

# Flyers Creek

## WIND FARM

### Environmental Assessment

#### CHAPTER 11 Heritage



# 11. Heritage Issues

This section of the Environmental Assessment summarises the findings of the assessment of heritage issues associated with the proposal. Heritage has been addressed under two headings:

- Aboriginal Heritage (traditional indigenous land use and cultural values), Sections 11.1 to 11.6
- Non-Aboriginal heritage (recent settlement history, last 200 years), Section 11.7

## 11.1 Summary of Aboriginal Heritage assessment process

The Aboriginal archaeological and cultural heritage assessment for the project was undertaken by Austral Archaeology Pty Ltd (Austral). The full report of their investigation is provided as Appendix F.

The assessment undertaken by Austral involved stakeholder consultation in accordance with the Department of Environment, Climate Change and Water (DECCW) Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005 (the Part 3A Guidelines). Stakeholder registrations of interest were invited, and were received on behalf of the Orange Local Aboriginal Land Council (OLALC), the Wiradjuri Traditional Owners Central West Corporation (WTOCWC), and 12 individual Aboriginal stakeholders. A search of the National Native Title Tribunal (NNTT) data base identified no Native Title Holders or Claimants that were registered within the study area.

The assessment combined both desktop and field assessment components to:

- identify the legislative, landscape and regional context for Indigenous heritage and the archaeological background of the area
- identify on-site areas of potential archaeological deposit and/or archaeologically sensitive landscapes, within the project area
- establish the importance or value that identified objects or sites may have to the community at large based on the survey findings and through consultation (significance assessment)
- identify the measures to be incorporated in the project to mitigate the archaeological impacts of the development both in general and on the identified objects or sites.

Desktop assessment work was carried out with regard to the legislative, landscape and regional context for Indigenous Heritage. A predictive model was utilised to develop the field assessment survey methodology. All of the registered stakeholders were provided with a draft copy of the survey methodology and asked to provide their comments.

Following confirmation of the survey methodology, field assessment work was carried out, with five of the registered stakeholders participating in the field work. Views of the local Aboriginal community groups regarding cultural constraints were sought throughout the fieldwork component of the project. The field findings were summarised, and the archaeological and cultural significance of the identified sites was evaluated using the NSW National Parks and Wildlife Service significance assessment criteria.

Eight recommended actions were developed based on the results of the Aboriginal Archaeological and Cultural Heritage Assessment. These eight recommendations take into account the archaeological context, environmental information, consultation with the local Aboriginal community, the findings of the survey results, and the predicted impact of the proposed development on archaeological resources. Mitigation measures were then developed by the project team, based on Austral's recommendations.

A copy of the draft Aboriginal Archaeological and Cultural Heritage Assessment report in Appendix F has been provided to the Aboriginal stakeholders for comment and review. Consultation with relevant stakeholders will continue during any subsequent stages of planning and implementation. The mitigation measures that are relevant to matters potentially affecting indigenous heritage aspects will be incorporated in the project Environmental Management Plan (EMP).

The findings and recommendations of the Aboriginal Archaeological and Cultural Heritage Assessment for the project are outlined in Sections 11.2 to 11.6.

## 11.2 Summary of the desktop findings

### 11.2.1 Legislative, landscape and regional context review

A review of the applicable State and Federal heritage legislation confirmed that the assessment should be undertaken under the DECCW *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation Guidelines 2005* (Part 3A). The Austral assessment therefore follows these guidelines.

Austral's investigations into the distribution of archaeological objects and places included an analysis of information on the natural resources available in a region, in order to gain an understanding of the range of cultural remains that can be expected. For example, water availability is a major influence on the intensity of Aboriginal occupation and evidence. The Flyers Creek area was reviewed in terms of the climate, hydrology, geology and soil and flora and fauna types in the region.

Climatic conditions within the study area are generally mild to cool and are indicated to have been fairly similar for the last 1,000 years. The area experiences good rainfall throughout the year, which maintains soil moisture and in turn creates good conditions for ground cover growth and lowers the risk of erosion from climatic causes.

As a result of over 170 years of farming and mining only a very small portion of the study area remains relatively undisturbed. The current flora and fauna of the study area is not considered indicative of the range and quality present prior to European settlement. However, the remnants that remain today show that there were sufficient resources historically to support a moderate-sized population of hunter-gatherers.

The pre-European context of the Flyers Creek area is one of Aboriginal people living a mobile hunting and gathering lifestyle in an environment which provided an extensive resource base associated with the multitude of water sources, woodland flora and fauna as well as alpine regions. Fire was used as a hunting aid and modified trees are a common cultural marker. Material culture, such as tools, was made of a variety of materials such as bark, resin, shell, bone and reeds. Hard stone raw material that was made into stone tools is the main element of this tool kit to remain in the archaeological record.

### 11.2.2 Archaeological background (databases and previous investigations)

#### Review of existing databases

Austral undertook a search of the NSW DECCW's Aboriginal Heritage Information Management System (AHIMS) for an area of approximately 17 km<sup>2</sup> surrounding the proposed FCWF study area. A total of 2 Aboriginal objects and places were recorded within this area (refer Table 11.1 and Figure 11.1).

**Table 11.1 – Summary of sites recorded within 17km<sup>2</sup> of the study area**

Feature Type	Total	%
Modified Tree (Carved or Scarred)	1	50%
Open Camp Site	1	50%
<b>TOTAL</b>		<b>100%</b>

The open camp site is outside of the study area. The Longview (AHIMS# 44-5-0070) scarred tree occurs within the study area but at such a distance from any construction or operational areas of the wind farm that it is not considered at risk of harm due to any aspect of the project.

Searches of the Australian Heritage Places Inventory (AHPI), the Register of the National Estate (RNE), the National Heritage List (NHL) and the NSW Heritage Council State Heritage Register (SHR) databases did not identify any recorded Aboriginal object or place within the Blayney Shire LGA.

### Investigation into archaeological models

The various archaeological surveys and models that have been developed for the region were reviewed by Austral and considered for utilisation within this assessment. The most recent and exhaustive predictive model developed for the Orange area is that of Kelton (1996), and it has been adopted as a basis for predictive modelling, with some small variation. This predictive model, summarised in Table 11.2 below, was used to highlight sites that are most likely to be present and therefore provide a basis for a statement concerning the landforms that will most likely yield a higher number of sites.

**Table 11.2 – Predictive model summary table**

Site Type	Site Location	Relative Probability of Occurrence within the Study Area
Artefact Scatter	Within 90 metres of water sources and on elevated ground (e.g. ridge tops, spurs, hills and slopes). Not likely to be visible on river terraces.	Moderate
Isolated Find	Throughout the landscape especially in locations of erosion, rarely in locations of aggradation.	Moderate
Culturally Modified Tree	Within remnant vegetation and old growth forests.	Low to moderate
Hearth Site	Within 90 metres of water sources and on elevated ground. Not likely to be visible at all but especially on river terraces.	Low
Stone Arrangement	On elevated flat ground nearby to suitable sources of raw material.	Low
Axe Grinding Groove	On sandstone outcrops, or other hard rock exposures next to creek beds etc.	Low
Burial	Some distance from artefact scatters and in the banks of watercourses and hillsides. Within trees, or near them and possibly in association with culturally modified trees.	Low
Potential Archaeological Deposit	Within 90 metres of water sources and on elevated ground.	Low to moderate

Within this area, landforms such as ridges, hill slopes and old growth areas constitute the places with the greatest likelihood of archaeological sites being extant. Conversely areas such as river flats and places impacted upon by European land use practices are least likely to yield any visible sites. In particular, level areas of comparatively high and sheltered land are most likely places for artefact scatters to be found, while isolated artefacts can be found throughout the landscape. Scarred trees are possible within the few areas where old growth vegetation still remains. Other sites will be less likely to occur within the study area (such as grinding grooves), though the location and form of the possible occurrence has been anticipated by the predictive model to allow for a representative and accurate methodology to be developed.

### 11.3 Survey methodology

The aim of the field assessment was to:

- Identify Aboriginal archaeological and cultural sites and issues.
- Identify areas of potential archaeological deposit and/or archaeologically sensitive landscapes, within the study area.

Austral's field assessment methodology was designed to specifically target the areas of proposed development and construction activity for the Flyers Creek Wind Farm. The survey methodology attempted to provide flexibility in response to onsite conditions and stakeholder and Client requirements, as well as to provide uniformity in recording to allow derivation of sound recommendations based on discussion and analysis of the results.

The study area was divided into nine survey units based on the proposed locations for the wind turbines, underground cabling, access road clusters and the transmission lines. The study area was surveyed in transects of a linear manner along each access track, possible underground cable location and transmission lines, survey participants spread out at even intervals of 10 to 15 m apart. Because of the close spacing and directed approach this means that coverage of each survey area would be as close to total as possible allowing for the variation in exposure and visibility.

**Table 11.3 – Descriptions of survey units**

Survey Unit	Description	Landform Unit	Potential
1	Covering the locations of turbines 21-31, access tracks and underground cabling location.	<ul style="list-style-type: none"> <li>• Fluvial flat/bank</li> <li>• Hill slopes</li> <li>• Hill crest</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Moderate</li> <li>• Moderate</li> </ul>
2	Covering the locations of turbines 32-37, access tracks and underground cabling location.	<ul style="list-style-type: none"> <li>• Hill slopes</li> <li>• Hill crest</li> </ul>	<ul style="list-style-type: none"> <li>• Moderate</li> <li>• Moderate</li> </ul>
3	Covering the locations of turbines 39-46, access tracks and underground cabling location.	<ul style="list-style-type: none"> <li>• Fluvial flat/bank</li> <li>• Flat</li> <li>• Hill slopes</li> <li>• Hill crest</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Low to moderate</li> <li>• Moderate</li> <li>• Moderate</li> </ul>
4	Covering the locations of turbines 19-20, 38, access tracks and underground cabling location.	<ul style="list-style-type: none"> <li>• Fluvial flat/bank</li> <li>• Hill slopes</li> <li>• Hill crest</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Moderate</li> <li>• Moderate</li> </ul>
5	Covering the locations of turbines 17-18, access tracks and underground cabling location.	<ul style="list-style-type: none"> <li>• Fluvial flat/bank</li> <li>• Flat</li> <li>• Hill slopes</li> <li>• Hill crest</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Low to moderate</li> <li>• Moderate</li> <li>• Moderate</li> </ul>
6	Covering the locations of turbines 14-16, access tracks and underground cabling location.	<ul style="list-style-type: none"> <li>• Fluvial flat/bank</li> <li>• Flat</li> <li>• Hill slopes</li> <li>• Hill crest</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Low to moderate</li> <li>• Moderate</li> <li>• Moderate</li> </ul>



Survey Unit	Description	Landform Unit	Potential
7	Covering the locations of turbines 9-13, access tracks and underground cabling location.	<ul style="list-style-type: none"> <li>• Fluvial flat/bank</li> <li>• Hill slopes</li> <li>• Hill crest</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Moderate</li> <li>• Moderate</li> </ul>
8	Covering the locations of turbines 1-8, access tracks and underground cabling location.	<ul style="list-style-type: none"> <li>• Fluvial flat/bank</li> <li>• Hill slopes</li> <li>• Hill crest</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Moderate</li> <li>• Moderate</li> </ul>
9	132 kV transmission line	<ul style="list-style-type: none"> <li>• Fluvial flat/bank</li> <li>• Flat</li> <li>• Hill slopes</li> <li>• Hill crest</li> </ul>	<ul style="list-style-type: none"> <li>• Low</li> <li>• Low to moderate</li> <li>• Moderate</li> <li>• Moderate</li> </ul>

Exposure and ground surface visibility of any site was recorded, and levels of disturbance were assessed according to predetermined categories.

A pro forma sheet for each artefact find recorded during assessment was kept. Artefacts were recorded singularly unless a major artefact scatter was observed. Recordable artefact attributes for field assessment included: type, length, breadth, width, material, cortex, and evidence of any diagnostic traits, as well as evidence of use, wear and/or retouch. Artefacts were photographed in the field with visible scale reference. GPS co-ordinates (in WGS84 / GDA94) were recorded for each artefact find.

The study area was surveyed in accordance with the predictive model and the survey methodology. The survey's focus was directed at 35 kilometres of access tracks, 46 wind turbine locations, routes for underground cabling, a 33 kV transmission line and a 132 kV transmission line corridor of up to 15 kilometres in length. (Since the survey was undertaken, two turbine locations have been deleted from the proposed layout, such that only 44 turbines are currently being proposed).

OLALC and four independent Aboriginal stakeholders (Shawn Williams, Wayne Williams, Enid Clarke and Jirrah Freeman) participated in the field assessment, completed in October and November 2010. Neville Williams (Shawn and Wayne Williams' father) had also registered interest in participating and attended the initial meeting and the site review.

It should be noted that additional assessment may be required if the project layout is altered in a way that extends beyond the areas surveyed and may potentially affect indigenous heritage aspects not yet identified. This issue is managed by the inclusion of mitigation measure number 8 (See Section 11.6).

## 11.4 Survey findings

The field assessment for the Flyers Creek Wind Farm project identified and recorded nine new Aboriginal archaeological sites in the study area with a total of 32 artefacts. The number of each particular site type is presented in Table 11.5. The location of each of these sites is shown on Figure 11.1.

Overall, the density of stone artefact scatters within the study area was low. The four artefact scatters, three isolated finds and two potential archaeological deposits were distributed throughout the study area, but were concentrated in moderately or highly disturbed contexts throughout the landscape. The majority of the sites were located on ridges, slopes and saddles of rolling hills primarily in access tracks but also in places of washout and exposure consequent on the construction of dams.



**Figure 11.1 – Map of Wind Farm Site layout and Heritage Sites**

This figure has been removed from the Environmental Assessment due to the information being of cultural sensitivity to the Aboriginal Community.

The nine sites identified by the survey included:

- seven artefact scatters or isolated finds that were of limited extent, 20 m<sup>2</sup> or less and with low or low to moderate archaeological potential
- two PADs (Potential Archaeological Deposits) Site 8 was assessed as having an extent of 100 m<sup>2</sup> and moderate to high archaeological potential while Site 9 was assessed as having an extent of 75 m<sup>2</sup> and being of moderate-high archaeological potential.

**Table 11.4 – Survey results**

No.	Site Name	Size	# of artefacts	Landform Unit	Exposure type (dam, track etc)	Archaeological Potential
1	FCWF-S-01	20 m <sup>2</sup>	7	Rolling hills, terrace	Furrow	Low to moderate
2	FCWF-S-02	20 m <sup>2</sup>	3	Rolling hills, lower slope	Dam wall	Low
3	FCWF-IF-01	<1 m <sup>2</sup>	1	Rolling hills, lower slope	Track	Low
4	FCWF-S-03	150 m x 2 m	7	Rolling hills, mid slope	Track	Low
5	FCWF-IF-02	<1 m <sup>2</sup>	1	Steep hills, lower slope	Washout	Low
6	FCWF-S-04	20 m <sup>2</sup>	12	Steep hills, saddle	Track	Low to moderate
7	FCWF-IF-03	<1 m <sup>2</sup>	1	Rolling hills, ridge	Track	Low
8	FCWF-PAD-01	100 m <sup>2</sup>	-	Rolling hills, terrace	Furrow	Moderate to high
9	FCWF-PAD-02	75 m <sup>2</sup>	-	Rolling hills, terrace	-	Moderate

Where: FCWF – Flyers Creek Wind Farm, IF – Isolated Find, S – Scatter (Open Artefact Scatter), PAD – Potential Archaeological Deposit

Ninety percent of the 32 artefacts found within the study area were classed as flakes. The disturbance associated with track use can be seen as being involved in the high proportion of broken flakes noted during the study while the overall small size of artefacts relative to the large study area reflects both ground surface visibility as well as the ongoing impact of European land use strategies.

The PADs were designated following consultation with the Aboriginal site officers present and each met the criteria for a PAD developed in the predictive model. PAD 1 is located on a terraced rise above an unnamed watercourse and has a single site associated within its boundaries, CWF-S-01. PAD 2 is in close proximity to Slattery's Creek. The archaeological and cultural significance of these sites is described in the following section.

## 11.5 Discussion and significance assessment

An assessment of significance seeks to determine and establish the importance or value that an object or site may have to the community at large. The NSW National Parks and Wildlife Service assessment criteria for archaeological significance have been developed to cover:

- Research potential
- Education potential
- Aesthetic significance

The Austral report in Appendix F details the assessment of the research and education potential and the aesthetic significance. The Austral findings are summarised below.



### 11.5.1 Assessment of research potential

Austral's assessment of the research and educational potential of the sites and areas of potential archaeological deposit are identified in the field assessment is presented in Table 11.6.

**Table 11.5 – Assessment of research potential**

No.	Site Name	Potential for new information	Representativeness	Rarity	Research Potential
1	FCWF-S-01	Low	Low	Low to moderate	Low
2	FCWF-S-02	Low	Low	Low	Low
3	FCWF-IF-01	Low	Low	Low	Low
4	FCWF-S-03	Low	Low	Low	Low
5	FCWF-IF-02	Low	Low	Low	Low
6	FCWF-S-04	Low	Low	Low to moderate	Low
7	FCWF-IF-03	Low	Low	Low	Low
8	FCWF-PAD-01	High	Low	High	High
9	FCWF-PAD-02	High	Low	High	High

The artefact scatters recorded during the Field Assessment for the FCWF Project represented different levels of research potential. The majority were considered to be of low potential due to the small size, the lower potential of the area in which they were located based on past land use and condition as observed during the Field Assessment, and the number and variety of associated artefact types and raw material.

The two areas where the research potential is of greater value are those associated with the two recorded PADs. Both PADs have been assessed by Austral as being of potentially high research and archaeological significance.


### 11.5.2 Assessment of education potential

The educational potential of a study area is best considered in light of its value to the general public, the Aboriginal stakeholders, and other researchers: those people whom the archaeologist has a duty to inform. Therefore the educational potential of the current study area is directly linked to its research potential.

Austral has considered the data that could be retrieved from further investigation of the current study area. Apart from FCWF-PAD-1 and FCWF-PAD-2, further investigation is unlikely to add any archaeological data that is likely to alter the story of Aboriginal people in the area. As such the educational potential in terms of the public (Sites 1 to 7) is considered to be low. Austral has assessed that investigation of FCWF-PAD-1 and FCWF-PAD-2 would be of moderate educational value.

### 11.5.3 Aesthetic significance

Austral confirmed that professional archaeologists view aesthetic significance as an attribute that can only be culturally determined by Aboriginal stakeholders. To gain a determination of cultural significance, Austral approached and consulted with the identified Aboriginal stakeholders, in keeping with the DECCW Aboriginal community consultation guidelines and ethical consultative practice. Each stakeholder organisation was asked to consider the study area from the perspective of the Aboriginal cultural heritage and offer any insights and/or knowledge they may have specific to the current study area.



At the time of preparation of this Environmental Assessment, comments, from the stakeholder groups, on the draft report and the areas assessed had not been received. The comments when received, will be forwarded as a supplement to the material provided in this Environmental Assessment.

Seven of the nine sites identified have been assessed as having low, or low to moderate, archaeological potential with limited potential to provide further research potential and as such do not warrant further archaeological investigation. The PADs are considered to be of high potential significance due to their rarity and possible research potential to provide new information.


## 11.6 Mitigation measures relating to Aboriginal heritage issues

The identified Aboriginal archaeological sites could constitute a constraint on the proposed development. However, Austral formulated recommendations that allow for appropriate management and mitigation measures to be put in place prior to the future development within the study area to manage these potential constraints.

Austral's recommendations were developed after considering the archaeological context, environmental information, consultation with the local Aboriginal community, the findings of the archaeological survey results, and the predicted impact of the proposed development on archaeological resources.

The proponent has taken into account the recommendations provided in the Austral Aboriginal Archaeological and Cultural Heritage Assessment report. In the context of its project objectives, the proponent will incorporate the following mitigation measures to avoid impacting significant Aboriginal sites and items. The mitigation measures will be incorporated in a Cultural Heritage Management Sub-Plan that will form part of the CEMP.

1. The layout of the proposed wind farm infrastructure will be slightly modified to avoid disturbing the two high significance PADs identified within the site area. Temporary fencing of these PAD areas will be undertaken during construction.
2. The layout of cables and/or tracks will be slightly modified to avoid the surface artefacts FCWF-S-01 to 04 and FCWF-IF-01 to 03. In the unlikely event that this is impractical, a permit to salvage through collection and relocation of surface artefacts will be sought for any of the sites FCWF-S-01 to 04 and FCWF-IF-01 to 03 impacted by development of the wind farm project. Any salvage will be undertaken in accordance with DECCW procedures including consultation.
3. The development and implementation of a care and control of artefacts strategy, devised through consultation with Aboriginal stakeholders, was recommended by Austral for all collected and excavated archaeological material retrieved during the abovementioned surface collection, testing and/or salvage excavation works. This strategy shall be agreed and finalised with the Aboriginal stakeholders prior to any archaeological site works commencing.
4. If additional unrecorded Aboriginal archaeological material is encountered during development, works shall cease immediately to allow an archaeologist to make an assessment of the finds, as all Aboriginal artefacts (known and unknown) are protected under the *NP&W Act 1974* and *Amendment Act 2010*. DECCW will be notified immediately of any such finds as per these Acts.
5. As required by the *NSW Heritage Act 1977* (amended), in the event that historic relics are encountered, works shall cease immediately to allow an archaeologist to make an assessment of the finds. The archaeologist may need to consult with the Heritage Branch Department of Planning concerning the significance of any historic cultural material encountered.
6. Access to Aboriginal archaeological information may be restricted for the purposes of public exhibition. Consultation with Austral Archaeology Pty Ltd, and the registered Aboriginal stakeholders will be undertaken to determine the appropriate level of public release.

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7. Copies of the finalised report shall be provided by the client to the following Aboriginal stakeholder groups: OLALC and WTOCWC as well as the twelve individual stakeholders. In alphabetical order the individual stakeholders include Enid Clarke, Stuart Cutmore, Keith Freeman, Norma Freeman, Jirrah Freeman, Coedie Freeman, Krystal Ingram, Dallas Ingram, Neville Williams, Sharon Williams, Wayne Williams and Shawn Williams. Austral Archaeology Pty Ltd will provide a copy of the finalised report to NSW DECCW. Completed site cards shall be provided by Austral to the DECCW AHIMS Registrar as per the *NP&W Act 1974* and *Amendment Act 2010*.
  8. Consultation with relevant stakeholders will be continued during any subsequent stages of planning and implementation. The mitigation measures that are relevant to matters potentially affecting indigenous heritage aspects will be incorporated in the project Environmental Management Plan (EMP) in the form of a Cultural Heritage Management Sub-Plan.

### 11.7 Non Aboriginal heritage issues

The following description of the European settlement of the Blayney region provides an overview of key aspects of European settlement of the region (a period of less than 200 years) and context for the project area. It is based on material obtained from Council websites and local historical articles.

Non-indigenous presence to the west of the Blue Mountains occurred from 1813 following the crossing of the Blue Mountains by the explorers Blaxland, Wentworth and Lawson and the progressive expansion of exploration to the west following the development of the route from the coast.


Surveyor George Evans is reported to have observed three hills to the south in 1813. This represented the first European record of the Blayney district. Evans named these hills the Three Brothers. During an expedition in 1815, Evans set out from the fledgling village of Bathurst towards the Three Brothers. As he travelled west, he observed a large flat mountain to the north which he named Mt Lachlan, later to become Mt Macquarie. He travelled through the present areas of Neville and Lyndhurst before discovering the Lachlan River.

The temporary settlement throughout the area between 1821 and 1828 was predominantly pastoral when government stock stations were set up and private pastoralists took up land. The village of Carcoar was gazetted in 1839 and was the first settlement beyond Bathurst. Blayney was established in 1843 followed by Orange in 1846.

The first recorded settlement near Millthorpe (previously known as Springgrove) was the establishment of Grove Farm by Charles Booth in 1837. John Savery Rodd is also indicated to have taken up 1256 acres on Flyers Creek at Errowanbang during the 1830s.

As well as pastoral settlement of western lands, the first discovery of payable gold occurred at Ophir to the northeast of Orange. The Gold was found by William Tom and John Lister in April 1851. They recovered about 120g (4 oz) of payable gold; the first to be discovered in NSW and in Australia. The ensuing gold rush of the 1850s and 60s sparked the development and growth of a number of settlements throughout the region including Blayney and Forest Reefs. Initially Blayney Shire was allocated for farming. However, with the opening and working of many mines, the townships flourished. The site eventually decided upon for the township of Blayney was in a picturesque valley with the Belubula River running along its eastern boundary.

With valuable gold came bushrangers, including the notorious Ben Hall, John Gilbert, John O'Meally, John Vane and Mickey Bourke. They were active throughout the district with a number of hold-ups along the roads to Carcoar. Bushranging activities had been reported from 1828. However, the early sixties is indicated to have been associated with significant attacks by bushrangers and the daylight robbery of a bank in Carcoar. Following Ben Hall and John Gilbert's departure from the area and their deaths in 1865, the Carcoar area is indicated to have become more peaceful.



Growth of villages continued in the 1870s and 1880s, aided by the construction of the western railway and the influx of people pursuing gold. The railway reached Bathurst in April 1876 and subsequently Blayney in the same year with Orange station being opened in April 1877. The railway from Bathurst to Orange was 48 km. Spring Grove station (now Millthorpe) was established in 1886 but was closed in 1985. The railway also reached Carcoar in 1888 but it was only a branch line and did not provide the same economic impetus as the main western line and was subsequently closed. Another branch line was also established between Cadia Valley and Spring Hill on the main western line.

Some of the mining activity in the area is indicated to have been curtailed or scaled back in the late 1860s due to low copper prices, reduction in quantity and quality of ore and inadequate capital to develop the mines on a large-scale.

The lack of rail in the early days of mining would have hampered the ability to get the ore to the market. In the early 1900s iron ore was supplied from the Cadia area to the Hoskins Plant at Lithgow until the plant's closure and relocation to Port Kembla in 1928.

Indications of the area's rich mineral potential had been established by 1950 and there are further indications that much mining activity took place at Cadia in the decade prior to 1970. Infrastructure associated with mining included smelting plant, pumps to keep workings dry, water races to supply water for sluicing as well as mining settlements including residences, shops and schools were built.

The district is predominantly made up of cleared land dedicated to pasture and cultivation, however industry and mining play a much greater role in the current economics of the Shire. The cool climate and rich volcanic soils has contributed to a resurgence of agricultural and pastoral activities generating a wide range of products. These include sheep's cheeses, beef, lamb, fungi, stone fruits, olives, grapes, berries and almost half the NSW crop of apples. There is also a rapidly expanding wine production industry.

No buildings within the project area have been identified as having any heritage significance.

### **11.7.1 Mining and exploration and potential of the project area**

Cadia Valley has been associated with a variety of mining and mineral exploration and refining ventures since 1850 including minerals, copper, gold, silver and iron. Few intact historic sites or relics relating to the historic mining activity are indicated to be retained in the precinct although a few at the Cadia site have warranted development of a Conservation Plan.

Historic mining activities at the proposed wind farm site are primarily exploratory in nature with some small scale attempts to extract localised and concentrated mineralisation. By contrast, the mining activities of the current Cadia Valley Operations are large scale and extract large volumes of gold, and to a lesser extent, copper.


The former Browns Creek mine to the east of the proposed wind farm site has now closed but represents a former site of significant opencast and underground mining.

Small-scale mining activities are evident and/or indicated on mapping for the wind farm area, but these appear to be short term ventures. In some cases, abandoned adits, shafts and spoil piles are evidence of the former small-scale mining activity. Inspection of the locations shown on mapping as former mining sites, close to the wind farm site, yielded few signs of former mining and most of the areas appear to have been rehabilitated and returned to pasture. Exceptions to the above include:

- Slattery's Creek/Wallaby rock mining activity and water race and weir (Plates 11.1 to 11.6)
- "Little Jesse" represented by a shaft site and nearby footing for an unknown item of mining plant indicated by remaining bolts in a concrete and timber frame footing. (Plates 11.7 to 11.12)

In all cases, the areas of historical mining activity are separate from areas to be impacted by the wind farm development. Works in closer proximity to the historical mining areas can easily avoid impacting the mining areas and it is expected that fencing around some of the closer former mining areas could





be installed to ensure no impacts occur for the identified areas. In particular, it is proposed that the 'Little Jesse' adit and footing structure be fenced off to avoid inadvertent impact during the wind farm construction.

### **11.7.2 Trigonometrical Stations**

There are two Trigonometrical (Trig) stations (Calvert and Hopkins Trig Stations) in close proximity to proposed turbine sites. The Trig Stations are contemporary structures comprising a concrete base with a steel vane at the top (Plate 11.2). There is also a rock cairn structure close to the more recent Calvert Trig Station structure.

Measures will be incorporated in the construction management program to ensure that the Trig Station structures and their associated reference marks are not damaged. This will include fencing to be erected around the Calvert and Hopkins Trig Stations as well as any associated survey reference marks. The fence will be maintained for the duration of the construction period and if required by the Lands Department will be retained following completion of construction.

### **11.7.3 Mitigation measures relating to Non-Aboriginal heritage items**

The assessment for this document has included literature review, site inspection, photography and recording of locations and details of the former historic sites, mining areas, trig stations and the remains of an old hut. The locations of the former mining areas are shown in Figure 11.2 and representative photographs provided in Plates 11.1 to 11.12.

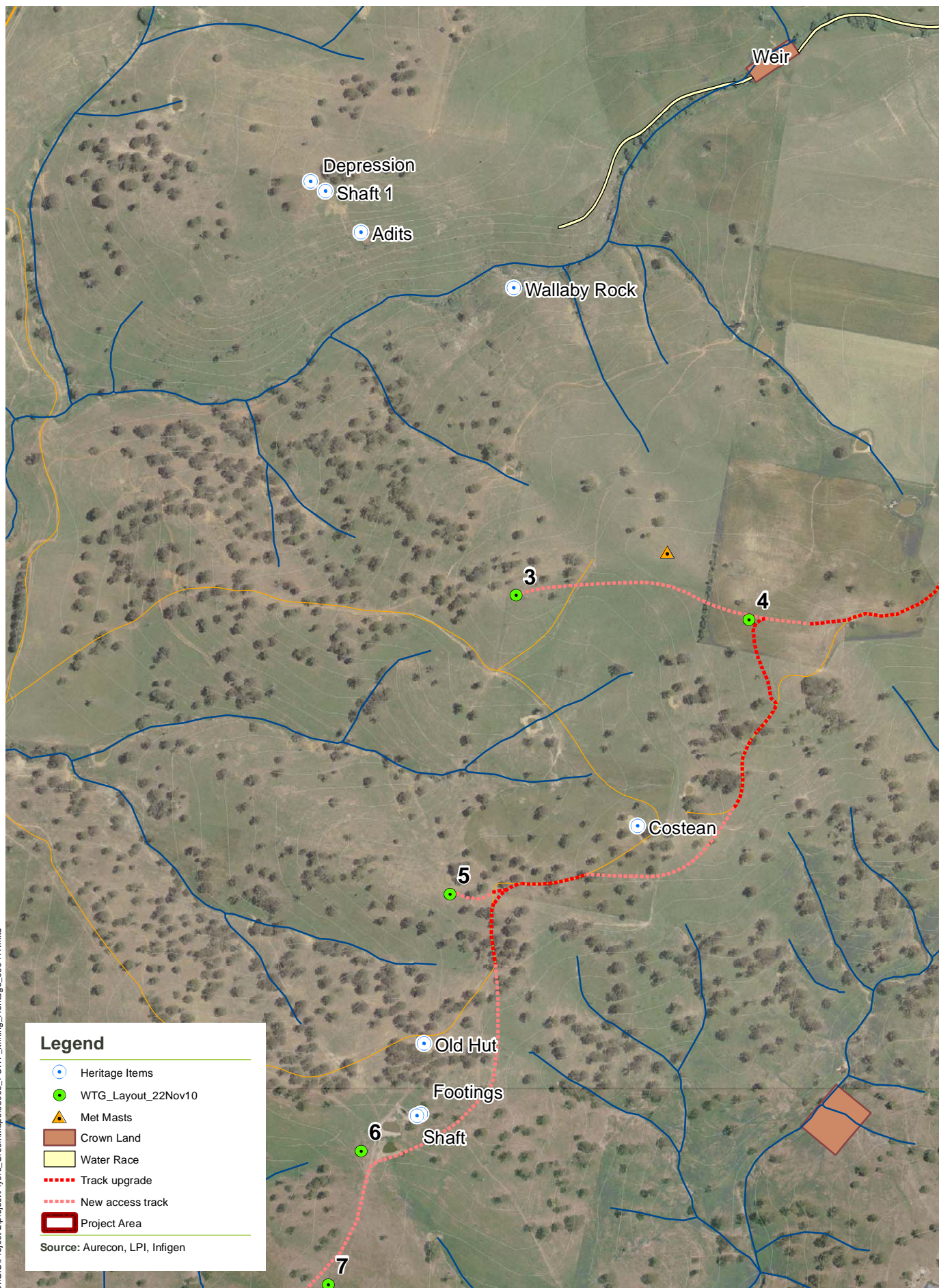
The following management measures are proposed to avoid impacts on former mining areas.

Where the wind farm construction works are in close proximity (within 50 metres) of any identified items of non-Aboriginal heritage potential, despite being of low heritage significance, a temporary fence will be constructed around the item for the duration of the construction works to avoid disturbance of the particular feature. Items to be protected from damage by the project include:

- The Calvert Trig Station site and its associated reference marks. These will be protected by fencing erected by the contractor prior to any works at Turbine site 4. The fencing will be maintained for the duration of the construction works and if required by Lands Department following completion of construction works. Such fencing would be at least 5 metres in each direction from the Trig Station or any reference marks in its vicinity and no construction activities will occur within the fenced area. Site monitoring will routinely ensure that the fence around this survey facility is secure.
- Flyers Creek Wind Farm will, prior to commencement of construction, arrange for the preparation of a photographic record of any former mining structures that could be disturbed. This includes the former mining shaft site and footing in the vicinity of Turbines 5 and 6 and the access track and the remains of the old hut on the ridgeline near the shaft. No works will occur within 20 metres of these sites.
- Should disturbance of any sites be unavoidable then heritage recording of the sites will be undertaken by an industrial archaeologist familiar with the types of infrastructure associated with historic mining sites and items
- Should any items of historic mining activities or historical items be exposed by the site earthworks then the works will cease at location and an archaeologist would be engaged to investigate the findings



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Projection: MGA Zone 55

Flyers Creek Wind Farm **Environmental Assessment**

**FIGURE 11.2:** Location of Mining or Built Heritage Sites





**Plate 11.1 – View to north side of Slatterys Creek. Former small scale mining activities are evident**



**Plate 11.2 – View of former mine adit and spoil on slope – Wallaby Rock in distance**



**Plate 11.3 – View of adit in hillside – only short tunnel, water in base of heading**



**Plate 11.4 – View to the west at location of adit**



**Plate 11.5 – Top of hill, scattered rock around several shafts and inclined adits**



**Plate 11.6 – Inclined adit on top of hill**





**Plate 11.7 – Former shaft site amongst trees and near farm dam**



**Plate 11.8 – Shaft Site with footing for unknown mining plant**



**Plate 11.9 – Spoil pile adjacent former shaft site**



**Plate 11.10 – Footing mostly concealed by long grass – remaining items include large bolts and rock/concrete footings**



**Plate 11.11 – Fireplace and tank at former hut site close to site of former shaft – close to wind farm access track**



**Plate 11.12 – Fireplace still standing – Brick and timber construction with metal chimney flume**