

Transmission Line Landform Unit 2/Locale 3 (TL LU2/L3) 767918e 6440024n (GDA)

Three stone artefacts were recorded in a large area of sheet wash exposure adjacent to a creek (Plate 47). The landform is a flat, with very gentle gradient and an aspect to the south-east. An area of erosion measures 50m x 50m of which 30% was ground exposure, possessing 10% archaeological visibility. The effective survey coverage at this point is low. Artefact density is predicted to be moderate. The site has subsurface potential. This site is a component of a small complex including the grinding grooves (AHIMS #6-3-105) in the adjacent creek.



Plate 47 TL LU2/L3 looking 180°.

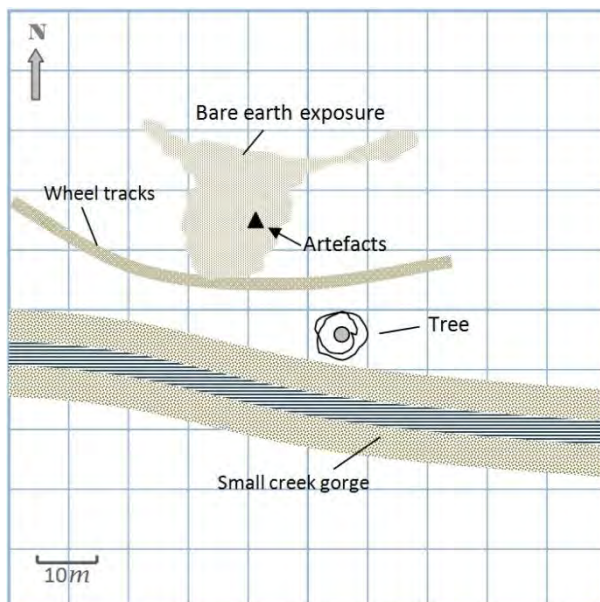


Figure 7 Sketch map showing location of TL LU2/L3.

AHIMS 36-3-105

767857e 6439959n (GDA)

Two sets of grinding grooves were recorded adjacent to a water pool on sandstone bedrock in a creek in Transmission Line Landform Unit 2 (Plates 48, 49 & 50).



Plate 48 Creek bed below *AHIMS 36-3-105* where the small gorge begins; looking 80°.



Plate 49 The location of the grinding grooves around the small pool.



Plate 50 Close up of the two most eastern grooves.

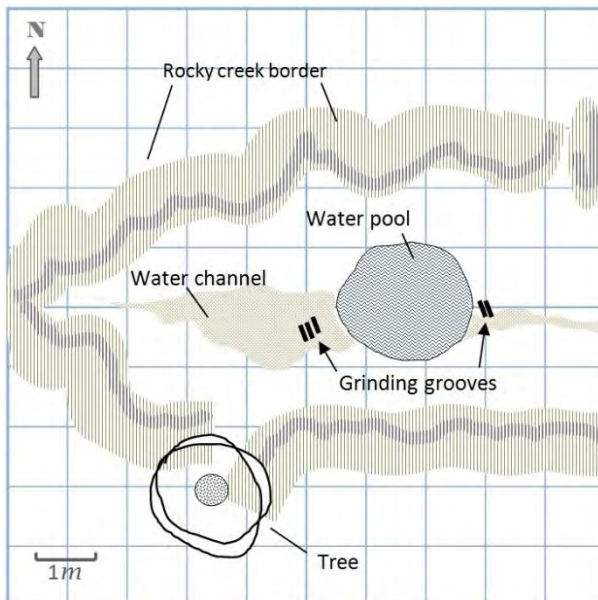


Figure 8 Sketch map showing location of AHIMS 36-3-105.

Transmission Line Landform Unit 1 /Locale 1 (TL LU1/L1) 776895e 6446565n (GDA)

Three stone artefacts were recorded in an area of exposure on a vehicle track at this locale (Plate 51). The landform is broad undulating crest, with very gentle gradient and open aspect. The area measures 12m x 2.5m of which 90% was ground exposure, possessing 60% archaeological visibility. The effective survey coverage at this point is relatively high, and given that three artefacts only were recorded, it appears that this is a discrete event, with artefact density assessed to be low. The site has subsurface potential given some depth to the soils, but artefact density is predicted to be low.



Plate 51 TL LU1/L1 looking 180°.

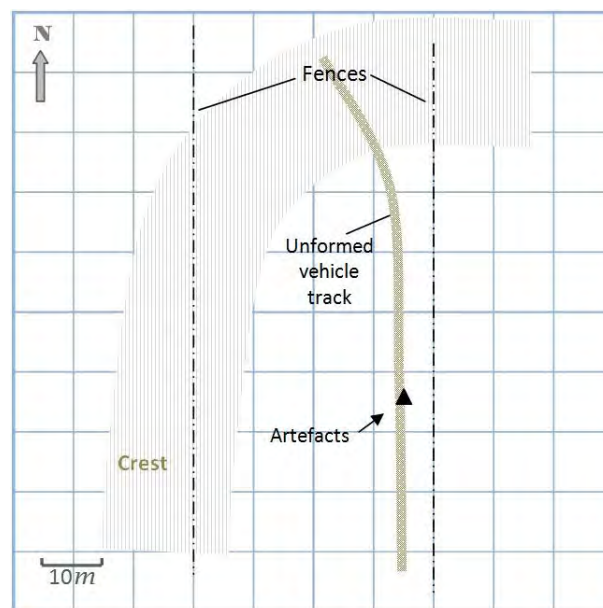


Figure 9 Sketch map showing location of TL LU1/L1.

Table 4 Stone artefacts recorded.

Locale	colour	material	type	platform	platform surface	termination	length	width	thickness	comments
LU6/L1	milky	quartz	flake fragment				23	9	9	a possible artefact only - possessing no diagnostic features
LU10/L1	milky	quartz	flake	broad	flake scar	feather	23	18	5	hertzian
LU10/L1	milky	quartz	flake fragment				17	14	4	
TL LU2/L1	milky	quartz	bipolar flake				31	28	9	
TL LU2/L1	milky	quartz	flake	focal			20	18	6	
TL LU2/L1	milky	quartz	flake fragment				20	18	4	
TL LU2/L1	milky	quartz	flake	broad		feather	22	13	7	
TL LU2/L1	milky	quartz	core fragment				38	25	16	
TL LU2/L1	grey	tuff	flake fragment				25	18	8	
TL LU2/L1	milky	quartz	medial flake portion				15	14	4	
TL LU1/L1	milky	quartz	proximal flake portion	focal			39	23	14	
TL LU2/L1	milky	quartz	flake fragment				14	8	3	
TL LU2/L1	cream	tuff	flake fragment				32	21	12	edge damage/usewear along one margin
TL LU2/L3	milky	quartz	flake fragment				11	18	7	
TL LU2/L3	milky	quartz	flake	broad	flake scar	feather	14	18	4	
TL LU2/L3	red grading to orange	sandstone	possible broken grinding slab				280	260	80	sandstone slab with areas of smooth surface, including small rounded quartz inclusions, flattened so as to be consistent with use wear abrasion, covering an area c. 12 x 12 cm
TL LU1/L1	milky	quartz	piece - possible artefact				34	25	12	quartz piece with fresh fracture
TL LU1/L1	brown	chert	flaked piece				22	16	8	
TL LU1/L1	grey	fine-grained volcanic	distal flake portion			hinge	23	30	9	
TL LU1/L1	grey	fine-grained volcanic?	flake	broad	flake scar	feather	43	36	9	
LU30/L1	grey	quartzite	core				65	95	60	1 platform; 70% pebble cortex

3. CONSULTATION PROCESS

A process of Aboriginal community consultation has been undertaken as a component of this assessment and has been conducted in accordance with the guidelines as set out in the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (NSW DEC July 2005) and OEH's *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW DECCW 2010b).

It is noted that there were several late registrations of interest, and these have been accommodated within the process of consultation. The Walhallow Local Aboriginal Land Council is the relevant LALC for the wind farm subject area. The proposed transmission line would be located in the Mudgee Local Aboriginal Land Council area. Both groups are a Registered Aboriginal Party in the process of Aboriginal consultation.

3.1 Consultation

In order to identify, notify and register Aboriginal people who may hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the area of the proposed project, the following procedure was implemented (Copies of all documentation relating to this process have been submitted to OEH [Dubbo] in separate correspondence).

Correspondence dated 4 September 2012 was sent to:

- OEH Dubbo office
- Gilgandra Local Aboriginal Land Council
- Mudgee Local Aboriginal Land Council
- Walhallow Local Aboriginal Land Council
- the Registrar, Aboriginal Land Rights Act 1983
- the National Native Title Tribunal, requesting a list of registered native title claimants, native title holders and registered Indigenous Land Use Agreements
- Native Title Services Corporation Limited (NTSCORP Limited)
- Liverpool Plains Shire Council
- Warrumbungle Shire Council
- Upper Hunter Shire Council
- Mid-western Regional Council
- the Central West Catchment Management Authority, requesting contact details for any established Aboriginal reference group

In addition advertisements were placed in local newspapers:

- Muswellbrook Chronicle (closing date for registration of interest was noted as 21 September 2012)
- Coonabarabran Times (closing date for registration of interest was noted as 27 September 2012)
- Quirindi Advocate (closing date for registration of interest was noted as 26 September 2012)
- Mudgee Guardian (closing date for registration of interest was noted as 21 September 2012).

Following advice received from NSW OEH (13 September 2012) and the National Native Title Tribunal (11 September 2012), further correspondence was sent to:

- Gomerai People (NC11/6) c/o NTSCORP Limited
- Elizabeth Howard Waabi Gabinya Cultural Consultancy
- Abie Wright Ngarramang-kuri Aboriginal Cultural & Heritage Group
- Susan Cutmore Moreeites
- Les Field Mooki Plains Management
- Stephen Matthews Mooki Plains Management
- KL KG Saunders Trading Services
- Jeff Matthews
- Clifford Johnson
- Esther Tighe
- Wiradjuri Interim Working Party
- Robert Clegg Wiradjuri Council of Elders
- Wellington Wiradjuri Aboriginal Corporation
- Trevor Robinson
- Scott Smith
- Roslyn Smith
- Ronald Long
- Lorraine Towney
- Ron Smith
- Paul Moodie
- Neville Williams
- Michael Long
- Kevin Simpson
- Patricia Jean Hands Elli Lewis
- Coonabarabran LALC
- Chair Pilliga Nature Reserve Committee
- Brian Draper
- Dorothy Stewart Wellington Wiradjuri Heritage Survey

Following advice received from the Mid-Western Regional Council, letters of notification were sent to:

- Murong Gialinga Aboriginal & Torres Strait Islander Corporation
- Wellington Valley Wiradjuri Aboriginal Corporation
- Warrabinga Native Title Claimants Aboriginal Corporation
- Wiradjuri Council of Elders
- Darlina Verrills
- Dhuuluu-Yala Aboriginal Corporation
- Bill Allen
- Mooka
- North-Eastern Wiradjuri
- David Maynard
- Jean Thornton
- Wiradjuri Traditional owners Central West Aboriginal Corporation
- Mingaan Aboriginal Corporation.

The Registered Aboriginal Parties (RAPs) for this project are:

- Mudgee Local Aboriginal Land Council
- Walhallow Local Aboriginal Land Council
- Murong Gialinga Aboriginal & Torres Strait Islander Corporation
- Abie Wright, Ngarramang- Kuri Aboriginal & Cultural Heritage Group
- Terry Mathews, Breeza Plains Culture and Heritage Consultants
- Ronald Long
- Sonny Fitzroy
- George Sampson, Cacatua Culture Consultant
- Clifford Johnson, Heilamon Cultural Consultants
- Michael Long, The White Cockatoo
- Esther Tighe, EMT (Culture and Heritage)
- Brian Draper
- Dorothy Stewart
- Kevin Simpson
- Nerida Saunders, Kl. KG Saunders Trading Services
- Travis Matthews, Wanda Cultural Consultants
- Deslee Matthews, Deslee Talbot Consultant
- Susan Cutmore, Moreeites

An outline of the scope of the project, the proposed cultural heritage assessment process and the heritage assessment methodology was forwarded to the registered parties on varying dates, immediately following receipt of their registration of interest. One response was received in regard to the consultation process and methodology and these concerns have been addressed. No specific cultural information has been received from any of the registered Aboriginal stakeholders, however, all fieldworkers provided valuable information in regard to the nature of Aboriginal landuse in the area, and hence, the archaeological potential of the study area. Specifically, they indicated that the turbine ridges are likely to have been utilised by Aboriginal people for a limited range of activities which may have included hunting and gathering and travel through country.

In order to fulfil part B Section 3 of the 2005 guidelines and stage 4 of the 2010 requirements for Aboriginal consultation, for review and comment, a draft copy of this report was forwarded to the RAPs on 10 December 2012 with an invitation to provide comments within 28 days. One response was received. Murong Gialinga Aboriginal & Torres Strait Islander Corporation responded via email on 12 December 2012. This group recommends that any artefacts which may be impacted should be collected and placed out of the impact area. For those which would not be impacted, it was recommended that they be left untouched. This is consistent with the recommendations outlined in this report and will be adopted within the context of the development of a Cultural Heritage Management Plan, prior to construction.

4. SUMMARY AND ANALYSIS OF BACKGROUND INFORMATION

In the previous section, the results of the background research and the field survey have been outlined. The purpose of this section of the report is to explain the results. In summary, the turbine ridges are predicted to be of very low archaeological potential. No previously recorded Aboriginal places, areas or objects are known to be present in the wind turbine subject area and only three object locales (stone artefacts) were recorded during fieldwork.

Given the extensive survey coverage (see Table 1), the paucity of stone artefacts is believed to be an generally accurate reflection of the artefactual status of the wind turbine subject area. That is, the proposed impact areas inclusive of turbine alignments, tracks and so on, are assessed to contain very low density artefact distribution. Accordingly, undetected or subsurface stone artefacts are predicted to be present in extremely low density. This assessment may be extrapolated to those turbine alignments, tracks and so on, which have not been subject to survey during this assessment.

One of the two transmission line options has been comprehensively surveyed; the *Preferred* route. This route covered two different geological formations and soil landscapes, each of which possess different archaeological potential and sensitivity. The northern section traversed gently undulating basalt country of low local relief. One site containing stone artefacts was recorded. This landform is assessed to be of generally low sensitivity except for elevated areas situated adjacent to higher order streams.

The southern extent of the transmission line route traverses sandstone country which is also gently undulating and of low local relief. This landform is also assessed to be of generally low sensitivity except for elevated areas situated adjacent to higher order streams, and areas where sandstone cliffs, boulders or platforms occur.

The *Alternative* route traverses comparable landforms to the *Preferred* route. The survey assessment and results can be extrapolated with confidence to be comparable to the archaeological potential of the *Alternative* route.

The archaeological results are also in keeping with the information provided by the Aboriginal people who conducted the field survey with us. Given the location of the wind turbine ridges on high ridges which are well away from water, they have indicated that the area would have been used for hunting and gathering and possibly for travel through country.

It is concluded that there are no information gaps which are of a significant magnitude to warrant any further consideration at this time. However, it is acknowledged that the transmission line route is yet to be confirmed and if it would traverse country other than that covered during the survey of the *Preferred* route, this would require additional survey and assessment in order to develop appropriate management and mitigation strategies.

5. CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNIFICANCE

The following significance assessment criteria is derived from the relevant aspects of ICOMOS Burra Charter (Australian ICOMOS 1999).

Aboriginal cultural heritage sites are assessed under the following categories of significance:

- Social or cultural value to contemporary Aboriginal people;
- Historical value;
- Scientific/archaeological value;
- Aesthetic value.

Aboriginal cultural significance

The Aboriginal community will value a place in accordance with a variety of factors including contemporary associations and beliefs and historical relationships. Most heritage evidence is highly valued by Aboriginal people given its symbolic embodiment and physical relationship with their ancestral past.

Archaeological value

The assessment of archaeological value involves determining the potential of a place to provide information which is of value in scientific analysis and the resolution of potential archaeological research questions. Relevant research topics may be defined and addressed within the academy, the context of cultural heritage management or Aboriginal communities. Increasingly, research issues are being constructed with reference to the broader landscape rather than focusing specifically on individual site locales. In order to assess scientific value sites are evaluated in terms of nature of the evidence, whether or not they contain undisturbed artefactual material, occur within a context which enables the testing of certain propositions, are very old or contain significant time depth, contain large artefactual assemblages or material diversity, have unusual characteristics, are of good preservation, or are a part of a larger site complex. Increasingly, a range of site types, including low density artefact distributions, are regarded to be just as important as high density sites for providing research opportunities.

Aesthetic value

Aesthetic value relates to aspects of sensory perception. This value is culturally contingent.

5.1 Statement of Significance

The three Aboriginal object locales comprised of stone artefacts (LU6/L1, LU10/L1 & LU30/L1) identified in the wind farm subject area are assessed to be representative of very low density artefact distribution. The archaeological heritage value of these sites is low, however, their cultural values are of some greater significance to the Aboriginal community.

Two Aboriginal object locales comprised of stone artefacts (TL LU2/L1 & TL LU1/L1) identified in the transmission line (*Preferred* option) subject area are assessed to be

representative of low or low to moderate density artefact distribution. The archaeological heritage value of these sites is low/moderate, however, their cultural values are likely to be of some greater significance to the Aboriginal community.

Two previously recorded sites occur adjacent to the Ulan Road and the southern end of the proposed transmission line, AHIMS #36-3-1138 and #36-3-1139, both of which have been subject to impacts during pipeline construction (in accordance with an OEH Permit). These would be assessed to now be of low archaeological significance.

The grinding groove site AHIMS #36-3-105 and its associated artefact scatter, TL LU2/L3, as a complex are assessed to be of moderate archaeological and cultural significance.

The significance of the small rock shelter with potential archaeological deposit is uncertain, however, given it has some research potential, is assessed to be of potential moderate archaeological significance.

6. THE PROPOSED ACTIVITY

In this section the nature and extent of the proposed activity and any potential harm to Aboriginal areas, objects and/or places is identified.

A full description of the proposal and its potential impact on the landscape and heritage resource is described. A summary of the impact history of the study area has been described in Section 2 and is not repeated here. However, it is emphasised that prior and existing land uses have caused significant changes to geomorphological processes in the area with an associated effect on the archaeological resource.

Potential impacts to archaeology and heritage during the construction phase of the wind farm proposal relate to site preparation, operation of vehicles and machinery and the installation of infrastructure. This may involve earthworks and excavations and vegetation clearing.

6.1 Proposed Impacts

The proposal would involve the construction, operation, and decommissioning of the wind farm. The proposed impact areas are shown in Figures 1 and 2. Up to 288 wind turbine generators are proposed. Each turbine would have three blades, likely to be approximately 112m diameter, mounted on a tubular steel tower approximately 100 metres high, with capacity between 1.5 and 3.0 MW. The maximum tip height is not expected to exceed 165 metres.

The proposal would involve the following construction (Table 5 below):

- Electrical connections between wind turbines and on-site substations, which would be a combination of underground cable and overhead power lines;
- Onsite control buildings and equipment storage facilities for each precinct;
- A temporary concrete batching plant at each precinct;
- Access roads within the precincts in addition to minor upgrades to access on local roads, as required, for the installation and maintenance of wind turbines;
- A number of freestanding permanent monitoring masts for wind speed verification and monitoring.

Table 5 Project components and approximate dimension (based on greatest impact).

Project Component	Approximate Dimensions	Quantity	Total Area (ha)
Turbine foundation/assembly/ crane hardstand areas	25 x 60 m (ea.)	288	43.2
Access tracks	10 m wide	359.8 km	359.8
Underground reticulation onsite	1 m wide	204.6 km	20.5
Overhead reticulation onsite	25 m easement	56.5	141.3
Overhead powerline	60 m easement	134.9	809.4
Collection substation	200 x 200 m	6	24
Connection station	300 x 300 m	1	9

Project Component	Approximate Dimensions	Quantity	Total Area (ha)
Site compound	300 x 300 m	4	36
Concrete batch plant	100 x 100 m	4	4
Operations and control building	100 x 100 m	1	1

A description of the individual components and their related impacts are outlined as follows:

Turbines

The ground disturbance associated with each turbine would include the construction of reinforced concrete footings excavated to a maximum size of 25 x 25 metres. A hardstand area adjacent to the turbine footings which could measure up to 40 x 25 metres is required for a crane. The foundation and hardstand area would measure c. 25 x 60 m in total. Each tower will have a transformer which will be housed either within the base of the tower, in the nacelle (located on the tower), or adjacent to the tower as a small pod mount transformer.

Access Tracks

Approximately 359.8 kilometres of access tracks measuring 10 in width would be constructed. Where possible, these tracks would follow existing farm roads.

Electrical Connections

The onsite electrical works will include on-site power reticulation cabling (underground and overhead) linking the turbines to a Substation. Underground cabling is proposed between the turbines, with overhead cabling proposed in some locations to connect the turbines to the substation and/or the existing transmission system. Underground cabling would be laid out in trenches measuring 1 - 1.5 metres deep and 0.5 - 1 metres wide, and where possible, the trench routes will follow access tracks, with short spur connections to each turbine. Overhead cabling would require an easement of c. 25 metres wide and would be erected on 40 - 50 metres high single steel or concrete poles spaced 150 - 300 metres apart, with spans avoiding all wet areas. Postholes would be 3 - 5 metres deep and c. 3 - 5 metres in diameter. It is noted that the exact location of power poles is not defined.

Substation

Up to six on-site collection substations are required to convert power from on-site reticulation voltage to a transmission voltage of up to 330kV suitable to connect to the existing 330kV transmission system. The substations would occupy an area measuring c. 200 x 300 metres. They would be fenced and the ground covered with crushed rock and partly by concrete pads for equipment, walkways and cable covers. A connection substation measuring 300 x 300 metres would be constructed.

On-site Control and Facilities Building

An on-site Control and Facilities Building which will house instrumentation, control and communications equipment is proposed. The building and overall area would measure up to 100 x 100 metres and would be built on a concrete slab. Control and communications cabling is also required to extend from the Control and Facilities Building to each turbine and to the site Substation. The control cabling will be installed using the same method and route as the power cabling.

In addition, up to four concrete batching plants and up to four construction compounds are proposed.

6.2 Type of Harm

The proposed works entail ground disturbance and, accordingly, the construction of the wind farm has the potential to cause impacts to any Aboriginal areas, places or objects which may be present within the zones of direct impact.

Impacts in the wind farm subject area will be located on land currently utilised for sheep and cattle grazing. Previous land use has resulted in relatively significant environmental impacts and a generally degraded landscape. European activated geomorphological processes and other natural processes associated with land degradation, will have caused significant prior impacts to Aboriginal objects within the proposal area. The majority of the transmission line would also traverse grazing land. However, at its, southern end it would traverse land currently used for coal mining and other infrastructure such as roads. In addition, it is emphasised that proposed impacts are discrete and small in area.

However, irrespective of prior impacts and the small and discrete nature of those proposed, the construction of the wind farm would entail ground disturbance and, accordingly, the project has the potential to cause impacts to any Aboriginal objects which may be present within the individual components of the proposal.

7. AVOIDING AND/OR MINIMISING HARM

The principles of ecologically sustainable development and the matter of cumulative harm have been considered for this project. The area is in a vast rural region and hence existing and future impacts are low, despite the proposed construction of numerous wind farms to the south. The majority of cultural values, including archaeological, which attach to the landform and the broader landscape remain intact across the region.

Avoidance or the mitigation of harm has been considered as an option in relation to the proposed activities. The cultural and archaeological heritage significance of the proposal area has not been assessed to be of sufficient significance to specifically warrant the implementation of avoidance or impact mitigation strategies (the exception to this is the grinding groove complex and possibly the rock shelter). However, a number of management strategies are possible and these are each given consideration below.

7.1 Management and Mitigation Strategies

Further Investigation

The field survey has been focused on recording artefactual material present on visible ground surfaces. Further archaeological investigation would entail subsurface excavation undertaken as test pits for the purposes of identifying the presence of artefact bearing soil deposits and their nature, extent, integrity and significance.

Further archaeological investigation in the form of subsurface test excavation can be appropriate in certain situations. These generally arise when a proposed development is expected to involve ground disturbance in areas which are assessed to have potential to contain high density artefactual material and when the Effective Survey Coverage achieved during a survey of a project area is low due to ground cover, vegetation etc.

No areas of the proposal area have been identified which warrant further archaeological investigation such as test excavation in order to formulate appropriate management and mitigation strategies. Based on a consideration of the predictive model of site type applicable to the environmental context in which impacts are proposed, the archaeological potential of the proposed impact areas is assessed not to warrant further investigation. It has not been demonstrated that Aboriginal objects with potential conservation value have a high probability of being present in the subject area. Accordingly, test excavation conducted under OEH's *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010: 24) is not necessary.

Conservation

Conservation is a suitable management option in any situation however, it is not always feasible to achieve. Such a strategy is generally adopted in relation to sites which are assessed to be of high cultural and scientific significance, but can be adopted in relation to any site type.

In the case at hand, avoidance of impacts (or minimisation of impacts) in regard to the recorded artefacts locales is not considered to be necessarily warranted. However, given that the proposed impacts are discrete, generally linear and small in area, it is recommended that wherever possible, a strategy of impact avoidance and hence conservation be implemented because this would so easily be achieved.

In respect of the grinding groove complex, inclusive of AHIMS #36-3-105 and TLLU2/L3, this complex should be avoided during construction (if the *Preferred* transmission line option was chosen) with a buffer of at least 100 metres. An active strategy of impact avoidance would need to be implemented in order to ensure the conservation of these sites.

Likewise, the rock shelter TL LU2/L2 should be actively avoided during construction.

Mitigated Impacts

Mitigated impact usually takes the form of partial impacts only (i.e. conservation of part of an Aboriginal artefact locale or Survey Unit) and/or salvage in the form of further research and archaeological analysis prior to impacts. Such a management strategy is generally appropriate when Aboriginal objects are assessed to be of moderate or high significance to the scientific and/or Aboriginal community and when avoidance of impacts and hence full conservation is not feasible. Salvage can include the surface collection or subsurface excavation of Aboriginal objects and subsequent research and analysis.

It is assessed that the archaeological resource in the proposal area does not surpass significance thresholds which warrant any form of impact mitigation in this regard. However, note recommendations above under heading *Conservation*; given the small and discrete nature of proposal avoidance of impacts is easily achieved and should therefore occur.

8. STATUTORY INFORMATION

The NPW Act provides statutory protection for all Aboriginal objects and Aboriginal Places.

An ‘Aboriginal object’ is defined as:

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

An Aboriginal place is an area declared by the Minister to be an Aboriginal place for the purposes of the Act (s84), being a place that in the opinion of the Minister *is or was of special significance with respect to Aboriginal culture*.

Under s90 of the NPW Act a person must not destroy, damage or deface or knowingly cause or permit the destruction, damage or defacement of an Aboriginal object or Aboriginal Place without first obtaining the s90 consent Aboriginal Heritage Impact Permit (AHIP). Consents which enable a person to impact an Aboriginal object are issued by the OEH upon review of a s90 Aboriginal Heritage Impact Permit application.

Under Section 89J of the Environmental Planning and Assessment Act 1979, the following authorisations are not required for State significant development that is authorised by a development consent granted after the commencement of this Division (and accordingly the provisions of any Act that prohibit an activity without such an authority do not apply):

- an Aboriginal heritage impact permit under section 90 of the National Parks and Wildlife Act 1974.

9. RECOMMENDATIONS

The following recommendations are made on the basis of:

- A consideration of the relevant section of the Environmental Planning and Assessment Act (see Section 8 Statutory Information).
- The results of the investigation as documented in this report.
- Consideration of the type of development proposed and the small and discrete nature of proposed impacts.
- The discussion in Section 7 regarding impact mitigation and management.

The following conclusions and recommendations are provided:

1. The proposal area does not warrant further archaeological investigation such as subsurface test excavation.
2. The recorded Aboriginal object locales and the predicted generally very low density subsurface artefact distribution in the proposal area do not surpass archaeological significance thresholds which would act to entirely preclude the proposal. There are no identified Aboriginal archaeological and cultural constraints.
3. It is recommended that prior to construction, additional archaeological assessment is conducted in any areas which are proposed for impacts that have not been surveyed during the current assessment. It is predicted that significant Aboriginal objects can occur anywhere in the landscape and, accordingly, they need to be identified and impact mitigation strategies implemented prior to impacts. This applies particularly to the transmission line route, which in the sandstone country at its southern end, has the potential to traverse areas in which significant Aboriginal heritage items and values occur.
4. The proponent should, in consultation with an archaeologist, develop a Cultural Heritage Management Protocol, which documents the procedures to be followed for impact mitigation and management. The development of an appropriate Cultural Heritage Management Protocol should be undertaken in consultation with an archaeologist, the registered Aboriginal parties and the NSW Office of Environment and Heritage. It would aim to ensure the effectiveness and reliability of mitigation and management strategies.
5. Personnel involved in the construction and management phases of the project should be trained in procedures to implement recommendations relating to cultural heritage, as necessary.
6. Cultural heritage should be included within any environmental audit of impacts proposed to be undertaken during the construction phase of the development.

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GLOSSARY

Aboriginal object - A statutory term, meaning: ‘... any deposit, object or material evidence (not being a handcraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains’ (s.5 NPW Act).

Declared Aboriginal place - A statutory term, meaning any place declared to be an Aboriginal place (under s.84 of the NPW Act) by the Minister administering the NPW Act, by order published in the NSW Government Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal objects.

Development area - Area proposed to be impacted as part of a specified activity or development proposal.

Harm - A statutory term meaning ‘... any act or omission that destroys, defaces, damages an object or place or, in relation to an object – moves the object from the land on which it had been situated’ (s.5 NPW Act).

Place - An area of cultural value to Aboriginal people in the area (whether or not it is an Aboriginal place declared under s.84 of the Act).

Proponent - A person proposing an activity that may harm Aboriginal objects or declared Aboriginal places and who may apply for an AHIP under the NPW Act.

Proposed activity - The activity or works being proposed.

Subject area - The area that is the subject of archaeological investigation. Ordinarily this would include the area that is being considered for development approval, inclusive of the proposed development footprint and all associated land parcels. To avoid doubt, the subject area should be determined and presented on a project-by-project basis.

APPENDIX 1 OEH AHIMS RESULTS

Your Ref Number : LR WF 55
Client Service ID : 80370

SiteID	SiteName	Date	Zone	Easting	Northing	Context	Site Status	Site Features	Site Types	Reports
36-3-0117	Coolah Rd;	AGD	55	779640	6454890	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
Contact										
36-3-0118	Borambl No.3;	AGD	55	781790	6452780	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
Contact										
36-3-0119	Borambl No.2;	AGD	55	781800	6452760	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
Contact										
28-6-0020	Quindalup;	AGD	55	770840	6462980	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
Contact										
28-6-0021	Quindalup 2;	AGD	55	769600	6463420	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
Contact										
28-6-0022	Collieblue;	AGD	55	764040	6470250	Open site	Valid	Modified Tree (Carved or Scarred) :	Scarred Tree	
Contact										
36-3-0308	BBS; Mudgee LALC; Turill State Forest	AGD	55	777301	6451834	Open site	Valid	Artifact: 1000		98970
Contact										
36-3-0309	BBS; Mudgee LALC; Turill State Forest 1	AGD	55	777506	6451425	Open site	Valid	Artifact: 4		98970
Contact										
36-3-0310	BBS; Mudgee LALC; Turill State Forest 2	AGD	55	777478	6451338	Open site	Valid	Artifact: 6		98970
Contact										
36-3-0311	BBS; Mudgee LALC; Turill State Forest 3	AGD	55	777600	6451363	Open site	Valid	Artifact: 16		98970
Contact										
36-3-0312	BBS; Mudgee LALC; Turill State Forest 4	AGD	55	775071	6449780	Open site	Valid	Artifact: 31		98970
Contact										
36-3-0313	BBS; Mudgee LALC; Turill State Forest 5	AGD	55	776182	6450040	Open site	Valid	Artifact: 1		98970
Contact										

Report generated by AHIMS Web Service on 16/09/2012 for Julie Dibden for the following area at Datum: gDA, Zone: 55, Eastings: 759000 - 783000, Northings: 6450000 - 6496000 with a Buffer of 50 meters. Additional Info : EIS, Number of Aboriginal sites and Aboriginal objects found is 20
This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

Your Ref Number : LR_WF 55
Client Service ID : 803770

AHIMS Web Services (AWS)
Extensive search - Site list report

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	Site Features	Site Types	Reports
36-3-0314	BBS; Mudgee LALC; Turill State Forest 6 Contact	AGD	55	775430	6450976	Closed site	Valid	Artefact: 2		98970
36-3-0315	BBS; Mudgee LALC; Turill State Forest 7 Contact	Recorders	55	775060	6450019	Open site	Valid	Artefact: 23	Permits	98970
36-3-0316	BBS; Mudgee LALC; Turill State Forest 8 Contact	Recorders	55	775033	6449946	Open site	Valid	Artefact: 12	Permits	98970
36-3-0317	BBS; Mudgee LALC; Turill State Forest 9 Contact	Recorders	55	774998	6450133	Open site	Valid	Artefact: 14	Permits	98970
36-3-0318	BBS; Mudgee LALC; Turill State Forest 10 Contact	Recorders	55	775097	6450449	Open site	Valid	Artefact: 1	Permits	98970
28-6-0050	BBS; Walhallow LALC; Pandora Pass Rd1 Contact	Recorders	55	775965	6491620	Open site	Valid	Modified Tree (Carved or Scarred): 1	Permits	98951
36-3-0319	BBS; Mudgee LALC; Turill State Forest 11 Contact	Recorders	55	775074	6450218	Closed site	Valid	Artefact: 2	Permits	98970
36-3-0320	BBS; Mudgee LALC; Turill State Forest 12 Contact	Recorders	55	776422	6452690	Closed site	Valid	Artefact: 5	Permits	98970

Report generated by AHIMS Web Service on 16/09/2012 for Julie Didden for the following area at Datum: GDA, Zone: 55, Eastings: 759000 - 783000, Northings: 6450000 - 6496000 with a Buffer of 50 meters. Additional Info: EIS, Number of Aboriginal sites and Aboriginal objects found is 20
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Your Ref Number : LR WF 56
Client Service ID : 80371

AHIMS Web Services (AWS)
Extensive search - Site list report



SiteID	SiteName	Datum	Zone	Eastings	Northings	Context	Site Status	SiteFeatures	SiteTypes	Remarks
29-4-0013	Isolated Artefact (IA 8)IA 8; Contact	AGD	56	216650	6484320	Open site	Valid	Artefact :-	Isolated Find	2752
29-4-0018	Warung State Forest Site 1;WSF-S1; Contact	Recorders	Mr.Warwick Pearson	56	216143	6484838	Valid	Artefact :-	Open Camp Site	2752
29-4-0019	Warung State Forest Site 2;WSF-S2; Contact	Recorders	Mr.Warwick Pearson	56	216154	6484839	Valid	Artefact :-	Open Camp Site	2752
29-4-0020	Warung State Forest Site 3;WSF-S3; Contact	Recorders	Mr.Warwick Pearson	56	216154	6484851	Valid	Artefact :-	Open Camp Site	2752
29-4-0021	Warung State Forest Site 4;WSF-S4; Contact	Recorders	Mr.Warwick Pearson	56	216157	6484849	Valid	Artefact :-	Open Camp Site	2752
29-4-0022	Warung State Forest Site 5;WSF-S5; Contact	Recorders	Mr.Warwick Pearson	56	216190	6484810	Valid	Artefact :-	Open Camp Site	2752
29-4-0023	Warung State Forest Site 6;WSF-S6; Contact	Recorders	Mr.Warwick Pearson	56	216590	6485010	Valid	Artefact :-	Open Camp Site	2752
29-4-0024	Warung State Forest Site 7;WSF-S7; Contact	Recorders	Mr.Warwick Pearson	56	216690	6484990	Valid	Artefact :-	Open Camp Site	2752
29-4-0025	Warung State Forest Site 8;WSF-S8; Contact	Recorders	Mr.Warwick Pearson	56	216840	6484990	Valid	Artefact :-	Open Camp Site	2752
29-4-0026	Warung State Forest Site 9;WSF-S9; Contact	Recorders	Mr.Warwick Pearson	56	217080	6485140	Valid	Artefact :-	Open Camp Site	2752
29-4-0027	Warung State Forest Site 10;WSF-S10; Contact	Recorders	Mr.Warwick Pearson	56	216870	6487890	Valid	Artefact :-	Open Camp Site	2752
29-4-0028	Warung State Forest Site 11;WSF-S11; Contact	Recorders	Mr.Warwick Pearson	56	217180	6488030	Valid	Artefact :-	Open Camp Site	2752
29-4-0029	Warung State Forest Site 12;WSF-S12; Contact	Recorders	Mr.Warwick Pearson	56	217220	6488800	Valid	Artefact :-	Open Camp Site	2752
29-4-0030	Warung State Forest Site 13;WSF-S13; Contact	Recorders	Mr.Warwick Pearson	56	217240	6488940	Valid	Artefact :-	Open Camp Site	2752
29-4-0031	Warung State Forest Site 14;WSF-S14; Contact	Recorders	Mr.Warwick Pearson	56	218120	6489140	Valid	Artefact :-	Open Camp Site	2752
29-4-0032	Warung State Forest Site 15;WSF-S15; Contact	Recorders	Mr.Warwick Pearson	56	218550	6489200	Valid	Artefact :-	Open Camp Site	2752

Report generated by AHIMS Web Service on 16/09/2012 for Julie Dibden for the following area at Datum GDA, Zone : 56, Eastings : 216000 - 219000, Northings : 6450000 - 6496000 with a Buffer of 50 meters. Additional Info : EIS, Number of Aboriginal sites and Aboriginal objects found is 27
This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
29-4-0034	Warung State Forest Site 17; WSF-S17; Contact	AGD	56	218420	6484910	Open site	Valid	Artefact :-	Open Camp Site	2752
29-4-0035	Warung State Forest Site 18; WSF-S18; Contact	AGD	56	218300	6483590	Open site	Valid	Artefact :-	Open Camp Site	2752
29-4-0036	Warung State Forest Site 19; WSF-S19; Contact	AGD	56	218340	6483220	Open site	Valid	Artefact :-	Open Camp Site	2752
29-4-0037	Warung State Forest Site 20; WSF-S20; Contact	AGD	56	218640	6483040	Open site	Valid	Artefact :-	Open Camp Site	2752
29-4-0043	Norfolk Falls Art Site; NFAS; Contact	AGD	56	216168	6484836	Closed site	Valid	Art (Pigment or Engraved) :-	Shelter with Art	2752
29-4-0006	Isolated Artefact (IA 1); IA 1; Contact	AGD	56	216145	6484370	Open site	Valid	Artefact :-	Isolated Find	2752
29-4-0007	Isolated Artefact (IA 2); IA 2; Contact	AGD	56	216850	6484100	Open site	Valid	Artefact :-	Isolated Find	2752
29-4-0008	Isolated Artefact (IA 3); IA 3; Contact	AGD	56	216150	6484854	Open site	Valid	Artefact :-	Isolated Find	2752
29-4-0009	Isolated Artefact (IA 4); IA 4; Contact	AGD	56	217510	6489090	Open site	Valid	Artefact :-	Isolated Find	2752
36-3-0120	Borambil No.1; Contact	AGD	55	783290	6451990	Open site	Valid	Modified Tree (Carved or Scarred) :-	Scarred Tree	929
36-3-0144	HV18; Contact	AGD	55	783000	6454000	Open site	Valid	Modified Tree (Carved or Scarred) :-	Scarred Tree	929
	Contact				Margrit Koettig			Permits		

Report generated by AHIMS Web Service on 16/09/2012 for Julie Dildien for the following area at Datum GDA, Zone: 56, Eastings: 216000 - 219000, Northings: 6450000 - 6496000 with a Buffer of 50 meters. Additional Info: EIS, Number of Aboriginal sites and Aboriginal objects found is 27
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Table 6 AHIMS Site Search for proposed transmission line (with 500m buffer)

SITE ID	SITE NAME	FEATURE	CONTEXT	VALIDITY_S	PERMIT	RECORDERS	ASR TYPES
36-3-0039	Ulan	Modified Tree	Open Site	Valid		Haglund	Scarred Tree
36-3-0708	CE-32-IF	Artefacts	Open Site	Valid	2531	Syme	None
36-3-1094	S1MC279	Artefacts	Open Site	Valid		Hamm	None
36-3-0059	Ulan Creek Site 17	Artefacts, Modified Tree	Open Site	Valid		Haglund	Open Camp Site, Scarred Tree
36-3-0219	Ulan SG1	Artefacts	Open Site	Valid		Haglund	Open Camp Site
36-3-0264	CU11	Artefacts	Open Site	Partially Destroyed	1648	Webster	None
36-3-0286	CU1	Artefacts	Open Site	Partially Destroyed	1648	Kuskie	None
36-3-0326	BBS; Mudgee LALC; Durridgere State Forest 3	Artefacts	Open Site	Valid		Mudgee Local Aboriginal Land Council	None
36-3-0218	Ulan SG2	Artefacts	Enclosed Shelter	Valid		Haglund	Shelter with Deposit
36-3-0353	Evaporation Pond 2	Artefacts	Open Site	Valid		Kuskie	None
36-3-0709	CE-33-IF	Artefacts	Open Site	Valid	2531	Syme	None
36-3-1041	S1MC 225	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1061	S1MC245	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1067	S1MC252	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-0043	Ulan Creek Site 1	Art	Enclosed Shelter	Valid	31	Haglund	Shelter with Art
36-3-0045	Ulan Creek Site 23	Artefacts	Enclosed Shelter	Valid		Haglund	Shelter with Deposit
36-3-0069	Ulan Creek Site 22	Artefacts	Enclosed Shelter	Valid		Haglund	Shelter with Deposit
36-3-0070	Ulan Creek Site 23	Artefacts	Enclosed Shelter	Valid		Haglund	Shelter with Deposit
36-3-0215	Ulan SG8	Artefacts	Open Site	Valid		Haglund	Open Camp Site
36-3-0285	CU40	Artefacts	Open Site	Partially Destroyed	1648	Webster	None
36-3-1084	S1MC269	Artefacts	Open Site	Valid		Hamm	None
36-3-0007	Curra Creek;Goulburn River;	Art	Enclosed Shelter	Valid		Sullivan	Shelter with Art
36-3-0182	Spring Gully;	Artefacts, Waterhole	Open Site	Valid		Elwood	Open Camp Site, Water Hole/Well
36-3-0183	Hands on Rock 2;	Art	Enclosed Shelter	Valid		Elwood	Shelter with Art
36-3-0184	Hands on Rock 3;	Artefacts	Enclosed Shelter	Valid		Elwood	Shelter with Deposit
36-3-0214	Ulan SG11	Artefacts	Enclosed Shelter	Valid		Haglund	Shelter with Deposit
36-3-0293	CU3	Artefacts	Open Site	Partially Destroyed	1648	Kuskie	None
36-3-0306	CU41	Artefacts	Open Site	Partially Destroyed	1648	Webster	None
36-3-0691	CE-15-IF	Artefacts	Open Site	Valid	2531	Syme	None
36-3-1064	S1MC248	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1065	S1MC249	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1066	S1MC250	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-0063	Ulan Creek Site 21	Artefacts	Open Site	Valid		Haglund	Open Camp Site
36-3-0105	Forest Lodge;	Grinding Grooves	Open Site	Valid		Bluff	Axe Grinding Groove
36-3-0181	Bobadeen Creek 1;	Art, Artefacts	Enclosed Shelter	Valid		Elwood	Shelter with Art, Shelter with Deposit

SITE ID	SITE NAME	FEATURE	CONTEXT	VALIDITY_S	PERMIT	RECORDERS	ASR TYPES
36-3-0814	S1MC17	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1093	S1MC278	Artefacts	Open Site	Valid		Hamm	None
36-3-1113	S1MC244A	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-0216	Ulan SG4	Artefacts	Open Site	Valid		Haglund	Open Camp Site
36-3-0283	CU29	Artefacts	Open Site	Partially Destroyed	1648	Webster	None
36-3-1063	S1MC247	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1068	S1MC253	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1083	S1MC268	Artefacts	Open Site	Valid		Hamm	None
36-3-0051	Ulan Creek Site 9	Artefacts	Enclosed Shelter	Valid		Haglund	Shelter with Deposit
36-3-0107	Tomimibil No.3;	Modified Tree	Open Site	Valid		Bluff	Scarred Tree
36-3-0203	Ulan Goanna Tree	Modified Tree	Open Site	Valid		Allen	Carved Tree
36-3-0217	Ulan SG3	Artefacts	Enclosed Shelter	Valid		Haglund	Shelter with Deposit
36-3-0246	CU2	Artefacts	Open Site	Partially Destroyed	1648	Kuskie	None
36-3-0282	CU28	Artefacts	Open Site	Partially Destroyed	1648	Kuskie	None
36-3-1042	S1MC226	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1046	S1MC230	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1062	S1MC246	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1089	S1MC274	Artefacts	Open Site	Valid		Hamm	None
36-3-1433	Identifier 2	Artefacts	Open Site	Valid		Haglund	None
36-3-1439	Identifier 8	Artefacts	Open Site	Valid		Haglund	None
36-3-1548	Ulan ID#268 (Bobadeen 8)	Artefacts	Open Site	Valid		Haglund	None
36-3-1544	Ulan ID#206 (IF1; BO IF1)	Artefacts	Open Site	Valid		Haglund	None
36-3-1149	S1MC312a	Artefacts	Open Site	Valid		Hamm	None
36-3-1432	Identifier 1	Artefacts	Open Site	Valid		Haglund	None
36-3-1438	Identifier 7	Artefacts	Open Site	Valid		Haglund	None
36-3-1137	S1MC310	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1444	Identifier 13	Artefacts	Open Site	Valid		Haglund	None
36-3-1446	Identifier 15, F10	Artefacts	Open Site	Destroyed		Haglund	None
36-3-1479	Ulan ID86# (Identifier 86)	Artefacts	Open Site	Valid		Haglund	None
36-3-1498	Ulan ID#153 (Spring Gully 26)	Artefacts	Enclosed Shelter	Valid		Edgar	None
36-3-1547	Ulan ID#267 (Bobadeen 7)	Artefacts, Grinding Grooves	Enclosed Shelter	Valid		Haglund	None
36-3-1600	Ulan ID#326 (AD4/A)	Artefacts	Open Site	Valid		South East Archaeology	None
36-3-1442	Identifier 11	Artefacts	Open Site	Valid		Haglund	None
36-3-1445	Identifier 14	Artefacts	Open Site	Valid		Haglund	None
36-3-1494	Ulan ID#144 (Spring Gully 17)	Artefacts	Enclosed Shelter	Valid		Edgar	None
36-3-1545	Ulan ID#265 (Bobadeen 1)	Artefacts	Open Site	Valid		Haglund	None
36-3-1139	S1MC312	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1414	S1MC320	Artefacts	Open Site	Valid	3439	Hamm	None

SITE ID	SITE NAME	FEATURE	CONTEXT	VALIDITY_S	PERMIT	RECORDERS	ASR TYPES
36-3-1447	Identifier 17	Artefacts	Open Site	Valid		Haglund	None
36-3-1546	Ulan ID#266 (Bobadeen 6)	Artefacts	Enclosed Shelter	Valid		Haglund	None
36-3-1571	ulan ID#292 (Durridgere 1)	Art. Artefacts	Enclosed Shelter	Valid		Haglund	None
36-3-1601	Ulan ID#327 (AD4/B)	Artefacts	Open Site	Valid		South East Archaeology	None
36-3-1138	S1MC311	Artefacts	Open Site	Valid	3439	Hamm	None
36-3-1440	Identifier 9	Artefacts	Open Site	Valid		Haglund	None
36-3-1480	Ulan ID87 (Identifier 87)	Artefacts	Open Site	Valid		Haglund	None
36-3-1481	Identifier 88	Artefacts	Open Site	Destroyed		Haglund	None
36-3-1488	Spring Gully 5	Artefacts	Enclosed Shelter	Destroyed		Edgar	None
36-3-1499	Ulan ID#154 (Spring Gully 27)	Artefacts	Enclosed Shelter	Valid		Edgar	None
36-3-1602	Ulan ID#328 (AD4/C)	Artefacts	Open Site	Valid		South East Archaeology	None

APPENDIX 2 EUROPEAN HERITAGE REGISTER LISTINGS

Searches have been conducted for previous heritage listings in and around the study area; these searches have included all of the relevant heritage registers for items of local through to world significance. Details of these searches are provided below.

Australian Heritage Database

This database contains information about more than 20 000 natural, historic and Indigenous places. A search of this database (10 November 2012) revealed that there are 124 items in total listed on the Register of the National Estate (RNE) for the three Local Government Areas in which the Liverpool Range Wind Farm study area and associated transmission line falls, they being Warrumbungle Shire Council, Upper Hunter Shire Council and Mid-Western Regional Council (Table 1). From this total, seven listed items are identified as being in some vicinity to the proposed Liverpool Range Wind Farm area (Table 2) although none of these are actually located within the impact area.

Table 7 Australian Heritage Database overall search results.

Local Government Area	Total Number of Listings in the LGA
Warrumbungle Shire Council	15 results
Upper Hunter Shire Council	42 results
Mid-Western Regional Council	67 results

Table 8 Australian Heritage Database list of items situated in some proximity to the study area.

Heritage Item	Location	Register and Status
Indigenous Place (Hands on Rock)	Ulan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Talbragar Reserve Wonga Roo Rd	Ulan, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Cassilis Public School Coolah Rd	Cassilis, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)
Old Cassilis Woolshed Golden Hwy	Cassilis, NSW, Australia	(Indicative Place) Register of the National Estate (Non-statutory archive)

Heritage Item	Location	Register and Status
Police Station Group Branksome St	Cassilis, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Royal Hotel Buccleugh St	Cassilis, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)
Village of Cassilis	Cassilis, NSW, Australia	(Registered) Register of the National Estate (Non-statutory archive)

Of itself, listing on the Register of the National Estate does not afford legal protection for a heritage item. None of the abovementioned identified items listed on the Register of the National Estate are included in another Commonwealth statutory heritage list and as such are not afforded protection under the EPBC Act.

State Heritage Inventory

The NSW heritage database contain over 20,000 statutorily-listed heritage items in New South Wales. This includes items protected by heritage schedules in local environmental plans (LEPs), regional environmental plans (REPs) or by the State Heritage Register.

The information is supplied by local councils and State agencies and includes basic identification details and listing information. Consequently listings should be confirmed with the responsible agency.

As indicated, the Liverpool Range Wind Farm and associated transmission line falls within the boundaries of the three local council areas Warrumbungle Shire Council, Upper Hunter Shire Council and Mid-Western Regional Council. A search of this database (10 November 2012) revealed a total of 756 listings exist for the regions encompassed by all three council areas (Table 3).

From this total, 12 listed items are identified as being in some vicinity to the proposed Liverpool Range Wind Farm area (Table 4) although none of these items are actually located within the study area.

Table 9 State Heritage Inventory overall search results.

Local Government Area	Items listed under the NSW Heritage Act.	Items listed by Local Government and State Agencies	Total Number of Listings for the LGA
Warrumbungle Shire Council	4 records	43 records	47 records
Upper Hunter Shire Council	8 records	205 records	213 records
Mid-Western Regional Council	13 records	483 records.	496 records

Table 10 State Heritage Inventory list of items situated in some proximity to the study area.

Item name	Address	Suburb	LGA
Grave of Mary Elliott	Old Turee Private Cemetery Tongy Lane	Coolah	Warrumbungle
Turee (Old) Homestead	Tongy Lane	Coolah	Warrumbungle
Turee (Vale) Creek Cemetery	Coolah Road	Coolah	Warrumbungle
Casillis Station Homestead	Merriwa Road		Upper Hunter
Cassilis Police Station and Official Residence	9-11 Branksome Street	Cassilis	Upper Hunter
Cassilis Conservation Area		Cassilis	Mid-Western Regional
Courthouse & Police Station	Branksome Street	Cassilis	Mid-Western Regional
Dalkeith	Merriwa Road	Cassilis	Mid-Western Regional
Farmhouse & Cottage Group	Merriwa Road	Cassilis	Mid-Western Regional
Police Residence	Branksome Street	Cassilis	Mid-Western Regional
Royal Hotel	Branksome Street	Cassilis	Mid-Western Regional
Woolshed	Munamurra Road	Cassilis	Mid-Western Regional

National Trust of Australia (NSW) Register

The National Trust of Australia (NSW) is a non-government Community Organisation which promotes the conservation of both the built and natural heritage (for example, buildings, bushland, cemeteries, scenic landscapes, rare and endangered flora and fauna, and steam engines may all have heritage value). The Trust has approximately 30,000 members in New South Wales.

A search of the National Trust of Australia (NSW) Register (10 November 2012) revealed that a total of 145 listings exist for the regions encompassed by all three council areas (Table 5). Thirteen of the items currently listed with the National Trust (Table 6) are situated in some proximity to the proposed Liverpool range wind farm study area, although there is possibly an iteration with regard to the Cassilis Royal Hotel listing.

Table 11 National Trust of Australia (NSW) Register overall search results

Local Government Area	Total Number of Listings in the LGA
Warrumbungle Shire Council	23 results
Upper Hunter Shire Council	117 results
Mid-Western Regional Council	5 results

Table 12 National Trust of Australia (NSW) Register list of items situated in some proximity to the study area.

Item name	Address	Locality	LGA
Royal Hotel	Buccleugh Street	Cassilis	Upper Hunter Shire
The farmhouse and old stone cottage	Merriwa Road	Cassilis	Upper Hunter Shire
Collaroy ETC	Cassilis-Merriwa Road	Cassilis	Upper Hunter Shire
Cassilis station gravesite	Cassilis Station Homestead, On Hillside Overlooking Old Gaol, 200 M North-West Of Homestead	Cassilis	Upper Hunter Shire
St Columbas Anglican Church		Cassilis	Upper Hunter Shire
Headstones/grave surrounds in old general (Chinaman's) Cemetery	Scott Street, Adjacent To Catholic Cemetery	Cassilis	Upper Hunter Shire
Former store	Main Road	Cassilis	Upper Hunter Shire
Courthouse/Police station (part of Courthouse group - card 2 of 3)	Branksome Street 11	Cassilis	Upper Hunter Shire
Police residence (part of Courthouse group - card 3 of 3)	Branksome Street 9	Cassilis	Upper Hunter Shire
Courthouse group, comprising Courthouse/Police Station, Police residence (Courthouse group - card 2 of 3)	Branksome Street 9 & 11	Cassilis	Upper Hunter Shire
Royal Hotel	Buccleugh Street	Cassilis	Upper Hunter Shire
Cassilis urban conservation area	Cassilis Urban Conservation Area: North Side Harden Street, Western Bank Munmurra Brook, North Side Trunk Road No.62, Crossing Branksome Street, South Side Ancrum Street (T.R.62) Rear Of Lots 1-14, Section 3 South Side Ancrum Street, Projection North-East	Cassilis	Upper Hunter Shire

Item name	Address	Locality	LGA
Collaroy Private Cemetery	Cassilis-Merriwa Road, 1.8 Km West Of 'Collaroy' Main House	Cassilis	Upper Hunter Shire

APPENDIX 3 EUROPEAN HISTORICAL CONTEXT AND RESULTS

Alienation of lands within the colony of New South Wales

When New South Wales was settled as a British Colony in 1788, all lands became the property of the Crown. A major component of the colonial process was the creation and maintenance of spatial order (Jeans 1966: 205). The alienation of land was controlled at the discretion of the colonial government, initially under direction of the Colonial Office in London. Grants, in the first instance, were offered to officers and civil servants as both reward and incentive to relocate. This was later extended after Governor Phillip was instructed to grant land for farming to discharged soldiers, free settlers and convicts who had served their term (Shaw 1970: 11).

As the population and demand for land increased, measures were adopted by both the government and settlers to enable the spread of settlement and an increase in agricultural production. With a further increase in the population of settlers and livestock numbers after 1800, the demand for land continued to grow.

In 1822, J. T. Bigge filed his Report to the Commissioner of Inquiry into the State of the Colony of New South Wales. Bigge had been dispatched to the Colony in 1819 by the British government to establish, among other things, if the Colony was achieving its aims as a penal settlement and to consider its development and commercial viability. Bigge recommended an increase in land grants, but only to those who could contribute to an increase in pastoral production (Molony 1988: 45). Assigned convict labour was intended to assist with the maintenance of pastoral properties granted under such a system.

Governor Macquarie continued to grant land to cater for the needs of increasing livestock numbers. Although alienation was not allowed without survey, by 1821 about 340,000 acres of land grants could not be located, as their issue had outpaced the ability of surveyors to accurately determine their placement (Perry 1965: 44). The three-man survey department was not able to cope with the demands made on it, and the number of uncompleted surveys of the country beyond the immediate vicinity of Sydney began to mount. This situation became more problematic in 1825 when the administration declared that the area to be settled was to be divided into counties and parishes and, in 1826, temporarily restricted land that could be granted to the first nineteen counties created around Sydney, which became known as the 'Limits of Location'.

The northern boundary of the nineteen counties, as defined in 1829, extended from the source of the Manning River in the Mount Royal Range, along that range and through the Liverpool Range to Pandora's Pass, then along then Coolaburragundy River before heading southwest to the settlement of Wellington. That is, effectively through the middle of the proposed wind farm. However, even before these boundaries were established, graziers William Lawson and William Cox had already taken up land beyond these newly emplaced limits, occupying the properties known as 'Weetaliba' and 'Binnia' respectively (Cameron 1993: 54, 103).

In order to allow occupation of new lands, satisfy demand and maintain some control on

the spread of settlement, in 1827, the government introduced ‘tickets of occupation’ to allow graziers rights over the lands they occupied (Carter 1994: 9-10). These were replaced in 1828 by grazing licenses. From that time, through a variety of means, there was a spread of both official and unofficial settlement, and Crown Lands began to be broken up into smaller portions.

The head office of the Crown Lands Commissioner for the Squatting District of Bligh was established in the frontier settlement of Cassilis in 1837. This district took in a large area, and Crown rents were collected and the operations of the Border Police overseen from the Cassilis office. In 1839, these headquarters were relocated to the township of Coolah, where they remained operational until the position of Crown Lands Commissioner was abolished in 1858 (Cameron 1993: 103).

Amongst the responsibilities of the Border Police was the protection of Aborigines residing beyond the Limits of Settlement. In 1839, the offices of the New South Wales Governor had noted in a dispatch to the Secretary of State that in areas beyond the official settlement limits 'Aboriginal inhabitants' had incurred losses to the flocks and herds of squatters, and that in retaliation shepherds and stockman had reacted by committing atrocities on the Aborigines (Cameron 1993: 106).

In 1839, the Border Police for the Squatting District of Bligh, attached to the headquarters at Coolah, consisted of three men overseen by the district Commissioner, Graham Hunter. By 1842, this number had increased to six men. The Border Police force itself was comprised almost entirely of convicts. They were provisioned with mounts and muskets, but instead of receiving pay, they were given rations and clothing, and promised future indulgences in reward for good service and good behaviour. To this end they were informed that they could win the Governor's future favour by behaving in a kind and humane manner towards the 'natives', endeavouring to gain their confidence and esteem as well as to 'civilise and improve them'. They were instructed not to treat the Aboriginal population unkindly, give them spirits, teach them bad language, or to mock them (King 1958, cited in Cameron 1993: 106).

Commissioner Hunter reported annually to the Lands Commissioner with regard to the state of the Aboriginal population of the district. On several occasions he commented that in areas throughout the district where settlers had resided for a time, numerous Aboriginal people were employed on the stations. In 1843 he reported that '[d]uring the past year new tracts of country have been occupied by the Settler; and, as on all such occasions the natives are inclined to be hostile, I have endeavoured to cause a reconciliation; but, until the natives become acquainted with our habits, it cannot be expected, but they would use every means to destroy the Stock of those occupying distant parts, that are left to run in the bush, as the herds of New South Wales; but this is only temporary; after a time, they generally become comparatively civilised, and will make themselves useful to the Settler'. It was, however, Hunter's general observation over time that the Aboriginal population of the district was slowly in decline, although he was reluctant to attribute this to any particular reason (Cameron 1993: 109-110).

Throughout the colony, grants and sales, either directly or at auction, permitted the alienation of land. However, demand outstripped supply. ‘Squatters’ began to occupy

large tracts of land outside the settled districts beyond the control of the colonial government (Cannon 1988: 9, Carter 1994: 10-12). In order to wrest back control, various regulations were introduced to allow land to be leased or licensed for a fee to depasture stock. Sales as a result of improvements to land occurred later, along with sales at auction for a set minimum price per acre. Access to and availability of land, along with insufficient capital for many prospective landowners restricted expansion. The majority of suitable land remained in the hands of a wealthy few.

By 1850, settlement had spread throughout New South Wales and Victoria (Shaw 1970: 45) and at that time 3,000 squatters had the use of over 70 million acres of Crown Land (Jeans 1966: 212). It was during this period that political support increased for small rural landholders. Support came from a number of groups, including:

- land owners seeking to restrict the squatters and capitalise on their own investments;
- tenant farmers seeking access to rural land;
- successful gold-miners with capital to invest in land;
- independent shopkeepers who resented the squatters use of Sydney wholesalers; and
- agitated politicians fearful of the growing power of the ‘squattoocracy’.

In 1861, Sir John Robertson, the Minister of Lands, introduced legislation (Crown Lands Occupation Act 1861 and Crown Lands Alienation Act 1861) to allow selection of land by any person under certain conditions, at a set price of one pound per acre. One quarter of the purchase price was required with the balance deferred as long as certain conditions were met. This legislation set minimum and maximum sizes for portions as well as orientation and boundary proportions. Selection could also take place prior to survey. The intention of this legislation was to allow access to land on fair and easy terms and promote closer settlement throughout the colony. Despite these intentions, the legislation failed in that loopholes and indiscriminate practices allowed the original landholders to maintain control of much of their original ‘runs’ (Carter 1994: 21). By 1874 ‘... deserted farms are everywhere visible to the traveller ...’ (Jeans 1972: 213). Nevertheless, the policy of closer settlement continued and by the 1890s large land holdings had gradually given way to a myriad of smaller farms. As a result of World War I, the first half of the twentieth century saw Soldier Settlement land programs in place throughout Australia.

The modern landscape not only reflects a sequence of occupation and activity through a number of phases of ownership, improved technology and changing farm management practices, but evidence of the legislative and administrative controls governing alienation and land use.

Exploration and Pioneers

Many of Australia's early explorers were professional surveyors who were assigned the task of locating and reporting on districts that were viable for future settlement, possessing sources of available fresh water and land that was suitable for grazing and farming. Under the directive of the Governor of the Colony, these explorers set about identifying and mapping important geographic features, recommending areas that appeared suitable for settlement, and plotting routes that could serve for travel and communication. In carrying out this role, their surveying skills were called upon in order to design the layout of towns, to subdivide land for sale, and thereafter, to assist in the

undertakings of constructing roads, bridges, and railways. In so doing, these early explorers encountered many challenges in what for them was a new and unfamiliar country.

In 1813, an expedition led by George Evans reached the Macquarie River beyond Bathurst. Following on from this, in 1817 Allan Cunningham joined John Oxley's expedition to the Lachlan and Macquarie rivers. The next year, Oxley led another expedition from Bathurst and followed the Macquarie River until it disappeared into the 'ocean of reeds' that is the Macquarie marshes. Oxley's party then made their way north-east until they came upon the Castlereagh River, then turning east they entered the rich Liverpool Plains. Finally, after trekking to the coast they arriving back in Newcastle, some six months after the party had departed Bathurst. Upon his return Oxley reported on the abundant pastoral lands of the Liverpool Plains, which in consequence were speedily occupied by enterprising pastoralists who battled their way overland by means of indirect and tortuous routes. However, by and large, Oxley's discovery of the Liverpool Plains had left much to be desired, because of the intricate, involved and difficult to replicate route by which he had reached them (Lee 1925: 492).

William Lawson, best known for finding a way from Sydney across the Blue Mountains with companions Blaxland and Wentworth in 1813, also played a principal role in exploring country to the north of Bathurst and Mudgee, stretching all the way to the Liverpool Plains.

The first European accredited with venturing forth to lands located above present-day Bathurst was James Blackman, the district constable at Bathurst from 1819. In 1821, Blackman travelled north to the Cudgegong River and through Aaron's Pass, which was named after his Aboriginal guide, before returning to Bathurst. Later that same year William Lawson teamed up with Blackman, following Blackman's earlier route before, then continuing on through to Mudgee. In a subsequent foray Lawson set forth again, locating the Goulburn River and exploring the Talbragar River which flows southward from the Liverpool Range, west of Cassilis, and finally westward to the Dubbo district. Thereafter, in 1823, Lawson travelled out from Bathurst again, this time even passing over the Liverpool Range in an area near to present-day Coolah, some months before the more accredited exploits of explorer Allan Cunningham and his discovery of 'Pandoras Pass' (O'Rourke 2009).

Allan Cunningham was first and foremost a botanist, whose impetus to exploration was the discovery and cataloguing of new plant species. After a short excursion from Bathurst to explore the region of the Cudgegong River near Mudgee, in 1823 Cunningham then embarked on an expedition that would take him as far as Pandora's Pass in the Liverpool Range. He was encouraged to undertake this journey by the Governor of the time, Sir Thomas Brisbane, who had succeeded Governor Macquarie. Brisbane expressed his belief that such an expedition would prove an important factor 'in directing the tide of emigration towards the heart of the continent rather than coastwise.' To this end it was agreed that if Cunningham would continue with his explorations further northward, the Government would furnish his party with the necessary equipment for the journey (Lee 1925: 501-504).

Cunningham wrote to authorities at Kew informing them of this proposed journey and indicating that he intended to '... ascertain how far a communication can be opened between Liverpool Plains and the settlement at the upper parts of the Hunter River and again between the latter and Bathurst'. On 31 March 1823, Cunningham set out from the Nepean and thereafter his expedition departed Bathurst on 15 April, travelling first to the Cudgegong River and then heading further northwards. On 8 May, traversing the banks of a rivulet on a northerly course, the party came to within fifteen miles of the Liverpool Range. The country in this region became very rough, and incised by deep valleys. From here Cunningham observed and named Oxley's Peak before deciding to scale the Main Range in order to take bearings, and if possible to view the Liverpool Plains. The going was hard, but when he finally reached the peak (which he called Mount Macarthur, now Mount Moan) he could see the Liverpool Plains stretching out before him (Lee 1925: 505).

At this point it appeared to Cunningham that a descent to the Plains could be readily gained from a lower section of the Range he could observe to the east. However, after searching for five days and negotiating a difficult path over some 35 miles, he was unable to find a passage down to the northern side of the range to the plains below. Seeing that it was impossible to advance further eastward, a disappointed Cunningham turned and descended into open forest to the south, determining that if the party travelled westward they would encounter less difficult country as they retraced their steps. They arrived at the Goulburn River on 31 May. By this time rations were running low and both men and horses were placed on a reduced supply.

It was decided, however, to continue to search for a Pass and on 5 June Cunningham ascended a section along the western range in order to take his bearings, at which time, about 3 miles distant, he observed a break through the Range. He wrote: 'it was a very low back in the main ridge ... and although limited, afforded me a clear view of the open plains north of this extensive barrier'. On descending from the ridge Cunningham moved the party's encampment to an open valley which ran to the foot of the mountains. The following day the party made their way from this campsite, heading up to discover a breach in the Range. They were pleased to see that through the Pass the gradient which sloped down on the north side of the Range to the Liverpool Plains below was not too steep or rough for their pack-horses to negotiate (Lee 1925: 507). Cunningham named the pass Pandora's Pass, and said that he 'believed it would become the great route of communication between Bathurst, the Hunter River and the Liverpool Plains.' Before leaving it, a paper containing the following account of their travels was enclosed in a bottle and placed under a tree:

After a very laborious and harassing journey from Bathurst since April last a party consisting of 5 persons under the direction of Allan Cunningham, His Majesty's Botanist (making the sixth individual), having failed in finding a route to Liverpool Plains while tracing the southern base of the Barrier Mountains before us northward so far as 50 miles to the E. of this spot, at length prosecuting their research in a westerly direction reached this valley and discovered a practicable and easy passage . . . to the very extensive levels connected with the above plains, of which the southernmost of the chain is distant about 11 or 12 miles (by estimation) N.N.W. from this valley and to which a line of trees has been carefully marked.

This valley, which extends S.W. and W.S.W., has been named Hawkesbury Vale, and the high point of the range bearing N.W. by W. from this tree was called Mount Jenkinson, the one a former title, the other the family name of the noble earl whose present title the plains bear to which from the southern country this gap affords the only passage. The party encountered many privations in travelling to and returning from the eastward. In spite, however, of these evils, a Hope . . . at the close of their journey induced them to persevere westerly and this passage was discovered. It has therefore been named Pandora's Pass. Due east and west by compass from this tree in a direct line of 336 yards were planted the fresh stones of peaches brought from the colony in April last with every good hope that their produce will one day or other afford some refreshment to the weary farmer on his route. . . . North of Pandora's Pass a like planting took place on the plains 12 miles N. at the last marked tree. A remarkable high mountain above the Pass eastward, being a guide to the traveller advancing S. from the plains, has been named Direction Head. The situation of this tree is as follows: lat., observed on the 7th and 8th June, 1823, 32°15'19' S.; long. (presumed) 149°30' E. The party now proceed with the utmost despatch S. for Bathurst.

Signed A. CUNNINGHAM, June 9th, 1823

Buried for the information of the first farmer who may venture to advance so far to the northward as this vale of whom it is requested this document may not be destroyed but carried to the settlement at Bathurst after the opening of the bottle.'

While the Rev. George Grimm, writing in 1888, observed 'The bottle was found a few years ago and the Explorer's direction carried out', there has never been any official confirmation that the buried bottle was returned to the district of Bathurst. In 1927 Colonel John McClean Arnott, the then owner of Coolah Creek Station, engaged the surveyor R. D. Fitzgerald for the purpose of determining the exact spot where Cunningham and his party camped on the night of 6 June 1823. Fitzgerald established that the last camp made by the Explorer and his crew on the night before they discovered Pandora's Pass was actually the site on which the Arnott's original homestead was constructed. In the 1930s Colonel Arnott installed a metal plaque honouring the explorer Cunningham, at a location on the western side of the Pandora Pass Road, about two kilometres north of the Coolah Creek causeway (Cameron N.D.). The plaque reads:

*Near this Spot
Alan Cunningham
Botanist and Explorer
Pitched his camp in June, 1823
Pandora's Pass
Was discovered and named after him.*

Having secured a much more direct overland route from Bathurst to the Liverpool Plains, by way of the Liverpool Range, which was quickly made more widely known than Lawson's exploits, an influx of settlers soon followed along this route established by Cunningham and his party, occupying land and setting up grazing enterprises. Soon after, in 1824, Newcastle based surveyor Henry Dangar passed a similar way while exploring the Hunter Valley. After discovering the confluence of the Hunter and Goulburn Rivers, he and his party briefly crossed the Liverpool Range and entered the plains to the north (O'Rourke 2009).

Twenty years after Cunningham's expedition, explorer, botanist and geologist Ludwig Leichhardt made his way to the Liverpool Range. The area was sparsely settled by this time, and having camped overnight at a creek near Collaroy Station on 19 May 1843, he then stayed at the Dalkeith Homestead near Cassilis. Leichhardt spent several days in the Coolah area, before travelling to the Coolah Tops, located some 31 kilometres from the township. Here he recorded that the Coolah Tops section of the Liverpool Range formed a perfect plain about three miles wide and that the adjoining steep slopes near to the top were formed of loose sharp basalt, which underfoot rolled away downhill. On 25 May 1843, Leichhardt road through Pandora's Pass following present-day Coxs Creek, into the Liverpool Plains (Cameron N.D.).

Towns and Settlements

Turee - In 1866, the N.S.W. Gazetteer portrayed Turee as a postal hamlet in the County of Bligh, electoral district of Upper Hunter, and police district of Cassilis. The two nearest settlements were Cassilis, situated 14 miles to the south-east, and Coolah, located 11 miles to the north-west. At that time, the population of this locality was some 150 persons, with the principal landowners of the district being R. M. Fitzgerald at *Tongay*, A. J. Jones at *Old Turee*, and W. R. Elliott at *New Turee* (Cameron 1993: 18).

However, prior to this, one of the first settlers in the broader Coolah district had been John Jones. Jones arrived in the colony as a free settler in 1801 and was given the role of superintendent of construction of the Francis Greenway designed St Matthew's Church of England at Windsor, after an earlier attempt had gone awry and the building had been required to be condemned. In recognition of his services in the construction of the new Church, Jones was granted 500 acres of land in the Bathurst district by Governor Lachlan Macquarie. Thereafter, in 1835, he applied to purchase lands in the parish of Turee, near Uarbry, and subsequently became the first person to be granted the land now known as Turee Station. When John Jones took up this land, stock owned by William Cox, the builder of the road over the Blue Mountains, was already being grazed in the nearby Coolah Valley. By the latter half of 1835, Jones gave his address as being *Turee*, and in 1837 he applied to the Court of Petty Sessions, District of Bligh, Cassilis, to be assigned four additional convicts, they being a cook, a coachman, a footman and a groom, in addition to the 19 servants and 21 freeman who were already working on his property at that time (Cameron 1993: 9-11).

By 1835 John Jones held 8,833 acres of land with frontage to the Talbragar River and Turee Creek. He subsequently listed amongst his possessions 500 head of cattle, 12,000 sheep, 30 horses, 165 acres of land under cultivation of grain and in addition nine assigned servants and 20 freeman who were engaged to work on his property. In 1837, however, John Jones was attacked and stabbed with sheep shears by one of his employees, and soon after died. Following his death, the *Turee* property remained in the Jones family for a further 76 years before being sold on (Cameron 1993: 12-13; 18).

In 1890, the Jones' *Old Turee* station purchased a 10 hp Rusten-Hornsby single cylinder steam engine to be used at their woolshed, which was located on the banks of the Talbragar River some 2 km upstream from the Coolah-Cassilis Road. This was one of two such engines to arrive in the district in that same time. The second was set up at the

Oakey Creek Station. The steam engine at *Old Turee* remained in operation there until 1909, at which time it was purchased by the owners of *Turee Vale*, to again be used in providing power to a woolshed. The steam engine was such an unwieldy machine that it took three horses three days to haul it to its new destination. It did however perform exceptional service at *Turee Vale*, powering the Woolshed up until 1963 when it finally burst a tube just at a time when electricity was to be connected (Cameron 1993: 18).

Cassilis - The township which grew to become Cassilis was firstly known as Dalkeith, and was originally a private settlement that was established on the *Dalkeith* property. *Dalkeith Station* started as a grant of 1,224 acres accorded to Donald McIntyre in 1834. McIntyre added to this original holding by acquiring additional adjoining land, before then selling the lot to Robert Scott who already owned land in the district. The sale of the township which then became known as Cassilis occurred in 1850. Thereafter, the Dalkeith property was acquired by the Hon. William Busby who maintained it until his death in the 1890s (Cameron 1993: 44).

Cassilis featured prominently in the early settlement of districts north of Mudgee, playing an important role in the development of the localities of Turee Creek, and the Upper Talbragar and Coolaburragundy Rivers. As indicated in the notice for sale of the Dalkeith township and its adjoining lands, published in the Sydney Morning Herald in 1850, it was '... situated on the high road leading from Maitland to Bligh, Liverpool Plains, Wellington, the Castlereagh and Namoi Rivers, and to all the western and north-western interior, and is the last town in that direction within the limits of location. It is in the heart of a fertile country, and well settled, and in the neighbourhood of wealthy proprietors' (Cameron 1993: 44).

By 1830, Cassilis had its own lock-up depot and mounted police, and in 1835 a slab courthouse was constructed, to be later replaced with a stone premises in 1859. The headquarters of the border police was based in Cassilis between 1836 and 1839, while the Post Office was opened in 1836 with a mail service twice a week. With developments in communication, a telegraph office was opened in 1865. This office was amalgamated with Post Office in 1870, and by the 1890s the township had its first telephone service (Cameron 1993: 44-47). However, despite its early establishment, Cassilis never developed to become a major rural centre and even from the early days, after the Coolah district was first surveyed in 1832, and following this when the Crown Lands office and the headquarters for the border police were shifted to Coolah in 1839, eyes and interests were already focused to the north.

Coolah - As was generally the case throughout most of the colony, first settlements in the broader Coolah region were made in close association with rivers and creeks, especially given the need for ready access to water for stock and crops. As indicated, Lawson and Cox were the first to graze cattle in the Coolah Valley area, arriving in the district in about 1821, some two years before Cunningham had discovered Pandora's Pass. Thereafter, Henry Clarke was the first person to gain freehold title of land in the Coolah district. Clark was granted 1,920 acres of land in 1829, in an area bordered on the west by Coolaburragundy River and extending east towards Croppy Creek, on acreage that today would encompass the properties of 'Oban', 'Braemar', 'Sunset Strip' and others besides (Cameron 1993: 54).

Joseph Myers applied for a grant of 2,560 acres of Crown land in 1829, in an area north of and adjoining Henry Clarke's portion. However, it was not until 1831 that the property boundaries of these first settlers were pegged by Surveyor Lewis (Cameron 1993: 54).

Another of the first settlers to take up land in the Coolah Valley was Nelson Lawson, who in the 1840s depastured his stock on the 16,000 acre *Gotta Rock Run*, on the northern side of Coolaburragundy River. This tract of land took in most of what is the present-day site of the Coolah township. When his possession of the *Gotta Rock Run* was formalised in 1848 the land on which the surveyed village stood was excised from the property (Cameron 1993: 124).

James McCubbin played a prominent role in the early life of the Coolah township. He was an early settler who in 1847 occupied some 160 acres of land in the village itself, which he later secured as freehold. McCubbin became not only the Coolah agent and reporter for the Maitland Mercury Newspaper, but also the local publican, blacksmith, and postmaster (Cameron 1993: 124).

By and large, however, most of the early settlers who made their way to the Coolah district in the first half of the 1800s were sheep and/or cattle graziers who were drawn by the rich fertile basaltic soils and more temperate climate in the Valley than surrounding regions. The land below the striking ridgelines which dominate the horizon tended to be gently undulating, and the area gives rise to many serviceable watercourses including the Castlereagh, Coolaburragundy and Talbragar Rivers, as well as numerous creeks such as Turee Creek, the Butheroo, Merrygoen and Mumbedah.

By the 1840s, the William Lawson and his sons William Jr and Nelson Simmons Lawson had become the principal landowners in the district, holding 27,074 acres of freehold land and 176,000 acres of leasehold land over 11 runs. These extended from the township of present-day Dunedoo, along the Talbragar and then the Coolaburragundy Rivers, past the present township Coolah and on up Coolah Creek. Nelson Simmons Lawson gained freehold title for the 1,920 acre property he called *Booyamurra Station*, situated just to the east of the Coolah township (Cameron 1993: 58).

Another family to rise to prominence in the Coolah district was the McMasters, who settled *Binnia Station* located adjacent to the Gunnedah Road, some 19 km north of Coolah. By 1874, Duncan McMaster had increased the holding to 26,101 acres. By the 1890s, Duncan McMaster owned *Binnia Downs* and *Oban*, near Coolah, *Pollybrewon* near Walgett, *Bundella* near Quirindi, and *Dalkeith* at Cassilis. When his son Frederick McMaster completed his education at Sydney Grammar School in 1891, his father appointed him manager of the 35,998 acre property *Dalkeith*, which he had purchased for Frederick.

Dalkeith thrived under Frederick McMaster's hand, and he was successful at breeding the finest fine-wool Merinos, producing numerous grand champion sheep, including the ram 'David', which sold for a then-world record price of 5,000 guineas. In 1934 he was knighted Sir Frederick McMaster in recognition of his achievements. These not only included the establishment of one of the major stud flocks of Merino sheep in Australia, and a fine pure bred herd of Hereford cattle, but also the advancement of the scientific

understanding for the betterment of soils, pastures, and stock. In the course of perfecting the Dalkeith pastures he once commented- ‘Too few people have any sense of humus!’ (Pastoral Review and Graziers’ Record 1954). From their arrival in the district the McMasters family has held a strong association with the area up until the present (Cameron 1993: 67).

Assisted by the favourable farming conditions of the Coolah region, and fortunate enough to operate over periods when the income from farming was comparatively at its most lucrative, a number of other early families who settled the district were also able to make a successful go of it, with many being in a position to expand their landholdings. In consequence, over time a number of these first farming families have also been able to pass down their holdings within the same family through a succession of subsequent generations. Because of this, the district has several historic rural homesteads, including Baladonga Homestead, Oban Homestead, Birriwa Homestead, Tongy Homestead, Rotherwood, Mount Mill, Binnia Downs, Cobbora Station, Pine Ridge, Coolah Creek Homestead, Coolahville Homestead, Derrawee Homestead, Turee Station Homestead, Old Turee and Digilah Stations (Hickson and Cameron 2005: 5, 56-57).

It should also be noted that, given the number of people who were engaged to work on these larger estates, such properties often operated in much the same manner as a small village, having numerous outlying buildings including a general store, a school, a variety of residences, wool sheds, storage sheds, and even small scale cemeteries (Hickson and Cameron 2005: 56-57).

The Black Stump - The Australian saying “beyond the black stump” has the colloquial meaning of being in the far outback or in a remote area removed from civilisation. While disputed by some, there is nevertheless strong evidence that this distinctly Australian idiom was adopted into the language as the result of the situation of the *Black Stump Run* and the associated 'Black Stump Wine Saloon', located just to the north of Coolah. Indeed, Landform Units 17 and 18 follow a property boundary which originally separated the *Black Stump* and *Oakey Creek* runs (George Esdaile pers. comm. Nov 2012). Heritage item LU18/H1 is a section of fence on this former boundary which would date from the 1870s.

A number of hostelrys were scattered along the length of main route roads throughout the colony in the 1800s. In the Coolah district, the best known was said to be the 'Black Stump Wine Saloon', which was erected near the Gunnedah Road, some 6 miles north of the township of Coolah. Because of its location near to the junction of several coach routes, the saloon was a popular stop off point and resting place for both passengers and horses (Cameron 1993:142). The saloon acquired its name from the nearby Black Stump Creek and associated *Black Stump Run*, the latter being described in the Government Gazette of 19th June 1850 as an area estimated to be some 16,000 acres, and bounded by the Coolah Range to the south, and the road leading to the Castlereagh River to the north (Hickson and Cameron 2005: 4).

The saying is said to have come about because in 1826 Governor Darling fixed the Limits of Location which in one minor section ran along the approximate boundary of the *Black*

Stump Run. Nevertheless, despite the introduction of these physical limitations to settlement and the grazing of stock, on *occasions* colonists allowed their animals to graze outside the set boundaries, which in the Coolah district became known as "beyond the black stump", with this vague term adopted in order to evade the attention of the administration (Cameron 1993: 142).

Historical Themes

A historical theme is a way of describing a major historical event or process that has contributed to the history of NSW. Historical themes provide the background context within which the heritage significance of an item can be understood. Themes have been developed at National and State levels, but corresponding regional and local themes can also be developed to reflect a more relevant historical context for particular areas or items.

The table below summarises the historical themes that are applicable to the Liverpool Range Wind Farm study area.

Table 13 National, state and local historical themes applicable to the study area and surrounds.

Australian Theme	NSW Theme	Local Theme
Peopling Australia	Aboriginal cultures and interactions with other cultures	Day-to-day life
		Mythological and ceremonial
		Natural resources
		Contact period
Developing local, regional and national economies	Agriculture	Fencing
		Sheds
		Pasture
		Water provision
		Farmsteads
		Shearing
		Machinery
	Commerce	Banking
		Trade routes
		Shops
		Inns
	Communication	Postal services
		Telephone and telegraph services
		Newspapers
		Transport networks
	Environment – cultural landscape	Tree plantings
		Picnic areas
	Events	Floods
	Exploration	Camp sites
		Exploration routes

Australian Theme	NSW Theme	Local Theme
		Water sources
	Industry	Mills
		Shearing sheds
		Workshops
		Transport network
	Mining	Prospecting
		Mine claims
		Extraction of ores
		Processing plants
		Transport of supplies and ore
		Mining settlements
		Mining equipment/machinery
		Mining landscapes
	Pastoralism	Pastoral homesteads
		Sheds and yards
		Travelling stock reserves
		Fencing and boundaries
		Pastoral workers' camps
		Water sources
	Technology	Communication networks
		Processing of ores
	Transport	Railways
		Early roads
		Private tracks
Coaches and teamsters		
Bridges		
Building settlements, towns and cities	Towns, suburbs and villages	Town plan
		Neighbourhoods
	Land tenure	Fencing and other boundary markers
		Mining lease markers
		Trig stations
	Utilities	Water distribution
		Garbage disposal
		Sewage/septic systems
		Provision of electricity
		Bridges
	Accommodation	Culverts
		Inns and hostels
		Domestic residences
		Temporary encampments
		Homesteads
	Humpies	

Australian Theme	NSW Theme	Local Theme
Developing Australia's cultural life	Domestic life	Domestic artefact scatters
		Residences
		Food preparation
		Gardens
		Domesticated animals
	Leisure	Show grounds
		Picnic/camping areas
		Racecourse
		Scenic lookouts
		Town halls
		Tourism
	Religion	Churches
	Social institutions	Public hall
Social groups/associations		
Sport	Sports grounds	
	Sports teams	
Marking the phases of life	Birth and death	Graves
	Persons	Individual monuments
		Significant individuals/families
		Place names

Predictive Statements

As the above table indicates, there is an array of themes and hence potential site types that might occur in and around the study area, although many of these correspond to heritage items in urban contexts. Given that there are no known historical villages or towns within the proposal area it is unlikely that most of these themes will be represented within the proposed turbine envelopes and other areas of direct impacts. There is, however, potential for sites associated with agriculture, such as fences, stockyards, sheep folds, sheds, ploughfields and water tanks. More generally there is the potential for roads, tracks and paths. There is also some potential for evidence of small mining ventures, including shafts, mullock heaps and costeans. However, given that the majority of impacts associated with the proposed wind farm are located on exposed ridge tops, the potential for evidence of early settlement, such as homesteads and huts, is relatively low.

Results

Seven European heritage items have been recorded in the vicinity of proposed impacts, as described below.

LU2/H1 Telegraph tree

779065.6484146 (GDA)

This tree is located adjacent to the road to Coolah Tops and has imbedded in it two white porcelain insulators for a former telegraph or electricity line. Attached to the insulators are short sections of copper wiring. These lines used to run alongside the road at this

point. The tree is a eucalypt, about 14 metres tall and appears to be in robust condition. It is likely to date to the mid-1900s.



Plate 52 LU2/H1 Looking north-east

LU6/H1 Electricity pole

766965.6471295 (GDA)

This item is an old electricity pole with two remaining insulators. Formerly, it carried three cable lines, and it is likely that one of these was a telephone line. The pole is formed from a relatively straight tree, and was made upright through placement in a hole dug in the ground. It is likely to date to the mid-1900s. While the pole is now leaning, it is nevertheless in reasonable condition.



Plate 53 LU6/H1 Looking south-west.

LU15/H1 Mouldboard plough

777042.6478454 (GDA)

This item is a mouldboard plough, in reasonably good condition, standing in a paddock. Mouldboard ploughs took a c. 20 centimetre deep slice of soil and flipped it over, opening up the ground for better drainage or to create a seedbed. However, in recent years in Australia this technique has largely been dropped because it exposes the earth to wind erosion. It is believed that this example possibly dates to the 1930s-40s.



Plate 54 LU15 /H1 Looking north.

LU16/H1 Old fence post

776153.6473456 (GDA)

This single wooden fence post is likely to date to the mid-late 1800s and is possibly a part of an original boundary fence, probably between different runs. It is situated c. 8 metres west of an existing boundary fence. The post remains upright and is in relatively good condition. It has five holes for plain wire from halfway down, and another near the top.



Plate 55 LU16/H1 looking south.



Plate 56 LU16/H1 looking south.

LU18/H1 Old fence posts

767884.6489009 (GDA)

These two wooden fence posts date to c. 1870 (George Esdaile pers. comm. Nov 2012) and are a part of an original boundary fence between the *Black Stump* and *Gundare* runs. They are situated c. 2 metres east of an existing boundary fence. One post remains upright and is in relatively good condition. The other has fallen to the ground. The posts have five holes for plain wire, and originally would have been braced by a rail at the top.



Plate 57 LU18/H1 Looking north.



Plate 58 LU18/H1 Looking south.

TL LU1/H1 Old section of fence

East end 777190.6449550 (GDA)

This item is a section of old fence which is still standing and in service. The fence posts have five holes in them for plain wire, and at the top a rectangular hole for the insertion of a supporting horizontal rail. Similar in design and construction to the two other fence vestiges, it is possible that this fence also dates to c. 1870.



Plate 59 TL LU1/H1 looking west.

TL LU1/H2 Mouldboard plough

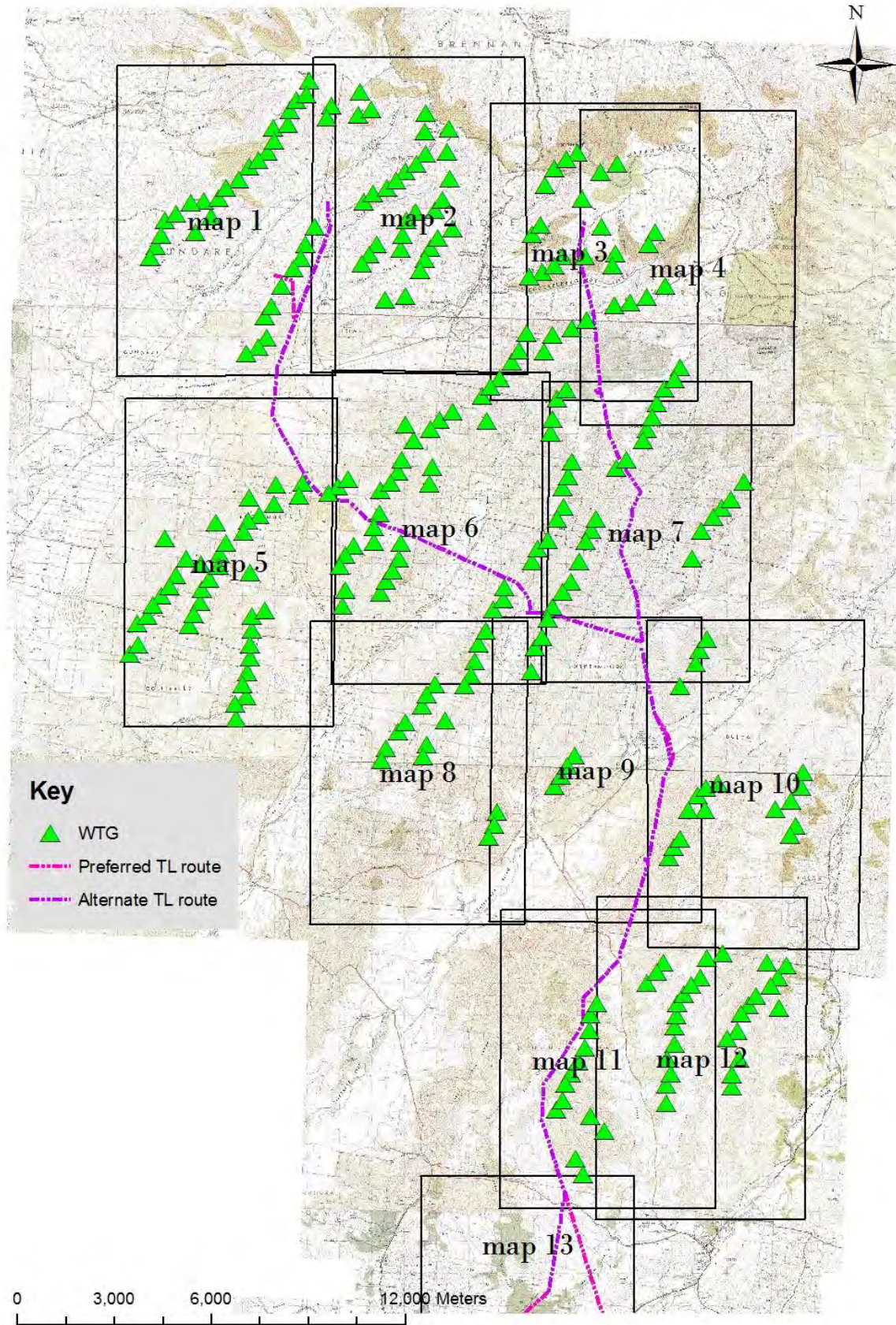
777961.6453964 (GDA)

This item is a mouldboard plough which has been abandoned in the paddock, however it is in good condition given its exposure to the elements. This plough possibly dates to the 1930-40s.

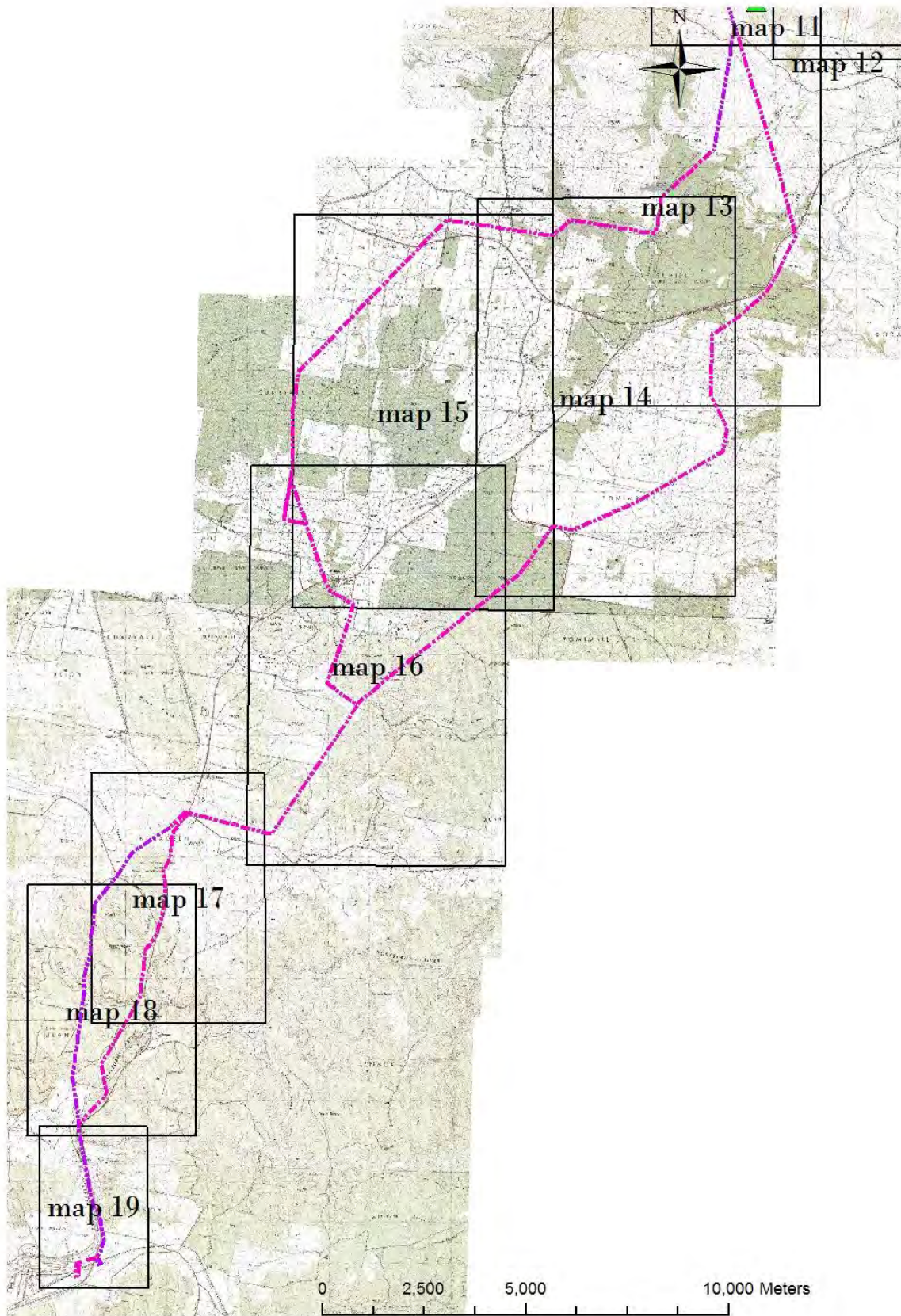


Plate 60 TL LU1/H2 looking south-east.

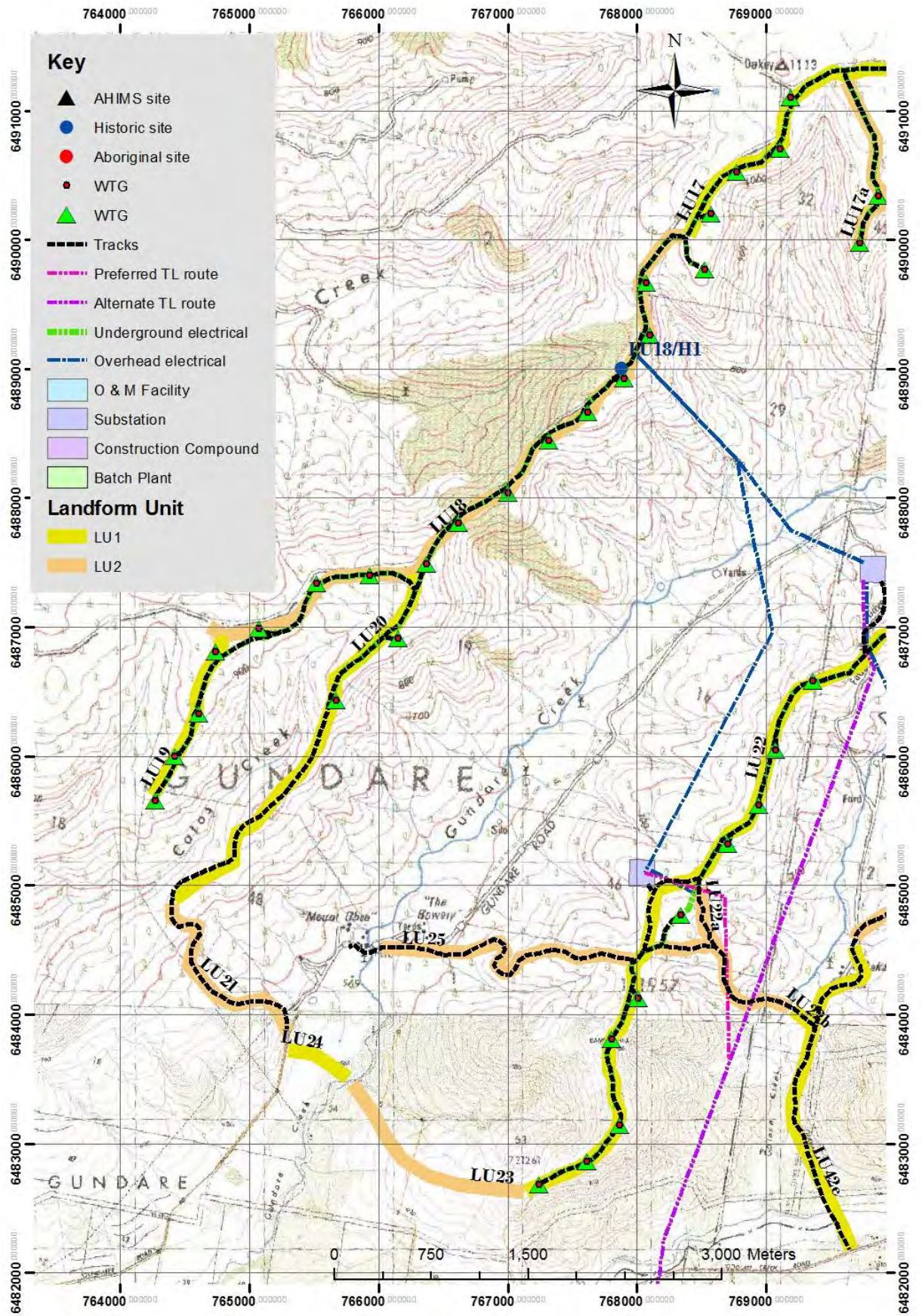
APPENDIX 4 LANDFORM UNIT AND HERITAGE SITE MAPPING



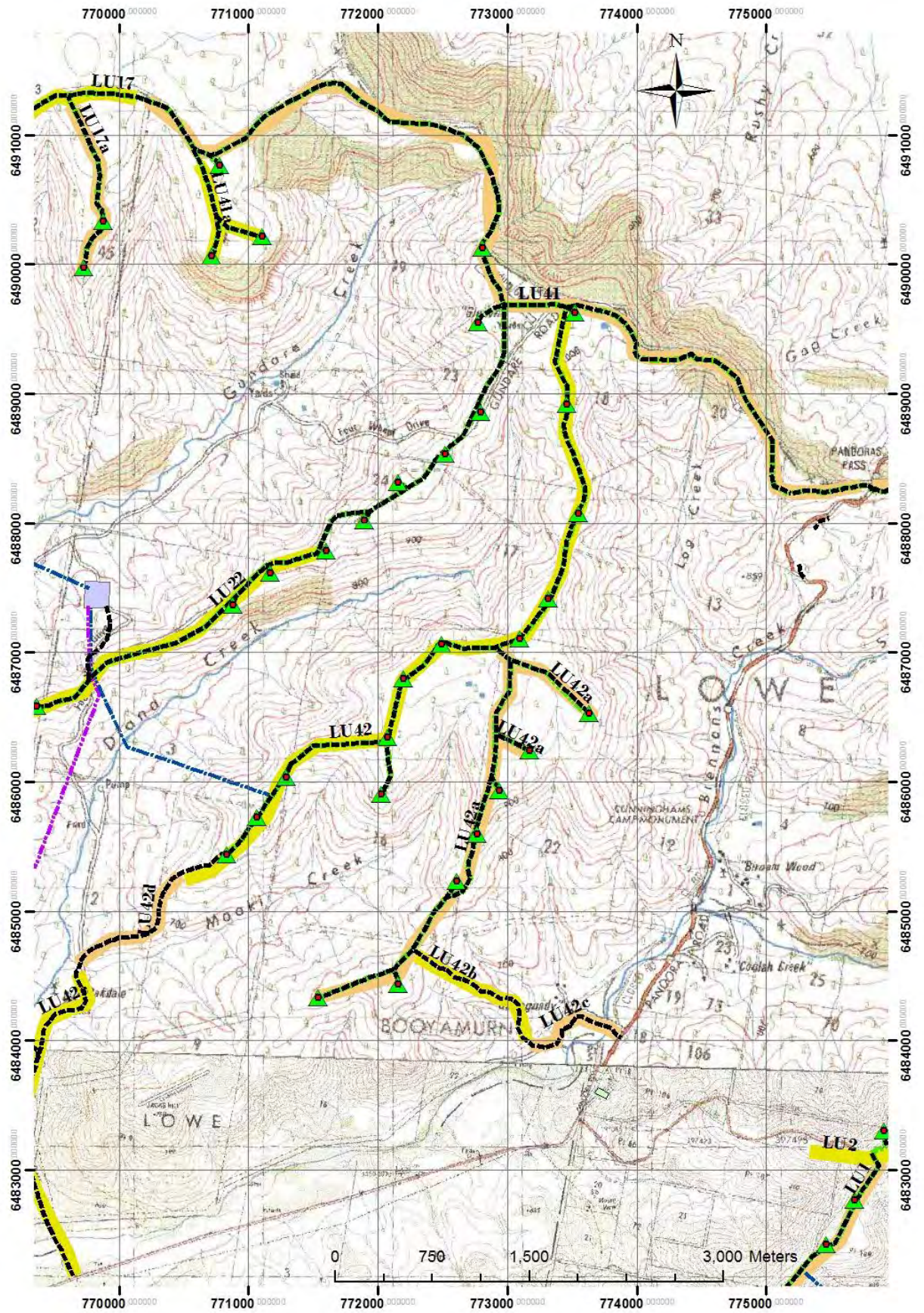
Map Codes – Wind Farm Subject Area



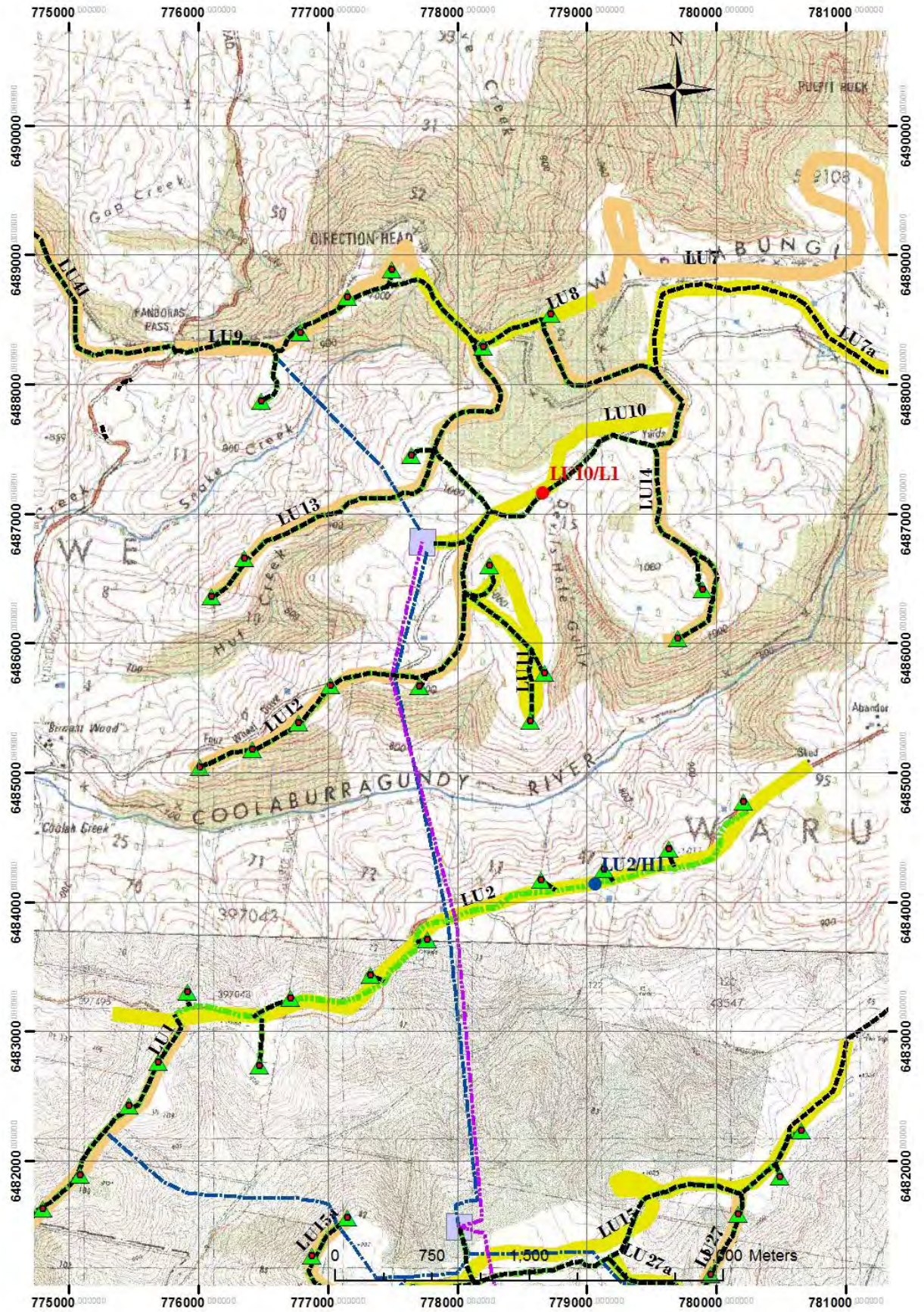
Map Codes – Transmission Line Subject Area



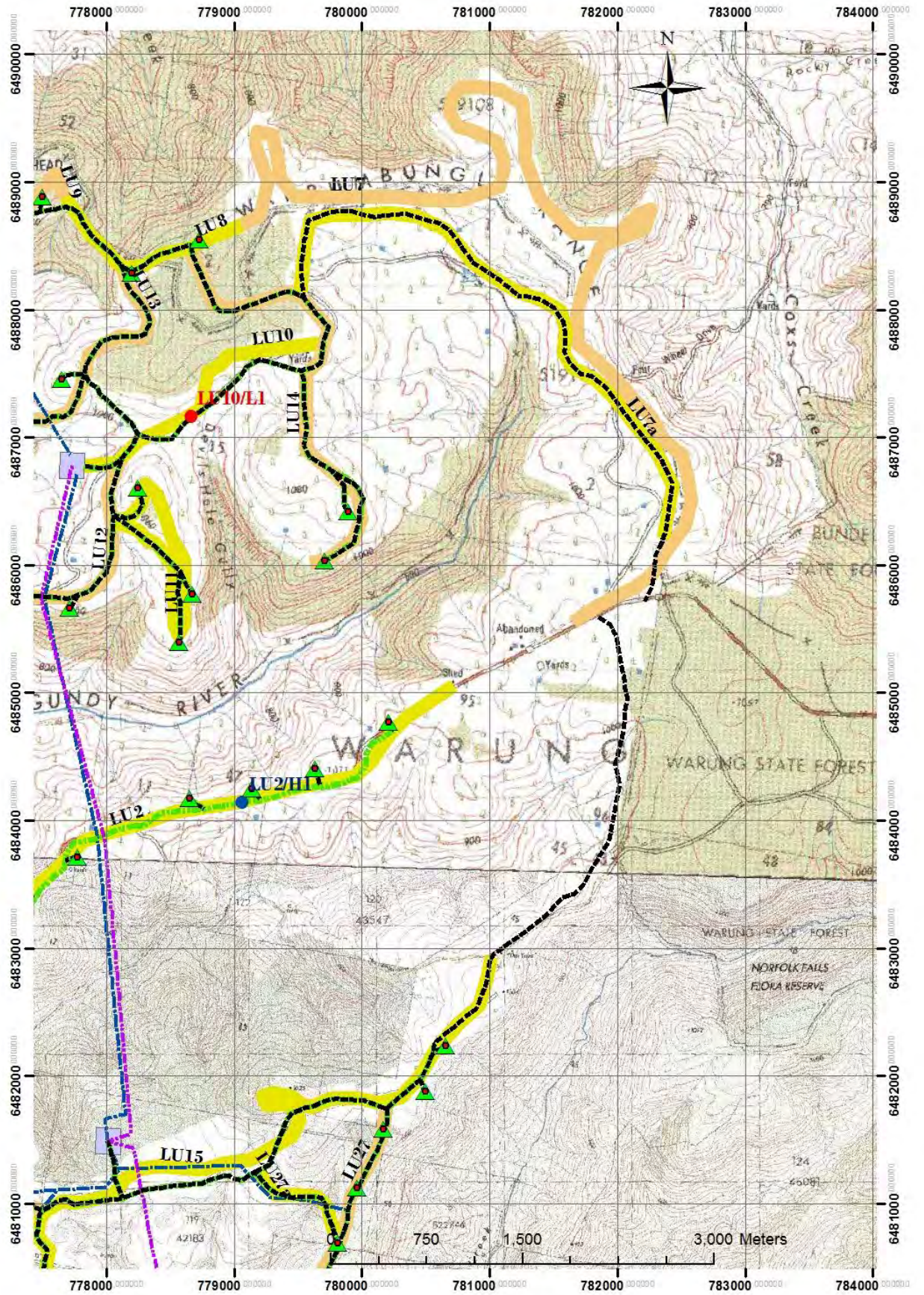
Map 1



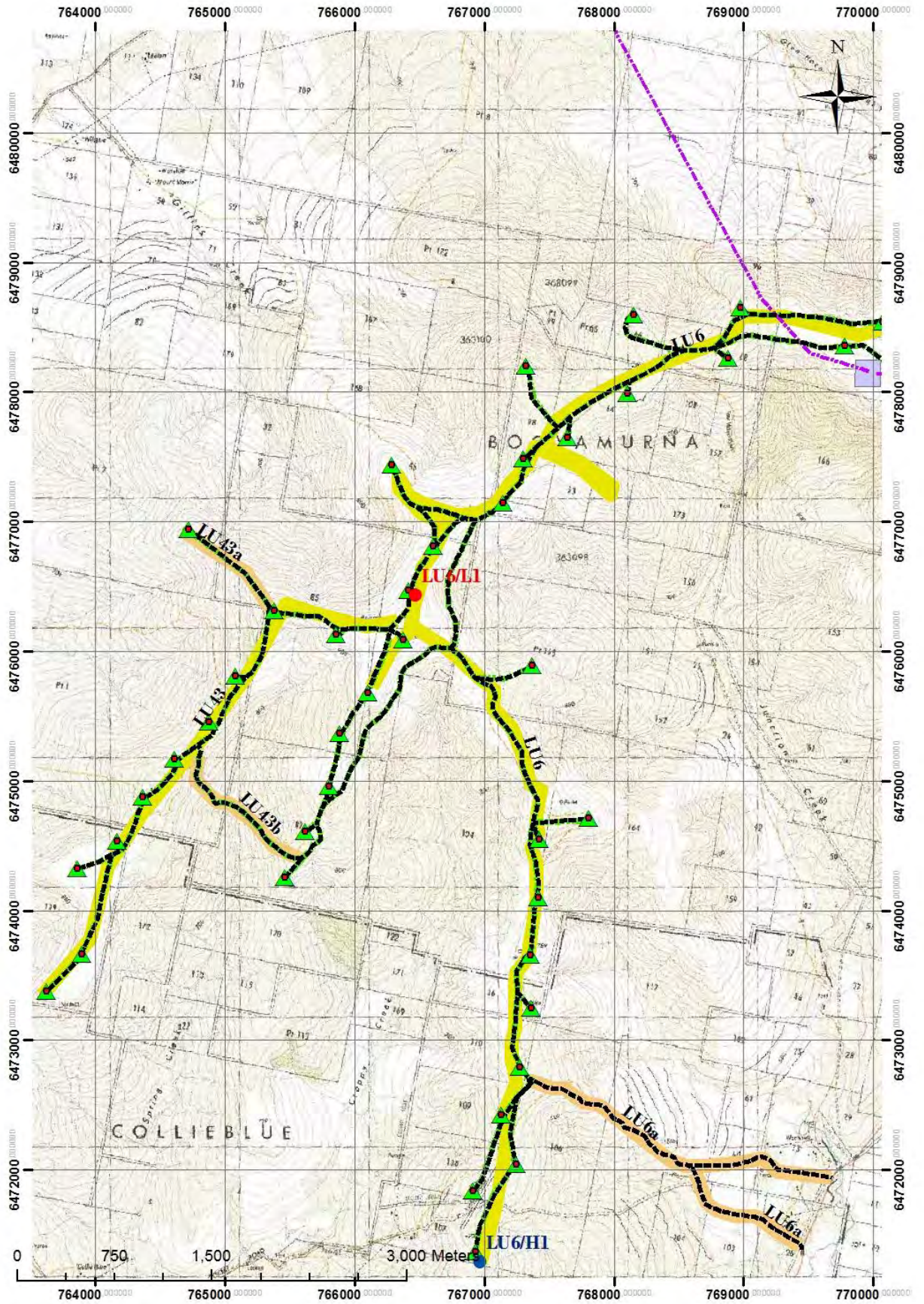
Map 2



Map 3



Map 4



Map 5