



APPENDIX N HISTORIC CULTURAL HERITAGE ASSESSMENT REPORT



N.1 HISTORIC HERITAGE ASSESSMENT



Wind Energy Partners Pty LTD



**Developed by Clean Energy
Partners Pty Limited**

Development Management by:



Hills of Gold Windfarm

Historic Heritage Assessment

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Hills of Gold Windfarm

Historic Heritage Assessment



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Acronyms and Abbreviations

Name	Description
The Burra Charter	<i>The Australia ICOMOS Burra Charter for Places of Cultural Significance</i>
CHL	Commonwealth Heritage List
EIS	Environmental Impact Statement
EP&A Act	NSW Environmental Planning & Assessment Act 1979
EPBC Act	Environmental Protection and Biodiversity Conservation Act
ERM	Environmental Resources Management
IHO	Interim Heritage Order
LEP	Local Environmental Plan
LGA	Local Government Area
MW	Megawatts
NHL	National Heritage List
RNE	Register of the National Estate
SEARs	Secretary's Environmental Assessment Requirements
SHI	State Heritage Inventory
SHR	State Heritage Register
SSD	State Significant Development
WEP	Wind Energy Partners

EXECUTIVE SUMMARY

Wind Energy Partners Pty Ltd (WEP or the Proponent) is seeking approval to construct and operate the Hills of Gold Wind Farm (the Project), located on the ridgeline between Hanging Rock and Crawney Pass in the Northern Tablelands region of New South Wales (NSW). The Project will supply renewable energy directly into the national electricity grid, through a proposed connection into the existing TransGrid Liddell to Tamworth 330 kV transmission line.

The proposed development involves the construction and operation of:

- a maximum of 70 turbines, of approximately 420 megawatts (MW) total install capacity, and maximum height of 230 metres (to blade tip); and
- Ancillary infrastructure including internal access tracks, road upgrades, battery storage, concrete batching facility, underground and overhead electricity cabling, substation and a switching station and grid connection to the 330 kV Liddell to Tamworth transmission line.

To facilitate the construction of the turbines at the Project Area, components will be need to be transported from the Port of Newcastle. It is proposed that the majority of equipment and components will be transported along the New England Highway. Oversized components requiring special shipment will be transported along an alternate route utilising the Golden Highway and secondary roads to minimise interruption to traffic flows. As the oversized components will require additional space to be manoeuvred to site, several road upgrades and amendments are proposed along this alternate route.

The aim of this report is to examine and understand any historic heritage values within the Project Area, and assess the potential impact upon these sites as a result of the proposed works. Additionally, this report will aim to provide considered management and mitigation measures to avoid or minimise impact on any identified historic heritage values within the Project Footprint.

In addition to assessing the potential impact of the Project on historic heritage values, this report will also assess the potential impact of road amendment and upgrade works on known heritage sites along the proposed transport route.

The key findings of this historic heritage assessment are summarised below:

- No historic heritage sites have been identified within the Project Area.
- The proposed small components transportation route will result in no impacts to identified historic heritage items.
- The proposed large components transport route will result in insignificant direct impacts to three identified heritage items, being:
 - Merton Cemetery (Muswellbrook LEP Item I18);
 - St Peters Catholic Church; and
 - Nundle Shire Offices.
- The proposed large components transport route will result in minor direct impacts to one identified heritage items, being:
 - Kayuga Cemetery (Muswellbrook LEP Item I43).
- The proposed large components transport route will result in major direct impacts to one identified heritage item, being:
 - Black Snake Gold Mine (Tamworth LEP Item I134).
- Proposed transportation through Nundle will result in indirect impacts to two identified heritage items, being:
 - St Peters Catholic Church (Tamworth LEP I269)
 - Nundle Shire Offices (Tamworth LEP I271)
- No impacts will result from proposed upgrades in proximity to the Jerrys Plains Conservation Area (Singleton LEP Item C1);

1. INTRODUCTION

1.1 Project Overview

Wind Energy Partners Pty Ltd (WEP or the Proponent) is seeking approval to construct and operate the Hills of Gold Wind Farm (the Project), located on the ridgeline between Hanging Rock and Crawney Pass in the Northern Tablelands region of New South Wales (NSW). The Project will supply renewable energy directly into the national electricity grid, through a proposed connection into the existing TransGrid Liddell to Tamworth 330 kV transmission line.

The proposed development involves the construction and operation of:

- A maximum of 70 turbines, of approximately 420 megawatts (MW) total install capacity and maximum height of 230 metres (to blade tip); and
- Ancillary infrastructure including internal access tracks, road upgrades, battery storage, concrete batching facility, underground and overhead electricity cabling, substation and a switching station and grid connection to the 330 kV Liddell to Tamworth transmission line.

With an expected power output of up to approximately 420MW, the Project will provide regional jobs and economic benefits for communities in and around Nundle, Hanging Rock and Crawney while producing enough electricity for approximately 185,000 average Australian homes. A locality plan is provided in Figure 1.1 and a Project overview is provided in Figure 1.2.

1.2 Locality Description and Context

The Project includes the proposed Wind Farm (the Project Area) and proposed transport routes between the Port of Newcastle and the Project Area. Due to the size of components required to construct the wind farm, several road modifications will be required along the proposed route. The following provides a description of the location of the Project Area, and proposed transport routes between Newcastle and Nundle.

1.2.1 The Project Area

1.2.1.1 Description of General Setting

The Project Area is located approximately 5 km south of Hanging Rock, 8 km south-east of Nundle and 60 km south east of Tamworth. The proposed development is located within the Tamworth Regional, Upper Hunter and Liverpool Plains local government areas (LGAs). The general locality includes Ben Halls Gap National Park, Crawney Pass National Park, Ben Halls Gap State Forest, Hanging Rock State Forest and Nundle State Forest. The locality is a former gold mining area, with the small village of Nundle containing historic buildings, including the Nundle Woollen Mill and Mount Misery Gold Mine Museum.

1.2.1.2 Description of Project Site Landscape

Land on which the Project is proposed to be located is owned by 14 freehold landholdings and includes Crown land paper roads and one Crown land allotment under perpetual lease, forming Ben Halls Gap State Forest. The proposed development footprint within the Project Area is predominately agricultural land with a high percentage of overstorey native vegetation adjacent to the development footprint and within steeper terrain. The Project Area has a history of agricultural use (grazing cattle). Native understorey has been converted to exotic pastures in many locations.

1.2.2 The Transport Route

As part of the construction process, components will be need to be transported from the Port of Newcastle through to the Project Area. It is proposed that the majority of equipment and components required for construction will be transported along the New England Highway. Oversized components requiring special shipment will be transported along an alternate route utilising the Golden Highway and secondary roads to minimise interruption to traffic flows. As the oversized components will require additional space to be manoeuvred to site, several road upgrades and amendments are proposed along this alternate route. At the majority of the proposed upgrade locations, works will be confined to replacing fixed signage with removable signage and installation of gravel/asphalt hardstands to allow for the additional swing radius required for the blades. At one location, identified as 'Devil's Elbow' on Barry Road, Hanging Rock, the road conditions are entirely unsuitable for transportation of the blades and a new road will need to be installed to bypass the small radii bends.

In addition to assessing the potential impact of the development footprint, this report will also assess the potential impact of road amendment and upgrade works on known heritage sites along the proposed transport route.

1.3 Aims and Objectives

The aim of this report is to examine and understand any historic heritage values within the Project Area and road upgrades, and assess the potential impact upon any identified heritage sites as a result of the proposed works. Additionally, this report will aim to provide considered management and mitigation measures to avoid or minimise impact on any identified historic heritage values within the development footprint.

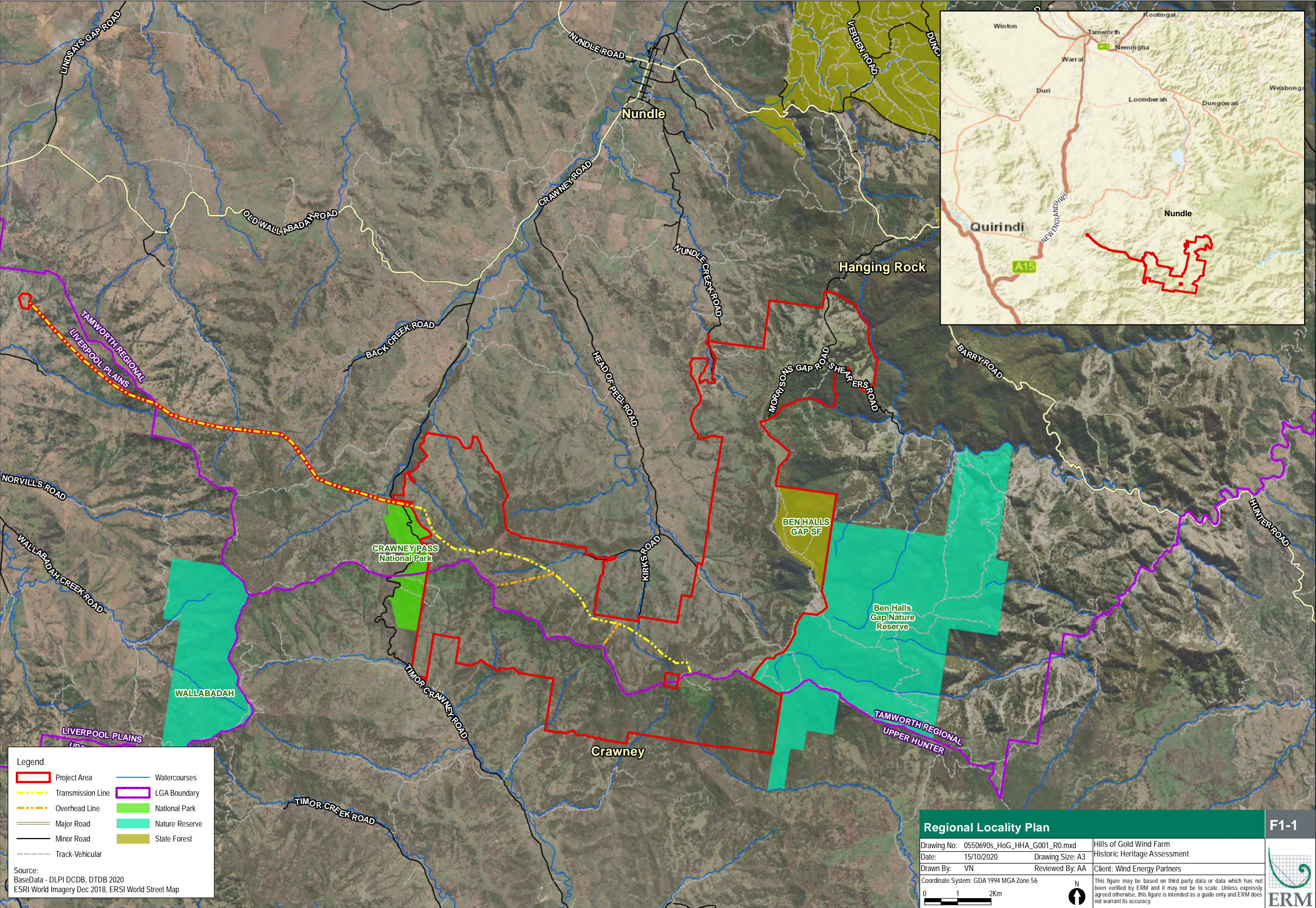
1.3.1 Methodology

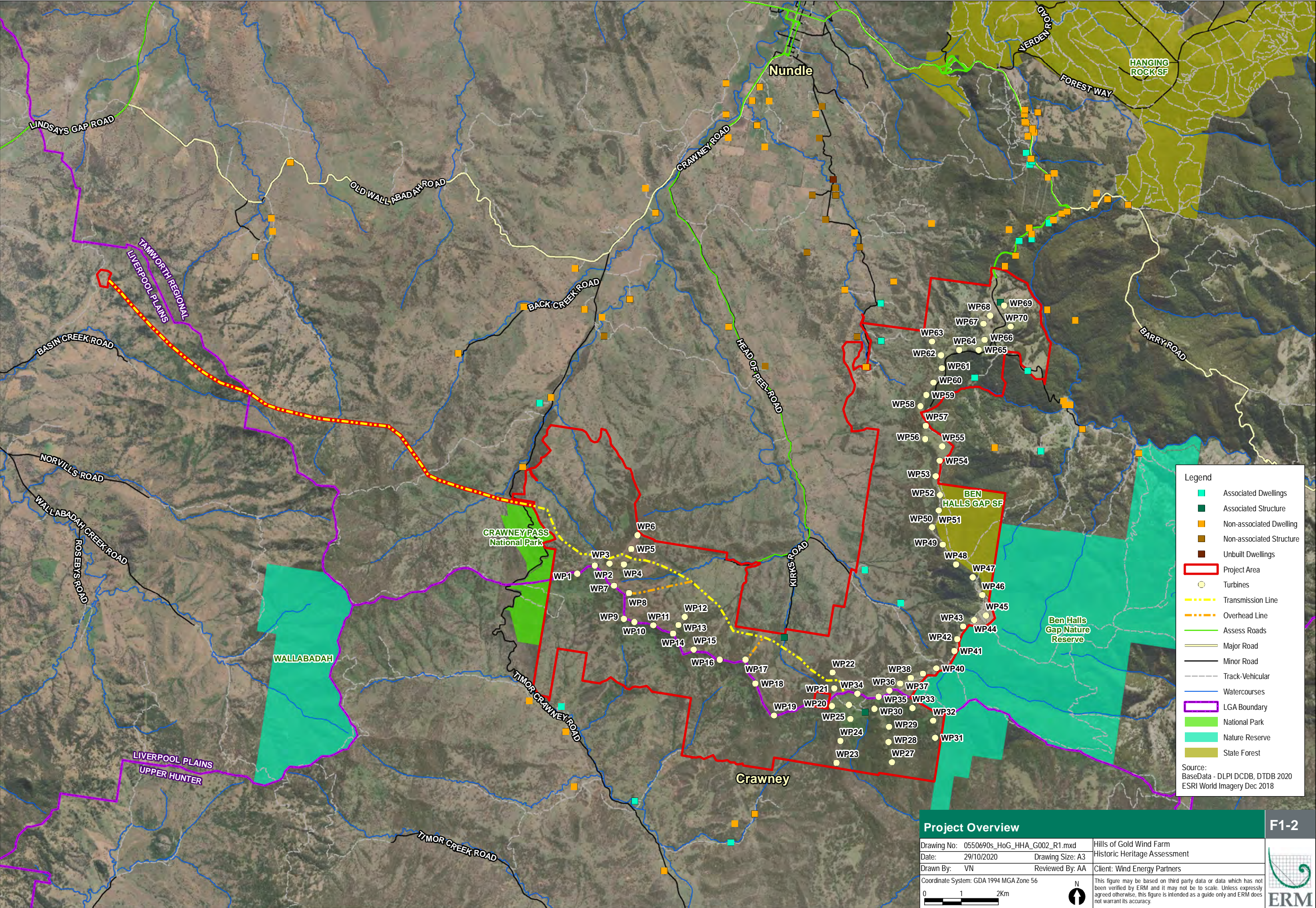
The following tasks were undertaken in the preparation of this report:

- background research and heritage database searches;
- physical inspection of the Project Area and location of proposed amendments to the transport routes; and
- consultation with the Nundle History and Heritage Research Committee.

1.4 Authorship and Acknowledgements

This report has been prepared by Stephanie Moore (ERM Heritage Consultant) and Toyah Morath (ERM Heritage Consultant), with technical review undertaken by Erin Finnegan (ERM Principal Heritage Consultant). Quality Assurance review was undertaken by Murray Curtis (ERM Partner).





2. LEGISLATIVE CONTEXT

2.1 NSW Legislation

2.1.1 *Environmental Planning and Assessment Act 1979*

The Environmental Planning and Assessment Act 1979 (EP&A Act) regulates a system of environmental planning and assessment for NSW. Land use planning requires that environmental impacts, including those on cultural heritage, must be considered when making decisions about the future of a place.

The EP&A Act allows for the preparation of planning instruments to direct development within NSW. This includes Local Environment Plans (LEP), which are administered by local government, and principally determine land use and the process for development applications. LEPs usually include a schedule of identified heritage items.

The Project Area and transport route cross seven local government areas, and is therefore subject to seven LEPs, as identified below.

- City of Newcastle Council (Newcastle LEP 2012);
- Cessnock City Council (Cessnock LEP 2011);
- Singleton Shire Council (Singleton LEP 2013);
- Muswellbrook Shire Council (Muswellbrook LEP 2009);
- Liverpool Plains Shire Council (Liverpool Plains Shire LEP 2011);
- Upper Hunter Shire Council (Upper Hunter LEP 2013); and
- Tamworth Regional Council (Tamworth Regional LEP 2010).

It should be noted that the Project Area is situated within three of these LGAs (Tamworth Regional Council, Upper Hunter Shire Council and Liverpool Plains Shire Council), and road modifications are proposed in the LGAs of Tamworth Regional Council, Muswellbrook Shire Council, Cessnock Shire Council and Newcastle City Council).

The Project is being assessed as State Significant Development (SDD), and has thus been prepared in accordance with:

- the requirements of Section 4.12 of the (EP&A Act);
- Schedule 2 of the Environmental Planning and Assessment Regulations 2000 (EP&A Regulation); and
- the Secretary's Environmental Assessment Requirements (SEARs) issued for the proposed development, dated 22 November 2018.

In relation to historic heritage, the SEARs requires that this assessment must:

- assess the impact to historic heritage items in accordance with the *NSW Heritage Manual* (Heritage Office and Department of Planning 1996); and
- the Environmental Impact Statement (EIS) must provide a heritage assessment including but not limited to an assessment of impacts to State and local heritage including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:
 - outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the *NSW Heritage Manual* (1996);

- be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria);
 - include a statement of heritage impact for all heritage items (including significance assessment); and
 - consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant); and
- where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.

2.1.2 NSW Heritage Act 1977

The New South Wales (NSW) *Heritage Act 1977* establishes the NSW Heritage Council and the State Heritage Register (SHR). The aim of the Act is to conserve the heritage of NSW. The aim of heritage management is not to prevent change and development, but to ensure that the heritage significance of recognised heritage items is not harmed by changes and developments.

The SHR is a separate listing to the State Heritage Inventory (SHI) and includes items which are accorded SHR listing through gazettal in the NSW Government Gazette. Nominated items are considered by the NSW Heritage Council, which then makes a recommendation to the Minister for Environment and Heritage. The Heritage Council is empowered to place Interim Heritage Orders (IHO) on an item of potential state significance. The assessment of significance is made against the criteria shown in Table 2.1.

Table 2.1 NSW State Heritage Significance Criteria

NSW Criterion	
(a)	Historical <i>An item is important in the course, or pattern, of NSW's cultural or natural history.</i>
(b)	Association <i>An item has 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.</i>
(c)	Aesthetic <i>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.</i>
(d)	Social <i>An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.</i>
(e)	Scientific <i>An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history.</i>
(f)	Rarity <i>An item possesses uncommon, rare or endangered, aspects of NSW's cultural or natural history.</i>
(g)	Representativeness <i>An item is important in demonstrating the principal characteristics of a class of NSW's a) cultural or natural places: or b) cultural or natural environments.</i>

2.1.2.1 State Heritage Inventory

The SHI contains over 25,000 heritage items on statutory lists in NSW. This information is provided by local councils and State government agencies. The level of information for each heritage item can range from basic identification information such as name, address and listing to full information such as detailed descriptions, histories, significance and images. While Heritage NSW (former Heritage Division) seeks to keep the SHI up to date, the most recent statutory listings may not yet be included.

2.2 Non-Statutory Considerations

2.2.1 National Trust of NSW

The National Trust is a community-based, non-government organisation. The National Trust has a database of important heritage sites across the State.

2.2.2 The Burra Charter

The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance (Adopted 31 October 2013) (The Burra Charter) sets a standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance including owners, managers and custodians. The Charter provides specific guidance for physical and procedural actions that should occur in relation to significant places. A copy of the 2013 charter can also be accessed at:

<http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf>.

This historic heritage assessment report has been prepared in accordance with this Charter and to the standards and principles it describes.

3. HISTORIC HERITAGE DATABASE SEARCH RESULTS

The following historic heritage databases were searched in September 2020, to identify any known non-Aboriginal heritage sites within the Project Area or in proximity to transport upgrades:

- Australian Heritage Database, which includes:
 - Commonwealth Heritage List (CHL);
 - Register of the National Estate (RNE); and
 - National Heritage List (NHL);
- NSW SHR and SHI;
- Newcastle City Council LEP 2012;
- Cessnock LEP 2011;
- Singleton LEP 2013;
- Muswellbrook LEP 2009;
- Upper Hunter LEP 2013;
- Liverpool Plains Shire LEP 2011;
- Tamworth Regional LEP 2010; and
- The National Trust of Australia (NSW).

The searches indicate that the Cessnock, Singleton, Muswellbrook, Upper Hunter and Tamworth Shire Council Areas each have significant sites within the Project Area and intersecting the Transport Route. Table 3.1 to 3.5 indicate these identified sites within these Council Areas.

The Newcastle City Council Area and the Liverpool Plains Area does not have significant sites within the Project Area. However, search results indicated a number of known sites within 50 m of the transport route that would not be impacted by any proposed works; these sites within each council area have been included in a comprehensive table at Appendix B for reference.

ERM has provided Figures 3.1 to 3.7 which identify the significant sites within each council area, and highlight where these sites are located in relation to the Project Area and Transport Route.

Table 3.1 Cessnock Shire Council Area

Heritage Item	Register / Item #	Location	Impact from Project Transport Route
South Maitland Railway System	LEP – I212	Between Pelton Colliery Triangle and LGA Boundary At Cliftleigh	Nil –Intersects proposed transport route at Hunter Expressway near Main Rd, Heddon Greta and west of Loxford. No upgrades proposed at this location.
Collieries of the South Maitland Coalfields/Greta Coal Measures Group (1340721) (Neath Colliery)	LEP – I215	Maitland Road, Neath	Nil – intersects proposed transport route at Hunter Expressway near Branxton. No upgrades proposed at this location.
Great Northern Railway Network	LEP – I216	Various	Nil – intersects proposed transport route at Hunter Expressway near Branxton. No upgrades proposed at this location.

Table 3.2 Singleton Shire Council Area

Site Name	Register / Item #	Location	Impact from Proposed Works
Singleton Heritage Conservation Area	LEP – C1	Singleton	Nil – Intersects proposed transport route along New England Highway, Singleton
Jerrys Plains Heritage Conservation Area	LEP – C2	Golden Highway, Jerrys Plains	Nil - Road upgrades proposed approximately 80m north of the conservation area.

Table 3.3 Muswellbrook Shire Council Area

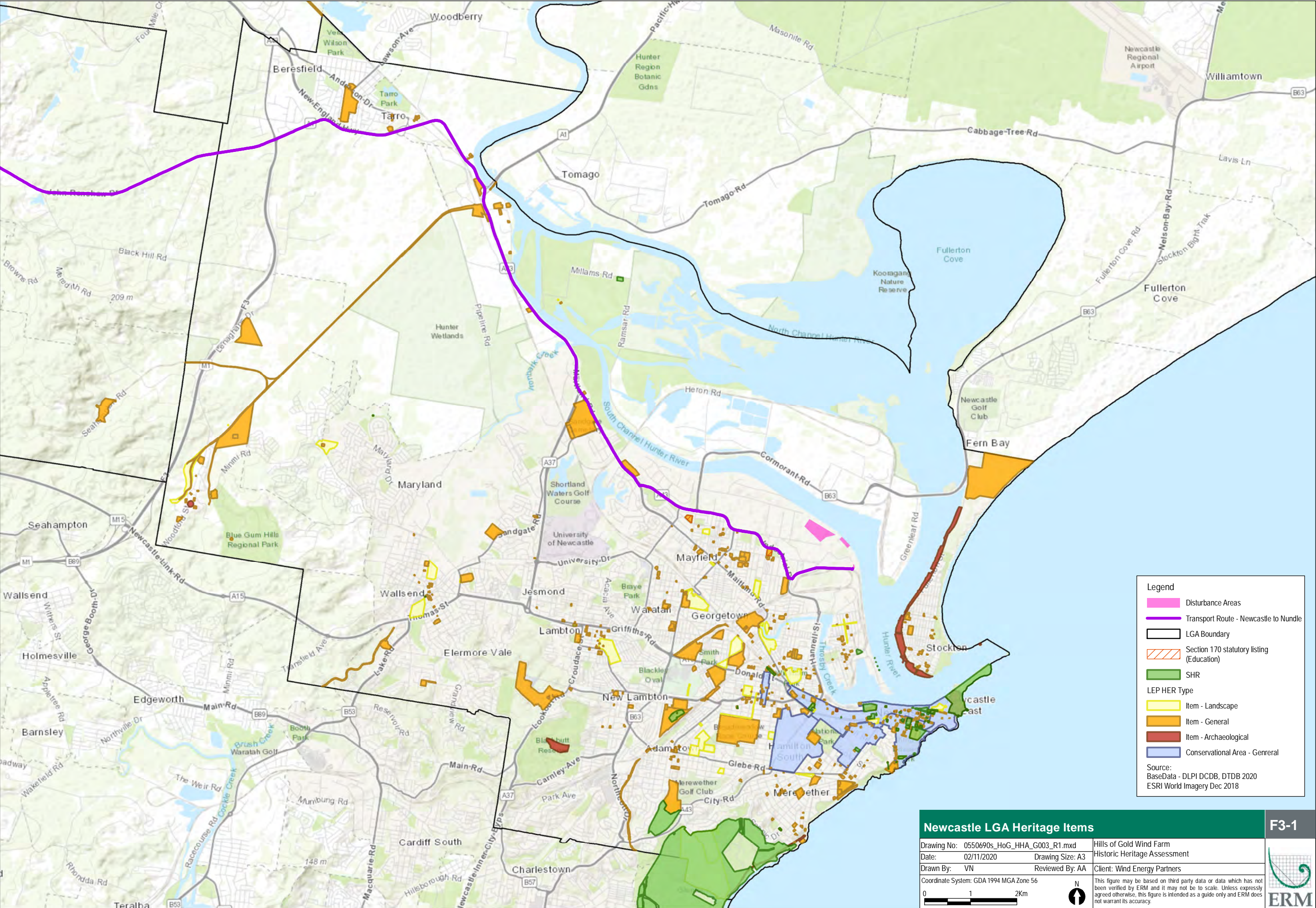
Site Name	Register / Item #	Location	Impact from Proposed Works
Merton Cemetery	LEP - I18	Intersection of Golden Highway and Denman Road, Denman	Indirect Impact – Blade swing across LEP curtilage
Kayuga Cemetery	LEP – I43	Stair St, Kayuga	Direct Impact – Road upgrades proposed at this location
Fitzgerald/Olympic Park Gates	LEP – I124	Wilkinson Avenue, Muswellbrook	Nil – intersects proposed transport route along Bell St, Muswellbrook. No upgrades proposed at this location.
Residential Heritage Conservation Area	LEP – C2	Muswellbrook	Nil - intersects proposed transport route along Market St and New England Hwy, Muswellbrook. No upgrades proposed at this location.
Muswellbrook Business Heritage Conservation Area	LEP – C3	Muswellbrook	Nil - intersects proposed transport route along Market St and New England Hwy, Muswellbrook. No upgrades proposed at this location.

Table 3.4 Upper Hunter Shire Council Area

Site Name	Register / Item #	Location	Impact from Proposed Works
Central Scone Conservation Area	LEP – C2	Scone	Nil – intersects the proposed transport route along New England Hwy, Scone. No road upgrades proposed in this location.
Murrurundi Conservation Area	LEP – C4 REN (Reg) - 1374	New England Highway, Murrurundi	Nil – intersects proposed transport route at New England Highway, Murrurundi. No road upgrades proposed at this location.

Table 3.5 Tamworth Regional Council Area


Site Name	Register / Item #	Location	Impact from Proposed Works
Black Snake Gold Mine	LEP - I134	Nundle Road, Hanging Rock	Direct Impact – Road upgrades proposed at this location.
St Peters Catholic Church	LEP – I269	Innes Street, Nundle	Indirect Impact – Blade swing across LEP curtilage
Nundle Shire Office	LEP – I271	Jenkins Street, Nundle	Indirect Impact – Blade swing across LEP curtilage

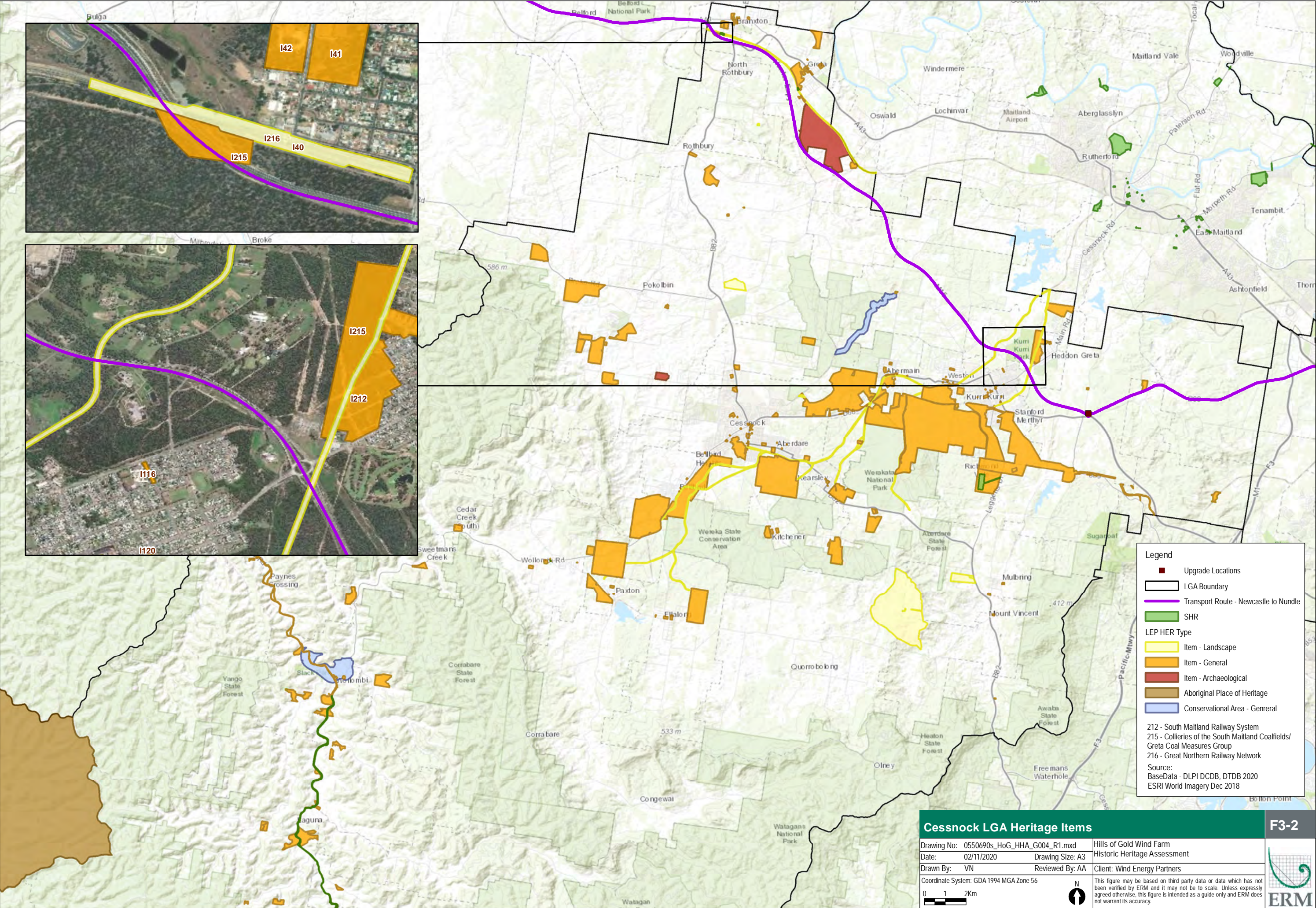


Legend

- Disturbance Areas
- Transport Route - Newcastle to Nundle
- LGA Boundary
- Section 170 statutory listing (Education)
- SHR
- LEP HER Type
 - Item - Landscape
 - Item - General
 - Item - Archaeological
 - Conservational Area - General

Source:
BaseData - DLPI DCDB, DTDB 2020
ESRI World Imagery Dec 2018

Newcastle LGA Heritage Items			F3-1
Drawing No: 0550690s_HoG_HHA_G003_R1.mxd		Hills of Gold Wind Farm	
Date: 02/11/2020		Drawing Size: A3	
Drawn By: VN		Reviewed By: AA	
Coordinate System: GDA 1994 MGA Zone 56		Client: Wind Energy Partners	
<div><div><div></div><div></div><div></div></div><div>012Km</div></div>		<div><div>N</div><div>↑</div></div> <div>This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.</div>	
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Upgrade Locations

LGA Boundary

Transport Route - Newcastle to Nundle

SHR

LEP HER Type

Item - Landscape

Item - General

Item - Archaeological

Aboriginal Place of Heritage

Conservational Area - General

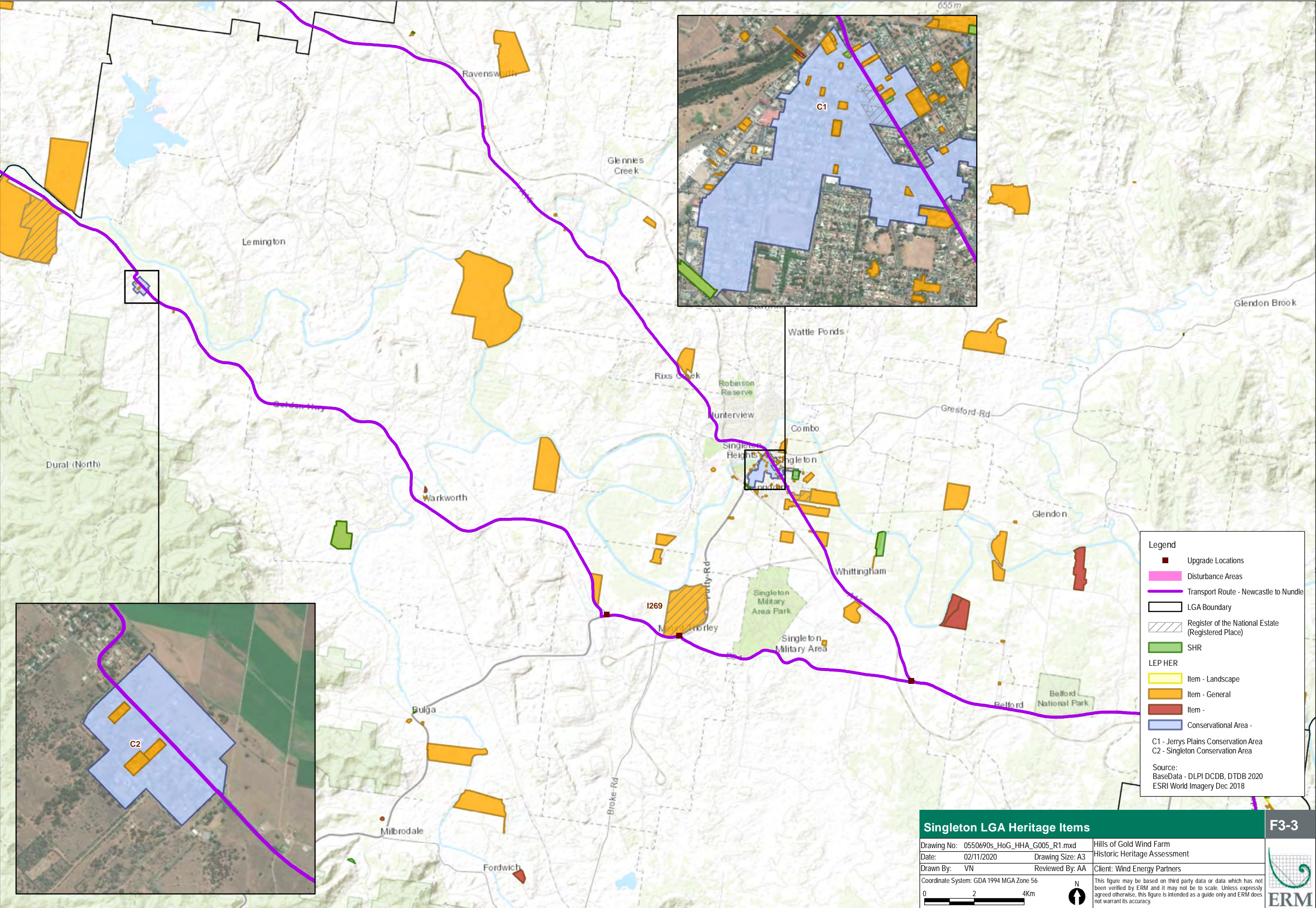
212 - South Maitland Railway System

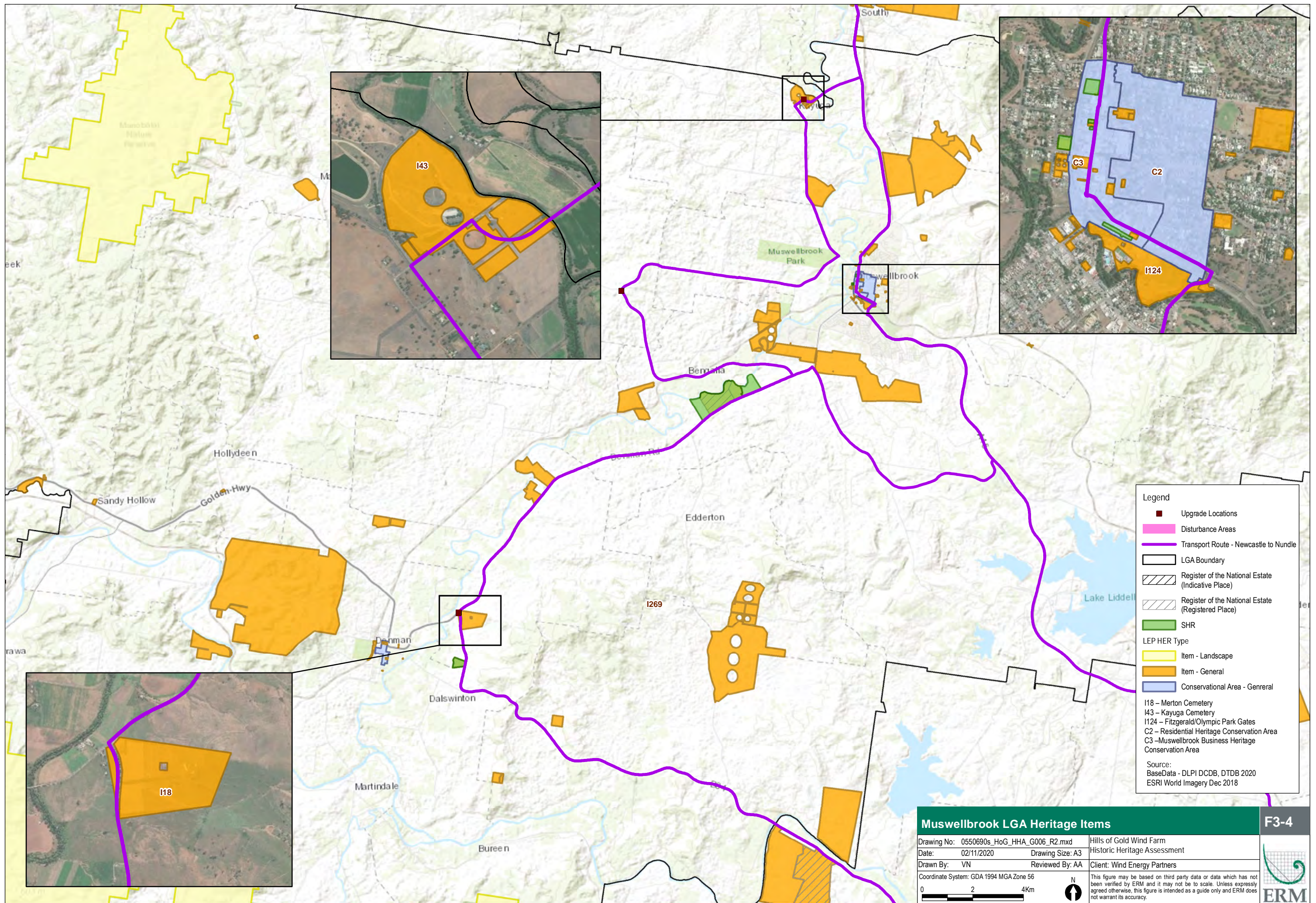
215 - Collieries of the South Maitland Coalfields/
Greta Coal Measures Group

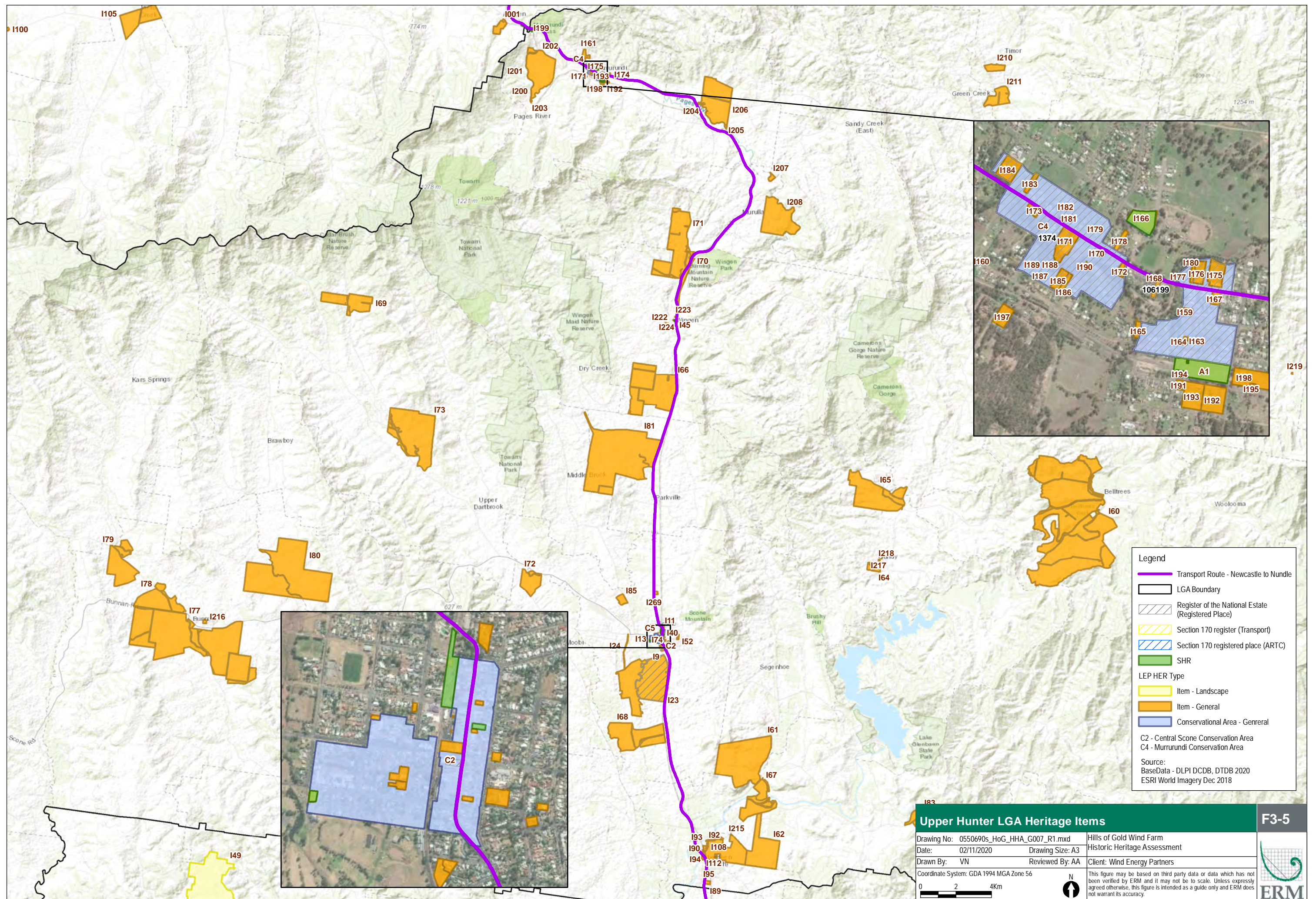
216 - Great Northern Railway Network

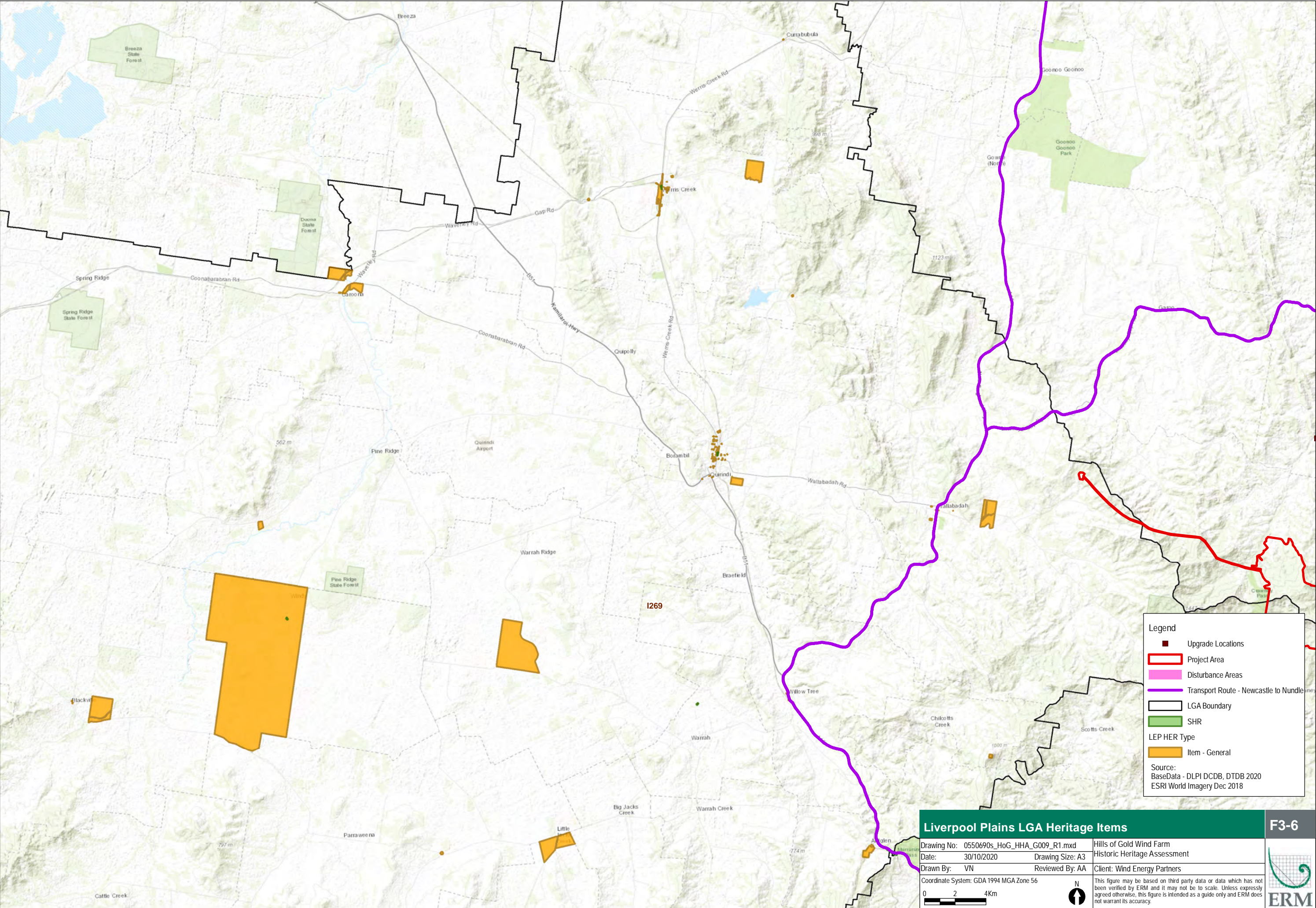
Source:
BaseData - DLP DCDB, DTDB 2020
ESRI World Imagery Dec 2018

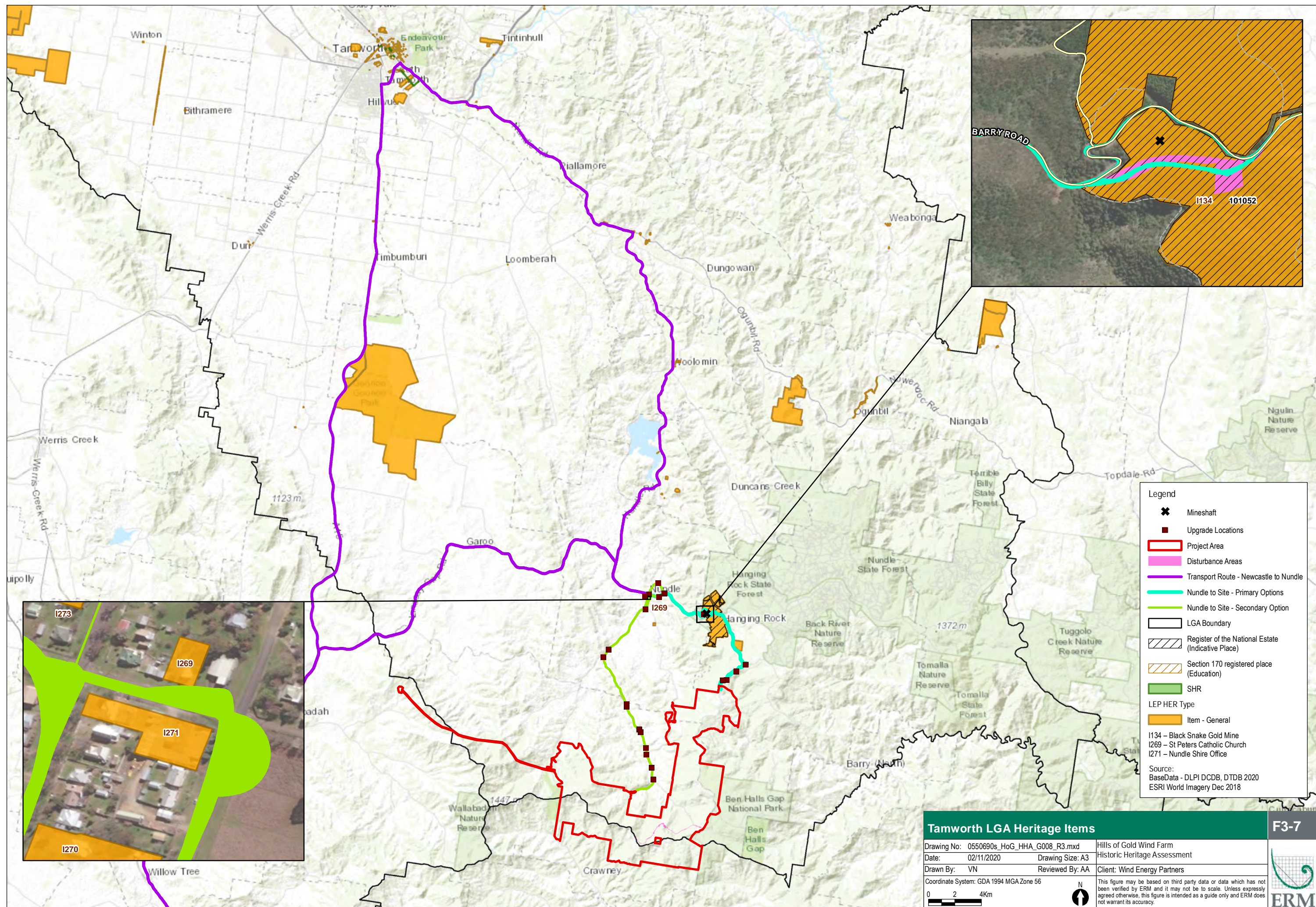
Cessnock LGA Heritage Items		F3-2
Drawing No: 0550690s_HoG_HHA_G004_R1.mxd	Hills of Gold Wind Farm	
Date: 02/11/2020	Drawing Size: A3	
Drawn By: VN	Reviewed By: AA	
Client: Wind Energy Partners		
Coordinate System: GDA 1994 MGA Zone 56		<div>This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.</div>
<div>0 1 2Km</div>		











4. HISTORICAL CONTEXT

This chapter considers the potential non-Aboriginal heritage values for the Project Area. It includes a review of primary and secondary resources including available heritage assessments, reports, publications, historical maps and aerial imagery for the local area. This material will be used to help determine the Project Area's history and development over time.

4.1 NSW Historic Themes

The NSW Historical Themes have been used to assist in the identification, assessment and management of heritage values within the Project Area. Table 4.1 presents the historic themes and sub-themes relevant to each locally significant place within the Project Area (listed Heritage Items). The NSW Historical Themes are present in Appendix E.

Table 4.1 Historic Themes Applicable to listed Heritage Items within Project Area

Place	NSW Historic Theme	Sub-Theme
Merton Cemetery, Muswellbrook	8. Developing Australia's cultural life	■ Religion
	9. Marking the phases of life	■ Birth and Death
Kayuga Cemetery, Muswellbrook	2 Peopling Australia	■ Convict
	8. Developing Australia's cultural life	■ Religion
	9. Marking the phases of life	■ Birth and Death
St Peters Catholic Church, Nundle	8. Developing Australia's cultural life	■ Religion
Nundle Shire Offices, Nundle	7. Governing	■ Government and administration
Hanging Rock	1 Tracing the natural evolution of Australia	■ Environment – naturally evolved
	3. Developing local, regional and national economies	■ Exploration ■ Mining
	4. Building settlements, towns and cities	■ Towns, suburbs and Villages ■ Land tenure
Black Snake Gold Mine	3. Developing local, regional and national economies	■ Mining

4.2 Historical Overview

In addition to the sources mentioned above, the following historical overview has summarised and extracted sections from the *Thematic History of Nundle, Manilla and Barraba, a community based heritage study* prepared for the Tamworth Regional Council by Joanna Boileau in 2007.

4.2.1 *Aboriginal History of the New England Region*

NSW Historic Theme 2 – Peopling Australia – Aboriginal cultures and interactions with other cultures

The Project Area and transport route are within the traditional lands of the Kamilaroi (Gamilaroi/Gamilaraay) and Geawegal (Kayawaykal) people, with the former being situated to the north and west, and the latter to the south and east (Tindale 1974). Within these broader language groups, there would have been various dialects throughout the region, representing different familial or residential groups. It is likely that these groups moved fluidly throughout the landscape to utilise seasonal resources.

Aboriginal people throughout the Upper Hunter and Kamilaroi regions would have utilised inland river systems for subsistence, obtaining fish, eels, crustaceans and shellfish, and would have hunted small animals including possums, gliders, bandicoots and wallabies. Plant resources, such as Kurrajong seeds, honey, roots, acacia gum, bulrush, nuts (quandong), grass seeds, Gubiyaay (a type of lily), Capparis lasiantha (a native orange or pomegranate), Emu apple / sour plum, yams, water yams, wild potato, melon and various fruits and berries would also have been sought for subsistence and medicine.

Hunting implements utilised by Aboriginal people may have included spears, throwing sticks, and boomerangs, all constructed of local timber. Bark would have been collected to create containers and shields, and animal skins would have been treated and worn as cloaks. Cloaks were both practical and artistic, as they were worn for warmth and protection, but could be decorated with designs that allowed for self-expression (Sonter and White 2012).

Decline of the Aboriginal population in the region was a direct result of European exploration and settlement, through several avenues including direct violence, rapid decline of traditional resources, and the introduction of alcohol and disease (Wood 1972). Despite this, Aboriginal people maintain a strong connection to the region, through intergenerational sharing of knowledge.

4.2.2 *Exploration of Inland NSW*

NSW Historic Theme 2 – Peopling Australia – Aboriginal cultures and interactions with other cultures

NSW Historic Theme 3 – Developing local, regional and national economies – Exploration

Initial European exploration into the Kamilaroi lands surrounding Tamworth and Nundle was undertaken by a party lead by Surveyor General John Oxley in 1818. Oxley had been tasked with exploring inland to find the inland sea that was thought to be the source of the rivers in NSW. His earlier expedition, which travelled east from Bathurst, had ended in the discovery of a series of muddy waterholes at the end of the Lachlan River. In May 1818, Oxley and his party again left Bathurst, only this time travelling north along the Macquarie River. After reaching yet more marshy ground at the end of the Macquarie River, Oxley headed east through the Warrumbungle ranges, and eventually discovered the Liverpool Plains (Figure 4.1). By September, Oxley had reached the site of present day Tamworth, from which his party headed east, discovering and following the Cockburn and MacDonald Rivers. Although the inland sea was not identified on this exploratory journey, Oxley reported the fertility of the Liverpool Plains and the harbour and estuaries of Port Macquarie. J Cross' Chart of 'Part of New South Wales' in 1827 included Oxley's discoveries, leaving the upper Peel blank, but marking the area as two counties – 'Cambridge' to the west and 'Ayr' to the east of Peel River (Bayley 1953:16).



Figure 4.1 Liverpool Plains, west Prospect from View Hill [picture] / drawn by Major Taylor from a sketch by Mr. Evans (National Library of Australia (NLA) PIC Volume 99 #U8094 NK68

Although the lands around Tamworth had been identified by the early 1800s, there was not yet a safe or a reliable way to access the Liverpool Plains, a factor that significantly hindered plans for settlement. Under instructions from Oxley, Henry Dangar made two expeditions into the Liverpool Plains in 1824 and 1825. The first was cut short by violent encounters with the Gamilaroi people; however, the second expedition led to the discovery of an accessible pass over the Liverpool Range (the route now followed by the New England Highway). Dangar traversed the foothills of the Great Dividing Range heading east until he reached the Peel River, near Nundle. Dangar then crossed the mountains near Hanging Rock and returned along the Barnard River.

Major Thomas Mitchell also explored the Liverpool Plains area in 1831, following up Dark Brook and Kingdon Ponds to Murulla, passing over the range to Liverpool Plains to the Peel River (Bayley 1953:16). On Mitchell's *Map of the Colony* published in 1834, the ranges are shown south of the Peel River, though no names or signs of habitation are marked on its upper reaches (Figure 4.2). The course of Peel River was first traced by Assistant Surveyor G.B. White in late 1832, the report of this survey does not record any settlement along the banks of the Peel River at that time (Bayley 1953:17).



Figure 4.2 Detail of the *Map of the Colony of NSW 1834*, showing Liverpool Ranges and Peel River, by T.L. Mitchell, Surveyor General (Hunter Living Histories)

4.2.2.1 The Limits of Settlement

From the late 1820s, the Colonial Government attempted to restrict settlement to the nineteen counties established within a roughly 320 km radius of Sydney. Officially, no settlement beyond these limits was permitted; though many settlers moved beyond these limits, making claims to tracks of country, squatting illegally with their sheep and cattle. The valley of Peel River was well beyond the official limits of settlement; however, the reports of rich grazing land made by explorers such as Oxley and Mitchell drew many squatters to the district. Governor Gipps introduced a regulation requiring squatters to pay a licence fee of £10 a year to squat on Crown land, though it was not until 1837 that pasturage licences became compulsory. While the Government made attempts to stop squatters settling outside the nineteen counties, it welcomed all attempts to develop the region within the bounds of these approved settlement areas.

In November 1824, a group in England formed the Australian Agricultural Company, incorporated by Royal Charter, for the purpose of sheep raising. The Government granted the new Australian Agricultural Company with one million acres of land in the colony, free of all restriction and reservation (Bayley 1953:17). The Company's agent, Robert Dawson, selected a million acres of land extending north of Port Stephens. Dawson was later replaced by Sir Edward Parry, a famous explorer, as the Company's new commissioner.

Towards the end of 1831, Henry Dangar was again sent to the Liverpool Plains to inspect a suitable property for the Australian Agricultural Company, finding the Peel River was suitable for grazing. Parry with his party then travelled overland south east up the Peel River, through the site of Nundle, crossing the Crawney Pass to examine the region on 5 March 1832 (Bayley 1953:17). As a result of this journey, the company selected Warrah and the Peel River grant, the latter containing 313,298 acres extending westward from Peel between the sites of Attunga and Nundle, incorporating the Forest Creek Catchment. By August 1833, the Company secured a grant for the land, despite it being beyond the limits set for the location of settlement in the colony. The new Peel River station became known as Goonoo Goonoo (pronounced Gunny Gunnoo) and received 1,400 convicts as labour (Bayley 1953:18). The Goonoo Goonoo Station became known for its fine wool and stock and the company's Peel River asset increased over time, from 6000 head of sheep in 1834 to 130,000 sheep and 6000 cattle by 1934 (Bayley 1953:18).

Return journeys to the district throughout the 1820s and 1830s frequently utilised either Crawney Pass or Hanging Rock to traverse the Range, further background on these early transport routes is provided in *Section 4.2.2.2* below.

4.2.2.2 Early Transport Routes

NSW Historic Theme 4 – Building settlements, towns and cities – Transport

The following section has been largely summarised from the *Thematic History of Nundle, Manilla and Barraba* (J. Boileau 2007:21-22).

For most of the nineteenth century, the two main transport routes through NSW originated from the major ports: Sydney and Newcastle. From these ports the wool, beef and materials that constituted the wealth of the colony were shipped to England. The overland track from the Hunter Valley leading across the Liverpool Ranges and through the Peel River Valley was a major route for supplying the stations and scattered settlements of north west NSW. Baker's Australian Atlas of 1848 shows a track following the eastern bank of the Peel River passing the site of the present town of Nundle, and meeting the Port Stephens track near the junction with the Peel and Ogunbil Creek. From that point the track evidently crossed the Liverpool Range over the Crawney Pass to the Hunter Valley, following the route of the early explorers.

During the early days of settlement all supplies for the Peel River Valley and further north were carried by horse or bullock teams from the Hunter Valley over the steep road across the Liverpool Ranges at Nowlands Gap. Goods were shipped from Sydney to Newcastle then up river to Morpeth in the lower

Hunter Valley. This was the terminus for shipping, and from there goods were transported overland to Tamworth. Located at the strategic crossing of the Peel River, Tamworth developed as an important transport hub.

Following the discovery of gold at Hanging Rock in 1852, Rocky River near Armidale in 1856, and Bingara and Bundarra in the 1860s, road traffic in the area greatly increased. This prompted the Government to extend the Great North Road from the Hunter Valley to the New England Tablelands. One of the major challenges of this project was cutting a route up the notorious Moonbi Range, the mountain barrier between Tamworth and the New England Tablelands. It was a daunting climb for heavily laden bullock teams and coaches. As bullock drays had no brakes, on steep hills logs were dragged behind the vehicle to slow their progress. The route from Maitland to Hanging Rock was said to be completed in four days on horseback, though the long steep pinches over the Crawney Pass were known to be dangerous. Travellers were advised that out of the two routes over the Pass, travellers should take the easier ascent which began furthest up the Isis River.

In the early 1850s, William Telfer Junior described the experience of travelling the steep and dangerous route from Nundle to Hanging Rock:

At that time there was a sheep station on the Company's side of the river also one on the other side which was the property of Dr. Jenkins. Crossing the Peel River here saw the Hanging Rock mountain some two miles away proceeding along a very steep track almost perpendicular in appearance [...] the only traffic on this road was Nathan Burrows' bullock team which used to go to Tamworth about twice a year [...] some place you could scarcely discern any road and the mountain was very steep if you went a little off the track the cart would capsize and go down the mountain [...]. (Telfer, W. in R. Milliss 1980 via J. Boileau 2007:22).

Improvements were made to some of the major roads in the Nundle district during the 1870s. In 1879, a new road was surveyed along the eastern side of the Peel River from Nundle to Bowling Alley Point, cutting into the hills that rise steeply from the river. In December 1874, a new road was completed to Hanging Rock, climbing over 500 m from Nundle to Hanging Rock village in just over 8 km and 900 m to the highest part of Hanging Rock (Photograph 4.1). This road is still in use today, and has one of the steepest grades of any road in NSW.



Photograph 4.1 The steep road from Nundle to Hanging Rock (now Devil's Elbow) c.1880s (Bayley 1953:30)

4.2.3 First Settlers of the Nundle District

NSW Historic Theme 3 – Developing local, regional and national economies – Pastoralism

NSW Historic Theme 4 – Building settlements, towns and cities – Land Tenure

The following section has been summarised from the *Thematic History of Nundle, Manilla and Barraba* (Boileau 2007: Section 5.1), with additional archival and secondary research by ERM.

The word Nundul was derived from 'nuntul' meaning 'mouth' in the dialect of the local Aboriginal inhabitants, and over time the name evolved to Nundle. One of the earliest references to the word is in a survey of the area carried out in 1842 by Assistant Surveyor Burnett who showed it on a plan as Nundul.

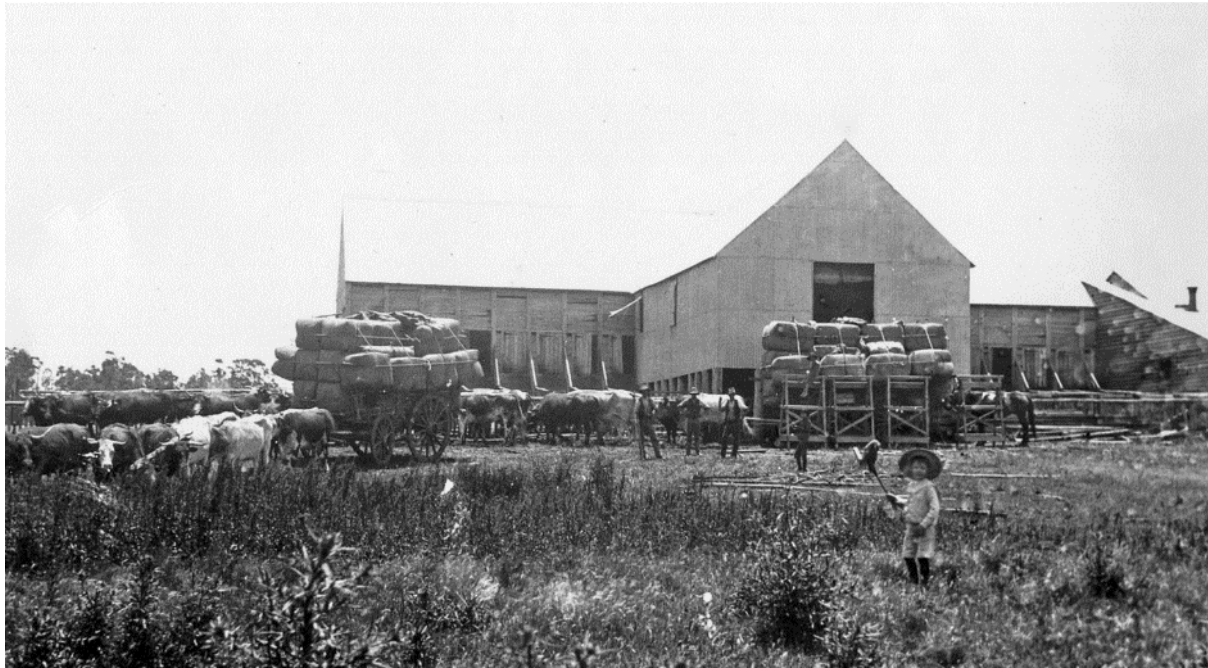
The first record of white settlement within the present township of Nundle was in 1839, when Hamilton Collins Sempill took out a license to depasture stock at 'Nundul' Creek near its junction with the Peel River. Sempill is thought to have learnt of the good prospects for grazing on the Liverpool Plains from Sir Edward Parry, following his track over Crawney Pass to set up a series of stations in the newly explored country beyond the range. Other squatters also appeared in the district around this time, settling on stations beyond the limits of legal settlement.

4.2.3.1 Wombramurra Woolshed - Dag Sheep Station'

In 1841, Armitage and Company are recorded as holding Wombramurra Station in the vicinity of the present town of Nundle, under pasture licence. Covering approximately 25,000 acres (Photograph 4.2). The boundaries of the run extended from the range at Crawney in the south, along Wombramurra Creek and the Peel River to the west and along spurs of the Great Dividing Range on the north and east. The township of Nundle was later laid out within the northern tip of Wombramurra run. In 1847, Dr Jenkins acquired Wombramurra in addition to his already extensive land holdings in the area, including Woolloomoon (25,600 acres), Wollombol (12,000 acres) and Piallimore (6,400 acres). When the boundaries of pastoral holdings were gazetted in 1848, Jenkins' 'Wombramurra' run had absorbed Sempill's earlier 'Nundul' station. According to recollections of early Nundle resident William Telfer, Dr. Jenkins:

[...] made a fortune on the place working in connection with Dungowan and Wombramurra stations running about twenty-eight or thirty thousand sheep also fifteen hundred head of cattle also one hundred and fifty horses also carrying on a butchering establishment and store on the goldfields and having another business as a gold buyer on the field at Hanging Rock. (Warner, R: 1990 pp. 27-93).

In 1848 ex-convict Nathan Burrows, with a ticket of leave gained in 1832, was listed as a squatter holding a lease of 15,360 acres at Hanging Rock. Burrows ran some 500 head of cattle on his lease, known as the 'Hanging Rock Run'. Other runs established in the Nundle area by this time included Peter Brodie's run at Swamp Oak Creek (20,480 hectares) and Isaac Haig's run at Dungowan Creek (10,240 hectares). In the same year, the Governor at the time recognised the need for expansion of the district. Sir Charles Fitzroy, secured permission from Earl Grey in England to allow the development and to proclaim new counties. The County of Parry was proclaimed, named after the famous explorer and commissioner of the Australian Agricultural Company. The new County included the Liverpool Plains around the Peel River. It also contained the whole of the original Goonoo Goonoo lands and the greater parts of the lands within the present Shire of Nundle. Following this, the limits of settlement were widened, encouraging squatters to search for land even further from settled areas (Bayley 1953:17).



Photograph 4.2 Loading wool bales at the Wombramurra Station, 1906 (DAG Sheep Station 2014)

4.2.4 Early Settlement: Muswellbrook, Kayuga and Merton

NSW Historic Theme 2 – Peopling Australia – Convict

NSW Historic Theme 3 – Developing local, regional and national economies – Pastoralism

NSW Historic Theme 4 – Building settlements, towns and cities – Land Tenure

NSW Historic Theme 9 – Marking the phases of life – Birth and Death

4.2.4.1 Muswellbrook

The town of Muswellbrook is considered to date from 1824, when Henry Dangar set aside 640 acres at the Junction of a small creek and the Hunter River as a village reserve. Muswellbrook was the only reserve out of a number that Dangar set aside that turned into a large town. Muswellbrook was on the main track to the Liverpool Plains, which later became the Great Northern Road and eventually the New England Highway. For a few years, Dangar was the principal surveyor in the Hunter Valley and was responsible for surveying many of the stations in the area. In 1832, Surveyor Davidson's map of the region was published which showed a reserve at Kayuga (Figure 4.3).

In the early period of settlement, the most important economic activity was wool production; although attempts were also made at growing wheat, tobacco, sugar and grapes. There was also a large population of convicts in the district during this early period. Commissioner Binge was responsible for the convict policy remodel in 1822 and recommended that convicts be assigned to wealthier settlers who would be responsible for feeding and clothing them (Veritas Archaeology 2014:43). The 1828 census indicated that 69 % of the male population in the Hunter Valley were convicts. Convicts were used for clearing and cultivating, with a great many also utilised as shepherds for the rapidly increasing flocks of sheep in the area. In 1828, a site was set aside for a central burial ground to meet the needs of the Upper Hunter properties. Kayuga reserve was considered to have this central position. Properties that are known to have used the Kayuga burial ground are Negoa, St Helliers, Segenhoe and Puen Buen. The first known burial took place in 1831 and the cemetery was used up until 1956 (Veritas Archaeology 2014:43).

4.2.4.2 Kayuga

The village of Kayuga was also set aside by Surveyor Davidson's in his 1832 map of the region. The first plan for the village was developed by Surveyor John Rogers in May 1858, though by this time the only development appears to be the creating of burial ground for the surrounding district. The alignment of the village drawn by Rogers did not take into account the 'road' that went from Musswellbrook to Scone via the Kayuga Station, he did mark the burial ground and marked two sections 'R', for reserves, with one being the early cemetery. Later plans for this village ignored the existence of the cemetery and no provisions were made on later maps, appearing in the middle of Heir Street (Veritas Archaeology 2014:43). As of 2014, there were 19 headstones and at least 50 other burials at the Kayuga Cemetery (Veritas Archaeology 2014:47). It originally had 22 gravestones when it was placed under the protection of Heritage Act in 1996 (Muswellbrook Heritage Inventory) (Figure 4.4 and Photograph 4.3).

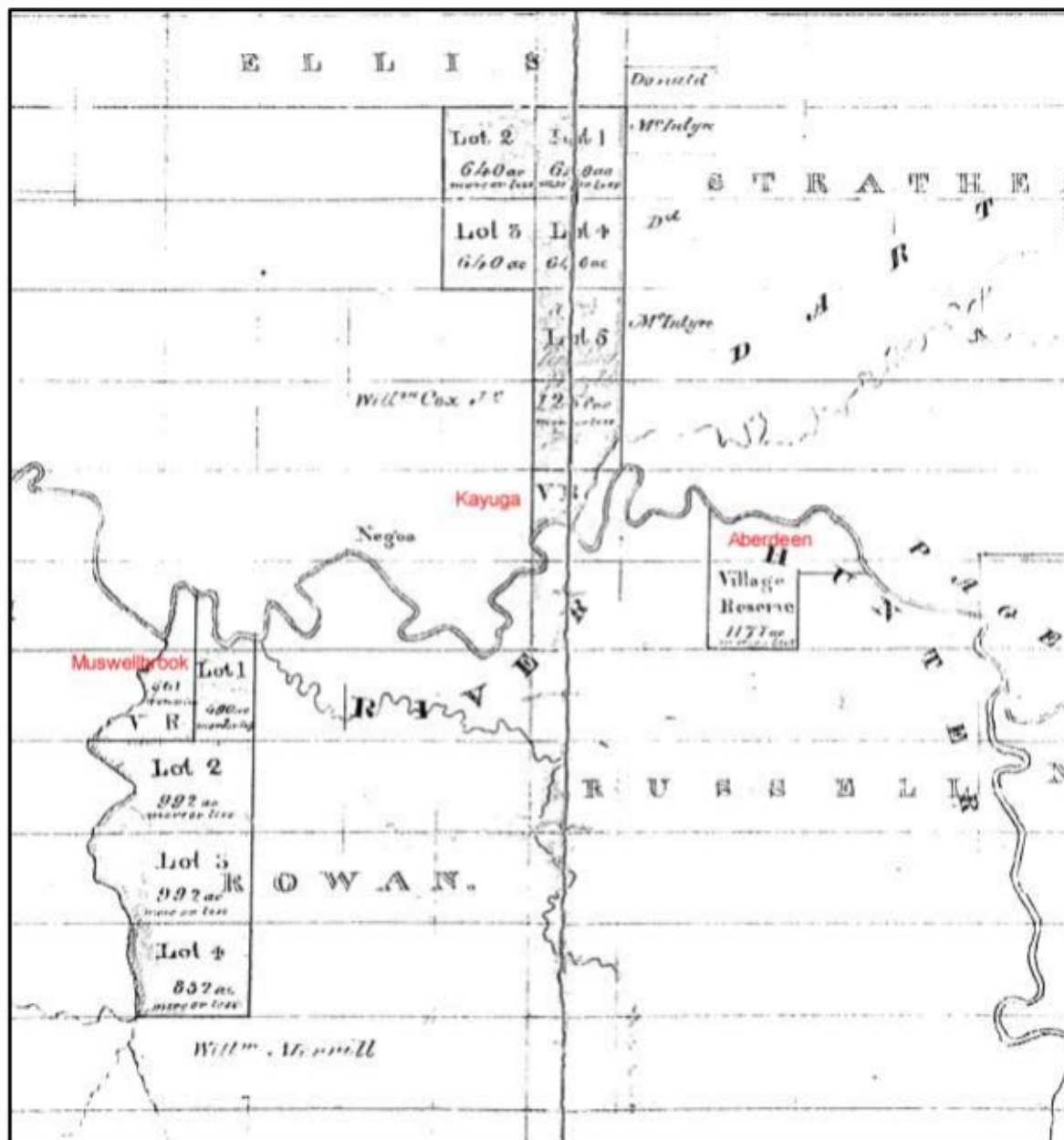


Figure 4.3 Part of Davidson's map of the district 1832 with reserves for the future town of Muswellbrook, Kayuga and Aberdeen (Veritas Archaeology 2014:40)

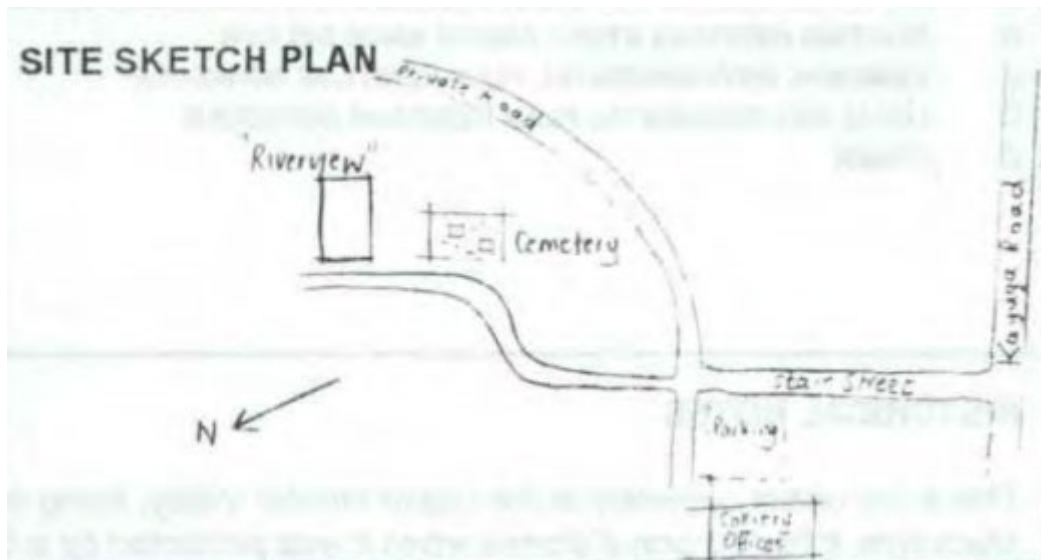


Figure 4.4 Site Sketch Plan of the Kayuga Cemetery (Muswellbrook Heritage Inventory 1996 Site ID: KAYU/R001)



Photograph 4.3 Kayuga Cemetery c.1996 (Muswellbrook Heritage Inventory 1996 Site ID: KAYU/R001)

By 1841, Muswellbrook was a recognised town with 215 residents and had become the dominant town in the district. The few buildings which survive from this period are Wiedmann Cottage, a house in Hunter Terrace, and Loxton House. In 1861, the *Robertson Land Act* provided the opportunity to open up further land, and by 1869, a railway had reached Muswellbrook. Wealthy landowners and merchants dominated the economic and social life of the district. The surviving homesteads at Martindale, Pickering, Edinglassie, Balmoral, Skellatar, Bengalla and St. Helier's were built during this

period. Some of the larger commercial buildings were established during the second half of the 19th century, such as the Royal Hotel and Muswellbrook Hotel.

4.2.4.3 Merton

The Merton Homestead was the first European Settlement in the Denman area, within the Upper Hunter Valley. The Merton Homestead was located east of the current Denman Township on the opposite side of the Hunter River. Captain William Ogilvie was granted 4,000 acres of land in 1825 upon his arrival to NSW from England. Merton was named after the house of Lord Nelson in Surrey, England (Muswellbrook Shire Council 2012 & NSW State Heritage Register Site ID: 00159 (1999)). The Merton Cottage was constructed a year later in 1826, a small four-roomed, sandstone structure with shingle roof, the sandstone was quarried from the hillside behind (NSW State Heritage Register Site ID: 618867).

The Merton Homestead grew to be self-sufficient due to its isolation and soon became the centre of the first village in the Upper Hunter Valley, with church, school and cemetery. The Merton Cemetery had burials from 1825 onwards in what was the original burial ground, in later years the Merton Churchyard was used for burials (Muswellbrook LEP 2009).

Merton was also the centre of the justice of the district, with William Ogilvie as Magistrate. Merton had its own courthouse and police headquarters, though by 1837 the police headquarters had moved to Muswellbrook (Muswellbrook Shire Council 2012). William Ogilvie died in 1859 and the family leased the property until it passed to Reginald White in 1896. Reginald White was known as the region's most successful pastoralist (NSW State Heritage Register Site ID: 618867).

The town of Denman, located near Merton, was gazetted 21 October 1853. Settlers from Merton eventually moved closer to the Hunter River and eventually crossed the River to Denman.

4.2.5 Early Settlement at Hanging Rock

NSW Historic Theme 2 – Peopling Australia – Migration

NSW Historic Theme 4 – Building settlements, towns and cities – Towns, suburbs and villages

Settlement at Hanging Rock started soon after the discovery of gold in 1851. With the heavy influx of prospectors and miners from across the country and internationally, crude shanty villages were established around Hanging Rock. In February 1853 the Hanging Rock community was substantial enough that it was to be formed into a township:

It is reported that the Hanging Rock is to be formed into a township, and allotments to be sold, a thing much desired by many of the diggers (The Sydney Morning Herald 7 Feb 1853: 2).

By April 1853, the residents of Hanging Rock erected a building to serve the dual purpose of a Church of England and school, and asked the Bishop of Newcastle to appoint a school master as there were at least 30 children living in the area. The residents of Hanging Rock contributed to the erection of the building, and the clergyman's stipend. Though it was recognised at the time that the population of Hanging Rock was largely migratory and a permanent building would be unnecessary. It was therefore suggested that 'a large tent, with bark or slab sides to make it commodious, would answer admirably, and that it could be easily moved on any occasion without great expense' (The Sydney Morning Herald 13 Dec 1853:3).

On 14 May 1853, the Maitland Mercury reported that a 'strong bark building' had been erected at Hanging Rock to serve as a church and a school. This original school served the community of Hanging Rock for over twenty years.

It will be perhaps of some satisfaction to those who have families who are about to try the Hanging Rock that a school has recently been erected and that Mr. Richards, a gentleman recently from England, has been appointed schoolmaster (J. Webster n.d: 10).

Transport in and out of the new Hanging Rock settlement was difficult in the early days of settlement, despite the frequent visitors to the new township. At the time it was noted '*nothing is more badly wanted than a passenger conveyance from Maitland to the Hanging Rock*' (The Sydney Morning Herald 8 Sep 1853:5). At the time, there was no other vehicle than the mail coach, and it was difficult for any person to catch a ride, as the seats were often always taken by miners. It was reported by the Sydney Morning Herald in 1853 that:

We often see man and wife separated; the fare is paid for two persons, and when the mail starts they find there is only room for one of them, the husband is compelled to get upon a horse, an animal quite unable to perform the journey (The Sydney Morning Herald 8 Sep 1853:5).

It was not until later years that a passenger service was established between Nundle and Tamworth (**Error! Reference source not found.**).

In September 1878, a new public school was erected after the residence petitioned the Council of Education to open a permanent public school. Two years later the Department of Public Instruction took over and erected a new weatherboard school with teacher's residence on a two acre site. During the 1890s a second classroom and two small rooms were added. This early school was again replaced in 1952 and officially closed in 1970. A public cemetery at Hanging Rock was dedicated in 1873, though there were apparently burials here before this date. The dedication of the cemetery was subsequently revoked, but it was officially rededicated in 1896 (Figure 4.5).



Photograph 4.4 The horse and cart that carried passengers between Nundle and Tamworth, c.1890s (Bayley 1953: 44)

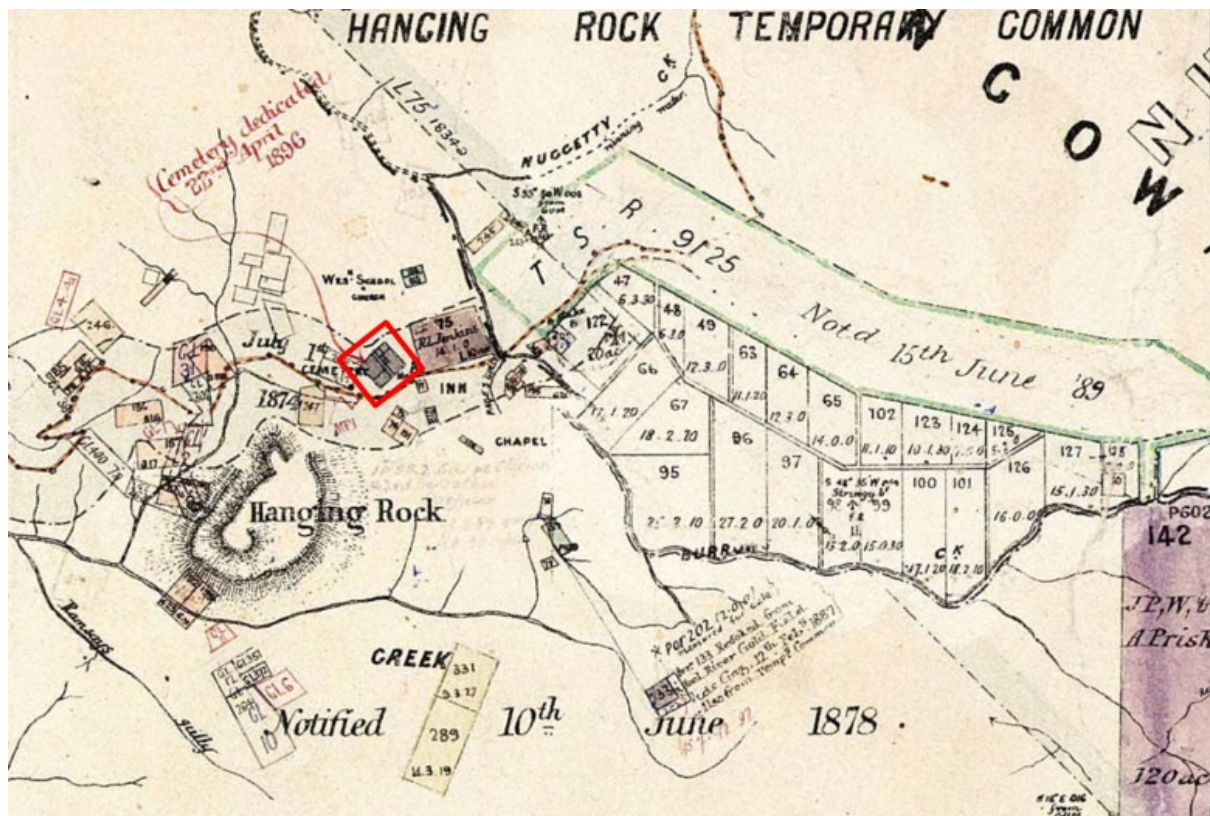


Figure 4.5 Map of the early town of Hanging Rock, notified June 1878, rededicated Cemetery indicated in red (NSW Land Registry Services - Historical Land Record Viewer)

4.2.5.1 Discovery of Gold at Hanging Rock

NSW Historic Theme 2 – Peopling Australia – Migration

NSW Historic Theme 3 – Developing local, regional and national economies – Mining

NSW Historic Theme 5 – Working – Labour

The following section has been largely summarised from the *Thematic History of Nundle, Manilla and Barraba* (Boileau 2007: Section 5.3) with additional archival research by ERM.

The first discovery of gold at Hanging Rock is attributed to Nathan Burrows in August 1851. Burrows was supposedly riding near Swamp Oak Creek on his run at Hanging Rock when he came across one of his stockmen washing for gold with a pint pot. The stockman found small flecks of gold while washing his pannikin after a meal. Burrows reported the discovery of gold to William Cohen, the storekeeper at Tamworth and the news quickly spread. By 24 January 1852, the *Maitland Mercury* announced that gold had been found at the Hanging Rock, bringing waves of prospectors to the district. Before the end of February 1852, gold from Swamp Creek and Hanging Rock was reaching Maitland. Twenty seven cradles were operating at Hanging Rock and the number of diggers were increasing daily.

The first strikes at Hanging Rock were followed by an even richer find at Bowling Alley Point on the Peel River (Photograph 4.5 and 4.6). By the end of March 1852 the main body of miners had moved their operations there, setting up shanty towns of tents and crude bark shelters (Photograph 4.7). At first gold was found in creeks, in riverbanks and on ridges throughout the Nundle district. In May 1852, 223 gold miners' licences were issued, with miners paying very reluctantly until the Government reduced fees from one pound ten shillings per month to ten shillings per year.



Photograph 4.5 Bowling Alley Point, centre of the early ‘Peel River Diggings’ 1952 (Bayley 1953:29)

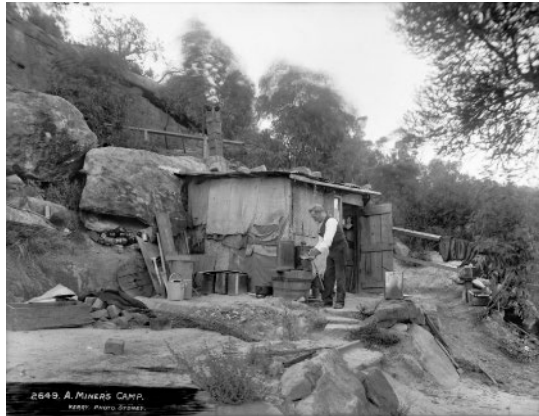


Photograph 4.6 Alluvial flats in distant valley opposite Bowling Alley Point 1952 (Bayley 1953:29)

Tiny settlements quickly sprang up to provide for the needs of prospectors who flocked to the Nundle district. Along Oakenville Creek, west of the foot of Hanging Rock, stores and public houses appeared quickly, and by June 1852 there were 300 diggers and their families camped along the valley in tents and bark huts. In Happy Valley, north of Oakenville Creek, two stores and a public

house were operating by 1855. Happy Valley became the principal diggings in winter when miners did not have to contend with rainfall '*...already diggers are going there, and securing their favourite spots*' (The Sydney Morning Herald, 5 Feb 1855: 5).

Miners were able to make a fine living at Hanging Rock, being employed in mining, cradling, sluicing and cutting timber for more sluices. Sawyers were also badly needed at the time, as diggers were constantly needing new timber boards and cradles for panning. Once the gold was brought to the surface, it would be sieved to remove larger material and placed in a box-like cradle adjacent to the windlass (a hand-powered winch used to haul ore up the shaft) (Photograph 4.8).



Photograph 4.7 Example of mining camp, made of bark shelter in NSW (Museum of Applied Arts & Sciences Object No: 85/1284-1383)



Photograph 4.8 Miners panning for gold NSW (Museum of Applied Arts & Sciences Object No: 85/1286-528)

By December 1853, the miners were experiencing hardship and unemployment at the diggings due to heavy and continued rains. The sluicing water was also stopped at this time due to disagreements between sluicing parties. At this time, one-half of the miners had left the diggings, with a correspondent for the Sydney Morning Herald reporting:

[...] I should not have been surprised if such a vicissitude¹ had not seized the gold field, and my only astonishment is that so many diggers have remained so long a time unemployed, waiting for the dry season to set in. (The Sydney Morning Herald 23 Dec 1853:3).

The heavy rains and flooding caused water to rush down the main creek and over the falls, washing away nearly every claim. The sluicing parties came together in 1853 to address grievances and gathering signatures in order to turn the sluicing water from Swamp Creek back on (The Sydney Morning Herald 23 Dec 1853:30).

By 1854, miners started to arrive from as far as China, Europe, California and Jamaica to try their luck on the goldfields. With the arrival of international prospectors, further shanty settlements sprang up along the Peel River and the creeks that flowed into it, including Happy Valley, Golden Point, Diamond Creek and Nuggety Creek. Visitors commented that Nundle district was like being in 'Yankee land', with veterans (known as the Californian Party) of the Californian gold rushes of 1849 dominating the community that gathered on the diggings in the Nundle district. The California Party starting on sluicing 'Nuggety Gully' with apparent great success (The Peoples Advocate and NSW Vindicator 5 Nov 1853:6).

In January 1854, there was some controversy over large area of diggings owned by the Australian Agricultural Company, when Captain Price, a representative of the Company, promised the diggings

¹ A change of circumstances or fortune, typically one that is unwelcome or unpleasant.

would be opened to the public. The Secretary of the Company and other officers issued a protest against Captain Price, and cautioned the public from digging on the Company's ground (The Sydney Morning Herald 9 Jan 1854:8). The proposed licences for the public to dig on Company land was the high price of £3 per month, a cost too high for most miners. It was argued that:

[...] persons sluicing would have to pay an ounce of gold per month for water, £3 to the Company, and £5 to the Government. Those diggings should be rich to admit the payment of such expenses (The Sydney Morning Herald 9 Jan 1854:8).

The early locality known as Black Creek was situated on the Government side of the Peel River, 6 miles from Hanging Rock, opposite what was then the Cordillera Company's Diggings. These diggings were also successfully sluiced by the Californian Party (from the American Water Company). On the opposite side of the River was the American Water Company's diggings. In 1854, the American Water Company proposed to bring water to their diggings with water races, in order to employ more miners in the district. However, Dr Jenkins was the owner of the locality, and refused the Company his water:

Who is he Dr Jenkins, that he should obstruct the successful working of the gold fields? [...] he pays £2 per annum for each square mile; the digger pays £6 per annum for twenty square feet! Shall one man, [...] be allowed to dictate to the miners and to the Government, and stem the tide of wealth [...] (The Sydney Morning Herald, 9 Jan 1854: 8).

Dr Jenkins refusal was also met with great local disappointment, with miners hoping the government would not support his opposition to the American Water Company (The Sydney Morning Herald 3 Feb 1854:2). Many of the miners were waiting in anticipation of the water brought by the American Water Company, as the sluicing would decrease the manual labour required to extract the gold from the carts and sacks that had to be brought down to the river by hand (The People Advocate and NSW Vindicator, 4 Feb 1854: 5).

The rush in Happy Valley began in 1854, though by 1859 most of the best alluvial gold had been taken out. In 1857 there were still high hopes for the Peel River diggings, a correspondent for the Empire publication in Sydney noting:

I am still of the opinion that the Hanging Rock will prove the richest gold field yet discovered in the colony, and the successive discoveries of the past month bear me out in that opinion (Empire, 15 Jul 1857: 5)

However, the Peel River diggings never rivalled the finds at Turon or Burragorang, let alone the major Victorian strikes at Bendigo and Ballarat. The diggings were lucrative enough to support hundreds of miners until the mid-1860s when the easily won alluvial gold began to run out. As early as 1861, Happy Valley, which had been populated by hundreds of prospectors from all corners of the globe, was almost deserted, as miners moved onto richer fields. Chinese miners stayed on and made a small living of abandoned European claims for a few more years, though by 1872 there was very little gold mining activity at Hanging Rock:

The Hanging Rock is now a mere relic of its departed greatness, and views from the height where I stood, where all the old workings could be seen, it seemed like a monster basin [...] surrounded by hills from top to base, turned over, where rich patches were first worked, and in after years 're-turned' again, and still gold procured. Two public houses stand in the valley, their signs 'golden ones' now only to serve to remind one of what was when diggers were plentiful and cash abounding. But little business is done there now – a few old hands remain. (Bayley 1988: 66, cited in J. Boileau 2007: 44).

4.2.5.2 Black Snake Gold Mine

NSW Historic Theme 3 – Developing local, regional and national economies – Mining

The Black Snake Mine is one of 10 mines which form the major gold reefs within the Nundle Goldfield, which covers an area of about 15 km north-south by 5 km east-west and about 45 km south-south-east of Tamworth. Most of these mines are situated near the hamlet of Bowling Alley Point or between Nundle and Hanging Rock village. Joseph Clark, a miner born in 1832 in England, came to Australia in 1851. Clark established the Black Snake mine in 1876, over a decade after he arrived in the Nundle area.

Clarke worked the mine with another miner, George Cairns until 1926. Using primitive equipment limited to hammers, picks and gunpowder, the two miners constructed 112 metres of tunnels by hand. The main tunnel, winding 80 m into the hillside, was built in the 1880s. They named the mine Black Snake because of the way the main reef of gold twisted and turned, although it generally trended north-south. In June 1890, a Tamworth correspondent for Table Talk (Melbourne) reported that important discoveries had recently been made on the Hanging Rock Mountain, on the Black Snake line of reef.

‘In the Broomfield Claim the reef has been cut at a low level, and is surprisingly good, the stone going quite 10oz. to the ton, thus bearing out the opinion expressed by the late Rev. B.W. Clarke that the lower levels in this ground would prove richer than nearer the surface’ (Table Talk 27 June 1880:6).

The Black Snake Gold Mine occupies 17.5 hectares, encompassing both the Black Snake and Brown Snake mines and surrounding land. ‘Brown Snake’ was a previously used informal name for the mine. Mining took place intermittently from 1877/8 to 1908, with a total production of 63.4 kg gold at grades of 20 – 100 gms/tonne Au.

4.2.6 Establishment of Nundle

NSW Historic Theme 2 – Peopling Australia – Migration

NSW Historic Theme 4 – Building settlements, towns and cities – Land Tenure

The following section has been summarised from the *Thematic History of Nundle, Manilla and Barraba* (Boileau 2007:33-40) with additional research by ERM.

It is well known that Nundle had its origins in the early gold rushes of NSW. Before gold was discovered near Hanging Rock in 1851 it was merely a branching off point for the tracks followed by the bullock teams supplying nearby stations or the more remote properties further north. On 10 July 1852 Abraham Solomon made an application for allotments to be put up for sale in the locality of the Woolomin Reserve. This prompted the Government to consider the best location for a township to serve the newly discovered Peel River diggings. The surveyor commissioned to investigate the matter recommended Nundle as the most suitable site for a village.

Nundle was centrally located at the junction of the road from the diggings at Hanging Rock to Tamworth and the road from Hunter Valley via the Crawney Pass. Approval for the layout of the village was given on 18 October 1852. Assistant Surveyor J.V. Gorman completed the plan for the township in January 1853, laying out the principal street, Jenkins Street, parallel to Peel River. Jenkins Street was named after one of the earliest residents, Dr. R.L Jenkins. Two of the cross streets, Durbin and Innes Streets, were named in honour of the first two gold commissioners for the district (Figure 4.6). The site of the township was selected on a gentle slope on the eastern side of the Peel River, between the junction of Oakenville Creek and Nundle Creek, only ten miles from the source of the river (Bayley 1953:40).

Nundle was gazetted as a township on 23 February 1854, its official description being ‘Nundle on the Peel River in the pastoral district of Liverpool Plains’. In this same year, the Peel River Land and

Mineral Company laid out a township on the western side of the Peel River, offering its quarter acre allotments at first sale on July 1, 1854 (Bayley 1953:40).



Figure 4.6 Detail of early Nundle Parish Map, Jenkins Street, Innes Street and Durbin Street (NSW Land Registry Services - Historical Land Record Viewer)

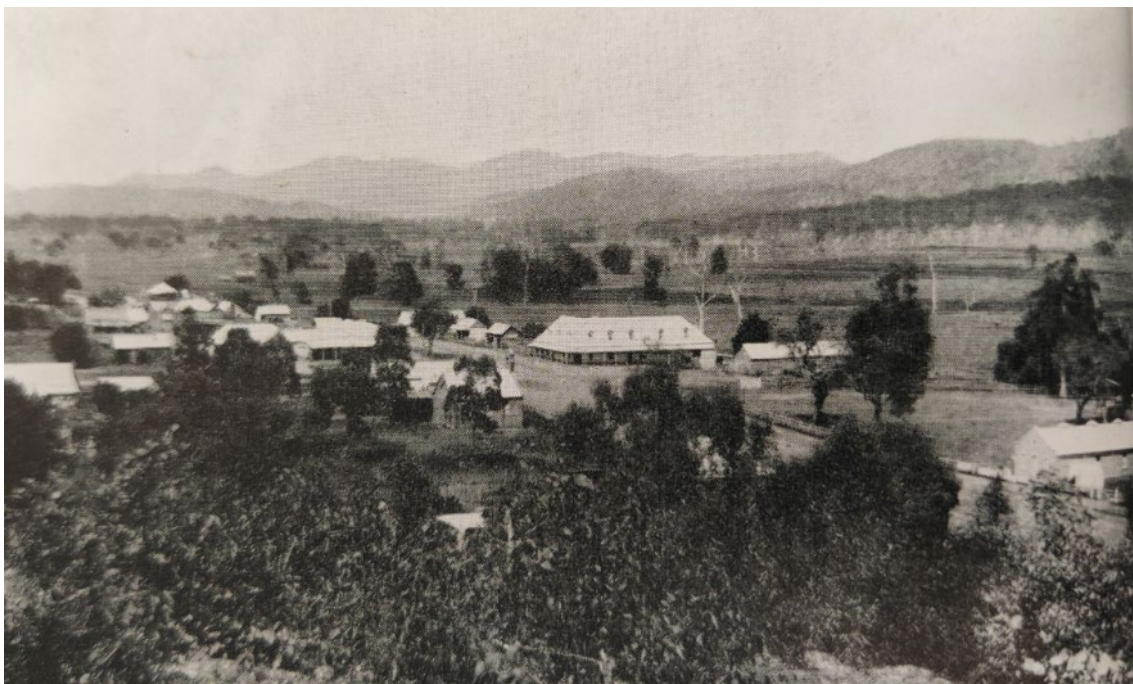
The only existing buildings on the site of the government township of Nundle when the layout was completed were an Inn on six acres reserved for R.L Jenkins' improvements on the north west corner of Jenkins and Durbin Streets, and the Police Barracks on a bend in river, south of the junction of Oakenville Creek. The first auction of town allotments in Nundle was held in Tamworth on 9 February 1855 with the maximum price set as £8 per acre or £4 per half acre lot (Bayley 1853: 40). Once the first lots of land on the Government side of the Peel River were auctioned in 1855, the township of Nundle grew rapidly.

In 1857, Richard L. Jenkins purchased under pre-emptive right for an area set aside for him at Hanging Rock, previously Jenkins had the same deal for land in Nundle. The area at Hanging Rock was fourteen acres on which he established Gibbins' Inn, a store and other buildings.

Soon the township of Nundle started to take shape, a site was set aside for a courthouse on the north east corner of Jenkins and Durbin Street. By 1866 Nundle had a population of 500 and had five hotels, a post and money order office, court house, police barracks and a steam flour mill. The earlier settlements of Happy Valley, Oakenville Creek and Hanging rock soon became suburbs of Nundle (**Error! Reference source not found.**). The first school in Nundle was a Church of England denominational school which began in 1861, though attendance was poor and it closed in 1870. Local residents made an official application for a public school in Nundle on 20 September 1869 and by 1870 two acres of land at the corner of Jenkins and Oakenville Streets were reserved. A new brick school with single roof was built on the site, opening January 1872. By 1882 sites were set aside for a Wesleyan (later marked 'Primitive') Methodist Church, a Presbyterian Church, Manse and School, Roman Catholic School and Church (**Error! Reference source not found.** & Photograph 4.10).



Photograph 4.9 The lower view of Jenkins Street with Primitive Methodist Church, erected 1882 (Bayley 1953:20)



Photograph 4.10 Panoramic view of Nundle c.1890s showing Peel Valley, Liverpool Ranges and Crawney Gap in the distance (Bayley 1953: 20)

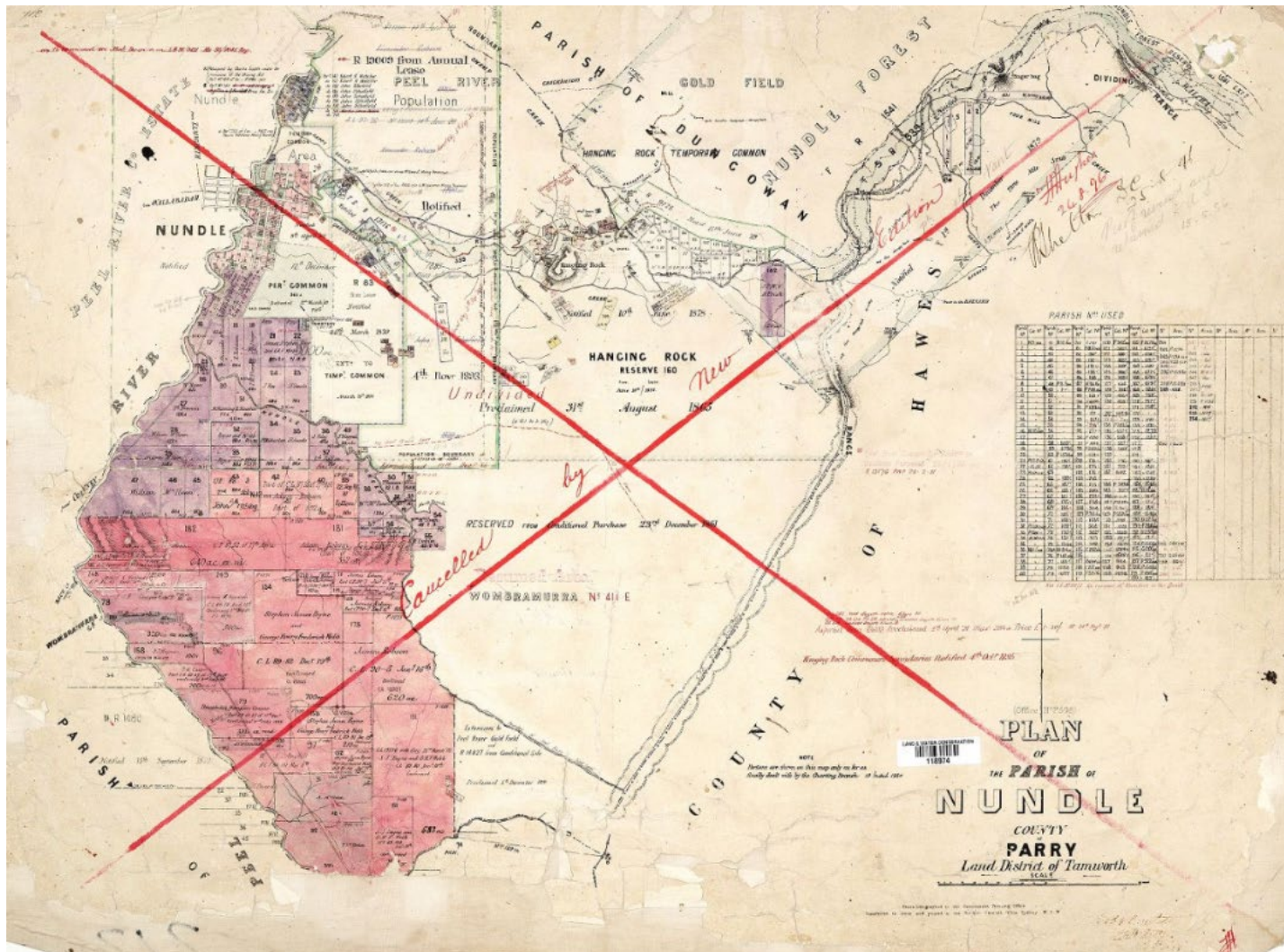


Figure 4.7 Plan of the Parish of Nundle, Happy Valley, Oakenville Creek and Hanging Rock absorbed as suburbs (NSW Land Registry Services - Historical Land Record Viewer)

4.2.6.1 Early Industry in Nundle

NSW Historic Theme 2 – Peopling Australia – Ethnic influences

NSW Historic Theme 3 – Developing local, regional and national economies – Mining

NSW Historic Theme 3 – Developing local, regional and national economies – Pastoralism

During the height of the gold rushes small farmers found a ready market for their fruit and vegetable on the diggings, and the sheep and cattle raised on the grazing runs kept the miners supplied with meat. Many miners who were unsuccessful in making their fortune on the diggings, including the Chinese, stayed in the district and also took up farming.

From the late nineteenth and into the early twentieth centuries Chinese market gardeners made significant contribution to the supply of fresh vegetables, and dominated the production and distribution of vegetables in NSW until the 1930s. Chinese farmers were also pioneers of tobacco growing in NSW, experimenting with tobacco during the 1880s in the Nundle district on the Peel River flats.

During the 1870s, a number of dairies were established along the river flats of the Peel. Although there was a move to build a dairy factory in Nundle in 1904, the proposal received little support and farmers continued to send their cream to the factory in Tamworth. Other thriving industries during the early years of the Nundle Township include pig raising for ham and bacon production, cattle and sheep, wheat and Lucerne. Maize was also grown along the Peel River between Nundle and Dungowan. Potatoes were also grown up at Hanging Rock, with the rainfall and fertile soil ideal conditions. Later member of Council J.W Newman (1914) in support of submission for a railway line to Nundle commented:

The rich valleys of Dungowan Creek of Duncan's Creek on the east and all that valuable land just over the mountain on the west, owned by Peel River Land and Mineral Company [...] one acre of that rich soil would produce more loadings than five or six acres of wheat land [...] there is almost inexhaustible supply of nearly all kinds of hardwoods [...] if this line were built in would place thousands of acres of rich volcanic soil at Hanging Rock, and at the heads of Duncan's, Dungowan and Mullah Creeks within the workable distance where potatoes, turnips and all root crops could be grown to perfection (Telfer, W. in R. Milliss 1980, cited in Boileau 2007: 39).

The heavily forested ranges to the east of Hanging Rock were first exploited in 1874, when a zigzag road was completed up Hanging Rock Mountain. These ranges included good reserves of valuable timber, including stringybark, messmate, manna gum and ribbon gum. Widespread clearing of forests in NSW continued up until the 1890s and into the twentieth century. Following the *Forestry Act 1909* and the establishment of the Forestry Commission of NSW in 1916, wholesale clearing of leasehold lands in central and eastern NSW was brought under some control through the declaration of State forests and timber reserves. The Nundle State Forest was dedicated in 1917 and in 1918 the Hanging Rock State Forest was created.

4.2.7 A New Era of Mining

NSW Historic Theme 3 – Developing local, regional and national economies – Technology

During the early 1860s a new era of mining began in the Nundle district, focusing on quartz reefs. It was found that steam quartz crushing machines could largely replace the laborious work of panning for gold by hand, and the hills and valleys around Nundle were honeycombed with shafts and tunnels. Miners gave their claims and reefs names that expressed their hopes and aspirations: Golden Hole, the Golden Chance, The Golden Gate, Hidden Treasure, Golden Point, Diamond Point, or reflected the polyglot community in which they lived and worked, such as Blackfellow's and Kanaka. There was also a single mine that belonged to woman named Sally, called Sally Grey's mine. Soon the landscape at Hanging Rock was greatly altered, with the Tamworth Observer noting in 1885:

These men were the great captains of the days gone by [...] they dug up the valleys, turned the river courses, pierced the great mountains and obtained thousands of ounces of gold for their labour [...] (Tamworth Observer 1885, cited in W. A. Bayley and I. R. Lobsey, 1988: 20).

By 1864 631 miners' licences had been issued at Nundle, and the district produced 8,476 ounces of gold, valued at £32,000. During this time, Chinese miners far outnumbered Europeans and were skilled at constructing waterworks. The Chinese miners continued to work the alluvial gold claims abandoned earlier by European prospectors. Water supplies had become a constant problem on the goldfields, as a large and constant supply of water was needed to wash the crushings. In 1862, the rights to all the water of the western slopes of the Liverpool Range was granted to the American Water Company, and later the Mount Sheba Company subsequently leased the rights from them twenty years later.

In the early 1870s, mining the area was centred on two spots, the Hanging Rock and Foley's Folly, only two miles apart, divided by the Swamp Creek. It was noted at this time that Hanging Rock alluvial had once been rich, though there was 'nothing very lively stirring up on the field' at the time (Evening News 25 Sep 1871:3). Working reefs known at the time were the 'Criterion' (a vein) wrought by 'Wood and Christie' and Stephens tunnelling claim 'in a very peculiar hill, the bottom being still glossy clay capped with a heavy layer of waterworn wash, in which gold was found. Near to this area was a site known as Dangar's Hill, 'locally remarkable for a broad layer of tufa or cinder stone of many colours' (Evening News 25 Sep 1871: 3). The creek which descended from the high ranges of Hanging Rock into the Peel River below was still thought to be rich with gold:

Scattered parties – both British and Chinese – are still searching for treasure hidden in its rocky bed, and I cannot help thinking that a considerable quantity of gold yet remains in this high ground about the creek head. (Evening News, 25 Sep 1871:3).

By 1882 there were a large number of mining claims and known quartz reefs. Joseph Ruzicka discovered 'very rich patches of gold at Hanging Rock' at the beginning of 1882 and on Saturday 18 March he obtained 9 pounds weight of gold from the reef (Adelaide Observer, 18 March 1882:32). This reef became known as Ruzickas Reef or 'Ruzickas Lady of the Mountain'. In November the same year a miner named Lang struck a large reef with payable gold, after he had been tracing some leaders very near to Ruzickas claim (The Sydney Mail and NSW Advertiser, 11 Nov 1882: 845). The innovative crushing technology inspired many other experienced prospectors to the district, with the Sydney Mail noting '...something grand may be expected when science and great experience are brought to bear' (29 Jul 1882: 168). The new Marquis of Lorne and Price's Hill Gold-mining Company, under the management of Mr. John Stanning had started work at Bowling Alley Point. The Company had started driving a main low-level tunnel, and putting down a main shaft through the old mine. They also had a 50-foot tunnel in order to cut into the reef (The Sydney Mail and NSW Advertiser, 11 Nov 1882: 845). A new water power machine was purchased by Mr. J.P Robinson and a Mr. Weeks to build a new water wheel, this new plant was used to crush stone from the Possum and Foley's reefs. The Golden Hole reef was also active at this time, working with a steam pump:

The Golden Hole [...] is pushing ahead [...], they get small prospects, but as yet nothing payable (The Sydney Mail and NSW Advertiser, 11 Nov 1882: 845).

In 1888 the Mount Sheba Company built the two Sheba dams on Swamp Creek at Hanging Rock (Photograph 4.11). The two dams were built by hand in three weeks. From these dams, water was directed to the miners by means of water races, which can still be seen cutting across the landscape around Hanging Rock today. The Mount Sheba Gold Mine was established in the same year (Photograph 4.12).

During the depression of the 1890s, large numbers of alluvial miners returned to the goldfields to try to make a living. During this time, the Peel River goldfields produced the largest quantity of gold in its

history with 5,770 ounces produced at a value of £20,224. Though the new Sheba Dams provided miners with a reliable supply of water and inspired new mining companies to the district, this peak only lasted a few years. The Mount Ephraim Mine closed in 1890 and soon mines at Bowling Alley Point, Hanging Rock and Nundle ceased working. The Tamworth Gold Mining Company began operations on the Nundle goldfields in 1897, though when they failed to make a profit the company folded. Between 1905 and 1917 the Nundle Gold Dredging Syndicate undertook dredging operations in the Peel River, though again this was met with little success.



Photograph 4.11 Sheba Dam 1952 (Bayley 1953:42)



Photograph 4.12 Mount Sheba Gold Mine c.1888, lengths of hose used for carrying water to sluicing hydrants shown (Bayley 1953: 43)

4.2.8 20th Century Growth in Nundle

NSW Historic Theme 4 – Building settlements, towns and cities – Towns suburbs and villages

With the end of the mining era, the settlement of Nundle took advantage of the fertile soil surrounding the township. Local farmers, graziers and townsmen united to maintain a prosperous and wealthy district (Bayley 1953:84). A new Progress Committee was formed at a public meeting at the School of Arts on November 1, 1899. The new Committee turned their attention to new roads, bridges and public buildings until a local government was established.

Rebuilding of the town began early in the 20th century, with a new weatherboard official post office constructed at the corner of Oakenville and Jenkins Streets in 1904. In the early stages of town reconstruction the Nundle Shire was formed, embracing the whole catchment of the Peel River on the northern side of the Dividing Range, with Nundle township at its centre. In 1907 the All Saints Anglican Church was consecrated and by 1913 the Nundle Shire Offices were erected at the corner of Jenkins and Innes Street. The Shire Offices were built by A.A. Moore at a cost of £646 and opened on 25 January, 1913 by Hon. F. Flowers. In 1930, the Nundle Memorial Hall was opened to honour the locals who had served during World War I. In 1948, the Douglas Dc-3 *Lutana* aircraft crashed into Square Peak west-south-west of Nundle on flight between Brisbane and Sydney.

St Peters Catholic Church

In the early 20th century there were a number of new churches constructed in Nundle as the religious community grew. This included an All Saints' Church of England near Innes and Jenkins Street, and a new Anglican Church on the corner of Gill and Oakenville streets, a new Church of England was also being built. At the same time, the Roman Catholic Community was at work erecting a new place of worship. The church stood at west Nundle on the original American Company's town had outlived its usefulness and a more central site was sought (Bayley 1953: 87). A site was finally secured in Innes Street between Jenkins and Gill Streets where a new weatherboard Church was built. The new St Peters Church was opened and blessed by the Rt Rev. J. Coleman, D.D on July 23, 1938 (Photograph 4.13).



**Photograph 4.13 St Peters Roman Catholic Church, Innes Street Nundle
(Bayley 1953:90)**

Nundle Shire Offices

The first meeting of the Nundle temporary Shire Councillors was held at the court house in June 1906. The Department of Education leased two rooms of the old school to the Council, which served as the Shire Offices until the modern Shire Offices were erected at the corner of Jenkins and Innes Street on land purchased from Thomas McClelland for £60. The Shire Offices were built by A.A. Moore at a cost of £646 and opened on 25 January, 1913 by Hon. F. Flowers. On the suggestion of D.C. Crichton the council adopted the motto, "*Candore er Prudentia*" – "with sincerity and discretion" (Bayley 1953: 85) (*Photograph 4.14 & Photograph 4.15*).



Photograph 4.14 Nundle Shire Office soon after establishment in 1913 (Bayley 1953:67)



Photograph 4.15 Nundle Shire Office c.1952 (Bayley 1953:67)

4.2.9 Nundle Township Today

Today Nundle is a bustling country town with a thriving tourism industry. Both Nundle and Hanging Rock have a small population of approximately 600 people between them (Nundle 2016). Nundle is popular tourist destination for its unique historic and natural setting with many features remaining of its early European settlement. Popular attractions include the Hanging Rock Lookout, DAG Sheep Station, The Peel Inn, Mount Misery Gold Mine Retreat and Café, the Gem and Mineral Collection and the Nundle Woollen Mill, a historic reproduction of a working spinning mill. The original Nundle Post Office (built 1904) remains in its original location as well as the original Court House, which now houses a significant collection of objects from 1850s Nundle until recent times.

Also located within Nundle is also the Chinese Memorial Garden, a memorial that acknowledges the Chinese who died on the goldfields between the 1860s and 1917 at Hanging Rock and Nundle (Monuments Australia 2020).

5. SURVEY DESIGN AND RESULTS

5.1 Survey Aims

The survey methodology adopted for this assessment incorporated a vehicle and pedestrian survey across the Project Area and transport route upgrade locations targeting those sites identified by the desktop review and discussions with locals.

5.2 Predictive Modelling

The most effective survey methodology is informed by predictive modelling. Sampling strategies (where to look) can be either *purposive*, where specific areas are targeted as is done with predictive modelling; or *probabilistic*, where decisions are made to survey without any prior knowledge or predictive model of what heritage resources might exist in the landscape to be surveyed. For this survey, a purposive sampling strategy was employed. The field survey was preceded by a desktop-based investigation (Sections 3 and 4), which provided guidance as to the types and location of heritage items and potential heritage values like to be encountered across the Project Area.

Historical and contextual research combined with local information provided by the community enabled an initial assessment of areas known to be of historical interest whilst remaining inside the available timeframes.

5.3 Survey and Recording

An inspection of the Project Area was undertaken between 29 September to 2 October 2020 by ERM Heritage Consultant Stephanie Moore. The site inspection included a visual inspection of the transportation route between Newcastle and the Project Area, and a physical inspection at the location of potential direct impacts to listed heritage items, including:

- Jerrys Plains Conservation Area;
- Merton Cemetery;
- Kayuga Cemetery; and
- Black Snake Gold Mine,

Visual inspection of the transportation route included photographic recording at the location where transport modifications may result in impacts to listed heritage items.

A guided inspection of the proposed Wind Farm Project Area was undertaken on 30 September, including the proposed road upgrade at Devil's Elbow, within the listed curtilage of Black Snake Gold Mine a general overview of the Project Area. Historical research did not identify any other areas of interest or potential within the Project Area that required further inspection. In addition to an inspection of the Project Area, representatives from Someva were also present during an inspection of the proposed alternate road locations at Devil's Elbow, within the listed curtilage of Black Snake Gold Mine. A further inspection of the Devil's Elbow road upgrade locations was undertaken on 28 October 2020.

5.4 General Setting and Landscape

The Project comprises two main portions for ease of description – the transport route and the Project Area. A brief overview of the general setting for both is provided below.

5.4.1 Project Area

The Project Area is situated along the elevated ridges of the range south of Nundle and Hanging Rock. The landscape is generally characterised by steep gullies, containing drainage lines off the range, and areas of densely vegetated flats. The proposed location of Wind Turbine Generators

(WTGs) is utilised farmland, which has been cleared to create pasture for cattle and sheep. The elevated landscape is challenging to access, except through existing roadways and farm tracks.



Photograph 5.1 View south from Project Area (ERM 2020)



Photograph 5.2 General view of Project Area facing south (ERM 2020)

5.4.2 Transport Route

The transport route begins at the Port of Newcastle and travels west and north to reach the Project Area. The transport route traverses a broad range of landscapes, including rolling hills, plains, and hilly regions and a series of towns ranging from moderate to large in size (such as Muswellbrook and Tamworth), to very small (Willow Tree and Jerrys Plains). Between Newcastle and Muswellbrook, land use is characterised by light industrial (closest to towns), pastoral, and heavy industry (mining) uses. Beyond Muswellbrook, land use is largely pastoral or agricultural, with lower levels of heavy industry. Around Nundle and Hanging Rock, the area is defined by pastoral and agricultural land, with heavy industry represented by pine logging occurring in the nearby state forest.

5.5 Targeted Site Inspections

The following description of physical inspection areas is provided south to north, commencing along the transport route before arriving at the Project Area.

5.5.1 Areas of Road Alignment Upgrades

5.5.1.1 Jerrys Plains Conservation Area (Item No. C1, Singleton LEP 2013)

Jerrys Plains is a small settlement, consisting largely of farming land with very few structures along the main road. The remaining structures include residences, a Petrol Station, the Jerrys Plains Hotel, the former Post Office, and St James Anglican Church. The inspection area at Jerrys Plains was chosen due to the proximity of the proposed works to the LEP listed heritage conservation area (Item C1) which covers the majority of the town. Given the location of the conservation area, the potential for other heritage items (unlisted) to be present in the vicinity is increased. Physical inspection of this site allowed for verification of the location of any such heritage items.

The proposed road modification will be undertaken at the western end of Jerry's Plains, along the Golden Highway near the intersection with Pagan Street. Surrounding this portion of road, the residences are primarily modern. Additionally, the proposed modifications are being made within the road reserve and surrounding undeveloped land. There was no evidence of historic structures in this location that would be impacted by the proposed road works.



Photograph 5.3 Historic Residences, Jerrys Plains (ERM 2020)



Photograph 5.4 St James Anglican Church, Jerrys Plains (ERM 2020)



Photograph 5.5 View south-west towards proposed upgrade area (marked) (ERM 2020)



Photograph 5.6 View south-east towards proposed upgrade area (marked) (ERM 2020)

5.5.1.2 Merton Cemetery (Item No. I18, Muswellbrook LEP 2009)

Merton Cemetery is located on the southern side of Denman Road, straddling the Golden Highway around the location of the intersection of these roads. The Merton Cemetery consists of the historical burial grounds associated with the Merton Homestead, and is situated on land now operated as a winery. The LEP listed curtilage of the Merton Cemetery includes a small portion to the west of the Golden Highway, and a larger portion to the east, surrounding the historic homestead. Documentary evidence suggests that the burial ground is located on the hilltop, rather than in the low-lying areas nearest Denman Road.

A visual inspection was undertaken from the road reserve beside the listed site, as no property access was permitted. The visual inspection showed no headstones or other grave markers in the proposed modification areas. No other evidence of burials was noted, although ground visibility was low due to long grass growing in the area. Modification for the construction of modern roads, including drainage swales and bunds, has resulted in significant ground modification directly adjacent to the road in all directions.



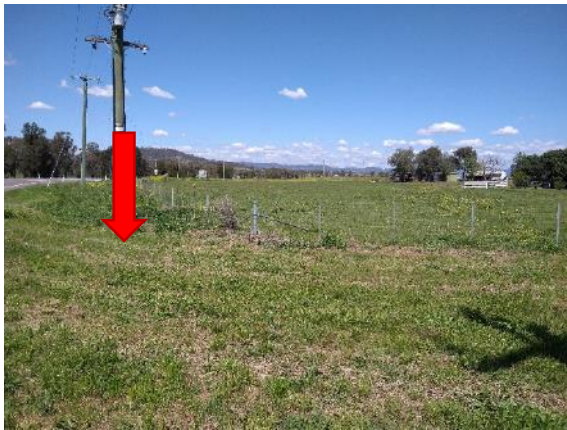
Figure 5.1 Proposed road upgrades at Merton Cemetery



Photograph 5.7 Northern portion of listed Cemetery



Photograph 5.8 Detail of northern portion of listed site, proposed works location just out of frame to right of image (ERM 2020)



Photograph 5.9 Southern portion of cemetery, showing fencing along road reserve, proposed works location marked (ERM 2020)



Photograph 5.10 View of intersection, showing northern portion of cemetery, proposed works location across intersection at right of image (ERM 2020)

5.5.1.3 Kayuga Cemetery (Item No. 143, Muswellbrook LEP 2009)

This is the oldest cemetery in the Upper Hunter Valley, being set aside in 1828 and includes at least 12 convict burials. There are twenty surviving monuments, along with placed rocks that are thought to be the sign of other burial plots.

The historic Kayuga Cemetery is located on Crown land, surrounded by the Dartbrook Mine. Access to the area is restricted by a private road. A visual inspection was undertaken of the surrounding area, from the public roadways and road reserves. No evidence of historic infrastructure or grave markers was noted within the area of proposed road modification.



Figure 5.2 Proposed road upgrades at Kayuga Cemetery (west)



Figure 5.3 Proposed road upgrades at Kayuga Cemetery (east)



Photograph 5.11 View of intersection, showing proposed impact area (behind telegraph pole) (ERM 2020)



Photograph 5.12 Proposed impact area (foreground) (ERM 2020)



Photograph 5.13 View north-east towards impact area and location of known burials (ERM 2020)



Photograph 5.14 View to south-east of Stair Street. General landscape. (ERM 2020)

5.5.2 Nundle and Surrounds

Inspection of Nundle and surrounds included examination of the proposed road amendment locations, located at the intersection of Lindsay's Gap Road and Nundle Road; along Oakenville Road, Nundle; and at Devil's Elbow, Hanging Rock. In addition, a general inspection of Nundle and Hanging Rock was undertaken to ascertain if there were any unidentified heritage items that would be impacted by the proposed works. No additional sites were identified; however, this general inspection provided valuable contextual information.

5.5.2.1 Intersection of Lindsay's Gap Road and Nundle Road, Nundle

The intersection of Lindsay's Gap Road and Nundle Road is situated approximately 3.5 kms north west of Nundle. The intersection is surrounded by farmland, with no structures noted in the vicinity. Historical research has not identified any archaeological potential in this location, although it is noted that the local community views this intersection as having social and historical significance. No justification for this has been provided by the local community.



Photograph 5.15 View along Nundle Road, Lindsay's Gap Road Marked by red arrow (ERM 2020)



Photograph 5.16 View to proposed upgrade area (ERM 2020)

5.5.2.2 Jenkins Street, Nundle

Jenkins Street is the main thoroughfare through the small town of Nundle, presenting many of the early civic and public buildings, including the Public School, former Post Office, Shire Offices, and former Courthouse. Jenkins Street retains a heritage character, with many of these early buildings still extant and in some use. The street is wide and open, allowing a good view of the heritage buildings from most positions along Jenkins Street.

No road upgrades are proposed along Jenkins Street, although it will be used as the alternate transportation route to the southern access of the Project Area.



Photograph 5.17 View north along Jenkins Street (ERM 2020)



Photograph 5.18 View north-east along Jenkins Street (ERM 2020)

5.5.2.3 Oakenville Street, Nundle

Oakenville Street, Nundle is the main thoroughfare, transitioning from the Tamworth-Nundle Road, to Hanging Rock Road at either end of town. Proposed modifications at the western end of town will accommodate the need to transport the turbines through Nundle. The proposed modifications will be situated in the vicinity of the playing fields and rest stop, at the edge of Nundle. There are no historic structures within this location that will be impacted by the proposed works.



Photograph 5.19 View east along Oakenville Street to proposed impact area at Herron Street Intersection (marked) (ERM 2020)



Photograph 5.20 View west along Oakenville Street to proposed impact area, on right side of image (ERM 2020)



Photograph 5.21 View west along Oakenville St, from Jenkins Street (ERM 2020)



Photograph 5.22 View west along Oakenville Street (ERM 2020)

5.5.2.4 St Peters Catholic Church (Item No. 1269, Tamworth LEP 2010)

Proposed road modifications at the corner of Innes and Gill Streets, Nundle, have been mapped as slightly overlapping the curtilage of the locally listed St Peters Catholic Church. St Peters is a modest weatherboard building situated on a small block, accompanied by a weatherboard outhouse at the rear of the property. The block does not have a fenced churchyard, and there is no evidence of historic burials within the grounds. The proposed road modification will not result in direct impacts to any structures on the property, however the blade swing across the curtilage may require the removal of a small tree (refer to Photographs 5.24 and 5.26). There is no evidence to suggest that this tree is a historical planting associated with the establishment of the church, and it appears that the tree is located just outside the LEP registered heritage item boundary.

St Peters is located next door to the Nundle Branch of the State Emergency Service (SES). The grounds of the SES will also be included in the proposed road modification, however this site has not been identified as having heritage significance.

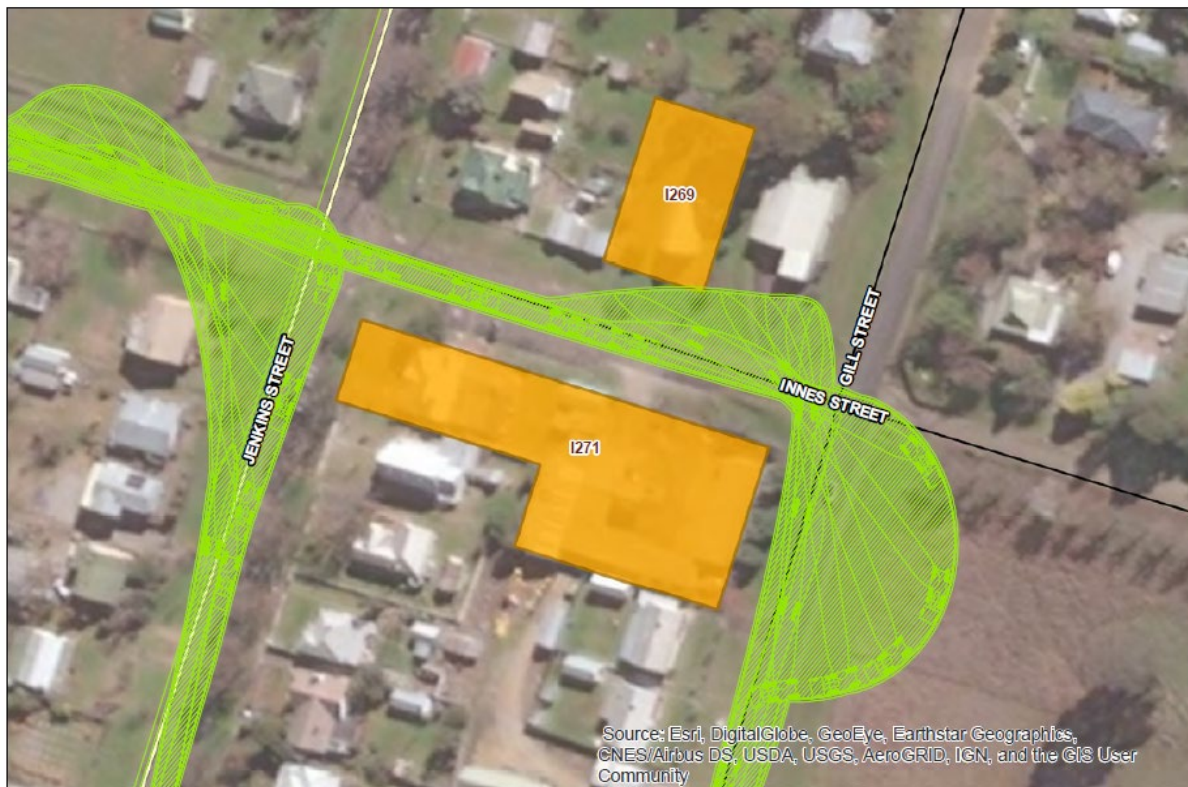


Figure 5.4 Proposed transport route and blade swing areas at Innes St and Gill St, Nundle



Photograph 5.23 View east along Innes St, St Peters on the right (ERM 2020)



Photograph 5.24 View of impacted portion of Innes St (ERM 2020)



Photograph 5.25 St Peters Catholic Church, Nundle (ERM 2020)



Photograph 5.26 View east on Innes St towards proposed roadworks site, tree to be removed marked (ERM 2020)

5.5.2.5 Nundle Shire Offices (Item No. 1271, Tamworth LEP 2010)

The Nundle Shire offices occupy the southern side of Innes St, between Jenkins Street and Gill Street. At the western most end are the council offices and public library, situated in a historic building (Photograph 5.27). This historic building also contains stone memorials to soldiers from the Nundle region lost during WWI and WWII. At the eastern end of the block is situated a council depot, consisting of work sheds and storage areas (Photograph 5.28). The structures here are more modern. The proposed road modification will not result in direct impacts to any structures on the property, although transportation of the large components will result in blade swing across the listed LEP curtilage of the item. Blade swing will not result in any physical impacts to the site.



Photograph 5.27 Nundle Shire Offices, view southeast from Innes St/Jenkins St (ERM 2020)



Photograph 5.28 Front elevation of Nundle Shire Offices (ERM 2020)

5.5.2.6 Black Snake Gold Mine, Hanging Rock (Item No. 1134, Tamworth LEP 2010)

A preliminary inspection of the LEP listed curtilage of the Black Snake Gold Mine was undertaken on 30 September 2020. The historic Black Snake Gold Mine surrounds the area of Barry Road, near Hanging Rock, known as Devil's Elbow. Devil's Elbow consists of two sharp hairpin turns, unsuitable for the transportation of the turbines to the site.

The landscape in this area is generally very steep and hilly, being situated close to the top of the range.

The proposed realignment is situated within steep terrain, although the ground on this side shows less disturbance from logging activities. The proposed road realignment generally follows the ridgeline surrounding gullies through this area. Inspection was limited to easily accessible areas, utilising existing tracks. On the south of the inspection area, the terrain is very steep, and was not inspected due to safety concerns. On the west side of the inspected ridge, there are additional tracks leading back towards Barry Road, upon which an extant mineshaft was located. No additional features were located along the proposed route, although the terrain made it difficult to complete a more thorough inspection. It is expected that further physical evidence associated with activities at Black Snake Gold Mine may be encountered in the area.



Photograph 5.29 Western approach to Devil's Elbow (ERM 2020)



Photograph 5.30 Existing track, southern side of Barry Road (ERM 2020)



Photograph 5.31 Mineshaft, southern side of Barry Road (ERM 2020)



Photograph 5.32 Detail of mineshaft (ERM 2020)



Photograph 5.33 Terrain, southern side of Barry Road. (ERM 2020)



Photograph 5.34 Terrain, northern side of Barry Road (ERM 2020)



Photograph 5.35 Devil's Elbow, view from North (ERM 2020)



Photograph 5.36 View west along Barry Road, west of Devil's Elbow (ERM 2020)

5.6 Site Inspection Summary

Physical inspection of the Project Area identified no previously unknown heritage items. The inspection also confirmed that only two known heritage sites will be directly impacted by the proposed works – Kayunga Cemetery and Black Snake Gold Mine. At Kayunga Cemetery the road hardstand extension will require minimal groundworks, although potential extension of culvert and associated piping may require limited excavation that may extend slightly into the listed LEP curtilage of the item, though not at the location of known burial sites. Pedestrian survey within the LEP listed curtilage of Black Snake Gold Mine identified one remnant mineshaft, which presents contributory evidence of the LEP listing. Identification of the mineshaft also indicates potential for further evidence or prior mining use to be found during construction of road upgrades.

6. HISTORIC HERITAGE SIGNIFICANCE SUMMARY

6.1 Listed Heritage Items

The field survey of the Project Area did not yield identification of any previously unidentified heritage places that would require assessment of significance.

There are a number of previously identified heritage sites along the proposed transport route that are listed on each LGA's respective Schedule 5 of their LEP Table 6.1 below provides an overview of the know heritage items along the transport route, and their assessed significance levels, and the heritage criteria under which the place has been assessed as significant.

A comprehensive table outlining the Statement of Significance for each of these sites is provided in *Appendix C*.

Table 6.1 Heritage Significance Summary

Site Name	LGA	Listing / ID #	Significance Criteria	Significance Level
South Maitland Railway System	Cessnock	LEP – I212	Historical	Local
Collieries of the South Maitland Coalfields/Greta Coal Measures Group (1340721) (Neath Colliery)	Cessnock	LEP – I215	Historical	Local
Great Northern Railway Network	Cessnock	LEP – I216	Historical	State
Jerrys Plains Conservation Area	Singleton	LEP – C1	Historical, Aesthetic	Local
Singleton Conservation Area	Singleton	LEP – C2	Historical, Aesthetic	Local
Merton Cemetery	Muswellbrook	LEP - I18	Historical, Social	Local
Kayuga Cemetery	Muswellbrook	LEP – I43	Historical, Social	Local
Fitzgerald/Olympic Park Gates	Muswellbrook	LEP – I124	Historical, Social	Local
Residential Heritage Conservation Area	Muswellbrook	LEP – C2	Historical, Aesthetic	Local
Muswellbrook Business Heritage Conservation Area	Muswellbrook	LEP – C3	Historical, Aesthetic	Local
Central Scone Conservation Area	Upper Hunter	LEP – C2	Historical, Aesthetic	Local
Murrurundi Conservation Area	Upper Hunter	LEP – C4 REN (Reg) - 1374	Historical, Aesthetic	Local
Black Snake Gold Mine	Tamworth	LEP - I134	Historical	Local
St Peters Catholic Church	Tamworth	LEP – I269	Historical	Local
Nundle Shire Offices	Tamworth	LEP – I271	Historical	Local

6.2 Community Identified Heritage Items

In addition to the locally listed heritage items, a series of locations and buildings in Nundle and its surrounds were identified by local historian, Geoff Cummins (member of the Nundle History and Heritage Committee). Some of these sites are already identified on the Tamworth LEP 2010 (see Appendix B), although a number have not been identified in previous listings. The list provided by Mr.

Cummins can be found in Appendix D. As none of these sites will be directly impacted by the proposed works, they have not been subject to significance assessment in this report.

Local communities, as the custodians and users of heritage places in their local area, generally ascribe social value to heritage places within their area. It is noted that all sites identified by Mr. Cummins (Appendix D) *may* retain social value for the Nundle and Hanging Rock communities; however, no social values assessment has been undertaken to inform this report. Information obtained from Mr Cummins has been used to verify the location of unlisted heritage items, and confirm that there are will be no impacts to unknown heritage items as a result of the proposed works.

It is understood that the Nundle and Hanging Rock communities greatly value their heritage, and take pride in the historic buildings and locations that represent this history. Understanding the value of such places to the local community is important in creating a holistic view of the value of heritage items.

6.2.1 Historical Archaeological Potential and Significance

There are three listed heritage sites along the transport route, at the location of proposed road upgrades, which have archaeological potential. These are identified as:

- Merton Cemetery;
- Kayuga Cemetery; and
- Black Snake Gold Mine.

Merton Cemetery and Kayuga Cemetery have archaeological potential relating to human burials and associated objects. At these locations, proposed works will involve minimal grading and installation of gravel/asphalt hardstands to allow movement of oversized vehicles. Considering the low ground impact proposed by this work, there is low probability of impact to archaeological values at these sites.

At Black Snake Gold Mine, archaeological potential is related to the former mine activities in the area. Impacts at this location will be substantial, including vegetation clearance and construction of a new roadway. Probability of impacting archaeological remains at this location is considerably higher, due to the nature of the proposed works.

7. HERITAGE IMPACT ASSESSMENT

This section provides a summary of the potential impacts for each heritage item identified, and includes a preliminary analysis of consequence. Recommendations for mitigation of impacts and management of heritage items during construction are provided in Section 8 of this report. Heritage items listed in the following tables that follow are identified at their highest level of protection. The sections below outline the metrics utilised to undertake the impact assessment.

7.1 Consequence Ratings

The following 'consequence ratings' are used to provide an assessment of level of impact to the heritage item. The consequence ratings have been devised to illustrate the level of impact, and provide a framework against which mitigation and management recommendations can be made.

Table 7.1 Consequence Ratings

Rating	Consequence or Impact to heritage item
5 - Major	Permanent detrimental impact to the heritage item would occur, beyond salvage and where replacement is not possible. The impact would cause irreversible negative impact to the overall heritage significance of the heritage item or place.
4 - Major	Permanent detrimental impact on one or more of the following would occur, but may be reduced through mitigation measures: the significance, any of the values that contribute to significance, the functionality of the item or place, and / or the item or place's availability for access.
3 - Significant	Some damage or change may occur that would require remedial action, and permanent impact would occur to one or more of the following: the significance, any of the values that contribute to significance, the functionality of the item or place, and / or the item or place's availability for access.
2 - Minor	Minor damage or change could be relatively and easily remedied or repaired, with no permanent negative impact to the heritage item's significance or heritage values contributing to significance, the functionality of the item or place, or the item or place's availability for access.
1 - Insignificant	Damage or change, if it occurred at all, would be of an extremely slight or minor nature.

7.2 Type of Impact

The following impact definitions (Table 7.2) have been utilised in the impact assessment to demonstrate the effect of the proposed works on identified heritage items. Table 7.3 below provides details of proposed project impacts at all locations where known heritage items have been identified in proximity to proposed works. Figure 7.1 provides an overview of the proposed impact areas.

Table 7.2 Types of Impact

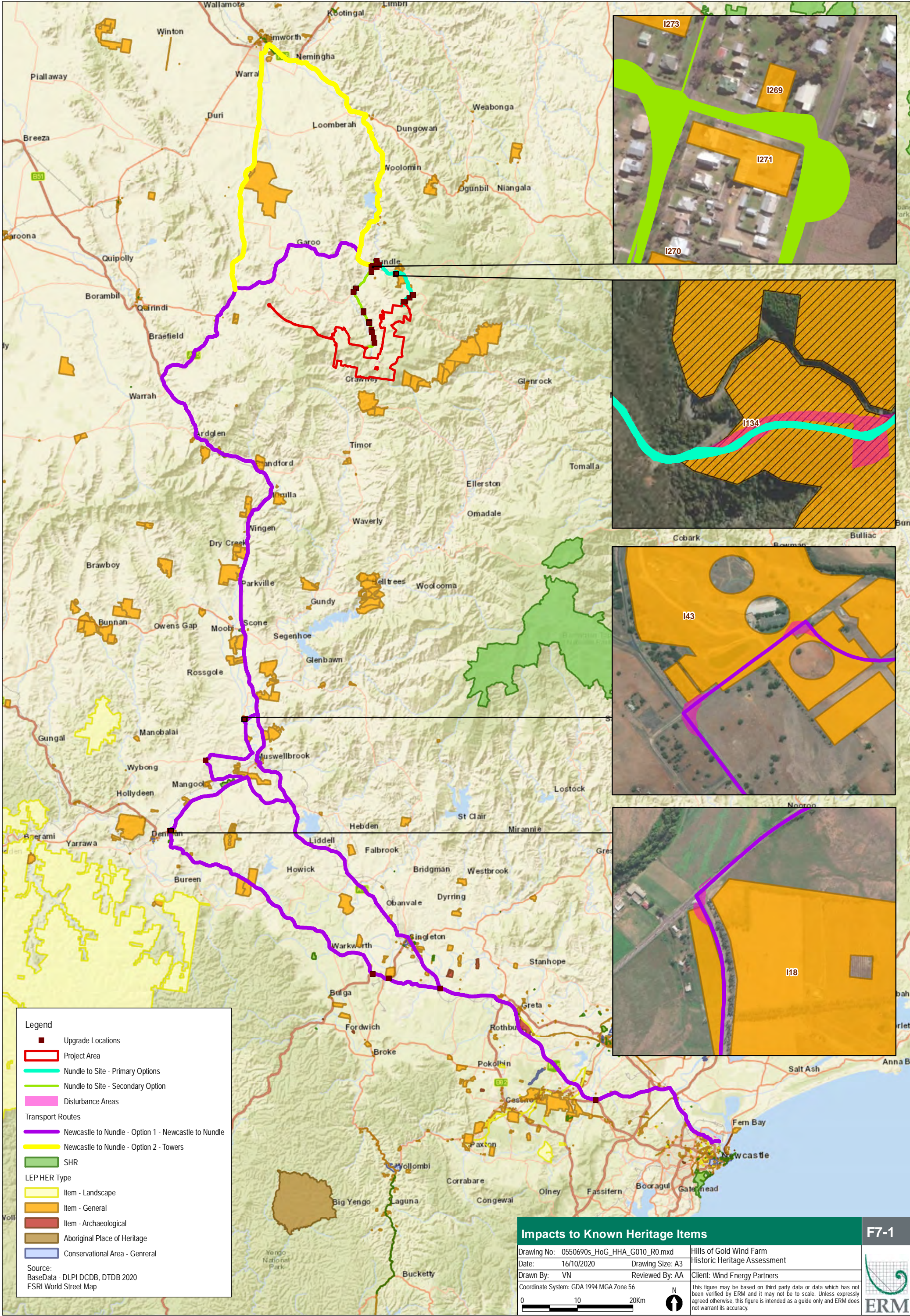
Type of Impact	Description
Direct	Direct impact is defined as physical impact on the heritage item or its listed curtilage. Direct impact may result from construction activities, proposed road upgrades, or transportation of materials.
Indirect/Potential	Indirect or temporary impact may include reduction of the listed curtilage of an item, temporary visual impact, or temporary modification of the item. Potential impact is identified where an item has been identified in proximity to works, and has been flagged for further review.
No impact	The heritage item will not be impacted by the proposed works

Table 7.3 Heritage Impact Assessment

LGA	ID #	Heritage item	Impact Type	Potential Impact	Consequence Rating	Assessment
Cessnock	I212	South Maitland Railway System	No Impact	Curtilage of heritage item intersects transport route. No road upgrades/amendments proposed.	1 - Insignificant	No impact will result from transport of components through the heritage curtilage of this item.
Cessnock	I215	Collieries of the South Maitland Coalfields/Greta Coal Measures Group (1340721) (Neath Colliery)	No Impact	Curtilage of heritage item intersects transport route. No road upgrades/amendments proposed.	1 - Insignificant	No impact will result from transport of components through the heritage curtilage of this item.
Cessnock	I216	Great Northern Railway Network	No Impact	Curtilage of heritage item intersects transport route. No road upgrades/amendments proposed.	1 - Insignificant	No impact will result from transport of components through the heritage curtilage of this item.
Singleton	C1	Jerrys Plains Conservation Area	No impact	Proposed road impacts/upgrades at the north western end of Jerrys Plains, approximately 80 m north west of the LEP Conservation Area. Some signs to be made removable and some hardstand added.	1 - Insignificant	As there are no heritage items or conservation area at the location of proposed hardstand installation, no direct impact to heritage will result from the proposed works.
Singleton	C2	Singleton Conservation Area	No Impact	Curtilage of heritage item intersects transport route. No road upgrades/amendments proposed.	1 - Insignificant	No impact will result from transport of components through this heritage conservation area.
Muswellbrook	I18	Merton Cemetery	Indirect Impact	Blade swing only over mapped LEP curtilage. Hardstand to be installed on north side of Denman Road.	1 - Insignificant	Proposed impact is located some distance from the known burial locations at Merton Cemetery. Installation of hardstand will require no significant groundworks. Blade swing only over mapped LEP curtilage. No further assessment or monitoring required.
Muswellbrook	I43	Kayuga Cemetery	Direct Impact	The existing corner will require hardstand to be added and signs made removable. No ground excavation to be understand.	3 – Minor	Proposed impact is located in proximity to the location of known burials at Kayuga Cemetery. Previous work by Dartbrook Mine has resulted in

LGA	ID #	Heritage item	Impact Type	Potential Impact	Consequence Rating	Assessment
						significant ground impacts in the area, although the full extent of this is unknown. Hardstand installation will require minimal groundworks. Site should be managed in accordance with recommendations in Section 8 of this report.
Muswellbrook	I124	Fitzgerald/Olympic Park Gates	No Impact	Curtilage of heritage item intersects transport route. No road upgrades/amendments proposed.	1 - Insignificant	No impact will result from transport of components through the heritage curtilage of this item.
Muswellbrook	C2	Residential Heritage Conservation Area	No Impact	Curtilage of heritage item intersects transport route. No road upgrades/amendments proposed.	1 - Insignificant	No impact will result from transport of components through this heritage conservation area.
Muswellbrook	C3	Business Heritage Conservation Area	No Impact	Curtilage of heritage item intersects transport route. No road upgrades/amendments proposed.	1 - Insignificant	No impact will result from transport of components through this heritage conservation area.
Upper Hunter	C2	Central Scone Conservation Area	No Impact	Curtilage of heritage item intersects transport route. No road upgrades/amendments proposed.	1 - Insignificant	No impact will result from transport of components through this heritage conservation area.
Upper Hunter	C4	Murrurundi Conservation Area	No Impact	Curtilage of heritage item intersects transport route. No road upgrades/amendments proposed.	1 - Insignificant	No impact will result from transport of components through this heritage conservation area.
Tamworth	I134	Black Snake Gold Mine	Direct Impact	As the hairpin corners at the Devil's Elbow (Barry Road) are too tight to accommodate the transport of large components, it is proposed to clear a new portion of road through the LEP listed Black Snake Mine. This will involve significant vegetation clearance, cut and fill activity, and road construction.	4 – Major	The proposal would result in major impact to the listed heritage item. Although no objects associated with the former mine have been identified along the proposed route, the proposed road will impact upon the LEP listed curtilage of the Black Snake Gold Mine. A Statement of Heritage Impact (SoHI) will be submitted as part of the Project assessment documentation

LGA	ID #	Heritage item	Impact Type	Potential Impact	Consequence Rating	Assessment
Tamworth	I269	St Peters Catholic Church	Indirect Impact	Blade swing will overlap LEP heritage curtilage at south-eastern corner of the site.	2 – Insignificant	No direct impact to the heritage item (the Church). Works will result in the removal of one tree, although this is not a historic planting associated with the establishment of the church.
Tamworth	I271	Nundle Shire Offices	Indirect Impact	Blade swing will overlap LEP heritage curtilage at north-eastern corner of the site.	1 – Insignificant	No direct impact to structures within the curtilage, temporary overhang of blades only.



8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

The key findings of this historic heritage assessment are summarised below:

- No historic heritage sites have been identified within the Project Area.
- The proposed construction equipment and traffic transportation route will result in no impacts to identified historic heritage items.
- The proposed oversized turbine equipment transport route will result in insignificant indirect impacts to one identified heritage item, being:
 - Merton Cemetery (Muswellbrook LEP Item I18).
- The proposed alternate large transport route through Nundle to the south will result in indirect impacts to two identified heritage items, being:
 - St Peters Catholic Church (Tamworth LEP I269)
 - Nundle Shire Offices (Tamworth LEP I271)
- The proposed large components transport route will result in minor direct impacts to one identified heritage items, being:
 - Kayuga Cemetery (Muswellbrook LEP Item I43).
- The proposed large components transport route will result in major direct impacts to one identified heritage item, being:
 - Black Snake Gold Mine (Tamworth LEP Item I134).
- No impacts will result from proposed upgrades in proximity to the Jerrys Plains Conservation Area (Singleton LEP Item C1);

8.2 Recommendations

Based on the results of this report, as summarised above, the following recommendations are made:

- All works should be undertaken in accordance with the Non-Aboriginal Heritage Unexpected Finds Procedure, presented in Section 8.2.1 of this report.
- Road upgrades works at Devil's Elbow (Barry Road), through the listed Black Snake Gold Mine, will require further heritage assessment in the form of a Statement of Heritage Impact (SoHI). Although no objects associated with the former mine have been identified along the proposed route, the proposed road will impact upon the LEP listed curtilage of the Black Snake Gold Mine. A Statement of Heritage Impact (SoHI) will be submitted as part of the Project assessment documentation.

8.2.1 Unexpected Finds Procedure

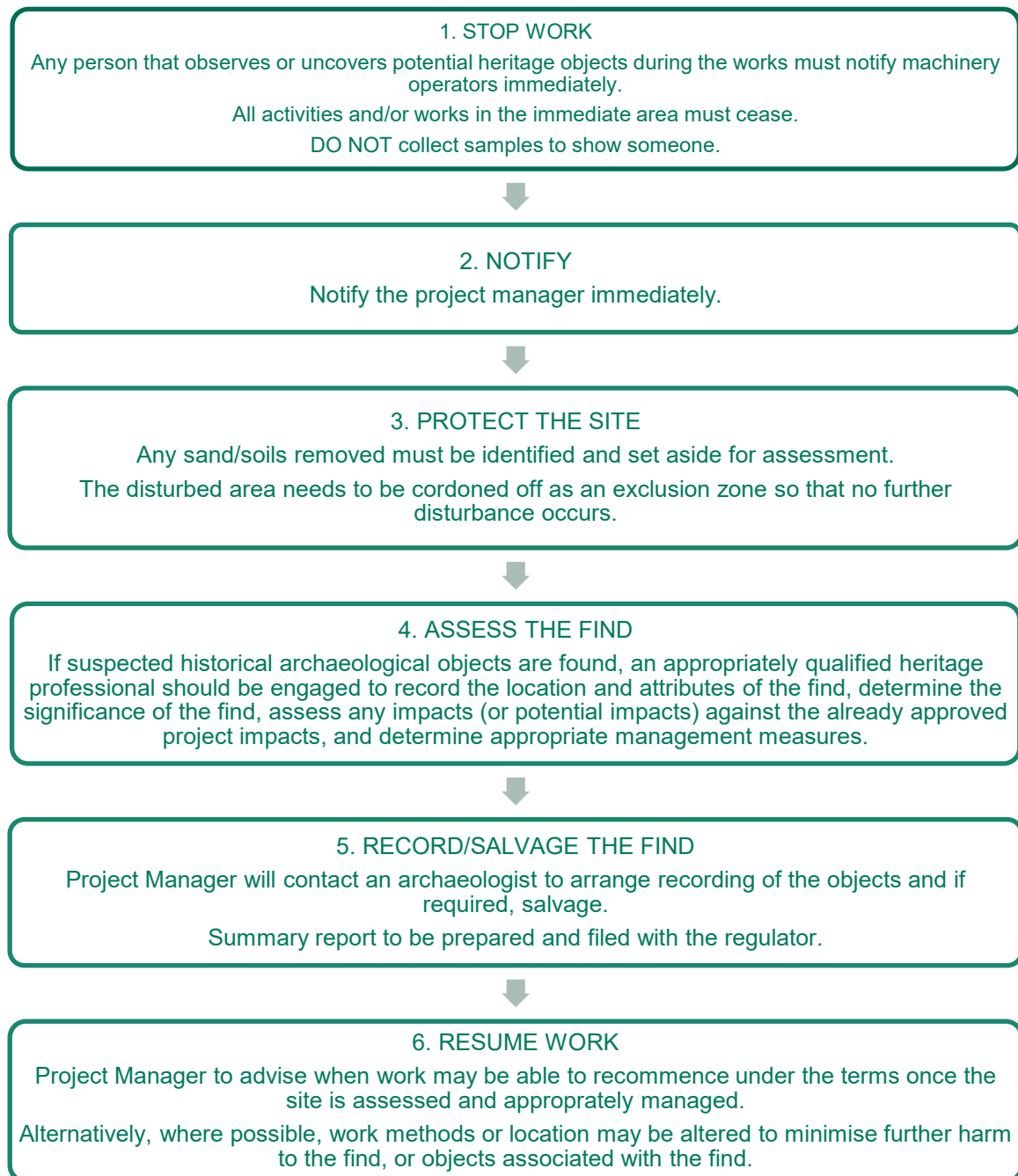
Historical artefacts or material may be unearthed unexpectedly around the proposed works. These could potentially be located on the ground surface or subsurface. In the event of the discovery of any historical artefacts or material during project activities, the steps in Figure 8.1 below should be followed.

As some of the proposed roadworks are occurring in proximity to known cemeteries, there is potential (although unlikely) that human remains may be identified. If suspected human remains are identified, the following procedure should be followed:

1. cease work in the immediate area;
2. notify site supervisor and protect the suspected remains until an initial assessment can be undertaken by a technical specialist;

3. preliminary notification to NSW Police; and
4. no works to recommence in the area until cleared by the relevant authorities.

Figure 8.1 Unexpected Finds Procedure



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APPENDIX A SEARS

Environmental Assessment Requirements

Section 4.12 (8A) of the *Environmental Planning and Assessment Act 1979* Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*

Application Number	SSD 9679
Development	<p>Hills of Gold Wind Farm which includes: The construction, operation and decommissioning of a wind farm with:</p> <ul style="list-style-type: none"> • a maximum of 97 turbines, a maximum of 410 megawatts (MW) and maximum height of 220 metres (to blade tip); and • ancillary infrastructure including access tracks, road upgrades, battery storage, underground and overhead electricity cabling, substations and grid connection to the 330 kV Liddell to Tamworth transmission line.
Location	Morrisons Gap Road, Hanging Rock
Proponent	Wind Energy Partners
Date of Issue	22 November 2018
General Requirements	<p>The Environmental Impact Statement (EIS) for the development must comply with the requirements in Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>In particular, the EIS must include:</p> <ul style="list-style-type: none"> • a stand-alone executive summary; • a full description of the development, including: <ul style="list-style-type: none"> – details of construction, operation and decommissioning, including any proposed staging of the development or refurbishing of turbines over time; – all infrastructure and facilities, such as substations, transmission lines, construction compounds, concrete batching plants, internal access roads, and road upgrades (including any infrastructure that would be required for the development, but the subject of a separate approvals process); – plans for any buildings; – site plans and maps at an adequate scale with dimensions showing: <ul style="list-style-type: none"> ○ the location and dimensions of all project components including coordinates in latitude / longitude and maximum AHD heights of the turbines; ○ existing infrastructure, land use, and environmental features in the vicinity of the development, including nearby residences and approved residential developments or subdivisions within 3 km of a proposed turbine, and any other existing, approved or proposed wind farms in the region; and ○ the development corridor that has been assessed, including any allowance for micro-siting of turbines and identification of the key environmental constraints that have been considered in the design of the development; – details of the progressive rehabilitation of the site; • a list of any approvals that must be obtained before the development may commence; • the terms of any proposed voluntary planning agreement with the relevant local council; • an assessment of the likely impacts of the development on the environment, focusing on the specific issues identified below, including: <ul style="list-style-type: none"> – a description of the existing environment likely to be affected by the development using sufficient baseline data; – an assessment of the likely impacts of all stages of the development, taking into consideration any relevant legislation, environmental planning instruments, guidelines, policies, plans and industry codes of practice and including the <i>NSW Wind Energy Guideline for State Significant Wind Energy Development</i> (2016); – a description of the measures that would be implemented to avoid, mitigate and/or offset residual impacts of the development and the likely effectiveness of these measures, including details of consultation with any affected non-associated

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	<p>landowners in relation to the development of mitigation measures, and any negotiated agreements with these landowners; and</p> <ul style="list-style-type: none"> – a description of the measures that would be implemented to monitor and report on the environmental performance of the development, including adaptive management strategies and contingency measures to address residual impacts; • a consolidated summary of all the proposed environmental management and monitoring measures, identifying all the commitments in the EIS; and • the reasons why the development should be approved having regard to: <ul style="list-style-type: none"> – relevant matters for consideration under the <i>Environmental Planning and Assessment Act 1979</i>, including the objects of the Act and how the principles of ecologically sustainable development have been incorporated in the design, construction and ongoing operations of the development; – the environmental, economic and social costs and benefits of the development, having regard to the predicted electricity demand in NSW and the National Electricity Market, the Commonwealth's Renewable Energy Target Scheme, and the greenhouse gas savings of the development; – a detailed consideration of the capability of the project to the security and reliability of the electricity system in the National Electricity Market, having regard to local system conditions and the Department's guidance on the matter; – the suitability of the site with respect to potential land use conflicts with existing and future surrounding land uses, including rural villages, rural dwellings, subdivisions, land of high scenic value, conservation areas (including National Parks / Reserves), strategic agricultural land, state forests, mineral resources, triangulation stations, tourism facilities, existing or proposed wind farms, and the capacity of the existing electricity transmission network to accommodate the development; and – feasible alternatives to the development (and its key components), including the consequences of not carrying out the development. <p>While not exhaustive, Attachment 1 contains a list of some of the environmental planning instruments, guidelines, policies, and plans that may be relevant to the environmental assessment of this development.</p> <p>In addition to the matters set out in Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i>, the development application must be accompanied by a signed report from a suitably qualified person that includes an accurate estimate of the capital investment value of the development (as defined in Clause 3 of the <i>Environmental Planning and Assessment Regulation 2000</i>).</p>
Key issues	<p>The EIS must address the following specific matters for both the wind farm and associated infrastructure:</p> <p>Landscape and Visual – the EIS must include a detailed assessment of the visual impacts of all components of the project (including turbines, transmission lines, substations, and any other ancillary infrastructure) in accordance with the <i>Wind Energy: Visual Assessment Bulletin</i> (DPE, 2016);</p> <p>Noise and Vibration – the EIS must:</p> <ul style="list-style-type: none"> • assess wind turbine noise in accordance with the NSW Wind Energy: Noise Assessment Bulletin (EPA/DPE, 2016); • assess noise generated by ancillary infrastructure in accordance with the NSW Noise Policy for Industry (EPA, 2017); • assess construction noise under the Interim Construction Noise Guideline (DECC, 2009); • assess traffic noise under the NSW Road Noise Policy (DECCW, 2011); and • assess vibration under the Assessing Vibration: A Technical Guideline (DECC, 2006);

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Biodiversity – the EIS must:

- assess biodiversity values and the likely biodiversity impacts of the development including impacts associated with transport route road upgrades in accordance with the *Biodiversity Conservation Act 2016* (NSW), including a detailed description of the proposed regime for minimising, managing and reporting on the biodiversity impacts of the development over time, and a strategy to offset any residual impacts of the development in accordance with the *Biodiversity Conservation Act 2016* (NSW);
- assess the impact of the development on the National Estate in accordance with the *Guidelines for Development Adjoining Land and Water Managed by DECCW* (OEH 2010);
- assess the impact of the project on birds and bats from blade strikes, low air pressure zones at the blade tips (barotrauma), and alteration to movement patterns resulting from the turbines and considering cumulative effects of other wind farms in the vicinity;

Traffic and Transport – the EIS must:

- assess the construction and operational traffic impacts of the development;
- provide details of traffic volumes (both light and heavy vehicles) and transport routes during construction and operation, including traffic associated with sourcing raw materials (water, sand and gravel);
- assess the potential traffic impacts of the project on road network function including intersection performance and site access arrangements and road safety, including school bus routes;
- assess the capacity of the existing road network to accommodate the type and volume of traffic generated by the project (including over-mass / over-dimensional traffic) during construction and operation;
- provide details of measures to mitigate and / or manage potential impacts including a schedule of all required road upgrades, road maintenance contributions, and any other traffic control measures, developed in consultation with the relevant road authority;

Hazard / Risks – the EIS must include an assessment of the following:

- *Aviation Safety*:
 - assess the impact of the development under the *National Airports Safeguarding Framework Guideline D: Managing Wind Turbine Risk to Aircraft*,
 - provide associated height and co-ordinates for each turbine assessed;
 - assess potential impacts on aviation safety, including cumulative effects of wind farms in the vicinity, potential wake / turbulence issues, the need for aviation hazard lighting, considering, defined air traffic routes, aircraft operating heights, approach/departure procedures, radar interference, communication systems, navigation aids;
 - identify aerodromes within 30 km of the turbines and consider the impact to nearby aerodromes and aircraft landing areas;
 - address impacts on obstacle limitation surfaces, and
 - assess the impact of the turbines on the safe and efficient aerial application of agricultural fertilisers and pesticides in the vicinity of the turbines and transmission line;
- *Telecommunications* – identify possible effects on telecommunications systems, assess impacts and mitigation measures including undertaking a detailed assessment to examine the potential impacts as well as analysis and agreement on the implementation of suitable options to avoid potential disruptions to radio communication services; which may include the installation and maintenance of alternative sites;
- *Health* – consider and document any health issues having regard to the latest advice of the National Health and Medical Research Council, and identify potential hazards and risks associated with electric and magnetic fields (EMF) and demonstrate the application of the principles of prudent avoidance;
- *Bushfire* – identify potential hazards and risks associated with bushfires / use of bushfire prone land, including the risks that a wind farm would cause bush fire and any potential impacts on the aerial fighting of bush fires and demonstrate compliance with *Planning for Bush Fire Protection 2006* (if located on bushfire prone land);

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	<ul style="list-style-type: none"> • <i>Blade Throw</i> – assess blade throw risks; and • <i>Battery Storage</i> – including a preliminary risk screening in accordance with <i>State Environmental Planning Policy No. 33 – Hazardous and Offensive Development and Applying SEPP 33</i> (DoP, 2011), and if the preliminary risk screening indicates the development is “potentially hazardous”, a Preliminary Hazard Analysis (PHA) must be prepared in accordance with <i>Hazard Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis</i> (DoP, 2011) and <i>Multi-Level Risk Assessment</i> (DoP, 2011). <p>Heritage – the EIS must:</p> <ul style="list-style-type: none"> • assess the impact to Aboriginal cultural heritage impact under the <i>Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW</i> (OEH, 2011) and the <i>Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW</i> (DECCW, 2010); • provide evidence of consultation with Aboriginal communities in determining and assessing impacts, developing options and selecting options and mitigation measures (including the final proposed measures), having regard to the <i>Aboriginal Cultural Heritage Consultation Requirements for Proponents</i> (DECCW, 2010); and • assess the impact to historic heritage items under the <i>NSW Heritage Manual</i>. <p>Water & Soils – the EIS must:</p> <ul style="list-style-type: none"> • quantify water demand, identify water sources (surface and groundwater), including any licensing requirements, and determine whether an adequate and secure water supply is available for the development; • access potential impacts on the quantity and quality of surface and groundwater resources, including impacts on other water users and watercourses; • where the project involves works within 40 metres of the high bank of any river, lake or wetlands (collectively waterfront land), identify likely impacts to the waterfront land, and how the activities are to be designed and implemented in accordance with the <i>DPI Water Guidelines for Controlled Activities</i> (DPI, 2012) and (if necessary) <i>Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings</i> (DPI, 2003); and • describe the measures to minimise surface and groundwater impacts, including how works on steep gradient land or erodible soil types would be managed and any contingency requirements to address residual impacts. <p>Waste – the EIS must:</p> <ul style="list-style-type: none"> • identify, quantify and classify the likely waste streams to be generated during construction and operation, and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. <p>Social & Economic – the EIS must include an assessment of the social and economic impacts and benefits of the project for the region and the State as a whole, including consideration of any increase in demand for community infrastructure services and impacts to tourism.</p>
Consultation	<p>During the preparation of the EIS, you must consult with relevant local, State and Commonwealth Government authorities, service providers, community groups and affected landowners.</p> <p>However, you must:</p> <ul style="list-style-type: none"> • establish a Community Consultative Committee for the project in accordance with the <i>Community Consultative Committee Guidelines for State Significant Projects</i>, and consult with the committee during the preparation of the EIS; and • Carry out detailed consultation with the following: <ul style="list-style-type: none"> – Tamworth Regional Council; – Upper Hunter Shire Council; – Liverpool Plains Shire Council

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	<ul style="list-style-type: none"> – Office of Environment and Heritage; – National Parks and Wildlife Service; – Environment Protection Authority; – Division of Resources and Geoscience; – Department of Industry – Roads and Maritime Services; – Department of Finance, Services and Innovation – Telco Authority; – Local Land Services; – Forestry Corporation; – NSW Rural Fire Service; – Department of Defence; – Civil Aviation Safety Authority; and – Airservices Australia. <p>The EIS must include a description of what consultation was carried out during the preparation of the EIS, identify the issues raised during this consultation, and explain how these issues have been addressed in the EIS.</p>
Further consultation after 2 years	If you do not lodge a development application and EIS for the development within 2 years of the issue date of these SEARs, you must consult further with the Secretary in relation to the preparation of the EIS.

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Environmental Planning Instruments, Policies, Guidelines & Plans	
Consultation	
	Community Consultative Committee Guidelines for State Significant Projects (DPE)
Landscape and Visual	
	NSW Wind Energy: Visual Assessment Bulletin (DPE)
Noise and Vibration	
	NSW Wind Energy: Noise Assessment Bulletin (EPA/DPE)
	NSW Noise Policy for Industry (EPA)
	Interim Construction Noise Guidelines (EPA)
	NSW Road Noise Policy (EPA)
	Assessing Vibration: A Technical Guideline (EPA)
	Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration (ANZEC)
Biodiversity	
	Biodiversity Assessment Method 2017 (OEH)
	Threatened Species Assessment Guidelines – Assessment of Significance (OEH)
	Guidelines for Developments Adjoining Land and Water Managed by DECCW (OEH)
	Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (DPI)
	Policy and Guidelines for Fish Habitat Conservation and Management (DPI)
	NSW State Groundwater Dependent Ecosystem Policy (DPI Water)
	Risk Assessment Guidelines for Groundwater Dependent Ecosystems (DPI Water)
Transport	
	Guide to Traffic Generating Developments (RMS)
	Road Design Guide (RMS) & relevant Austroads Standards
	Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development
Hazard/Risks	
	National Airports Safeguarding Framework Guideline D: Managing Wind Turbine Risk to Aircraft (NASAG)
	Aviation Assessments for Wind Farm Developments (Airservices Australia)
	Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields (ICNIRP)
	Planning for Bushfire Protection (NSW RFS)
	Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis (DPE)
	Multi-Level Risk Assessment (DPE)
	Work Health and Safety (WHS) Act 2011
Heritage	
	Aboriginal Cultural Heritage Consultation Requirements for Proponents (OEH)
	Code of Practice for Archaeological Investigations of Objects in NSW (OEH)
	Guide to investigating, assessing and reporting on aboriginal cultural heritage in NSW (OEH)
	NSW Heritage Manual (OEH)
Soils	
	Soil and Landscape Issues in Environmental Impact Assessment (OEH)
	Landslide Risk Management Guidelines (AGS)

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	Site Investigations for Urban Salinity (OEH)
Water	
	Managing Urban Stormwater: Soils & Construction (Landcom)
	Guidelines for Controlled Activities on Waterfront Land (DPI Water)
	Water Sharing Plans (DPI Water)
	Guidelines for Watercourse Crossings on Waterfront Land (DPI Water)
Waste	
	Waste Classification Guidelines (EPA)
Electromagnetic Interference	
	ICNIRP Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields

Commonwealth Department of Agriculture, Water and the Environment assessment requirements

Guidelines for preparing assessment documentation relevant to the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for proposals being assessed under an Accredited NSW Assessment Process

Hills of Gold Wind Farm (EPBC 2019/8535) (SSD 9679)

Introduction

1. On 23 December 2019, a delegate of the Federal Minister for the Department of Agriculture, Water and the Environment (formerly Department of Environment and Energy) determined that the Hills of Gold Wind Farm Project was a controlled action under section 75 of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The EPBC Act controlling provisions for the proposed action are:
 - i. listed threatened species and communities (sections 18 and 18A)
 - ii. listed migratory species (sections 20 and 20A)
2. The proposed action will be assessed in accordance with the *NSW Bilateral Agreement relating to environmental assessment 2015* and as such, is required to be assessed in the manner specified in Schedule 1 to that Agreement including, addressing the matters outlined in Schedule 4 of the *Environment Protection and Biodiversity Conservation Regulations 2000* (EPBC Regulations).
3. The proponent must undertake an assessment of all protected matters that may be impacted by the development under the controlling provision identified in paragraph 1. The Commonwealth Department of Agriculture, Water and the Environment considers that the proposed action is likely to have a significant impact on threatened species and communities and migratory species listed in **Appendix A**.
4. The proponent must consider each of the protected matters under the triggered controlling provisions that may be impacted by the action. Note that this may not be a complete list and it is the responsibility of the proponent to undertake an analysis of the significance of the relevant impacts and ensure that all protected matters that are likely to be significantly impacted are assessed for the Commonwealth Minister's consideration.

General Requirements

Relevant Regulations

5. The Environmental Impact Statement (EIS) must address all matters outlined in Schedule 4 of the EPBC Regulations and all the matters outlined below in relation to the controlling provisions.

Project Description

6. The title of the action, background to the action of the action and current status.
7. The precise location and description of all works to be undertaken (including associated offsite works and infrastructure), structures to be built or elements of the action that may have impacts on Matters of National Environmental Significance (MNES).
8. How the action relates to any other actions that have been, or are being taken in the region affected by the action.

9. How the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts on MNES.

Impacts

10. The EIS must include an assessment of the relevant impacts of the action on the matters protected by the controlling provisions, including:
 - i. a description and detailed assessment of the nature and extent of the likely direct, indirect and consequential impacts, including short term and long term relevant impacts;
 - ii. a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;
 - iii. analysis of the significance of the relevant impacts; and
 - iv. any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

Avoidance, mitigation and offsetting

11. For each of the relevant matters protected that are likely to be significantly impacted by the action, the EIS must provide information on proposed avoidance and mitigation measures to manage the relevant impacts of the action including:
 - i. a description, and an assessment of the expected or predicted effectiveness of the mitigation measures,
 - ii. any statutory policy basis for the mitigation measures;
 - iii. the cost of the mitigation measures;
 - iv. an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing;
 - v. the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.
12. Where a significant residual adverse impact to a relevant protected matter is considered likely, the EIS must provide information on the proposed offset strategy, including discussion of the conservation benefit associated with the proposed offset strategy.
13. For each of the relevant matters likely to be impacted by the action the EIS must provide reference to, and consideration of, relevant Commonwealth guidelines and policy statements including any:
 - i. conservation advice or recovery plan for the species or community,
 - ii. relevant threat abatement plan for a process that threatens the species or community
 - iii. wildlife conservation plan for the species
 - iv. any strategic assessment.

[Note: the relevant guidelines and policy statements for each species and community are available from the Department of Agriculture, Water and the Environment Species Profile and Threats Database.

<http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

Key Issues

Biodiversity (threatened species and communities and migratory species)

Assessment Requirements

14. The EIS must identify each EPBC Act listed threatened species and community and migratory species likely to be impacted by the action. For any species and communities that are likely to be impacted, the proponent must provide a description of the nature, quantum and consequences of the impacts. For species and communities potentially located in the project area or in the vicinity that are not likely to be impacted, provide evidence why they are not likely to be impacted.
15. For each of the EPBC Act listed threatened species and communities and migratory species likely to be impacted by the action the EIS must provide a separate:
 - a. description of the habitat (including identification and mapping of suitable breeding habitat, suitable foraging habitat, important populations and habitat critical for survival), with consideration of, and reference to, any relevant Commonwealth guidelines and policy statements including listing advice, conservation advice and recovery plans;
 - b. details of the scope, timing and methodology for studies or surveys used and how they are consistent with (or justification for divergence from) published Australian Government guidelines and policy statements;
 - c. description of the relevant impacts of the action having regard to the full national extent of the species or community's range; and
 - d. description of the specific proposed avoidance and mitigation measures to deal with relevant impacts of the action;
 - e. identification of significant residual adverse impacts likely to occur after the proposed activities to avoid and mitigate all impacts are taken into account;
 - f. description of any offsets proposed to address residual adverse significant impacts and how these offsets will be established.
 - g. details of how the current published NSW Biodiversity Assessment Methodology has been applied in accordance with the objects of the EPBC Act to offset significant residual adverse impacts; and
 - h. details of the offset package to compensate for significant residual impacts including details of the credit profiles required to offset the action in accordance with the NSW Biodiversity Assessment Methodology and/or mapping and descriptions of the extent and condition of the relevant habitat and/or threatened communities occurring on proposed offset sites;

[Note: For the purposes of approval under the EPBC Act, it is a requirement that offsets directly contribute to the ongoing viability of the specific protected matter impacted by a proposed action and deliver an overall conservation outcome that improves or maintains the viability of the MNES i.e. 'like for like'. Like-for-like includes protection of native vegetation that is the same ecological community or habitat being impacted (preferably in the same region where the impact occurs), or funding to provide a direct benefit to the matter being impacted e.g. threat abatement, breeding and propagation programs or other relevant conservation measures.
16. Any significant residual impacts not addressed by the NSW Biodiversity Assessment Methodology may need to be addressed in accordance with the Environment Protection and Biodiversity Conservation Act 1999 Environmental Offset Policy.

Other approvals and conditions

17. Information in relation to any other approvals or conditions required must include the information prescribed in Schedule 4 Clause 5 (a) (b) (c) and (d) of the EPBC Regulations 2000.

Environmental Record of person proposing to take the action

18. Information in relation to the environmental record of a person proposing to take action must include details as prescribed in Schedule 4 Clause 6 of the EPBC Regulations 2000.

Information Sources

19. For information given in the EIS, the EIS must state the source of the information, how recent the information is, how the reliability of the information was tested; and what uncertainties (if any) are in the information.

REFERENCES

- *Environment Protection and Biodiversity Conservation Act 1999* - section 51-55, section 96A(3)(a)(b), 101A(3)(a)(b), section 136, section 527E
- *Environment Protection and Biodiversity Conservation Regulations 2000 Schedule 4*
- NSW Assessment Bilateral Agreement (2015) - Item 18.1, Item 18.5, Schedule 1
- *Matters of National Environmental Significance - Significant impact guidelines 1.1* (2013) EPBC Act
- *Environment Protect and Biodiversity Conservation Act 1999 Environmental Offsets Policy* October 2012

Appendix A

Proposed site

Based on the information in the referral documentation, the location of the action, species records and likely habitat present in the area, there are likely to be significant impacts to:

- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community listed as **critically endangered**.
- Regent Honeyeater (*Anthochaera phrygia*) listed as **critically endangered**.
- Swift Parrot (*Lathamus discolor*) listed as **critically endangered**.
- Booroolong Frog (*Litoria booroolongensis*) listed as **endangered**.
- Fork-tailed Swift (*Apus pacificus*) which is listed as **migratory**.

In addition, there is some risk that there may be significant impacts on the following matters and levels of impact should be further investigated.

- Small Snake Orchid (*Diuris pedunculata*) listed as **endangered**.
- Blackbutt Candlebark (*Eucalyptus rubida* subsp. *barbigerorum*) listed as **vulnerable**.
- Fragrant Pepperbush (*Tasmannia glaucifolia*) listed as **vulnerable**.
- Austral Toadflax (*Thesium australe*) listed as **vulnerable**.
- Spotted-tailed Quoll (*Dasyurus maculatus maculatus*) (SE mainland population) listed as **endangered**.
- Koala (*Phascolarctos cinereus*) (combined populations of Qld, NSW and the ACT) listed as **vulnerable**.
- White-throated Needletail (*Hirundapus caudacutus*) listed as **vulnerable**.
- *Euphrasia arguta* listed as **critically endangered**.

Transport route

Further information is required during the assessment stage to determine the extent of potential impacts to the following protected matters from impacts associated with transporting project components to the proposed site:

- New England Peppermint (*Eucalyptus nova-anglica*) Grassy Woodlands ecological community listed as **critically endangered**.
- Lowland Rainforest of Subtropical Australia ecological community listed as **critically endangered**.
- White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland ecological community listed as **critically endangered**.
- Regent Honeyeater (*Anthochaera phrygia*) listed as **critically endangered**.
- *Euphrasia arguta* listed as **critically endangered**.
- Small Snake Orchid (*Diuris pedunculata*) listed as **endangered**.
- *Zieria lasiocaulis* listed as **endangered**.
- *Diuris eborensis* listed as **endangered**.
- White-flowered Wax Plant (*Cynanchum elegans*) – **endangered**.

- Milky Silkpod (*Parsonsia dorrigoensis*) – **endangered**.
- *Grevillea guthrieana* listed as **endangered**.
- Craven Grey Box (*Eucalyptus largeana*) listed as **endangered**.
- *Solanum sulphureum* listed as **endangered**.
- Blackbutt Candlebark (*Eucalyptus rubida* subsp. *barbigerorum*) listed as **vulnerable**.
- Koala (*Phascolarctos cinereus*) (combined populations of Old, NSW and the ACT) listed as **vulnerable**.
- Earp's Gum (*Eucalyptus parramattensis* subsp. *decadens*) listed as **vulnerable**.
- Austral Toadflax (*Thesium australe*) listed as **vulnerable**.
- Greater Glider (*Petauroides volans*) listed as **vulnerable**.
- Leafless Tongue-orchid (*Cryptostylis hunteriana*) listed as **vulnerable**.
- Fragrant Pepperbush (*Tasmannia glaucifolia*) listed as **vulnerable**.
- Narrow-leaved Peppermint (*Eucalyptus nicholii*) listed as **vulnerable**.
- Long-nosed Potoroo (SE Mainland) (*Potorous tridactylus tridactylus*) listed as **vulnerable**.
- Tall Velvet Sea-berry (*Haloragis exalata* subsp. *velutina*) listed as **vulnerable**.
- *Hakea archaeoides* listed as **vulnerable**.

Note: uncertainty around the extent and number of protected matters that may be impacted will need to be resolved through the assessment process once final alignment and construction plans have been completed.

Note: this may not be a complete list and it is the responsibility of the proponent to ensure any protected matters under these controlling provisions are assessed for the Commonwealth decision-maker's consideration.

To Whom It May Concern

Airservices Aviation Assessments for Wind Farm Developments

Guidelines to manage the risk to aviation safety from wind turbine installations (Wind Farms/Wind Monitoring Towers) have been developed by the National Airports Safeguarding Advisory Group (NASAG). NASAG is comprised of high-level Commonwealth, State and Territory transport and planning officials and has been formed to develop a national land use planning regime to apply near airports and under flight paths.

The wind farm guidelines provide information to proponents and planning authorities to help identify any potential safety risks posed by wind turbine and wind monitoring installations from an aviation perspective.

Potential safety risks include (but are not limited to) impacts on flight procedures and aviation communications, navigation and surveillance (CNS) facilities which require assessment by Airservices.

To facilitate these assessments all wind farm proposals submitted to Airservices must include an Aviation Impact Statement (AIS) prepared by an aeronautical consultant in accordance with the AIS criteria set out below.

AIS must be undertaken by an aeronautical consultant with suitable knowledge and capabilities to provide a reliable and comprehensive report. All data is to be supplied in electronic form. If you are not familiar with any aeronautical consultants, you may wish to view the member directory on the Australian Airports Association (AAA) website:

<https://www.airports.asn.au/public/member-directory>

AIS Criteria

The AIS must provide a detailed analysis covering, as a minimum:

Airspace Procedures:

1. Obstacles
 - Co-ordinates in WGS 84 (to 0.1 second of arc or better)
 - Elevations AMSL (to 0.3 metres)
2. Drawings
 - Overlayed on topographical base not less than 1:250,000. Details of datum and level of charting accuracy to be noted.
 - Electronic format compatible with Microstation version 8i.

3. Aerodromes
 - Specify all registered/certified aerodromes that are located within 30nm (55.56km) from any obstacle referred to in (1) above.
 - Nominate all instrument approach and landing procedures at these aerodromes.
 - Confirmation that the obstacles do not penetrate Annex 14 or OLS for any aerodrome. If an obstacle does penetrate, specify the extent.
4. Air Routes
 - Nominate air routes published in ERC-L & ERC-H which are located near/over any obstacle referred to in (1) above.
 - Specify two waypoint names located on the routes which are located before and after the obstacles.
5. Airspace
 - Airspace classification – A, B, C, D, E, G etc where the obstacles are located.

Navigation/Radar:

1. Detect the presence of dead zones
2. False target analysis
3. Target positional accuracy
4. Probability of detection
5. Radar coverage implications
6. We would expect the analysis to follow the guidelines outlined in the latest version of the EUROCONTROL Guidelines on How to Assess the Potential Impact of Wind Turbines on Surveillance Sensors:

<https://www.eurocontrol.int/tags/guidelines>

NOTE: Within the Eurocontrol Guidelines there are specific assumptions about the type of wind turbine for which the Guidelines are applicable (i.e. 3 blades, 30-200 m height, and horizontal rotation axis). For any deviations to the wind turbine characteristics listed within the Eurocontrol Guidelines, the proponent should justify to Airservices why these Guidelines are still applicable.

Airservices Review of AIS

Airservices will review the quality and completeness of an AIS and will undertake limited modelling and analysis to confirm the findings and recommendations of the report.

Provided the AIS is of sound quality and is complete in accordance with the above criteria, there is currently no charge for the review or limited modelling and analysis.

If the AIS is not of sound quality or is not complete in accordance with the above criteria, no modelling or analysis will be undertaken. Airservices will advise the proponent that the AIS does not meet the requirements and that the proposal cannot be assessed by Airservices.

If Airservices review of an AIS confirms impacts identified in the report (or identifies additional impacts), Airservices will advise the proponent of the impacts and the required mitigating actions (where mitigation is feasible). The proponent will also be advised that there will be charges for any mitigation actions to be undertaken by Airservices.

These charges may be advised at the time but it is likely that a detailed quote will be needed and this will only be provided on request from the proponent.

Please contact the Airport Developments Team on 03 9339 2182 or airport.developments@airservicesaustralia.com if you have any questions.

Current as at January 2017

OUT18/16430

Mr Anthony Ko
Senior Environmental Assessment Officer
Resource & Energy Assessments
NSW Department of Planning and Environment

Anthony.ko@planning.nsw.gov.au

Dear Mr Ko

**Hills of Gold Wind Farm (SSD 9679)
Comment on the Secretary's Environmental Assessment Requirements (SEARs)**

I refer to your email of 23 October 2018 to the Department of Industry (DoI) in respect to the above matter. Comment has been sought from relevant branches of Lands & Water and Department of Primary Industries (DPI), and the following requirements for the proposal are provided:

DoI – Water and Natural Resources Access Regulator (NRAR)

- The identification of an adequate and secure water supply for the life of the project. This includes confirmation that water can be sourced from an appropriately authorised and reliable supply. This is also to include an assessment of the current market depth where water entitlement is required to be purchased.
- A detailed and consolidated site water balance.
- Assessment of impacts on surface and ground water sources (both quality and quantity), related infrastructure, adjacent licensed water users, basic landholder rights, watercourses, riparian land, and groundwater dependent ecosystems, and measures proposed to reduce and mitigate these impacts.
- Proposed surface and groundwater monitoring activities and methodologies.
- Consideration of relevant legislation, policies and guidelines, including the NSW Aquifer Interference Policy (2012), the Guidelines for Controlled Activities on Waterfront Land (2018) and the relevant Water Sharing Plans (available at <https://www.industry.nsw.gov.au/water>).

DPI – Fisheries

- Assess the impact of the design, construction and operation of waterway crossings on access roads across the site in accordance with *NSW Fisheries (2013) Fisheries Policy and Guidelines Fish Habitat Conservation and Management (2013 update)* and *Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings*.

DPI Agriculture

- Develop Rehabilitation and Decommissioning/Closure Management Plans that outlines the rehabilitation objectives and strategies. This includes, but is not limited to, describing the design criteria of the final landuse and landform, indicators to be used to guide the return of the land back to agricultural production, along with the expected timeline for the rehabilitation program

- Outline monitoring and mitigation measures to be adopted for rehabilitation remedial actions.
- Any land with a cropping history or land with a capability for cropping cables/pipes to be buried at a depth >500mm to allow greater opportunity for agricultural activities to continue over the top, particularly for non-decommissioning cables/pipes once restoration is complete.
- Trenching through sodic soils during construction must include soil amendment with Gypsum at a minimum rate of 10t/ha. Actual rates to be determined following soil testing (Clay content, ECEC and EC)

Dol – Lands

- All Crown land within and affected by the project area, including Crown roads and waterways, should be identified and intended uses outlined.
- Works must not be undertaken on crown lands without the appropriate leases, licences or permits, or purchase of the affected crown land.
- Consultation with Department of Industry – Lands should be undertaken in relation to proposed works that may affect crown land, including identifications of alternatives if crown lands permits cannot be obtained.
- The EIS should address the requirements of the *Crown Lands Management Act 2016*.

Any further referrals to Department of Industry can be sent by email to landuse.enquiries@dpi.nsw.gov.au.

Yours sincerely



Alison Collaros
A/Manager, Assessment Advice
Lands and Water - Strategy and Policy
09 November 2018



Our reference: : SF18/83508; DOC18/848532
Contact: : Rebecca Scrivener – 02 6773 7000 – armidale@epa.nsw.gov.au
Date : 6 November 2018

Resource and Energy Assessments
Planning Services
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Email: anthony.ko@planning.nsw.gov.au

BY EMAIL

Attention: Mr Anthony Ko

Dear Mr Ko,

RE: ENVIRONMENTAL ASSESSMENT REQUIREMENTS FOR 'HILLS OF GOLD' WINDFARM (SSD 9679)

I refer to your request for the Environment Protection Authority's (EPA) requirements for the Environmental Assessment (EA) regarding the above proposal, received by EPA on 23 October 2018.

The EPA has considered the details of the proposal as provided by the Department of Planning and Environment (DPE) and has identified the information it requires to issue its general terms of approval in **Attachment A**. In summary, the EPA's key information requirements for the proposal include an adequate assessment of:

- 1. Noise** - Proximity to sensitive receptors and impacts of any sources associated with the project.
- 2. Air** - Dust generation and management of potential impacts on adjacent rural residences during the construction and operational phases of the project.
- 3. Water** - Water management systems and the implementation of adequate erosion and sediment controls to control runoff from the Windfarm.

In carrying out the assessment, the proponent should refer to the relevant guidelines as identified in **Attachment A** and any relevant industry codes of practice and best practice management guidelines.

Based on the information provided to the EPA, the proponent will require an Environment Protection Licence to construct and operate the proposed windfarm if approval is granted. The proponent will need to make a separate application to the EPA at the completion of the assessment process. General information on licence requirements can be obtained from the EPA's Environment Line by calling 131 555 or on the EPA's website at www.epa.nsw.gov.au/licensing/licencePOEO.htm.

To assist the EPA in assessing the EA it is requested that the EA document follow the format of DPE's EIS guidelines and addresses the EPA's specific requirements outlined in the following attachments.

If the necessary information is not adequately addressed in the EA then delays in the development assessment process may occur.

The Proponent should be made aware that any commitments made in the Environmental Assessment (EA) may be formalised as approval conditions and may also be placed as formal licence conditions.

The Proponent should be made aware that, consistent with provisions under Part 9.4 of the *Protection of the Environment Operations Act 1997* ("the Act") the EPA may require the provision of a financial assurance and/or assurances. The amount and form of the assurance(s) would be determined by the EPA and required as a condition of an Environment Protection Licence ("EPL").

In addition, as a requirement of an EPL, the EPA will require the Proponent to prepare, test and implement a Pollution Incident Response Management Plan and/or Plans in accordance with Section 153A of the Act.

Please note that this response does not cover biodiversity or Aboriginal cultural heritage issues, which are the responsibility of the Office of Environment and Heritage.

The EPA requests that the proponent provide one (1) electronic copy of the EA when lodging it application with the EPA. These documents should be sent to the EPA's Armidale office by email to:

armidale@epa.nsw.gov.au.

If you have any queries regarding this matter, please contact me on (02) 6773 7000 or by email to

armidale@epa.nsw.gov.au.

Yours Sincerely



REBECCA SCRIVENER
Acting Head Regional Operations Unit - Armidale
Environment Protection Authority

ATTACHMENT A: Environmental Assessment Requirements – EAR (SSD 9679) – ‘Hills of Gold’ Windfarm.

1. Environmental impacts of the project

- 1.1. The EA must address the requirements of Section 45 of the Protection of the Environment Operations Act 1997 (POEO Act) by determining the extent of each impact and providing sufficient information to enable the EPA to determine appropriate conditions, limits and monitoring requirements for an Environment Protection Licence (EPL).
- 1.2. Impacts related to the following environmental issues need to be assessed, quantified and reported on:
 - **Air Issues:** air quality including dust generation from the operation on the surrounding landscape and/or community;
 - **Noise and vibration impacts** associated with blasting, and operational noise particularly machinery, turbines and plant movements;
 - **Waste** including hazardous materials and radiation. Consideration needs to be given to disposal options for general waste, sanitary waste as well as hazardous materials and radiation, where relevant.
 - **Water and Soils** including site water balance and sediment and erosion controls during construction and operation phases.

The Environmental Assessment (EA) should address the specific requirements outlined under each heading below and assess impacts in accordance with the relevant guidelines mentioned.

2. Licensing requirements

- 2.1. The development is a scheduled activity under the *Protection of the Environment Operations Act 1997* (POEO Act) and will therefore require an Environment Protection Licence (EPL) if approval is granted.
- 2.2. Should project approval be granted, the proponent will need to make an application to the EPA for its EPL for the proposed facility prior to undertaking any on site works. Additional information is available through the *EPA Guide to Licensing* document available from our website at: www.epa.nsw.gov.au/licensing/licenceguide.htm.

SPECIFIC ISSUES

3 Air issues

- 3.1. The EA must demonstrate the proposal's ability to comply with the relevant regulatory framework, specifically the *Protection of the Environment Operations (POEO) Act (1997)* and the *POEO (Clean Air) Regulation (2002)*. Particular consideration should be given to section 129 of the POEO Act concerning control of “offensive odour”.
- 3.2. The EA must include an air quality impact assessment (AQIA).
- 3.3. The AQIA must be carried out in accordance with the document, *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW* (2005) <http://www.epa.nsw.gov.au/resources/air/ammodelling05361.pdf>.

- 3.4. The EA must detail emission control techniques/practices that will be employed at the site and identify how the proposed control techniques/practices will meet the requirements of the POEO Act, *POEO (Clean Air) Regulation* and associated air quality limits or guideline criteria.

4. Noise and Vibration

The EA must assess the following noise and vibration aspects of the proposed development

- 4.1. Construction noise associated with the proposed development should be assessed using the *Interim Construction Noise Guideline* (DECC, 2009). These are available at: <https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/interim-construction-noise-guideline>
- 4.2. Vibration from all activities (including construction and operation) to be undertaken on the premises should be assessed using the guidelines contained in the *Assessing Vibration: a technical guideline* (DEC, 2006). These are available at: <https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/assessing-vibration>
- 4.3. If blasting is required for any reasons during the construction or operational stage of the proposed development, blast impacts should be demonstrated to be capable of complying with the guidelines contained in *Australian and New Zealand Environment Council – Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration* (ANZEC, 1990). These are available at: <https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/interim-construction-noise-guideline>

Industry

- 4.4. Operational noise from all industrial activities (including private haul roads) to be undertaken on the premises should be assessed using the guidelines contained in the *NSW Noise Policy for Industry* (EPA, 2017). [https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/noise-policy-for-industry-\(2017\)](https://www.epa.nsw.gov.au/your-environment/noise/industrial-noise/noise-policy-for-industry-(2017))

Wind Farms

- 4.5. Operational noise activities from Wind Farms should be assessed against the South Australian EPA's *Wind Farm- Environmental Noise Guidelines* (2009) and the DPE's *Wind Energy: Noise Assessment Bulletin* (2016), available at: www.planning.nsw.gov.au/~media/Files/DPE/Bulletins-and-Community-Updates/wind-energy-noise-assessment-bulletin-2016-12.ashx

Roads

- 4.6. Noise on public roads from increased road traffic generated by land use developments should be assessed using the guidelines contained in the *NSW Road Noise Policy* and associated application notes (EPA, 2011). <https://www.epa.nsw.gov.au/your-environment/noise/transport-noise>

5 Waste, chemicals and hazardous materials and radiation

- 5.1. The EA must assess all aspects of waste generation, management and disposal associated with the proposed development.
- 5.2. The EA must demonstrate compliance with all regulatory requirements outlined in the POEO Act and associated waste regulations.
- 5.3. The EA must identify, characterise and classify the following in accordance with the EPA's *Waste Classification Guidelines* (2014) and associated addendums:

- (i) all waste that will be generated onsite through excavation, demolition or construction activities, including proposed quantities of the waste;
- (ii) all waste that is proposed to be disposed of to an offsite location, including proposed quantities of the waste and the disposal locations for the waste. This includes waste that is intended for re-use or recycling.

Note: The EPA's *Waste Classification Guidelines (2014)* and associated addendums are available at: <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste>

- 5.4. The EA must outline contingency plans for any event that may result in environmental harm, such as excessive stockpiling of material, or dirty water volumes exceeding the storage capacity available on-site.
- 5.5. The EA must demonstrate that appropriate spill containment will be provided for storage, filling and loading of all fuels and other chemicals to be used on site, in accordance with the relevant Australian Standard.

6 Water

- 6.1. The EA must demonstrate how the proposed development will meet the requirements of section 120 of the POEO Act.
- 6.2. The EA must include a water balance for the development including water requirements (quantity, quality and source(s)) and proposed storm and wastewater disposal, including type, volumes, proposed treatment and management methods and re-use options.
- 6.3. If the proposed development intends to discharge waters to the environment, the EA must demonstrate how the discharge(s) will be managed in terms of water quantity, quality and frequency of discharge and include an impact assessment of the discharge on the receiving environment. This should include:
 - Description of the proposal including position of any intakes and discharges, volumes, water quality and frequency of all water discharges.
 - Description of the receiving waters including upstream and downstream water quality as well as any other water users.
 - Demonstration that all practical options to avoid discharge have been implemented and environmental impact minimised where discharge is necessary.
- 6.4. The EA must refer to Water Quality Objectives for the receiving waters and indicators and associated trigger values or criteria for the identified environmental values of the receiving environment. This information should be sourced from the ANZECC (2000) Guidelines for Fresh and Marine Water Quality (<http://www.environment.gov.au/water/policy-programs/nwqms/>).
- 6.5. The EA must describe how stormwater will be managed in all phases of the project, including details of how stormwater and runoff will be managed to minimise pollution. Information should include measures to be implemented to minimise erosion, leachate and sediment mobilisation at the site. The EA should consider the guidelines *Managing urban stormwater: soils and construction*, vol. 1 (Landcom 2004) and vol. 2 (A. Installation of services; C. Unsealed roads; D. Main Roads; E. Mines and quarries) (DECC, 2008).

- 6.6. The EA must describe any water quality monitoring programs to be carried out at the project site. Water quality monitoring should be undertaken in accordance with the *Approved Methods for the Sampling and Analysis of Water Pollutant in NSW* (2004) which is available at: <http://www.epa.nsw.gov.au/resources/legislation/approvedmethods-water.pdf>.

7 Soils

- 7.1. The EA should include:
- An assessment of the potential impacts on soil and land resources should be undertaken, being guided by the Soil and Landscape Issues in Environmental Impact Assessment (DLWC 2000). The nature and extent of any significant impacts should be identified. Particular attention should be given to:
- a. Soil erosion and sediment transport- in accordance with *Managing urban stormwater: Soils and construction*, vol. 1 (Landcom 20) and vol. 2 (A. Installation of services; B Waste landfills; C Unsealed Roads; D Main Roles) (DECC2008).
 - b. Mass movement (landslides) – in accordance with *Landslide risk management guidelines* presented in the Australian Geomechanics Society (2007).
 - c. Urban and regional salinity – guidance given in the Local Government Salinity Initiative booklets which includes *Site Investigation for Urban Salinity* (DLWC, 2002).
- 7.2. A description of the mitigation and management options that will be used to prevent, control, abate or minimise identified soil and land resource impacts associated with the project. This should include an assessment of the effectiveness and reliability of the measures and any residual impacts after these measures are implemented. Where required, add any specific assessment requirements relevant to the project.



DOC18/743312

Mr Anthony Ko
Senior Environmental Assessment Officer
Resource & Energy Assessments
Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001
Anthony.ko@planning.nsw.gov.au

Dear Mr Ko

Hills of Gold 'Nundle' Wind Farm

I refer to your email dated 23 October 2018 seeking input into the Department of Planning and Environment Secretary's Environmental Assessment Requirements (SEARs) for the preparation of an Environmental Impact Assessment (EIS) for the Hills of Gold, 'Nundle' Wind Farm.

Due to the prevalence of native woodland and forest on and directly adjacent to the project site (including national park and state forest), the Office of Environment and Heritage (OEH) has concerns regarding potential impacts of the proposal on fauna, particularly birds and bats. These include numerous threatened fauna species known to be present in the area. As such, we request that OEH be consulted on fauna survey methodology prior to surveys commencing.

OEH has considered your request and provides our standard SEARs for the proposed development in **Attachment A**. Additional SEARs specific to the proposal are provided in **Attachment B**, and a list of guidance material is contained in **Attachment C**.

OEH recommends the EIS needs to appropriately address the following:

1. Biodiversity and offsetting
2. Aboriginal cultural heritage
3. Historic heritage
4. Water and soils
5. Flooding
6. Impact to NPWS estate

Please note that for projects **not** defined as pending or interim planning applications under Part 7 or the *Biodiversity Conservation (Savings and Transitional) Regulation 2017* the Biodiversity Assessment Methodology (BAM) **must** be used to assess impacts to biodiversity in accordance with the *Biodiversity Conservation Act 2016* (BC Act). **For this project the BAM must be used.**

If you have any questions regarding this matter please contact Liz Mazzer, Conservation Planning Officer on 02 6883 5325 or email liz.mazzer@environment.nsw.gov.au.

Yours sincerely

A handwritten signature in black ink, appearing to read 'P. Christie', is positioned above the printed name.

PETER CHRISTIE
Director, North West
Conservation and Regional Delivery

29 October 2018

Contact officer: LIZ MAZZER
6883 53325

Attachment A - Environmental Assessment Requirements

Attachment B - Guidance Material

ATTACHMENT A

Standard Environmental Assessment Requirements

Biodiversity

1. Biodiversity impacts related to the proposed development are to be assessed in accordance with [Section 7.9 of the Biodiversity Conservation Act 2017](#) the [Biodiversity Assessment Method](#) and documented in a [Biodiversity Development Assessment Report \(BDAR\)](#). The BDAR must include information in the form detailed in the *Biodiversity Conservation Act 2016* (s6.12), *Biodiversity Conservation Regulation 2017* (s6.8) and [Biodiversity Assessment Method](#), unless OEH and DPE determine that the proposed development is not likely to have any significant impacts on biodiversity values.
2. The BDAR must document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the [Biodiversity Assessment Method](#).
3. The BDAR must include details of the measures proposed to address the offset obligation as follows;
 - The total number and classes of biodiversity credits required to be retired for the development/project;
 - The number and classes of like-for-like biodiversity credits proposed to be retired;
 - The number and classes of biodiversity credits proposed to be retired in accordance with the variation rules;
 - Any proposal to fund a [biodiversity conservation action](#);
 - Any proposal to conduct ecological rehabilitation (if a mining project);
 - Any proposal to make a payment to the Biodiversity Conservation Fund.
 If seeking approval to use the variation rules, the BDAR must contain details of the [reasonable steps](#) that have been taken to obtain requisite like-for-like biodiversity credits.
4. The BDAR must be submitted with all spatial data associated with the survey and assessment as per Appendix 11 of the BAM.
5. The BDAR must be prepared by a person accredited in accordance with the Accreditation Scheme for the Application of the Biodiversity Assessment Method Order 2017 under s6.10 of the *Biodiversity Conservation Act 2016*.

Aboriginal cultural heritage

6. The EIS must identify and describe the Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR). This may include the need for surface survey and test excavation. The identification of cultural heritage values must be conducted in accordance with the [Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW](#) (OEH 2010), and guided by the [Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW](#) (DECCW, 2011) and consultation with OEH regional branch officers.
7. Consultation with Aboriginal people must be undertaken and documented in accordance with the [Aboriginal cultural heritage consultation requirements for proponents 2010 \(DECCW\)](#). The significance of cultural heritage values for Aboriginal people who have a cultural association with the land must be documented in the ACHAR.

8. Impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH.

Historic heritage

9. The EIS must provide a heritage assessment including but not limited to an assessment of impacts to *State and local heritage* including conservation areas, natural heritage areas, places of Aboriginal heritage value, buildings, works, relics, gardens, landscapes, views, trees should be assessed. Where impacts to State or locally significant heritage items are identified, the assessment shall:
- outline the proposed mitigation and management measures (including measures to avoid significant impacts and an evaluation of the effectiveness of the mitigation measures) generally consistent with the NSW Heritage Manual (1996),
 - be undertaken by a suitably qualified heritage consultant(s) (note: where archaeological excavations are proposed the relevant consultant must meet the NSW Heritage Council's Excavation Director criteria),
 - include a statement of heritage impact for all heritage items (including significance assessment),
 - consider impacts including, but not limited to, vibration, demolition, archaeological disturbance, altered historical arrangements and access, landscape and vistas, and architectural noise treatment (as relevant), and
 - where potential archaeological impacts have been identified develop an appropriate archaeological assessment methodology, including research design, to guide physical archaeological test excavations (terrestrial and maritime as relevant) and include the results of these test excavations.

Water and soils

10. The EIS must map the following features relevant to water and soils including:
- Acid sulfate soils (Class 1, 2, 3 or 4 on the Acid Sulfate Soil Planning Map).
 - Rivers, streams, wetlands, estuaries (as described in s4.2 of the Biodiversity Assessment Method).
 - Wetlands as described in s4.2 of the Biodiversity Assessment Method.
 - Groundwater.
 - Groundwater dependent ecosystems.
 - Proposed intake and discharge locations.
11. The EIS must describe background conditions for any water resource likely to be affected by the project, including:
- Existing surface and groundwater.
 - Hydrology, including volume, frequency and quality of discharges at proposed intake and discharge locations.
 - Water Quality Objectives (as endorsed by the NSW Government <http://www.environment.nsw.gov.au/ieo/index.htm>) including groundwater as appropriate that represent the community's uses and values for the receiving waters.

<ul style="list-style-type: none"> d. Indicators and trigger values/criteria for the environmental values identified at (c) in accordance with the ANZECC (2000) Guidelines for Fresh and Marine Water Quality and/or local objectives, criteria or targets endorsed by the NSW Government. e. Risk-based Framework for Considering Waterway Health Outcomes in Strategic Land-use Planning Decisions http://www.environment.nsw.gov.au/research-and-publications/publications-search/risk-based-framework-for-considering-waterway-health-outcomes-in-strategic-land-use-planning
<p>12. The EIS must assess the impacts of the development on water quality, including:</p> <ul style="list-style-type: none"> a. The nature and degree of impact on receiving waters for both surface and groundwater, demonstrating how the project protects the Water Quality Objectives where they are currently being achieved, and contributes towards achievement of the Water Quality Objectives over time where they are currently not being achieved. This should include an assessment of the mitigating effects of proposed stormwater and wastewater management during and after construction. b. Identification of proposed monitoring of water quality.
<p>13. The EIS must assess the impact of the project on hydrology, including:</p> <ul style="list-style-type: none"> a. Water balance including quantity, quality and source. b. Effects to downstream rivers, wetlands, estuaries, marine waters and floodplain areas. c. Effects to downstream water-dependent fauna and flora including groundwater dependent ecosystems. d. Impacts to natural processes and functions within rivers, wetlands, estuaries and floodplains that affect river system and landscape health such as nutrient flow, aquatic connectivity and access to habitat for spawning and refuge (e.g. river benches). e. Changes to environmental water availability, both regulated/licensed and unregulated/rules-based sources of such water. f. Mitigating effects of proposed stormwater and wastewater management during and after construction on hydrological attributes such as volumes, flow rates, management methods and re-use options. g. Identification of proposed monitoring of hydrological attributes.
<p>Flooding</p>
<p>14. The EIS must map the following features relevant to flooding as described in the Floodplain Development Manual 2005 (NSW Government 2005) including:</p> <ul style="list-style-type: none"> a. Flood prone land. b. Flood planning area, the area below the flood planning level. c. Hydraulic categorisation (floodways and flood storage areas). d. Flood hazard
<p>15. The EIS must describe flood assessment and modelling undertaken in determining the design flood levels for events, including a minimum of the 5% Annual Exceedance Probability (AEP), 1% AEP, flood levels and the probable maximum flood, or an equivalent extreme event.</p>
<p>16. The EIS must model the effect of the proposed development (including fill) on the flood behaviour under the following scenarios:</p>

<p>a. Current flood behaviour for a range of design events as identified in 14 above. This includes the 0.5% and 0.2% AEP year flood events as proxies for assessing sensitivity to an increase in rainfall intensity of flood producing rainfall events due to climate change.</p>
<p>17. Modelling in the EIS must consider and document:</p> <p>18. Existing council flood studies in the area and examine consistency to the flood behaviour documented in these studies.</p> <p>19. The impact on existing flood behaviour for a full range of flood events including up to the probable maximum flood, or an equivalent extreme flood.</p> <p>20. Impacts of the development on flood behaviour resulting in detrimental changes in potential flood affection of other developments or land. This may include redirection of flow, flow velocities, flood levels, hazard categories and hydraulic categories.</p> <p>21. Relevant provisions of the NSW Floodplain Development Manual 2005.</p>
<p>22. The EIS must assess the impacts on the proposed project on flood behaviour, including:</p> <ul style="list-style-type: none"> a. Whether there will be detrimental increases in the potential flood affectation of other properties, assets and infrastructure. b. Consistency with Council floodplain risk management plans. c. Consistency with any Rural Floodplain Management Plans. d. Compatibility with the flood hazard of the land. e. Compatibility with the hydraulic functions of flow conveyance in floodways and storage in flood storage areas of the land. f. Whether there will be adverse effect to beneficial inundation of the floodplain environment, on, adjacent to or downstream of the site. g. Whether there will be direct or indirect increase in erosion, siltation, destruction of riparian vegetation or a reduction in the stability of river banks or watercourses. h. Any impacts the development may have upon existing community emergency management arrangements for flooding. These matters are to be discussed with the NSW SES and Council. i. Whether the proposal incorporates specific measures to manage risk to life from flood. These matters are to be discussed with the NSW SES and Council. j. Emergency management, evacuation and access, and contingency measures for the development considering the full range of flood risk (based upon the probable maximum flood or an equivalent extreme flood event). These matters are to be discussed with and have the support of Council and the NSW SES. k. Any impacts the development may have on the social and economic costs to the community as consequence of flooding.

ATTACHMENT B

Specific Environmental Assessment Requirements

1. Fauna survey is to be conducted in native vegetation adjacent to the development site, including Ben Halls Gap Nature Reserve and Ben Halls Gap State Forest.
2. Assessment of impact is to include all components of the proposal, including any road/track widening to enable transport of turbines to the site.
3. Hollow-bearing trees are to be quantified on the development site and in adjacent native vegetation.
4. A candidate list of species that may use the development site as a flyway or migration route must be included in the EIS, including: (a) resident threatened aerial species (b) resident raptor species (c) nomadic and migratory species that are likely to fly over the project area.
5. Bird and bat flight paths are to be identified and assessed. Maps of habitual flight paths for nomadic and migratory species likely to fly over the site and maps of likely habitat for threatened aerial species resident on the site are to be included in the EIS.
6. The cumulative effect of wind farms in the broader area should be considered in relation to migratory birds.
7. Copies of all raw data sheets for flora and fauna studies are to be included in the EIS or provided to OEH.
8. ArcGIS compatible spatial data is to be provided including (but not limited to) vegetation mapping, plot locations, transect locations and the locations of turbines and other infrastructure.

ATTACHMENT C

Guidance Material

Title	Web address
Relevant Legislation	
<i>Biodiversity Conservation Act 2016</i>	https://www.legislation.nsw.gov.au/#/view/act/2016/63/full
<i>Coastal Management Act 2016</i>	https://www.legislation.nsw.gov.au/#/view/act/2016/20/full
<i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	http://www.austlii.edu.au/au/legis/cth/consol_act/epabca1999588/
<i>Environmental Planning and Assessment Act 1979</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+203+1979+cd+0+N
<i>Fisheries Management Act 1994</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+38+1994+cd+0+N
<i>Marine Parks Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+64+1997+cd+0+N
<i>National Parks and Wildlife Act 1974</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+80+1974+cd+0+N
<i>Protection of the Environment Operations Act 1997</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+156+1997+cd+0+N
<i>Water Management Act 2000</i>	http://www.legislation.nsw.gov.au/maintop/view/inforce/act+92+2000+cd+0+N
<i>Wilderness Act 1987</i>	http://www.legislation.nsw.gov.au/viewtop/inforce/act+196+1987+FIRST+0+N
Biodiversity	
Biodiversity Assessment Method (OEH, 2017)	https://biodiversity-ss.s3.amazonaws.com/Uploads/1494298079/Biodiversity-Assessment-Method-May-2017.pdf
Biodiversity Development Assessment Report	https://www.legislation.nsw.gov.au/#/view/act/2016/63/part6/div3/sec6.12
Guidance and Criteria to assist a decision maker to determine a serious and irreversible impact (OEH, 2017)	https://biodiversity-ss.s3.amazonaws.com/Uploads/1494298198/Serious-and-Irreversible-Impact-Guidance.PDF
Accreditation Scheme for Application of the Biodiversity Assessment Method Order 2017	https://www.legislation.nsw.gov.au/regulations/2017-471.pdf
Biodiversity conservation actions	www.environment.nsw.gov.au/resources/bcact/ancillary-rules-biodiversity-actions-170496.pdf
Reasonable steps to seek like-for-like biodiversity credits for the purpose of applying the variation rules	www.environment.nsw.gov.au/resources/bcact/ancillary-rules-reasonable-steps-170498.pdf
OEH Threatened Species Website	www.environment.nsw.gov.au/threatenedspecies/
NSW BioNet (Atlas of NSW Wildlife)	www.bionet.nsw.gov.au/
OEH guidelines for carrying out a survey	https://www.environment.nsw.gov.au/surveys/GuidelinesForCarryingOutASurvey.htm
NSW guide to surveying threatened plants (OEH 2016)	www.environment.nsw.gov.au/resources/threatenedspecies/160129-threatened-plants-survey-guide.pdf

Title	Web address
OEH threatened species survey and assessment guideline information	www.environment.nsw.gov.au/threatenedspecies/surveyassessmentsgdlns.htm
BioNet Vegetation Classification - NSW Plant Community Type (PCT) database	www.environment.nsw.gov.au/research/Vegetationinformationsystem.htm
OEH Data Portal (access to online spatial data)	http://data.environment.nsw.gov.au/
Fisheries NSW policies and guidelines	http://www.dpi.nsw.gov.au/fisheries/habitat/publications/policies,-guidelines-and-manuals/fish-habitat-conservation
List of national parks	http://www.environment.nsw.gov.au/NationalParks/parksearchatoz.aspx
Revocation, recategorisation and road adjustment policy (OEH, 2012)	http://www.environment.nsw.gov.au/policies/RevocationOfLandPolicy.htm
Guidelines for developments adjoining land and water managed by the Department of Environment, Climate Change and Water (DECCW, 2010)	http://www.environment.nsw.gov.au/protectedareas/developmntadjoiningdecc.htm
<u>Heritage</u>	
The Burra Charter (The Australia ICOMOS charter for places of cultural significance)	http://australia.icomos.org/wp-content/uploads/The-Burra-Charter-2013-Adopted-31.10.2013.pdf
Statements of Heritage Impact 2002 (HO & DUAP)	http://www.environment.nsw.gov.au/resources/heritagebranch/heritage/hmstatementsofhi.pdf
NSW Heritage Manual (DUAP) (scroll through alphabetical list to 'N')	http://www.environment.nsw.gov.au/Heritage/publications/
<u>Aboriginal Cultural Heritage</u>	
Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW, 2010)	http://www.environment.nsw.gov.au/resources/cultureheritage/consultation/09781ACHconsultreq.pdf
Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW, 2010)	http://www.environment.nsw.gov.au/resources/cultureheritage/10783FinalArchCoP.pdf
Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW (OEH 2011)	http://www.environment.nsw.gov.au/resources/cultureheritage/20110263ACHguide.pdf
Aboriginal Site Recording Form	http://www.environment.nsw.gov.au/resources/parks/SiteCardMainV1_1.pdf
Aboriginal Site Impact Recording Form	http://www.environment.nsw.gov.au/resources/cultureheritage/120558asirf.pdf
Aboriginal Heritage Information Management System (AHIMS) Registrar	http://www.environment.nsw.gov.au/contact/AHIMSRegistrar.htm
Care Agreement Application form	http://www.environment.nsw.gov.au/resources/cultureheritage/20110914TransferObject.pdf

<u>Water and Soils</u>	
Acid sulphate soils	
Acid Sulfate Soils Planning Maps via Data.NSW	http://data.nsw.gov.au/data/
Acid Sulfate Soils Manual (Stone et al. 1998)	http://www.environment.nsw.gov.au/resources/epa/Acid-Sulfate-Manual-1998.pdf
Acid Sulfate Soils Laboratory Methods Guidelines (Ahern et al. 2004)	http://www.environment.nsw.gov.au/resources/soils/acid-sulfate-soils-laboratory-methods-guidelines.pdf This replaces Chapter 4 of the Acid Sulfate Soils Manual above.
Flooding	
Floodplain development manual	http://www.environment.nsw.gov.au/floodplains/manual.htm
NSW Climate Impact Profile	http://climatechange.environment.nsw.gov.au/
Climate Change Impacts and Risk Management	Climate Change Impacts and Risk Management: A Guide for Business and Government, AGIC Guidelines for Climate Change Adaptation
Water	
Water Quality Objectives	http://www.environment.nsw.gov.au/ieo/index.htm
ANZECC (2000) Guidelines for Fresh and Marine Water Quality	www.environment.gov.au/water/publications/quality/australian-and-new-zealand-guidelines-fresh-marine-water-quality-volume-1
Applying Goals for Ambient Water Quality Guidance for Operations Officers – Mixing Zones	http://deccnet/water/resources/AWQGuidance7.pdf
Approved Methods for the Sampling and Analysis of Water Pollutant in NSW (2004)	http://www.environment.nsw.gov.au/resources/legislation/approvedmethods-water.pdf



NSW RURAL FIRE SERVICE



The Secretary
NSW Planning & Environment
GPO Box 39
SYDNEY NSW 2001

Your Ref: SSD 9679
Our Ref: D18/7808
DA18102515764 AB

**ATTENTION: Anthony Ko
2018**

1 November

Dear Mr Ko

Agency Comment - SEARs Significant Development Application - Hills Of Gold Wind Farm, Morrisons Gap Road Hanging Rock Tamworth Regional Council and Upper Hunter Shire LGA's

I refer to your letter dated 23 October 2018 seeking NSW Rural Fire Service (NSW RFS) input to the Secretary's environmental assessment requirements for the above State Significant Development proposal.

The NSW RFS notes that the land is mapped bush fire prone by Council's.

The NSW RFS has reviewed the submitted documentation and the draft SEARs and supports the inclusion of a requirement for the preparation of a bush fire hazard assessment as outlined in Key Issues - Hazards of the draft SEARs. The bush fire hazard assessment shall include flame length modelling for all turbines, ancillary buildings, internal roads and transmission lines and identify required vegetation management practices to achieve asset protection zone standard that will prevent flame contact on the proposed infrastructure components.

For any queries regarding this correspondence please contact Alan Bawden on 6691 0400.

Yours sincerely,

John Ball

Manager – Planning and Environment Services North

The RFS has made getting information easier. For general information on 'Planning for Bush Fire Protection, 2006', visit the RFS web page at www.rfs.nsw.gov.au and search under 'Planning for Bush Fire Protection, 2006'.

Postal address

Records
NSW Rural Fire Service
Locked Bag 17
GRANVILLE NSW 2142

Street address

NSW Rural Fire Service
Planning and Environment Services (North)
Suite 1, 129 West High Street
COFFS HARBOUR NSW 2450

T (02) 6691 0400
F (02) 6691 0499
www.rfs.nsw.gov.au
Email: pes@rfs.nsw.gov.au

File No: NTH18/00147
Your Ref: SSD 9679

The Manager
Department of Planning and Environment
Resource & Energy Assessments
GPO Box 39
SYDNEY NSW 2001

Attention: Anthony Ko

Dear Anthony,

Secretary's Environmental Assessment Requirements for SSD 9679 – Hills of Gold Wind Farm, Hanging Rock

I refer to your email of 23 October 2018 requesting input to the Secretary's Environmental Assessment Requirements (SEARs) for the abovementioned state significant development.

Roles and Responsibilities

The key interests for Roads and Maritime Services are the safety and efficiency of the road network, traffic management, the integrity of infrastructure and the integration of land use and transport.

New England Highway [HW9] is a classified (State) road (a highway) under the *Roads Act 1993* (Roads Act). Liverpool Plains Shire Council and Tamworth Regional Council are the roads authorities for all public roads (other than freeways or Crown roads) in the respective local government areas pursuant to Section 7 of the Roads Act. Roads and Maritime is the roads authority for freeways and can exercise roads authority functions for classified roads in accordance with the Roads Act. Any proposed works on a classified (State) road will require the consent of Roads and Maritime. Consent is provided under the terms of a Works Authorisation Deed (WAD).

Lindsay's Gap Road [MR106] and Nundle Road [MR105] are classified (Regional) roads. Roads and Maritime's concurrence is required prior to Council's approval to works on these roads in accordance with S138 of the Roads Act.

Roads and Maritime Response

Roads and Maritime requests that the Environmental Assessment be supported by a Traffic Impact Assessment (TIA) and Construction Traffic Access Management Plan (CTAMP) prepared by a suitably qualified person in accordance with the Austroads Guide to Traffic Management Part 12, Roads and Maritimes Supplements and RTA Guide to Traffic Generating Developments. The TIA and CTAMP should address the following;

- The total impact of existing and proposed development on the road network with consideration for construction, operation and decommission of the wind farm.
- The volume and distribution of traffic generated by the proposed development.
- Sight distances at key intersections, consideration of turning lane warrants and details of proposed intersection treatments on the road network and at site access locations based on

Austrroads Part 6 Intersections, Interchanges and Crossings and Guide to Road Design Part 4A Un-signalised and Signalised Intersections.

- Capacity analysis using SIDRA or similar, if required, to identify Level of Service (LOS) at key intersections with the classified road network.
- An assessment of the proposed transport route, including swept paths of the largest vehicle requiring access from port to site. Current advice indicates the largest blade that can be conventionally transported along the New England Highway is 65m.
- Impacts on rail corridors along the transport routes and details of proposed interface treatments.
- Details of existing and proposed site access, servicing and parking arrangements.
- Impact on public transport (public and school bus routes) and consideration for alternative transport modes such as walking and cycling.
- Impacts of road traffic noise and dust generated along the primary transport routes.
- Preparation of a Construction Traffic Access Management Plan (CTAMP) to identify and manage the impact of construction, operation and decommission traffic on the safety and efficiency of the road network. The CTAMP may include temporary measures such as Traffic Control Plans (TCPs) to address construction and decommission related traffic at specific locations.

The CTAMP should include a Driver Code of Conduct which may include, but not be limited to, the following:

- A map of the primary transport routes highlighting critical locations.
- Consideration of coordination of construction traffic with seasonal agricultural activities.
- Safety initiatives for haulage through residential areas, school zones and along school bus routes.
- An induction process for vehicle operators and regular toolbox meetings.
- A complaint resolution and disciplinary procedure.
- Any community consultation measures for peak construction periods.

If road works are identified on a classified (State) road the Developer would be required to enter into a Works Authorisation Deed (WAD) with Roads and Maritime. Current Austrroads Guidelines, Australian Standards and Roads and Maritime Supplements are to be adopted. The developer would be responsible for all costs associated with the works and administration for the WAD. Further information on undertaking private developments adjacent to classified roads can be accessed at:

<http://www.rms.nsw.gov.au/projects/planning-principles/index.html>

Advice to the Consent Authority

Roads and Maritime highlights the Consent Authority is responsible for considering the environmental impacts of any road works which are ancillary to the development. This includes any road works which form part of the proposal and/or any road works deemed necessary to include as requirements in the conditions of development consent.

If you have any further enquiries regarding the above comments please contact Liz Smith, Manager Land Use Assessment on (02) 6640 1362 or via email at development.northern@rms.nsw.gov.au

Yours faithfully,



for Monica Sirol
Network & Safety Manager, Northern Region

NSW Department of Planning and Infrastructure
PO BOX 550
TAMWORTH NSW 2340

Dear Sir/Madam,

SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS – PROPOSED HILLS OF GOLD WIND FARM – MORRISONS GAP ROAD, HANGING ROCK

I refer to your correspondence received 23 October 2018 requesting Council's input into the Secretary's Environmental Assessment Requirements to the subject proposal and to nominate any issues to be addressed in the Environmental Impact Assessment (EIS). In this regard, the following information is provided:

Public Exhibition

- The public notice should be placed in the Northern Daily Leader and Nundle community newsletters.
- The EIS should be displayed for public perusal at Tamworth Regional Council (both Ray Walsh House in Tamworth and Nundle branch office).
- Public notification should include the provision of all documentation on USBs or CDs to any person who requests a copy, at the locations where the EIS is displayed.

General

- The application should detail any public consultation, including any issues identified by the public and the manner in which the issues have been addressed prior to the submission of the application.
- The construction period is approximately 24 months. Consideration must be given to the likely impact vehicles relating to the construction period will have on the Nundle village, Hanging Rock and any other affected communities which are on the proposed haulage route.

Traffic & Access

- A Traffic Impact Assessment (TIA) report, including traffic movements into and out of the site (during construction and ongoing operations phases), is to be provided as part of the EIS. The report needs to address vehicle movements (including trucks, cars etc.) both in and out of the site on a 24 hours/day, 7 days a week basis and should also consider existing, proposed and predictive (when running at full capacity) traffic volumes.
- Proposed haulage routes to and from the site are also to be clearly identified in the report. The Traffic Impact Assessment report should address the relevant RMS, AUSTRROADS, and Council guidelines/standards.

All correspondence should be addressed to the General Manager:

Telephone: 6767 5555
Facsimile: 6767 5499

PO Box 555 (DX 6125)
Tamworth NSW 2340

trc@tamworth.nsw.gov.au
www.tamworth.nsw.gov.au

- The identified haulage routes (Head of the Peel, Lindsay Gap Road, Old Wallabadah Road) are also used for existing logging operations. Coordinating movements up and down the road between Nundle and Hanging Rock with the logging companies who currently operate in this area and have multiple truck movements each day must occur. Blocking the range for an hour or more each day will have an effect the logging operations.
- Consideration must also be given to the impact any road and bridge upgrade works will have on existing logging industries.
- The Proponent shall consult with Tamworth Regional Council as the local roads authority to determine the adequacy of existing roads, bridges and culverts. The length, width and weight of trucks transporting wind turbine components are required.
- If wind turbine components are to be transported vertically to navigate certain sections of the road between Nundle and Hanging Rock, this may necessitate tree removal/trimming. Furthermore, altering the load configuration will add to the time to navigate this section of road.

Biodiversity

- Consideration should be given to the proximity of the site being directly adjacent to the Ben Halls Gap National Park. Details regarding any vegetation retention/removal are to be provided and a full biodiversity assessment must address how this proposal impacts flora and fauna communities and natural watercourses.

Nearby Residential Receptors

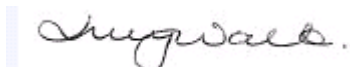
- Consideration must be given to all existing adjoining and nearby properties most likely to be affected by noise, traffic, visual impact and dust. It is noted that a Development Application for a dwelling has recently been lodged with Tamworth Regional Council on Lots 46 and 47 DP 752722 Morrisons Gap Road, Hanging Rock (DA2019-0097). This application has not yet been determined.

Voluntary Planning Agreement (VPA)

- There should be further discussion between Council, the Proponent and the Department on the a VPA for the community fund. The VPA shall take into consideration all neighbouring properties and nearby communities.

Should you require any clarification in relation to the matters raised above, please contact Coordinator, Development Assessment, Lucy Walker on the number below.

Yours faithfully,



Lucy Walker,
Coordinator Development Assessment

Contact: (02) 6767 5530 or l.walker@tamworth.nsw.gov.au

Reference: SF8621

15 November 2018

Contact Name: Mr Mathew Pringle
Contact No: (02) 6540 1139
Our Reference: OUT-12644/18



31 October 2018

Department of Planning and Environment
GPO Box 39
SYDNEY NSW 2001

Attention: Anthony Ko

Dear Sir/Madam,

Hills of Gold Wind Farm (SSD 9679) - Secretary's Environmental Assessment Requirements (SEARs)

Thank you for the opportunity to comment on the Secretary's Environmental Assessment Requirements (SEARs) for the Hills of Gold Wind Farm (SSD 9679) proposed at Hanging Rock.

It is understood that the proposal involves the construction and operation of a wind farm including:

- Up to 97 turbines with a maximum tip height of 220 m;
- Ancillary infrastructure including switchyards, substations, battery storage;
- Connection to the 330 kV Liddell to Tamworth transmission line via a 23 km overhead powerline.

Council has reviewed the draft SEARs in relation to the proposed development and is satisfied that all relevant environmental issues have been included.

It would be appreciated if Council could be kept updated on the progress of the proposal and we would welcome further consultation with the proponent.

Should you have any questions, please contact Council's Director Environmental & Community Services, Mathew Pringle on 6540 1139.

Yours faithfully



Mathew Pringle
DIRECTOR ENVIRONMENTAL & COMMUNITY SERVICES

All correspondence to:

General Manager | Upper Hunter Shire Council | PO Box 208, Scone NSW 2337

Phone: Scone Office 6540 1100 | Merriwa Office 6521 7000 | Murrurundi Office 6540 1350

Email: council@upperhunter.nsw.gov.au



UPPERHUNTER.NSW.GOV.AU

APPENDIX B HERITAGE DATABASE SEARCH RESULTS

City of Newcastle Council Area

Site Name	Register / Item #	Location	Impact from Proposed Works
Australian Wire Rope Building	LEP – I286	6 George St, Mayfield East	Nil – 34 from proposed upgrades on George St
Mayfield East Public School	LEP – I282 s.170 - Education	34 Crebert St, Mayfield East	Nil – 14m south of transport route along Industrial Dr
Simpsons Cottage	LEP – I266	64 Industrial Drive, Mayfield	Nil – 14m south-west of transport route along Industrial Dr
Remnant Garden	LEP – I692	1, 2, 4, 5A-D, 6, 7 & 8 Murray Dwyer Circuit, Mayfield West	Nil – 25m north-east of transport route along Industrial Dr
Former Migrant Camp	LEP – I291	609 Maitland Road, Mayfield West	Nil – 27m east of transport route along Pacific Hwy
Sandgate Cemetery Office	LEP – I518	116 Maitland Road, Sandgate	Nil – 15m west of transport route along Pacific Hwy
Sandgate Cemetery	LEP – I516	108 Maitland Road, Sandgate	Nil – 15m west of transport route along Pacific Hwy
2Hd Studio	LEP – I519	173 Maitland Road, Sandgate	Nil – 30m east of transport route along Pacific Hwy
Former Travellers Rest Hotel	LEP – I177	23 Maitland Road, Hexham	Nil – 20m east of transport route along Pacific Hwy
Railway Station	LEP – I176	Maitland Road, Hexham	Nil – 15m east of transport route along Pacific Hwy
Oak Factory	LEP – I178	189 Maitland Road, Hexham	Nil – 15m west of transport route along New England Hwy
Hannel Family Vault	LEP – I179	398B Maitland Road, Hexham	Nil – 30m east of transport route along New England Hwy
Residence	LEP – I548	29 Eastern Avenue, Tarro	Nil – 50m north of transport route along New England Hwy

Cessnock Shire Council Area

Site Name	Register / Item #	Location	Impact from Proposed Works
Buttai Cemetery/Elliott Family Graves	LEP – I46	659 John Renshaw Drive, Buttai	Nil – 35m north of transport route along John Renshaw Dr
South Maitland Railway System	LEP – I212	Between Pelton Colliery Triangle and Lga Boundary At Cliftleigh	Nil – intersects Hunter Expressway near Main Rd, Heddon Greta and west of Loxford. No upgrades proposed at this location.
Collieries of the South Maitland Coalfields/Greta Coal Measures Group (1340721) (Neath Colliery)	LEP – I215	Maitland Road, Neath	Nil – intersects Hunter Expressway near Branxton. No upgrades proposed at this location.

Site Name	Register / Item #	Location	Impact from Proposed Works
Great Northern Railway Network	LEP – I216	Various	Nil – intersects Hunter Expressway near Branxton. No upgrades proposed at this location.

Singleton Shire Council Area

Site Name	Register / Item #	Location	Impact from Proposed Works
'Abbey Green' and outbuilding	LEP – I39 RNE (Reg) – 1433	478 Putty Road, Mount Thorley	Nil – located 12m north of transport route at intersection of Putty Road and Golden Highway
Brick Farm House	LEP – I40	Golden Highway, Mount Thorley	Nil – located 15m east of transport route along Golden Highway, Mount Thorley
Jerrys Plains Conservation Area	LEP – C1	Golden Highway, Jerrys Plains	Nil – conservation area intersects with transport route along Golden Highway at Jerrys Plains. No upgrades proposed within the conservation area.
Post Office and Store	LEP – I27	13 Pagan St, Jerrys Plains	Nil – located 20m west of proposed transport route along Golden Highway, Jerrys Plains
St James Anglican Church	LEP – I28	27-31 Pagan St, Jerrys Plains	Nil – located 20m west of proposed transport route along Golden Highway, Jerrys Plains
Jerrys Plains Catholic Church	LEP – I29	45-47 Pagan St, Jerrys Plains	Nil – located 20m west of proposed transport route along Golden Highway, Jerrys Plains
'Strowan'	LEP – I32 RNE (Reg) - 1395	3065 Golden Highway, Jerrys Plains	Nil – located 10m south-west of proposed transport route along Golden Highway, Jerrys Plains
Former Gates and Gate Lodge ('Neotsfield')	LEP – I152	4244 New England Highway, Whittingham	Nil – located directly adjacent to the transport route along New England Highway, Whittingham
Former Lairmont Hotel	LEP – I153	4253 New England Highway, Whittingham	Nil – located 20m west of proposed transport route along New England Highway, Whittingham
'The Woolpack Inn'	LEP – I151	3 Newington Lane, Whittingham	Nil – located 10m east of proposed transport route along New England Highway, Whittingham
'Bebeah'	LEP – I120	Waddells Lane, Singleton	Nil – located 10m west of proposed transport route along New England Highway, Singleton
'Ardersier'	LEP – I118 RNE (Reg) - 14034	48 Maitland Road, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton

Site Name	Register / Item #	Location	Impact from Proposed Works
Townhead Estate	LEP – I129	5 Townhead Cres, Singleton	Nil – located 20m west of proposed transport route along New England Highway, Singleton
Former Police Station	LEP – I139	83-87 York St, Singleton	Nil – located 10m west of proposed transport route along New England Highway, Singleton
Singleton Conservation Area	LEP – C2	Singleton	Nil – Intersects proposed transport route along New England Highway, Singleton
Burdekin Park Group, Burdekin Park, Boer War Memorial and war memorial	LEP – I88 RNE (Reg) - 14343	75 George St, Singleton	Nil – located 10m west of proposed transport route along New England Highway, Singleton
Residence	LEP – I93	96 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
Burdekin Medical Centre	LEP – I92	90 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
'Ewbank' and Outbuildings	LEP – I91 SHR – 00174 RNE (Reg) - 1423	88 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
Royal Hotel	LEP – I90	86 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
Shop	LEP – I89	76-78 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
Mechanics Institute	LEP – I87	74 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
Percy Hotel	LEP – I86 RNE (Reg) - 14340	65-67 George St, Singleton	Nil – located 10m west of proposed transport route along New England Highway, Singleton
Former Patrick Plains Shire Building, commercial shop and offices	LEP – I84 RNE (Reg) - 1437	57-63 George St, Singleton	Nil – located 10m west of proposed transport route along New England Highway, Singleton
Commercial Premises	LEP – I85	58 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
Commercial Premises and Residence	LEP – I83	45-49 George St, Singleton	Nil – located 10m west of proposed transport route along New England Highway, Singleton

Site Name	Register / Item #	Location	Impact from Proposed Works
Former commercial premises and residence	LEP – I82	42-44 George St Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
Caledonian Hotel	LEP 0 I81 RNE (Reg) - 1407	38-40 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
House Group	LEP – I58	15-19 Campbell St, Singleton	Nil – located 20m west of proposed transport route along New England Highway, Singleton
Singleton Mowers, commercial shop	LEP – I80	32 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
Pines Café	LEP – I78	26 George St, Singleton	Nil – located 10m east of proposed transport route along New England Highway, Singleton
Former Post Office	LEP – I79 SHR – 00478 RNE (Reg) - 14341	25-27 George St, Singleton	Nil – located 10m west of proposed transport route along New England Highway, Singleton
Office and Residence	LEP – I77	21-25 George St, Singleton	Nil – located 10m west of proposed transport route along New England Highway, Singleton
Former Public School	LEP – I42	Corner of New England Hwy and Hebden Rd, Ravensworth	Nil – located 10m east of proposed transport route along New England Highway, Singleton

Muswellbrook Shire Council Area

Site Name	Register / Item #	Location	Impact from Proposed Works
Merton	LEP – I17 SHR – 00159 RNE (Reg) - 1343	4883 Jerrys Plains Road, Denman	Nil – located 10m west of proposed transport route along Golden Highway, Denman
Merton Cemetery	LEP – I18	5052 Jerrys Plains Road, Denman	Indirect Impact – Blade Swing across LEP heritage curtilage. No ground impacts.
Piercefield	LEP – I13	1532-1618 Denman Road, Denman	Nil – located 10m north of proposed transport route along Denman Rd, Denman
Edinglassie Homestead	LEP – I84 SHR – 00170 RNE (Ind) - 1344	710 Denman Road, Denman	Nil - located 10m north of proposed transport route along Denman Rd, Denman

Site Name	Register / Item #	Location	Impact from Proposed Works
Rous Lench	LEP – I85 SHR – 00211	710 Denman Road, Denman	Nil – located 10m north of proposed transport route along Denman Rd, Denman
Negoa	LEP – I44	92 Wiltons Lane, Kayuga	Nil – located 1-m east of proposed transport route along Kayuga Rd, Kayuga
Kayuga Cemetery	LEP – I43	Stair Street, Kayuga	Direct Impact – road upgrades proposed on Stair Street, Kayuga
Fitzgerald/Olympic Park Gates	LEP – I124	Wilkinson Avenue, Muswellbrook	Nil – intersects proposed transport route along Bell St, Muswellbrook. No upgrades proposed at this location.
Railway Depot (Roundhouse)	LEP – I53	Bell Street, Muswellbrook	Nil – located 10m south of proposed transport route along Bell St, Muswellbrook
Residential Heritage Conservation Area	LEP – C2	Muswellbrook	Nil – intersects proposed transport route along Victoria St, Muswellbrook. No upgrades proposed at this location.
Muswellbrook Business Heritage Conservation Area	LEP – C2	Muswellbrook	Nil – intersects proposed transport route along Market St and New England Hwy, Muswellbrook. No upgrades proposed at this location.
Muswellbrook Hotel	LEP – I109	46 Market Street, Muswellbrook	Nil – located 10m north-east of proposed transport route along Market St, Muswellbrook
Railway Signal Box	LEP – I106	Market Street, Muswellbrook	Nil – located 15m south-west of proposed transport route along Market St, Muswellbrook
Muswellbrook Railway Station and yard group	SHR – 01208	Market Street, Muswellbrook	Nil – located 10m south-west of proposed transport route along Market St, Muswellbrook
Railway Hotel	LEP – I108	10-14 Market Street, Muswellbrook	Nil – located 10m north of proposed transport route along Market St, Muswellbrook
Simpson Park and Reserve	LEP – I107	Cnr Market and Sydney Streets, Muswellbrook	Nil – located 20m south-west of proposed transport route along Market St, Muswellbrook
Royal Hotel	LEP – I58	1 Sydney Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
School of Arts/Town Hall	LEP – I56	3 Bridge Street, Muswellbrook	Nil – located 10m east of proposed transport route along New England Hwy, Muswellbrook
Post Office	LEP – I57	7 Bridge Street, Muswellbrook	Nil – located 10m east of proposed transport route along New England Hwy, Muswellbrook
Taskers Pharmacy	LEP – I61	26 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook

Site Name	Register / Item #	Location	Impact from Proposed Works
Edward Higgins Building	LEP – I62	30-32 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
Police Station	LEP – I125	26 William Street, Muswellbrook	Nil – located 10m east of proposed transport route along New England Hwy, Muswellbrook
Shop Front	LEP – I63	34 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
Billiards Building	LEP – I64	36-40 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
National Australia Bank Building	LEP – I65	46-50 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
Former Picture Theatre	LEP – I59	17 Bridge Street, Muswellbrook	Nil – located 10m east of proposed transport route along New England Hwy, Muswellbrook
Former Campbell's and Co Store	LEP – I66	52 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
Westpac Bank Building	LEP – I60	19 Bridge Street, Muswellbrook	Nil – located 10m east of proposed transport route along New England Hwy, Muswellbrook
Campbell's Corner	LEP – I67	60 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
Kerb and Guttering	LEP – I79	Brook Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
Uniting Church	LEP – I69	110 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
Masonic Lodge	LEP – I68	75 Bridge Street, Muswellbrook	Nil – located 10m east of proposed transport route along New England Hwy, Muswellbrook
Weidmann Cottage	LEP – I70 SHR - 00260	126 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
Loxton House	LEP – I71 SHR - 00185	142-144 Bridge Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook
Eatons Group Shop Building	LEP – I72 SHR - 00331	172 Bridge Street, Muswellbrook	Nil – located 15m west of proposed transport route along New England Hwy, Muswellbrook

Site Name	Register / Item #	Location	Impact from Proposed Works
Eatons Group St Vincent de Paul Society	LEP – 173 SHR - 00331	174-176 Bridge Street, Muswellbrook	Nil – located 15m west of proposed transport route along New England Hwy, Muswellbrook
Eatons Group House	LEP – 174 SHR - 00331	178 Bridge Street, Muswellbrook	Nil – located 15m west of proposed transport route along New England Hwy, Muswellbrook
Eatons Hotel	LEP – 175 SHR - 00331	182-184 Bridge Street, Muswellbrook	Nil – located 15m west of proposed transport route along New England Hwy, Muswellbrook
Kildonan	LEP – 176	208 Bridget Street, Muswellbrook	Nil – located 15m west of proposed transport route along New England Hwy, Muswellbrook
Former Butter Factory	LEP – 151	14-15 Aberdeen Street, Muswellbrook	Nil – located 10m west of proposed transport route along New England Hwy, Muswellbrook

Upper Hunter Shire Council Area

Site Name	Register / Item #	Location	Impact from Proposed Works
The Grange	LEP – 189	New England Highway, Aberdeen	Nil – located 20m east of proposed transport route along New England Hwy, Aberdeen
Aberdeen Hotel (top pub)	LEP – 195	129 MacQueen Street, Aberdeen	Nil – located 15m west of proposed transport route along New England Hwy, Aberdeen
Former Bank Building	LEP – 197	1 Segenhoe Street, Aberdeen	Nil – located 15m south-west of proposed transport route along New England Hwy, Aberdeen
M. Campbell & Co. Store (Former), including sandstone kerb, guttering and paving	LEP – 187	70 New England Highway, Aberdeen	Nil – located 15m north-east of proposed transport route along New England Hwy, Aberdeen
Commercial Hotel (bottom pub)	LEP – 186	65 MacQueen Street, Aberdeen	Nil – located 20m south-west of proposed transport route along New England Hwy, Aberdeen
Segenhoe Inn	LEP – 194	56 MacQueen Street, Aberdeen	Nil – located 10m north-east of proposed transport route along New England Hwy, Aberdeen
Commercial Premises	LEP – 188	48-52 New England Highway, Aberdeen	Nil – located 10m north-east of proposed transport route along New England Hwy, Aberdeen
Fitzgerald Bridge, Hunter River	LEP – 191 s.170 – Transport	New England Highway, Aberdeen	Nil – located adjacent (east) to proposed transport route along New England Hwy, Aberdeen

Site Name	Register / Item #	Location	Impact from Proposed Works
	RNE (Reg) - 15940		
St Aubin's House	LEP - I23 RNE (Reg) -1409	New England Highway, Scone	Nil – located 5m west of proposed transport route along New England Hwy, Scone
St Aubin's Arms (former Woolpack Inn)	LEP – I9 RNE (Ind) - 101935	245 Kelly Street, Scone	Nil – located 10m west of proposed transport route along New England Hwy, Scone
Central Scone Conservation Area	LEP - C2	Scone	Nil – intersects the proposed transport route along New England Hwy, Scone. No road upgrades proposed in this location.
Former Library Building and WWI Memorial	LEP – I58	212 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Upper Hunter Ambulance Station	LEP – I55	210 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Scone Advocate Building	LEP – I51	206 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Asser House carpark and outbuildings	LEP – I31	202 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
National Australia Bank (former CBC Bank)	LEP – I8	182 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Post Office	LEP – I20 RNE (List) - 106199	187 Kelly Street, Scone	Nil – located 10m west of proposed transport route along New England Hwy, Scone
Campbell's Corner	LEP – I26	177-181 Kelly Street, Scone	Nil – located 10m west of proposed transport route along New England Hwy, Scone
Golden Fleece Hotel	LEP – I40	174 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Bank of New South Wales	LEP – I25	170 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Farams Store	LEP – I39	157 Kelly Street, Scone	Nil – located 10m west of proposed transport route along New England Hwy, Scone
Scone Civic Theatre	LEP – I59 SHR – 01660	144 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Shops	LEP – I41	127-133 Kelly Street, Scone	Nil – located 10m west and 20m east of proposed transport route along New England Hwy, Scone

Site Name	Register / Item #	Location	Impact from Proposed Works
Café (former Energy Australia Buidling)	LEP – I36	122 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
2 Shops (adjacent to Mazda showroom)	LEP – I35	116 and 118 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Royal Hotel	LEP – I50	109-119 Kelly Street, Scone	Nil – located 10m west of proposed transport route along New England Hwy, Scone
Belmore Hotel	LEP – I7	98 Kelly Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Shops	LEP – I6	95-97 Kelly Street, Scone	Nil – located 10m west of proposed transport route along New England Hwy, Scone
Residence, Geraldton (former Belmore House)	LEP – I11	2 Shaw Street, Scone	Nil – located 20m east of proposed transport route along New England Hwy, Scone
Roman Catholic Cemetery	LEP – I49	New England Highway, Scone	Nil – located 15m east of proposed transport route along New England Hwy, Scone
Cressfield Station	LEP – I81	New England Highway, Parkville	Nil – located 10m west of proposed transport route along New England Hwy, Parkville
Wyoming Stud	LEP – I66	New England Highway, Clifffdale	Nil – located 10m west of proposed transport route along New England Hwy, Clifffdale
Mountain House (former public school)	LEP – I45 SHR - 00311	Cnr Petwynn and Raglan Streets, Wingen	Nil – located 20m west of proposed transport route along New England Highway, Wingen
Antiques Shop (former post office)	LEP – I223	New England Highway, Wingen	Nil – located 20m west of proposed transport route along New England Highway, Wingen
Abbotsford (former Coach House)	LEP – I70	New England Highway, Wingen	Nil – located 10m east of proposed transport route along New England Highway, WIngen
Murulla Station	LEP – I71	New England Highway, Wingen	Nil – located 20m west of proposed transport route along New England Highway, Wingen
St Luke's Church	LEP – I204	Salisbury Street, Blandford	Nil – located 35m north-east of proposed transport route along New England Highway, Blandford
Residence (former 'Haydonton Inn')	LEP – I174	2 Mayne Street, Murrurundi	Nil – located 20m north of proposed transport route along New England Highway, Murrurundi

Site Name	Register / Item #	Location	Impact from Proposed Works
Murrurundi Conservation Area	LEP – C4 RNE (Reg) - 1374	New England Highway, Murrurundi	Nil – intersects proposed transport route at New England Highway, Murrurundi. No road upgrades proposed at this location.
Council Building and Chambers	LEP – I167	47-53 Mayne Street, Murrurundi	Nil – located 10m south of proposed transport route along New England Highway, Murrurundi
White Hart Hotel	LEP – I175	46 Mayne Street, Murrurundi	Nil – located 10m north of proposed transport route along New England Highway, Murrurundi
J. Dooley General Store	LEP – I176	60 Mayne Street, Murrurundi	Nil – located 10m north of proposed transport route along New England Highway, Murrurundi
Gallery and Restaurant (former CBC Bank)	LEP – I180	66 Mayne Street, Murrurundi	Nil – located 10m north of proposed transport route along New England Highway, Murrurundi
Bridge House	LEP – I177	44 Mayne Street, Murrurundi	Nil – located 10m north of proposed transport route along New England Highway, Murrurundi
Post Office	LEP – I168	89 Mayne Street, Murrurundi	Nil – located 10m south of proposed transport route along New England Highway, Murrurundi
Pink Cottage	LEP – I172	109 Mayne Street, Murrurundi	Nil – located 10m south of proposed transport route along New England Highway, Murrurundi
RSL Hall (former Manchester Unity Hall)	LEP – I178	116 Mayne Street, Murrurundi	Nil – located 20m north of proposed transport route along New England Highway, Murrurundi
Museum (former Presbyterian Church)	LEP – I169	Mayne Street, Murrurundi	Nil - Nil – located 10m south of proposed transport route along New England Highway, Murrurundi
Museum (former Literary Institute)	LEP – I170	Mayne Street, Murrurundi	Nil - Nil – located 10m south of proposed transport route along New England Highway, Murrurundi
Methodist Church	LEP – I179	126 Mayne Street, Murrurundi	Nil - Nil – located 10m north of proposed transport route along New England Highway, Murrurundi
Public School	LEP – I171	135 Mayne Street, Murrurundi	Nil - Nil – located 10m south of proposed transport route along New England Highway, Murrurundi
Royal Hotel	LEP – I181	144 Mayne Street, Murrurundi	Nil - Nil – located 10m north of proposed transport route along New England Highway, Murrurundi
Royal Hotel Stables	LEP – I182	144 Mayne Street, Murrurundi	Nil - Nil – located 10m north of proposed transport route along New England Highway, Murrurundi

Site Name	Register / Item #	Location	Impact from Proposed Works
Café (former Telegraph Office)	LEP – I173	155 Mayne Street, Murrurundi	Nil - Nil – located 10m south of proposed transport route along New England Highway, Murrurundi
Rose Cottage	LEP – I183	160 Mayne Street, Murrurundi	Nil - Nil – located 10m north of proposed transport route along New England Highway, Murrurundi
Bobadil House	LEP – I184	94 Mayne Street, Murrurundi	Nil - Nil – located 10m north of proposed transport route along New England Highway, Murrurundi
Ardglen Tunnel	LEP – I199 SHR – 01021 s.170 – ARTC	Main North Railway Line, Ardglen	Nil - Nil – located 10m south-west of proposed transport route along New England Highway, Murrurundi

Liverpool Plains Shire Council Area

Site Name	Register / Item #	Location	Impact from Proposed Works
Marshall MacMahon Hotel	LEP – I075	31 Coach Street, Wallabadah	Nil – located 20m west of proposed transport route along New England Highway, Wallabadah
St Anne's Catholic Church	LEP – I076	New England Highway, Wallabadah	Nil – located 20m east of proposed transport route along New England Highway, Wallabadah

Tamworth Regional Council Area

Site Name	Register / Item #	Location	Impact from Proposed Works
Goonoo Goonoo Station	LEP – I125	New England Highway, Goonoo Goonoo	Nil – located adjacent (east) to proposed transport route along New England Highway, Wallabadah
Timbumburi School	LEP – I508	New England Highway, Timbumburi	Nil – located 20m west of proposed transport route along New England Highway, Timbumburi
Tobacco Kiln	LEP – I476	Scott Road, Tamworth	Nil – located 20m west of proposed transport route along New England Highway, Tamworth
Wells and Pumping Station off Peel River	LEP – I412	Scott Road, Tamworth	Nil – located 50m east of proposed transport route along New England Highway, Tamworth
Power House Motel and Monument	LEP – I429	248 Marius Street, Tamworth	Nil – located 20m north-east of proposed transport route along New England Highway, Tamworth

Site Name	Register / Item #	Location	Impact from Proposed Works
House – Glenbrook	LEP – I440	28 Nundle Road, Nemingha	Nil – located 35m south-west of proposed transport route along New England Highway, Nemingha
Former Nemingha School	LEP – I256	Nundle Road, Nemingha	Nil – located 20m south of proposed transport route along New England Highway, Nemingha
Nemingha Anglican Church	LEP – I257	Nundle Road, Nemingha	Nil – located 20m north of proposed transport route along New England Highway, Nemingha
Dungowan Butchery	LEP – I108	Nundle Road, Dungowan	Nil – located 40m north of proposed transport route along New England Highway, Dungowan
Dungowan Bakery, Store and Residence	LEP – I106	Nundle Road, Dungowan	Nil – located 40m north of proposed transport route along New England Highway, Dungowan
Roman Catholic Church, Former Convent and School Site	LEP – I110	Cnr Tangaratta and Warral Streets, Dungowan	Nil – located 20m north-east of proposed transport route along New England Highway, Dungowan
Residence	LEP – I538	Munroo Street, Woolloomin	Nil – located 20m east of proposed transport route along New England Highway, Woolloomin
Peel Inn	LEP – I277	89 Jenkins Street, Nundle	Nil – located 20m east of proposed transport route along Herring St, 20m south of proposed transport route along Oakenville St, and 10m west of proposed transport route along Jenkins St, Nundle
Jenkins Street Guesthouse – Former Bank of NSW	LEP – I276	85 Jenkins Street, Nundle	Nil – located 10m west of proposed transport route along Jenkins Street, Nundle
Jenkins St Antiques Odgers & McClelland General Store	LEP – I275	83 Jenkins Street, Nundle	Nil – located 10m west of proposed transport route along Jenkins Street, Nundle
Odgers and McClelland Exchange Stores	LEP – I274	81 Jenkins Street, Nundle	Nil – located 10m west of proposed transport route along Jenkins Street, Nundle
Residence	LEP – I273	79 Jenkins Street, Nundle	Nil – located 10m west of proposed transport route along Jenkins Street, Nundle
All Saints Church of England	LEP – I272	70 Jenkins Street, Nundle	Nil – located 10m east of proposed transport route along Jenkins Street, Nundle
Nundle Post Office	LEP – I279	91 Jenkins Street, Nundle	Nil – located 10m west of proposed transport route along Jenkins Street, Nundle
Nundle Public School	LEP – I280 s.170 – Education	93-97 Jenkins Street, Nundle	Nil – located 10m west of proposed transport route along Jenkins Street, Nundle

Site Name	Register / Item #	Location	Impact from Proposed Works
Nundle Memorial Hall and Library	LEP – I281	101 Jenkins Street, Nundle	Nil – located 10m west of proposed transport route along Jenkins Street, Nundle
Old Church Boutique Primitive Methodist Church	LEP – I278	92 Jenkins Street, Nundle	Nil – located 15m east of proposed transport route along Jenkins Street, Nundle
St Peters Catholic Church	LEP –I269	15 Innes Street, Nundle	Indirect Impact – Blade swing across south east corner of LEP heritage curtilage. No impact to structures
Nundle Shire Offices	LEP – I271	58 Jenkins Street, Nundle	Indirect Impact – Blade swing across north east corner of LEP heritage curtilage. No impact to structures
Former Courthouse Museum	LEP – I270	38-40 Jenkins Street, Nundle	Nil – located 10m east of proposed transport route on Jenkins St and 10m west of proposed transport route on Gill St, Nundle
Black Snake Gold Mine	LEP – I134 RNE (Ind) – 101052	Nundle Road, Hanging Rock	Direct Impact – Road upgrades proposed at this location.
Sheba Dam, Gatekeepers Slab Cottage	LEP – I135	Barry Road, Hanging Rock	Nil – located 25m east of proposed transport route along Barry Road, Hanging Rock

APPENDIX C

KNOWN HERITAGE SITES – STATEMENTS OF SIGNIFICANCE

Site Name	LGA	Listing / ID #	Statement of Significance	Significance Level
South Maitland Railway System	Cessnock	LEP – I212	From 1892 until the 1960s the South Maitland Railway was the largest and busiest private railway in Australia - essential in the export of Australia's richest coal resources as well as moving passengers. It was the focus of some bitter industrial disputes, and of the conflict, competition and co-operation of some of NSW's largest industrial organisations including J&A Brown and the Australian Agricultural Co. The growth and decline of the line provides evidence of the growth and decline of the coal industry around Cessnock. The largest rail system to retain steam power until it was finally abandoned in 1983. (Source: Pike, Walker and Assoc, 1994).	Local
Collieries of the South Maitland Coalfields/Greta Coal Measures Group (1340721) (Neath Colliery)	Cessnock	LEP – I215	The manager's house is the only built evidence remaining of the Neath Colliery which has operated on and off for most of this century and is part of the network of mines and collieries which were established across the South Maitland coalfields - Australia's richest coal resource. It is also significant as evidence of the colliery which gave rise to the village of Neath, for which it was the largest employer of local labour and the source of its economic survival. (Source: Pike, Walker and Assoc, 1994).	Local
Great Northern Railway Network	Cessnock	LEP – I216	No Statement of Significance Available.	State
Jerrys Plains Conservation Area	Singleton	LEP – C1	No Statement of Significance Available.	Local
Singleton Conservation Area	Singleton	LEP – C2	The conservation area for Singleton encompasses most of the oldest part of the town which has the buildings of chief historic interest as well as those stretches of townscape which are still handsome or have the potential for restoration. Along with Morpeth and Maitland, Singleton is one of the principal early towns of the Hunter Valley and deserves special recognition. Singleton is on the site of the first crossing of the Hunter River on the road to the north.	Local
Merton Cemetery	Muswellbrook	LEP - I18	Historically the property is of regional significance as it was settled by one of the region's founding families, bought by the region's best known successful pastoralist, and contains evidence of the original homestead buildings. It has remained continuously in use for its original purpose. Socially the homestead site has regional significance for the descendants of the Ogilvie, Reginald White and Porter families. Scientifically it has regional significance for its potential to reveal information which could contribute to an understanding of the lifestyle of successful pastoralists in the 19th and 20th centuries and about the changes in farming in the Upper Hunter over the past century. Because of the surviving evidence of settlement by its founders, the homestead has regional rarity. <i>(Taken from Significance Statement for Merton Homestead)</i> .	Local
Kayuga Cemetery	Muswellbrook	LEP – I43	Historically significant regionally and to the state, as the oldest cemetery in the Hunter Valley, the Old Kayuga Cemetery has a similar social significance for providing the resting	Local

Site Name	LGA	Listing / ID #	Statement of Significance	Significance Level
			place for members of the area's pioneering families, many of whose descendants live in the region. Scientifically the cemetery is of significance to the region and state for its potential to reveal information which could contribute to an understanding of the early members of the Upper Hunter community, their burial habits and the significance of cemeteries in the lives of pioneers of remote areas of the state in the early 19th century.	
Fitzgerald/Olympic Park Gates	Muswellbrook	LEP – I124	The gates have historical and social significance for recording the relative status of an eminent local in the early 20th century and for being significant to all descendants of the locally-famous Keys family.	Local
Residential Heritage Conservation Area	Muswellbrook	LEP – C2	No Statement of Significance Available.	Local
Muswellbrook Business Heritage Conservation Area	Muswellbrook	LEP – C3	No Statement of Significance Available.	Local
Central Scone Conservation Area	Upper Hunter	LEP – C2	No Statement of Significance Available.	Local
Murrurundi Conservation Area	Upper Hunter	LEP – C4 REN (Reg) - 1374	A town with a particularly fine collection of nineteenth and early twentieth century buildings. The consistency of scale and density and the high percentage of surviving historic buildings give the town a strong architectural character. Visually the town is clearly defined and enhanced by the surrounding hills in which there has been little development. The hills successfully terminate vistas along the streets of the town. Mature street trees add to the character of the townscape and link it to the natural landscape of its setting.	Local
Black Snake Gold Mine	Tamworth	LEP - I134	The place has both historical and geological significance to Nundle, the Tamworth district and to local and national mining development beginning in this instance from the mid 1800s.	Local
St Peters Catholic Church	Tamworth	LEP – I269	The building is locally significant in terms of its usage as a church for spiritual, cultural and social reasons and is representative of the importance of churches in rural community's. Important in the course and nature of local parish development.	Local
Nundle Shire Offices	Tamworth	LEP – I271	This building is locally significant due to its original and continued use as council office. This building is considered to be an integral component of the Nundle streetscape due to its architectural and design elements and is representative of the type of building of its time.	Local

APPENDIX D COMMUNITY IDENTIFIED HERITAGE SITES

Site Name
Nundle Sport and Recreation Club Ltd, Nundle Bowling Club and Nundle Golf Club
Market
Town Pound
Church Site. A Catholic Church was built on the Company site and opened in 1885
Court House Site
Peel River Bridge
Nundle Recreation Area
Peel River Recreation Area
Nundle Sports Oval and Cricket Ground
Peel Inn Hotel
Nundle Post Office (former)
Site of former Queens Hotel (later Royal Hotel, then Bank of NSW)
Former Seamstress Shop and Residence
Former Grahams Saddlery (later Church of England Vicarage)
Former Nundle Hotel
Former Undertakers Residence and Coffin Workshop
Site of former Presbyterian Church
Site of former Nundle Flour Mill
Abandoned Antimony Mine
Site of former Sailors Home Hotel (later the Happy Valley Hotel)
Site of former Butcher's Shop
Site of former Chinese Store
Site of former Union Hotel
Site of former Bradford's Reservoir
Devil's Elbow
Site of original Hanging Rock Post Office
Former Hanging Rock cricket ground/sports/recreation ground
Hanging Rock School Site
Hanging Rock Hall
Sheba Dams Recreation Reserve
Sheba Dams, Dam Keepers Cottage
Nundle Memorial Hall
Nundle School of Arts
Nundle Café and Fuel
Imperial Hotel Site
Nundle Swimming Pool
Primitive Methodist Church (former)
Nundle Public School
Historic Avenue of Trees
Former Bank of NSW

Former Odgers and McClelland General Store

Odgers and McClelland Exchange Stores

Former Butchers Shop

CWA Rooms, Doctors Rooms, Practice Nurse Rooms, Child Care Rooms

Former Spread Eagle Hotel

Former Nundle Shire Council

Former Nundle Courthouse

All Saints Anglican Church

Site of the Diggers Arms (first Nundle Hotel on the Goldfields)

Site of former Peel River Inn

Site of former Specimen Inn (later Galatea Hotel)

APPENDIX E NSW HISTORICAL THEMES

New South Wales Historical Themes

**Table showing correlation of national, state and local themes,
with annotations and examples**

Dated 4 October 2001

Australian Theme	NSW Theme		Notes	Examples
1 Tracing the natural evolution of Australia,	Environment - naturally evolved	Local themes	There are two aspects to this theme: (1) Features occurring naturally in the physical environment which have significance independent of human intervention (2) Features occurring naturally in the physical environment which have shaped or influenced human life and cultures.	A geological formation, fossil site, ecological community, island, soil site, river flats, estuary, mountain range, reef, lake, woodland, seagrass bed, wetland, desert, alps, plain, valley, headland, evidence of flooding, earthquake, bushfire and other natural occurrences.
2 Peopling Australia	Aboriginal cultures and interactions with other cultures	Local themes	Activities associated with maintaining, developing, experiencing and remembering Aboriginal cultural identities and practises, past and present; with demonstrating distinctive ways of life; and with interactions demonstrating race relations.	Place name, camp site, midden, fish trap, trade route, massacre site, shipwreck contact site, missions and institutions, whaling station, pastoral workers camp, timber mill settlement, removed children's home, town reserve, protest site, places relating to self-determination, keeping place, resistance & protest sites, places of segregation, places of indentured labour, places of reconciliation

2 Peopling Australia	Convict	Local themes	Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW (1788-1850) – does not include activities associated with the conviction of persons in NSW that are unrelated to the imperial ‘convict system’: use the theme of Law & Order for such activities	Prison, convict shipwreck, convict system document, ticket-of-leave and probationary living quarters, guards uniform, landscapes-of-control, lumber yard, quarry, gallows site, convict-built structure, convict ship arrival site, convict barracks, convict hospital, estate based on convict labour, place of secondary punishment.
2 Peopling Australia	Ethnic influences	Local themes	Activities associated with common cultural traditions and peoples of shared descent, and with exchanges between such traditions and peoples.	Blessing-of-the-fleet site, ethnic community hall, Chinese store, place or object that exhibits an identifiable ethnic background, marriage register, Coat of Arms, olive grove, date palm plantation, citizenship ceremony site, POW camp, register of ship crews, folk festival site, ethnic quarter in a town.
2 Peopling Australia	Migration	Local themes	Activities and processes associated with the resettling of people from one place to another (international, interstate, intrastate) and the impacts of such movements	Migrant hostel, customs hall, border crossing, immigration papers, bus depot, emigrant shipwreck, Aboriginal mission, quarantine station, works based on migrant labour, detention centre.
3 Developing local, regional and national economies	Agriculture	Local themes	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes, can include aquaculture	Hay barn, wheat harvester, silo, dairy, rural landscape, plantation, vineyard, farmstead, shelterbelt, silage pit, fencing, plough markings, shed, fish farm, orchard, market garden, piggery, common, irrigation ditch, Aboriginal seasonal picking camp.

3 Developing local, regional and national economies	Commerce	Local themes	Activities relating to buying, selling and exchanging goods and services	Bank, shop, inn, stock exchange, market place, mall, coin collection, consumer wares, bond store, customs house, trade routes, mint, Aboriginal trading places, Aboriginal ration/blanket distribution points, Aboriginal tourism ventures
3 Developing local, regional and national economies	Communication	Local themes	Activities relating to the creation and conveyance of information	Post office, telephone exchange, printery, radio studio, newspaper office, telegraph equipment, network of telegraph poles, mail boat shipwreck, track, airstrip, lighthouse, stamp collection.
3 Developing local, regional and national economies	Environment - cultural landscape	Local themes	Activities associated with the interactions between humans, human societies and the shaping of their physical surroundings	A landscape type, bushfire fighting equipment, soil conservation structures, national park, nature reserve, market garden, land clearing tools, evidence of Aboriginal land management, avenue of trees, surf beach, fishing spot, plantation, place important in arguments for nature or cultural heritage conservation.
3 Developing local, regional and national economies	Events	Local themes	Activities and processes that mark the consequences of natural and cultural occurrences	Monument, photographs, flood marks, memorial, ceremonial costume, honour board, blazed tree, obelisk, camp site, boundary, legislation, place of pilgrimage, places of protest, demonstration, congregation, celebration.
3 Developing local, regional and national economies	Exploration	Local themes	Activities associated with making places previously unknown to a cultural group known to them.	Explorers route, marked tree, camp site, explorer's journal, artefacts collected on an expedition, captain's log, surveyor's notebook, mountain pass, water source, Aboriginal trade route, landing site, map.

3 Developing local, regional and national economies	Fishing	Local themes	Activities associated with gathering, producing, distributing, and consuming resources from aquatic environments useful to humans.	Fishing boat, whaling station, marine reserve, fisher camp, seafood factory, fish shop, oyster lease, artificial reef, fishing boat wreck, mooring, dock, marina, wharf, fish farm, fish trap
3 Developing local, regional and national economies	Forestry	Local themes	Activities associated with identifying and managing land covered in trees for commercial timber purposes.	Forested area, forest reserve, timber plantation, forestry equipment, saw mill, mill settlement, arboretum, charcoal kiln, coppiced trees, forest regrowth, timber tracks, whim.
3 Developing local, regional and national economies	Health	Local themes	Activities associated with preparing and providing medical assistance and/or promoting or maintaining the well being of humans	Hospital, sanatorium, asylum, surgical equipment, ambulance, nurses quarters, medical school, baby clinic, hospital therapy garden, landscaped grounds, herbalist shop, pharmacy, medical consulting rooms.
3 Developing local, regional and national economies	Industry	Local themes	Activities associated with the manufacture, production and distribution of goods	Factory, workshop, depot, industrial machinery, timber mill, quarry, private railway or wharf, shipbuilding yard, slipway, blacksmithy, cannery, foundry, kiln, smelter, tannery, brewery, factory office, company records.
3 Developing local, regional and national economies	Mining	Local themes	Activities associated with the identification, extraction, processing and distribution of mineral ores, precious stones and other such inorganic substances.	Mine, quarry, race, mining field or landscape, processing plant, manager's office, mineral specimen, mining equipment, mining license, ore laden shipwreck, collier, mine shaft, sluice gate, mineral deposit, slag heap, assay office, water race.

3 Developing local, regional and national economies	Pastoralism	Local themes	Activities associated with the breeding, raising, processing and distribution of livestock for human use	Pastoral station, shearing shed, slaughter yard, stud book, photos of prize-winning stock, homestead, pastoral landscape, common, fencing, grassland, well, water trough, freezer boat shipwreck, wool store.
3 Developing local, regional and national economies	Science	Local themes	Activities associated with systematic observations, experiments and processes for the explanation of observable phenomena	Laboratory, experimental equipment, text book, observatory, botanical garden, arboretum, research station, university research reserve, weather station, soil conservation area, fossil site, archaeological research site.
3 Developing local, regional and national economies	Technology	Local themes	Activities and processes associated with the knowledge or use of mechanical arts and applied sciences	Computer, telegraph equipment, electric domestic appliances, underwater concrete footings, museum collection, office equipment, Aboriginal places evidencing changes in tool types.
3 Developing local, regional and national economies	Transport	Local themes	Activities associated with the moving of people and goods from one place to another, and systems for the provision of such movements	Railway station, highway, lane, train, ferry, wharf, tickets, carriage, dray, stock route, canal, bridge, footpath, aerodrome, barge, harbour, lighthouse, shipwreck, canal, radar station, toll gate, horse yard, coach stop.
4 Building settlements, towns and cities	Towns, suburbs and villages	Local themes	Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages	Town plan, streetscape, village reserve, concentrations of urban functions, civic centre, subdivision pattern, abandoned town site, urban square, fire hydrant, market place, abandoned wharf, relocated civic centre, boundary feature, municipal Coat of Arms

4 Building settlements, towns and cities	Land tenure	Local themes	Activities and processes for identifying forms of ownership and occupancy of land and water, both Aboriginal and non-Aboriginal	Fence, survey mark, subdivision pattern, land title document, boundary hedge, , stone wall, shelterbelt, cliff, river, seawall, rock engravings, shelters & habitation sites, cairn, survey mark, trig station, colonial/state border markers.
4 Building settlements, towns and cities	Utilities	Local themes	Activities associated with the provision of services, especially on a communal basis	Water pipeline, sewage tunnel, gas retort, powerhouse, County Council office, garbage dump, windmill, radio tower, bridge, culvert, weir, well, cess pit, reservoir, dam, places demonstrating absence of utilities at Aboriginal fringe camps
4 Building settlements, towns and cities	Accommodation	Local themes	Activities associated with the provision of accommodation, and particular types of accommodation – does not include architectural styles – use the theme of Creative Endeavour for such activities.	Terrace, apartment, semi-detached house, holiday house, hostel, bungalow, mansion, shack, house boat, caravan, cave, humpy, migrant hostel, homestead, cottage, house site (archaeological).
5 Working	Labour	Local themes	Activities associated with work practises and organised and unorganised labour	Trade union office, bundy clock, time-and-motion study (document), union banner, union membership card, strike site, staff change rooms, servants quarters, shearing shed, green ban site, brothel, kitchen, nurses station, hotel with an occupational patronage.
6 Educating	Education	Local themes	Activities associated with teaching and learning by children and adults, formally and informally.	School, kindergarten, university campus, mechanics institute, playground, hall of residence, text book, teachers college, sail training boat wreck, sportsfield, seminary, field studies centre, library, physical evidence of academic achievement (e.g. a medal or certificate).

7 Governing	Defence	Local themes	Activities associated with defending places from hostile takeover and occupation	Battle ground, fortification, RAAF base, barracks, uniforms, military maps and documents, war memorials, shipwreck lost to mines, scuttled naval vessel, POW camp, bomb practice ground, parade ground, massacre site, air raid shelter, drill hall,
7 Governing	Government and administration	Local themes	Activities associated with the governance of local areas, regions, the State and the nation, and the administration of public programs – includes both principled and corrupt activities.	Municipal chamber, County Council offices, departmental office, legislative document, symbols of the Crown, State and municipal flags, official heraldry, ballot box, mayoral regalia, places acquired/disposed of by the state, customs boat, pilot boat, site of key event (eg federation, royal visit), protest site, physical evidence of corrupt practises.
7 Governing	Law and order	Local themes	Activities associated with maintaining, promoting and implementing criminal and civil law and legal processes	Courthouse, police station, lock-up, protest site, law chambers, handcuffs, legal document, gaol complex, water police boat, police vehicle, jail, prison complex (archaeological), detention centre, judicial symbols
7 Governing	Welfare	Local themes	Activities and process associated with the provision of social services by the state or philanthropic organisations	Orphanage, retirement home, public housing, special school, trades training institution, employment agency,
8 Developing Australia's cultural life	Domestic life	Local themes	Activities associated with creating, maintaining, living in and working around houses and institutions.	Domestic artefact scatter, kitchen furnishings, bed, clothing, garden tools, shed, arrangement of interior rooms, kitchen garden, pet grave, chicken coop, home office, road camp, barrack, asylum.

8 Developing Australia's cultural life	Creative endeavour	Local themes	Activities associated with the production and performance of literary, artistic, architectural and other imaginative, interpretive or inventive works; and/or associated with the production and expression of cultural phenomena; and/or environments that have inspired such creative activities.	Opera house, theatre costume, film studio, writer's studio, parade tableau, manuscripts, sound recording, cinema, exemplar of an architectural style, work of art, craftwork, and/or public garden, bandstand, concert hall, rock art site, rotunda, library, public hall; and/or a, particular place to which there has been a particular creative, stylistic or design response.
8 Developing Australia's cultural life	Leisure	Local themes	Activities associated with recreation and relaxation	Resort, ski lodge, chalet, cruise ship, passenger rail carriage, swimming pool, dance hall, hotel, caravan park, tourist brochures, park, beach, clubhouse, lookout, common, bush walking track, Aboriginal Christmas camp site, fishing spot, picnic place, swimming hole.
8 Developing Australia's cultural life	Religion	Local themes	Activities associated with particular systems of faith and worship	Church, monastery, convent, rectory, presbytery, manse, parsonage, hall, chapter house, graveyard, monument, church organ, synagogue, temple, mosque, madrasa, carved tree, burial ground
8 Developing Australia's cultural life	Social institutions	Local themes	Activities and organisational arrangements for the provision of social activities	CWA Room, Masonic hall, School of Arts, Mechanic's Institute, museum, art gallery, RSL Club, public hall, historical society collection, public library, community centre, Aboriginal mission hall or school room.
8 Developing Australia's cultural life	Sport	Local themes	Activities associated with organised recreational and health promotional activities	Oval, race course, swimming pool, bowling club, bowling green, trophies, calendar of fixtures, cricket set, yacht pens, tennis court, rugby field, speedway, sporting equipment, bocce court.

9 Marking the phases of life	Birth and Death	Local themes	Activities associated with the initial stages of human life and the bearing of children, and with the final stages of human life and disposal of the dead.	Birth control clinic, maternity hospital, nursery, baby clinic, baptism register, circumcision equipment, and Hospice, nursing home, funeral parlour, grave furnishings, cremation site, cemetery, burial register, disaster site, memorial plantings, shipwreck with loss of life,
9 Marking the phases of life	Persons	Local themes	Activities of, and associations with, identifiable individuals, families and communal groups	A monument to an individual, a family home, a dynastic estate, private chapel, a birthplace, a place of residence, a gendered site, statue, Coat of Arms, commemorative place name, place dedicated to memory of a person (e.g. hospital wing).

Notes:

Editorial

- The table is arranged numerically in the order of the national themes, and then within each national theme alphabetically in order of the state themes – no other particular order is intended.

Thematic usages

- The inclusion of an example against one theme does not exclude its consideration against one or more of the other themes (e.g Asylum) to indicate that the physical development of an item can be shaped by more than one historical process of theme during its existence.
- Aboriginal histories can be analysed using any theme(s) relevant to the place or object being considered – it is not necessary to restrict analysis to the theme of 'Aboriginal cultures and interactions with other cultures' only
- The theme of 'Domestic Life' can be used to explore the historical contexts for interior or private, domestic spaces and objects.
- The theme of 'Forestry' can be used for the active management of natural and regrowth trees for timber production while the theme of 'Agriculture' can be used for the intensive cultivation of exotic trees for purposes other than timber production.

Correlations

- The placement of the 36 State themes against the National themes was informed by the arrangement of the 84 national sub-themes and 116 national sub-sub-themes developed by the AHC for each of its National themes – the placements are not random.
- The development of local themes is accommodated within this framework with each local theme regarded as a correlation to a State theme in a similar manner to the relationship between the State and National themes
- Generally, local = local government area, but can also be used in other ways, such as a particular ethnic or social community, or a locality that is smaller than an LGA or straddles an LGA boundary, or a locality larger than an LGA such as a SHR historical region or an ecclesiastical diocese or an area smaller than the whole state but larger than an LGA, such as the area within an Aboriginal nation or Land Council.

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