressions, gentle to steeply inclining slopes, and broad upper flat ridgelines.

A review of the 1: 250,000 Glen Innes geology map shows that tertiary basalt dominates the study area, the underlying rock formations are mafic and extrusive in character formed through basalt flows, basaltic vents, and minor basaltic volcanoclastic events. These events have resulted in the formation of the broad ridgelines with basalt outcrops on ridgelines, hill crests and tors.

Soils in the study area consist of Calcarosols on ridgelines and Chromosols on side slopes. The soil profile would be expected to be thin and to have a high clay content leading to water logging along drainage lines and valley floors. Basaltic outcrops predominate in this region and grazing is the main use for the area, as a result of the thin soils and unsuitability for intensive cultivation.

3.1.2 *Flora and Fauna*

The natural vegetation across the proposal area has been almost totally cleared and is now considered as a modified environment. Grass coverage appears to have been subject to pasture improvement along flat areas of middle and lower slopes. Some native trees are present along the ridgeline areas and widely scattered on the flatter lower slopes. The natural vegetation of the area would most likely have consisted of Stringybark forest prior to clearing with native grasses. Stringybark trees predominant across the study area.

The NSW OEH classifies the vegetation community in the region as High areas with woodland of snow gum, black sallee and ribbon gum. Silver-top stringybark, New England peppermint at lower levels on basalt. White box woodland with rough-barked apple, ribbon gum and yellow box in lowest western areas. Narrow-leaved ironbark on sedimentary rocks. This forested environment supported a wide range of edible plant and fauna species. Fauna present would range from small marsupials (i.e. possums), to avian species and macropods. A range of resources were available within this environment that would have been utilised by Aboriginal groups.

3.1.3 Historic Land use

Pastoral settlement commenced in the Glen Innes region in the 1830's. Large pastoral runs such as Stonehenge station (Archibald Boyd) and Glen Innes (Archibald Mosman 25, 000 acres) were the norm with the closer settlement into smaller farms commencing following the Robertson Land Acts (1861). The name Glen Innes is believed to have been coined by Mosman in honour of his friend Major Archibald Clunnes Innes from whom he bought the station.

The mountainous ranges of Ben Lomond and the Glen Innes region have been utilised for stock grazing and low level fodder cropping. Tree removals have been undertaken to open up areas and roads and access points tend to follow along the ridge lines or level valley plains. Erosion has resulted in areas, due to the impacts of stock and the formation of roads. Overall the level of disturbance across the project area due to past land use patterns is low and would not have affected the archaeological record in any significant manner.

3.1.4 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. The project area ranges over minor areas of creek flats/floodplains to ridgeline crests across the majority of the survey area.

The landforms for the survey were therefore determined to be stable landforms, with an aggrading landscape on the creek flats and floodplains. Soils on the crests and upper slopes retain their original aspect due to rock outcropping, but appear shallower and to be moderately erodible.

Minor drainage lines and creek lines occur throughout the landscape. These water sources are not located on the main ridgelines which comprise the study area. However, these water sources could easily be reached from the ridgeline locations when required.

The landscape would indicate that it would have been traversed and utilised by Aboriginal people but the lack of water resources or large scale resources would render it less suitable for large scale gatherings or long term camping sites. Transport routes used by Aboriginal groups when travelling through the mountainous landscape followed the broad ridgelines which provided ease of access and movement through the landscape. This use of the landscape would result in low level density sites being formed at areas of camping, resting or resource gathering.

3.2 REVIEW OF ABORIGINAL ARCHAEOLOGICAL CONTEXT

3.2.1 Ethnohistoric Setting

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 *et al.* 2005:8). 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 *et al.* 2005:8 & 16).

The Glen Innes area is within a region identified as part of the Nganyaywana language group. This is an assemblage of many small clans and bands speaking a number of similar dialects (Howitt 1996, Tindale 1974, Horton 1994). The borders were however, not static, they were most likely fluid, expanding and contracting over time to the movements of smaller family or clan groups. Boundaries ebbed and flowed through contact with neighbours, the seasons and periods of drought and abundance.

It was the small family group that was at the core of Aboriginal society, 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 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.

The 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 than small family camps.

At the time of European settlement in the region, the western portion of the study area in the vicinity of Inverell was believed to have been inhabited by Anaiwan (Nganyaywana) speaking Aboriginal people (Tindale 1974). Closer to Glen Innes were probably a related group known as the Ngarrabal (Ngarabal, Ngarrbul) (Tindale 1974).

The Anaiwan and Ngarrabal people are thought to have utilised the majority of the area north of the Macintyre River, making use of a broad range of natural resources. Although occupation seems to have been focused on the riverine margins, it is believed that their occupation was not restricted to these areas but traversed a variety of landform units away from the major water sources for the gathering of resources, hunting and transport. (McIntyre 1998).

The Ngarrabal continue an oral history which describes traditional seasonal movement patterns between the tablelands in the east during the summer and autumn and the western river systems in the west during the cooler winter months (DECC, 2008). Traditional knowledge communicated on the area focused on this use of the ridgelines as travel routes, regularly followed seasonally through the mountains (S.Ahoy and O.Connors *pers comm*).

Byrne (cited in Paton 1998:33) believed that the people of the Glen Innes – Inverell locality were constrained by the limited plant and animal resources when compared to the people of the coast and as a

result, the inland people led a far more mobile lifestyle. However, this would seem to underestimate the resources present in the area.

Prior to European settlement, the tablelands and adjacent slopes between Glen Innes and Inverell supported dense woodlands, which provided habitat for a broad range of plant and animal species that formed the core of Aboriginal dietary items prior to contact with early European explorers and settlers. Groups are documented as having utilised a broad range of plant species as both food and material resources, including bracken fern, orchids, tubers and lilies, kurrajong trees and the daisy yam, to mention just a few (Morris, 1999:4-6). Major water courses such as the Macintyre River to the south and perennial creeks were also a valuable source of plant and animal food and material resources.

Aboriginal traditional lifestyles were disrupted by the spread of European settlement by the 1840s. European disease and violence by early settlers lead to a decline in the local population, with some remaining families finding employment on the large pastoral stations that had become established in the region (DECC. 2008). Aboriginal men also found employment within the shearing or timber industries.

No Aboriginal reserves were established in the Inverell or Glen Innes areas, however they were established at Armidale, Guyra, Ashford, Ingelba and Tingha. Many families congregated at these centres and ceased traditional lifeways.

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 45 km east-west x 35 km north-south centred on the proposal area, was undertaken on the 8th of March 2017. The AHIMS Client Service Number was: 270249. There were 47 Aboriginal sites and no declared Aboriginal Places recorded in the search area. Table 1 below shows the site types previously recorded in the region and Figure 3 shows the locations of the AHIMS sites in relation to the assessment area.

Table 1. Breakdown of previously recorded Aboriginal sites in the region

Site type	Number
Artefacts (1 or more)	21
Potential Archaeological Deposit (PAD)	9
Modified Tree	8
Artefacts and Modified Tree	3
Artefact and PAD	2
Ceremonial Ring (Stone or Earth)	1
Art (Pigment or Engraved)	1
Burial	1
TOTAL	47

None of the sites are located within the current study area and no other previously recorded sites are adjacent to the current study area.

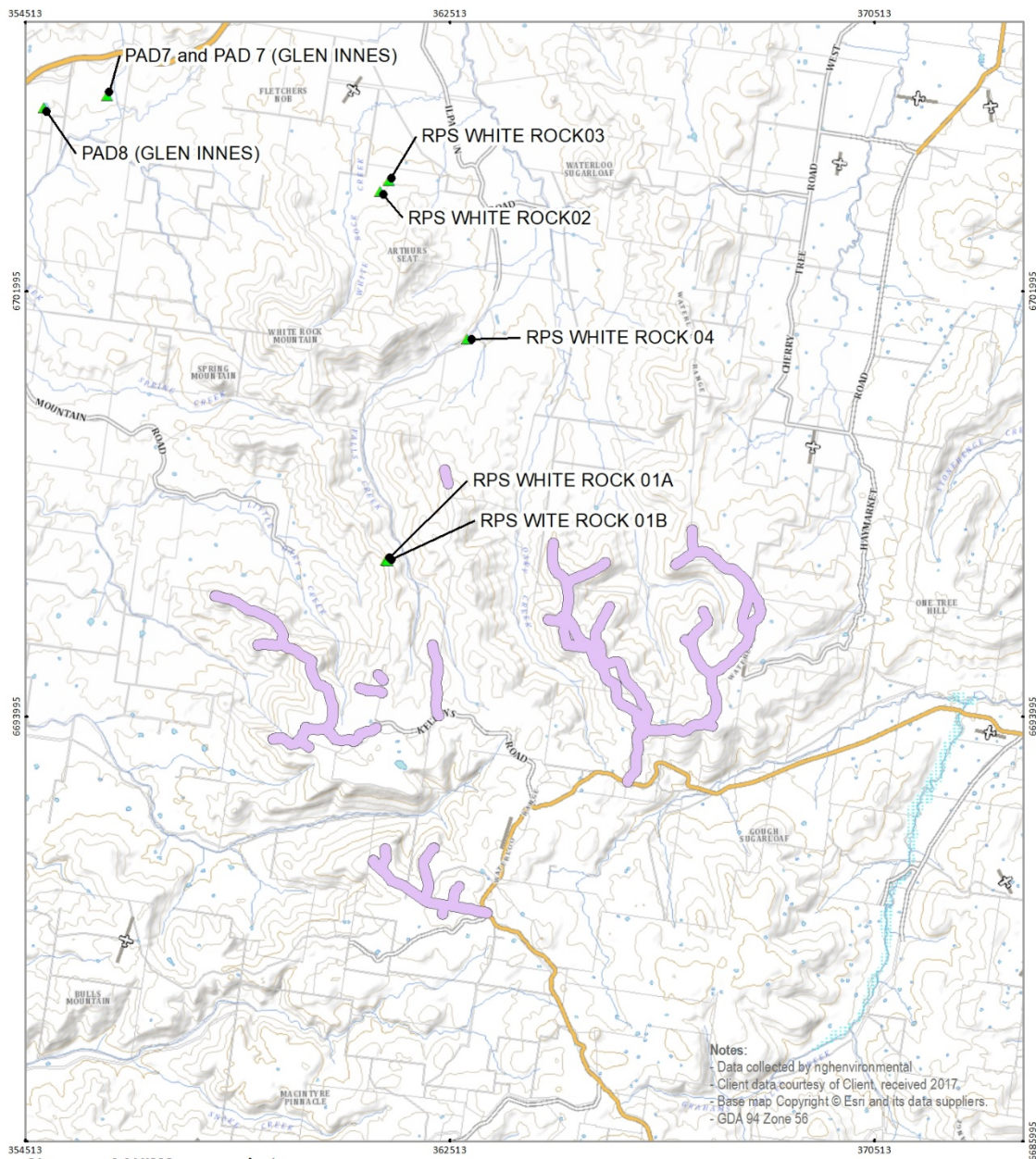


Figure 3. Location of AHIMS sites

3.2.3 Archaeological Setting

There have been no dated excavations in the Glen Innes area and no regional synthesis of the archaeology has been completed since the seminal work of McBryde in the 1970s. Most assessments have been undertaken to assess proposed developments in the region. In the recent period these developments have focused on the potential for wind and solar farms in the region, covering a landscape similar to the current project area. The following are summaries of those archaeological survey reports that have been completed for the White Rock Wind farm. The previous studies for the White Rock Wind farm were undertaken by RPS in 2010, Anaiwan Local Aboriginal Land Council in 2012 and 2016, ERM in 2015 and Environmental Assessment in 2016. NGH Environmental also surveyed land adjacent to the White Rock Wind farm for the proposed White Rock Solar Farm in 2016.

In respect of the RPS assessment in 2010, their background research identified that previous Aboriginal heritage studies in the region had located artefact scatters, often in association with potential archaeological deposits (PADs) and that they were often located near third order drainage lines. They therefore predicted that these were the most likely site types to occur within the Wind Farm survey area.

RPS undertook a pedestrian survey of the wind farm infrastructure areas. Their survey strategy was to divide the area into survey units, which appear to be based on associated infrastructure areas for the project but included a range of topographies including crest, upper, mid and lower slopes of the main ridgelines (location of proposed turbines and infrastructure) and creek terraces.

RPS recorded three modified trees and two artefact scatters during their surveys (RPS 2010). Two of the modified trees (RPS White Rock 01A – AHIMS# 12-4-0028 and White Rock 01B – AHIMS# 12-4-0029) were recorded on the upper slopes of a knoll, in close proximity to each other. The third modified tree was situated on a creek terrace (RPS White Rock 04 – AHIMS#12-4-0032). One artefact scatter (RPS White Rock 02 – AHIMS#12-4-0030) was situated on a creek terrace and comprised three artefacts in a small exposure. The second artefact scatter (RPS White Rock 03 – AHIMS#12-4-0031) was also found on a creek terrace and also comprised three artefacts in a small exposure. At each of these locations, RPS identified that PAD extended east and west along the terrace either side of the exposure. The artefacts recorded were made from quartz, silcrete and basalt.

RPS concluded that the predictive model for site location was supported with a modification that creek terraces beyond the foot slopes were preferred camp sites, most likely due to the foot slopes retaining a waterlogged soil after rains. They further suggested that Aboriginal camping activity was undertaken at the lower elevations, not on the ridge crests, which could be as much as 300 m above the drainage lines and that the ridgelines were used for resource gathering (floral and faunal) and travel, as indicated by the scarred trees (RPS 2010:38).

ERM also provided further survey of the White Rock Wind Farm Project Area in 2015 as part of pre-construction planning. This included a review of potential modifications to the Stage 1 WRWF project layout. The assessment identified an additional Aboriginal site AHIMS #08-4-0022 (ERM WR01) consisting of an isolated artefact.

In 2012 Anaiwan Local Aboriginal Land Council (Anaiwan LALC) conducted surveys for a power line easement for the White Rock Wind Farm from White Rock Mountain to the TansGrid 330kV Power line. Two scarred trees were recorded and it was recommended they were not removed or disturbed. This route was amended and the alternate route was surveyed in 2016 by Environmental Assessment to support a modification application for the proposed alternative grid connection facility. The study area consisted of a 100m wide corridor along the proposed alternative powerline route. The two possible scarred trees initially identified in 2012 by the Anaiwan LALC were re located and the route was diverted well away from them. The site cards for these were re sent to OEH in October 2016 by Environmental Assessment however

neither was listed on the database when NGH conducted the AHIMS search for the current assessment in early 2017. Both sites are outside the current assessment area.

In 2016 the Anaiwan LALC conducted an additional survey to assess the route inspected by Environmental Assessment and to ensure that the scarred trees were avoided. Anaiwan LALC were satisfied that the due diligence procedure was followed and that no sites or PADs were identified along the proposed alternative powerline works area. Anaiwan LALC endorsed the report and recommendations outlined by Environmental Assessment (2016).

In 2016 NGH Environmental (NGH) surveyed the White Rock Solar Farm. The project area was located partly within the western section of the White Rock Wind Farm in midslopes of undulating terrain. The Solar Farm would be connected to its electricity transmission and substation infrastructure. No Aboriginal heritage sites or areas of PAD were identified within the project area.

Within the broader region, several surveys have been undertaken that have resulted in a range of Aboriginal sites being recorded. The major relevant studies are summarised below.

Appleton in 1992a completed an assessment for a proposed optic fibre cable from Gilgai to Tingha to Wandsworth telephone exchanges. The survey covered 66 km, mainly located in strips of native bushland and stock routes amongst a highly disturbed environment. Five Aboriginal sites consisting of artefact scatters were located with one containing 87 artefacts and deemed to hold high significance. The route was redesigned to avoid impact to three of the five sites.

Another survey was undertaken by Appleton in the same year (1992b) for a fibre optic cable from the Martin's Lookout to Red Range telephone exchanges. The survey covered 14.5 km. No sites were located but one site close to the Yarrow River was reported subsequently.

An assessment was undertaken for the proposed wind farm at Black Springs by Harper Somers O'Sullivan in 2006. The area was subject to field survey but no sites were identified. Visibility was low across the area due to dense grass coverage, but the area was considered to hold low potential due to past land use.

McCardle Cultural Heritage in 2007 completed an assessment for the Glen Innes Wind Farm, located 12 km west of Glen Innes and covering approximately 8.5 km of the Waterloo Range. Visibility was considered low due to grass coverage and the area was considered highly disturbed due to past agricultural usage. The area was not considered to contain high potential for heritage sites and only one isolated find was recorded.

Central West Archaeological and Heritage Services undertook an assessment in 2008 for a 12.5 km section of overhead transmission line. The alignment was located on the western outskirts of Glen Innes with the area found to be highly disturbed due to farming practices. Despite the finding that 90% of the route was covered by dense grass coverage six Aboriginal sites were identified, one being a chert quarry located along a flat ridge crest.

In 2008 an assessment was undertaken for the Ben Lomond Wind Farm by RPS. The survey area covered 9.7 ha, located 1 km north of the village of Ben Lomond. No Aboriginal sites were identified, but ground surface visibility was low due to the dense grass coverage. Modelling indicated the area to hold low potential, due to sites predicted to be close to water resources.

In 2009, NSW Archaeology conducted an assessment for the proposed Sapphire Wind Farm (NSW Archaeology 2011). A total of three Aboriginal object locals SU14/L1, SU19/L1 and SU21/L1 were recorded within the assessed Survey Units as listed in Sapphire EA Appendix 12, 2011. The locales were reported to have very low density stone artefact distribution, resulting in low archaeological potential/sensitivity and therefore low archaeological significance. In addition to the Indigenous object locales, five trees were considered by the Aboriginal field assistants to be possible scarred trees. All survey units were assessed to

hold high potential for archaeological sites to be present, but that the sites would be of low density and would be of low archaeological significance. As a result, no constraints were placed on the project.

3.2.4 Summary of Aboriginal land use

The results of previous archaeological surveys in the Glen Innes region serve to show that there are sites present in a range of landforms. There does appear however to be a pattern of site location that relates to the presence of potential resources for Aboriginal use. The small artefact scatters tend to be present due to the occurrence of small drainage or creek lines per resources, an essential factor for Aboriginal people. These locations would be preferred for camping or longer occupation, but are usually located on level terraces or lower slopes set back from the creek lines.

Scarred trees tend to be located along ridge crests and are recorded through the wider area. Quarry sites and some surface scatters have also been recorded along the ridge crests, but in lower numbers and with less artefacts per site. Information from Aboriginal representatives indicated that ridgelines were used as pathways through the country with camping and resting areas in open level areas. These may not be close to water but would be located at natural stopping/resting points along the pathways. In steeper country, the same pathways (ridgelines) were used consistently, a pattern that would result in larger density sites as an amalgamation of repeated visits.

The Aboriginal land use of the region is in reality little understood as few in-depth studies have been completed. It is possible, however, to ascertain that proximity to resources was a key factor in the location of Aboriginal camp sites, but that smaller sites may be located along the ridgelines utilised as travel routes. 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 currently limited.

3.2.5 Windfarm assessments

Heritage assessments for wind farm projects have been undertaken for numerous projects throughout the surrounding area and the wider NSW regions. Despite their range, wind farms are consistently located in similar mountainous topography, usually with similar soil structures. Infrastructure within the wind farm developments (turbine locations, access roads and cabling) are similar and placed in the same positions within the landscape. As a consequence, results from these disparate wind farms are applicable in a wider sense to the predictive assessment of the current White Rock stage 2 area.

In a number of wind farm assessments (Harper Somers O'Sullivan 2006 (Black Springs WF), McCardle 2007 (Glen Innes) RPS 2008 (Ben Lomond)) the site predictive model is based on the proximity to water resources for the presence of large scale sites and camping areas. These models do not focus on the use of the ridgelines as travel routes, assuming that such transient use would have resulted in such low levels of artefact deposition to be invisible in the archaeological record.

Other wind farm assessment undertaken (NSW Archaeology 2005 (Cullerin), 2009 (Sapphire), 2012 (Collector); Biosis 2004a (Woodlawn WF), RPS 2010 (WRWF)) utilised a modified version of the above predictive model with larger sites predicted on the lower slopes with proximity to water, but small sites predicted on the ridge lines which were a focus of travel and resource gathering. In these studies sites were often located along ridge lines but were small in size. The ridge lines were classified as holding high potential for sites, but that the sites are of low density and would be effectively 'background scatter' and not warranting further investigation. The requirement for no further investigation was justified on the grounds that any information gathered would not provide a significant increase in knowledge of Aboriginal land use or site patterning and that impacts were confined to small areas within a larger ridgeline system.

The third class of wind farm assessments follows the above model of site patterning, but holds that the use of the landscape in this topography is not so well understood and the model requires ‘ground truthing’ by limited areas of subsurface testing on ridgeline locations. These assessments (Jo McDonald 1997 (Crookwell 1); 2003 (Gunning WF); Austral 2007 (Capital WF); Biosis 2004b (Crookwell 2)) held that the ridgelines would have lower potential than elevated contexts near water sources but that the ridgelines were likely to hold sites representative of differing uses and should be subject to further assessment. Test pits were then excavated at all turbine locations for these projects or within defined areas of PAD.

Reports on these subsurface testing programs have overall supported this model, that sites on ridgeline locations consist of small dispersed low density sites with low archaeological significance (McDonald 2003 (Gunning) Austral 2007 (capital)). Most sites located at Crookwell 1 and 2 (McDonald 1998 and Biosis 2005) also returned a finding of low significance, but several high significance sites comprising either a large number of artefacts or rare artefact types were also located.

At Crookwell 1 McDonald (1998) excavated test pits at each turbine location recording an average of three artefacts per turbine location. She also located one large site on the spur line located 1km from Middle Creek, an area which according to modelling would contain small dispersed sites. The site consisted of 2,154 artefacts in test pits and was considered significant to warrant full salvage excavations. A new artefact type (Pejar Point) was identified.

At Crookwell 2 Biosis (2005) completed test pits at all turbine locations and sections of access roads along ridge lines resulting in the identification of 55 heritage sites. The sites range in size from single artefacts to densities of 1,002 in a single test pit. Based on the number of higher density sites on the ridgelines it was concluded that in some instances, they were representative of single knapping events carried out in the course of travelling or foraging activities, in other places it was considered to be the result of repeated visits to same locations. The presence of the larger sites highlighted that the use of the ridgelines is not well understood and may have been misrepresented in standard models.

3.2.6 Archaeological Site Location Model

RPS proposed a model of site location for their study area for the WRWF (2010) which can be used for the current Wind Farm site area with modifications based on current assessments of windfarm projects constructed in similar landforms. RPS concluded that there was some potential for the presence of artefact scatters, scarred trees (where trees had not been cleared) and isolated artefacts along ridgelines due to transient use of the ridgelines. Artefact scatters and isolated finds have the potential to occur anywhere but are most likely in association with permanent water.

As discussed previously, wind farm developments are proceeding throughout the south eastern Australian landscape. The majority of these projects are based in landscapes similar in topography to the current project area. These landscapes also mainly consist of turbines located on broad, level ridgelines at a distance from water. Traditional models of site location with proximity to water as a defining factor is proving to be not applicable to these landscapes, with large sites being located on the level areas of the ridgelines at a distance to water (McDonald 1998, Biosis 2005, NSW Archaeology 2008). Results from surveys at windfarms in NSW (Biosis 2005) has also shown that the majority of the sites had no surface expression of artefacts but contained extensive subsurface deposits. These studies have theorised that these sites represent overnight camping or resting places along pathways (McDonald 1998, Biosis 2005).

Other assessments such as NSW Archaeology 2005, 2008 at Silvertown WF and 2012 have concluded that there is a high probability of sites in all impact areas, but that the sites will be low density and holding low significance not warranting further investigation. As turbine locations are placed on these landforms, if these models are correct then the project has an increased probability of impacting subsurface

archaeological material. This subsurface material will probably consist of low density sites, dispersed across ridgeline locations.

Based on the results of these previous archaeological investigations in the local area, and findings from wind farm projects that are based in similar landscapes, it is possible to provide the following model of site location in relation to the proposed White Rock Wind Farm Stage 2 project area.

Stone artefact scatters – representing camp sites these sites can occur across the landscape, usually in association with some form of resource or landscape unit such as broad ridgelines which were used for travel through the mountainous landscape. Creek lines and small water holding bodies can also be a focus of Aboriginal occupation. Boundaries between changes in vegetation can also be a focus for occupation. Within the Wind Farm site area of interest, broad ridgelines and small creek line crossings are present with resulting moderate potential for this site type.

Burials – are generally found in sandy contexts or in association with rivers and major creeks. No such features exist with the Wind Farm and therefore such sites are unlikely to occur.

Scarred Trees – these require the presence of mature trees and are likely to be concentrated along major ridgelines, flat level open areas in the landscape or in association of water sources. Scarred trees are recorded in the immediate area along ridgelines which are the focus of the field survey. Moderate to high potential for scarred trees to occur is present throughout the majority of the study area.

Stone resources – are areas where people used natural stone outcrops as a source material for flaking. This requires geologically suitable material outcropping so as to be accessible. The WRWF area contains some natural outcropping stone such as basalt. There is therefore potential for this site type to occur.

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. Based on traditional knowledge the broad ridgelines were used for access and travel routes. Discarded single artefacts are most likely to be present on these features or within creekline features.

In summary, the presence of broad ridgelines with open level areas within steeply valleyed country means that there are numerous loci that could potentially be attractive to Aboriginal people to concentrate activity (camping, resting etc). Repeated use of these areas would increase the probability of leaving archaeological traces and increasing the significance of the site location. Nonetheless, given that Aboriginal people have lived in the region for tens of thousands of years, there is some potential for archaeological evidence to occur in all areas. This low density, dispersed material away from loci is most likely to be in the form of isolated stone artefacts or scarred trees.

3.2.7 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 Glen Innes district there have only been a few archaeological investigations, however the relatively recent investigations of renewable energy sites (4 wind farms and a solar farm) is providing an improved database. Information relating to site patterns, their age and geomorphic context is still little

understood, particularly on the higher areas and ridgelines and further testing of predictive modelling is necessary.

The robustness of the AHIMS survey results are therefore considered to be only moderate for the present investigation. There are likely to be many sites that exist that have yet to be identified. Although the terrain is generally a stable landscape, the scale of farming activities, in particular clearing and extensive ploughing over a long period of time has disturbed the site area.

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, no such places have been identified within the archaeological reports carried out within the adjacent area. Additionally, no information about any such places within the WRWF project area has been provided during consultations. There is always the potential for such places to exist but insofar as the current project is concerned, no such places or values have been identified.

4 ARCHAEOLOGICAL INVESTIGATION RESULTS

4.1 SURVEY STRATEGY

Field survey was undertaken over four days from the 9th to 12th of May 2017. The field survey concentrated on the area of proposed impact for the new turbines and associated new Stage 2 works and did not sample landforms outside of project boundaries.

As already noted, the Wind Farm project involves a number of separate components, mainly the defined study area where the 20 additional wind turbine arrays would be located and the surrounding landscape which will be impacted by the construction of access roads. The location of the study area is shown in Figure 2. The survey strategy followed the standard practice of delineating different survey units based on topography, soils or other landscape features. This methodology was applied across the project area dividing the landscape into survey units based on their topography.

The survey method was therefore to carry out a series of pedestrian survey transects along each access road alignment and turbine location, ensuring enough coverage to be able to assess and characterise the area's heritage potential. Team members walked in parallel lines across each paddock looking for evidence of Aboriginal occupation and heritage sites. The linear nature of the project allowed for coverage across all areas within the proposed impact corridors. The location of transects are shown on Figure 4. Details of transect length and start/finish points are provided in Appendix B.

4.2 SURVEY COVERAGE

Survey transects were undertaken on foot and traversed the re-aligned access routes and locations of the proposed additional turbines. The effectiveness of the field survey was hindered by poor ground surface visibility over the majority of the turbine locations with extensive grass coverage and few areas of ground exposures.

Areas of exposure generally consisted of access roads, small stock impact trails and areas of exposure along dam banks. Survey Units were delineated based on landform context. Details of ground surface visibility (GSV), rate of exposures, exposure types and soils where possible were recorded for each survey unit. Details of these factors for each survey unit are provided in Appendix C. The description of survey units, and degree of survey coverage over each of the survey areas is presented in the Appendix organised by each survey area.

Following the methodology outlined previously, the project area was divided into survey units based on landform. These survey units are shown on Figure 5. A general description for each landform is provided below.

Broad ridgeline crest. – The majority of the study area consists of this landform. The majority of turbine locations are placed here and access vehicle tracks run along this landform whenever possible. The area has been extensively cleared, introduced grass species are the dominant vegetation type which thickly covers much of the ground surface, thus resulting in low ground surface exposure and visibility (Plate 1). There were limited occurrences of ground surface exposure associated with the main farm access track and gateways. GSV is considered to be less than 5% overall. No Aboriginal sites were identified in this landform, probably as a result of the low surface visibility. This landform is considered to hold the highest potential for the location of Aboriginal heritage sites based on predictive modelling.



Plate 1. Example of broad ridgeline crest

Upper slopes – This unit comprises the steep upper slopes that rise or descend from the broad ridgeline crests. This area has not been subject to intensive cultivation and although some tree removal has occurred, has a high proportion of mature tree stands. Limited areas of exposure were present in this area. The steepness of the slopes would indicate the lack of potential for camping sites or travel ways as passage would be easier through the landscape by following the ridgelines. Grass length was mid-thigh in this section with areas of thistles, overall GSV was extremely low with no areas of clear exposure. Most remnant mature trees are located in this section, which were inspected for cultural scarring. Level benches occur occasionally in this landform. Basalt boulders were observed outcropping in this survey unit at the top of hills and were generally covered in weeds such as thistles. An example of the conditions on an upper slope at the time of the field survey are shown in Plate 2.



Plate 2. Example of Upper slope landform

Mid slopes – the mid slope landform occurs on the access routes to all turbine locations. Gradients were usually moderate to steep and vegetation levels high. Level benches were present within this landform in several survey units. Some turbine placements occur on these level benches in the mid slope areas. Ground surface visibility was low across the mid slopes due to grass coverage and small areas of exposure. When exposures occurred they were the result of the grading for vehicle tracks and stock tracks. Plate 3 shows the conditions on the mid slopes at the time of field survey.



Plate 3. Example of Mid slope landform

Lower slopes – the lower slope landform occurs along access routes leading to turbine locations and on rises from one broad ridgeline to another. The lower slopes were usually highly grassed with few exposures. Gradients were usually gentle and areas of exposure consisted of the vehicle access tracks and small areas of stock impact at gates and along fence lines. An example of the lower slope landform is shown in Plate 4.



Plate 4. Example of Lower slope landform

Flat, Level plateau. - Level areas are located at the base of lower slopes, along saddles and within the mid slope sections of the alignments. These areas contained high grass coverage and minimal levels of exposures. Vehicle tracks were common in these areas as they provide level areas for access. An example of these level areas is shown in Plate 5.



Plate 5. Example of plateau area

Creek flats. - Small areas of creek flats are located through the access alignments. These creek flat areas abutted small tributary creek lines. Level areas along the creek lines fit the predictive modelling for campsite or PAD locations, and overall the visibility in these locations was moderate to good with extensive exposures due to stock impact, vehicle crossings and erosion scours. Despite the good visibility only one small artefact scatter was located in this landform. An example of a creek flat landform is shown in Plate 6.



Plate 6. Example of Creek flat landform

Details of each survey unit along with survey coverage tables are provided in Appendix B. Descriptions of survey units follow Speight 1990

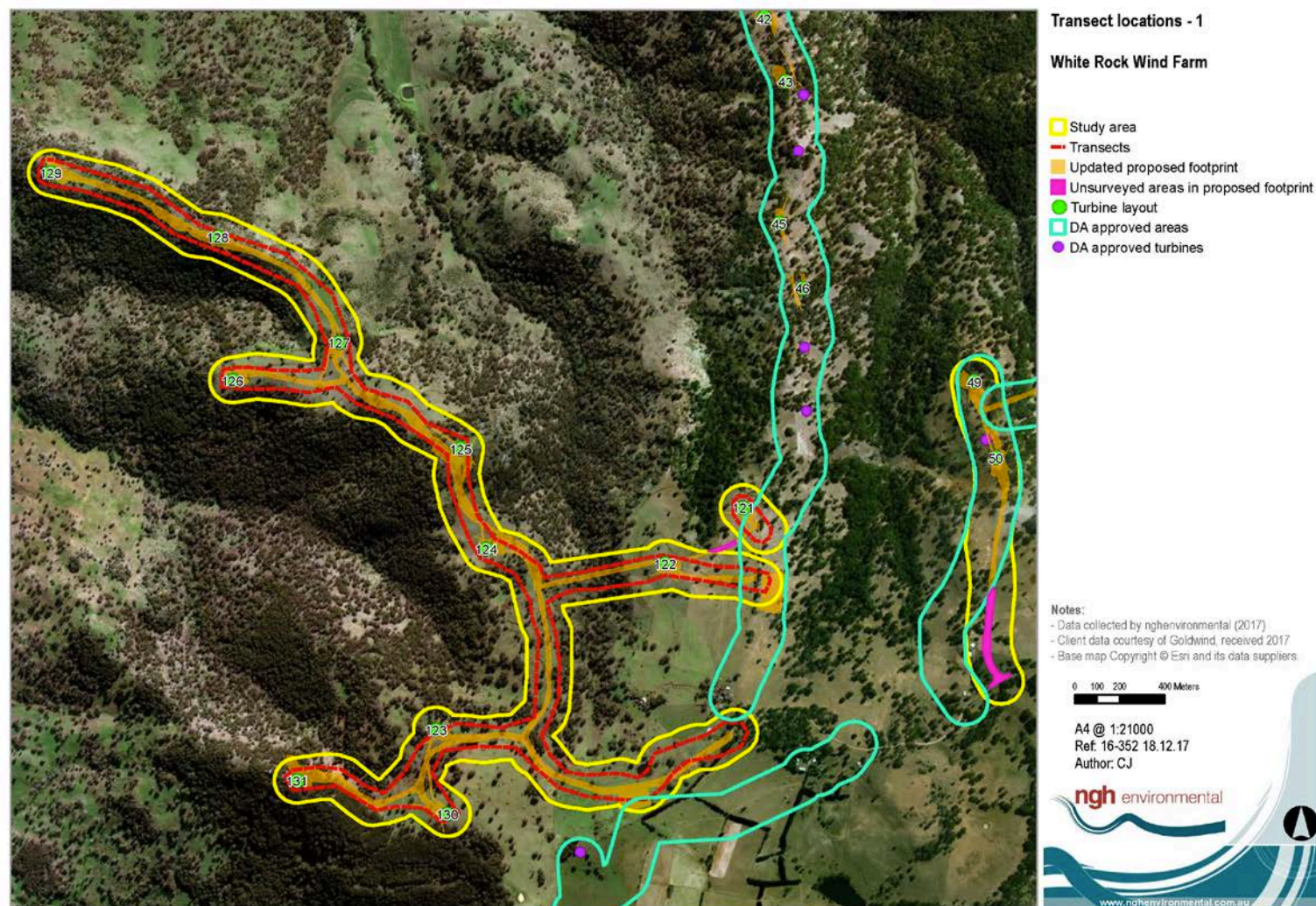


Figure 4. Location of Transects Survey Area 1

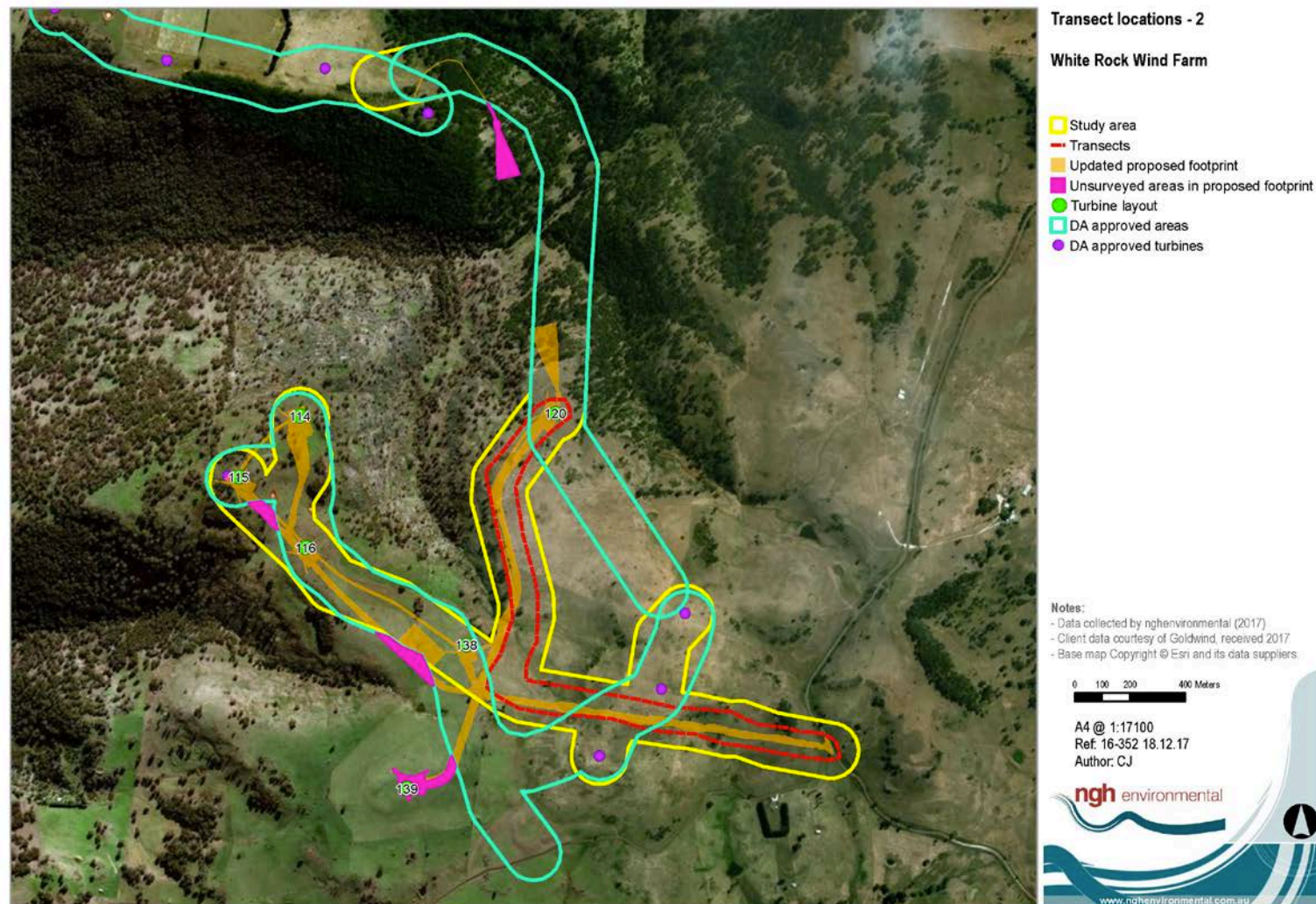


Figure 5. Location of transects Survey Area 2

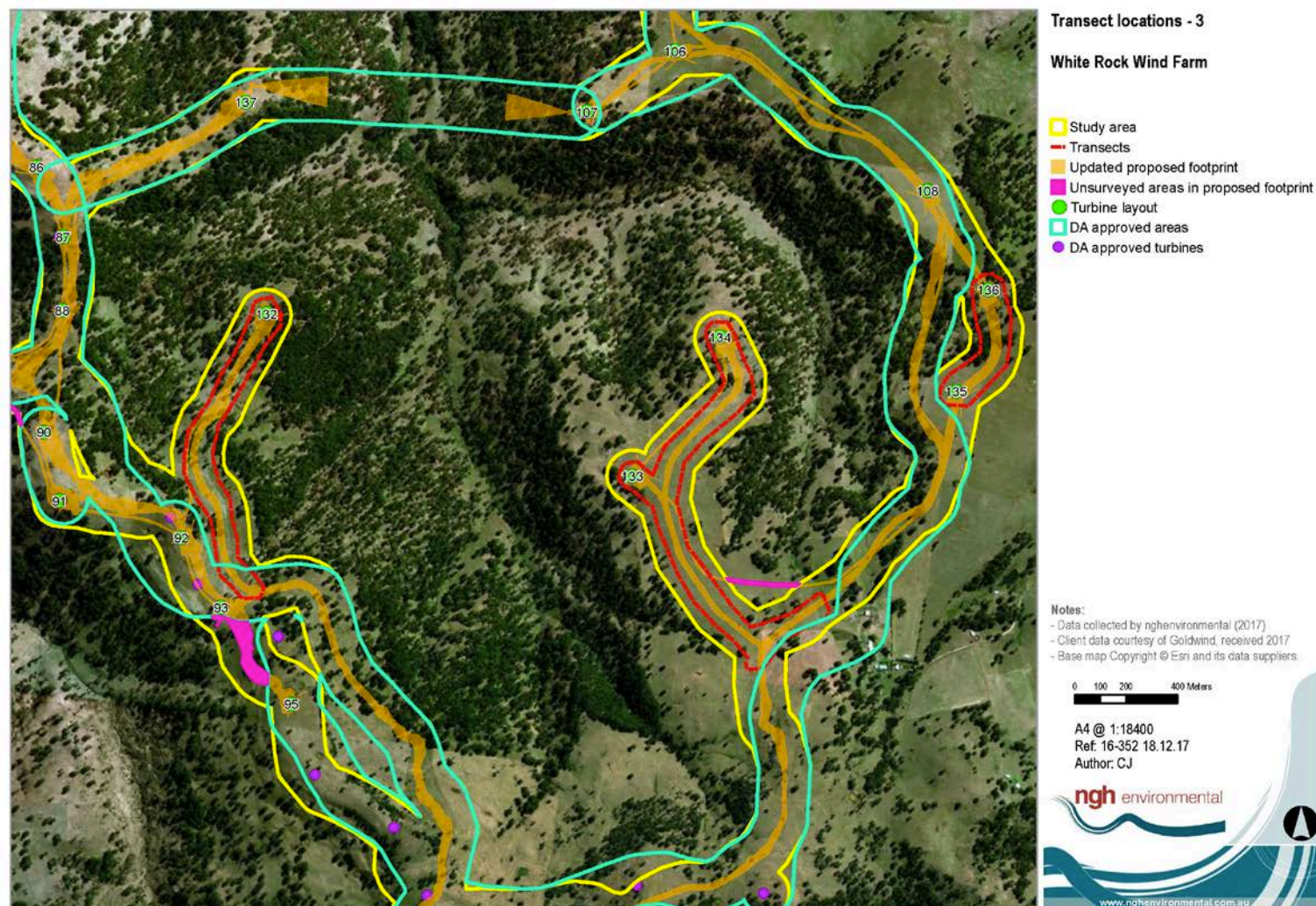
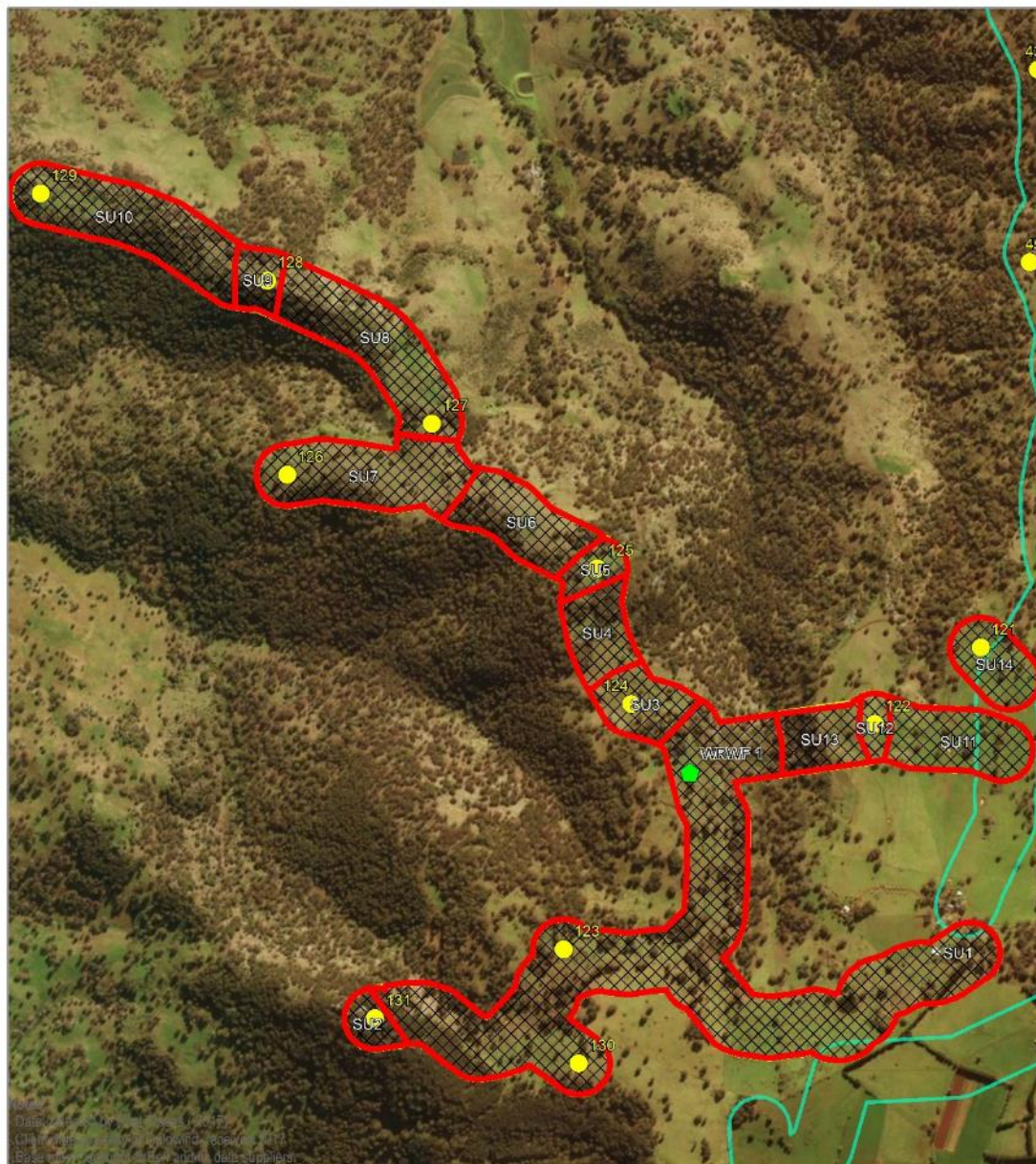


Figure 6. Location of Transects Survey Area 3.



Survey Units

White Rock Wind Farm Stage 2

- Stage 2 turbines
- DA approved areas
- Stage 2 area
- ✕ Survey units
- Heritage sites

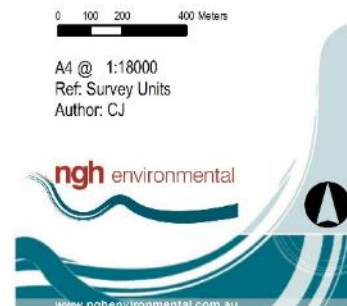
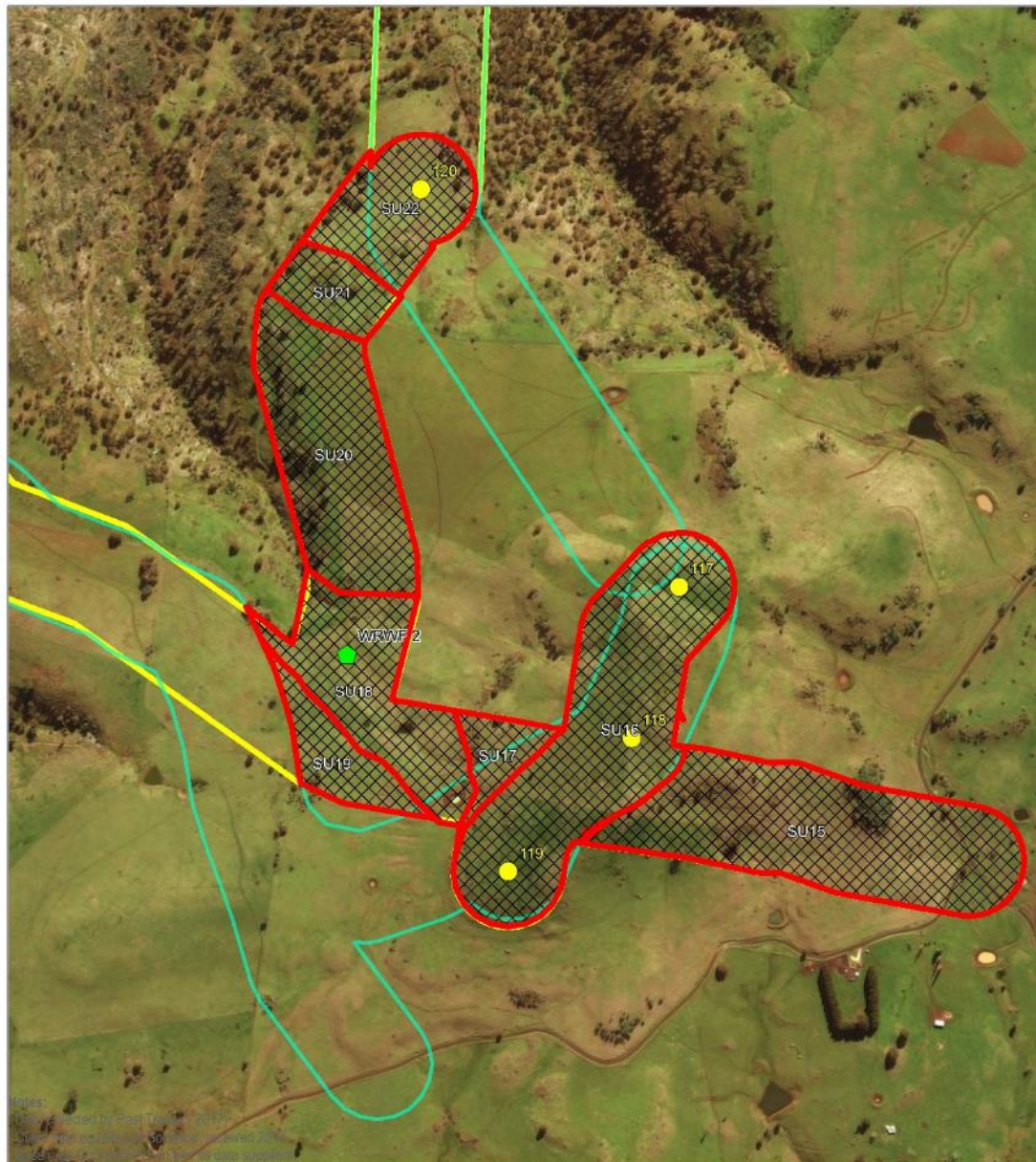


Figure 7. Survey Units 1-14



Survey Units

White Rock Wind Farm Stage 2

- Stage 2 turbines
- DA approved areas
- Stage 2 area
- ▣ Survey units
- Heritage sites

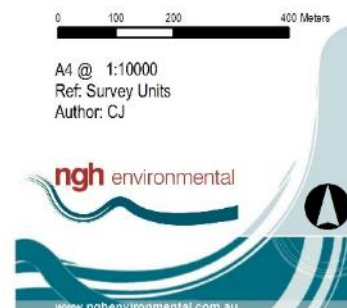


Figure 8. Survey Units 15-22

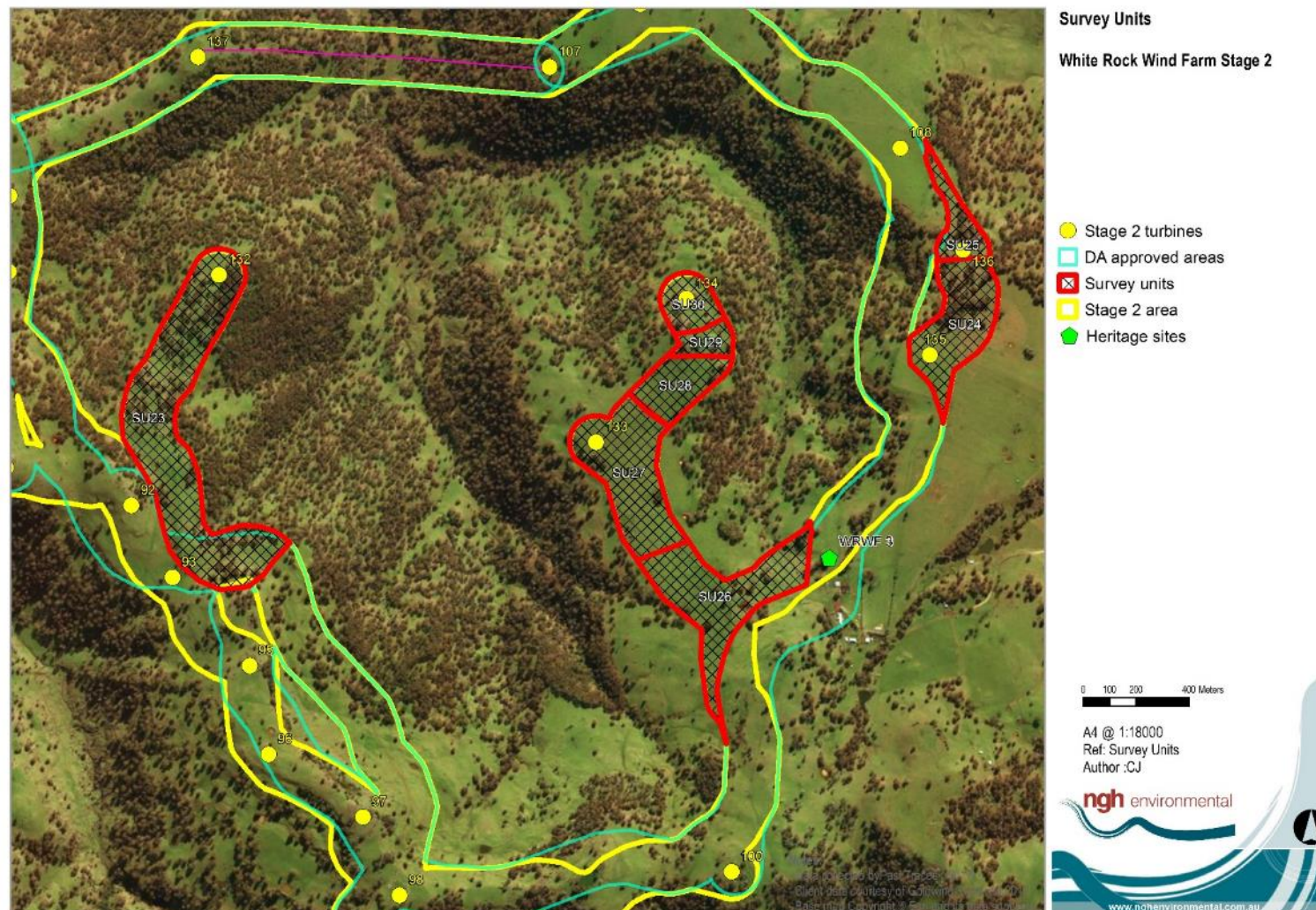


Figure 9. Location of survey units 23-30.

Summary

Due to the conditions at the time of the field survey it is considered that the surface survey of the project area had an overall low effective survey coverage. This is mainly due to the dense grass coverage over all areas. An analysis of the landforms and the degree of disturbance across the project area was observed during the field survey, leading to some ability to characterise the potential impacts of the proposed development.

Survey coverage was focused on the ridgeline, upper and middle slopes units, located along the access routes and turbine locations. A few areas of creek flats, lower slopes and level flats also occur within the study area. Moderate subsurface potential was found to be present in a number of the broad ridgeline survey units due to their placement on level, open areas amidst the steeper topography. These areas would be the focus of Aboriginal camping and/or resting activities during travelling through the country, which utilised the ridgelines as access routes.

Post field survey of the project area, some small changes have been made to the project layout including a proposed new wind turbine and some areas of overhead powerlines and an access tracks. These were outside the survey corridors for this Stage 2 assessment and outside the Stage 1 DA approved areas. This assessment therefore is only for the survey carried out as described and does not include the later changes. Further assessment of the project footprint will be undertaken prior to construction for these additional areas that are outside the currently assessed corridors.

4.3 FIELD SURVEY RESULTS

4.3.1 Identified heritage sites

The field survey resulted in the identification of three Aboriginal heritage sites consisting of a possible scarred tree and two artefact scatters. Details of each of these sites are provided in the following section under their individual site designation.

WRWF1 – Possible Aboriginal scarred tree - 360210, 6694370

Site WRWF1 consists of a possible Aboriginal scarred tree to the south of Turbine 124. This tree is on the very edge of the road corridor and can easily be avoided by placement of the road within the surveyed corridor. The tree is a Stringy bark - circumference 376cm. Scar is located on the north north east face 40cm from the ground level. Scar dimensions are: 150cm internal length, 29cm internal width. 5cm regrowth on all sides. Scar depth in tree is 7cm. The scar would appear to have been recently exposed by bark removal (source unknown). Currently a bark flap hangs over and protects scar. When this bark flap is lifted, parallel straight scar edges clearly visible. The details of the scar are shown in Plates 7 to 10.



Plate 7. View of tree with scar location



Plate 8. Straight scar edge visible under bark flap



Plate 9. Lifting up bark flap to reveal scar face

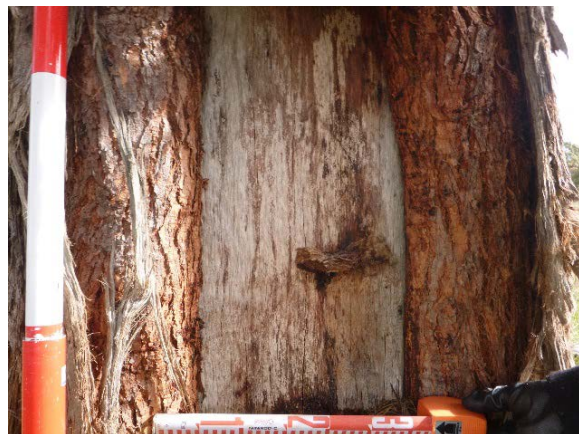


Plate 10. Detail of scar face

WRWF2 - Artefact Scatter - 362067, 6690680

WRWF2 consists of an artefact scatter located along the current farm access track. The artefact scatter is located on lower slopes/creek flats junction before crossing the creek line on way to Turbine 120. This site is located along the new proposed access road within an area of erosion and vehicle impacts. Subsurface deposits are considered unlikely due to thinness of soils in this location. Impacts to the recorded location should be avoided. If the site cannot be avoided by alignment placement then surface collection and recording of the artefact scatter will be required. Site location is shown in Plate 11.



Plate 11. Location of site WRWF2 looking south



Plate 12. Selection of artefacts

Twelve artefacts were located in a continuous scatter along the western side of the graded vehicle track for a length of 2.5m. Track contained high GSV of 90% only reduced by natural gravels present. The creek line in this area is shallow and muddy. This location at the creek line is where the vehicle track crosses and stock also appear to cross regularly at this point. Details of identified artefacts are provided below in Table 1. The order of artefacts is by north to south progression up the lower slopes away from the creek line.

Table 1. Artefact Details WRWF2

Material	Type	Dimensions (mm)	Comments
Red Silcrete	Distal Flake	13x12x3	Feather termination, retouch all margins, use wear left lateral margin
Tuff	Flake	26x16x5	Flat platform feather termination use wear right lateral margin
Fine grained volcanic	Flake	20x36x6	Retouch all margins (backing retouch) removed platform and termination
Silcrete	Flake	21x15x8	Retouch on margins
Quartz	Flake	12x21x5	Flat platform, feather termination, 3 negative scars
Quartz	Flake	15x6x5	Flat platform, feather termination
Quartz	Flake	16x9x4	Flat platform, feather termination
Quartz	Flake	29x18x11	Flat platform, feather termination
Quartz	Flake	15x12x4	Flat platform, feather termination
Quartz	Flake	10x7x3	Flat platform, feather termination
Quartz	Flake	10x8x2	Flat platform, feather termination
Quartz	Flake	19x3x4	Flat platform, feather termination, triangular blade.

WRWF3 - Artefact Scatter - 367823, 6695010

WRWF3 consists of an artefact scatter located in two exposures, on the edge of a farm access track and at the base of trees along the access alignment to turbine 135. The artefact scatter is on the edge of the road corridor and can be easily avoided by placement of the road. Soils appear shallow in this location. The vehicle trail is not graded but has formed due to impacts and erosion in this area. The site location is not considered to be an area of PAD due to this thin soil profile.

The artefact scatter extends 1.5m from the base of a large yellow box tree to the north east of a dam between the two proposed access roads. The site is located on a low crest and along the adjoining farm impact trail (discontinuously) for a length of approximately 8m. This area is close to the main farm house and associated sheds and has suffered previous disturbance. Surface visibility within the areas of exposure was 60% due to presence of leaves and cow manure. The same conditions of surface visibility applied along the stretch of access road. Grass coverage away from exposures was moderate with frequent patches of soil present. A total of 12 artefacts were recorded at this site location (Table 2). Site location is shown in plates 10 and 11 with examples of artefacts shown in plates 13-18.

Table 2. Details Artefacts WRWF3

Material	Type	Dimensions (mm)	Comments
Silcrete	Core	26x25x12	11 removals, multifacial and multidirectional
Silcrete	Proximal Flake	26x20x5	Flaked platform
Silcrete	Core	15x20x10	6 removals, multidirectional, exhausted
Silcrete	Proximal Flake	27x30x11	Flaked Platform, 2 negative scars
Quartz	Flake	10x6x6	Flat platform, feather termination
Silcrete	Proximal Flake	21x14x6	Flaked platform, snapped laterally
Silcrete	Flake	10x16x4	Flaked Platform, Feather termination, 4 negative scars, use wear on distal and right lateral margin
Silcrete	Proximal Flake	12x6x3	Microblade portion. Flat platform
Silcrete	Medial Flake	15x8x5	Microblade portion.
Quartz	Flake	10x9x4	Flat platform, feather termination
Silcrete	Flake	18x22x7	Flaked platform, feather termination use wear on left lateral margin
Silcrete	Medial Flake	9x5x3	Microblade portion



Plate 13. Location of WRWF3 - tree base



Plate 14. Location of site WRWF3 - vehicle trail.



Plate 15. Artefacts #1 – WRWF3



Plate 16. Artefacts #2 – WRWF3



Plate 17. Artefacts #3 – WRWF3



Plate 18. Artefacts #4 – WRWF3

4.3.2 Turbine locations

No surface artefacts or scarred trees were located on any of the proposed turbine locations. Surface visibility in all of these locations was low due to extensive grass coverage. As a result of this low visibility the subsurface potential of each of the turbine locations was assessed, based on landscape modelling. The following factors were noted for each turbine location and as a result a ranking of low, moderate or high was applied:

- northerly aspect,
- distance to water,
- level or gently sloping ground,
- presence of soil deposits with little exposed bedrock,
- potential rest point compared to surrounding landscape – i.e. only flat area within undulating country, not exposed to winds, and
- feedback from RAPs as to the location of pathways and resting places within the landscape.

The results of the assessment of each turbine location are provided in the following table. The turbine locations assessed to hold moderate to high subsurface potential occur in the western section of the study area, along the steep ridgeline which runs in a north/south direction. The slopes in this section funnel access routes along the ridgeline which narrows in places and then widens to open areas at the top of steep rises. It is considered that these locations, if used for resting or camping, would be returned to due to their

location within this landscape, resulting in a larger probability of artefact deposition. The only exception is turbine 123 which is located amidst undulating mid slopes but close to a water source.

Other turbine locations are considered to hold low to moderate potential based on their level aspects but are not more attractive than other locations in their immediate surrounds. As open areas within the steep topography all of the turbine locations are assessed as holding some level of archaeological potential, but in line with previous modelling for the landscape, locations ranked as low to moderate are likely to contain only small low density sites that do not warrant further subsurface investigations.

Table 3. Summary of archaeological subsurface potential at turbine locations.

Turbine No	Assessed subsurface potential	Action
120	Low to moderate	No action
121	Low to Moderate	No action
122	Low	No action
123	Moderate to high	Test
124	Moderate to high	Test
125	Low to moderate	No action
126	Low	No action
127	Low	No action
128	Low	No action
129	Moderate to High	Test
130	Low to moderate	No action
131	Nil	No action
132	Low to moderate	No action
133	Moderate	No action
134	Moderate	No action
135	Low	No action
136	Low-moderate	No action
137	Not assessed	

The turbine locations that have been found to contain moderate to high subsurface potential and to require further investigative actions are described in the following sections.

Turbine 123 – 369796, 6693798

The location of turbine 123 is placed on level ground, within open cleared area, amidst undulating lower slopes continuing to turbine 130 and 131. This area contains rock outcrops but large areas of clear ground

are also present amidst the 50 x 50m area that will be impacted by the turbine construction hardstand. The finding of higher potential for this area is based on its proximity to an area of wet drainage line which may have been a minor creek line in past prior to dam being built in area to the east. The soils appear to be deep based on the length and lushness of grass coverage. Area is assessed to hold moderate to high probability of subsurface deposits.



Plate 19. Turbine 123 location.

Turbine 124 – 360018, 6694601

The location of turbine 124 is on a gently sloping to level area located in flat plateau area on the saddle between two ridgelines. The turbine location is close to a small dam to the northwest which would have been a fresh spring or soak in past, thus providing a source of water in close proximity. Grass levels are very high and there were no areas of exposures. This level area follows a steep descent or a steep ascent depending on which direction you approach from. The subsurface potential in this location has been classified as being high based on its location in the landscape and the presence of a water source.



Plate 20. Turbine 124 location.

Turbine 129 – 358081, 6696270

Turbine 129 is at the end of the ridge line and after crossing through a narrow bottleneck opens to broad level area of crest. The crest has a northerly aspect and soil depth. Grass coverage was high across turbine location with no areas of exposure resulting in very low surface visibility. Beyond a fence line present on the western edge, high thistles obscured all visibility. This open area follows a steep ascent from the north and then descends to the south. Based on its location in the landscape the subsurface potential is considered to be moderate to high.



Plate 21. Turbine location 129.

4.4 DISCUSSION

The predictions based on limited modelling for the study area was that Aboriginal activity would have been focused on the broad ridgelines which provided transport routes through the steep topography of the study area. Site predictive models showed that small artefact scatters and isolated artefacts were the most likely manifestation of Aboriginal occupation of the area. Scarred trees may also be present on ridgeline locations. Despite survey intensity being focused on these landforms, the survey located no heritage sites on the ridgeline locations, which may be a result of the limitations provided by the lack of visibility.

The survey of turbine locations on the ridgeline crests or upper slopes results in a finding of subsurface potential at some of these locations. The level aspects following a climb or along stages of a transport route, would have made them attractive locations for resting or camping. Activities would then have taken place which would result in archaeological material being present. The probability of artefacts being present subsurface occurs at several turbine locations, but these would (if present) consist of low density artefacts. Landform locations where the frequency of use is predicted to be higher have a higher probability of site presence and site significance. These turbine locations have been ranked as holding moderate or high potential and require some form of further investigation prior to impacts from construction.

Disturbance was minimal across the study area, mainly consisting of previous vegetation removal and some areas of pasture improvement. No intensive cropping appears to have occurred throughout the study area. The proposed impact areas are located in landforms and terrain which are consistent along the alignments and generally undifferentiated in character. During the field survey few landforms (or areas within landforms), were identified that are likely to have been environmental focal points that Aboriginal people would have habitually occupied and hence which would result in high density concentrations of artefacts. Accordingly Aboriginal use of this landscape is predicted to have been sparse, of low intensity, and restricted to a limited range of activities; mainly movement through country and resource gathering activities. This range of activities would have resulted in artefact discard which is dispersed (patchy) and low density in distribution.

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 & 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 as a whole 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 RAPs for this proposal through the fieldwork and draft reporting process.

The area was identified as holding cultural value to the local community with pathways connecting the region to other groups and traversed for gatherings or seasonal movements. Seasonal changes resulted in the movement of groups as resources became available in different areas. The RAPs for the project

indicated that the area holds cultural significance to Aboriginal people due its location within areas that were used for hunting, gathering and camping by past Aboriginal groups and therefore provides evidence of the Aboriginal occupation of the region, a past way of life and a direct link to their ancestors.

Scientific (archaeological) value.

The research potential of the project area is considered to be low to moderate. The recorded sites are small in nature and common for the region and the scientific value for further research is limited at these sites. Currently the nature and location of Aboriginal campsites within this landscape and topography is unclear and requires further investigation. The field survey has been focused on recording material present on visible ground surfaces. Further archaeological investigation would entail subsurface excavation for the purposes of identifying the presence of artefact bearing soil deposits and their nature, extent, integrity and significance.

Investigations of the landforms at the three moderate to high ranked locations will provide valuable data in developing robust models of site location and activities. The turbine locations being located on broad ridgelines theorised to have been used for regular travel routes provide locations for further assessment through excavation and analysis of spatial patterning.

Other Values

There are no other known heritage values associated with the project area.

6 PROPOSED ACTIVITY

6.1 PROPOSED DEVELOPMENT ACTIVITY

The proposed modifications to the approved WRWF development, MP10_160, for the proposed WRWF Stage 2 works include the following variations:

- Up to 48 turbines (the existing approval allows for 49 approved turbines sites), of which 20 would be new locations not consented under the original approval;
- A larger turbine model (GW140) is being considered for all 48 sites in this assessment;
- Variations to the on-site 33kV/132kV grid connection facility located south of White Rock Mountain, involving a marginally extended 132kV switchyard and 33kV/132kV substation. This includes an additional 33kV/132kV transformer, switchgear and other components;
- Some additional access tracks for the new turbine sites and minor modifications to approved access track routes to improve constructability;
- Additional 33kV collections circuits, including six approved overhead 33kV lines (four assessed under the original proposal) and either an upgrade to or a potential parallel line installation for the existing 33kV overhead line between T62 and T35, for the new wind turbine sites.
- Temporary construction facilities including temporary compounds and site offices, crushing facilities, concrete batching plants, storage sheds or storage containers, laydown areas and amenities facilities. Where possible, Stage 1 ancillary facilities may be used for Stage 2 construction.

This assessment covered the areas to be impacted by the construction of additional turbine locations and associated access roads, with the exception of those areas identified as unsurveyed in Figure 2. The majority of impacts will be confined to the site footprint area of the wind turbines, located on level areas along the broad ridgelines or upper slopes with subsurface archaeological potential at some locales and no identified surface sites.

Each turbine location will require an area of 80m by 50m for the hardstand, foundation and turbine laydown/assembly area. An estimated additional 34kms of access road, constructed to a width of 6m with associated earthworks, wider at junctions and corners.

The construction of the infrastructure will result in substantial impact to soils and potential harm to any unidentified heritage items.

Changes made to the layout post field survey have not been assessed in this report.

6.2 ASSESSMENT OF HARM

There were no previously recorded Aboriginal archaeological sites present within the project area. Three heritage sites were located during the field survey of which one (WRWF2) will be impacted by the proposed access road to turbine 120. Three of the turbine locations are considered to hold subsurface deposits that require investigation prior to construction impacts. The impacts of the project on known heritage values are detailed in Table 4.

Table 4. Impact Assessment

Site name	Impact	Consequence
WRWF1	Nil – can be avoided by alignment	No loss of value
WRWF2	Direct and Total	Access road cannot avoid – total loss of value
WRWF3	Nil – can be avoided by alignment	No loss of value

Two of the Aboriginal sites recorded are low density distributions of stone artefacts. Any unrecorded or subsurface Aboriginal stone artefacts are predicted to be present as low density artefact distributions. The archaeological significance of the predicted distribution of unrecorded subsurface material is assessed to be low; accordingly a management strategy of unmitigated impact is considered to be appropriate for the majority of the turbine locations and areas of access road.

Any potential impacts from the Wind Farm would be unlikely to impact on Aboriginal heritage if the recommendations in section 7 are applied for the project.

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 site and the potential for mitigating impacts to the artefacts recorded for the White Rock Wind Farm proposal. The main consideration was the cumulative effect of the proposed impact to the site 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.

There have been archaeological investigations for other projects in the region, but currently there is no clear regional synthesis of the nature, number, extent and content for archaeological sites within the region. In the landscape associated with the current project, site types predicted to occur consist of small artefact scatters or scarred trees along ridgeline areas.

The implications for ESD principles is that the area has low potential for large or significant Aboriginal heritage sites which reduces the potential impact of the development, especially considering the small confined nature of the impacts to the footprint of the turbines and linear nature of the access roads. The wider landscape holds areas of as high or higher potential for heritage locations which will not be impacted by the development in any manner.

The principle of inter-generational equity requires the present generation to ensure that the health and diversity of the archaeological record is maintained or enhanced for the benefit of future generations. Based on the results of the field survey, it is considered that the diversity of the archaeological record is not compromised by development of this particular project area, given that only small recorded sites are present and that Aboriginal representatives on site thought it unlikely that the area would have been used other than as transient hunting grounds or transport routes.

7.2 CONSIDERATION OF HARM

Based on the assessment of the development area, it is not considered necessary to prevent development at any of the proposed locations. The areas have been shown to be in the majority low potential for scientific value. Aboriginal cultural value is determined by the local Aboriginal community, with verbal responses to date indicating that the areas are considered to be high in cultural values.

The question remains however about possible occurrence of unrecorded artefacts or scarred trees within the balance of the wider Wind Farm project area. It is possible that unrecorded artefacts or scarred trees may be present. It is not considered that the risk of such disturbances means the development should be abandoned, as any unrecorded sites identified during the works can be managed by following the management measures outlined in Section 9 and in particular, the Unexpected Finds Protocols contained in the approved CHMP for the project.

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 artefacts. Salvage collection is the preferred mechanism for artefacts whilst avoidance by redesign of alignment is recommended for scarred trees.

For areas of identified PAD at turbine locations a program of limited subsurface testing or controlled monitoring of topsoil stripping by the heritage team, incorporating salvage of exposed artefacts is recommended prior to or at the time of construction. These works can be a component of the post approval process. These recording methods will ensure that the presence, extent and significance of any subsurface deposits are recorded in an appropriate manner to allow analysis of artefact occurrence, distribution and spatial patterning.

8 LEGISLATIVE CONTEXT

Aboriginal heritage is primarily protected under the NSW *National Parks and Wildlife Act 1974* (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.

The *Environmental Planning and Assessment Act 1979* (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. The Department of Planning and Environment will consult with other departments, including OEH prior to development consent being approved.

The White Rock Wind Farm 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 archaeological survey;
- Consideration of results from other local archaeological studies;
- Results of consultation with the registered Aboriginal parties;
- Appraisal of the proposed development, and
- Legislative context for the development proposal.

As a result of the field survey and consultation with the local Aboriginal community, it is recommended for the project, that prior to any impacts occurring, that:

1. Areas of the project footprint not surveyed by the current assessment must be subject to archaeological assessment prior to construction. This must involve representatives of the registered Aboriginal parties.
2. Heritage sites have been identified within the proposed access corridors for the turbine locations. These sites are WRWF1, WRWF2 and WRWF3. Avoidance of impacts should be undertaken by design and placement of the access alignment.
3. WRWF1 consists of a possible scarred tree, impacts to this site should be avoided. Barrier fencing will be required during construction in the vicinity.
4. If impacts cannot be avoided to the identified heritage site WRWF2 and WRWF3 mitigation measures will be required. Mitigation measures would consist of collection of surface artefacts.
5. Areas of PAD have been identified at three turbine locations (123, 124, 129). These areas of PAD require investigation as part of the post approvals process. The investigation may consist of subsurface testing prior to construction or controlled monitoring of topsoil removals by the heritage team during the initial phase of construction.
6. In all areas other than those listed above the development proposal should be able to proceed with no additional archaeological investigations. In the event of any finds being discovered during the construction process the protocol in the CHMP for the project should be followed.
7. All Aboriginal objects are protected under the NSW *National Parks and Wildlife Act 1974*. Should any Aboriginal objects be encountered during works then works must cease and the find should not be moved until assessed by a qualified archaeologist. Adherence to the unexpected finds protocol in the CHMP is required.
8. In the unlikely event that human remains are discovered during the construction, all work must cease. OEH, the local police and the appropriate LALC should be notified. Further assessment would be undertaken to determine if the remains are Aboriginal or non-Aboriginal.
9. Further archaeological assessment would be required if the proposal activity extends beyond the area of the current investigation (including 'unsurveyed areas' shown on Figure 2). This would include consultation with the RAPs for the project and may include further field survey.
10. Continued consultation with the RAPs for the project should be undertaken. RAPs should be informed of any major changes in project design or scope, further investigations or finds.
11. White Rock Wind Farm Pty Ltd should consider conducting an on-site meeting with the registered Aboriginal parties to discuss heritage management issues and the ongoing development of the project.

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APPENDIX A ABORIGINAL COMMUNITY CONSULTATION

Response from Olivia Connors

Report of Glen Innes Wind Farm Glen Innes

Thursday 11th of May 2017 & Friday the 12th of May 2017

I had the privilege of working as an Aboriginal Stakeholder with Lyn O'Brien - Archaeologist and Steve Ahoy, Anaiwan Traditional Owners Aboriginal Corporation.

Whilst working we found Aboriginal Sacred Sites and Aboriginal Artefacts that are significant to the Aboriginal People, Culture & Heritage within the White Rock Wind Farm Project of the Anaiwan Tribal Boundaries.

See examples below.





Organisation	Contact	Action	Date Sent	Reply Date	Replied by	Response
OEH	Phil Purcell	Letter via email to OEH	21/02/2017	14/03/2017	letter via email	provided list of 5 potential stakeholders -see below
NTScorp		Letter via email to NTScorp	21/02/2017			
National Native Title Tribunal		online search	21/02/2017			
Office of Registrar <i>Aboriginal Land Rights Act</i>		Letter via email to Office of the Registrar	21/02/2017	9/03/2017	letter via email	Informed area does not appear to have registered Aboriginal Owners and suggest contact Glen Innes LALC.
Glen Innes LALC		Letter via email	21/02/2017			
Anaiwan LALC	Greg Livermore	letter via email	9/03/2017	13/03/2017	via email	suggested NGH contact 3 potential interested parties Glen Innes LALC, Anaiwan Traditional Owners Aboriginal Corporation and Ron Connors - Jukambal
Glen Innes Severn Council		letter via email	21/02/2017			
Northern Tablelands Local Land Services		Letter via email	21/02/2017	14/02/2017	letter via post	Northern Tablelands Local Land Services - Aboriginal Reference Advisory Group registered. Noted the Aboriginal reference advisory group comprises of reps from Glen Innes LALC, Anaiwan LALC and 8 other LALC within area. Contact detail
Inverell Shire Council		Letter via email	21/02/2017	8/03/2017	via email	noted to contact the Anaiwan LALC via Greg Livermore and the Ashford Local Aboriginal Land Council via Tracey Nagle
Local Newspaper		Koori Mail	8/02/2017			
		Glen Innes Examiner	7/02/2017			
		Inverell Times	7/02/2017			
OEH list of potential stakeholders						

Organisation	Contact	Action	Date Sent	Reply Date	Replied by	Response
Anaiwan Traditional Owners Aboriginal Corporation	David Ahoy	letter via post	14/03/2017	29/03/2017	email	29/3/17 email reply wishing to be registered
Glen Innes LALC		already written to see above				
Kwiembal Elders Indigenous group		letter via post	14/03/2017			
Liza Duncan		letter via post	14/03/2017			
Craig Archibald		letter via post	14/03/2017			
Anaiwan LALC list of potential stakeholders						
Glen Innes LALC		already written to see above		9/04/2017	phone call from KB to Glenn Inn LALC	KB called to confirm best email address as had 2 listed. Spoke with Trevor who confirmed email address is best but to please cc in . KB to send methodology and copy of original notice today.
Anaiwan Traditional Owners Aboriginal Corporation		already written to see above				
Ron Connors - Jukambal		letter via post	14/03/2017			
Registered parties						
Gomerioi Native Title Representative	Anthony Munro	Phone call and email to register	17/02/2017			Provided Mobile contact
Northern Tablelands Local Land Services - Aboriginal Reference Advisory Group	Harry White	letter via post	14/02/2017			Northern Tablelands Local Land Services - Aboriginal Reference Advisory Group registered. Noted the Aboriginal reference advisory group comprises of reps from Glen Innes LALC, Anaiwan LALC and 8 other LALC within area.
Nyakka Aboriginal Corporation	Cheryl Kitchener	contacted NGH via email	15/03/2017			Greg Livermore has passed NGH contact details and a copy of the methodology. They have read the methodology and I have no issues with the outline.

Organisation	Contact	Action	Date Sent	Reply Date	Replied by	Response
	Ricky Pascoe	contacted Goldwind Australia and details passed onto NGH	16/03/2017			KB called as number passed on from Goldwind Australia. Ricky wished to register for project and invited NGH to participate in on country meeting on 15th April at Deepwater, Methodology to be sent via email and post
Anaiwan LALC	Greg Livermore	register via email	13/03/2017			Registered interest and provided list of additional possible stakeholders to contact
Anaiwan Traditional Owners Aboriginal Corporation	David Ahoy	register via email	29/03/2017			
Olivia Connors		registered by phone	21/04/2017			Had rung Goldwind and NGH. MB spoke to her and registered her interest.
Methodology						
Gomerioi Native Title Rep	Anthony Munro	methodology sent via email	9/03/2017			comments due 6 of April 2017
Northern Tablelands Local Land Services - Aboriginal Reference Advisory Group	Harry White	methodology sent via email	9/03/2017	6/04/2017	via phone call	comments due 6 of April 2017 , KB returned voice message Harry indicated Northern tablelands won't be providing fees and insurance for fieldwork as Greg Livermore has provided rates and works with Harry. KB acknowledged and noted that NGH would still provide a copy of the draft for comment. Harry noted he was happy with the methodology and had no issues.
Anaiwan LALC	Greg Livermore	methodology sent via email	9/03/2017	4/04/2017	letters sent via email	comments due 6 of April 2017 , sent acknowledgement that are satisfied that the Aboriginal consultation and assessment methodology for project is sufficient. Reiterated that any new areas not previously assessed should be physically assessed using experiences and appropriately trained Aboriginal Stakeholders. Provided rates, insurances and experience information. Letter dated 3rd March 2017, email received 4/04/2017

Organisation	Contact	Action	Date Sent	Reply Date	Replied by	Response
Glen Innes LALC	Trevor Potter	methodology sent via email	9/03/2017			comments due 6 of April 2017
Nyakka Aboriginal Corporation	Cheryl Kitchener	methodology sent via email	15/03/2017	16/03/2017	via email	comments due 12 of April 2017 Greg Livermore passed NGH contact details and a copy of the methodology. They have read the methodology and I have no issues with the outline. Will provide relevant insurance and fee rates over the next few days. Has cultural connections to the land in question and believe that able to provide cultural information that can add to the project. Rhonda sent through insurance details and rates on 16/03/2017
	Ricky Pascoe	methodology sent via email and post	16/03/2017			comments due 13th of April 2017
	Ricky Pascoe	phoned NGH		17/03/2017		Ricky rang and spoke to MB. noted he was unhappy with consultation and that we were not talking to right people. Outlined he is connected to this country, mentioned some family names including Williams, Marlow and Connors, was pleased Connors members were registered parties. Identified that was not satisfied with methodology due to lack of detail about which Aboriginal groups were being consulted. Wanted to have a community meeting on the ground. Was concerned that inappropriate people were working on country. Mentioned Jukabul from Tingha mission.
Anaiwan Traditional Owners Aboriginal Corporation	David Ahoy	methodology sent via email	3/04/2017			comments due 1 May 2017
Olivia Connors	Olivia Connors	registered interest by phone	21/04/2017			Her mother Hilda was involved in original White Rock wind farm survey, has experience as cultural officer for TransGrid.
Olivia Connors		sent email registration	24/04/2017			advised was a descendant of Kwiambal, Anaiwan and Gamilaroi
Olivia Connors		NGH sent methodology	24/04/2017			comments due 22 May 2017

Organisation	Contact	Action	Date Sent	Reply Date	Replied by	Response
Glen Innes LALC	Trevor Potter	Email and left voice message	28/04/2017	28/04/2017	via email	KB sent follow up email and left voice mail as no response from last phone call/email on the 9/03/2017
Glen Innes LALC	Trevor Potter	LP email to KB	28/04/2017	28/04/2017	KB email to LP	Registered interested in project will supply comments etc as soon as possible. Kb replied requesting comments, rate and insurance details ASAP given time that has elapsed.
Glen Innes LALC	Trevor Potter	LP email to KB	28/04/2017			provided insurances and rates
ATOAC	David Ahoy	MB rang	2/05/2017			left message
Glen Innes LALC	Trevor Potter	MB rang	2/05/2017			left message
Glen Innes LALC	Trevor Potter	MB rang & email	3/05/2017			left message
Glen Innes LALC	Trevor Potter	NGH email to GI LALC	8/05/2017			informed LALC of registered parties
Anaiwan LALC	Greg Livermore	NGH email to GI LALC	8/05/2017			informed LALC of registered parties
OEH	Roger Mehr	NGH email to OEH	8/05/2017			informed OEH of registered parties
Fieldwork						
Anaiwan Traditional Owners Aboriginal Corporation						Assisted in fieldwork
Olivia Connors						Assisted in fieldwork
All registered parties		Email draft report	2/6/2017			Daft report emailed for comment. Due date 30/6/2017
Draft report						
Gomerioi Native Title Representative		NGH sent draft report	2/06/2017			Due date for comments 30 June 2017
Nothern Tablelands Local Land Services - Aboriginal Reference Advisory Group		NGH sent draft report	2/06/2017			Due date for comments 30 June 2018
Nyakka Aboriginal Corporation		NGH sent draft report	2/06/2017			Due date for comments 30 June 2019
Ricky Pascoe		NGH sent draft report	2/06/2017			Due date for comments 30 June 2020
Anaiwan LALC		NGH sent draft report	2/06/2017			Due date for comments 30 June 2021
Anaiwan Traditional Owners Aboriginal Corporation		NGH sent draft report	2/06/2017			Due date for comments 30 June 2022
Olivia Connors		NGH sent draft report	2/06/2017			Due date for comments 30 June 2023
Glen Innes LALC		NGH sent draft report	2/06/2017			Due date for comments 30 June 2024

Ricky Pascoe		Ricky phoned NGH	5/06/2017			discussed a number of things including Ricky's connection to country, history of Ngarabal, location of cultural sensitive areas- outside project area. Also discussed consultation process, need for inclusion more broadly for the future and to tighten the process such as conducting community meetings and having a communication strategy.
Gomeri Native Title Representative		NGH emailed	27/06/2017			sought comments on draft report
Nothern Tablelands Local Land Services - Aboriginal Reference Advisory Group		NGH emailed	27/06/2017			sought comments on draft report. They indicated they hadn't received the report. Another copy was emailed on 28/6/17.
Nothern Tablelands Local Land Services - Aboriginal Reference Advisory Group		Advised NGH that didn't receive report				
Nyakka Aboriginal Corporation		NGH emailed	27/06/2017			sought comments on draft report
Anaiwan LALC		NGH emailed and called	27/06/2017			sought comments on draft report
Anaiwan Traditional Owners Aboriginal Corporation		NGH emailed and called	27/06/2017			sought comments on draft report
Olivia Connors		NGH emailed and called	27/06/2017			sought comments on draft report
Glen Innes LALC		NGH emailed	27/06/2017			sought comments on draft report
Olivia Connors		emailed response to NGH	5/07/2017			provided note indicating attendance during the survey and that sites were found that are significant to Aboriginal people
Gomeri Native Title Representative		NGH emailed	23/07/2017			sought comments, noted that report to be finalised by Tuesday
Nothern Tablelands Local Land Services - Aboriginal Reference Advisory Group		NGH emailed	23/07/2017			sought comments, noted that report to be finalised by Tuesday
Nyakka Aboriginal Corporation		NGH emailed	23/07/2017			sought comments, noted that report to be finalised by Tuesday
Ricky Pascoe		NGH emailed	23/07/2017			Sought to confirm response wording
Anaiwan LALC		NGH emailed	23/07/2017			sought comments, noted that report to be finalised by Tuesday

Anaiwan Traditional Owners Aboriginal Corporation		NGH emailed	23/07/2017			sought comments, noted that report to be finalised by Tuesday
Gomeri Native Title Representative	Anthony Munro	phoned NGH	24/07/2017			left message
Gomeri Native Title Representative		NGH phoned	24/07/2017			left return message
Gomeri Native Title Representative	Anthony Munro	NGH phoned	4/08/2017			discussed project, AM provided context on association including connection to New England area, history of his family in eh area including great grandfather. Identified that he would like to have on site meeting to discuss further work and visit the sites identified to discuss issues. Is not against the project but wishes to be kept informed of progress and any additional fieldwork. Would like to take elders to onto site to show them the area.

APPENDIX B TRANSECT DETAILS.

SU	Transect	Start Easting	Start Northing	End Easting	End Northing
SU1	37	360502	6694513	360206	6694566
	21	359196	6693627	360132	6694500
	19	360509	6694424	359269	6693534
SU2	20	359193	6693640	359245	6693544
SU3	22	360135	6694496	359930	6693544
	36	360195	6694569	36003	6694728
SU4	23	359930	6694675	359854	6694959
	35	360195	6694569	359937	6694996
SU5	24	359854	6694959	359805	6695046
	34	359937	6694996	359881	6695095
SU6	25	359805	6695046	359443	6695258
	33	359881	6695095	359502	6695316
SU7	26	359443	6695258	359305	6695496
	32	359502	6695316	359406	6695469
SU8	27	359305	6695496	358871	6695919
	31	359406	6695469	358877	6696004
SU9	28	358871	6695919	358723	6695967
	30	358877	6696004	358718	6696067
SU10	29	358723	6695967	358718	6696067
SU11	16	360853	6694482	360856	6694564
SU12	17	360853	6694482	360766	6694467
	39	360856	6694564	360771	6694567
SU13	18	360766	6694467	360509	6694424
	38	360771	6694567	36003	6694728
SU14	15	361136	6694824	361281	6694639
SU15	1	363219	6690269	362528	6690380
	14	362077	6690462	363229	6690312
SU16	2	362528	6690380	362350	6690437
	13	363229	6690312	362452	6690501
SU17	12	362452	6690501	3622275	6690504
SU18	3	362314	6690419	362452	6690501
	5	362011	6690601	362058	6690789
	11	362147	6690789	3622275	6690504
SU19	4	362182	6690430	362011	6690601
SU20	6	362452	6690501	361969	6691309
	10	362058	6690789	362072	6691256
SU21	7	361969	6691309	362054	6691405
	9	362072	6691256	362133	6691363

SU22	8	362054	6691405	362133	6691363
SU23	40	365497	6694969	365529	6696116
SU24	49	368256	6696111	368390	6696139
SU25	50	368390	6696139	368256	6696111
SU26	39	367253	6695048	367156	6695006
SU27	42	367156	6695006	367092	6695589
	46	367166	6695515	367253	6695048
SU28	43	367092	6695589	367207	6695760
	47	367253	6695048	367392	6695764
SU29	44	367207	6695760	367300	6695857
	46	367392	6695764	367378	6695889
SU30	45	367300	6695857	367378	6695889

APPENDIX C SURVEY UNITS AND COVERAGE

Table below shows the calculations of effective survey coverage. The survey data accounts for two people with an estimated survey transect width of 5 m each. For part of the survey area three participants were present, with the figures having been adjusted for this increased coverage.

Table 5 Survey coverage

Survey Unit	Landform	Exposure type	Exposure %	Survey Unit Area m ²	Visually inspected area m ²	Visibility %	Effective coverage (inspected area x visibility) m ²
1	Simple slopes - covers middle and upper slopes	Access road, dam edges, gateways, and erosion	5%	704856.1	67882.23	3%	2036.467
2	Crest	Rock crest	80%	25061.16	2452.33	40%	980.9319
3	Flat/ level area on upper slope area	Access road, fence line stock impacts	2%	56639.01	5539.213	1%	55.39213
4	Simple slopes - covers middle and upper slopes	Access road	5%	58954.37	5806.423	2%	116.1285
5	Crest	Access road	5%	26632.6	2618.928	2%	52.37856
6	Simple slopes - upper, middle and lower slopes	Access road	5%	88879.7	8806.454	5%	440.3227
7	Flat/level area on saddle, knoll feature	Access road, contour bank, fence line, base of trees, stock trails	10%	141110.8	14036.88	5%	701.8442
8	Simple slopes – covers middle and upper slopes	Access road	2%	149964.9	14999.72	5%	749.9858
9	Crest	Access road	5%	30323.55	3123.769	2%	62.47538
10	Simple slopes – upper slopes with area of flat spur line	Access road	5%	155875.1	15762.39	2%	315.2479
11	Simple slopes – very gradual almost level lower slopes, middle slopes and upper slopes	Stock impact trail, erosion under trees basses, contour bank and damage	10%	92175.08	8277.9	15%	1241.685
12	Crest	Stock trails	2%	19245.17	3677.4	2%	73.548
13	Simple slopes - steep upper, middle and lower slopes	access roads,	5%	53328.36	1561.792	2%	31.23584
14	Flat/plateau area on upper slopes	Stock impacts,	2%	58922.92	5715.43	10%	571.543
15	Simple slopes – covers lower, middle and upper slopes	Access road, dam bank edges	5%	137674.2	20018.88	2%	400.3775

16	Crest	Access road, rabbit warren, stock impacts	10%	153200.5	6839.474	15%	1025.921
17	Simple slopes – low, middle and upper very steep	Access road, stock impact trails	5%	17891.66	2723.275	5%	136.1638
18	Creek flats	Erosion areas, creek bank, vehicle access road	50%	77035.15	11010.56	5%	550.5282
19	Flat/level area on lower slopes	Vehicle access road	10%	28156.63	4184.41	2%	83.6882
20	Simple slopes – very gradual lower, middle, upper slopes	Stock impact trails,	5%	101356.8	15231.78	3%	456.9534
21	Crest – steep knoll	Access trail	2%	24674.82	3664.229	2%	73.28457
22	Flat/level area on spur line on upper slopes	Stock impact at trees, access road	2%	52714.21	8206.876	1%	82.06876
23	Simple slopes – covers undulating middle and lower slopes – flat spur on the middle slopes	Vehicle access road, stock impact at gateway, stock trails	10%	296275.6	41010.93	10%	4101.093
24	Flat/plateau are	Vehicle trail, rabbit warrens, erosion scours and clear areas under trees	20%	106810.4	16133.03	15%	2419.955
25	Simple slope – undulating upper slopes	Stock impact trails, old vehicle trails	5%	39428.66	4036.896	5%	201.8448
26	Simple slopes – covers upper and middle slopes, small knoll feature	Erosion areas at gateway, stock impacts at fence line and at tree bases	1%	148707.3	17708.47	2%	354.1694
27	Flat/plateau area along middle slopes	Stock trails at fence lines	1%	140745.9	21081.12	1%	210.8112
28	Simple slopes – covers upper slopes	Stock impact trails	1%	58292.31	8813.104	2%	176.2621
29	Crest	Access road	5%	23737.62	3506.532	1%	35.06532
30	Flat – level area on upper slopes	Stock impact at base of trees, stock impact trails	2%	40057.39	6446.804	5%	322.3402