

Appendix F

Appendix F: Cultural Heritage Site Assessment Report (ACHM)



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Cultural Heritage Assessment Report

Pacific Hydro Keyneton Wind Farm Cultural Heritage Site Assessment

Anthropological and Archaeological

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Date: May 2012

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Spatial Data

Spatial data captured by Australian Cultural Heritage Management Pty Ltd in this report for any newly recorded sites has been obtained by using hand held or differential GPS units using the GDA94 co-ordinate system.

Abbreviations

Term	Meaning
AARD	Aboriginal Affairs and Reconciliation Division (SA)
ACHM	Australian Cultural Heritage Management Pty Ltd
AHA	<i>Aboriginal Heritage Act 1988</i> (SA)
DPC	Department of the Premier and Cabinet (SA)
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (amended 2003) (Cwth)
MACAI	Mannum Aboriginal Community Association Inc.
NTA	<i>Native Title Act 1993</i> (Cwth)

Executive Summary

Australian Cultural Heritage Management Pty Ltd (ACHM) was engaged by Pacific Hydro Pty Ltd to undertake an initial cultural heritage site assessment of the proposed Keyneton Wind Farm footprint, taking into account Aboriginal (anthropological and archaeological) and European cultural heritage. The brief for this cultural heritage assessment included undertaking additional desktop research to build upon a desktop report compiled by ACHM in June 2009, as well as conducting the heritage inspection of the initial proposed layout of 57 turbines and associated infrastructure. The aim of the site inspection was to identify and record any Aboriginal heritage sites, through consultation with the Peramangk Traditional Owners (represented by the Mannum Aboriginal Community Association Inc. [MACAI]), as well as to provide an archaeological profile of the area whereby areas were denoted as presenting a high, medium or low risk of encountering surface or subsurface archaeological material. The archaeologist was also requested to document any points of interest with regard to European heritage.

This initial site inspection was conducted with a view to informing Pacific Hydro of any major heritage concerns in the initial planning stages, and resulted in the delineation of areas of sensitivity as described above, and specific recommendations with regard to the cultural heritage management of a culturally significant area near one of the proposed turbine locations. A thorough archaeological survey of the precise footprint is expected to take place at a later date. This general methodology was agreed upon at a meeting attended by representatives of MACAI, ACHM and Pacific Hydro on 11 November 2010.

Pacific Hydro revised their proposed turbine layout in November 2011, following receipt of the results and recommendations arising from the initial site assessment, and taking into consideration other matters not related to cultural heritage. The revisions reduced the number of turbines from 57 to 42. The new layout has predominately resulted in the avoidance of areas of high or medium sensitivity, with only one of the proposed turbine locations (turbine 5) still falling within an area of high sensitivity. The turbine that was proposed to be located near the culturally significant area mentioned above was removed from the layout altogether. In February 2012, Pacific Hydro also forwarded revised data for the additional infrastructure (site offices and temporary masts), in March 2012, slight amendments were made to the data for access tracks near the northern-most area of high sensitivity, and in May 2012, one of two sub-stations was removed from the proposed footprint, and minor alterations associated with the overhead cable route and to an access track were made; following these revisions, a site office, a section of overhead line (between the northern and southern clusters), and limited sections of access tracks remain within areas designated as being of high sensitivity.

The following provides a brief summary of the results of this cultural heritage assessment, and recommendations to have arisen from the study.

Heritage Searches

Conducted as part of the desktop research for the study, a search of the DPC-AARD Central Archive found that one registered site lies along the boundary of the Keyneton Wind Farm, at the southeast section of the project site. The site is a scarred or culturally modified tree (AARD site 3910, Cambrai Scarred Tree). This site should not be affected by the proposed works. In addition, 15 other registered sites, including campsites, scarred trees, a painting site, a burial and a quarry, exist within 5km of the project site.

A search of the South Australian Museum Anthropology Database returned numerous results for artefacts and human remains found within the region, and although the records are not detailed enough to indicate the exact find locations, these results provide some indication of the extent of occupation of Aboriginal people within the region, and the likelihood of uncovering other such objects in the project site.

Previous Research

A review of relevant literature shows that the project site lies definitively within the traditional lands of the Peramangk, and records by early settlers document a population of several thousand living in large camps throughout the Mount Lofty Ranges. The literature, as well as the discovery of numerous rock art and campsites along the Marne River, shows that this area was part of an important trade route and cultural centre, with groups conducting meetings and ceremonies on the upper banks of Saunders Creek and the Marne River, near Springton and Eden Valley.

The Keyneton Wind Farm area is also significant in terms of the history of European settlement. Keyneton was part of the early settlement of South Australia and the home of Joseph Keynes, who established a successful Merino sheep farming operation in the 1850s. A search of the Australian Heritage Database did not return any

results within the project site. However, two European heritage sites registered on the South Australian Heritage Register lie near the project site, although not within it. These are a historic Engine House and a historic bridge. Historic stone walls also criss-cross the project site, and were documented during the site inspection.

Anthropological Site Inspection Results

The anthropological site inspection found that the majority of the proposed infrastructure associated with the Keyneton Wind Farm was deemed by Traditional Owners present on the site inspection to be clear of anthropologically significant areas.

One area within the northern cluster was deemed to be of anthropological significance: a creek and spring situated at 33618.87E/ 6178347.51N. Although not enough detail was provided by the MACAI representatives during the site visit to be able to register the creek or spring as an Aboriginal site under the terms of the South Australian *Aboriginal Heritage Act 1988* (AHA), they did identify these sites as being culturally significant and stated that they would like them to be protected. As a result of this, it was recommended that the tower proposed for this area (within the 57 turbine layout) be constructed at a minimum of 50m from the creek (at around 333535.77E/ 6178286.22N), and that the associated access track and cable travel around the head of the gully, to the west, rather than through the gully. As a result of these recommendations, within the revised 42 turbine layout, this turbine location has been deleted.

The North Rhine Creek, which is crossed by an existing access track at the southwestern entry point to the project site, is also considered to be of likely anthropological significance. This was not visited during the anthropological site inspection; however, it is understood that project design will utilise the existing access track and creek crossing in order that any further disturbance is minimised.

Archaeological Site Inspection Results

The archaeological inspection identified one archaeological site (a scarred tree) and one potential archaeological site (a rock art site).

In addition, the archaeological site inspection resulted in the identification of areas of high, medium and low archaeological sensitivity, with the North Rhine Creek in the southwestern section of the survey area, the pockets of remnant vegetation located in the centre of the survey area and the spring site in the north of the survey area accorded high archaeological sensitivity status. Three minor creek ways in the south of the survey area were considered to be of medium archaeological sensitivity, with the remainder of the survey area considered to be of low archaeological sensitivity.

Revised Turbine Layout

After considering various factors, including the results of the cultural heritage site assessment and the draft recommendations put forward as a result of this, Pacific Hydro revised their proposed turbine layout, reducing the number of turbines from 57 to 42. As a response to the recommendation to avoid areas of high or medium cultural sensitivity, Pacific Hydro eliminated or moved the majority of turbines originally proposed to fall within these areas, including the turbine that had caused concern to Peramangk Traditional Owners due to its proximity to a culturally sensitive spring and creek. Following the revisions, one turbine (number 5) and its associated access track remain within an area designated as being of high sensitivity, and one (number 23) intersects slightly with the edge of an area designated as medium sensitivity. Pacific Hydro has indicated that this slight intersection into an area of medium sensitivity is likely to be above ground (i.e. a portion of the turbine's blades may, from time to time, be above the sensitive area depending on wind direction), thus no actual ground disturbing work is anticipated (Pacific Hydro report comments 19/01/2012). In addition, one site office, a section of overhead line (between the northern and southern clusters) and limited sections of access tracks remain within areas designated as being of high sensitivity.

The majority of turbine locations included in the revised layout differ from the original layout, meaning that these have not been the subject of specific anthropological consultation, or of an archaeological pedestrian survey. MACAI was consulted on this matter in February 2012 and confirmed that a further, specific anthropological survey and/or consultation will not be required over the revised layout, although a pedestrian archaeological survey will prior to Pacific Hydro undertaking any ground disturbing activities. Cynthia Hutchinson (MACAI) told Nick Butler (ACHM Anthropologist) that if any anthropological sites or places of interest were identified during a future pedestrian archaeological survey, then the Peramangk representatives on the archaeological survey will be eligible to provide details (*pers. comm.* 7th February 2012).

Recommendations

Taking into account the results of the initial anthropological and archaeological site assessment and consultation with representatives of MACAI, and considering the revised 42 turbine layout, the following recommendations are made with regard to the protection and management of cultural heritage within Pacific Hydro's Keyneton Wind Farm project site:

- The revised 42 turbine layout is preferable to the initially proposed 57 turbine layout in terms of its potential to avoid areas of cultural significance or areas containing surface or subsurface archaeological material.
- Areas designated as being of high and medium sensitivity have more potential to contain surface or subsurface archaeological material than other areas. It is therefore recommended that the extent of proposed infrastructure within these areas be minimised. It is recognised that the revised 42 turbine layout has already delivered on this recommendation. Where infrastructure is still proposed within high and medium sensitivity areas it is recommended at this stage that on-site monitoring occurs during initial ground disturbing works. Please note, however, that a pedestrian archaeological survey could further refine this recommendation and the areas requiring monitoring.
- A thorough archaeological pedestrian cultural heritage survey should be undertaken of the infrastructure footprint, once this is finalised. This is particularly recommended in the case that any infrastructure will disturb areas designated as being of high or medium cultural sensitivity.
- No Aboriginal sites are known to intersect with the proposed infrastructure locations included in the revised turbine layout; however, one archaeological site and one potential rock art site exist within the Wind Farm project site, and one AARD registered site falls on the boundary of the project site. These sites, and any sites recorded during future surveys should be treated in accordance with the requirements of the *South Australian Aboriginal Heritage Act 1988*. Section 23 of the *Aboriginal Heritage Act 1988* states that it is an offence to 'damage, disturb or interfere' with any Aboriginal site or object, without Ministerial approval. Should Pacific Hydro wish to disturb any of these sites, an application would need to be made to the Minister for Aboriginal Affairs and Reconciliation. A site card for the newly identified scarred tree has been submitted to AARD for registration; however, site cards cannot be submitted for potential sites. Nevertheless Pacific Hydro has confirmed that the proposed development will not impact on the potential rock art site (it lies approximately 800m from the project footprint).
- Following the archaeological pedestrian cultural heritage survey of the final footprint, a Cultural Heritage Management Plan should be developed to provide for the long term management of significant cultural heritage sites within the project site. As part of the Cultural Heritage Management Plan, a site discovery procedure, similar to the example supplied at Appendix 1 of this report, should be developed.
- Whilst the dry stone walls present on site are not currently registered or protected, it is recommended that disturbance of historic dry stone walls within the project site be avoided wherever possible. It is understood that Pacific Hydro's turbine and access track layout has sought to minimise these impacts, although some disturbance at site access points and to allow access tracks is expected. It is also recommended that Pacific Hydro exercises caution when working within the immediate vicinity of these walls so as to minimise the potential for any disturbances, both direct and inadvertent. Where impact is unavoidable to the dry stone walls, the level of disturbance should be mitigated with careful de-construction methods. It is also understood that Pacific Hydro will re-establish the walls at the conclusion of construction and will seek the assistance of the Dry Stone Walling Association of Australia or other experienced "wallers" to repair or re-construct any areas of dry stone wall that have been disturbed. (A detailed description of the dry stone walls is contained in Appendix 2 of this report).

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1 Introduction

Australian Cultural Heritage Management Pty Ltd (ACHM) was engaged by Pacific Hydro Pty Ltd (hereafter Pacific Hydro) to undertake an initial cultural heritage site assessment of the proposed Keyneton Wind Farm footprint, taking into account Aboriginal (anthropological and archaeological) and European cultural heritage. The brief for this cultural heritage assessment included undertaking additional desktop research to build upon a desktop report compiled by ACHM in June 2009 (ACHM 2009a), as well as conducting the heritage inspection of the initial proposed layout of 57 turbines and associated infrastructure. The aim of the site inspection was to identify and record any Aboriginal heritage sites, through consultation with the Peramangk Traditional Owners (represented by the Mannum Aboriginal Community Association Inc. [MACAI]), as well as to provide an archaeological profile of the area whereby areas were denoted as presenting a high, medium or low risk of encountering surface or subsurface archaeological material. The archaeologist was also requested to document any points of interest with regard to European heritage.

This initial site assessment was conducted with a view to informing Pacific Hydro of any significant heritage concerns in the initial planning stages, and resulted in the delineation of areas of sensitivity as described above, and specific recommendations with regard to the cultural heritage management of a culturally significant area near one of the proposed turbine locations (within the initial 57 turbine layout). A thorough archaeological survey of the precise final footprint is recommended to take place prior to the commencement of ground-disturbing work. This methodology was agreed upon at a meeting attended by representatives of MACAI, ACHM and Pacific Hydro on 11 November 2010.

Following receipt of the results and recommendations to have arisen from the initial site inspection, and taking into consideration a range of environmental matters and community consultation feedback, Pacific Hydro revised their proposed turbine layout to include only 42 turbines. The new layout has been designed to predominantly avoid areas of high or medium sensitivity, with only one of the turbines falling within an area of high sensitivity, where there were initially eight. The turbine that was proposed to be located near the culturally significant area was removed from the layout altogether. In February 2012, Pacific Hydro also forwarded revised data for the additional infrastructure (site offices and temporary masts), in March 2012, slight amendments were made to the data for access tracks near the northern-most area of high sensitivity, and in May 2012, one of two sub-stations was removed from the proposed footprint, and minor alterations associated with the overhead cable route and to an access track were made; following these revisions, one site office, a section of overhead line (between the northern and southern clusters), and limited sections of access tracks also remain within areas designated as being of high sensitivity.

This report includes information relating to the project and the survey area, basic environmental data, relevant Aboriginal and European heritage legislation, the methodology employed during the site inspection, background information relating to the Peramangk, the results of heritage register searches, and an overview of previous research relating to the project area. It details the results of the site inspection, and the recommendations that arose from that site inspection for the protection of cultural heritage within the survey area. It also includes details of the revised turbine layout provided to ACHM on 30 November 2011, and further cultural heritage recommendations made in relation to this revised layout.

Additional information relating to European heritage documented during the site inspection is contained in Appendix 2.

1.1 Survey Participation

The anthropological site inspection and initial archaeological site inspection took place on 18 April 2011 and included the following participants:

- Cynthia Hutchinson (MACAI)
- Anita Hunter (MACAI)
- Samuel Stewart (MACAI)
- Darryl Rigney (MACAI)
- Nadia Butler (ACHM anthropologist)
- Danielle Furniss (ACHM archaeologist)

Two further days of archaeological inspection were undertaken on Tuesday 19 and Wednesday 20 April 2011 and included the following participants:

- Cynthia Hutchinson (MACAI)
- Anita Hunter (MACAI)
- Samuel Stewart (MACAI)
- Darryl Rigney (MACAI)
- Isobelle Campbell (MACAI)
- Ivy Campbell (MACAI)
- Rynald Campbell (MACAI)
- Phillip Campbell (MACAI)
- Danielle Furniss (ACHM archaeologist)

2 Project Description and Project Areas

The following section describes the proposed project, providing information about both the initially proposed infrastructure 57 turbine layout that was the subject of the initial site assessment, and the revised 42 turbine layout. Information relating to the project area is also provided.

2.1 Project Description and Proposed Impacts

Pacific Hydro proposes to construct a wind farm within the Mt Lofty Ranges, to the east of Keyneton (see Map 2-1). Spatial data provided to ACHM on 31 March 2011 was used as the basis for the initial site assessment. The accompanying documentation outlined that the wind farm would consist of the following infrastructure:

- A total of 57 wind turbines (at that stage), grouped in two clusters (30 turbines in the northern cluster and 27 turbines in the southern cluster). It was stated that the turbine towers would have a maximum blade tip height of 145.5m, and foundations would measure 6m diameter at the surface and 14m diameter below the surface. Hardstands at each turbine base would measure approximately 1700m². Adjacent each turbine tower, an external electrical transformer / kiosk of approximately 4m length, 2m width and 2m height would be installed.
- Approximately 44.9km of access tracks of maximum 10m width, running from entry points and between the turbines.
- Approximately 50km of underground cabling (with trenching 1m deep and 1m wide), predominantly adjacent to access tracks.
- One main sub-station within the southern cluster, south of Pine Hut Road, with 150m by 150m total compound area and maximum height of 12m.
- One smaller sub-station within the northern cluster, north of the Angaston-Sedan Road with 40m by 40m total compound area and maximum height of 12m.
- Up to three meteorological masts installed to hub height (95m).
- Three temporary construction compounds within an area of approximately 50m by 50m (including site office and staff facilities, car park, concrete batching plant and turbine lay-down/storage areas).
- Approximately 5.5km of overhead transmission line to connect the two sub-stations.

Some road improvements are proposed to existing tracks where necessary, and a minimum extent of vegetation removal will occur as necessary to construct new access points to site from Pine Hut Road.

On Tuesday 19 April 2011, additional data was forwarded to ACHM which included:

- An additional site entry point to the southern cluster off Med Wrights Road and some consequential minor changes made to access tracks.
- An additional temporary construction compound adjacent to the new entry point.
- The location of three additional permanent meteorological masts.

The site inspection was already underway when this data was received, and these locations were therefore not assessed directly during the site inspections; however, they were discussed in a general sense, and some of the areas visited during the archaeological site inspection. The initially proposed infrastructure footprint that was subject to the anthropological and archaeological site inspection is presented in Map 2-2 below.

ACHM forwarded a draft report to Pacific Hydro in May 2011, in which the results and cultural heritage recommendations to have arisen from the site inspections were outlined. Taking into account these recommendations and other matters not related to cultural heritage, Pacific Hydro revised the proposed turbine and additional infrastructure layout, forwarding spatial data for the new turbine layout to ACHM on 30 November 2011, and for the additional infrastructure on 1 February, 7 March and 8 May 2012. The revised layout reduces the number of turbines from 57 to 42. This revised layout has not been subject to a cultural heritage survey, although the proposed footprint is within the general area surveyed and it can be demonstrated that the final layout will reduce the potential to impact on areas of high or medium cultural heritage sensitivity. The revised turbine layout is presented in Map 2-3 below.

2.2 Project Site

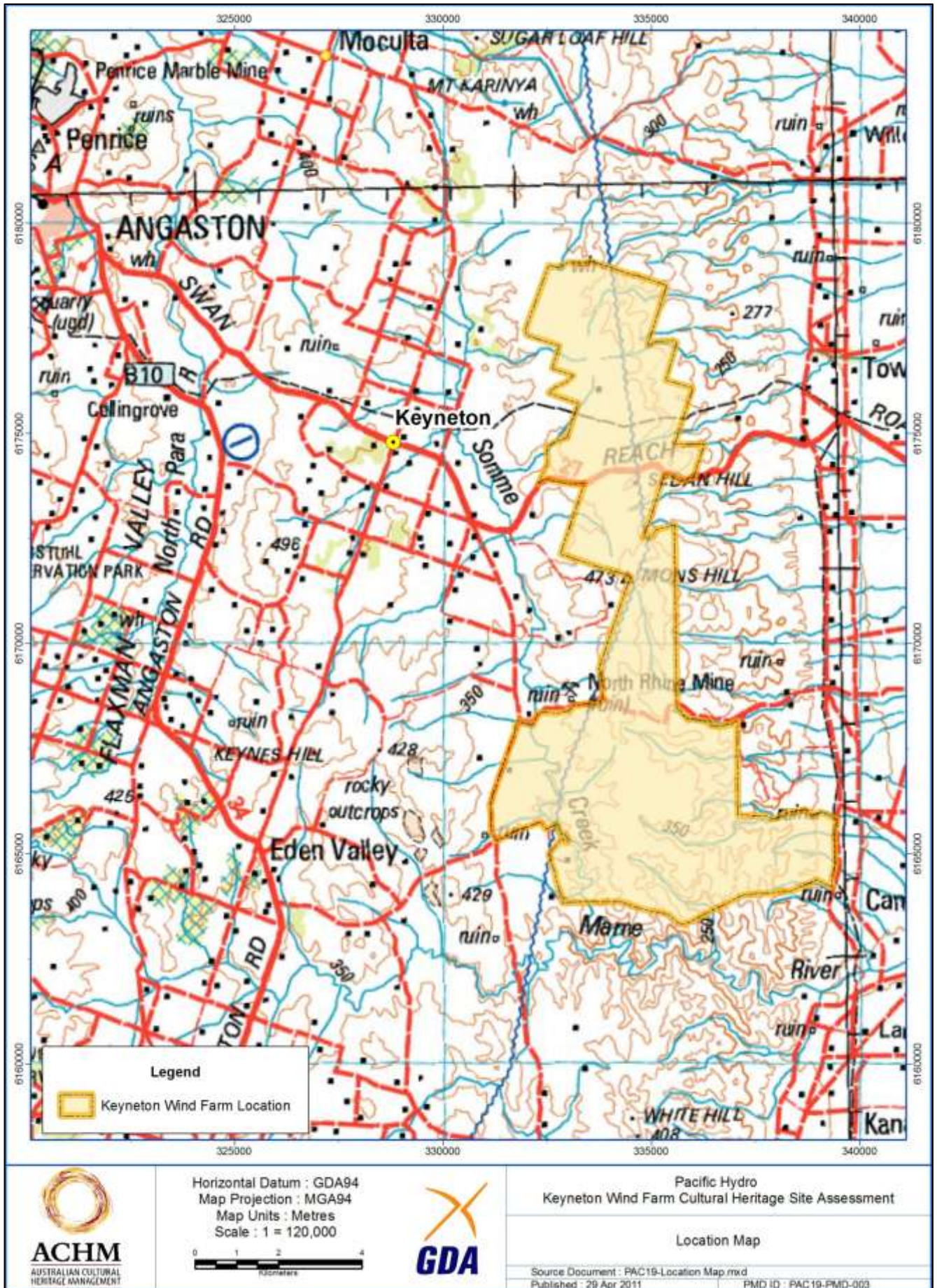
The project site is situated approximately 3km to the east of Keyneton, generally following the ridges of the Mt Lofty Ranges (Map 2-1). The project site is of irregular shape with north-south dimensions, extending approximately 15km from its northern to its southern boundary. The area has approximately 1km width at its narrowest point, and 7km width at its widest point, at the southern end. However, the proposed turbine locations lie along the ridge top within a narrower corridor of up to approximately 2.5km in width, with access tracks running between them. Existing access tracks will be utilised wherever possible. Environmental background information relating to the project area is included in section 3 below.

2.3 Previous Impacts and Current Land Use

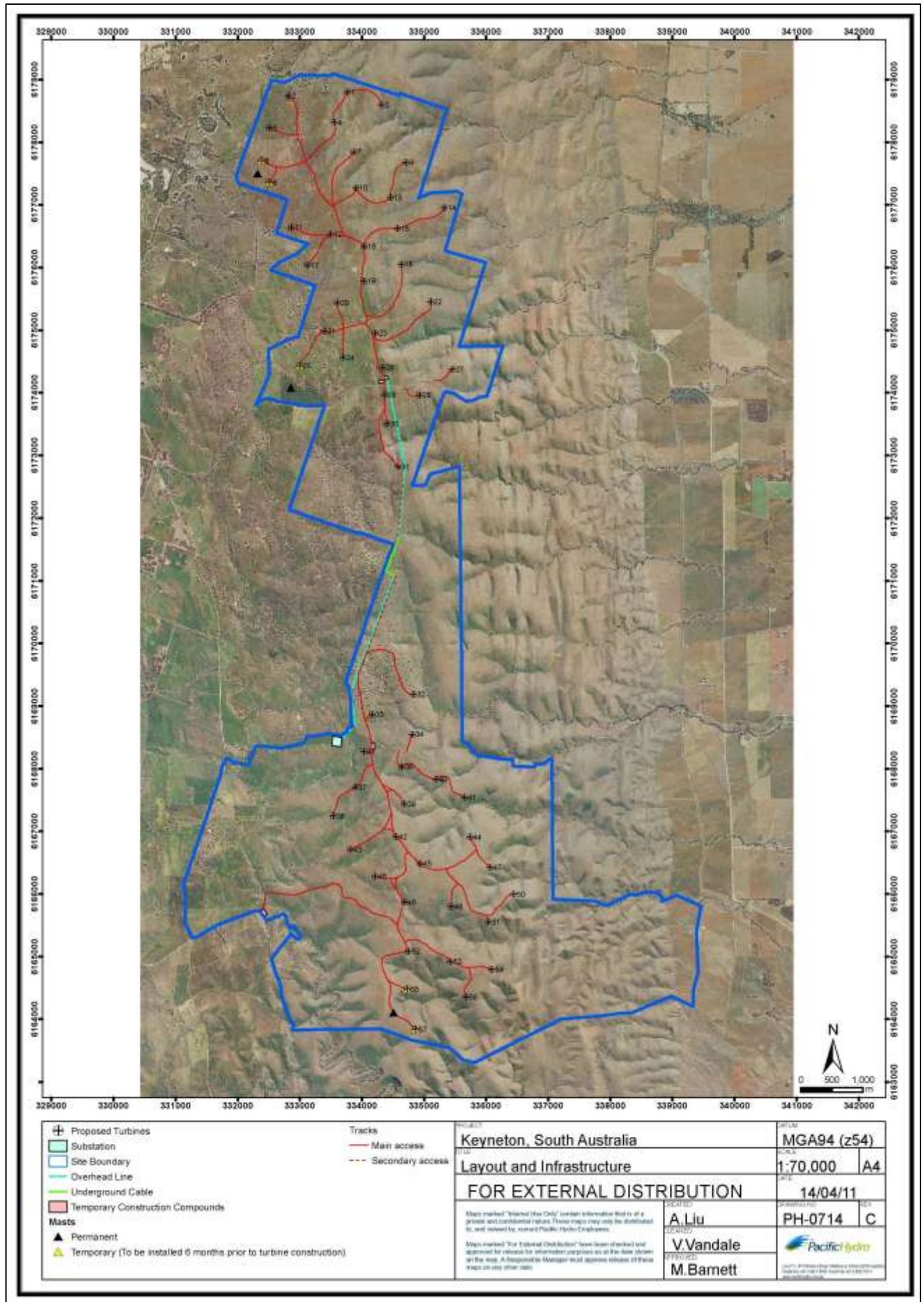
The project site lies within the traditional lands of the Peramangk people, now represented by the Mannum Aboriginal Community Association Inc. (MACAI). Further information on the Peramangk people's occupation and use of this area is presented in section 7 below.

Since European settlement, the area has been used predominantly for agricultural and pastoral purposes. Fencing has been erected, including segments of historic dry-stone wall, and access tracks have been created across the project site. Dams have been created in some areas. Three houses fall within the southern part of the project site. An existing 275kV high voltage transmission line runs generally north-south through the project site. An underground gas main crosses the northern section of the project site in an east-west direction.

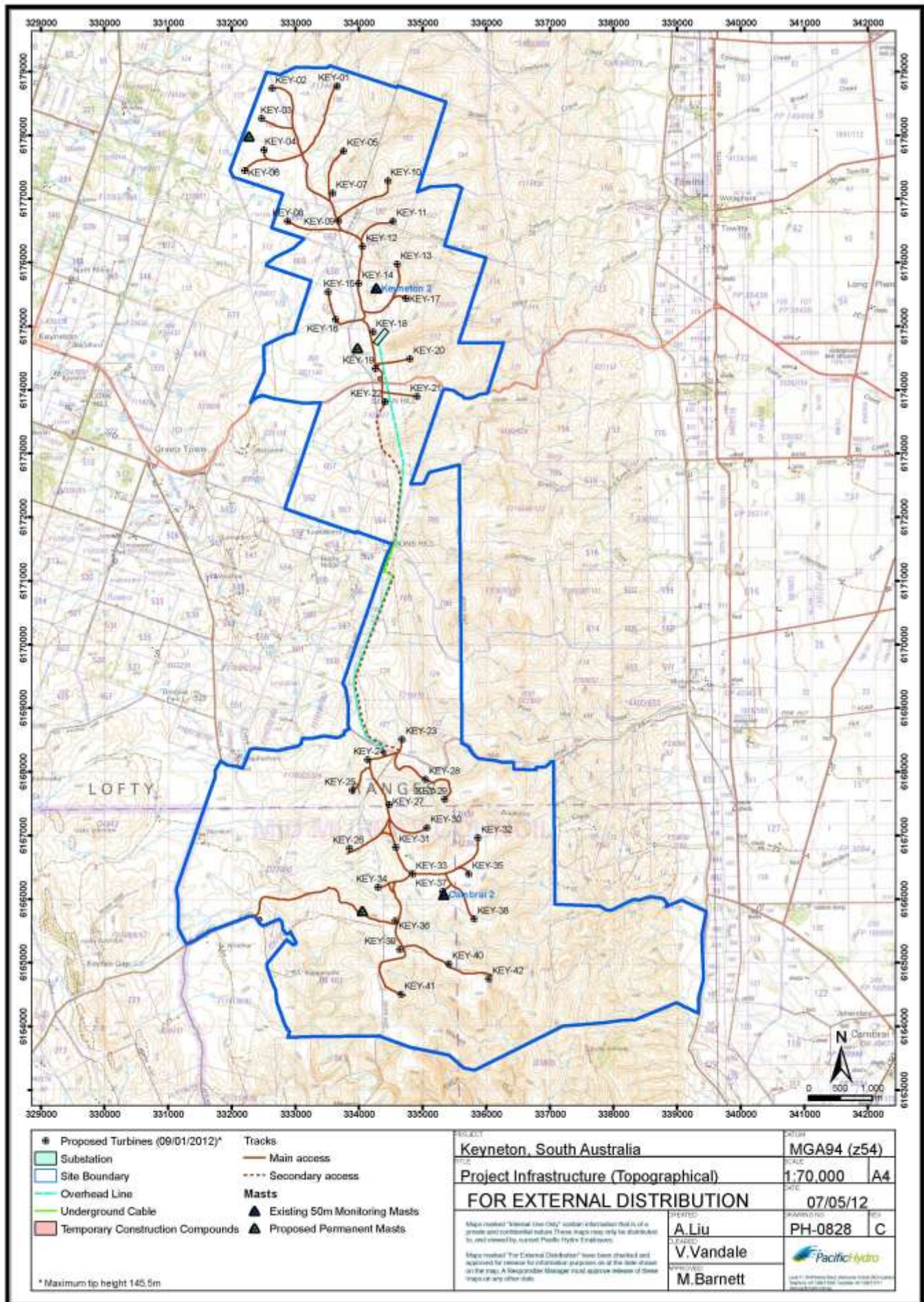
The land within the project site is currently owned by six separate landowners, with the land being used for grazing sheep and cattle. A memorandum forwarded to ACHM by Pacific Hydro on 12 April 2011 indicates that two houses within the project site are occupied.



Map 2-1: Keyneton Wind Farm Location



Map 2-2: Keyneton Wind Farm, 57 Turbine Layout and Infrastructure (map supplied by Pacific Hydro, April 2011).



Map 2-3: Keyneton Wind Farm, Revised Turbine Layout (map supplied by Pacific Hydro, May 2012)

3 Environmental Background

The following section provides basic environmental information relating to the project area.

3.1 Topography

The project site lies within the Mt Lofty Block (Province 3), as defined by Laut et al (1977). Specifically, the study area is part of the Peninsula Uplands (Environmental region 3.2), characterised by an undulating to hilly upland with steeper marginal ranges and hills (Laut et al 1977:56).

3.2 Geology

The Mt Lofty Ranges are generally considered to be an intraplate region uplifted since the early Tertiary (see Laut et al 1977:54; Coles and Hunter 2010:116), with inherited tectonic fabrics from the Delamerian structure. However, a recent study has proposed a new model incorporating neotectonic movements independent of ancient tectonic fabrics, and sea-level change, as factors governing landscape evolution of the Mt Lofty Ranges (Tokarev and Gostin 2003:1).

Coles and Hunter (2010:116) write that regional metamorphism occurred in sandy and clay sediments during the Palaeozoic age to produce the Kanmantoo group of rocks, which have formed rock shelters in which rock art has been found within Peramangk country (see section 7 below). They write that the rocks in Peramangk country can be divided into three main groups - calcareous, siliceous and coarse-grained gneiss - and that the latter formed the shelters used for habitation and art sites in districts including those near the project site, such as Angaston, Eden Valley and Springton (Coles and Hunter 2010:116). Granites and gneisses to the east and north of Mount Lofty are associated with rich mineral deposits, quartz veins and outcrops (Coles and Hunter 2010:116).

3.3 Vegetation

Pre-European vegetation in the project area has been categorised as open woodland transiting to an open scrub (Boomsa and Lewis 1980). The open woodland contained *Eucalyptus spp.* in association with *Acacia*, *Callitris*, and other native species as the dominant trees. The open scrub was dominated by multi-stemmed *Eucalyptus spp.* with various understoreys (Boomsa and Lewis 1980). Cereal cropping and clearing for grazing since European settlement has drastically altered the environment, with remnant native vegetation only existing in discrete parcels (Laut et al 1977).

3.4 Discussion

The project site lies within the Mt Lofty Block (Province 3) and is characterised by undulating to hilly upland, with some steeper hills. The geology of the area is such that over the years, rock shelters have been formed that were favourable for use as shelters and rock art sites by the Peramangk people; several such shelters have been identified near the project site, in areas such as Angaston, Eden Valley and Springton.

The soil condition of the project site has made it favourable for agricultural land use, which in turn has resulted in the clearing of the majority of native vegetation in the area. Aside from agriculture and pastoral uses, little development has occurred within the project site other than the construction of a few dry-stone walls, unpaved tracks, dams, three dwellings, a 275kV high voltage transmission line and an underground gas main.

4 Heritage Protection Legislation

This section outlines information on the relevant Aboriginal and European heritage protection legislation.

4.1 *Aboriginal Heritage Act 1988 (SA)*

The South Australian *Aboriginal Heritage Act 1988* (AHA) is administered by the Aboriginal Affairs and Reconciliation Division (AARD) of the Department of the Premier and Cabinet (DPC). Any Aboriginal site, object or remains, whether previously recorded or not, is covered under the blanket protection of the AHA. The AHA provides the following definition of an Aboriginal site in Section 3.

“Aboriginal Site” means an area of land

(a) That is of significance according to Aboriginal tradition; or

(b) That is of significance according to Aboriginal archaeology, anthropology or history.

It is an offence under Section 23 of the AHA to damage, disturb or interfere with an Aboriginal site, object or remains unless written authorisation from the Minister for Aboriginal Affairs and Reconciliation has been obtained. Penalties for an offence under this section are up to \$10,000 or six months' imprisonment in the case of an individual, or \$50,000 in the case of a corporate body.

It should also be noted that it is an offence under section 35 of the AHA to divulge information relating to an Aboriginal site, object, remains or Aboriginal tradition without authorisation from the relevant Aboriginal group or groups. Penalties for an offence against this section are up to \$10,000 or six months' imprisonment.

The AHA is highly relevant given that at least one Aboriginal site exists in the project site. The AHA provides no legal requirement to undertake an Aboriginal heritage survey. However, an Aboriginal heritage survey is often undertaken during the planning stage of a project as a risk minimising and due diligence strategy to reduce the prospect of delays during construction, and to avoid an inadvertent breach of the AHA.

4.2 *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cwth)*

The Commonwealth *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* provides a mechanism for the Commonwealth Minister for Environment to make declarations regarding the protection of an Aboriginal area when the Minister is satisfied that, under State or Territory law, there is ineffective protection of the area from a threat of injury or desecration. Declarations made under this Act may involve restricting activities and/or access to an Aboriginal site.

Under Section 21H of the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*, it is an offence to conduct behaviour or partake in an action that contravenes a declaration made by the Minister. Where an Aboriginal place is concerned, the penalties under this section are \$10,000 or imprisonment for five years, or both, for an individual, or \$50,000 for a corporate body. In the case of an Aboriginal object, the penalties are \$5000 or imprisonment for two years, or both, for an individual, or \$25,000 for a corporate body.

If the requirements of the *Aboriginal Heritage Act 1988* are adhered to, the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* will likely have no relevance for Aboriginal sites existing within the project area.

4.3 *Environment Protection and Biodiversity Conservation Act 1999 (amended 2003) (Cwth)*

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (amended 2003) (EPBC Act) protects places of national cultural and environmental significance from damage and interference by establishing a National Heritage List (for places outside of Commonwealth land) and a Commonwealth Heritage List (for places within Commonwealth land). Under the EPBC Act, any action that has, will have, or is likely to have a significant impact on a place of national cultural and/or environmental significance must be referred to the Minister for the Environment for approval. The EPBC Act sets out a procedure for obtaining approval, which

may include the need to prepare an environmental impact statement for the proposed action. (An action is defined in section 523 to include a project, development, undertaking, activity or series of activities).

The EPBC Act is only relevant in relation to an Aboriginal or European site if it is entered onto the National Heritage List or the Register of the National Estate. A search of the Australian Heritage Database revealed that there are no such sites within or adjacent to the project site. As such, this Act has little relevance for the project.

4.4 *Native Title Act 1993 (Cwth)*

The Commonwealth *Native Title Act 1993* (NTA) is part of the Commonwealth's response to the High Court's decision in *Mabo v Queensland (No.2)* and adopts the common law definition of native title, defined as the rights and interests that are possessed under the traditional laws and customs of Aboriginal people in land and waters, and that are recognised by the common law. These rights may exist over Crown Land but do not exist over land held as freehold title.

The NTA recognises the existence of an Indigenous land ownership tradition where connections to country have been maintained and where acts of government have not extinguished this connection.

The project site is not currently subject to any native title claim application. Therefore, the NTA holds no relevance to the current project.

4.5 *Native Title (South Australia) Act 1994*

As stated above, the Commonwealth *Native Title Act 1993* is part of the Commonwealth's response to the High Court's decision in *Mabo v Queensland (No. 2)* and adopts the common law definition of native title defined as the rights and interests that are possessed under the traditional laws and customs of Aboriginal people in land and waters, and that are recognised by the common law. Provisions within the Commonwealth NTA allow for the States to develop their own native title legislation, provided the State legislation does not conflict with the Commonwealth Act.

South Australia has enacted an alternative State right to negotiate scheme as authorised by the Commonwealth under section 43 of the NTA. This scheme is operative and to date comprises the *Native Title (South Australia) Act 1994*; *Land Acquisition (Native Title) Amendment Act 1994*; *Mining (Native Title) Amendment Act 1994*; *Opal Mining Act 1995* and the *Environment, Resources and Development Court (Native Title) Amendment Act 1995*. Regulations are in force for all these Acts together with Rules of Court for the Environment, Resources and Development Court.

As the project site is not currently subject to any native title claim application, these acts hold no relevant to the current project.

4.6 *Heritage Places Act 1993 (SA)*

The South Australian *Heritage Places Act 1993* is the paramount European heritage protection legislation in South Australia. This Act includes the SA Heritage Register (Part 3 of the Act), which consists of a list of 'State Heritage Places' and 'State Heritage Areas'. These lists have been searched as part of the desktop research for this report, and returned two results for sites near, although not within, the project site (see section 6). Section 16 of this Act establishes a set of criteria to be used to assess whether a place qualifies for listing on the SA Heritage Register. Buried cultural material relating to the non-Aboriginal settlement or exploration of Australia (i.e. archaeological artefacts) has relevance under this Act as a component of a listed 'State Heritage Place' or 'State Heritage Area', and it is also a requirement under Section 27(2) that the discovery of any non-Aboriginal 'archaeological artefact' of 'heritage significance' is reported to the South Australian Heritage Council. Under section 36 of this Act, it is an offence to damage a heritage place entered onto the SA Heritage Register.

4.7 *Development Act 1993 (SA)*

The South Australian *Development Act 1993* provides the legislative framework within which State-wide planning and development work must operate. Often used alongside the associated Development Regulations (2008), the *Development Act 1993* regulates the use and management of land and buildings as well as the design

and construction of buildings, and makes provisions for the maintenance and conservation of land and buildings, where appropriate.

4.8 Discussion

The central legislation to Aboriginal heritage in the project area is the South Australian *Aboriginal Heritage Act 1988*, as the project area contains at least one Aboriginal site, and may contain more sites, objects or remains covered by this Act. The auxiliary application of the Commonwealth *Native Title Act 1993* provides a process for identifying the native title claimant group and any consultation that may need to occur with that group; however, the land encompassed by the project area is not currently subject to any native title claim, and as such this Act holds little relevance to the current project.

Non-Aboriginal heritage (early colonial, European) is not afforded the same blanket protection as Aboriginal heritage, and as such, Pacific Hydro has no statutory obligation to manage unlisted non-Aboriginal heritage. Should the development of the Keyneton Wind Farm affect any places listed, the South Australian *Heritage Places Act 1993* would be the applicable legislation. Additionally, in accordance with the *Heritage Places Act 1993*, any site of heritage significance uncovered during the course of development must be reported. During the course of the desktop research and an initial site inspection, no such places have been identified within the project site; however, several dry stone walls of historical value are located within the survey area and are discussed in Appendix 2.

5 Cultural Heritage Research and Site Inspection Methods

5.1 Background Research

Prior to the site inspections, Heritage Register searches were undertaken of the DPC-AARD Central Archive, the South Australian Museum Anthropology Database, the Australian Heritage Database and the South Australian Heritage Register. These searches returned information on the existence of Aboriginal and European sites within or near the project area (see section 6 below). All relevant and accessible anthropological and archaeological literature relating to the project area and to the history of the Peramangk people was also reviewed. The results of this research are presented in section 7 below.

5.2 Anthropological Site Inspection and Consultation Methods

The anthropological site inspection was undertaken largely by vehicle, with specific areas of interest visited by foot. The inspection team met initially near the Graetz Town Bridge, where they viewed maps of the project area and decided upon the best way to proceed with the inspection.

The team travelled first to the northern cluster, and drove along the main centre track, viewing the locations of the proposed turbines and other infrastructure on either side of the track. At specific locations and vantage points, the team stopped to inspect the area more closely, and the anthropologist consulted with the Traditional Owners present about the cultural significance of those areas, and of the project area in general. The same process was repeated for the southern cluster.

Ethnographic information provided by the Traditional Owners was recorded in note form. Digital photographs of specific areas of interest were taken, and the locations of these recorded spatially using a hand-held GPS unit.

It became apparent during the site inspection that the GIS data-set uploaded onto the consultants' GPS units did not match the data shown on the maps provided by Pacific Hydro. The data-set that had been forwarded to ACHM for upload was an out-dated data-set, although the tracks appeared to be correct. As such, the consultants oriented themselves using the maps, rather than paying attention to the turbine locations shown on the GPS. As this was an initial site inspection only, this did not pose any particular problems, although it was not possible to consider the proposed turbine locations with regard to their exact locations in relation to any specific areas of interest.

The day following the anthropological site inspection, additional data was forwarded to ACHM, which included a new site entry point to the southern cluster off Med Wrights Road and some additional track, along with a new temporary construction compound adjacent the new entry point, and the location of three additional permanent meteorological masts. These areas were not visited during the anthropological inspection, although the southern entry point and track were largely covered during the archaeology inspection.

5.3 Archaeological Site Inspection Methods

The archaeological survey involved examining the survey area for archaeological sites and objects using a pedestrian survey methodology; that is, traversing and generally assessing the land contained within the survey area in order to identify archaeologically sensitive areas within the landscape and any surface archaeological material. Background research and aerial photography indicated that the land within the survey area had been significantly disturbed through land clearance and pastoral activity. In addition, land clearing has led to increased alluvial and Aeolian erosion activity along the upper and lower hill slopes, leading to a greater build-up of sediment towards the water line than would previously have occurred, as well as the relocation of topsoil from the upper slopes.

The project brief for this cultural heritage assessment requested a significance assessment of the landscape rather than a specific ground surface survey, which would have required walking linear transects to identify archaeological material or sites. Nevertheless, throughout the survey, the ground surface was monitored for the presence of sites or artefacts. Entry to the survey area was made through the available property access points, with much of the survey area traversed via existing tracks. The area was generally surveyed from the highest vista points, with MACAI representatives identifying areas of concern after viewing the aerial and topographic maps. In addition, due to the highly sensitive nature of waterways, one whole day was dedicated to following

the path of the North Rhine Creek, as the most important waterway within the survey area, and inspecting it for any cultural heritage, and in particular for scarred trees and rock art.

The same GIS data issues as discussed in the anthropological methodology section above were experienced by the archaeology team; however, due to the fact that this was an initial site inspection only, this proved not to be a problem.

6 Heritage Register Searches

The following section provides the results of searches of available Aboriginal and European heritage databases with regard to culturally significant sites within or near the project area.

6.1 DPC-AARD Central Archive

The Central Archive, which includes the Register of Aboriginal Sites and Objects, is maintained by AARD. The Central Archive is a record of previously recorded Aboriginal sites in South Australia, and is a mechanism whereby any previously identified Aboriginal sites on a parcel of land can be identified prior to development activities occurring on this land. It should be noted, however, that a lack of entries within the archive relating to a particular parcel of land does not necessarily mean that sites do not exist in the area. It may simply mean that no cultural heritage surveys have been undertaken in the area, and that sites remain unrecorded on the land.

The Central Archive was searched for records of Aboriginal sites in and adjacent to the proposed site boundary.

According to the Central Archive, one Aboriginal site lies on the boundary of the project area, in the southeastern section (Table 6-1; Map 8-1).

AARD Site Number	AARD Site Name	AARD Site Type
6728/3910	Cambrai Scarred Tree 1	Scarred Tree

Table 6-1: Aboriginal sites listed on the AARD Register intersecting the Wind Farm boundary.

In addition, another 15 Aboriginal sites lie within 5km of the project area boundary. The majority of these are campsites and scarred trees, with one painting site, one burial and one quarry. The details of these sites are presented in Table 6-2:

AARD Site Number	AARD Site Name	AARD Site Type
6728/3775	East River Marne Campsite 2	Archaeological
6728/3906	Deep Creek Hearth	Archaeological
6728/2257	Pine Hut Creek Burial	Burial
6728/2258	Pine Hut Creek Scarred Tree 3	Scarred Tree
6728/2259	Pine Hut Creek Scarred Tree 2	Scarred Tree
6728/2260	Pine Hut Creek Scarred Tree 1	Scarred Tree
6728/2261	Pine Hut Creek Scarred Tree 4	Scarred Tree
6728/3674	East River Marne Scarred Tree 2	Scarred Tree
6728/3758	River Marne Painting Site 3	Painting Site
6728/3776	Keynes Gap Campsite 1	Campsite
6728/3777	East River Marne Campsite 1	Campsite
6728/3778	North Keynes Gap Campsite 3	Campsite
6728/3779	Keynes Gap Campsite 2	Campsite
6728/3911	Lillecrapp Creek Campsite 1	Archaeological
6728/4553	Graetz Town Silcrete Quarry	Quarry

Table 6-2: Aboriginal sites listed on the AARD Register as being within the vicinity of the project area.

While these sites do not fall within the boundary of the Keyneton Wind Farm, they do provide an indication of the types of sites that may exist in the general area.

6.2 South Australian Museum Anthropology Database

The South Australian Museum Anthropology Database details the human remains and cultural items held by the museum. A search of items listed as having been found within or near the localities of Keyneton, Angaston, Eden Valley, Cambrai, Springton and the Marne River returned 68 entries. Table 6-3 provides an example of some of the entries that were returned:

REGISTRY NUMBER	DESCRIPTION	REGION	LOCALITY	COMMENTS
A38532	Jaw, lower and bones	Adelaide	S.A., Angaston	Peramangk/ Ngadjuri
A38531	Jaw and bones	Adelaide	S.A., Angaston	Peramangk/ Ngadjuri
A25509	Skull and Jaw	Adelaide	Angaston	Peramangk
NR64a	Part long bones and part cranium, mandible	Adelaide	Angaston	Peramangk
NR64b	1 part cranium and part skeleton	Adelaide	Angaston	Peramangk
A38270	Skull, part, lower jaw, part skeleton, part	Adelaide	S.A., Keyneton	Peramangk
A		Adelaide	Keyneton	
A21313	Hammerstone	Adelaide	Eden Valley	
A30584		Adelaide	Eden Valley	
A51426		Adelaide	Eden Valley	
A	Unio angasi	River Murray - Renmark	Wongulla Lagoon - mouth of Rhine Creek (Marne River)	
C		Adelaide	Cambrai - River Marne	

Table 6-3: Details of selected items held by the South Australian Museum, with provenance in the general region of the project area.

The South Australian Museum database should not be regarded as a definitive list of all Aboriginal items found to have existed within a given area. These are items that have been collected by individuals in an ad hoc way, and forwarded to the museum. The location and other details of items held by the museum are general and often incomplete, and these results are best applied as an indicative tool. The database does, however, provide an indication of the types of items that are likely to be encountered in an area, and a reasonable baseline to establish whether subsurface archaeological deposits may be uncovered during ground disturbing works.

6.3 Australian Heritage Database

The Australian Heritage Database provides details of heritage items listed on the World Heritage List, the National Heritage List, the Commonwealth Heritage List, the Register of the National Estate, the List of Overseas Places of Historic Significance to Australia and any place under consideration for any of these lists. A search of the Australian Heritage Database did not return any results for the proposed project area.

6.4 South Australia Heritage Register

The State Heritage Register, maintained by the South Australian Heritage Branch, lists heritage items and places of significance to the State. A search of the State Heritage Register returned results for two registered sites near the site boundary. The details of these sites are included in table 6-4:

NAME	ID	LIST	LOCATION	CLASS	STATUS
Engine House North Rhine Mine	16313	South Australian Heritage Register	Pine Hut Road	State	Registered
Bridge over the River Somme	16312	South Australian Heritage Register	Sedan-Angaston Road	State	Registered

Table 6-4: Sites included on the State Heritage Register, near the project area.

Neither of these sites falls within the boundary of the project area. The Engine House North Rhine Mine (ID 16313) lies just north of the boundary of the southern cluster, while the Bridge lies approximately 500m from the boundary of the northern cluster (see Map 8-1).

6.5 Discussion

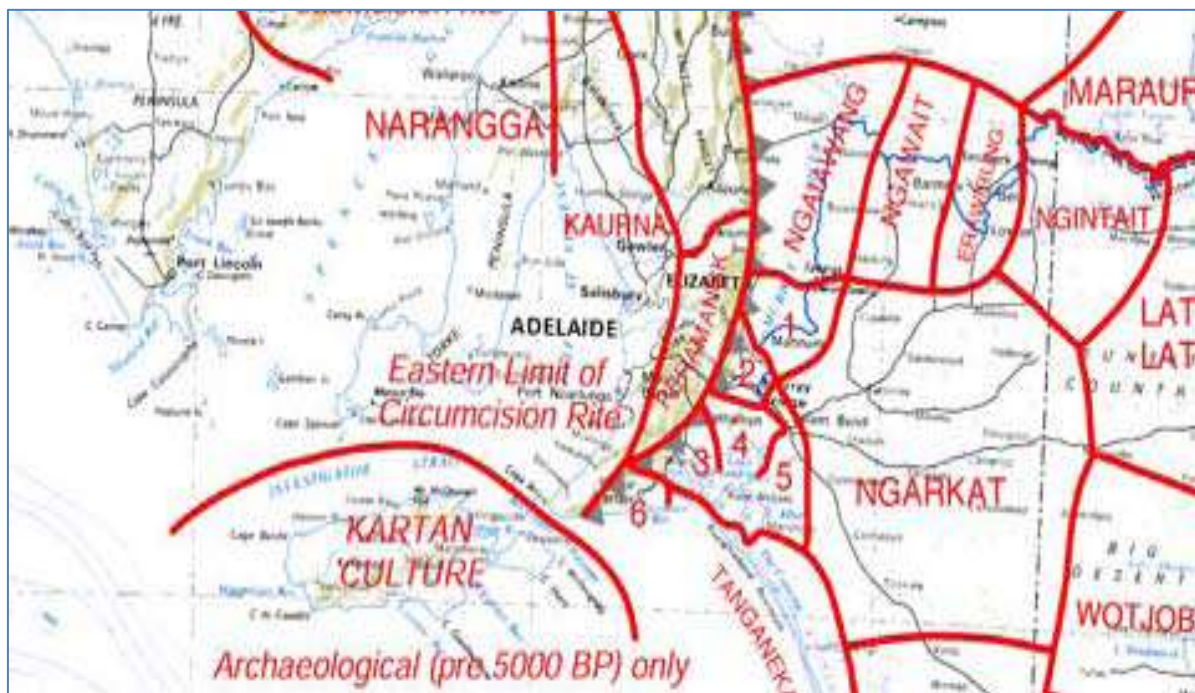
A search of the DPC-AARD Central Archive found that one registered site lies along the boundary of the Keyneton Wind Farm, at the southeast section of the project area. The site is a scarred or culturally modified tree. In addition, 15 other registered sites, including campsites, scarred trees, a painting site, a burial and a quarry, exist within 5km of the project area. A search of the South Australian Museum Anthropology Database returned numerous results for artefacts and human remains found within the region, and although the records are not detailed enough to indicate the exact find locations, these results provide some indication of the extent of occupation of Aboriginal people within the region, and the likelihood of uncovering other such objects in the project area.

A search of the Australian Heritage Database did not return any results within the project area. However, two sites registered on the South Australian Heritage Register lie near the project area, although not within it. These relate to sites of European heritage, and are a historic Engine House and a historic bridge.

This section also provides a review of relevant anthropological and archaeological literature, a discussion of site types prevalent in the Mt Lofty Ranges, and research into the European heritage of the area.

7.1 A History of Peramangk Occupation of the Project Area and Wider Region

Anthropologist Norman Tindale recorded the traditional lands of the Peramangk people as being in the Mt Lofty Ranges, extending as far south as Myponga and as far north as Gawler and Angaston, east to Wright Hill, Strathalbyn and Kanmantoo, and along the eastern scarp of the range to near Towitta (Tindale 1974:217; Coles and Draper 1988:5; Coles and Hunter 2010:13). Accounts from early European settlers record that the Peramangk people could have numbered several thousand people living in large camps near the Mount Barker summit, Mount Crawford, Eden Valley and Springton (Coles and Hunter 2010:13), and radiocarbon dating of charcoal from campsites in the area shows that people have lived in the Ranges for around 2400 years (Coles and Hunter 2010:13). Figure 7-1 shows the tribal boundaries as recorded by Tindale (1974:217).



This was an area well-endowed with resources, including food, water, firewood, raw materials such as stone, timber and resins for manufacturing tools, bark for huts, shields and canoes, pigments for painting, and animals for food and fur (Coles and Draper 1988:11). As such, while some neighbouring groups such as the Ngarkat to the east had to live a relatively nomadic lifestyle in order to exploit the available resources, the Peramangk did not need to venture far in order to survive. They lived for much of the year in the vicinity of Mount Barker, and along the strip of Red Gum country running north to the Angaston district. With abundant water and plenty of animals and plant life to exploit, the Peramangk had little need to visit the plains. During winter, they stayed below an altitude of around 360m, and winter shelters constructed of branches, bark, grass and leaves, often around hollow gum trees, have been recorded in the northern part of Peramangk country, around the Eden Valley and Angaston districts (Hossfeld 1926; Coles and Draper 1988:11).

Boundaries between the tribes maintained themselves for a number of reasons. To begin with, the boundary of circumcision includes the Peramangk, with groups to the east of the Ranges not engaging in that practice of initiation (Coles and Draper 1988:6; Tindale 1974). As such, those living to the east of the Mount Lofty Ranges were afraid of the Peramangk due to their practice of circumcision, while the Murray River peoples were also said to have a strong dislike of closed-in forests and hills, preferring to be able to see the horizon (Tindale 1974; Coles and Hunter 2010:16). Meanwhile, to the west, the Kurna feared the Peramangk for their reputed powers of evil magic (Tindale 1974; Coles and Hunter 2010:16). With groups on either side fearing them and having no desire to venture into the hills, boundaries maintained themselves without any need for the use of force.

However, it is also noted in the diaries of early settler and teacher, W.A. Cawthorne that a close relationship probably existed between the Peramangk and the Kurna. He suggests that the name Peramangk may in fact be Kurna in origin, being the combination of the words *peroo* (flesh) and *maingker* (red colour), which may be a reference to impressions of initiated Peramangk men painted in red ochre (Cawthorne 1844-46).

7.12 Land Use and Daily Life around the Project Area

As stated above, the Peramangk occupied an area abundant with food, water and other exploitable resources such as stone, timber, resins, pigments and furs (Coles and Draper 1988:3). Coles and Hunter (2010:34-55) list the numerous plant, animal and other resources they were able to make use of in the area. Women generally gathered the native roots and bulbs for food, roasting them in baskets in earthen ovens (Coles and Hunter 2010:34).

The Peramangk also had particular ways of hunting animals such as kangaroos and emus, including the use of 'hunting hides' which allowed the hunter to lie concealed, in wait for the prey (Coles and Hunter 2010:31). A number of these hides have been recorded within the Mount Lofty Ranges, consisting of low walls of stone, usually in a 'U' shape (Coles and Hunter 2010:31; Gara and Turner 1986).

For hunting ducks meanwhile, the Peramangk would construct long, string nets from plant fibre and set them in the creeks and rivers. A returning-hovering boomerang was used to fool the duck into thinking a hawk was hovering above it, and the hunter would make an artificial hawk cry, causing the duck to swoop into the net at the right moment (Tindale 1974:107; Coles and Hunter 2010:33).

Water courses such as the Marne were important trade routes for several groups. Among other groups, the Peramangk traded with the Kurna, and with the Ngangaruku, who visited the eastern hills near Springton seasonally, travelling upstream along Saunders Creek and the River Marne (Hossfeld 1926). Important trade items for the Peramangk included the bark from Manna gum, and stringybark and iron pyrites used to light fires (Schmidt 1983:66). Items brought into Peramangk country included chert pieces from the lower South East, and from further north along the Murray River, possum skins used to make fur cloaks, and River Red Gum bark used for bowls, shields and canoes (Hunter and Coles 2010:68). The people of the Murray River and plains are known to have brought mallee wood branches to trade, ideal for manufacturing spears (Tindale 1974; Coles and Draper 1988:6). Other items traded included milky quartz and crystals for the manufacture of spear barbs and blades used in skin cutting ceremonies and sorcery practices. Ochre used for body-coating and rock art, slate scrapers, and umbilical cords of new-born babies to be used in the practice of sorcery were also traded. Edge-ground axes were also brought all the way from Victoria, beginning their journey as blanks, and arriving in South Australia ground and polished. Some of these were used to cut wood, and others were regarded as status symbols for senior tribal members (Coles and Hunter 2010:68).

Important gatherings and corroborees also occurred along these trade routes. The network of painting sites and semi-permanent campsites near the project area suggests that this was a major cultural exchange centre, where groups would not only trade, but also settle grievances, perform ceremonies, organise marriages, and instruct young group members in the law (Coles and Hunter 2010:156; see also Blair 1997). The Peramangk would have had clear views of the trading groups' campfires from their shelters, and would have been able to prepare in advance for their arrival and for the large ceremonies that would follow (Coles and Hunter 2010:156).

The ceremonies would probably have taken place on the upper banks of Saunders Creek and the Marne River, near Springton and Eden Valley (Hossfeld 1926). According to Cawthorne's diaries, each tribe sat separately, although close, in a horse-shoe shape, with each tribe dancing and singing in turn for an hour or two (Cawthorne 1844). Coles and Hunter (2010:55) write, 'The corroborees were a means of connecting the participants and audience with the land.'

7.13 Rock Art near the Project Area

Many rock art sites have been recorded within the Mt Lofty Ranges and attributed to the Peramangk people (Coles and Draper 1988:34; Coles and Hunter 2010). Several of these are in proximity to the project area, in shelters or on granite columns and boulders along the Marne River. Most sites are found within 1km of a water source (Coles and Hunter 2010:116).

In the mid-1920s, geologist Paul Hossfeld (1926) wrote of three rock art sites in shelters near Eden Valley on the River Marne. In 1963, a fourth site was documented around 100m from one of the previously recorded sites, by Roger Teusner (1963). A painted and engraved site was recorded on the River Marne in 1986 by Gara and Turner (1986), and five further sites were recorded by Robin Coles near the River Marne in 1993 (Coles 1993).

Many of the paintings in the region were done using red, yellow and white ochre, and depict dancing figures and warriors holding boomerangs, spears and shields (Coles and Hunter 2010:141). The most commonly occurring motifs are human figures (Coles and Draper 1988:34). However, depictions of lizards, a snake-neck tortoise, a serpent humanoid, bird tracks and reptiles have also been identified (Coles and Hunter 2010:141, 156). An unusual use of white dots not seen in any other painting site in the Mount Lofty Ranges has been noted in two of the painting sites, and it is believed that the same artist may be responsible for both works (Coles and Hunter 2010:156).

A more recent art style of finely scratched figures superimposed over the older red and white ochre figures, as found in a large shelter at the headwaters of Saunders Creek, 2km southeast of Eden Valley, is thought to record the number of people attending a ceremony, or to depict groups of people in dance formation (Coles and Hunter 2010:156).

Charcoal from a hearth site near Saunders Creek has been dated to 800 years before present, with a standard deviation of +80 years (Coles 1995). This site includes two ceremonial stone circles, with nearby burial sites, and it seems likely that it is the same extensive semi-permanent Saunders Creek campsite described earlier by Hossfeld (1926). There are at least 200 other exposed hearths above this level in the region, indicating that cultural activity continued to occur in the area long after this time.

7.14 Peramangk Myths and Creation Stories

Several myths or creation stories have been recorded which make mention of Peramangk country (see Coles and Hunter 2010:89-98). These stories are often shared between neighbouring tribes, each of which holds slightly different versions of the story.

One well-known story is that of Tjilbruki (or Tjibruki), the best known account being that recorded by Tindale (1987). Although this is a story told by the Kurna people of the Adelaide plains, Tjilbruki travels through Peramangk country at one point during his journey. A Peramangk account of the story was provided to Tindale by Robert Mason of the Mannum area (Tindale 1987; see also Coles and Hunter 2010:89). In tracking an emu, he is thought to have followed it through Myponga, near the southern boundary of Peramangk country (Coles and Hunter 2010:90).

Another Kurna story which relates to Peramangk country is that of Juredla (also Yura), an ancestral giant who came from the east to attack the people of the plains. Sometimes recorded as the rainbow serpent, Tindale (1974:64) recorded the name in Kurna as meaning, 'the body of an ancestral man'. The giant was slain, and his fallen body forms the Mount Lofty Ranges, stretching approximately 60km from Mount Lofty to Nuriootpa. The twin peaks of Mount Lofty and Mount Bonython are his two ears (Coles and Hunter 2010:93; Tindale 1974:64). The town of Uraidla is said to have been named after this giant by the South Australian Premier, Sir Thomas Playford (Coles and Hunter 2010:93).

Ngurunderi, another creation ancestor, is said to have been involved with the creation customs and beliefs of the Peramangk, as well as the visiting lower Murray tribes. He is also credited with having created the Murray River. The Point McLeay Missionary, Rev. George Taplin (1879:55, 58), wrote the following about Ngurunderi:

He is said to have made all things on earth and to have given to men the weapons of war and hunting. Ngurunderi instituted all the rites and ceremonies which are practised by the Aborigines, whether connected with life or death... the natives regard thunder as the angry voice of Ngurunderi and the rainbow as also a production of his.

Finally, another Kurna story makes mention of the Peramangk association with the hilly country to the east of Adelaide. It is the story of Pootpobberrie, who is said to have, along with his lubra and children, 'had possession

of the hill country east of the great plain.’ As related to James Cronk by C.H. Harris in 1913, ‘They did not eat flesh, but lived on roots, fruit, and wattle-gum and to supply their wants with least trouble robbed their neighbours on the plain’ (a likely reference to the Kurna) (Public Service Review 1913:34-36).

7.1.5 The Effects of European Settlement on the Peramangk

By the mid-1840s, European settlement was encroaching on much of Peramangk territory, with flocks of sheep crowding the watering places used by the Peramangk and the animals they hunted. Because the area included some of the most productive agricultural land in South Australia (Laut et al 1977:54), agriculture rapidly expanded in the district. Hossfeld (1926:291) provides an example of the destruction that occurred to resources in the area:

This paper would be incomplete without reference to the very numerous burnt out hollow red gums in the district. The majority of the openings face east of north and provide excellent shelter... In conclusion the writer voices his regret that these important records of the former native occupation should be doomed to rapid disappearance owing to the mutilation which they are subject to by visitors ignorant of their value.

By the mid-1850s, documentary sources referring to the Hills Tribe began to disappear, and many of the Peramangk moved to live in the Riverland, displaced by agriculture (Coles and Draper 1988:2-3).

7.2 Aboriginal Site Types Prevalent in the General Region

In 2009, ACHM conducted cultural heritage desktop studies for a proposed rail line which was to run along the Mt Lofty Ranges, passing just east of the current project area (ACHM 2009b; ACHM 2009c). As this was a generalised study spanning a large area, the reports listed site types that are known to occur in the Mt Lofty Ranges. These are outlined below, and provide an indication of the type of site that may be encountered within or near the project area.

7.2.1 Campsites

ACHM (2009c) found that Aboriginal campsites were common in the Mount Lofty Ranges. As discussed above, the ranges are well watered and contain sufficient resources to be able to sustain large groups for long periods (Draper 1985). Early colonists in the region noted that large groups of Aboriginal people would camp by the banks of a creek for many weeks at a time, and there are many specific references to campsite locations observed by the settlers in the region (e.g. Schmidt 1983).

The archaeological remains of such campsites are most often found adjacent the numerous creeks and streams feeding out of the ranges, usually situated on the sandy banks and overflow areas of the larger water courses (e.g. Hossfeld 1926). Site descriptions tell us that such campsites usually consist of large open areas containing scattered stone artefacts and the remains of hearths and ground ovens, the use of which in the region is also attested by the historical record (e.g. Schmidt 1983). Human burials are sometimes found within campsites, and rock art and culturally modified or scarred trees are also often found in close proximity (Gara and Turner 1986), indicating that a range of activities was taking place at these locations.

7.2.2 Aboriginal burials

Burial grounds are also known in the Mount Lofty Ranges, particularly in sandy areas near creeks and rivers (Gara and Turner 1982; Hossfeld 1926). As mentioned above, these are the areas also targeted for campsites, and the co-location of burials and campsites in sandy grounds adjacent water sources is not uncommon.

7.2.3 Culturally modified trees

The culturally modified or scarred tree is possibly the most abundant site type in the region. Found primarily on the banks of the many water courses, most are River Red Gums bearing scars from the removal of bark for use as a dish, shield or canoe (e.g. Gara and Turner 1982), although large ‘sheets’ were also often removed for use in

shelter construction (Tindale 1974, cited in Coles and Draper 1988). Additionally, smaller scars may also be present where toe-holds have been cut out and/or spikes driven into the wood by Aboriginal people climbing trees to catch possums for food and skins (e.g. Sanders 1909, in Draper 1985). See the description of one such site identified during the archaeological site inspection for this project, at section 8.2.1 below.

7.2.4 Rock shelters

Rock shelters with occupational debris are reasonably abundant in the Mount Lofty Ranges. Rock shelters of sufficient height and with reasonably sized living areas are sometimes found to contain hearths, stone tools and food remains (Gara and Turner 1986), and a number have been reported containing artefacts manufactured from imported stone such as chert, as well as, occasionally, rock art (e.g. Hancock 1997). One such rock shelter was encountered during the archaeological site inspection for this project, which has been designated as a potential rock art site (see section 8.2.2 below).

7.2.5 Water Courses

There has been found to exist a high correlation between major water courses and Aboriginal archaeological sites in South Australia (e.g. Cooper 1961 on the Wakefield River and Thorley 2001). The availability of reliable fresh water has been demonstrated to correlate directly with important traditional living places, which are often associated with extensive archaeological campsites (ACHM 2001). Burials are also common in the overflow or flood zone areas of rivers and creeks; the easy-to-dig soft, sandy soil makes them ideally suited as interment grounds (Gara and Turner 1982). Rock shelters containing Aboriginal paintings and engravings in the Mt Lofty Ranges also are generally associated with nearby streams (Coles and Draper 1988; Blair 1997).

Water sources are also often ethnographically significant, forming parts of stories related to ancestor/creation stories (e.g. Tjilbruki; see Tindale 1987). Some of these have social restrictions (e.g. gender, age) placed upon their access and/or use (for example, in the case of both the Broughton and the Onkaparinga Rivers, parts of these rivers, and aspects of the stories associated with them, are restricted to women; see ACHM 2009d and 2001, respectively).

A search of the archives conducted as part of the rail alignment desktop report (ACHM 2009c) found that all of the major creeks and rivers within 5km either side of the proposed rail alignment (an area which encompasses the current project area) had Aboriginal sites in the vicinity, including culturally modified trees, rock art, campsites and burials.

Previous research indicates that various Aboriginal site types, such as campsites, burials, culturally modified trees, rock shelters and rock art sites, are most likely to be found in the vicinity of a watercourse, and that watercourses are often culturally significant in and of themselves. As such, the North Rhine Creek and other minor waterways that traverse the Keyneton Wind Farm project area should be treated with extreme caution. Section 8.2 described one culturally modified tree and a potential rock art site identified along the North Rhine Creek in the initial archaeological site inspection.

7.3 European Heritage Research

The wider area surrounding the proposed Wind Farm location is of historic significance with respect to the establishment of European settlement in South Australia. The area of Keyneton, with sections formally known as North Rhine, is within the boundaries of the special surveys claimed by Charles Flaxman in 1839 (State Library of South Australia 2009). Keyneton was part of the early European settlement in South Australia and most notably was settled by Joseph Keynes (1810-1883) in the 1850s, where he established a successful Merino sheep farming operation (Linn 1983:581).

Keyneton has maintained connections to its early farming origins and the built rural heritage has been the focus of extensive colonial and historic heritage research and reporting. Of particular note are the survey of the heritage of Eight Lower North Towns by Linn and Linn (1990), the Barossa Valley Heritage Survey by Lester, Firth and Murton (1981), and the cultural tourism series by Leader-Elliot (2005) of Flinders University.

The Linn and Linn (1990) report collected previous studies in the area and provides a themed approach to the built heritage of the area. The report identifies individual places and heritage landscapes of the major regional centres in the area as well as highlighting significant figures in the area.

Further references of built heritage in the area can be found in the Lester, Firth and Murton (1981) report. This reports on built heritage items throughout the area and is used as a reference for Register of the National Estate listings of many heritage items in the area (Australian Heritage Places Inventory accessed 1 June 2009).

The cultural tourism series by Leader-Elliot (2005) highlights the importance and exploitation of heritage items and places within the area. Leader-Elliot suggests the heritage focus in the area is driven from a Eurocentric perspective and a shift in perspective to incorporate other heritage types could be beneficial to the community.

The colonial/historic heritage in the area is well documented and appreciated by residents and visitors. Although there are only two heritage places listed as being of National and State significance, local heritage in the area contributes to the everyday lives of people within the Keyneton region. The proposed Wind Farm development should take place with consideration of the impacts to the local character of the area as stressed in the Mid Murray Council Development Plan (Department of Planning and Local Government 2003), as well as of the heritage obligations to the identified State and National places of significance.

7.4 Discussion

Background research conducted as part of this study has built upon research conducted for the desktop assessment undertaken in 2009 (ACHM 2009a). Documentation by early anthropologist Norman Tindale places the project area definitively within the traditional lands of the Peramangk, and records by early settlers document a population of several thousand living in large camps throughout the Mount Lofty Ranges. The area was abundant with food and water, so that the Peramangk were able to remain in semi-permanent camps and did not need to venture far from their traditional lands. Radiocarbon dating of charcoal from fires in the area shows that people have lived in the area for at least 2400 years.

The literature, as well as the discovery of numerous rock art sites and campsites along the Marne River, shows that this area was part of an important trade route and cultural centre, with groups conducting meetings and ceremonies on the upper banks of Saunders Creek and the Marne River, near Springton and Eden Valley. With the arrival of European settlers, much of the land was given over to agriculture, and the Peramangk were largely displaced from their lands, many moving to live in the Riverland nearby.

More generally, previous research indicates that various Aboriginal site types, such as campsites, burials, culturally modified trees, rock shelters and rock art sites, are most likely to be found in the vicinity of a watercourse, and that watercourses are often culturally significant in and of themselves. Many such sites have been previously identified within the Mt Lofty Ranges, and it is possible that more could be encountered along the North Rhine Creek and other minor waterways that traverse the Keyneton Wind Farm project area.

The Keyneton Wind Farm area is also significant in terms of the history of European settlement. Keyneton was part of the early settlement of South Australia and the home of Joseph Keynes, who established a successful Merino sheep farming operation in the 1850s. Several important heritage places are recorded in the region.

8 Cultural Heritage Site Inspection Results

The following section details the results of the initial anthropological and archaeological site inspections, which related to the initially proposed infrastructure footprint, provided to ACHM in April 2011. Map 8-1 below shows the initial 57 turbine layout that was subject to the cultural heritage survey, rather than the amended layout that was partly a result of this survey.

8.1 Anthropological Site Inspection and Consultation

One area of anthropological sensitivity was recorded during the anthropological site inspection, with the remainder of the proposed work program being deemed to be clear of areas of anthropological significance. However, a second area, which was not visited during the anthropological site inspection, is also considered to be of likely anthropological significance.

8.1.1 Creek and spring near proposed Turbine 4

A creek and spring near proposed wind turbine 4 (original 57 turbine layout) was identified by Traditional Owners as being of likely cultural significance (see Map 8-1). Water could be seen to be flowing out of the spring (at UTM coordinates 33618.87E/ 6178347.51N [MGA54]), and into the dry creek-bed. Cynthia Hutchinson stated that this place would have been a well-used place on the trade route, because of its access to water. She said that people used to travel along here from Moorundie, Roonka and Mcbean Pound on the River Murray. The MACAI representatives stated that they did not want the creek and spring disturbed. Although not enough detail was provided during the site inspection to be able to register the creek or spring as an Aboriginal site under the terms of the AHA, it is likely that they are of cultural significance.

The creek and spring appeared to lie just below the proposed location of turbine 4, although it was difficult to tell the exact location of the turbine without correct GIS data. The MACAI representatives stated that there would be no impediment to the construction of the tower, provided it was constructed at least 50m from the creek. A waypoint was taken on the hill at 333535.77E/ 6178286.22N, which was deemed to be a reasonable distance from the creek and spring for the tower to be constructed.

The Traditional Owners were also concerned with the proposed access track and cable at this point, which appeared to run through the gully near the spring. It was stated that the access and cable should travel around the head of the gully to the west, rather than through the gully. As there is a dam area at the head of the gully, it would be preferable that the cable travel through that already disturbed area.

As a result of the above comments made by the MACAI representatives, Pacific Hydro has not included Turbine 4 in the revised 42 turbine layout.

8.1.2 North Rhine Creek and Marne River

On the day following the anthropological site visit, additional GIS data and mapping was provided to ACHM, which included details of an additional access point at the southwestern corner of the project area, use of an existing track, and a temporary construction compound. The existing track crosses the North Rhine Creek, which is a tributary to the Marne River. Pacific Hydro has advised that it will utilise this existing track to access work sites within this location and to cross the creek (Kim Derriman, *pers. comm.* 21st December 2012). The creek was not visited during the anthropological site inspection; however, as a watercourse running off a main trade route, it fulfils the criteria of an area of high anthropological potential. The archaeological inspection team did, however, have the opportunity to visit the area, and the results of the inspection are presented in section 8.2 below.

The anthropological inspection team discussed the Marne River, as they were able to look south towards it from turbine 53 (of the original 57 turbine layout; near turbine 40 of the revised 42 turbine layout) in the southern cluster. The Traditional Owners stated that the Marne River was a very important trade route from the Murray River, and that Peramangk and other neighbouring groups would travel along it for trade purposes (see Section 7 above). The river is shared between the Peramangk and other groups for 15km from around this point. The Marne River flows out of the Murray at Wongulla and ends at Springton. Cynthia Hutchinson explained that rock art has been found at Ngaut Ngaut along the River Murray which depicts the trade route along the Marne.

The Marne River runs just south of the Keyneton Wind Farm boundary, and the Traditional Owners thought that with such a busy and important trade route so close by, it would be unlikely that people would have regularly ventured onto the wind-swept ridges within the Wind Farm project area; rather, they would have stayed along the river valley where they had access to water, shelter and food. The fact that people did, however, travel from

the Marne into and along North Rhine Creek, which does cross into the project area, is proven by the identification of an archaeological site along the creek (see Section 8.2.1 below).

8.1.3 Other Anthropological Information

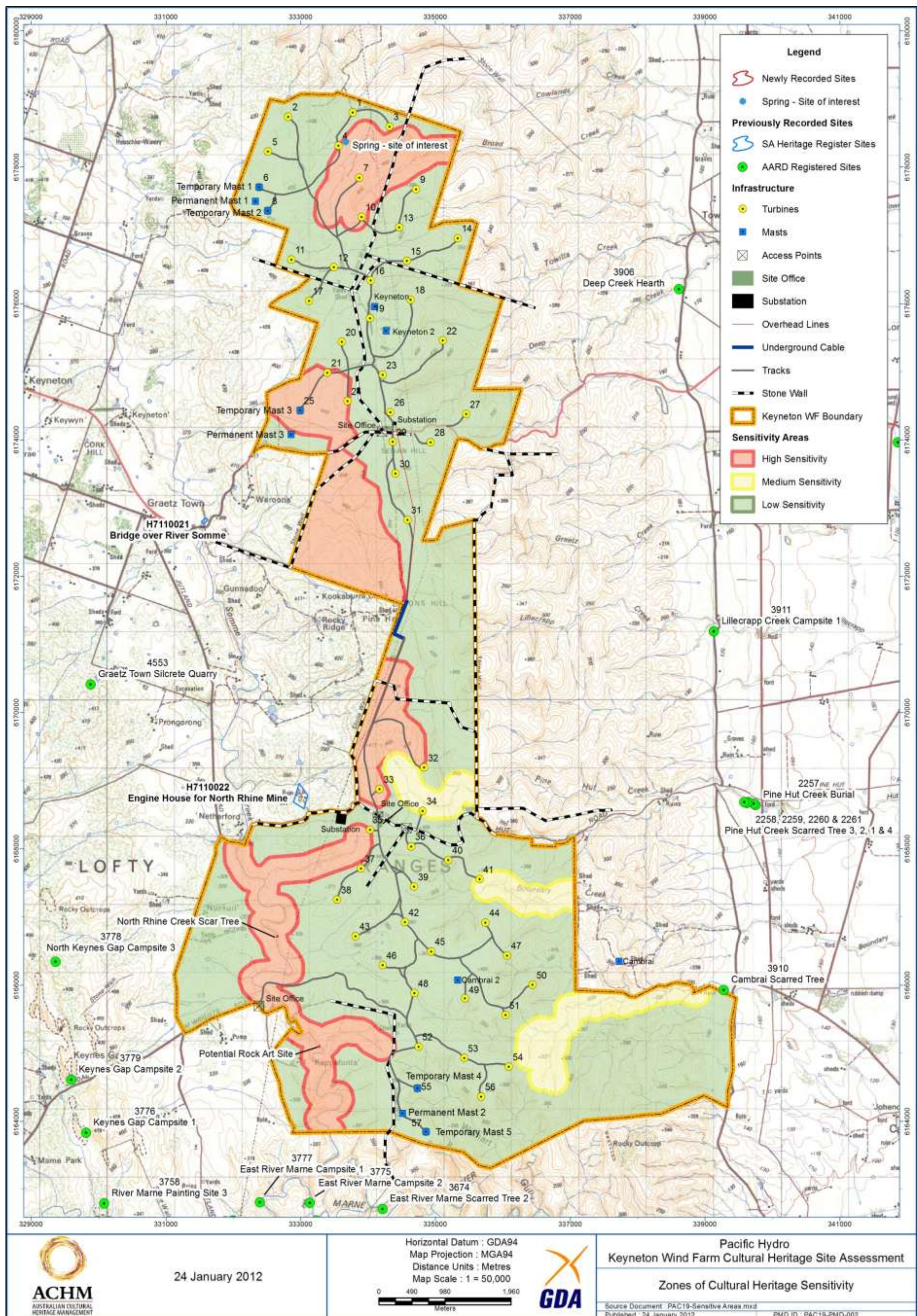
The Traditional Owners indicated that in general, the ridges in this area were not anthropologically significant, as they were open and wind-swept and their ancestors would not have chosen to camp or travel along there. Therefore, there was no impediment to placing turbines on the ridge-tops. Low-lying water, by contrast, is often significant; however, there was no infrastructure proposed for any such areas, other than the creek, as mentioned above.

The area in the vicinity of proposed turbine 2 (of both the original 57 turbine layout and the revised 42 turbine layout) is wooded, with some large gum trees. The Traditional Owners stated that the trees did not have anthropological significance, although they did have the potential to be scarred and would require thorough archaeological inspection should the final development footprint intersect this area.

The group stopped near a trig tower at 333653.91E/ 6176583.92N in the northern cluster. Cynthia Hutchinson believed that because this was a high point, affording views toward Mt Barker to the west and the Murray River to the east, there was a likelihood that people may have used it as a communication point, using fire and smoke to signal across the valleys. However, there was no infrastructure proposed for this point.

8.2 Archaeological Site Inspection

On Tuesday 19 and Wednesday 20 April 2011, an archaeological site inspection of the proposed Keyneton Wind Farm was undertaken involving MACAI representatives Isobelle Campbell, Ivy Campbell, Rynald Campbell, Phillip Campbell, Anita Hunter, Cynthia Hutchinson, Samuel Stewart and Darryl Rigney and ACHM archaeologist Danielle Furniss. As a result of the archaeological site inspection, one archaeological site and one potential archaeological site were identified, and areas of potential archaeological sensitivity were identified (Map 8-1). The newly identified site is a scarred tree, while a potential rock art site was also identified. A site card for the scarred tree (site name North Rhine Scar Tree) has been submitted to AARD for registration as an Aboriginal heritage site under section 3 of the *Aboriginal Heritage Act 1988* (SA). Site cards cannot be prepared for potential sites; however, this potential rock art site is approximately 800m away from any part of the proposed development and is therefore not at risk of being impacted. The following section contains description and mapping of these sites/ potential sites, followed by discussion of the designated zones of sensitivity. Information relating to the European heritage documented during the site inspection is included at Appendix 2.



Map 8-1: Anthropological and archaeological results map indicating zones of cultural heritage sensitivity and newly identified sites (showing initial 57 turbine layout)

8.2.1 North Rhine Scar Tree

This site consists of a scarred tree located within a stand of remnant River Red Gums (*Eucalyptus camaldulensis*) situated along the North Rhine Creek (Figures 8-1, 8-2 and 8-3) (UTM coordinates 332650E/ 6166715N [MGA54]). The tree appears to be in good health, despite one or two dead limbs. The tree species is Red Gum (*Eucalyptus camaldulensis*), with the tree's girth unmeasurable due to its position on the steep bank of the creek. The extant dry face dimensions are 113 centimetres wide and 117 centimetres long. The scar overgrowth is six centimetres at the top, five centimetres to the right, four centimetres at the bottom and five centimetres to the left. The top of the scar is located 232 centimetres from the base of the tree and the bottom of the scar is located 115 centimetres from the base of the tree. The orientation of the scar is west. The morphology of the scar suggests that it is most likely to be Aboriginal. The scar has been formed by the removal of bark. Scar preservation is excellent, with clearly defined shape and little distortion (see Figure 8-1).

A site card for the North Rhine Scar Tree has been submitted to AARD for registration as an Aboriginal heritage site under section 3 of the *Aboriginal Heritage Act 1988* (SA).



Figure 8-1: North Rhine Scar tree close up.



Figure 8-2: North Rhine Scar Tree.



Figure 8-3: North Rhine Scar Tree full view.

8.2.2 Potential Rock Art Site

The North Rhine Creek Potential Rock Art Site consists of a near horizontal rock overhang, situated at the base of a rocky steep hill slope/cliff (UTM coordinates 333271E 6165098N [MGA54]). The site was difficult to view due to its position, with no definitive pattern determined; however, there appears to be some red ochre coloured staining, which has potential to be of natural occurrence, and possibly some etching present (Figures 8-4 and 8-5).

As potential sites have not yet been found to fulfil the criteria to be considered Aboriginal heritage sites according to the terms of the AHA, a site card for the potential rock art site has not been submitted to AARD. Should Pacific Hydro require ACHM to revisit this site during a future archaeological survey, detailed examination of the site will be undertaken to determine whether it is an actual Aboriginal heritage site. If it is determined to be an Aboriginal heritage site then a site card will be submitted to AARD. But should ACHM not be required for whatever reason to revisit the site, and thus undertake detailed examination, then the site cannot be registered as an Aboriginal heritage site.



Figure 8-4: Red ochre staining present to the right and left of centre beneath the rock overhang.



Figure 8-5: Another view of the rock overhang showing the red ochre staining in the very top of the frame, slightly left of centre, and to the very right of the frame.

8.3 Zones of Sensitivity

During the archaeological site inspection, zones of high, medium and low sensitivity were identified (see Map 8-1). As the majority of the ground surface within the survey area has been modified by land clearance and pastoral activity, ground surface integrity is low. Areas classified as being of low archaeological potential included land devoid of vegetation, steep slopes, land affected by the construction of fences and dams, and windswept hill tops with no vista (see Figures 8-6 and 8-7). While these areas have been classified as low sensitivity, there is still a possibility that Aboriginal archaeological sites are present in subsurface deposits.



Figure 8-6: View over the northern section of the survey area. Photo taken facing north.



Figure 8-7: View over the northern section of the survey area. Photo taken facing east.

Topographical and environmental areas of greatest sensitivity within the survey area include land bordering waterways, gentle hill slopes and land within pockets of remnant vegetation. Areas classified as medium sensitivity within the survey area include land to either side of minor creek ways flowing mainly during times of medium to high rain falls, offering an alternative supply of resources to the more major waterways (see Map 8-1). These creeks have some remnant native vegetation that may retain scars from Aboriginal cultural activity and may potentially conserve cultural material in an undisturbed context. There is also a moderate probability that Aboriginal burials are located in subsurface deposits in these areas.

Areas of greatest sensitivity within the survey area include the North Rhine Creek flowing through the south western section of the survey area, significant pockets of remnant vegetation in the centre of the survey area and the spring fed minor creeks in the north of the survey area (see Map 8-1). The North Rhine Creek offers a neighbouring resource to the significant Marne River, which runs only a few hundred metres to the south of the survey area. A near permanent source of flowing and pooled water, the North Rhine Creek would have offered a range of resources including Eucalypts for bark and wooden implements, suitable rock surfaces for rock art, fire

wood, fresh water and grazing animals (Figures 8-8 to 8-11). In addition, there is a high likelihood that Aboriginal burials are located in subsurface deposits in the general creek area. The creek also presently retains an abundance of remnant river gums (*Eucalyptus camaldulensis*) which may preserve cultural material in an undisturbed context in subsurface deposits. While a low number of sites were identified during inspection of the North Rhine Creek, alluvial activity has been hastened due to land clearance and stock activity, particularly affecting water catchment zones along lower hill slopes leading to creeks. This has led to a greater build-up of sediment in the vicinity of the water line than would previously have occurred, which has potentially buried any archaeological sites present along the creek line.



Figure 8-8: General view of the North Rhine Creek. Photo taken facing southeast.



Figure 8-9: North Rhine Creek. Photo taken facing southeast.



Figure 8-10: Significant River Red Gums (*Eucalyptus camaldulensis*) along the North Rhine Creek. Photo taken facing east.



Figure 8-11: Rocky outcrops occurring frequently along the North Rhine Creek. Photo taken facing northeast.

The pockets of remnant vegetation in the centre of the survey area provide many of the last remaining tracts of land unaffected by pastoral development, and as such hold value to Aboriginal communities (Figure 8-12). In addition, pockets of remnant vegetation may preserve cultural material in an undisturbed context.



Figure 8-12: Stand of remnant vegetation in the northern section of the survey area. Photo taken facing northwest.

A minor creek line in the north of the survey area was identified as being fed by a spring, offering a year round water source. As discussed in the anthropological site inspection results at Section 8.1, this resource was most likely a well-used place on the River Murray trade route (Figures 8-13 and 8-14).



Figure 8-13: View of the spring in the northern section of the survey area. Photo taken facing west.



Figure 8-14: View of an area below the spring, which may have been suitable as protected camp site. Photo taken facing north-west.

8.4 Discussion and Draft Recommendations

The majority of the proposed infrastructure associated with the originally proposed layout of the Keyneton Wind Farm was deemed by Traditional Owners present on the site inspection to be clear of anthropologically significant areas. One area within the northern cluster was deemed to be of anthropological significance: a creek and spring situated at 33618.87E/ 6178347.51N. Although not enough detail was provided during the site visit to be able to register the creek or spring as an Aboriginal site under the terms of the AHA, the MACAI representatives present during the site visit identified them as culturally significant and stated that they would like them to be protected. As a result of this, a recommendation was included in a draft site assessment report forwarded to Pacific Hydro in May 2011, that the tower proposed for this area be constructed at a minimum of 50m from the creek (at around 333535.77E/ 6178286.22N), and that the associated access track and cable travel around the head of the gully, to the west, rather than through the gully.

The North Rhine Creek, which is crossed by an existing access track at the southwestern entry point to the project area, is also considered to be of likely anthropological significance, although this was not visited during the anthropological site inspection.

The archaeological site inspection identified one new archaeological site, North Rhine Scar Tree (332650E/ 6166715N), and one potential archaeological site, a rock art site (333271E/ 6165098N). A site card for the North Rhine Scar Tree has been submitted to AARD for registration as an Aboriginal heritage site under section 3 of the *Aboriginal Heritage Act 1988* (SA). Site cards cannot be submitted for potential sites. Both of these sites/ potential sites are over 500 metres from any part of the proposed wind farm footprint and as such will not be impacted by the proposed development. The archaeological site inspection identified areas of high, medium and low archaeological sensitivity, with the greatest attention paid to the North Rhine Creek in the southwestern section of the survey area, and with pockets of remnant vegetation and the spring site in the north of the survey area accorded high archaeological sensitivity status (See Map 8-1).

Taking into account the results of the initial site inspection, the following cultural heritage recommendations were included in a draft site assessment report forwarded to Pacific Hydro in May 2011 (with regard to the 57 turbine layout):

- Tower number 4 should be constructed at a minimum of 50m from the creek, no closer than 333535.77E/ 6178286.22N, in order to avoid damaging the creek and a spring that has been identified as culturally significant. The spring is located at 33618.87E/ 6178347.51N.
- The access track and cable associated with tower number 4 should run around the head of the gully, to the west, rather than through the gully, to avoid the creek and spring.

- All sites and potential sites recorded during the site inspection and during future surveys should be treated in accordance with the requirements of the South Australian *Aboriginal Heritage Act 1988*. Section 23 of the *Aboriginal Heritage Act 1988* states that it is an offence to 'damage, disturb or interfere' with any Aboriginal site or object, without Ministerial approval. Should Pacific Hydro wish to disturb this site in any way, an application must be made to the Minister for Aboriginal Affairs and Reconciliation.
- Consideration should be given during the construction planning process to designated areas of low, medium and high archaeological sensitivity, and any impact to areas accorded high archaeological sensitivity should be avoided. Impact to areas accorded medium archaeological sensitivity should be avoided where possible.
- A thorough archaeological cultural heritage survey should be undertaken of the infrastructure footprint, once this is finalised. This is particularly recommended in the case that any infrastructure will disturb areas designated as being of high cultural sensitivity.
- A Cultural Heritage Management Plan should be developed to provide for the long term relationship between the development and heritage in the area. As part of the Cultural Heritage Management Plan, a site discovery procedure, similar to the example supplied at Appendix 1, should be developed.

9 Revised Turbine Layout

After considering the cultural heritage recommendations provided by ACHM as a result of the initial site inspection (provided in section 8.4 above), and taking into account other matters not related to cultural heritage, Pacific Hydro revised the proposed turbine layout for the Keyneton Wind Farm, reducing the number of turbines from 57 to 42. The revised dataset and accompanying maps were forwarded to ACHM.

Map 9-1 shows the revised turbine layout overlain onto the original layout. (Note that only the latest data for associated infrastructure and tracks is included in the map). As indicated by the map, the revised layout was in part a response to ACHM's delineation of areas of cultural sensitivity and the recommendation to avoid areas of high and medium sensitivity, as well as the specific recommendation to avoid the culturally sensitive spring and creek to the north of the survey area. As a result of these revisions, several of the proposed turbines have been removed from areas designated as having medium or high potential for archaeological sites to exist subsurface. Of the 42 turbines that form part of the revised layout, one turbine (turbine 5) and its associated access track lies within an area designated as being of high sensitivity, and one (turbine 23) intersects only slightly with the edge of an area designated as medium sensitivity. Pacific Hydro has indicated that this slight intersection into an area of medium sensitivity is likely to be above ground (i.e. a portion of the turbine's blades may, from time to time, be above the sensitive area depending on wind direction), thus no actual ground disturbing work is anticipated (Pacific Hydro report comments 19/01/2012). Tower number 4 of the original 57 turbine layout, which had caused concern to the Peramangk Traditional Owners due to its proximity to the culturally significant spring and creek, was removed from the layout altogether.

The data for the revised infrastructure layout (as opposed to the turbine positions) was supplied to ACHM on 1 February 2012, and then further revised and forwarded on 8 May 2012. Of the associated infrastructure within this revised layout, one site office, a section of overhead line (between the northern and southern clusters) and limited sections of access track remain within areas of high sensitivity. Access track data for the northern-most area of high cultural potential was further revised and forwarded to ACHM on 7 March 2012; this led to a further reduction in track footprint falling within the northern-most area of high sensitivity.

9.1 Discussion

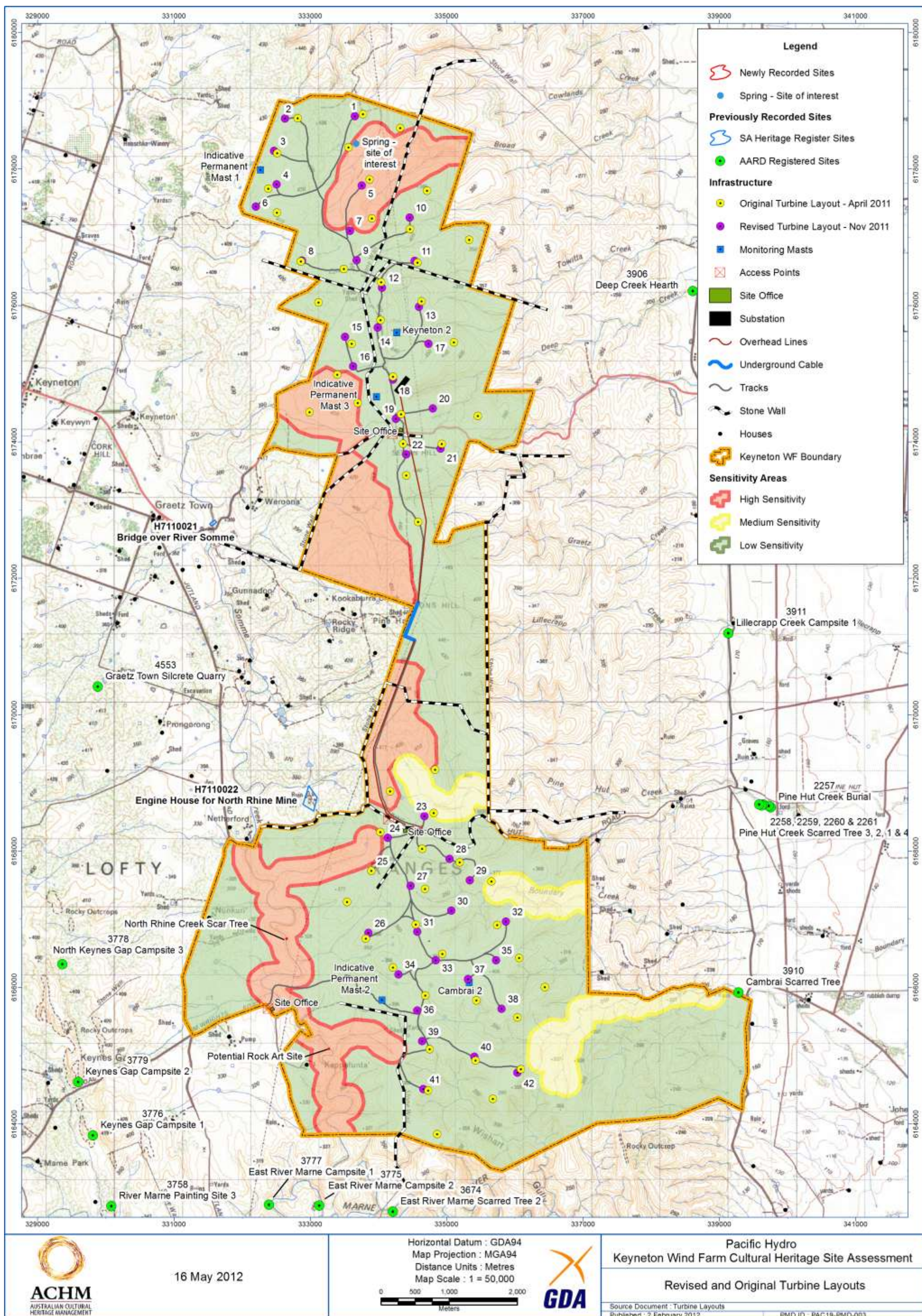
The revised turbine layout eliminates a number of proposed turbine locations from within areas designated as being of high or medium cultural sensitivity, including one that was of concern to the Peramangk Traditional Owners due to its proximity to a culturally significant spring and creek. In this regard, the revised layout is preferable to the original layout in terms of the protection and management of cultural heritage.

One turbine and its associated access track remain, however, within the northern-most area of high sensitivity (tower 5 on Map 9-1), and one intersects only slightly with the edge of an area designated as medium sensitivity (tower 23 on Map 9-1). Pacific Hydro have indicated that this slight intersection into an area of medium sensitivity is likely to be above ground (i.e. a portion of the turbine's blades may, from time to time, be above the sensitive area depending on wind direction), thus no actual ground disturbing work is anticipated (Pacific Hydro report comments 19/01/2012).

Of the associated infrastructure, one site office, a section of overhead line (between the northern and southern clusters) and limited sections of access track remain within an area of high sensitivity.

More generally, the majority of actual turbine locations included in the revised layout differ from the original layout, meaning that these have not been the subject of specific anthropological consultation, or archaeological pedestrian survey. They were, however, included in the general site survey area. As the turbines were moved following advice from the initial surveys, it can be demonstrated that the final layout will reduce the potential to impact on areas of high or medium cultural heritage sensitivity. MACAI was consulted on this matter in February 2012 and confirmed that a further, specific, anthropological survey and/or consultation will not be required over the revised layout. A pedestrian archaeological survey will, however, be required, and Pacific Hydro have indicated that this will be undertaken prior to any ground disturbing activities being carried out. Cynthia Hutchinson (MACAI) told Nick Butler (ACHM Anthropologist) that if any anthropological sites or places of interest were identified during a future pedestrian archaeological survey, then the Peramangk representatives on the archaeological survey will be eligible to provide details (*pers. comm.* 7th February 2012). This methodology would constitute best practice in ensuring that any visible archaeological sites or materials, or any previously unidentified anthropological sites or places of interest, were identified prior to ground disturbing work commencing, thereby reducing Pacific Hydro's risk of breaching the AHA.

Where infrastructure is still proposed within high and medium sensitivity areas it is recommended at this stage that on-site monitoring is carried out during initial ground disturbing works. Please note, however, that a pedestrian archaeological survey could further refine this recommendation and the areas requiring monitoring.



Map 9-1: Project Area showing revised and original turbine layouts

10 Summary and Recommendations

The following provides a summary of the content of this report, and recommendations with regard to the protection and management of cultural heritage within the project area, taking into account both the results of the site inspection, and the revised turbine layout.

10.1 Summary

Australian Cultural Heritage Management Pty Ltd (ACHM) was engaged by Pacific Hydro Pty Ltd to undertake a cultural heritage assessment of the proposed Keyneton Wind Farm footprint, taking into account Aboriginal (anthropological and archaeological) and European cultural heritage. The brief for this cultural heritage assessment included undertaking additional desktop research to build upon a desktop report compiled by ACHM in June 2009, as well as conducting the heritage inspection of the initially proposed layout of 57 turbines and associated infrastructure. The aim of the site inspection was to identify and record any Aboriginal heritage sites, through consultation with the Peramangk Traditional Owners (represented by the Mannum Aboriginal Community Association Inc. [MACAI]), as well as to provide an archaeological profile of the area whereby areas were denoted as presenting a high, medium or low risk of encountering surface or subsurface archaeological material. The archaeologist was also requested to document any points of interest with regard to European heritage. A recommendation with regards to the protection and management of the dry stone walls within the project site is provided below (further information about the dry stone walls is offered in Appendix 2 of this report).

This initial site inspection was conducted with a view to informing Pacific Hydro of any major heritage concerns in the initial planning stages, and resulted in the delineation of areas of sensitivity as described above, and specific recommendations with regard to the cultural heritage management of a culturally significant site near one of the proposed turbine locations. A thorough archaeological survey of the precise footprint is expected to take place at a later date. This method was agreed upon at a meeting attended by representatives of MACAI, ACHM and Pacific Hydro on 11 November 2010.

Pacific Hydro revised their proposed turbine layout in November 2011, and additional infrastructure layout in February, March and May 2012, following receipt of the results and recommendations arising from the initial site inspection, and taking into consideration a variety of other matters not related to cultural heritage. The revisions reduced the number of turbines from 57 to 42. The new layout has taken into account and predominantly avoided areas of high or medium sensitivity, with only one of the proposed turbine locations, one site office, a section of overhead line (between the northern and southern clusters) and limited sections of access track still falling within areas of high sensitivity. The turbine that was proposed to be located near the culturally significant area was removed from the layout altogether.

The following provides a brief summary of the results of this cultural heritage assessment, and recommendations to have arisen from the study.

10.1.1 Heritage Searches

Conducted as part of the desktop research for the study, a search of the DPC-AARD Central Archive found that one registered site lies along the boundary of the Keyneton Wind Farm, at the southeast section of the project area. The site is a scarred or culturally modified tree (AARD site 3910, Cambrai Scarred Tree). This site should not be affected by the proposed works. In addition, 15 other registered sites, including campsites, scarred trees, a painting site, a burial and a quarry, exist within 5km of the project area.

A search of the South Australian Museum Anthropology Database returned numerous results for artefacts and human remains found within the region, and although the records are not detailed enough to indicate the exact find locations, these results provide some indication of the extent of occupation of Aboriginal people within the region, and the likelihood of uncovering other such objects in the project area.

10.1.2 Previous Research

A review of relevant literature shows that the project area lies definitively within the traditional lands of the Peramangk, and records by early settlers document a population of several thousand living in large camps throughout the Mount Lofty Ranges. The literature, as well as the discovery of numerous rock art and campsites along the Marne River, shows that this area was part of an important trade route and cultural centre, with

groups conducting meetings and ceremonies on the upper banks of Saunders Creek and the Marne River, near Springton and Eden Valley.

The Keyneton Wind Farm area is also significant in terms of the history of European settlement. Keyneton was part of the early settlement of South Australia and the home of Joseph Keynes, who established a successful Merino sheep farming operation in the 1850s. A search of the Australian Heritage Database did not return any results within the project area. However, two sites registered on the South Australian Heritage Register lie near the project area, although not within it. These are a historic Engine House and a historic bridge. Historic stone walls also criss-cross the project area, and were documented during the site inspection.

10.13 Anthropological Site Inspection Results

The anthropological site inspection found that the majority of the proposed infrastructure associated with the Keyneton Wind Farm was deemed by Traditional Owners present on the site inspection to be clear of anthropologically significant areas.

One area within the northern cluster was deemed to be of anthropological significance: a creek and spring situated at 33618.87E/ 6178347.51N. Although not enough detail was provided during the site visit to be able to register the creek or spring as an Aboriginal site under the terms of the AHA, the MACAI representatives present during the site visit identified them as culturally significant and stated that they would like them to be protected. As a result of this, it was recommended that the tower proposed for this area be constructed at a minimum of 50m from the creek (at around 333535.77E/ 6178286.22N), and that the associated access track and cable travel around the head of the gully, to the west, rather than through the gully.

The North Rhine Creek, which is crossed by an existing access track at the southwestern entry point to the project area, is also considered to be of likely anthropological significance, although this was not visited during the anthropological site inspection.

10.14 Archaeological Site Inspection Results

The archaeological inspection identified one archaeological site (a scarred tree) and one potential archaeological site (a rock art site).

In addition, the archaeological site inspection resulted in the identification of areas of high, medium and low archaeological sensitivity, with the North Rhine Creek in the southwestern section of the survey area, the pockets of remnant vegetation located in the centre of the survey area and the spring site in the north of the survey area accorded high archaeological sensitivity status. Three minor creek ways in the south of the survey area were considered to be of medium archaeological sensitivity, with the remainder of the survey area considered to be of low archaeological sensitivity.

Revised Turbine Layout

After considering various factors, including the results of the cultural heritage site assessment and the draft recommendations put forward as a result of this, Pacific Hydro revised their proposed turbine layout, reducing the number of turbines from 57 to 42. As a response to the recommendation to avoid areas of high or medium cultural sensitivity, Pacific Hydro eliminated or moved the majority of turbines originally proposed to fall within these areas, including the turbine that had caused concern to Peramangk Traditional Owners due to its proximity to a culturally sensitive spring and creek. Following the revisions, one turbine and its associated access track remain within an area designated as being of high sensitivity, and one intersects slightly with the edge of an area designated as medium sensitivity. Pacific Hydro has indicated that this slight intersection into an area of medium sensitivity is likely to be above ground (i.e. a portion of the turbine's blades may, from time to time, be above the sensitive area depending on wind direction), thus no actual ground disturbing work is anticipated (Pacific Hydro report comments 19/01/2012). In addition, one site office, a section of overhead line (between the northern and southern clusters) and limited sections of access track still fall within areas designated as being of high sensitivity.

The majority of turbine locations included in the revised layout differ from the original layout, meaning that these have not been the subject of specific anthropological consultation, or archaeological pedestrian survey. They were, however, included in the general site survey area. As the turbines were moved following advice from the initial surveys, it can be demonstrated that the final layout will reduce the potential to impact on areas of high or medium cultural heritage sensitivity. MACAI was consulted on this matter in February 2012 and confirmed that a further, specific anthropological survey and/or consultation will not be required over the

revised layout, although a pedestrian archaeological survey will prior to Pacific Hydro undertaking any ground disturbing activities. Cynthia Hutchinson (MACAI) told Nick Butler (ACHM Anthropologist) that if any anthropological sites or places of interest were identified during a future pedestrian archaeological survey, then the Peramangk representatives on the archaeological survey will be eligible to provide details (*pers. comm.* 7th February 2012).

10.2 Recommendations

Taking into account the results of the initial anthropological and archaeological site assessment and consultation with representatives of MACAI, and considering the revised 42 turbine layout, the following recommendations are made with regard to the protection and management of cultural heritage within Pacific Hydro's Keyneton Wind Farm project site:

- The revised 42 turbine layout is preferable to the initially proposed 57 turbine layout in terms of its potential to avoid areas of cultural significance or areas containing surface or subsurface archaeological material.
- Areas designated as being of high and medium sensitivity have more potential to contain surface or subsurface archaeological material than other areas. It is therefore recommended that the extent of proposed infrastructure within these areas be minimised. It is recognised that the revised 42 turbine layout has already delivered on this recommendation. Where infrastructure is still proposed within high and medium sensitivity areas it is recommended at this stage that on-site monitoring occurs during initial ground disturbing works. Please note, however, that a pedestrian archaeological survey could further refine this recommendation and the areas requiring monitoring.
- A thorough archaeological pedestrian cultural heritage survey should be undertaken of the infrastructure footprint, once this is finalised. This is particularly recommended in the case that any infrastructure will disturb areas designated as being of high or medium cultural sensitivity.
- No Aboriginal sites are known to intersect with the proposed infrastructure locations included in the revised turbine layout; however, one archaeological site and one potential rock art site exist within the Wind Farm project site, and one AARD registered site falls on the boundary of the project site. These sites, and any sites recorded during future surveys should be treated in accordance with the requirements of the South Australian *Aboriginal Heritage Act 1988*. Section 23 of the *Aboriginal Heritage Act 1988* states that it is an offence to 'damage, disturb or interfere' with any Aboriginal site or object, without Ministerial approval. Should Pacific Hydro wish to disturb any of these sites, an application would need to be made to the Minister for Aboriginal Affairs and Reconciliation. A site card for the newly identified scarred tree has been submitted to AARD for registration; however, site cards cannot be submitted for potential sites. Nevertheless Pacific Hydro has confirmed that the proposed development will not impact on the potential rock art site (it lies approximately 800m from the project footprint).
- Following the archaeological pedestrian cultural heritage survey of the final footprint, a Cultural Heritage Management Plan should be developed to provide for the long term management of significant cultural heritage sites within the project site. As part of the Cultural Heritage Management Plan, a site discovery procedure, similar to the example supplied at Appendix 1 of this report, should be developed.
- Whilst the dry stone walls present on site are not currently registered or protected, it is recommended that disturbance of historic dry stone walls within the project site be avoided wherever possible. It is understood that Pacific Hydro's turbine and access track layout has sought to minimise these impacts, although some disturbance at site access points and to allow access tracks is expected. It is also recommended that Pacific Hydro exercises caution when working within the immediate vicinity of these walls so as to minimise the potential for any disturbances, both direct and inadvertent. Where impact is unavoidable to the dry stone walls, the level of disturbance should be mitigated with careful de-construction methods. It is also understood that Pacific Hydro will re-establish the walls at the conclusion of construction and will seek the assistance of the Dry Stone Walling Association of Australia or other experienced "wallers" to repair or re-construct any areas of dry stone wall that have been disturbed. (A detailed description of the dry stone walls is contained in Appendix 2 of this report).

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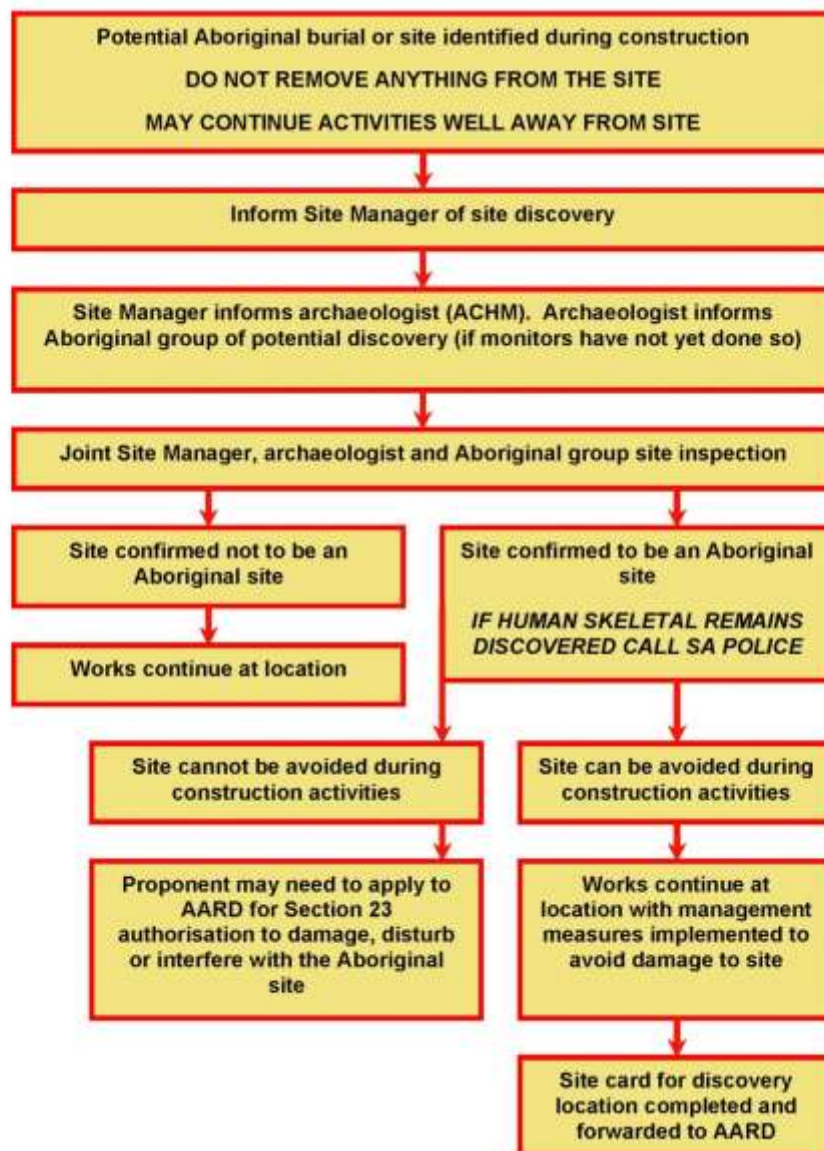
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12 Appendix 1: Aboriginal Site Discovery Procedure



Procedure to follow if potential Aboriginal skeletal remains and/or an archaeological site are found



13 Appendix 2: European Heritage

During the undertaking of background research for the proposed Keyneton Wind Farm, no listed Heritage Places were identified within the survey area. However, several items of cultural heritage value were identified during the site inspection of the proposed Wind Farm project area. Pacific Hydro is aware of all these items, as indicated on the 'Constraints Map' provided to ACHM prior to the cultural heritage inspection. These items are the dry stone walls (Figures 12-1 to 12-5) lining many of the roadways within and that crisscross much of the survey area.



Figure 13-1: Section of dry stone wall in the northern section of the project area. Photo taken facing west.



Figure 13-2: Section of dry stone wall in the centre of the survey area. Photo taken along Pine Hut Rd, facing northeast.



Figure 13-3: Two sections of dry stone wall in the centre of the survey area. Photo taken facing south, with Pine Hut Rd positioned between the two walls.



Figure 13-4: Section of dry stone wall in the centre of the survey area. Photo taken from Pine Hut Rd, facing northwest.



Figure 13-5: Sweeping section of dry stone wall along Pine Hut Rd. Photo taken facing southwest.

While the entire lengths of these stone walls were not inspected during the cultural heritage inspection, the walls that were inspected were predominantly fine examples of a nineteenth century craft imported by the British and other European immigrants that settled the district. The integrity of the walls is of a very high standard (see Figures 12-4 and 12-5). There is some damage to sections of the walls (Figure 12-6); however, forgoing this, the continuous lines of the dry stone walls adds a picturesque and functional quality to the landscape.



Figure 13-6: Damage to one the dry stone walls. Photo taken on Pine Hut Rd, facing south.

Other sites associated with the pastoral industry were observed in the project area, including a stock-loading ramp and stock enclosure in the north of the project area (Figure 12-7). Although the ramp and stock enclosure do not appear to be contemporary with the dry stone walls, the aged appearance of the site suggests some depth of age, and together with the walls they are reminders of past (and possibly still present) interaction with the landscape.



Figure 13-7: Stock-loading ramp located in the northern section of the survey area.
Photo taken facing west.

It is recommended that all works associated with the proposed Keyneton Wind Farm avoid impacting areas of cultural heritage value wherever possible. Site avoidance is the best management option for avoiding impact to heritage sites and avoids detracting from their character. Where impact is unavoidable to the dry stone walls, a minor level of disturbance should be mitigated with careful de-construction methods. It is also understood that Pacific Hydro will re-establish walls at the conclusion of construction and will seek the assistance of involvement of the Dry Stone Walling Association of Australia or experienced "wallers" to repair or re-construct any areas of dry-stone wall that have been disturbed.