



EPURON

APPENDIX N

Historic Heritage

BOWMANS CREEK
WIND FARM

environmental impact statement



View of Rock Lily Gully-HS01.

HERITAGE IMPACT STATEMENT

BOWMANS CREEK WINDFARM

BOWMANS CREEK, NSW

MARCH 2021

Report prepared by
OzArk Environment & Heritage
for Hansen Bailey
on behalf of
Epuron Projects Pty Ltd



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ABBREVIATIONS AND GLOSSARY

DPIE	NSW Department of Planning, Industry and Environment
EIS	Environmental Impact Statement. A required document for major projects documenting all potential impacts to the environment, including heritage, that may arise due to the development.
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
Heritage Act	<i>Heritage Act 1977</i> . Provides for the protection and conservation of historical places and objects of cultural heritage significance and the registration of such places and objects.
Heritage Council	The Heritage Council makes decisions about the care and protection of heritage places and items that have been identified as being significant to the people of NSW.
Heritage NSW	Government department tasked with ensuring compliance with the Heritage Act. Heritage NSW is part of the Department of Premier & Cabinet.
HHMP	Historic Heritage Management Plan
LEP	Local Environmental Plan
SEARs	Secretary's Environmental Assessment Requirements issued by the DPIE.
SHR	State Heritage Register. A register of places in NSW that are protected by the Heritage Act.
SSD	State Significant Development

EXECUTIVE SUMMARY

Epuron Projects Pty Ltd (the proponent) is seeking approval for the construction, operation, maintenance and decommissioning of the Bowmans Creek Wind Farm (Project).

The Project is located at Bowmans Creek, approximately 10 kilometres east of Muswellbrook.

The proponent seeks State Significant Development (SSD) Development Consent approval under Division 4.7 of Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) for the Project (SSD 10315).

OzArk Environment & Heritage (OzArk) has been engaged by Hansen Bailey which is preparing the Environmental Impact Statement to provide specialist historic heritage assessment for the Project.

Desktop database searches completed prior to the survey showed one listed heritage place located within the Project Boundary and two places located near the Survey Boundary (both terms are defined later in this report).

The historic heritage assessment took place at the same time as the Aboriginal heritage assessment for the Project (OzArk 2021). The survey was completed by OzArk over twelve days from 25–29 November 2019; 23–27 March 2020; 27 November 2020; and 23 February 2021.

During the survey, two historic heritage sites were recorded: Hilliers Creek-HS01 and Rock Lily Gully-HS01. The sites consist of a farm house ruin and a family grave site, respectively.

The two identified historic items have been assessed as having no significant historic value under the current Heritage NSW guidelines and the Burra Charter. It is noted, however, that Rock Lily Gully-HS01 has a personal significance for the current owners of the property and that the site should be respected as such. In addition, while Hilliers Creek-HS01 does not have significant heritage values, this report recommends that efforts be made to retain the site in the landscape.

The Survey Boundary is immediately outside the heritage curtilage of one item listed on the Singleton Local Environmental Plan (LEP) 2013, the 'Former Roman Catholic Church', located on Lot 1 DP1167323 to the north of Bowmans Creek Road. This item (I156) was listed in 2017 on the Singleton LEP 2013 and while it appears on the spatial heritage map, it is not listed in Schedule 5 of the LEP, nor on the State Heritage Register. Therefore, this report concludes that it is listed on the LEP but that the relevant registers have not been updated. As such, this report contains a Statement of Heritage Impact (SOHI) to assess whether there will be any impacts to the heritage values of the place and concludes that there will be no impacts from the Project.

The Survey Boundary is also shown to be close to the heritage curtilage of another two items listed on the Muswellbrook LEP 2009, 'Fairview' homestead (I47) and 'Hillcrest' homestead (I48). The heritage curtilage for both 'Fairview' and 'Hillcrest' are 80 m from the Survey Boundary and

the homesteads themselves are over 300 m from the Survey Boundary. These items are discussed further in **Section 4.2.1**. As there is no proposed work within the defined heritage curtilage of these items, there are no management recommendations to avoid harm to these places.

On a broader level, it is recognised that the Project is occurring within a cultural landscape typified by small rural holdings containing a variety of structures such as homesteads that exemplify a long history of settlement over the past 150 years. An assessment of the Project's impact on this cultural landscape is that it will, in places, have a visual impact that could disrupt the rural nature of the landscape. However, this impact will not adversely impact the fundamental values of the cultural landscape that will remain physically intact. It is also recognised that the values identified in the vicinity of the Project are representative of rural landscapes across large areas of NSW and do not contain any rare or unique features worthy of special conservation efforts.

It was assessed that there are no areas within the Survey Boundary that are likely to contain significant archaeological deposits of conservation value.

Recommendations concerning the historic values within Survey Boundary are as follows:

1. All land-disturbing activities must be confined within the assessed Survey Boundary. Should project impacts change such that the area to be impacted is outside of the assessed Survey Boundary, then additional assessment may be required.
2. The grave site (Rock Lily Gully-HS01) at GDA Zone 56 316931E, 6428480N should be fenced with a high visibility barrier during construction of the Project to avoid inadvertent impacts. To mitigate visual impacts from the access roads, the proponent will restore the fence surrounding the graves and install plantings to shield the graves from the nearby proposed access tracks.
3. The location of Hilliers Creek-HS01 located at GDA Zone 56 323003E, 6435229N should be considered when the design of the overhead electricity reticulation line is finalised to ensure that the place is avoided. No access tracks for the construction of the overhead electricity reticulation line should be designed to be within 10 m of the farm house ruin. No electricity pole associated with the overhead electricity reticulation line should be designed to be within 20 m of the farm house ruin.
4. There should be no impacts within Lot 1 DP1167323 that contains the 'Former Roman Catholic Church' (Item I156 on the Singleton LEP).
5. In terms of the cultural landscape surrounding the Survey Boundary, particularly along Albano (Bowmans Creek) Road, the proponent will commission a community based heritage study that will document and archivally record any items held to be significant by

the local community. This study will provide a record of the cultural landscape prior to any impacts associated with the Project commencing.

6. Procedures for the unexpected discovery of historic items and/or human skeletal material during the construction and/or use of the Project will be set out in an approved Historic Heritage Management Plan (HHMP) that will be developed following project approval in consultation with relevant regulators. Normally, no construction work associated with the Project can commence until the HHMP has been approved by the Department of Planning, Industry and Environment.

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1 INTRODUCTION

Epuron Projects Pty Ltd (the proponent) is seeking approval for the construction, operation, maintenance and decommissioning of the Bowmans Creek Wind Farm (Project).

The Project is located at Bowmans Creek, approximately 10 kilometres (km) east of Muswellbrook and 120 km from the Port of Newcastle in NSW (**Figure 1-1**).

The proponent seeks State Significant Development (SSD) Development Consent approval under Division 4.7 of Part 4 of the *Environmental Planning & Assessment Act 1979* (EP&A Act) for the Project (SSD 10315). The proponent also seeks an Approval from the Commonwealth Department of Agriculture, Water and the Environment (DAWE) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The two Applications are supported by the 'Bowmans Creek Wind Farm Environmental Impact Statement' (EIS) (Hansen Bailey 2020). This assessment supports the EIS.

The Project extends predominantly across two Local Government Areas (LGAs), being the Muswellbrook and Singleton Council LGAs. A small number of turbines are additionally proposed in the Upper Hunter Shire LGA.

The Project will generally involve the construction, operation, maintenance and decommissioning comprised of:

- Up to 61 wind turbine sites consisting of:
 - A three-blade rotor mounted onto a tubular tower
 - Crane hardstand area
 - Turbine laydown area.
- Electricity infrastructure:
 - Up to two substations
 - A 330kv transmission line (with above and underground components) to transmit the generated electricity into the existing TransGrid network
 - Connections between the wind turbines and the substations, which will include a combination of underground reticulation cables and overhead powerlines.
- Ancillary infrastructure:
 - Operation and Maintenance Facility (O&M Facility)
 - Construction compound and storage facilities
 - Unsealed access tracks within the Project Boundary
 - Ongoing use of existing and additional monitoring masts and other monitoring

- Temporary construction facilities (including concrete batching plant, laydown areas and rock crushing facilities).
- Minor upgrades to the road network to facilitate delivery of oversized loads (such as wind turbine components) to the Project
- Administrative activities (including boundary adjustments and subdivisions).

The conceptual project layout is shown on **Figure 1-2**.

This assessment generally applies to the Project Boundary unless otherwise stipulated in this assessment and the EIS Project Description.

Within the Project Boundary, the Survey Boundary incorporates conservative buffers around all Project components (including turbine locations to allow for micro-siting). Therefore, the Survey Boundary encompasses all areas that may be disturbed by the Project.

Within the Survey Boundary, a Disturbance Area has been defined for the purposes of relevant assessments and represents the maximum hectares (ha) to be directly impacted by the Project.

The three major boundaries that will be used in this report are set out below:

- Project Boundary defines the Project Site and includes all of the main Project components apart from the electricity transmission line (ETL) to the Liddell Power Station. The Project Boundary covers an area of approximately 16,720 ha
- Survey Boundary defines the area that was assessed in which all Project impacts will be located. The Survey Boundary covers an area of approximately 1,052ha
- Disturbance Area defines the area where it is currently planned that disturbance will occur. The Disturbance Area is within the Survey Boundary and covers an area of approximately 515 ha (including the Transport Route Disturbance).

Figure 1-1: Regional context of the Project Boundary.

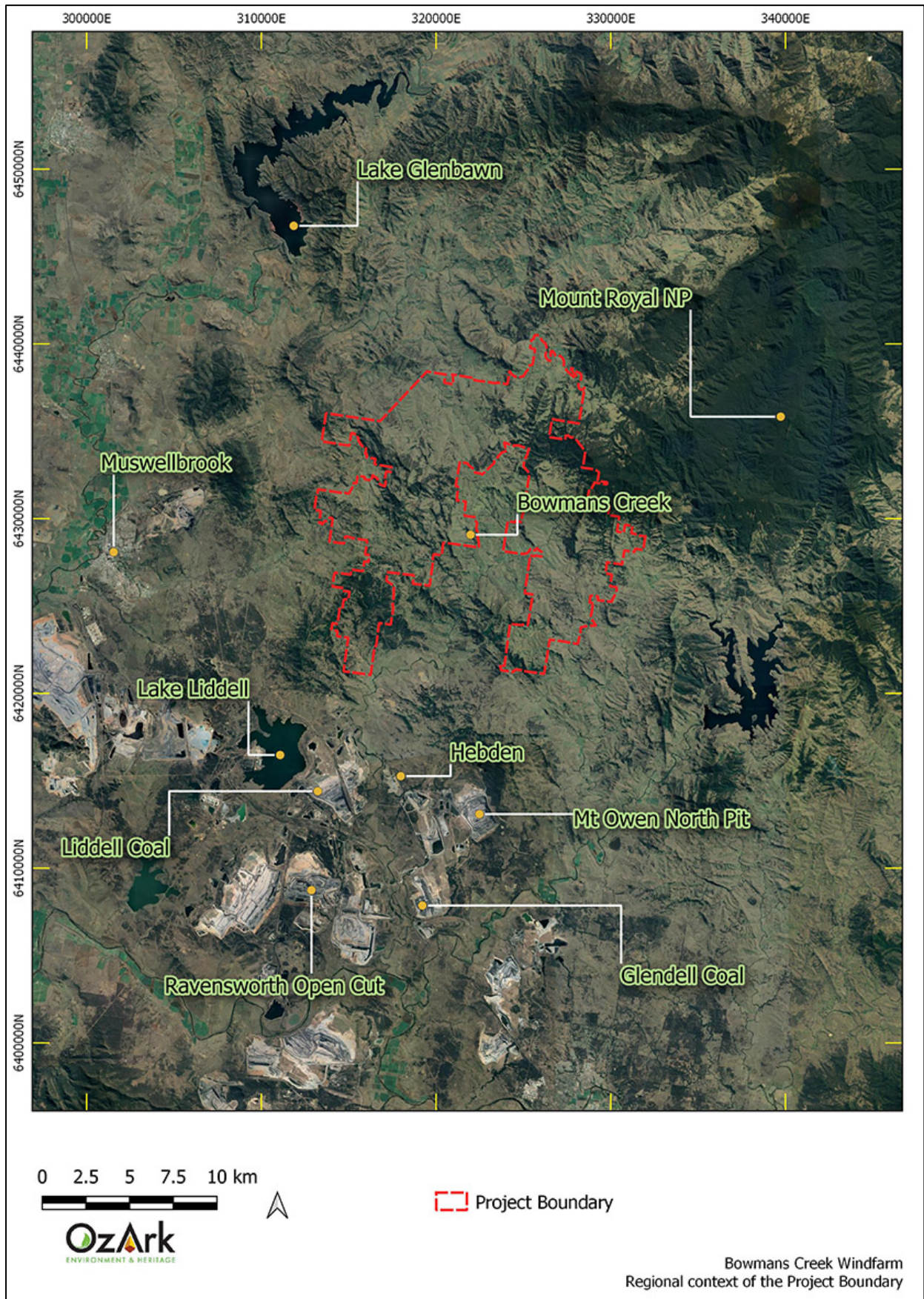
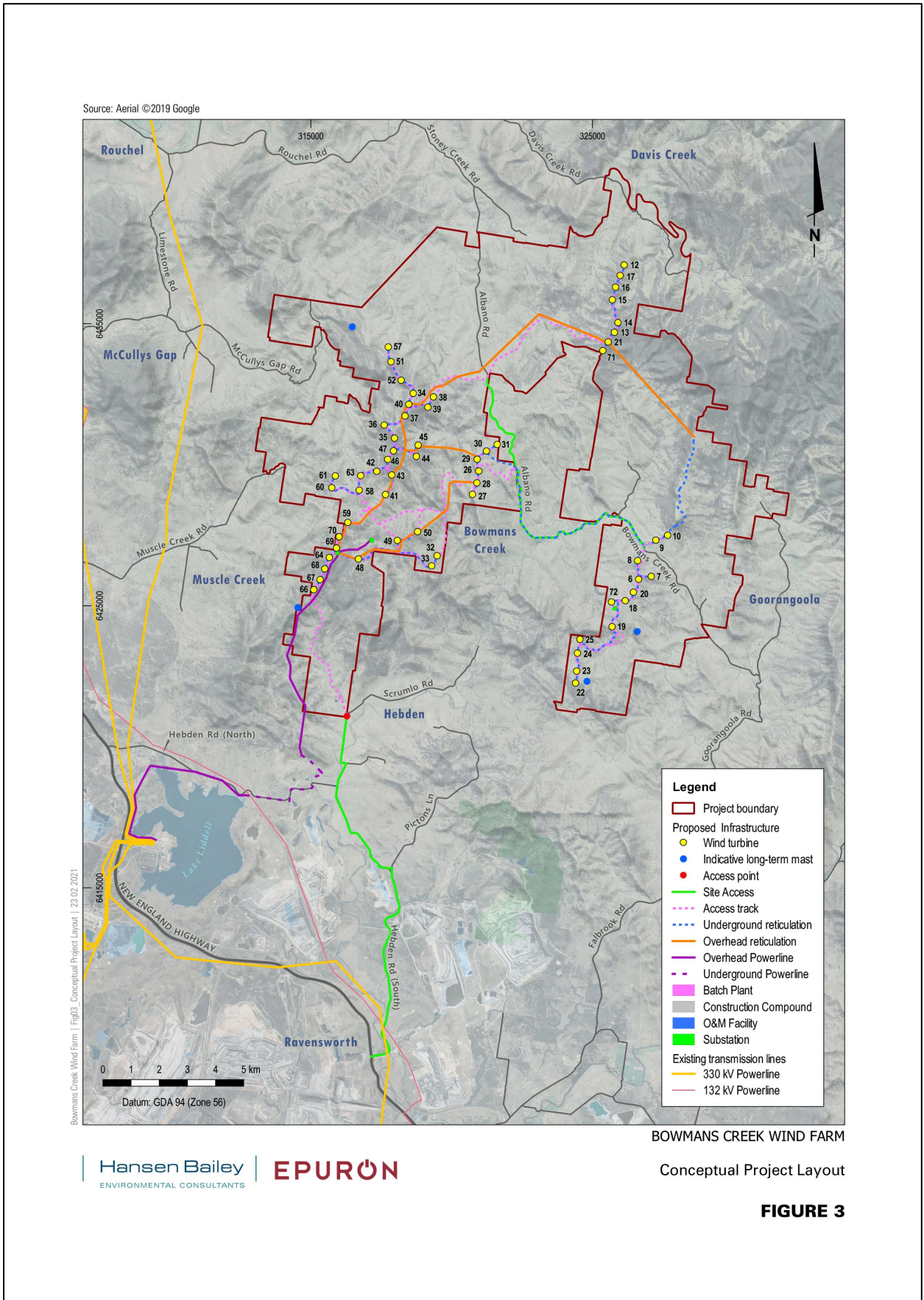


Figure 1-2: Conceptual project layout.



1.1 LOCATION OF THE PROJECT BOUNDARY

Mount Royal National Park is located at least 5 km to the northeast of the Project Boundary. Lake St Clair is over 10 km to the southeast and Lake Liddell over 6 km to the southwest of the Project Boundary. Project components within the Project Boundary are at greater distances from these localities. The southern-most part of Glenbawn Dam is over 13 km from the closest proposed turbine. The Project Boundary is shown within its regional context on **Figure 1-1**.

There are a number of rural communities in proximity to the Project Site including: Hebden, Muscle Creek, McCully's Gap, Rouchel Brook, Bowmans Creek, and Goorangoola.

The Project Site and surrounding area is used for farming and grazing operations. The region supports a number of active coal mines and two coal fired power stations. Historically, a number of mineral exploration licences have been granted over the Project Site, however, there are no current active exploration licences.

The Project is located primarily on freehold land within and adjacent to agricultural areas. There are a number of small parcels of Crown land within the Project Boundary.

Generally, the wind turbines have been positioned along a series of ridges generally running north–south.

1.2 SURVEY BOUNDARY

The Survey Boundary is generally located within steep hills overlooking the flat valley floor of the Hunter Valley, although a portion is on the flatter landforms around Lake Liddell (**Figure 1-3**). In the south the elevation is around 140 metres (m) above sea level while some of the turbine locations further north are at an elevation of greater than 700 m above sea level (**Figure 1-4**). The defining characteristic of the topography within the Survey Boundary is the very sharp local increase in elevation meaning that many of the hillslopes can only be walked up with difficulty. The steep hills either rise from narrow V-shaped valleys or are connected by thin swales.

Disturbances across most of the Survey Boundary in the north is limited to the agricultural land use of the area and is primarily limited to vegetation clearing, soil loss and the construction of farm infrastructure such as fences.

In the south where the Survey Boundary reaches the valley floor, the terrain is more level. However, in this portion of the Survey Boundary the disturbances increase from activities associated with mining, infrastructure construction (roads and railway), the creation of Lake Liddell, and the construction and use of the Liddell Power Station.

The landforms throughout the Survey Boundary are either cleared and used for grazing or have been cleared at some time in the past although now trees have regenerated. Only the steepest slopes retain pockets of native vegetation.

Figure 1-3: Aerial showing the Survey Boundary.

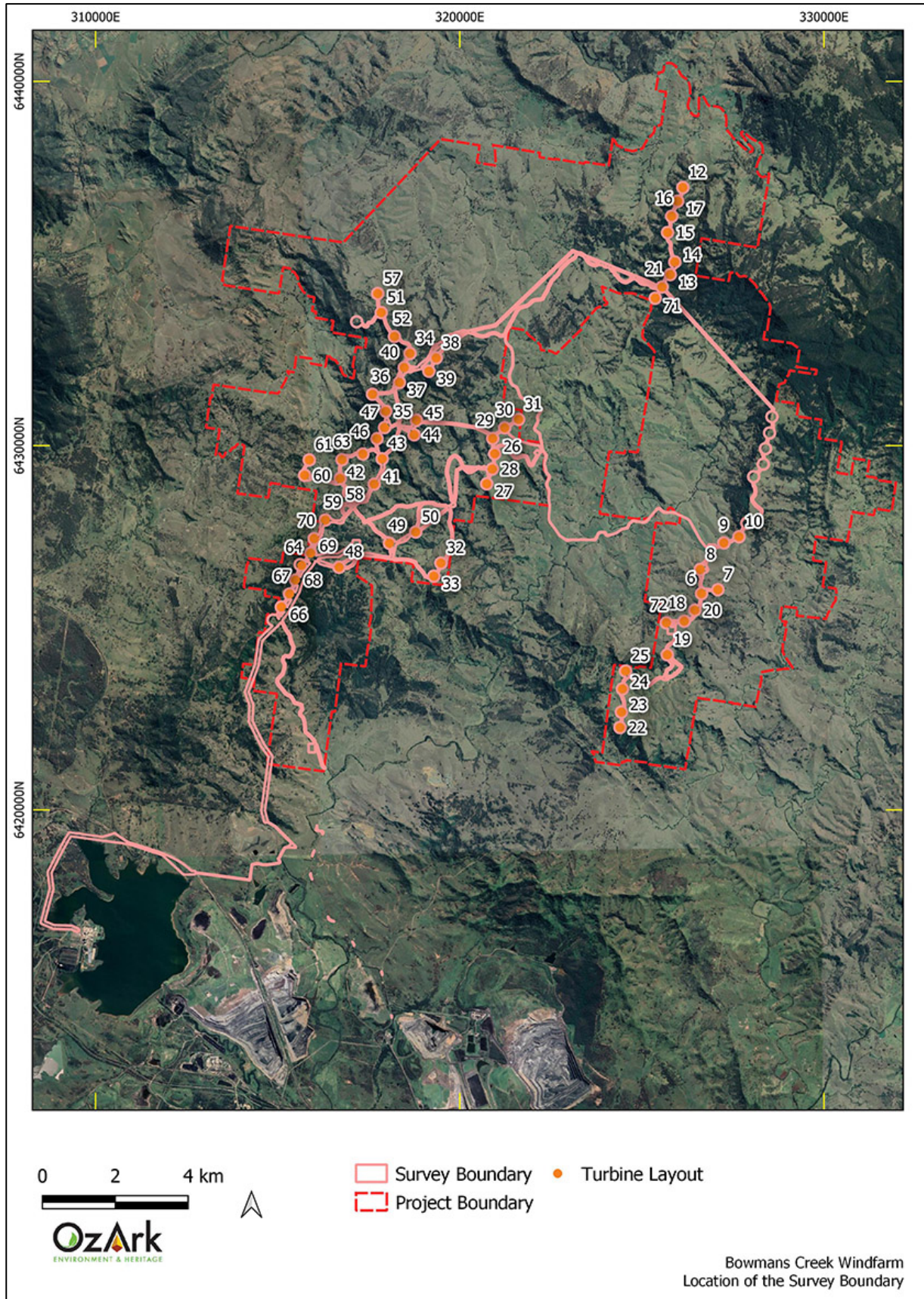


Figure 1-4: Views of the Survey Boundary.

	
<p>1. Landscape around Turbine 14 in the north of the Survey Boundary.</p>	<p>2. Landscape around Turbine 49 in the west of the Survey Boundary.</p>
	
<p>3. Landscape around Turbine 33 in the west of the Survey Boundary.</p>	<p>4. Headwaters of Bowmans Creek in the northeast of the Survey Boundary.</p>
	
<p>5. Landscape along the ETL approaching the valley floor.</p>	<p>6. View of the route of the ETL on the valley floor.</p>

2 HISTORIC HERITAGE ASSESSMENT: INTRODUCTION

2.1 RELEVANT LEGISLATION

Cultural heritage is managed by several state and national Acts. Baseline principles for the conservation of heritage places and relics can be found in the *Burra Charter* (Burra Charter 2013). The *Burra Charter* has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The *Burra Charter* generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a state level.

Several Acts of parliament provide for the protection of heritage at various levels of government.

2.1.1 Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)

The EPBC Act, administered by the Commonwealth Department of the Environment and Energy, provides a framework to protect nationally significant flora, fauna, ecological communities and heritage places. The EPBC Act establishes both a National Heritage List and Commonwealth Heritage List of protected places. These lists may include Aboriginal cultural sites or sites in which Aboriginal people have interests. The assessment and permitting processes of the EPBC Act are triggered when a proposed activity or development could potentially have an impact on one of the matters of national environment significance listed by the Act. Ministerial approval is required under the EPBC Act for Projects involving significant impacts to national/commonwealth heritage places.

Applicability to the Project

It is noted there are no Commonwealth or National heritage listed places within the Survey Boundary, and as such, the heritage provisions of the EPBC Act and other Commonwealth Acts do not apply.

2.1.2 State legislation

Environmental Planning and Assessment Act 1979 (EP&A Act)

This Act established requirements relating to land use and planning. The framework governing environmental and heritage assessment in NSW is contained within the following parts of the EP&A Act:

- Part 4: Local government development assessments, including heritage. May include schedules of heritage items

- Division 4.7: Approvals process for state significant development.

Applicability to the Project

As the Project is a State Significant Development (SSD), Section 4.41 of the EP&A Act (formerly Section 89J) applies and provides a defence for any investigative or other activities that are required to be carried out for the purpose of complying with any environmental assessment requirements (i.e. Secretary's Environmental Assessment Requirements [SEARs]: see below).

Section 4.41 of the EP&A Act also notes that an approval under Part 4, or an excavation permit under Section 139, of the *Heritage Act 1977* (Heritage Act) are not required. It is normally a condition of approval for SSD projects that historic heritage be managed under an Historic Heritage Management Plan (HHMP).

Secretary's Environmental Assessment Requirements

The SEARs were issued for SSD 10315 on 23 July 2019.

In relation to historic heritage, the SEARs state:

The EIS must:

- assess the impact to historic heritage items under the NSW Heritage Manual.

Compliance with the SEARs has governed the survey and reporting of potential impacts to historic heritage associated with the Project.

Heritage Act 1977 (Heritage Act)

The *Heritage Act 1977* (Heritage Act) is applicable to the current assessment. This Act established the Heritage Council of NSW. The Heritage Council's role is to advise the government on the protection of heritage assets, make listing recommendations to the Minister in relation to the State Heritage Register (SHR), and assess/approve/decline proposals involving modification to heritage items or places listed on the SHR. Most proposals involving modification are assessed under Section 60 of the Heritage Act.

Automatic protection is afforded to 'relics', defined as '*any deposit or material evidence relating to the settlement of the area that comprised New South Wales, not being Aboriginal settlement, and which holds state or local significance*' (note: formerly the Act protected any 'relic' that was more than 50 years old. In 2009 the age determination was dropped from the Act and now relics are protected according to their heritage significance assessment rather than purely on their age). Excavation of land on which it is known or where there is reasonable cause to suspect that 'relics' will be exposed, moved, destroyed, discovered or damaged is prohibited unless ordered under an excavation permit.

Applicability to the Project

There are no SHR listed items within, or near to, the Survey Boundary. Items of local heritage significance that are normally listed in Local Environmental Plans (LEPs) are also protected under the Heritage Act. It is noted below that there are two LEP listed sites in the Survey Boundary as described in **Section 4.2.1**.

2.1.3 Local legislation

Local Environmental Plans

The Survey Boundary is within areas governed by the Muswellbrook, Singleton and Upper Hunter Shire Council LEPs.

The LEPs include a schedule of heritage conservation areas and items that require either development consent or exemptions for projects that may impact conservation outcomes (Section 5.10). The objectives set out in Section 5.10 of the LEPs state:

- (a) to conserve the environmental heritage of an LGA,
- (b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,
- (c) to conserve archaeological sites,
- (d) to conserve Aboriginal objects and Aboriginal places of heritage significance.

Section 5.10(3)(a) (i) and (ii) set out the circumstances when a Development Application is not required when there is an impact to heritage items. Exemptions to consent are related to works that are of a minor nature or works that will not adversely impact the heritage values of a place.

Applicability to the Project

The Survey Boundary is adjacent to the heritage curtilages of item I47 ('Fairview' homestead) listed on the Muswellbrook LEP and I156 ('Former Roman Catholic Church') listed in the Singleton LEP. The Survey Boundary is near the heritage curtilage of I48 ('Hillcrest' homestead) listed in the Muswellbrook LEP.

2.2 HISTORIC HERITAGE ASSESSMENT OBJECTIVES

The current assessment will apply the Heritage Council's *Historical Archaeology Code of Practice* (Heritage Council 2006) in the completion of a historical heritage assessment, including field investigations, to meet the following objectives:

Objective One: To identify whether historical heritage items or areas are, or are likely to be, present within the Project Site

- Objective Two:** To assess the significance of any recorded historical heritage items or areas
- Objective Three:** Determine whether the proposal is likely to cause harm to recorded historical heritage items or areas
- Objective Four:** Provide management recommendations and options for mitigating impacts.

2.3 DATE OF HISTORIC HERITAGE ASSESSMENT

The historic heritage assessment took place at the same time as the Aboriginal heritage assessment for the Project (OzArk 2021). The survey was completed by OzArk over twelve days from 25–29 November 2019; 23–27 March 2020; 27 November 2020; and 23 February 2021.

2.4 OZARK INVOLVEMENT

Fieldwork Session 1 consisted of two teams of two OzArk archaeologists in each team. Fieldwork Session 2 consisted of one team of two OzArk archaeologists. Fieldwork Sessions 3 and 4 consisted of one team of one OzArk archaeologist.

The fieldwork component of the heritage assessment was undertaken by:

- Fieldwork Session 1
 - Fieldwork Director: Ben Churcher (OzArk Principal Archaeologist, BA[Hons], Dip Ed)
 - Archaeologist: Stephanie Rusden (OzArk Senior Archaeologist, BS University of Wollongong, BA University of New England)
 - Archaeologist: Dr Alyce Cameron (OzArk Senior Archaeologist, BA [Hons] and PhD [Archaeology & palaeoanthropology] Australian National University)
 - Archaeologist: Kirwan Williams (OzArk Project Archaeologist, BA University of Queensland).
- Fieldwork Session 2
 - Fieldwork Director: Dr Alyce Cameron
 - Archaeologist: Kirwan Williams.
- Fieldwork Session 3
 - Fieldwork Director: Stephanie Rusden
- Fieldwork Session 4
 - Fieldwork Director: Stephanie Rusden.

2.4.1 Reporting

The reporting component of the heritage assessment was undertaken by:

- Report Author: Ben Churcher
- Contributors: Adelia Gower (OzArk Project Archaeologist, BA University of Queensland, who undertook background research), Stephanie Rusden (incorporated fieldwork results of Fieldwork Sessions 3 and 4)
- Reviewer: Stephanie Rusden.

3 ENVIRONMENTAL CONTEXT

3.1 ENVIRONMENTAL OVERVIEW

The Survey Boundary was divided into two survey units: Survey Unit 1 and Survey Unit 2. The environment of each survey unit will be discussed below and the topographic differences between the two is shown on **Figure 3-1** that presents a digital elevation model of the central portion of the Project Boundary.

Survey Unit 1 is characterised by broadly benched spurs with moderate to steep slope forms off the crests/ridgelines. The slopes and creeks are largely bedrock controlled except for areas adjacent to the larger drainage lines such as Bowmans Creek that have some alluvial development. This topography has been largely cleared of trees in the past and has been used for long-term, low density grazing.

Survey Unit 1 is described as ‘hills’ in the *Australian soil and land survey field handbook* (CSIRO 2009):

Landform pattern of high relief (90–300 m) with gently inclined to precipitous slopes. Fixed, shallow, erosional stream channels, closely to very widely spaced, form a non-directional or convergent, integrated tributary network. There is continuously active erosion by wash and creep and, in some cases, rarely active erosion by landslides.

Using the terrain classifications in CSIRO 2009, Survey Unit 1 is a ‘Type C’ terrain with steep slopes and no terrace formation in the narrow V-shaped valleys.

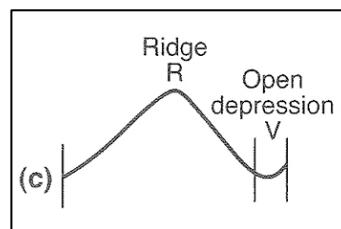


Figure 3-2 shows views of Survey Unit 1. In terms of the topography of the Survey Boundary in this unit, these photos show:

- Photo 1: shows outcropping rock on crest tops and the steeply undulating nature of the landscape
- Photo 2: shows the isolated, rocky crests where turbine locations are proposed
- Photo 3: shows the thin ridges along which access tracks and turbines are proposed
- Photo 4: shows the broader ridges that are also present. Although broader, these ridges are still within steep country
- Photo 5: shows the broad saddles that are present in Survey Unit 1
- Photo 6: shows the gradient and condition of the landscape at the time of survey.

Survey Unit 2 contains the low undulating hills typical of the Hunter Valley floor, which are divided by drainage lines that once flowed into Bayswater Creek (now Lake Liddell) to the south. The lowlands have historically been (although not currently) used for grazing, with extensive grasslands the result of past clearance.

The *Australian soil and land survey field handbook* (CSIRO 2009) defines the landforms of Survey Unit 2 as 'low hills':

Landform pattern of low relief (30–90 m) and gentle to very steep slopes, typically with fixed, erosional stream channels, closely to very widely spaced, which form a non-directional or convergent, integrated tributary pattern. There is continuously active sheet flow, creep, and channelled stream flow.

Using the terrain classifications in CSIRO 2009, Survey Unit 2 is a 'Type E' terrain and contains waning lower slope and flat landforms.

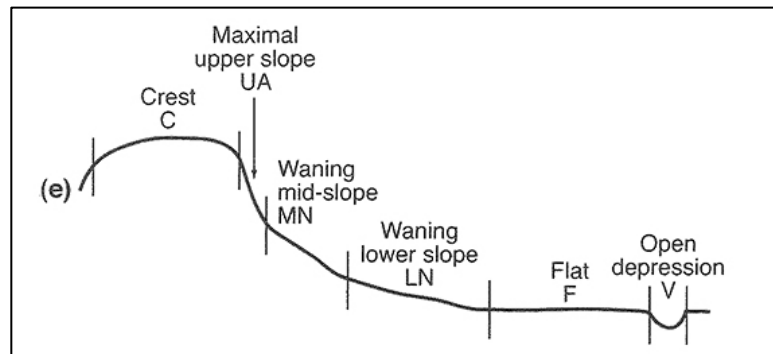


Figure 3-3 shows views of Survey Unit 2. In terms of the topography of the Survey Boundary in this unit, these photos show:

- Photo 1: shows the gentle, undulating nature of the landforms
- Photo 2: shows the extensive level landforms where the ETL corridor is proposed
- Photo 3: shows the flat landforms of the valley floor and the high degree of agricultural activity
- Photo 4: shows the flat landforms to the north of Lake Liddell
- Photo 5: shows the broad valley landforms that surround Bowmans Creek along Albano Road
- Photo 6: shows the broad valley landforms that surround Bowmans Creek along Albano Road.

Figure 3-1: DEM model of a portion of the Survey Boundary showing topography.

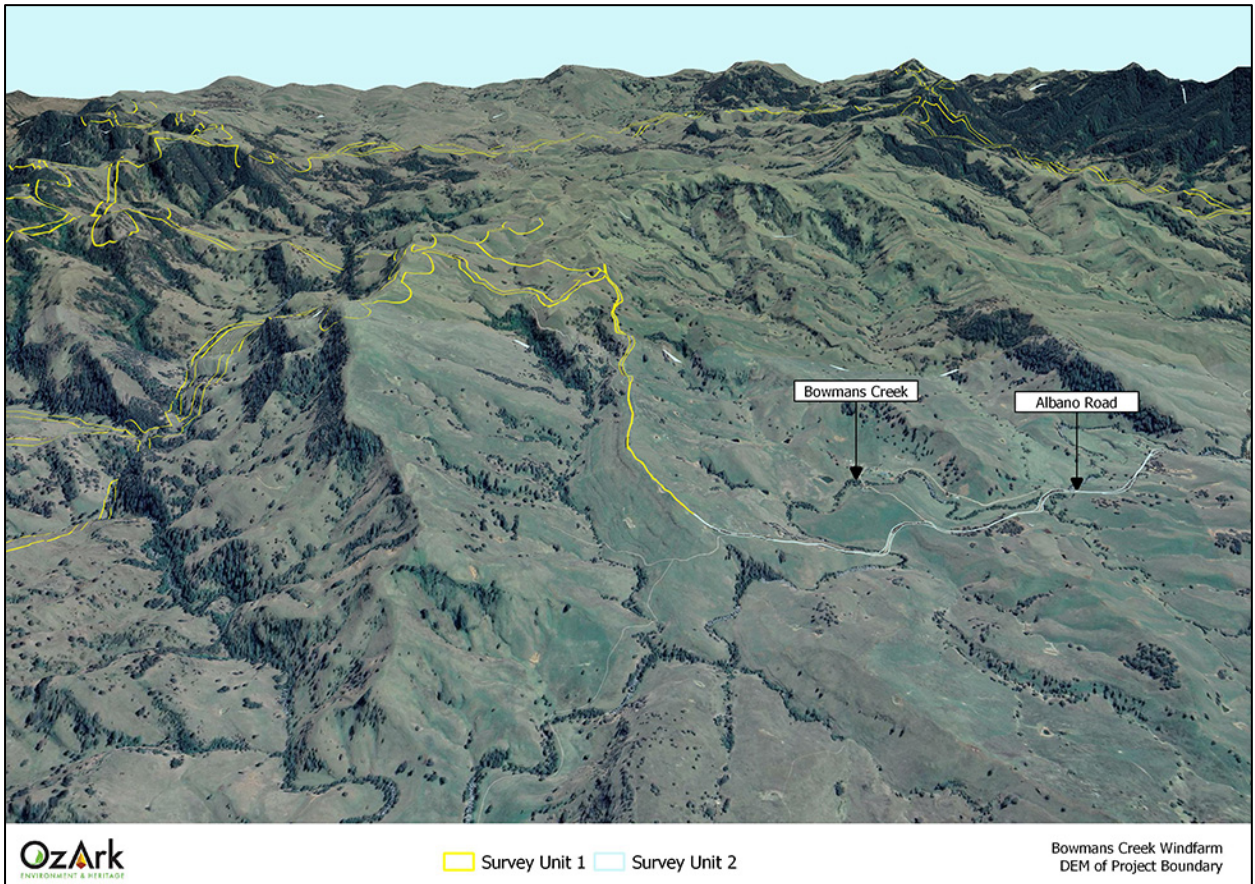
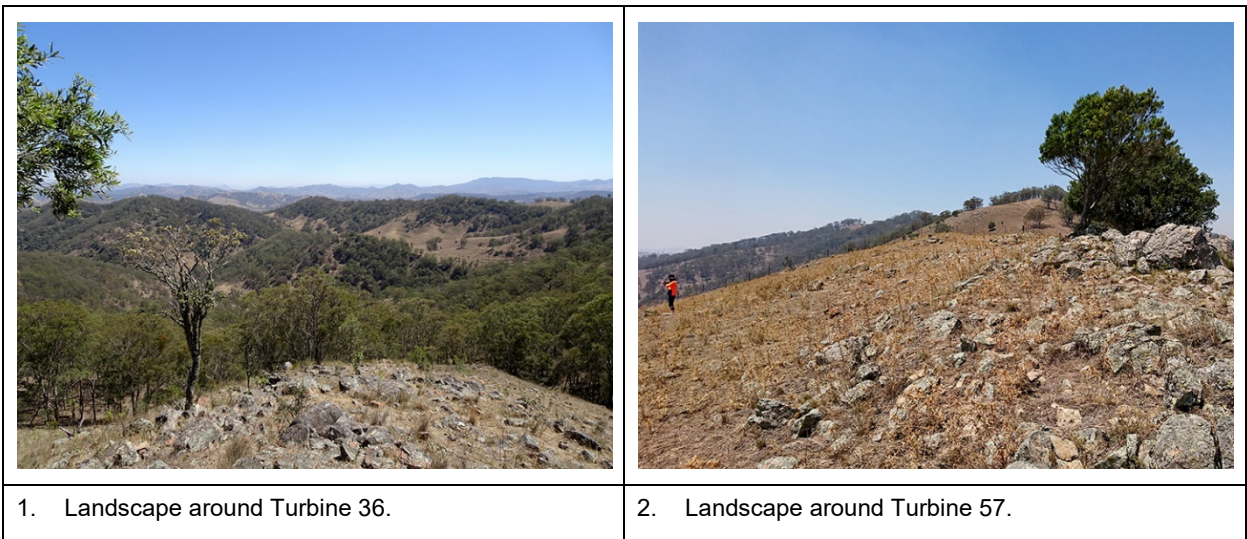


Figure 3-2: Views of the Survey Unit 1.



	
<p>3. Landscape around Turbine 36.</p>	<p>4. Landscape around Turbine 58.</p>
	
<p>5. Landscape along the route of proposed Underground Reticulation between Turbines 36 and 37.</p>	<p>6. View of the slope towards Turbine 45.</p>

Figure 3-3: Views of the Survey Unit 2.

	
<p>1. Landscape along an access track route in the southeast of the Survey Boundary.</p>	<p>2. Landscape within the Glencore landholdings.</p>

	
<p>3. Landscape at the junction of Hebden Road and Pictons Lane where Transport Route Disturbance is proposed.</p>	<p>4. Landscape along Hebden Road to the north of the Lake Liddell recreation area.</p>
	
<p>5. Landscape along the Albano Road portion of the Survey Boundary.</p>	<p>6. Landscape along the Albano Road portion of the Survey Boundary.</p>

4 HISTORIC HERITAGE ASSESSMENT: BACKGROUND

4.1 BRIEF HISTORY OF THE MUSWELLBROOK REGION

The Upper Hunter Valley is home to the Wonnarua people, who were also closely affiliated with the Gomeroi (Kamilaroi) peoples to the north. The Project Boundary is in the border region between the Wonnarua, the Geawegal and the Gomeroi (Kamilaroi).

Colonial settlement in the Hunter Valley has been well researched and well documented in a range of sources. Allan Wood's *Dawn in the Valley* provides a comprehensive overview of the colonial history of the Hunter. The earliest tales of the Hunter region and its coal resources came through escaped convicts in 1791. The earliest colonial explorers and surveyors in the upper Hunter Valley were Allan Cunningham in 1823; Henry Dangar in 1824; Robert Dixon in 1831; and Thomas Mitchell in 1831.

The initial phase of colonial exploration of the Hunter region was initiated by Surveyor General John Oxley with instructions to surveyor Henry Dangar and botanist Alan Cunningham in 1823. Henry Dangar started his survey of the Hunter River from Newcastle while Alan Cunningham started his survey of the Goulburn and Pages River from Bathurst. Both were searching of potential pasture lands and land that could be allocated to early settlers. Oxley directed Dangar to note that no settler was to receive more than one square mile fronting the river (GML 2016).

Dangar's survey eventually extended to the upper Hunter Valley. He named Fal and Foy Brooks in July 1824, and his 'discoveries' included detecting the confluence of the Goulburn and Hunter Rivers in October that year. Foy Brook is better known today as Bowmans Creek.

Dangar described the land around Bowmans Creek as:

Much alluvial Flat and undulating Land on Banks of Foy Brook. The West, Middle & East Parts are well watered by Foy Brook and two small chains of ponds—forest land, generally undulating surface, of the first and second class description, some being of third class. Iron Bark, scrubby land of small extent—soils rich vegetable alluvial, rich stiff and friable loams with some poor stuff and stone gravelly, yet forming a very desirable tract of Country.

By 1825 the Hunter River's upper reaches were occupied with large pastoral estates. Dangar's writings describe the rapid pace of European settlement in the Hunter Valley:

In this division of country, occupying upwards of 150 miles along the river, which, in 1822, possessed little more than its aboriginal inhabitants, in 1826–27, more than half a million acres were appropriated and in a forward state of improvement... Here in 1827 were upwards of 25,000 head of horned cattle, and 80,000 fine and improved-wool sheep.

Colonial settlement in the Hunter Valley began with blocks being distributed in 1822 (GML 2016: 8). From the following year, settlers looking to establish farms began to flock to the area. Villages and townships were established as more colonists moved to the upper Hunter Valley, including the villages of Muswellbrook and Scone in the 1830s.

Chief Constable John Howe first discovered Muscle Brook in 1819. It was named due to the large number of mussel shells that were found on the banks of the local creek. Sir Francis Forbes, Chief Justice of New South Wales received several land grants near Muscle Brook when it was first established and some historians say he later influenced the change of the town's name to Muswellbrook, after Muswell Hill in London, England, where his wife was born. Muswellbrook was declared a township in 1833.

The Muswellbrook region provided rich, fertile soils and this, coupled with easy access to watercourses and the relative ease of transport to Newcastle and Sydney, led to Muswellbrook being established as a farming centre. The original vegetation of the Survey Boundary and surrounds would have been covered by tall woodland consisting of spotted gums, forest red gums, swamp and river oak along the streams, yellow and white box with other shrubs and grasses (Mitchell 2002: 84). These have been mostly cleared since colonial contact for pastoralism and agriculture.

Wool production, dairying and wheat growing were the main industries in the Hunter Valley from an early date and by the 1840s, agriculture was a major land use in the Hunter Valley, with crops mostly yielding wheat. Other crops were not as desirable though they were grown in smaller quantities and were used personally or were sold only locally. Other industries in the area included vineyards, tobacco, stock breeding and horses. Leather was another valuable good that was exported from factories at Stockton and Muswellbrook into China (Lucas 2013: 18). Wheat production declined due to issues with disease in the late nineteenth century and instead a more robust crop, Lucerne, took over.

In the mid-nineteenth century, the area's larger estates had begun to be subdivided. Dairying in the region became a significant land use and intensified in the region after World War I. The move towards dairying in the Muswellbrook region was intensified with the growth of urban markets such as Newcastle and Sydney and the development of technological innovations such as the cream separator and refrigeration which opened international markets for meat and dairy products.

The number of dairy farms in the Hunter Valley has declined since the 1950s (Umwelt 2014: 3.21). Government policies of specialisation and amalgamation, introduced in the latter half of the 1960s, impacted smaller dairy farms. In the 1970s, Australia lost the British export market as a result of Britain joining the European Economic Community in 1973. Faced with the prospect of losing its primary dairy export market, the Gorton and Whitlam governments offered assistance

to help some dairy farmers to leave the industry. Milk production in NSW fell from 1,096 million litres in 1951–1952 to 820 million litres in 1981 (HLA 1995: 3).

Coal mining was not prevalent in Muswellbrook Shire until the late 1800s, although it had first been mined in the upper Hunter Valley in the 1860s. Staff at the geological surveyor identified belts of high quality coal in Muswellbrook and deemed the area to be a critical coal field (Scone 1925: 2). As the demand for coal increased, the development of transportation between Muswellbrook and the main cities became vital and this was accomplished by the construction of the Great Northern Railway that connected Singleton to Muswellbrook in 1869. This also led to Muswellbrook's rapid population expansion.

As coal mining started to emerge in the upper Hunter Valley in the 1900s, both dairying and horticulture started declining. Muswellbrook is now more associated with coal mining and the electrical generation industry rather than being an agricultural supply centre as it was in the past.

In the region of the Project Boundary, beef cattle raising has become the major industry following the decline of the dairy industry.

4.2 LOCAL CONTEXT

4.2.1 Desktop database searches conducted

A desktop search was conducted on the following databases to identify any potential previously recorded heritage within the Project Boundary. The results of this search are summarised in **Table 4-1**.

Table 4-1: Historic heritage: desktop-database search results.

Name of Database Searched	Date of Search	Type of Search	Comment
National and Commonwealth Heritage Listings	20/06/2020	NSW	No places listed on either the National or Commonwealth heritage lists are located within the Survey Boundary.
State Heritage Register (SHR)	20/06/2020	Singleton, Muswellbrook and Upper Hunter LGAs	No items on the SHR are located within or near the Survey Boundary. There are no SHR items within 5 km of the Survey Boundary. There are 18 places registered on the SHR within 25 km of the Project Boundary.
Section 170 Register	20/06/2020	Singleton, Muswellbrook and Upper Hunter LGAs	No items on the Section 170 Register are located within or near the Survey Boundary.
Local Environmental Plan (LEP)	20/06/2020	Singleton, Muswellbrook and Upper Hunter LEPs	The curtilage for the following LEP listed items are located immediately outside or in close proximity to the Survey Boundary: <ul style="list-style-type: none"> Muswellbrook LEP. I47: 'Fairview' (homestead) Muswellbrook LEP. I48: 'Hillcrest' (homestead) Singleton LEP. I156: 'Former Roman Catholic Church'

A search of the State Heritage Register (SHR) and the places listed on the applicable LEPs shows a variety of listings around the Project Boundary. The statutory heritage listed sites in the vicinity of the Project Boundary are shown on **Figure 4-2**.

A search of the Singleton and Muswellbrook LEPs indicates that none of the heritage curtilages extend into the Survey Boundary, although three items are located immediately outside or in close proximity to the Survey Boundary. These items include:

- Muswellbrook LEP I47: 'Fairview' homestead
- Muswellbrook LEP I48: 'Hillcrest' homestead
- Singleton LEP I156: 'Former Roman Catholic Church'.

However, the heritage curtilages for I47 and I48 are both in the wrong location, namely:

- The Muswellbrook Heritage Study Inventory 1996 available on the Muswellbrook Shire website notes that 'Fairview' (I47) is located within Lot 3111 DP549456 at the coordinates (converted) GDA Zone 56 312665E, 6418710N. When these coordinates are plotted, the location is within Lot 311 DP549456. Therefore, there is a typological error in the lot number on the inventory sheet, but otherwise everything else is correct and the coordinates plot to a built structure. The correct lot (Lot 311 DP549456) is outside the Survey Boundary, although a portion of the (incorrect) heritage curtilage shown on the LEP heritage mapping is immediately adjacent to the Survey Boundary. This portion does not include the 'Fairview' homestead
- The Muswellbrook Heritage Study Inventory 1996 available on the Muswellbrook Shire website notes that 'Hillcrest' (I48) is located on Lot 311 DP549456 at the coordinates (converted) GDA Zone 56 312665E, 6419290N. When these coordinates are plotted, the location is within Lot 3 DP233020. The coordinates plot to a built structure that the author knows to be the Hillcrest homestead. Therefore, the Lot and DP is wrong on the heritage inventory sheet and on the LEP spatial mapping data. The correct lot (Lot 3 DP233020) is outside the Survey Boundary.

The correct locations of both 'Hillcrest' and 'Fairview' and their associated curtilages are shown on **Figure 4-3**. **Figure 4-3** also shows the location of Lot 313 DP549456 which is the incorrect lot shown on the Muswellbrook spatial mapping for 'Fairview'. This report henceforth will assume that:

- 'Fairview' (I47) is located on Lot 311 DP549456 and all of this lot constitutes its curtilage
- 'Hillcrest' (I48) is located on Lot 3 DP233020 and all of this lot constitutes its curtilage
- There is no heritage listing in Lot 313 DP549456 and this will not be discussed further in this report.

Item 1156 of the Singleton LEP is listed as a 'Former Roman Catholic Church' and this place is located immediately outside the Project Boundary and the Survey Boundary (**Figure 4-4**).

Details on each of the LEP listed items close to the Survey Boundary are shown in **Table 4-2** and views of each item are shown on **Figure 4-1**.

Table 4-2: Description of the LEP listed items near the Survey Boundary.

Name of place	Statutory listing	Description
Fairview	Muswellbrook LEP I47	<p>'Fairview' has exterior weatherboard walls and a galvanised iron roof. On the interior there is evidence of pressed metal ceilings. It is associated with a timber slab and galvanised iron outbuilding.</p> <p>'Fairview' has local historic significance for its association with later 19th century land subdivision in the Lake Liddell area. It is one of few remaining groupings of its age and type in that area. It has local scientific significance for its potential to reveal information which could contribute to an understanding of the economic means and lifestyle of the earliest tanners in this area.</p> <p>The place was not inspected as part of the current survey.</p>
Hillcrest	Muswellbrook LEP I47	<p>'Hillcrest' has exterior weatherboard walls and a galvanised iron roof. It is associated with a galvanised iron outbuilding. Like 'Fairview', 'Hillcrest' has local historic significance for its association with later 19th century and early 20th century land subdivision in the Lake Liddell area. Its greatest significance must be its aesthetic significance which derives from its being a rare regional example of Federation Bungalow executed in timber. It has local scientific significance for its potential to reveal information which could contribute to an understanding of the economic means and lifestyles of the earliest farmers of the land in this area.</p> <p>The place was not inspected as part of the current survey.</p>
Former Catholic Church	Singleton LEP I156	<p>Weatherboard rural church. Mr William Schmierer erected the Catholic Church in 1902. The church and site have strong historical association with the early settlers of the area and in particular the five generations of the Ball family, who provided the land, worshipped and maintained the church and land for 118 years.</p> <p>The place was inspected as part of the current survey from the road corridor.</p>

Figure 4-1: Photographs of the LEP listed places near the Survey Boundary.





View of 'Hillcrest' from the Muswellbrook Heritage Study Inventory 1996.



View of the 'Former Roman Catholic Church' taken from Bowmans Creek Road (source Google Street View c. 2010).

4.2.2 Community consultation

On 27 August 2020 Ben Churcher (OzArk Principal Archaeologist) spoke with Leonie Ball. Leonie confirmed that the 'Former Roman Catholic Church' has not been moved to its current location. However, the church was not built where it was originally intended to be built as it was going to be on the far side of Bowmans Creek and the landowners agreed to build it at its current location to provide easier access.

Ms Ball also confirmed that there is a c. 1940 blacksmith's workshop located on their property. It remains standing and is currently used as a farm shed.

Figure 4-2: Statutory listings in the region of the Project Boundary.

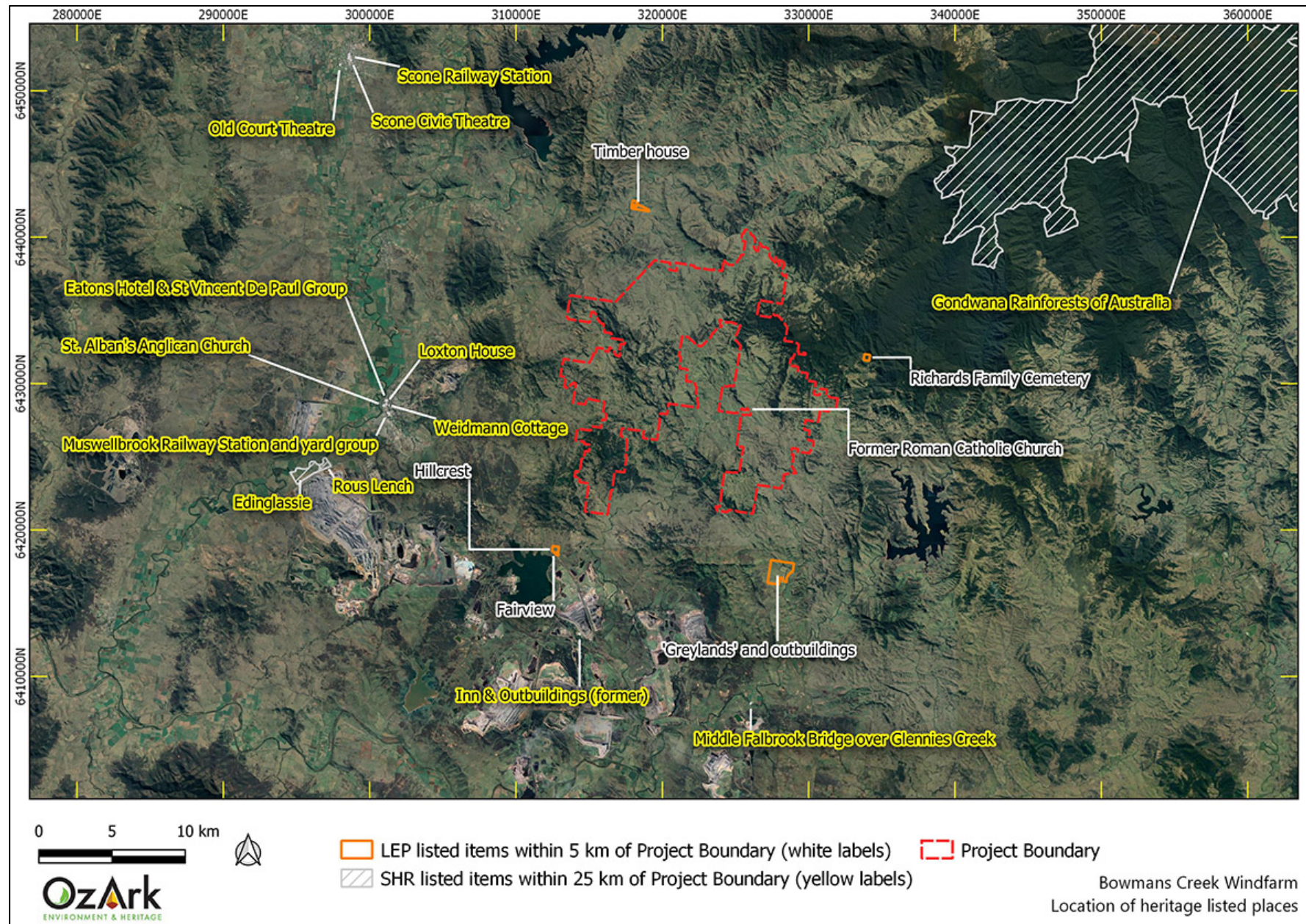
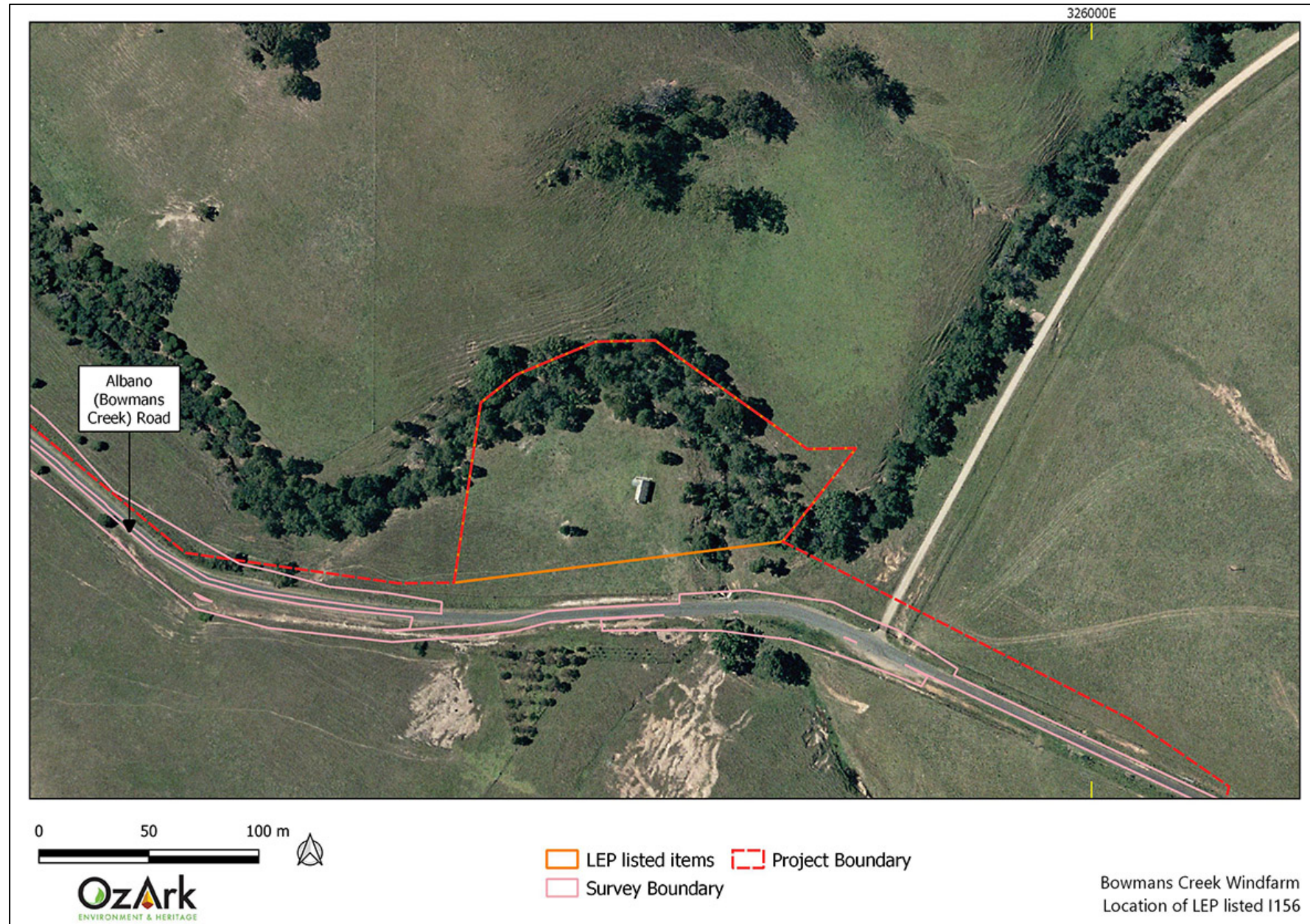


Figure 4-3: LEP listings 'Hillcrest' and 'Fairview' in relation to the Survey Boundary.



Figure 4-4: LEP listing 'Former Catholic Church' in relation to the Survey Boundary.



5 RESULTS OF HISTORIC HERITAGE ASSESSMENT

5.1 SURVEY AND FIELD METHODS

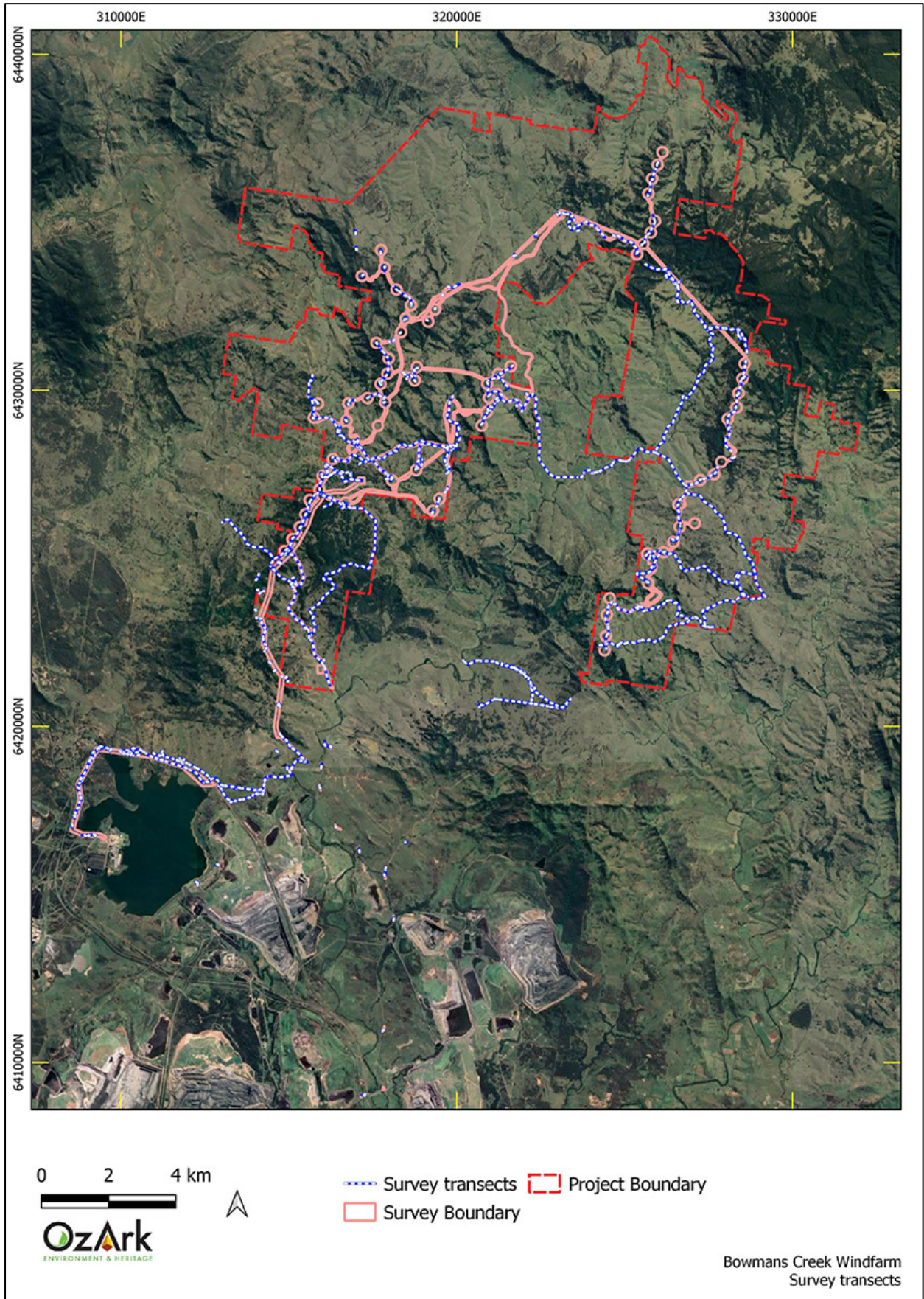
Standard archaeological field survey and recording methods were employed in this study (Burke & Smith 2004). The survey for historic heritage values occurred at the same time as the Aboriginal cultural heritage survey for the Project (OzArk 2021).

Survey consisted of reaching all turbine locations and sampling other project components such as the access tracks and the Overhead and Underground Reticulation routes. All locations for facilities were inspected. **Figure 5-1** shows the areas surveyed, either by vehicle or on foot. Typically, survey consisted of driving along access tracks where the tracks were on slopes but walking or sample surveying (i.e. inspecting landforms with higher archaeological potential) along access tracks on more level gradients. All turbine and facility locations were surveyed on foot. The portions of the ETL corridor within Survey Unit 2 landforms (Hunter Valley lowlands) were inspected on foot. Where the ETL corridor is associated with higher gradient landforms (Survey Unit 1), the route was driven where possible with sample survey, or where it was not possible to drive, the team walked to the corridor from the closest access to undertake sample survey. Proposed impacts associated with public road corridors consisted of driving to the impact location and inspecting the area on foot.

Reaching the turbine locations to undertake survey necessitated that a lot of slope, ridge and crest landforms within the Survey Boundary were surveyed. However, in Survey Unit 1, particular care was also taken to inspect the narrow valley landforms that are within this area as this is where early farming settlements are most likely to exist rather than on the steep slopes or exposed crests. This included inspecting the location of any impacts near Bowmans Creek within the Survey Boundary as this waterway would have attracted early colonial settlement. The ETL corridor inspection surveyed all landforms likely to possess historic archaeological potential.

At the conclusion of the survey it is considered that a large and representative sample of the landforms within the Survey Boundary have been surveyed.

Figure 5-1: Aerial showing the areas surveyed.



5.2 PROJECT CONSTRAINTS

Survey constraints included very poor ground surface visibility (GSV) in Survey Unit 2 (valley lowlands) as the ground cover was very thick following an exceptional germination period following late summer rains that ended a long period of below average rainfall. In contrast, most of Survey Unit 1 (hills and valleys) was surveyed in November 2019 at the height of the dry period when GSV was very high.

The nature of the Survey Boundary meant that not all portions were walked; although large portions were walked, or in the case of proposed access tracks on sloping landforms, driven. Aerial photography does not adequately capture the nature of the terrain and the difficulty in moving through it; especially as fences between properties would sometimes bar access and necessitate a detour of up to 40 minutes. Both the OzArk team and the ecology team from Cumberland Ecology swapped route data while in the field and this assisted in a more efficient survey. However, while the archaeological potential of the steep hills and narrow, V-shaped valleys that characterise Survey Unit 1 are adequately understood, the survey did have to extrapolate data to areas that were reasonably unreachable by the survey team. While all turbine locations were surveyed, an example of an unsurveyed portion would be a very steep valley (ravine almost) between two turbines that will be spanned by the Overhead Reticulation.

5.3 HISTORIC HERITAGE SITES

Two historic heritage places were recorded during the survey (**Table 5-1** and **Figure 5-3**). Details on each place are provided below.

It was assessed that there are no areas within the Survey Boundary that are likely to contain significant archaeological deposits of conservation value.

Table 5-1: Recorded historic heritage items.

Site Name	GDA Zone 56 coordinates	Type of heritage item	Figure
Rock Lily Gully-HS01	316931E, 6428480N	Family burial plot	Figure 5-4
Hilliers Creek-HS01	323003E, 6435229N	Farm house ruin	Figure 5-5

5.3.1 Cultural landscape

On a broader level, it is recognised that the Project is occurring within a cultural landscape typified by small rural holdings containing a variety of structures such as homesteads that exemplify a long history of settlement over the past 150 years.

Figure 5-2: Location of Rock Lily Gully-HS01 and Hilliers Creek-HS01.

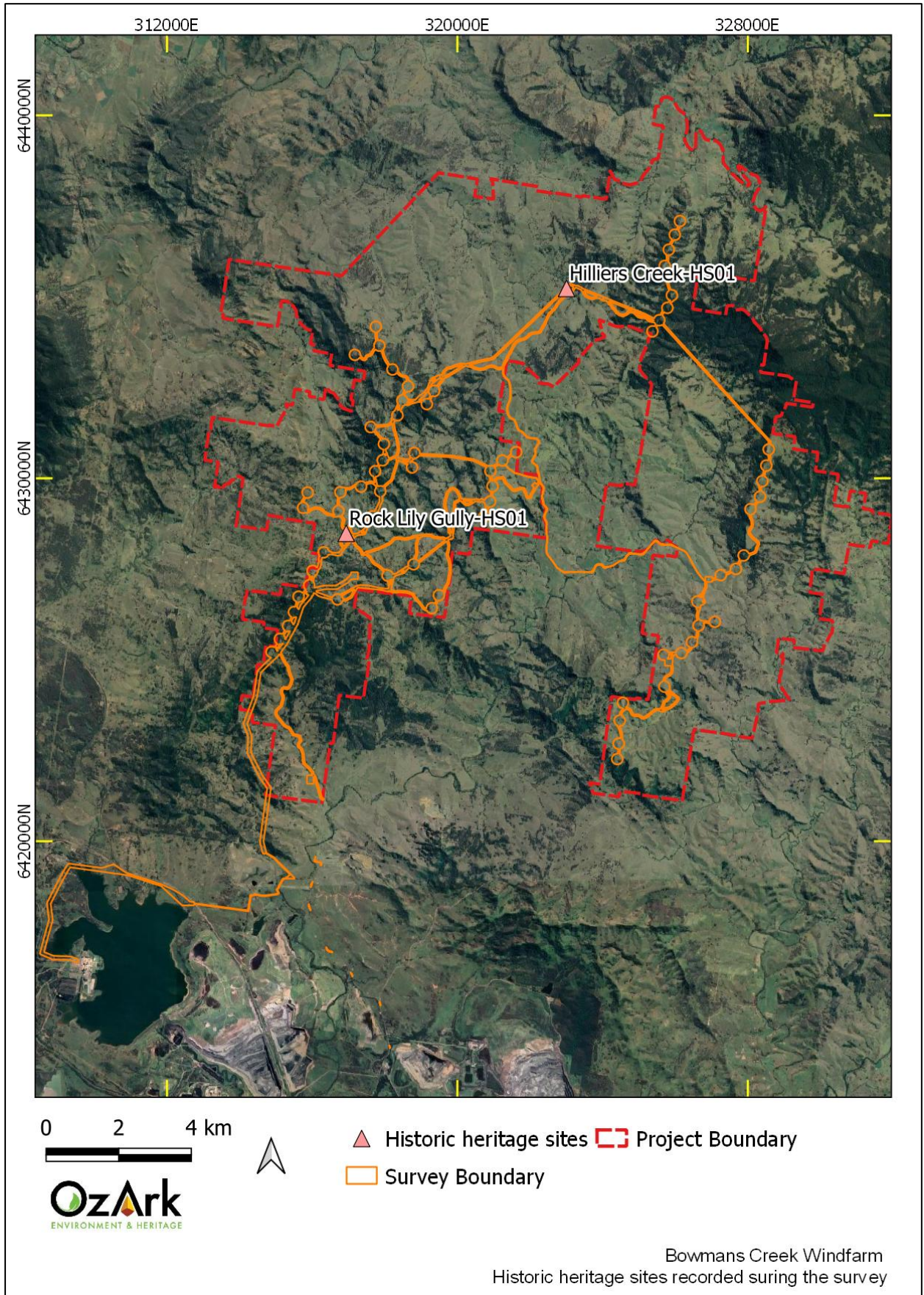


Figure 5-3: Detail of the location of Rock Lily Gully-HS01.

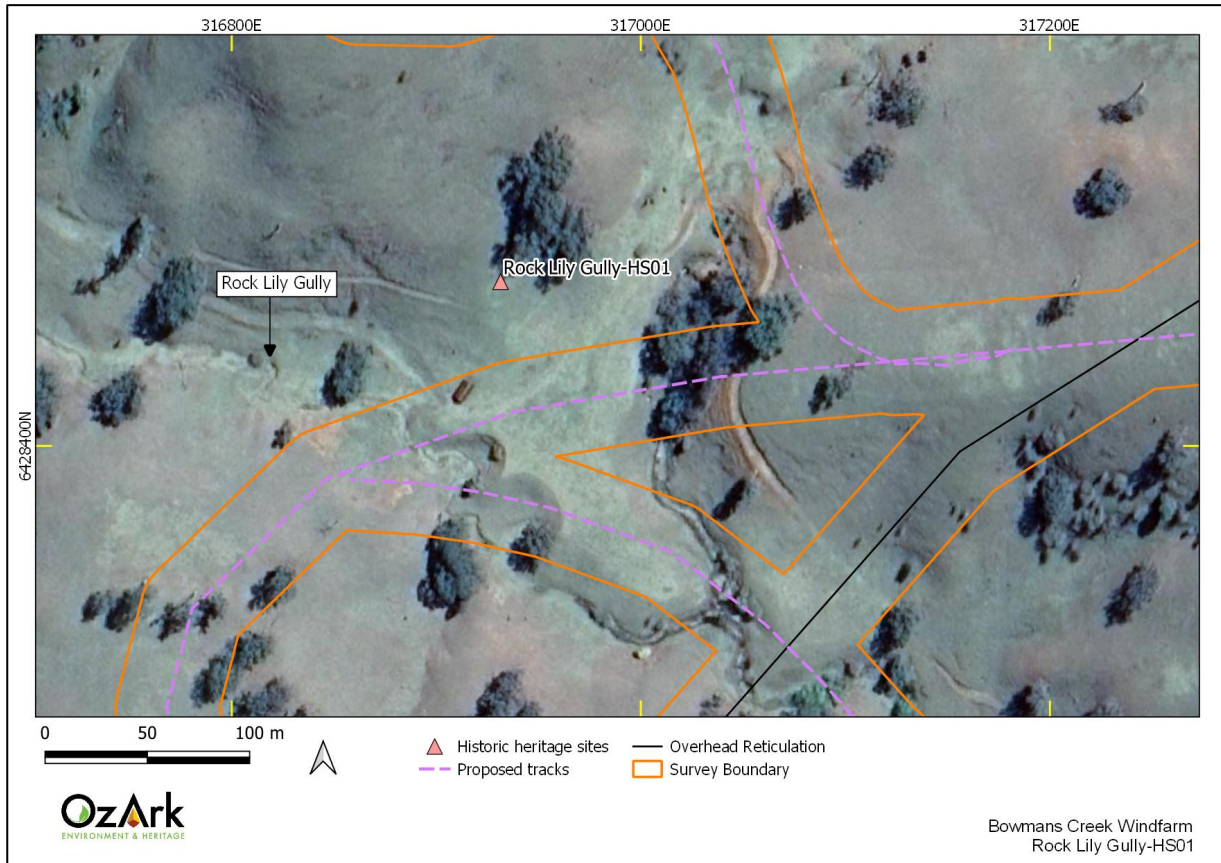
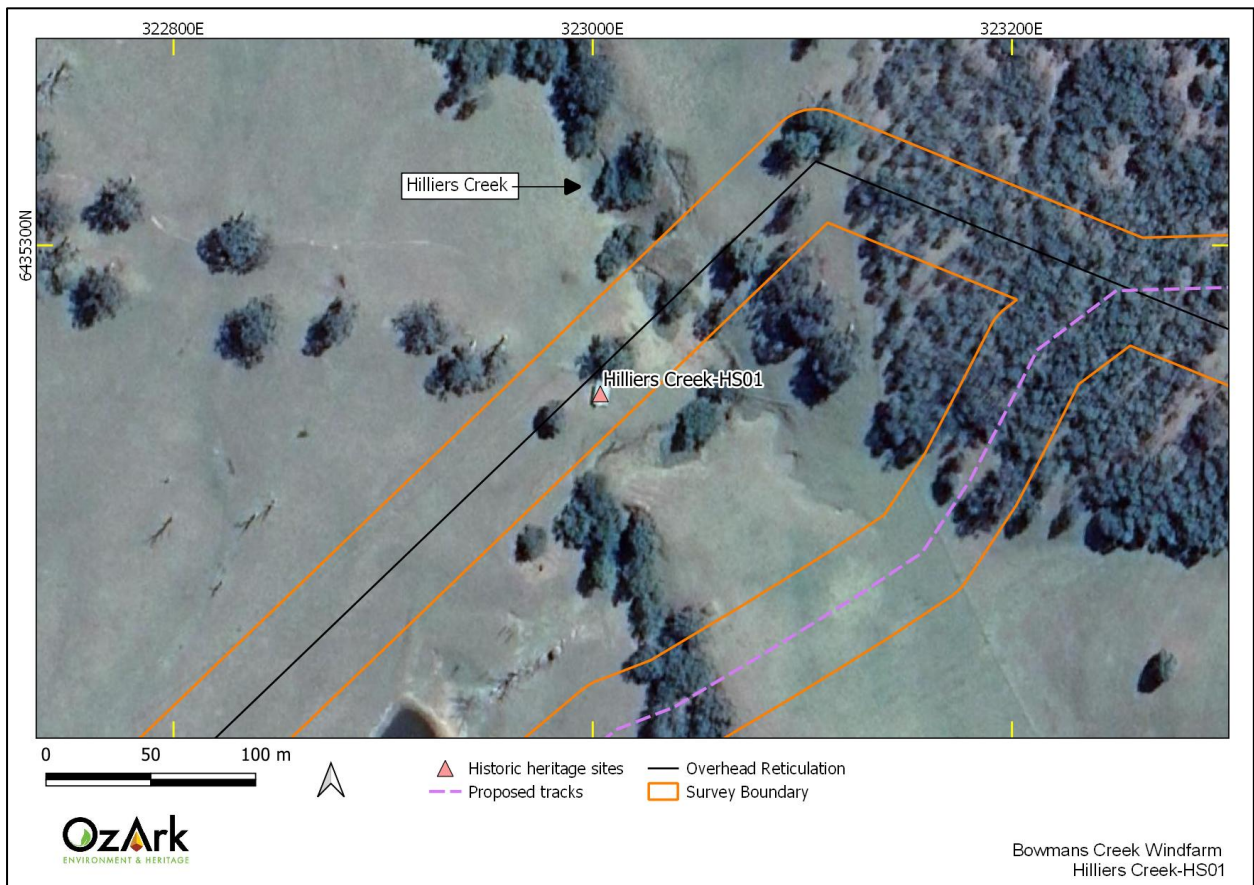


Figure 5-4: Detail of the location of Hilliers Creek-HS01.



Rock Lily Gully-HS01

Site Type: Family burial plot

GPS Coordinates: GDA Zone 56 — 316931E, 6428480N

Location of Site: The graves are located in Lot 2 DP752465 on the property of R., H., & T. Clendinning (**Figure 5-3** and **Figure 5-4**). The graves are on a slope overlooking the confluence of Rock Lily Gully with another unnamed waterway that joins the creek from the north. The confluence is separated by a low spur that the graves overlook.

Description of Site: The place consists of two graves. From the inscriptions on the headstones, the following people are interred at the grave site:

- George Clendinning (died 72 years Oct 1876) and his wife Sarah (died 62 years Aug 1880)
- John Clendinning (died 60 years Jan 1902) and his wife Eliza Margaret (died 28 years July 1888).

The graves are fenced in a wrought iron fence with a brick base that is in poor repair. John and Eliza's headstone appears to be original while George and Sarah's headstone seems to have been replaced at some time.




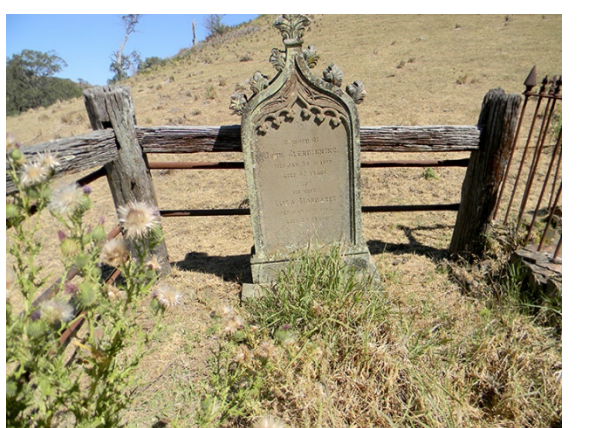
Research indicates that George was born in 1804 or 1805 in North Ireland, he graduated from the University of Dublin in 1832 as a medical doctor. George moved to Ballarat, Victoria, in 1852, and became the mayor of Ballarat East in 1865. He was first married to Martha Holmes in Ireland and they had a daughter together. It was not known when he moved to Muswellbrook, however, it was known that he owned some land in Muswellbrook and that his mother, Frances Isabella (Fanny) Clendinning (born Smith), was born at 'Muscel Creek', NSW. George married Sarah O'Donnell in 1835 and they had eight children together.

The other gravestone recorded was for John Clendinning who died in January 1902 at the age of 60, with this wife Eliza Margaret, who died in July 1888 at the age of 28. Research indicates that John was born in 1843 in Donegal, North Ireland and passed away in Ryde, New South Wales. John was one of eight children that George and Sarah Clendinning had together. He was buried in Muswellbrook with his father.

There is the ruin of a farm shed near to the graves but no visible evidence of a former homestead.

Figure 5-6 shows views of the recorded historic place.

Figure 5-5: Rock Lily Gully-HS01.

	
<p>1. View southeast of Rock Lily Gully-HS01 (circled) with the ruined shed to the west.</p>	<p>2. View of the grave compound.</p>
	
<p>3. View of the headstone of George and Sarah Clendinning.</p>	<p>4. View of the headstone of John and Eliza Clendinning.</p>

Hilliers Creek-HS01

Site Type: Farm house ruin

GPS Coordinates: GDA Zone 56 – 323003E, 6435229N

Location of Site: The place is located at Lot 1 DP558324. The site is located on the western bank of Hilliers Creek just to the south of its confluence with Stringybark Creek (**Figure 5-3** and **Figure 5-5**).

Description of Site: Site consists of a corrugated iron structure with a wooden verandah and a brick fireplace and chimney (**Figure 5-7**). There are the remains of the wooden supports for a water tank on the southern side of the building. The structure is standing but in poor condition. There are no obvious attributes to allow the construction date of the structure to be determined but it is assumed to be the early twentieth century given the narrow pitch of the corrugated iron used for the walls. The hut is well-made with sash-

windows, guttering and flashings. Therefore, it would seem that it was constructed as a permanent residence rather than a 'shepherd's hut'.

Figure 5-6: Hilliers Creek-HS01.



5.4 ASSESSMENT OF HISTORIC HERITAGE SIGNIFICANCE

5.4.1 Assessment of significance—general principles

The current assessment will evaluate the heritage significance of the historic heritage sites identified within the study area in accordance with the NSW Heritage Office's publication *Assessing Heritage Significance* (Heritage Office 2001). A historic heritage site must satisfy at minimum one of the following criteria to be assessed as having heritage significance:

Criterion (a): *An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area)*

Criterion (b): *An item has a strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area)*

Criterion (c): *An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area)*

Criterion (d): *An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons*

Criterion (e): *An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area)*

Criterion (f): *An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area)*

Criterion (g): *An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local area's cultural or natural places; or cultural or natural environments).*

Significance assessments are carried out on the basis that decisions about the future of heritage items must be informed by an understanding of these items' heritage values. The *Australia ICOMOS Burra Charter* (Burra Charter 2013) recognises four categories of heritage value: historic, aesthetic, scientific, and social significance.

Items are categorised as having local or state level, or no significance. The level of significance is assessed in accordance with the geographical extent of the item's value. An item of state significance is one that is important to the people of NSW whilst an item of local significance is one that is principally important to the people of a specific LGA.

5.4.2 Assessment of significance of historic items

The two items recorded during the survey are assessed below against the criteria established by the NSW Heritage Council (**Section 5.4.1**).

Rock Lily Gully-HS01

Table 5-2 assesses Rock Lily Gully-HS01 against the assessment criteria established in the Heritage Office publication, *Assessing Heritage Significance* (Heritage Office 2001).

Table 5-2: Assessment of heritage significance – Rock Lily Gully-HS01.

Criteria	Comments	Significance
a	The item has not influenced the pattern or course of NSW or local history	Does not satisfy this criterion
b	The item has a known association with individuals from the local area, but the individuals are not well-known to the extent that the item has associative significance.	Does not satisfy this criterion
c	The item does not meet the threshold for aesthetic significance.	Does not satisfy this criterion

Criteria	Comments	Significance
d	The item does not have any known strong/special associations for a group of people in the state or local area.	Does not satisfy this criterion
e	While the site demonstrates facets of life in the local area, it does not have broader research potential in relation to local or state history.	Does not satisfy this criterion
f	The item does not represent a class (headstones and memorials) that are endangered or uncommon in the state or local area.	Does not satisfy this criterion
g	The principal or defining characteristics of the item's class are not effectively demonstrated in this example.	Does not satisfy this criterion

Hilliers Creek-HS01

Table 5-3 assesses Hilliers Creek-HS01 against the assessment criteria established in the Heritage Office publication, *Assessing Heritage Significance* (Heritage Office 2001).

Table 5-3: Assessment of heritage significance – Hilliers Creek-HS01.

Criteria	Comments	Significance
a	The item has not influenced the pattern or course of NSW or local history	Does not satisfy this criterion
b	The item has no known associations with an individual of importance to the locality or state.	Does not satisfy this criterion
c	The item does not meet the threshold for aesthetic significance.	Does not satisfy this criterion
d	The item does not have any known strong/special associations for a group of people in the state or local area.	Does not satisfy this criterion
e	While the site demonstrates facets of life in the local area, it does not have broader research potential in relation to local or state history.	Does not satisfy this criterion
f	The item does not represent a class (rural dwellings), that are endangered or uncommon in the state or local area.	Does not satisfy this criterion
g	The principal or defining characteristics of the item's class are not effectively demonstrated in this example.	Does not satisfy this criterion

Table 5-4 details the assessed significance of recorded historic heritage items in accordance with the NSW Heritage Office guidelines and the *Burra Charter*.

Table 5-4: Historic heritage: assessment of significance.

Site Name	Level of Significance
Rock Lily Gully-HS01	Does not have significant heritage values
Hilliers Creek-HS01	Does not have significant heritage values

5.5 DISCUSSION

The two identified historic items have been assessed as having no historic heritage significance under the current Heritage NSW guidelines and the Burra Charter. It is noted that this result reflects the current thresholds and principles of the assessment criteria that rightly emphasise items with collective, aesthetic, technological and/or natural significance. These values are not present at the sites identified during the survey.

However, it should be noted that while neither item satisfies the criteria for local or state heritage significance, it does not mean that the items are without any historic significance. Rock Lily Gully-

HS01, for example, will be obviously significant to the current owners of the property in which the graves are located as the same family continues to own the property. The graves would also be of interest to the general public as they ‘speak’ of the establishment of farming in the district.

Hilliers Creek-HS01 is representative example of the small rural dwellings that would have been common in the district but are becoming rarer due to natural deterioration. Places such as Hilliers Creek-HS01 would be evocative to the general public as they illustrate a past way of life in rural Australia that no longer exists.

Although neither place would satisfy the criteria to be considered to have local heritage values, the loss of either item would be regretful, and it will be a recommendation of this report that both items are retained in the landscape.

5.6 LIKELY IMPACTS TO HISTORIC HERITAGE FROM THE PROJECT

5.6.1 Places recorded during the survey

Rock Lily Gully-HS01 is located outside of the Survey Boundary and therefore will not be impacted (**Table 5-5** and **Figure 5-4**).

Hilliers Creek-HS01 is within the Survey Boundary, however, it will be avoided by the proposed work (**Table 5-5** and **Figure 5-5**). The planned impact at this location is the construction of an overhead electricity reticulation line and as the farm house ruin occupies a low point in the landscape beside Hilliers Creek, it is recommended that the site is avoided by ensuring that the structure is spanned by the electricity line and that any planned access track is kept at least 10 m from the ruin.

Table 5-5: Historic heritage recorded during the survey: impact assessment.

Site Name	Will this site be impacted?	Notes
Rock Lily Gully-HS01	No	The site is located outside of proposed impacts and will be avoided. Recommendations will be made to avoid inadvertent damage to the site during construction of the Project
Hilliers Creek-HS01	No, with management	The site is within the Survey Boundary and is therefore liable to be impacted. It is recommended that the site is avoided by ensuring that it is spanned by the electricity line and that access tracks are kept away from the hut.

5.6.2 Places on an LEP

It was noted in **Section 4.2.1** that there are three places listed on an LEP that are immediately outside or in close proximity to the Survey Boundary.

The heritage curtilage of the ‘Former Roman Catholic Church’ is located immediately outside the Survey Boundary and therefore will not be impacted. As there will be impacts immediately outside the curtilage of the ‘Former Roman Catholic Church’ listed on the Singleton LEP, a Statement of

Heritage Impact (SOHI) is presented in **Section 5.7** to assess the degree of impact to the item's identified heritage values.

The heritage curtilage of both 'Fairview' and 'Hillcrest' is located 80 m from the Survey Boundary and therefore will not be impacted. Additionally, the closest impacts to the homesteads associated within these listings are over 360 m from 'Fairview' homestead and 775 m from 'Hillcrest' homestead (see **Figure 4-3**). As there will not be impacts within or close to the heritage curtilage of these LEP listed items, a SOHI is not required.

Table 5-6 summarises the heritage impact to the three LEP listed items that are immediately outside or close to the Survey Boundary.

Table 5-6: Historic heritage recorded on LEPs: impact assessment.

Site Name	Listing ID	Will this site be impacted?	Notes
'Fairview'	Muswellbrook LEP I47	No	There will be no impacts either to the item itself or within 80 m of its heritage curtilage
'Hillcrest'	Muswellbrook LEP I48	No	There will be no impacts either to the item itself or within 80 m of its heritage curtilage
'Former Roman Catholic Church'	Singleton LEP I56	No	There will be no impacts either to the item itself or to its heritage curtilage.

Beyond impacts to individual items, it was noted in **Section 5.3.1** that the Project exists within a cultural landscape characterised by rural holdings and associated infrastructure such as homesteads and sheds. While the Project will, in places, have a visual impact that could disrupt the rural nature of the landscape, this impact will not adversely impact the fundamental values of the cultural landscape that will remain physically intact. It is also recognised that the cultural landscape values identified in the vicinity of the Project are representative of rural landscapes across large areas of NSW and do not contain any rare or unique features worthy of special conservation efforts.

5.7 STATEMENT OF HERITAGE IMPACT

A SOHI is meant to convey what the impact or impacts of a proposal would be to an item of heritage significance.

The guidelines for preparing a SOHI issued by the NSW Heritage Council contain a number of scenarios where a SOHI may be required. In the case of the 'Former Roman Catholic Church' listed on the Singleton LEP that may be impacted indirectly by the Project, the applicable scenario is: '*new development adjacent to a heritage item*'. Under each scenario are a number of questions that require an answer to help assess the nature and extent of any impact.

How is the impact of the new development on the heritage significance of the item or area to be minimised?

The new development surrounding the 'Former Roman Catholic Church' is road widening works within the road corridor of Bowmans Creek Road. The road works are planned for the opposite side of the road to where the church is located, and these works will not impact the church itself and will not diminish or impact views to or from the church. Visual impacts and any required mitigation in relation to the 'Former Roman Catholic Church' are described in the Visual Impact Assessment Report.

Why is the new development required to be adjacent to a heritage item?

The new development is outside of the defined heritage curtilage of the item 'Former Roman Catholic Church'.

How does the curtilage allowed around the heritage item contribute to the retention of its heritage significance?

There will be no impacts in the heritage curtilage of the 'Former Roman Catholic Church' and all proposed impacts (road works) are located over 45 m from the church.

How does the new development affect views to, and from, the heritage item? What has been done to minimise negative effects?

The new development is road widening works within the road corridor of Bowmans Creek Road. The road works are planned for the opposite side of the road to where the church is located, and these works will not impact the church itself and will not diminish or impact views to or from the church.

Is the development sited on any known, or potentially significant archaeological deposits? If so, have alternative sites been considered? Why were they rejected?

The location of new impacts in the vicinity of the heritage item has been surveyed by a qualified archaeologist and the conclusion is that no archaeological deposits of conservation values will be impacted by the proposed works at any location.

Is the new development sympathetic to the heritage item? In what way (e.g. form, siting, proportions, design)?

This question is not applicable as there will be no new development immediately adjacent to a heritage item.

Will the additions visually dominate the heritage item? How has this been minimised?

No. All new development is at a distance to the heritage site and will not dominate the heritage item.

Will the public, and users of the item, still be able to view and appreciate its significance?

Yes. As all new development is at a distance to the heritage item, a suitable curtilage is maintained and there will be no diminution of the public's ability to view and interpret the heritage item.

6 MANAGEMENT AND MITIGATION: HISTORIC HERITAGE

6.1 GENERAL PRINCIPLES FOR THE MANAGEMENT OF HISTORIC SITES

Appropriate management of heritage items is primarily determined based on their assessed significance as well as the likely impacts of the proposed development.

In terms of best practice and desired outcomes, avoiding impact to any historical item is a preferred outcome, however, where a historical site has been assessed as having no heritage value, impacts to these items does not require any legislated mitigation.

6.2 MANAGEMENT AND MITIGATION OF RECORDED HISTORIC SITES

6.2.1 Places recorded during the survey

Rock Lily Gully-HS01 is located outside of the Survey Boundary, although there will be impacts from the construction of access tracks within 40 m of the graves. The following management recommendations are made with regard to this place:

- The proponent will undertake to restore the fence surrounding the graves and install plantings to shield the graves from the nearby proposed access tracks
- The grave site at GDA Zone 56 316931E, 6428480N should be fenced with a high visibility barrier during construction of the Project to avoid inadvertent impacts.

Hilliers Creek-HS01 located at GDA Zone 56 323003E, 6435229N is within the Survey Boundary and liable to be impacted. Although the assessment of heritage significance in **Section 5.4.2** concluded that the place does not have local or state heritage values, it is, nonetheless, highly desirable for the place to remain within the landscape. As such, the following management recommendations should be followed:

- The location of Hilliers Creek-HS01 should be considered when the design of the overhead electricity reticulation line is finalised to ensure that the place is avoided by not constructing an electricity pole within 20 m of the place
- No access tracks for the construction of the overhead electricity reticulation line should be designed to be within 10 m of the place.

6.2.2 Places recorded on LEPs

As noted in **Section 5.6.2**, there will be no impacts associated with the Project within 80 m of the heritage curtilage of 'Fairview' or Hillcrest'. Additionally, the closest impacts to the homesteads associated within these listings are over 360 m from 'Fairview' homestead and 775 m from 'Hillcrest' homestead. As there is no proposed work within the defined heritage curtilage of these items, there are no further management recommendations.

The SOHI presented in **Section 5.7** demonstrates that there will be no impact, either physical or visual, on the 'Former Roman Catholic Church'. As there is no proposed work within the defined

heritage curtilage of the 'Former Roman Catholic Church' (Lot 1 DP1167323), there are no management recommendations beyond ensuring that there are no impacts within the lot containing this item including vehicle movement and the storage of materials.

6.2.3 Impacts to the cultural landscape

In terms of the cultural landscape surrounding the Survey Boundary, particularly along Albano (Bowmans Creek) Road, some members of the local community feel that the Project will diminish the rural 'feel' of the area by introducing an 'industrial' element into the landscape. In order to provide an avenue for the local community to nominate places and landscapes that they feel are important, the proponent will commission a community-based heritage study that will document and archivally record any items held to be significant by the local community. This heritage study will provide a record of the cultural landscape that exists prior to any impacts associated with the Project commencing.

7 RECOMMENDATIONS

The following recommendations are made based on the impacts associated with the Project and with regard to:

- Legal requirements under the terms of the Heritage Act
- Guidelines presented in the *Burra Charter*
- The findings of the current assessment
- The interests of the local community.

Recommendations concerning the historic values within Project Site are as follows.

1. All land-disturbing activities must be confined within the assessed Survey Boundary. Should project impacts change such that the area to be impacted is outside of the assessed Survey Boundary, then additional assessment may be required.
2. The grave site (Rock Lily Gully-HS01) at GDA Zone 56 316931E, 6428480N should be fenced with a high visibility barrier during construction of the Project to avoid inadvertent impacts. To mitigate visual impacts from the access roads, the proponent will restore the fence surrounding the graves and install plantings to shield the graves from the nearby proposed access tracks.
3. The location of Hilliers Creek-HS01 located at GDA Zone 56 323003E, 6435229N should be considered when the design of the overhead electricity reticulation line is finalised to ensure that the place is avoided. No access tracks for the construction of the overhead electricity reticulation line should be designed to be within 10 m of the farm house ruin. No electricity pole associated with the overhead electricity reticulation line should be designed to be within 20 m of the farm house ruin.
4. There should be no impacts within Lot 1 DP1167323 that contains the 'Former Roman Catholic Church' (Item I156 on the Singleton LEP).
5. In terms of the cultural landscape surrounding the Survey Boundary, particularly along Albano (Bowmans Creek) Road, the proponent will commission a community based heritage study that will document and archivally record any items held to be significant by the local community. This study will provide a record of the cultural landscape prior to any impacts associated with the Project commencing.
6. Procedures for the unexpected discovery of historic items and/or human skeletal material during the construction and/or use of the Project will be set out in an approved HHMP that will be developed following project approval. Normally, no construction work associated

with the Project can commence until the HHMP has been approved by the Department of Planning, Industry and Environment.

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