



Appendix T

Statement of Heritage Impact



Hume Coal Project

Environmental Impact Statement | Appendix T
| Statement of Heritage Impact
Prepared for Hume Coal Pty Ltd | 23 February 2017



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Hume Coal Project

Final

Report J12055RP1 | Prepared for Hume Coal Pty Ltd | 23 February 2017

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Date 23 February 2017

Date 23 February 2017

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Executive Summary

This historical heritage assessment and statement of heritage impact forms part of the environmental impact statement to support a development application for the Hume Coal Project, for which approval is being sought under Part 4, Division 4.1 of the NSW *Environmental Planning and Assessment Act 1979*. The report assesses the heritage values of the project area to identify significant buildings, archaeological sites and landscapes. It assesses the level of impact that will occur and determines how best to manage those impacts.

Research was undertaken through the review of primary and secondary sources, field surveys and community consultation. The current environmental context of the project area is of a cultural landscape that includes historic elements such as buildings, structures and spaces representing various periods of colonial occupation from the early nineteenth century onwards. The region in which the project area sits also has a history of industrial uses, including mining, some of which continue today. The majority of the surviving heritage structures in the region are larger masonry buildings such as large homes, and include *Oldbury*, *Newbury*, and *Mereworth*. Smaller structures such as former shops, a former post office and houses also survive and are being used as residences; buildings that were constructed of timber, or were smaller than the stately homes have been demolished, resulting in a biased representation of the rural landscape. Also not obvious today, but an important factor that shaped the landscape, is the history of mining in the Southern Highlands.

A number of heritage items in the area surrounding the project area are listed on the State Heritage Register; these items were excluded from the project area in the early stages of design planning.

Research and field assessment for this report found that some heritage items occur within the project area, including items listed on the *Wingecarribee Local Environmental Plan 2010*, one area of archaeological sensitivity (Mereworth 1), one area of possible archaeological sensitivity (Evandale HC_127) and two previously identified but unlisted cultural landscapes (Sutton Forest Unit 6 and Exeter Sutton Forest Landscape Conservation Area).

The following heritage items in the project area are listed on the *Wingecarribee Local Environmental Plan 2010*:

- *The Harp* (I027)
- *Mereworth House and Garden* (I351)
- *The Pines* (I029)
- *Sutton Farm* (I035)
- *Newbury* (I202)
- *Bunya Hill* (I018)
- *Comfort Hill* (I021, I356, I357)
- *Eling Forest* (I004, I009, I010)

The assessment found that while heritage items are listed within the project area, only one occurs in the surface infrastructure area of the project. This item, Mereworth house and garden includes the entire lot, however the significant elements of the property are the house and surrounding garden, which will not be impacted. Other heritage items within the project area occur above the underground mining area and will not be affected by the project. Subsidence impacts have been assessed as negligible or imperceptible and as a result impacts associated with ground and soil movement through underground mining are not anticipated.

The report found that the most significant impact of the project will be to the visual setting surrounding the house and garden at Mereworth when viewed from within the property. Lesser visual impacts of setting of the house and garden from the public domain will also occur but the project design has used the landscape to screen infrastructure as much as practicable. However some residual visual impacts will remain.

Historic heritage values will be preserved through a series of management measures designed to conserve and enhance those values through avoidance, maintenance and screening. The following overarching strategy to protect the significance of heritage items within the project area has been followed to date and will as needed:

1. A precautionary approach will be followed to all activities that could impact on heritage items or potential heritage items. That is, the items will either be completely excluded from the disturbance footprint or its heritage values will be investigated and recorded prior to the works.
2. Impacts to heritage items including buildings, bridges, landscapes and landscape elements will be avoided through the project design.
3. Following project approval and prior to any work commencing, an historical heritage management plan (HHMP) will be prepared to guide the conservation of heritage items and unexpected finds for the duration of the project. The relevant measures in the HHMP will be incorporated into the project construction environmental management plan (CEMP) to avoid inadvertent impacts during the construction phase of the project.
4. The management measures outlined in Section 7 will be specified in detail in the HHMP.
5. The Department of Planning and Environment as well as the Heritage Division (OEH) will be consulted on the content of the HHMP and the relevant sections of the CEMP.
6. Tree line windbreaks will be retained to the greatest extent practicable and/or replaced as soon as possible if their removal is unavoidable.
7. The window frame and wagon wheel fragment leaning against the shed on the north-west of the house and garden at *Mereworth*, to the main house within the garden for safekeeping.

Detailed measures arising from the overarching measures above are included in Section 8 of this report.

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1 Introduction

1.1 Overview

Hume Coal Pty Limited (Hume Coal) is seeking approval to develop and operate the Hume Coal Project (the project), an underground coal mine and associated mine infrastructure in the Southern Coalfield of New South Wales (NSW). Figure 1.1 illustrates the location of the project in a regional context.

Hume Coal holds exploration Authorisation 349 (A349) located to the west of Moss Vale, in the Wingecarribee local government area (LGA). A349 covers approximately 8,900 hectares (ha) though mining is not proposed across its full extent; the proposed underground mine area will occupy approximately 3,474 ha. The project area boundary is illustrated in Figure 1.2, and covers the combined Mining Lease Application (MLA) areas for the project that have been submitted under the NSW *Mining Act 1992*, (MLA 527, MLA 528 and MLA 529), as well as the parts of the project that do not require a mining lease. The project area is therefore larger than the combined MLA area.

Hume Coal acquired A349 from Anglo Coal in December 2010, and commenced exploration drilling shortly after in May 2011. Since this time the project has been developed following several years of detailed geological, engineering, environmental, financial and other technical investigations to define the mineable resource, and to identify and address environmental and other constraints. This has included two stages of environmental and engineering investigations and three stages of opportunities and constraints analysis and workshops. Numerous alternative designs have been prepared and evaluated.

The project incorporates leading practice innovations, some of which set new benchmarks for underground coal mining in NSW. For example, the rail wagons to be used to transport product coal off-site will be covered and all coal reject material (the stone that is separated out of the coal during processing) will be returned underground to partially backfill the mined-out void and reduce visual and other environmental impacts. A low impact mining system will be used which leaves pillars of coal in place so that the overlying strata is supported (rather than collapsing into the mined-out void) and surface subsidence impacts will be negligible.

1.2 Project description

The project involves developing and operating an underground coal mine and associated infrastructure over a total estimated project life of 23 years. Indicative mine and surface infrastructure plans are provided in Figure 1.3 and Figure 1.4. A full description of the project, as assessed in this report, is provided in Chapter 2 of the main EIS report (EMM 2017a).

In summary it involves:

- Ongoing resource definition activities, along with geotechnical and engineering testing, and other fieldwork to facilitate detailed design.
- Establishment of a temporary construction accommodation village.

- Development and operation of an underground coal mine, comprising of approximately two years of construction and 19 years of mining, followed by a closure and rehabilitation phase of up to two years, leading to a total project life of 23 years. Some coal extraction will commence during the second year of construction and hence there will be some overlap between the construction and operational phases.
- Extraction of approximately 50 million tonnes (Mt) of run-of-mine (ROM) coal from the Wongawilli Seam, at a rate of up to 3.5 million tonnes per annum (Mtpa). Low impact mining methods will be used, which will have negligible subsidence impacts.
- Following processing of ROM coal in the coal preparation plant (CPP), production of up to 3 Mtpa of metallurgical and thermal coal for sale to international and domestic markets.
- Construction and operation of associated mine infrastructure, mostly on cleared land, including:
 - one personnel and materials drift access and one conveyor drift access from the surface to the coal seam;
 - ventilation shafts, comprising one upcast ventilation shaft and fans, and up to two downcast shafts installed over the life of the mine, depending on ventilation requirements as the mine progresses;
 - a surface infrastructure area, including administration, bathhouse, washdown and workshop facilities, fuel and lubrication storage, warehouses, laydown areas, and other facilities. The surface infrastructure area will also comprise the CPP and ROM coal, product coal and emergency reject stockpiles;
 - surface and groundwater management and treatment facilities, including storages, pipelines, pumps and associated infrastructure;
 - overland conveyors;
 - rail load-out facilities;
 - a small explosives magazine;
 - ancillary facilities, including fences, access roads, car parking areas, helipad and communications infrastructure; and
 - environmental management and monitoring equipment.
- Establishment of site access from Mereworth Road, and construction of minor internal roads.
- Coal reject emplacement underground, in the mined-out voids.
- Peak workforces of approximately 414 full-time equivalent employees during construction and approximately 300 full-time equivalent employees during operations.
- Decommissioning of mine infrastructure and rehabilitating the area once mining is complete, so that it can support land uses similar to current land uses.

The project area, shown in Figure 1.2 is approximately 5,051 hectares (ha). Surface disturbance will mainly be restricted to the surface infrastructure areas shown indicatively on Figure 1.4 though will include some other areas above the underground mine, such as drill pads and access tracks. The project area generally comprises direct surface disturbance areas of up to approximately 117 ha, and an underground mining area of approximately 3,472 ha, where negligible subsidence impacts are anticipated.

A construction buffer zone will be provided around the direct disturbance areas. The buffer zone will provide an area for construction vehicle and equipment movements, minor stockpiling and equipment laydown, as well as allowing for minor realignments of surface infrastructure. Ground disturbance will generally be minor and associated with temporary vehicle tracks and sediment controls as well as minor works such as backfilled trenches associated with realignment of existing services. Notwithstanding, environmental features identified in the relevant technical assessments will be marked as avoidance zones so that activities in this area do not have an environmental impact.

Product coal will be transported by rail, primarily to Port Kembla terminal for the international market, and possibly to the domestic market depending on market demand. Rail works and use are the subject of a separate EIS and State significant development application for the Berrima Rail Project.

1.3 Project area and study area

The project area is illustrated on Figure 1.2 and comprises the surface infrastructure area and the underground mining area.

The study area comprises the project area as well as the surrounding area within approximately 5 km from the project area boundary, which includes Berrima, Moss Vale and Exeter to the north, east and south, and large expanses of state forest to the west. Within the project area, the assessment focussed on the surface infrastructure footprint, as this is the area where surface disturbance will occur.

1.4 General site description

The project area is located in the Southern Highlands, a scenic area containing many established rural enterprises and historic towns. It is evident that the historic character of the Southern Highlands remains an important aspect of the place to residents and visitors and is recognised as such by statutory authorities and non-government run organisations alike. Classification by the National Trust of Australia in the 1960s promoted the popularity of places like Berrima in the tourist market. History and heritage is one of the drawcards of the Southern Highlands as a holiday destination (Destination NSW nd). The township of Berrima contains a substantial number of heritage items; the proposal will not impact the township of Berrima.

The project area is approximately 100 km south-west of Sydney and 4.5 km west of Moss Vale town centre in the Wingecarribee LGA (refer to Figure 1.1 and Figure 1.2). The nearest area of surface disturbance associated with the surface infrastructure area, which will be 7.2 km north-west of the Moss Vale town centre. It is in the Southern Highlands region of NSW and the Sydney Basin Biogeographic Region.

The project area is in a semi-rural setting, with the wider region characterised by grazing properties, small-scale farm businesses, natural areas, forestry, scattered rural residences, villages and towns, industrial activities such as the Berrima Cement Works and Berrima Feed Mill, and some extractive industry and major transport infrastructure such as the Hume Highway.

Surface infrastructure is proposed to be developed on predominately cleared land owned by Hume Coal or affiliated entities, or for which there are appropriate access agreements in place with the landowner. Over half of the remainder of the project area (principally land above the underground mining area) comprises cleared land that is, and will continue to be, used for livestock grazing and small-scale farm businesses. Belanglo State Forest covers the north-western portion of the project area and contains introduced pine forest plantations, areas of native vegetation and several creeks that flow through deep sandstone gorges. Native vegetation within the project area is largely restricted to parts of Belanglo State Forest and riparian corridors along some watercourses.

The project area is traversed by several drainage lines including Oldbury Creek, Medway Rivulet, Wells Creek, Wells Creek Tributary, Belanglo Creek and Longacre Creek, all of which ultimately discharge to the Wingecarribee River, at least 5 km downstream of the project area. The Wingecarribee River's catchment forms part of the broader Warragamba Dam and Hawkesbury-Nepean catchments. Medway Dam is also adjacent to the northern portion of the project area.

Most of the central and eastern parts of the project area have very low rolling hills with occasional elevated ridge lines. However, there are steeper slopes and deep gorges in the west in Belanglo State Forest.

Existing built features across the project area include scattered rural residences and farm improvements such as outbuildings, dams, access tracks, fences, yards and gardens, as well as infrastructure and utilities including roads, electricity lines, communications cables and water and gas pipelines. Key roads that traverse the project area are the Hume Highway and Golden Vale Road. The Illawarra Highway borders the south-eastern section of the project area.

Industrial and manufacturing facilities adjacent to the project area include the Berrima Cement Works and Berrima Feed Mill on the fringe of New Berrima. Berrima Colliery's mining lease (CCL 748) also adjoins the project area's northern boundary. Berrima colliery is currently not operating with production having ceased in 2013 after almost 100 years of operation. The mine is currently under care and maintenance.

1.5 Mine design and process

To eliminate and/or minimise impacts on surface features and water resources, Hume Coal will use a non-caving coal extraction method, leaving coal pillars in place throughout the underground mine that are designed to provide long-term support to the overlying rock strata. Given this mining system is for a first workings mine only, there will be no associated subsidence impacts, and therefore the overlying aquifer and surface features will be protected. The mine design also incorporates the construction of bulkheads, which will be used to seal each panel immediately after extraction of coal and backfilling with rejects is completed. This will enable groundwater recovery in each panel to begin once the bulkhead is installed. The incorporation of bulkheads in the project design will result in a much shorter recovery time for groundwater levels post mining than other mines currently operating in NSW.

1.6 Underground reject emplacement

Nearly all coal reject material will be returned underground to partially backfill the mined-out voids, rather than keeping it at the surface in a large above ground emplacement areas or trucking it off-site for emplacement elsewhere. This technology has so far only been adopted at one other Australian underground coal mine and is considered to be leading international practice. This method has higher operating costs than surface emplacement but it eliminates the requirement for tailings ponds or cells on the surface and was selected due to the following environmental and social benefits:

- significantly reduced potential for visual, dust and noise impacts compared to conventional surface emplacement practices;
- reduced surface disturbance footprint by avoiding the need for large above ground reject stockpiles;
- provision of additional ground support and pillar confinement in backfilled areas; and
- directly responds to an expressed preference from regulatory officials that above ground reject stockpiles be minimised.

1.7 Adoption of leading practices

Hume Coal has adopted a number of leading practices to result in a mine design that avoids and minimises impacts to historical heritage values in the project area. The project has been developed following several years of technical investigations to define the mineable resource and identify and address potential environmental, social and economic constraints.

1.8 Assessment requirements

This assessment addresses the SEARs (Table 1.1).

Table 1.1 Heritage-related SEARs

Requirement	Section addressed
The EIS must address the following specific issues: <ul style="list-style-type: none">• Heritage – including an assessment of the likely Aboriginal and historic heritage (cultural and archaeological) impacts to the development having regard to OEH's requirements (see Attachment 2).	This report addresses the historic heritage issues only, with specific attention to the OEH's requirements (outlined in Table 1.2 below). Aboriginal heritage issues have been addressed in a separate report (EMM 2017b).

To inform the preparation of the SEARs, DP&E invited other government agencies to recommend matters to be addressed in the EIS. These matters were then taken into account by the Secretary for DP&E when preparing the SEARs. Copies of the government agencies' advice to DP&E were attached to the SEARs.

One agency, the Heritage Division of the Office of Environment and Heritage, raised matters relevant to this assessment. These were mainly the standard requirements for projects of this nature, though included some project-specific requirements. These matters are listed in Table 1.2 and have been taken into account in preparing this historic heritage assessment and statement of heritage impact, as indicated below.

Table 1.2 Government agency request

Office of Environment and Heritage	Section addressed
<p>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:</p>	<p>All of the heritage aspects, except for Aboriginal values, are addressed in Sections 2 to 7. Aboriginal cultural heritage is assessed in a separate report (EMM 2017b).</p>
<p>a. 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);</p>	<p>Section 7.1 summarises the changes made to the project design from its inception in response to input from the heritage specialists. Mitigation measures are contained in Section 8.</p>
<p>b. 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);</p>	<p>This report has been prepared by four suitably qualified heritage consultants. Refer to Section 1.11. Archaeological excavation of relics was not proposed.</p>
<p>c. include a statement of heritage impact for all heritage items (including significance assessment);</p>	<p>The assessments of heritage significance are presented in Section 6 and the statements of heritage impact are in Section 7.5.</p>
<p>d. 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</p>	<p>Refer to Section 7.5.</p>
<p>e. 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.</p>	<p>Areas of historical archaeological sensitivity have been identified within the project area; these areas will not be subject to impacts. Management measures addressing the possibility of inadvertent impacts are provided in Section 8.</p>

1.9 Guidelines

This assessment was conducted using the principles of *The Australian International Council on Monuments and Sites, Charter for Places of Cultural Significance* (also known as the *Burra Charter*, Australian ICOMOS 2013) and the New South Wales (NSW) *Heritage Manual* (Heritage Office 1996 and 2006). Use of these documents satisfies the requirements of the SEARs.

The *Burra Charter* defines the concept of cultural significance as 'aesthetic, historic, scientific, social or spiritual value for past, present or future generations' (*Burra Charter* 2013, Article 1.2). It identifies that conservation of an item of cultural significance should be guided by the item's level of significance.

The Heritage Division of the Office of Environment and Heritage provides guidelines for the assessment of heritage significance and the listing of heritage items in local environmental plans (LEPs) or on the State Heritage Register, known as the *Heritage Manual* (Heritage Office 1996 and updates). The components of the *Heritage Manual* are informed by the values and definitions in the *Burra Charter*. OEH provides other leading practice guides which have informed this report including:

- *Statements of Heritage Impact Guidelines* (Heritage Office 2006);
- *Investigating Heritage Significance* (Heritage Office 2004);
- *Assessing Heritage Significance* (Heritage Office 2001); and
- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (Heritage Branch Department of Planning 2009).

1.10 Objectives and research methods

1.10.1 Objectives

In accordance with the SEARs and leading practice, the objectives of the historic heritage assessment are:

- to investigate the potential for items of historic heritage value, including relics, to exist in the project area;
- to assess the significance of historic heritage items in the study area;
- to assess the potential impacts of the project on items of historic heritage in the study area; and
- to formulate management measures for the protection of historic heritage items in the project area.

1.10.2 Identifying listed heritage items

Statutory and non-statutory registers were reviewed. Listing on statutory registers provides a legal basis under which the item or place is protected and change is managed through conditioned approvals.

Non-statutory listing is an acknowledgment of a site's or place's importance to sections of the community. Listings on such registers do not place legal requirements on development but nevertheless influence the future of such listed items.

For the purpose of this assessment all registers were searched online as described below:

- Statutory:
 - The National Heritage List (NHL). The register is made under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).
 - The Commonwealth Heritage List (CHL). The register is made under the EPBC Act.

- The State Heritage Register (SHR). This register is made under Part 3A of the *Heritage Act 1977* (Heritage Act). Items on the SHR undergo a rigorous assessment process and must reach a high significance threshold to be included. Inclusion on the SHR is directed by the Minister of the agency that administers the Heritage Act.
- The Heritage and Conservation Register (s170 register). This register is made under Section 170 of the Heritage Act and is also referred to as the Section 170 (s170) register. It is a register of heritage items that are owned or managed by state government authorities. Items on the s170 register may also be listed on other registers. Demolition, change to fabric and change of ownership require notification to the Heritage Council of NSW.
- Schedule 5 of the *Wingecarribee Local Environmental Plan 2010* (WLEP 2010). The EP&A Act sets the provisions for the making of LEPs. Most LEPs are prepared to a standard template, which includes environmental heritage in Schedule 5 (the heritage schedule). Where an item is included in the heritage schedule, development applications must include an assessment of impacts to the item. Where a project is being assessed as a state significance development application, approval by the relevant council is not required but the items require assessment and management if they are affected by a proposal.
- The State Heritage Inventory (SHI), which was cross-checked with Schedule 5 of the WLEP and the s170 register. The SHI is not a single statutory register but a central collection of state listed statutory heritage items maintained by the Heritage Division of the Office of Environment and Heritage (OEH), hereon referred to as the Heritage Division.
- Non-statutory:
 - National Trust of Australia, NSW (NT). The National Trust of Australia is made up of autonomous state chapters. Each chapter is a community-based and non-government organisation, with a mandate to conserve and promote Australia's natural and cultural heritage. Classification by the National Trust is a strong acknowledgment of heritage significance and while statutory constraints are not applicable, classification offers protection through visibility and community action.
 - Register of the National Estate (RNE). The RNE is an archived list of heritage items that were protected under the now repealed *Australian Heritage Commission Act 1975*, which was replaced by the EPBC Act. While many items were transferred from the RNE to the NHL or CHL, those that were not remain on the RNE as an indication of their heritage value.

1.10.3 Primary research

Primary research was also undertaken. It included investigating archives that may hold original material such as.

- newspaper articles (Trove);
- photographs (Trove and other online sources);
- land titles information (Land and Property Information – LPI);
- maps, plans, sketches (State Library NSW);
- diaries (National Trust of Australia – NSW);

- current aerial photography (LPI); and
- historic aerial photography (LPI).

1.10.4 Secondary research

Secondary research was conducted using published material such as books, journals and interpretive material, as well as unpublished sources such as university theses. The references section at the end of this report contains citations for all sources used.

1.10.5 Research facilities

The facilities used in research for this historic heritage assessment were as follows:

- Berrima District Historical & Family History Society Inc.;
- Land and Property Information (LPI);
- National Library of Australia Trove Online;
- National Trust of Australia – NSW;
- Sydney University Rate Books Collection;
- State Library (Mitchell Wing); and
- Wingecarribee Local Studies Library.

1.10.6 Local knowledge

In addition to the archival research that was conducted for this report, local knowledge from residents was also sought through face to face interviews. The purpose of these interviews was to ascertain if unrecorded structures or potential relics were present on properties that residents knew of, or if long-term residents remembered the existence of now-demolished structures.

1.10.7 Field survey

Targeted field survey was undertaken in locations where access was permitted, namely the *Mereworth* property including the house and gardens and the paddocks on which project infrastructure is proposed. Survey for historic period sites was also undertaken in conjunction with the Aboriginal heritage survey (EMM 2017p). Other heritage items were viewed from the public domain where possible.

1.11 Authorship

This report was prepared by Pamela Kottaras (BA honours Prehistoric and historical archaeology), Rebecca Newell (BA honours Prehistoric and historical archaeology), Ryan Desic (BA honours Prehistoric and historical archaeology) and Pamela Chauvel (BA Prehistoric and historical archaeology) of the EMM heritage team. It was reviewed by Paul Mitchell (Director) from EMM. External review was provided by Luke Edminson, Marco Benischek and Joshua Reid and Craig Brackenbury from Hume Coal.

1.12 Acknowledgments

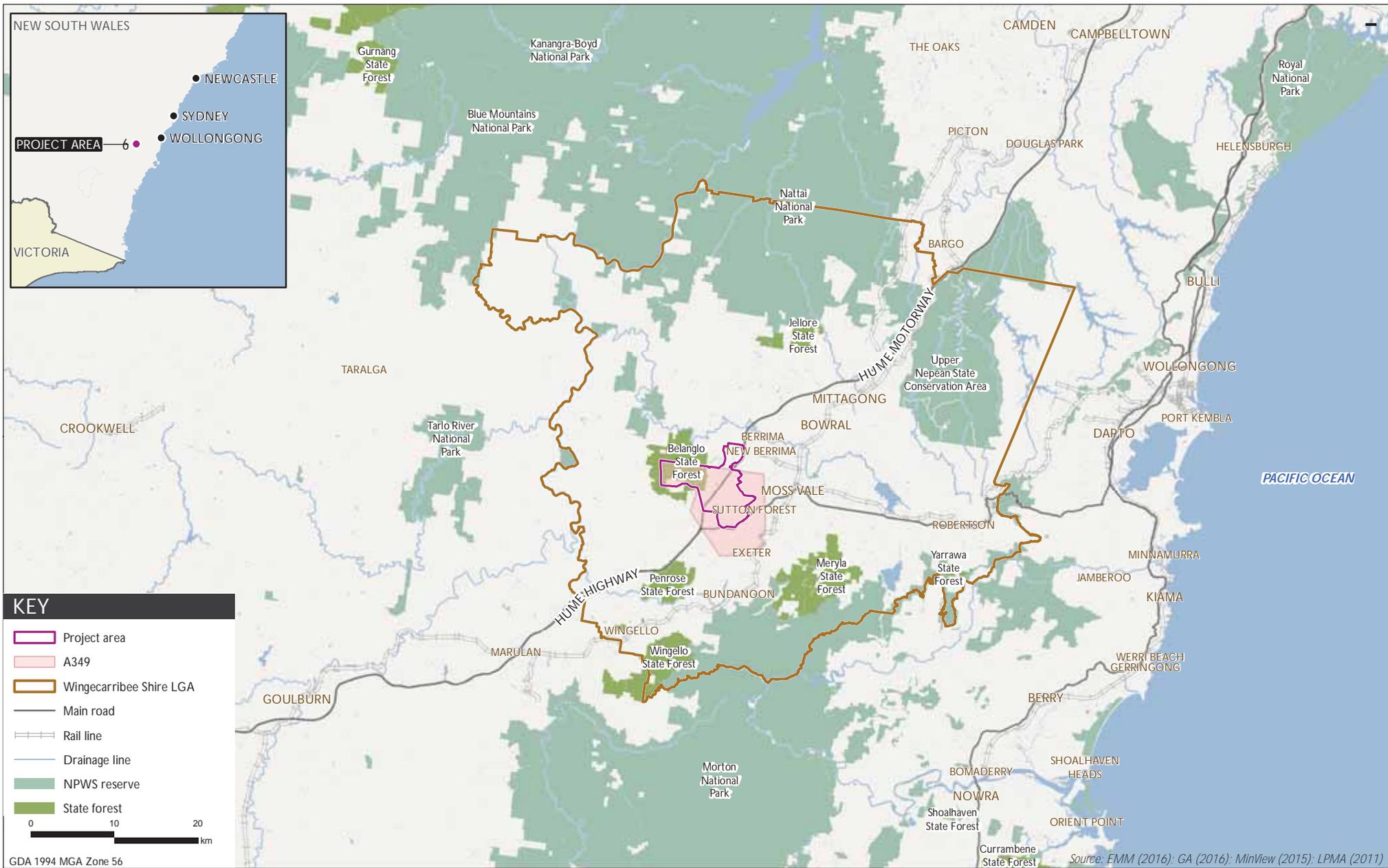
EMM would like to thank the following people for their assistance in the preparation of this report.

Luke Edminson	Hume Coal – Manager Environmental Planning
Marco Benischek	Hume Coal - Environmental Planner
Craig Brackenbury	Hume Coal – Health and Safety Advisor
Joshua Reid	Hume Coal - Environmental Coordinator
Alex Pauza	Hume Coal – Manager Mine Planning
Claudia Farrar	Hume Coal – External Affairs Coordinator
Matthew Sewell	Hume Coal – Manager Community Liaison
Chris Mitchell	Strata Gardens Pty Ltd
Sean Munro	Strata Gardens Pty Ltd
Sarah Websdale Farnese	Wingecarribee Shire Council - Heritage Land Use Planner - Heritage
Anne Mackay	Wingecarribee Shire Council - Strategic Planner
Chantelle Dollimore	Macquarie University archaeology intern
Raelee Jordan-Lancaster	Macquarie University archaeology intern
Stuart Read	Heritage Division, Office of Environment and Heritage
Noni Boyd	Australian Institute of Architects

A number of members of the community also kindly gave their time to provide historical information on the project area.

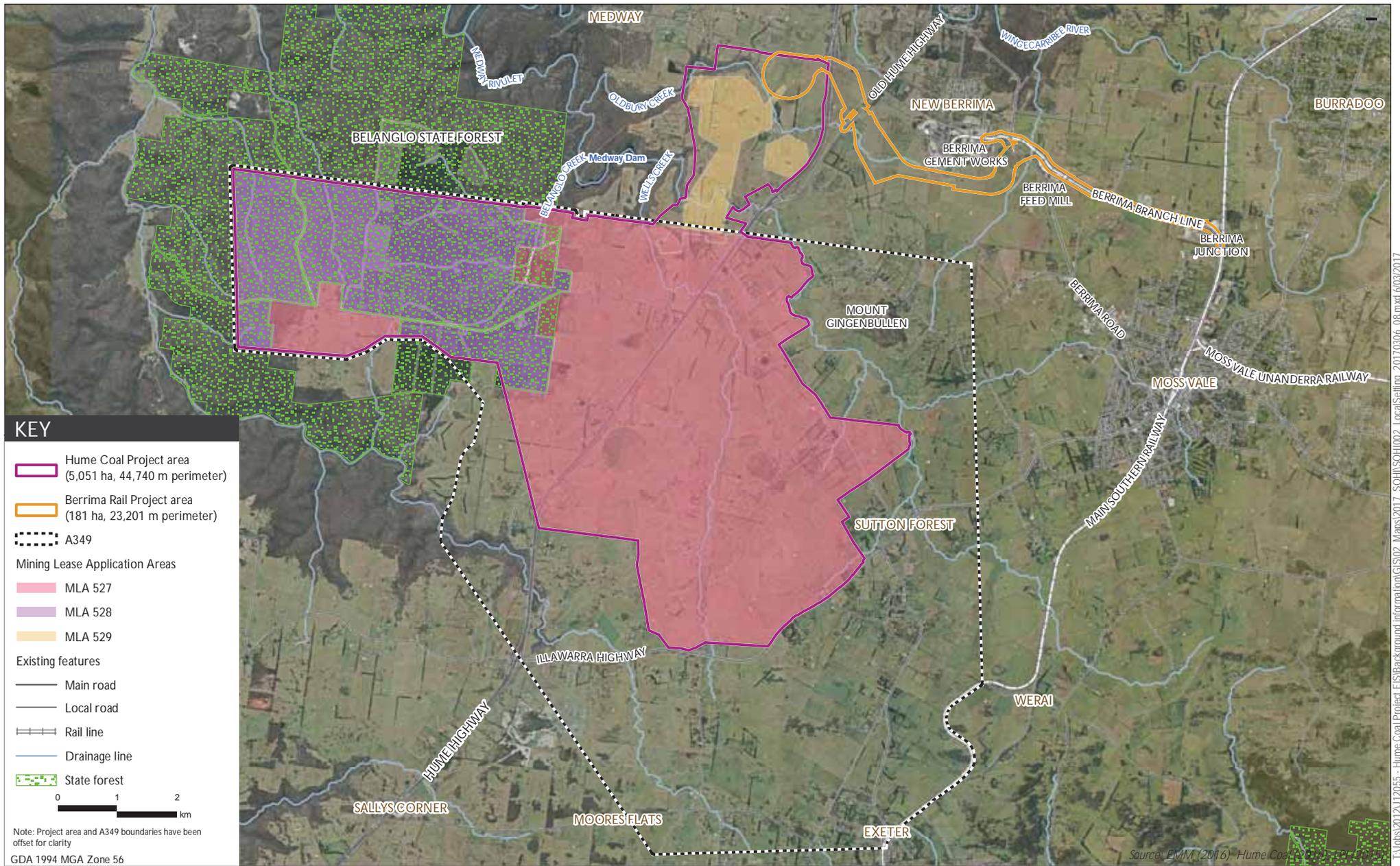
1.13 Limitations of the study

Any limitations or qualifications about the findings and conclusions given in this report are noted. Overall, the main limitation applied to this assessment was the restriction to access some properties.

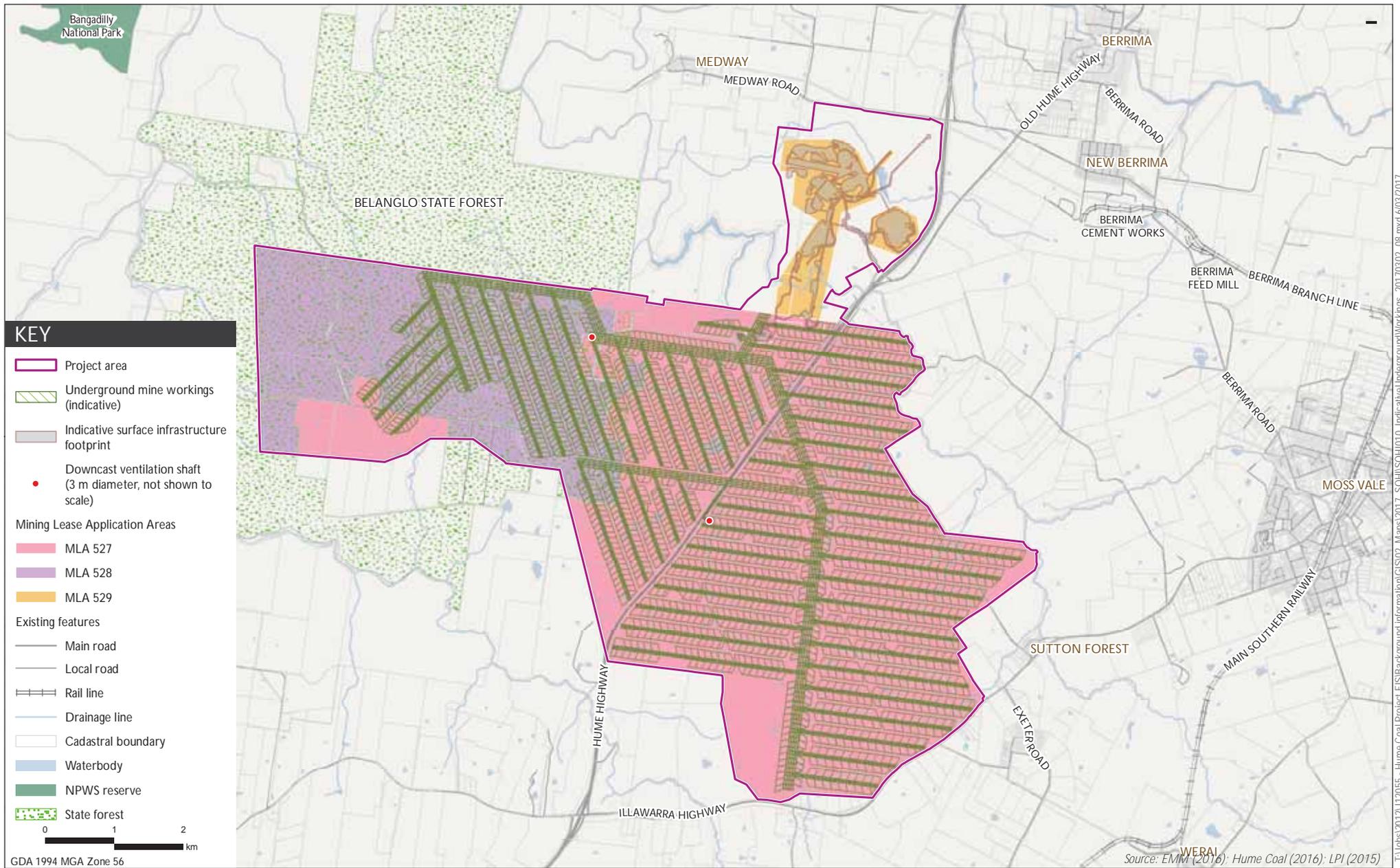


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Regional context
Hume Coal Project
Historic Heritage Assessment and Statement of Heritage Impact
Figure 1.1



Local context
Hume Coal Project
Historic Heritage Assessment and Statement of Heritage Impact
Figure 1.2



Indicative project layout
 Hume Coal Project
 Historic Heritage Assessment and Statement of Heritage Impact
 Figure 1.3



Indicative surface infrastructure layout

Hume Coal Project
Historic Heritage Assessment and Statement of Heritage Impact

Figure 1.4

2 Statutory framework and heritage context

2.1 Overview

2.1.1 Context

In NSW, historic heritage is protected by statutory instrument that manage change through a system of approvals. These mechanisms include legislation and schedules or registers of significant items. The relevant local environmental plan for the project area is the *Wingecarribee Local Environmental Plan 2010* (WLEP 2010).

Under the WLEP 2010 the zoning that is relevant to heritage matters is E3 Environmental Management, RU2 Rural Landscape, RU3 Forestry and SP2 Infrastructure. Development for the purposes of mining is prohibited in these zones under the Wingecarribee LEP. However, permissibility of mining developments is also governed by the *State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007* (Mining SEPP), which prevails over any inconsistencies with a LEP.

Where a project is assessed as a state significant development (SSD), as this project has been, individual activity-based approvals, such as archaeological excavation permits do not form part of the approval. The expectation of the level of detail for investigation, the guidelines and management measures however, are consistent with projects that are assessed under Part 5 of the EP&A Act.

2.2 Statutory listings

2.2.1 Listed properties

Eight properties that are listed on the WLEP are situated either wholly or partially within the project area; none are listed on the SHR (Table 2.1). An additional 113 listed properties occur within the study area, that is, in the vicinity of the project area, of which 33 are recently added to the WLEP Schedule 5 but are not reflected in the online version of the WLEP yet. The newly gazetted heritage items are listed in the minutes of the Wingecarribee Shire Council Ordinary Council Minutes for Wednesday 22 June 2016. Table 2.2 lists those items that have been published on the online WLEP and Table 2.3 shows the newly created heritage items.

Four items that are listed on the WLEP heritage schedule have all, or a substantial part, of their curtilage in the project area and are of *local* heritage significance; the identifying number in brackets is their LEP item number. These items are listed below.

- *The Harp* (I027);
- *Mereworth House and Garden* (I351);
- *The Pines* (I029); and
- *Sutton Farm House* (I035).

Another four heritage items of *local* heritage significance are partially located in the underground mining area. These items have only their respective paddocks over areas that will be mined.

The items with part of their lots above the underground mining area are:

- *Newbury* (I202);
- *Bunya Hill House, grounds and outbuildings* (I018);
- *Comfort Hill* (I021, I356, I357); and
- *Eling Forest Winery* (I004, I009, I010).

2.2.2 Unlisted heritage values

i Significant cultural landscapes

Unlisted, but previously identified heritage values have also been considered in this report. Potential relics, identified through research and analysis, are discussed in Chapter 5. Landscape values that have been assessed in previous reports are discussed below, despite their lack of statutory protection, as they are part of, and contribute to, the character of the project area and surrounds (Figure 2.3).

Two separate landscape descriptions were located during the research phase of this assessment. Both of these identified significant landscapes overlap to a large degree over Sutton Forest. The National Trust of Australia classification includes part of Exeter to the south and the Wingecarribee Heritage Study includes part of Berrima to the north. They are:

- The “Sutton Forest key historical unit (Unit 6)” identified in the Wingecarribee Heritage Study 1991 (JRC) as a significant landscape. This unit is not listed in the WLEP 2010.
- The “Exeter/Sutton Forest Landscape Conservation Area” classified by the National Trust of Australia.

ii Relics

Archaeological sites are protected by Section 139 of the Heritage Act if they are assessed to be *relics*, that is, of *local* or *State* significance. A formal listing is not required for protection, and disturbance can only occur with approval, either under the Heritage Act, or through the Minister’s conditions of consent for Major Projects.

Archival research, local community consultation and field surveys were undertaken to identify potential archaeological sites across the project area and determine their status as relics. Two potential archaeological sites have been identified within the project area (refer to Table 2.4).

Audits related to early mining endeavours exist in the wider study area; with one adit, the Longacre adit, in the north-west of the project area (Figure 5.3). The two potential archaeological sites in the project area are the former house on Mereworth (Mereworth 1) and HC_127, which includes a scatter of glass, ceramic and metal amongst Aboriginal stone artefacts.

Table 2.1 Identified heritage items in the project area

Item name	Register listing number								Location
	NHL	CHL	SHR	S170	LEP	NT	RNE	Other	
Berrima, Mereworth House and Garden (Hume Coal owned)	-	-	-	-	I351	-	-	-	Surface infrastructure area
Sutton Forest, The Harp (former "Bindagundra" house, grounds and outbuildings)	-	-	-	-	I027	-	1637*	-	Underground mining area
Sutton Forest, The Pines	-	-	-	-	I029	I029	-	-	Underground mining area
Sutton Forest, Sutton Farm house, grounds and outbuildings (former Red Cow Inn)	-	-	-	-	I035	I035	-	-	Underground mining area
Sutton Forest, Newbury house, grounds and outbuildings (part)**	-	-	-	-	I202	-	-	-	Underground mining area
Sutton Forest, Bunya Hill house, grounds and outbuildings (part)**	-	-	-	-	I018	-	-	-	Underground mining area
Sutton Forest, Eling Forest Winery, house, ground and outbuildings (part)**	-	-	-	-	I004	-	-	-	Underground mining area
					I009				
					I010				
Sutton Forest, Comfort Hill house, grounds and outbuildings (part)**	-	-	-	-	I021	-	-	-	Underground mining area
					I356				
					I357				
Sutton Forest Unit 6 landscape area								Heritage study 1991	
Exeter/Sutton Forest Landscape Conservation Area						R2218		-	Partially in project area

Notes: * Listed as "Bindungurra" on the RNE.

** part of the property but no listed buildings occur in the mine plan area. NHL National Heritage List (statutory); CHL Commonwealth Heritage List (statutory); SHR State Heritage Register (statutory); S170 Section 170 of the Heritage Act (Government agency list of heritage assets) (statutory); LEP Local Environmental Plan (statutory); NT National Trust of Australia (NSW Branch) (non-statutory); RNE - Register of the National Estate (static and non-statutory); Landscape Identified significant cultural landscapes.

Table 2.2 Listed heritage items in the vicinity of the project area

Item name	Register listing number								Location
	NHL	CHL	SHR	S170	LEP	NT	RNE	Other	
Berrima, Berrima House	-	-	00095	-		-	-	-	Outside the project area
Berrima, Gatehouse and walls of former gaol (part of Berrima training centre group, card 2 of 3), Wiltshire street	-	-	-	-	R6300	-	-	-	Outside the project area
Berrima, Berrima Internment Group	-	-	01848	-	-	R1428 R1430	Yes	-	Outside the project area
Berrima, Berrima Village	-	-		-	-	-	Yes	-	Outside the project area
Berrima, Nurses Cottage	-	-	00099	-	I228	-	-	-	Outside the project area
Berrima, Riverview Cottage	-	-	00100	-	I130	-	-	-	Outside the project area
Berrima, St Francis Xavier's Roman Catholic Church	-	-	01771	-	I120	R1438	Yes	-	Outside the project area
Berrima, Magistrate's House	-	-	00098	-	I125	-	-	-	Outside the project area
Berrima, Makin Cottage	-	-	00104	-	I227	-	-	-	Outside the project area
Berrima, White Horse Inn	-	-	00106		I123	-	-	-	Outside the project area
Berrima Conservation Area	-	-	-	-	C148	R1462	-	-	Outside the project area
Berrima Landscape Conservation Area	-	-	-	-	C1843	-	-	-	Outside the project area
Berrima, "The Gunyah"	-	-	-	-	I251	-	-	-	Outside the project area
Berrima, Sandstone and timber cottage	-	-	-	-	I239	-	-	-	Outside the project area
Bong Bong, Christ Church, Churchyard & Cemetery	-	-	01383	-	-	-	-	-	Outside the project area
Exeter, Exeter Railway Station	-	-	01142	TfNSW ID 4801254	I607, I610	-	-	-	Outside the project area
Exeter, "Invergowrie" house and garden	-	-	-	-	I372	-	-	-	Outside the project area
Exeter, St Aiden's Church and Memorial Hall	-	-	-	-	I375, I376	-	-	-	Outside the project area
Exeter, Vine Lodge house, grounds and outbuildings	-	-	-	-	I354	-	-	-	Outside the project area
Exeter, Exeter School of Arts Hall	-	-	-	-	I593	-	-	-	Outside the project area
Exeter, Romsey Cottage and Garden	-	-	-	-	I592	-	-	-	Outside the project area

Table 2.2 Listed heritage items in the vicinity of the project area

Item name	Register listing number								Location
	NHL	CHL	SHR	S170	LEP	NT	RNE	Other	
Exeter, "Cherrydell" house and garden formerly part of "Invergowrie"	-	-	-	-	I372	-	-	-	Outside the project area
Moss Vale, Moss Vale Underbridge over Argyle Street	-	-	01049	ARTC ID 4280314	I178	-	-	-	Outside the project area
Moss Vale, Moss Vale Railway Station and yard group	-	-	01200	TfNSW ID 4806253 co-owned with ARTC	I244	R4146 R4170	-	-	Outside the project area
Moss Vale, Throsby Park Historic Site	-	-	01008	-	I150, I053	R4160 R4161 R4162 R4163 R4164	Yes	-	Outside the project area
Moss Vale, Moss Vale Courthouse	-	-	-	Attorney General's Dept 3080091	-	-	-	-	Outside the project area
Moss Vale, Whitley, outbuildings, entry gate, garden	-	-	00508	-	I361, I360, I055	R4165	-	-	Outside the project area
Moss Vale, "Bonhuer" house, grounds and outbuildings	-	-	-	-	I049	R4169	-	-	Outside the project area
Moss Vale, "Browley" house grounds and outbuildings	-	-	-	-	I239	R4168	-	-	Outside the project area
Moss Vale, "Willow Grange" house and grounds	-	-	-	-	I1192	-	-	-	Outside the project area
Moss Vale, St John's Anglican Church	-	-	-	-	I175	-	-	-	Outside the project area
Moss Vale, I042, St Paul's International College (former Dominican Convent)	-	-	-	-	I042	-	-	-	Outside the project area
Moss Vale, St Paul's Roman Catholic Church	-	-	-	-	I408	-	-	-	Outside the project area
Moss Vale, Catholic Presbytery	-	-	-	-	I404	-	-	-	Outside the project area
Moss Vale, Leighton Gardens	-	-	-	-	I400	-	-	-	Outside the project area
Moss Vale, Leighton Garden pavilion	-	-	-	-	I172	-	-	-	Outside the project area
Moss Vale, "Gandalough"	-	-	-	-	I200	-	-	-	Outside the project area
Moss Vale, Semi-detached houses	-	-	-	-	I318	-	-	-	Outside the project area
Moss Vale, Coach House Antiques	-	-	-	-	I403	-	-	-	Outside the project area
Moss Vale, "Kalurgan"	-	-	-	-	I406	-	-	-	Outside the project area

Table 2.2 Listed heritage items in the vicinity of the project area

Item name	Register listing number								Location
	NHL	CHL	SHR	S170	LEP	NT	RNE	Other	
Moss Vale Public School	-	-	-	-	I201	-	-	-	Outside the project area
Moss Vale, Former St John's Anglican Rectory	-	-	-	-	I223	-	-	-	Outside the project area
Moss Vale, St Andrew's Presbyterian Church	-	-	-	-	I407	-	-	-	Outside the project area
Moss Vale, Whytes shop	-	-	-	-	I612	-	-	-	Outside the project area
Moss Vale, Argyle House	-	-	-	-	I040	-	-	-	Outside the project area
Moss Vale, Former School of Arts	-	-	-	-	I043	-	-	-	Outside the project area
Moss Vale, Hereford House	-	-	-	-	I418	-	-	-	Outside the project area
Moss Vale, Jemmy Moss Inn	-	-	-	-	I396	-	-	-	Outside the project area
Moss Vale, "Cardrona" (former Eagleroo) grounds	-	-	-	-	I352	-	-	-	Outside the project area
Moss Vale, "Peppers (former Mt Broughton) house, grounds and outbuildings	-	-	-	-	I488, I486, I487, I489	-	-	-	Outside the project area
Moss Vale, Argyle Street North Conservation Area	-	-	-	-	C1836	-	-	-	Outside the project area
Moss Vale, Argyle and Browley Streets Conservation Area	-	-	-	-	C1837	-	-	-	Outside the project area
Moss Vale, East Street Conservation Area	-	-	-	-	C1839	-	-	-	Outside the project area
Moss Vale, Throsby and Arthur Streets Conservation Area	-	-	-	-	C1839	-	-	-	Outside the project area
Moss Vale, Throsby Park Conservation Area	-	-	-	-	C1841	-	-	-	Outside the project area
Moss Vale, Valetta Street Conservation Area	-	-	-	-	C1840	-	-	-	Outside the project area
Sutton Forest, Comfort Hill house, grounds and outbuildings (buildings)	-	-	-	-	I357, I356, I021	R6302	-	-	Outside the project area
Sutton Forest, "Eccleston Park" house and outbuildings	-	-	-	-	I017	R5196	-	-	Outside the project area
Sutton Forest, "Black Horse Farm" house, grounds and outbuildings (former Black Horse Inn)	-	-	-	-	I020	R5198	Yes	-	Outside the project area
Sutton Forest, Hillview	-	-	00422	-	I008, I007, I358, I359	R5203	-	-	Outside the project area
Sutton Forest, "Bunya Hill" house, grounds and outbuildings (part)	-	-	-	-	I018	-	-	-	Outside the project area
Sutton Forest, Eling Forest Winery, house, grounds and outbuildings (buildings)	-	-	-	-	I004, I009, I010	R5189	-	-	Outside the project area
Sutton Forest, Boscobel house, grounds and outbuildings	-	-	-	-	I013	R5195	-	-	Outside the project area

Table 2.2 Listed heritage items in the vicinity of the project area

Item name	Register listing number								
	NHL	CHL	SHR	S170	LEP	NT	RNE	Other	Location
Sutton Forest, Golden Vale	-	-	00489	-	I003, I005, I001, I002	R5197	1635	-	Outside the project area
Sutton Forest, Newbury Farm, house, grounds and outbuildings	-	-		-	I202			-	Outside the project area
Sutton Forest, Oldbury Farm (shown as being located in Moss Vale in the LEP entry)	-	-	00488	-	I246, I247	R4166	Yes	-	Outside the project area
Sutton Forest, "Everything Store" Old (or former) Butcher Shop (A little piece of Scotland) and General Store;	-	-	-	-	I490	R5193 R5194	-	-	Outside the project area
Sutton Forest, "Rosedale" House and Grounds(identified as an archaeological site on the Department of Planning and Environment Planning Viewer Beta);	-	-	-	-	I031	R5207	-	-	Outside the project area
Sutton Forest Inn (former Royal Hotel)	-	-	-	-	I1187		-	-	Outside the project area
Sutton Forest, All Saints Anglican Church	-	-	-	-	I026, I022, I025, I350	R5188, R5201 R5202 R6303	-	-	Outside the project area
Sutton Forest, Black Bobs Bridge (identified as an archaeological site on the Department of Planning and Environment Planning Viewer Beta);	-	-	-	-	I019	R5199	-	-	Outside the project area
Sutton Forest, "Clover Hill" house grounds and outbuildings	-	-	-	-	I203		-	-	Outside the project area
Sutton Forest, "Charlie Grey's" Cottage	-	-	-	-	I014	R5191	-	-	Outside the project area
Sutton Forest, "Montrose" house and grounds	-	-	-	-	I006	R5192	-	-	Outside the project area
Sutton Forest, Former Post Office	-	-	-	-	I016	R5205	-	-	Outside the project area
Sutton Forest, "Rotherwood" house, grounds and outbuildings	-	-	-	-	I033, I032	R5206 R5209	Yes	-	Outside the project area
Sutton Forest, "Spring Grove Farm" house, grounds and outbuildings	-	-	-	-	I492		-	-	Outside the project area
Sutton Forest, Summerlees" house and grounds	-	-	-	-	I362, I037	R5211	-	-	Outside the project area
Sutton Forest, St Patrick's Roman Catholic Church and cemetery	-	-	-	-	I034, I349, I023	R5185 R5210	-	-	Outside the project area
Sutton Forest, Cottage (Illawarra Highway next to Medway Rivulet)	-	-	-	-	I028	R5204	-	-	Outside the project area

Table 2.3 Recently listed heritage items in the vicinity of the project area (June 2016)

Item name	Register listing number								Location
	NHL	CHL	SHR	S170	LEP	NT	RNE	Other	
Berrima, Berrima Internment Group (additional lots included in the listing)					11882			-	Outside the project area
Berrima, Remembrance Driveway Plantings, Old Hume Highway					1485			-	Outside the project area
Berrima, 'the Old Rose Cottage'					11382			-	Outside the project area
Berrima, 'Oaklea' cottage					1250			-	Outside the project area
Bong Bong, Bong Bong causeway					11879			-	Outside the project area
Burradoo, Burradoo Cemetery					11703			-	Outside the project area
Burradoo, 'Uplands' house					11385			-	Outside the project area
Burradoo, 'Bellevue Park' house including interiors								-	Outside the project area
Burradoo, 'Karrara' house (formerly 'Mt Gladstone')					1384			-	Outside the project area
Burradoo, 'Southdown' house, garden and trees					11374				Outside the project area
Burradoo, 'Capernwray' (formerly 'Wongabri')					1174				Outside the project area
Burradoo, 'Kerever Park' (formerly 'Knogle') house including interiors and garden					1498				Outside the project area
					1499				
Burradoo, 'Gwandalan' house					11375				Outside the project area
Burradoo, Club cottage					11859				Outside the project area
Exeter, Exeter Park					1233				Outside the project area
Exeter, War Memorial Gates, Exeter Park					11238				Outside the project area
Exeter, Badgery Memorial, Exeter Park					11229				Outside the project area
Exeter, Exeter Public School – 1907 classroom, former residence and trees					11346				Outside the project area
Moss Vale, Victorian shop, painted wall signs and house					11534				Outside the project area
Moss Vale, Sandstone kerb and guttering					11547				Outside the project area
Moss Vale, Cottage					11512				Outside the project area
Moss Vale, 'Cottesbrooke'					11516				Outside the project area
Moss Vale, Federation house					11515				Outside the project area
Moss Vale, "Park Hill"					11525				Outside the project area
Moss Vale, Moss Vale Showground					1615				Outside the project area
Moss Vale, Federation cottage					11596				Outside the project area

Table 2.3 Recently listed heritage items in the vicinity of the project area (June 2016)

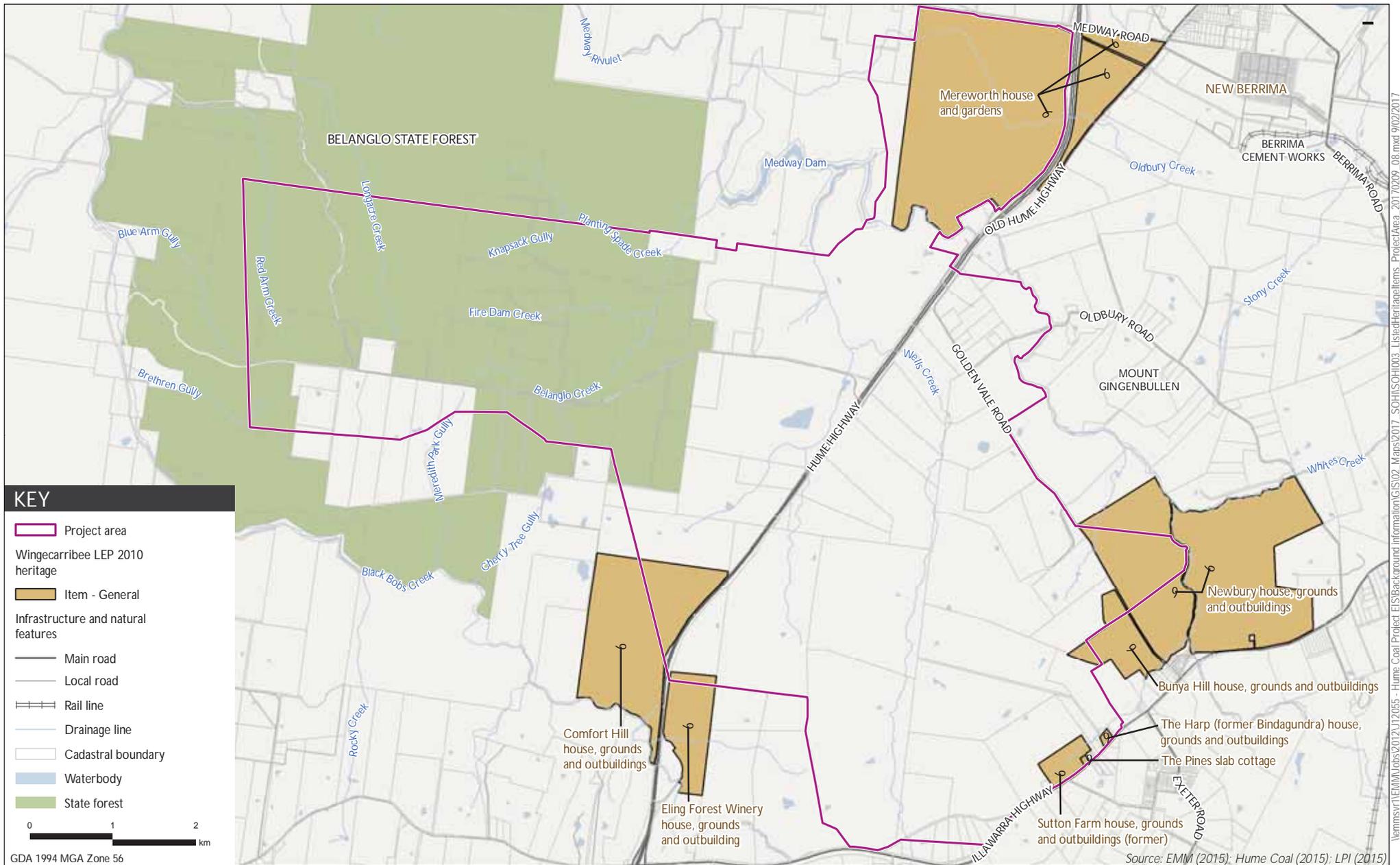
Item name	Register listing number								Location
	NHL	CHL	SHR	S170	LEP	NT	RNE	Other	
Moss Vale, Victorian worker's cottage					I1604				Outside the project area
Moss Vale, "Cherry Hinton"					I1657				Outside the project area
Moss Vale, Interwar bungalow					I1674				Outside the project area
Moss Vale, Interwar transitional bungalow					I1675				Outside the project area
Sutton Forest, Remembrance Driveway Plantings					I1691				Outside the project area
Sutton Forest, Sutton Forest Public School - 1879 classroom and toilets, and 1912 classroom					I030				Outside the project area
Sutton Forest to Penrose, Old Argyle Road					I1436				Outside the project area

Table 2.4 Potential relics identified in the project area

Item name	Listing	Report ID	Location	
Evandale scatter	N/A	HC_127	SIA	Outside impact area
Former house at Mereworth (Mereworth 1)	N/A	MH	SIA	Outside impact area

Table 2.5 Potential relics identified in the study area

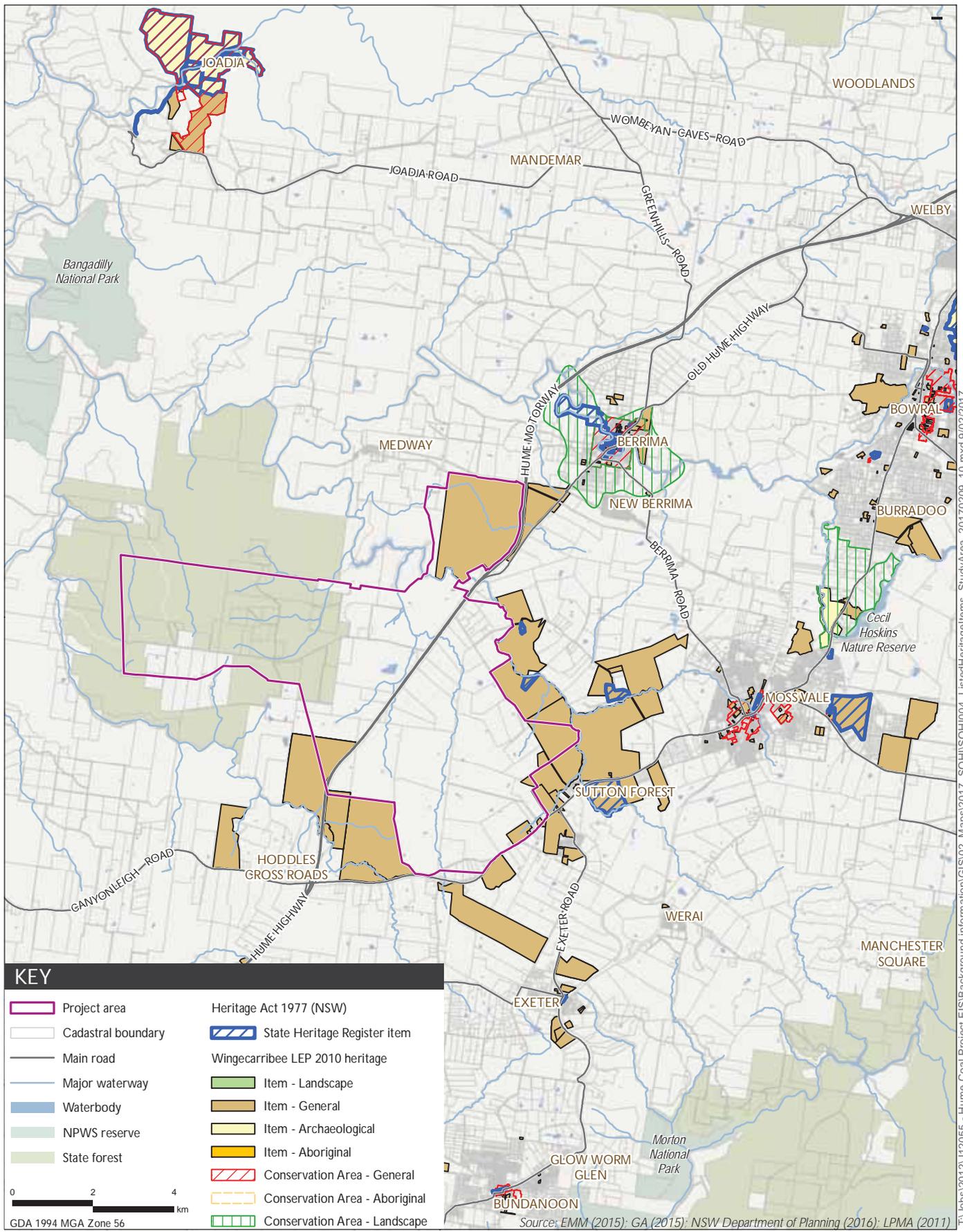
Item name	Listing	Report ID	Location	
Kentish Arms/Three Legs of Man	N/A	TLM	Adjacent to project	Outside the project area
Mereworth 2	N/A	M2	Adjacent to project	Outside the project area
Mereworth 3	N/A	M3	Adjacent to project	Outside the project area
Mereworth 4	N/A	M4	Adjacent to project	Outside the project area



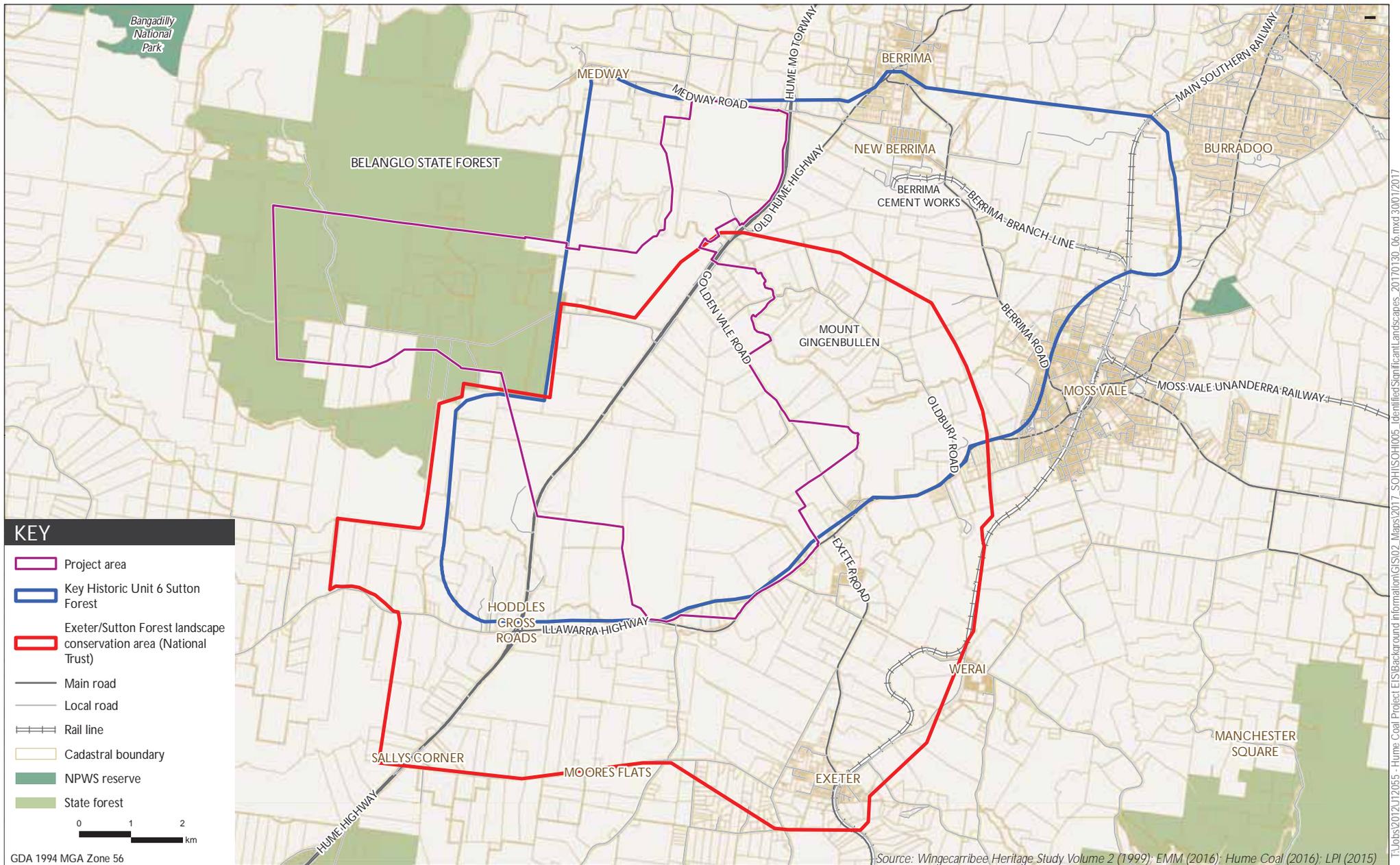
Listed heritage items in the project area

Hume Coal Project
Historic Heritage Assessment and Statement of Heritage Impact

Figure 2.1



Listed heritage surrounding the project area



Identified significant landscapes

Hume Coal Project
Historic Heritage Assessment and Statement of Heritage Impact

Figure 2.3

3 Historical background

3.1 Historic themes

The Australian and NSW heritage systems employ a series of historic themes to guide the understanding of history and historical investigation in the nation and state. As part of any historic heritage assessment, it is important to review the historic themes when undertaking research on an area or place to provide proper context. The state and national themes are complementary to enable the historian to present a unified understanding of how an area fits into Australian history. The historic themes are also an important guide when assessing an item's heritage significance. They provide information on how an item may be historically significant at the local, state or national level. Finally, historic themes help to develop interpretation and management strategies for items of heritage significance. A full list of these themes can be found on the Heritage Division website (refer to reference section for details). Historic themes in the study area were identified based on the historical background (as described below) and the results of the historical survey (Section 4.2). The Australian and NSW historic themes relevant to the study area that have been used in this report are listed in Table 3.1.

Table 3.1 Historic themes

NSW historic themes	Australian historic themes
2. Peopling Australia	Aboriginal cultures and interactions with other cultures Convict Migration
3. Developing local, regional and national economies	Agriculture Commerce Communication Events Exploration Forestry Industry Mining Transport Pastoralism Technology Transport
4. Building settlements, towns and cities	Towns, suburbs and villages Land tenure Accommodation
5. Working	Labour Education Law and order
8. Developing Australia's cultural life	Domestic life Leisure Religion Birth and death

3.2 Aboriginal – settler contact

Historical sources, while providing a partial snapshot in time, tell us that the cultural group based on language was the Gundungurra people who inhabited the land from Goulburn to Berrima and Camden (Tindale 1974). The Tharawal and Wodi Wodi people bordered the area, while the Ngunawal people inhabited the area south of Goulburn. The Southern Highlands appears to have been an area where Aboriginal groups came together for ceremonial and social reasons and Bong Bong features in some of the historical records. One account in May 1826, describes “a great concourse of natives, inhabitants of parts beyond Lake George” who returned from Bong Bong where they had been performing “certain ceremonies of their nation, particularly that of knocking out the front tooth” (*The Monitor*, Friday 29 December 1826, p.4). Lake George is less than 100 km to the south of the project area and in Ngunawal territory.

Louisa Atkinson, writing in the 1850s of her childhood memories in the 1830s and 1840s, discusses the interaction between Aboriginal people with the new settlers. Atkinson describes the Aboriginal people on whose land *Oldbury* had been built,

...with dispositions that are fitful, easily depressed or elevated, their feelings are quickly moved to tears or laughter. They attach themselves warmly to those who show them kindness, and are ready to exhibit their friendship in various ways

(Lawson 1989 p.48).

Her father, James Atkinson, who established the Agricultural Society with Hannibal Macarthur and built his homestead and property of *Oldbury*, wrote that hostilities between Aboriginal people and Europeans were usually instigated by Europeans:

In all the country eastward of the Blue Mountains, and in the county of Argyle, and country to the southward, not the slightest disturbance has taken place for many years; and from the manner in which the Natives are now intermixed and connected with the Settlers, there is not the most remote cause to fear that any serious difference will arise

(Atkinson 1975 p.146).

It is important to read contemporary settler accounts of Aboriginal people’s activities with an understanding that they were heavily biased and with little or no understanding of Aboriginal peoples’ culture and social structure. Activities undertaken by Aboriginal people that were recorded can however, provide an insight of life in the Southern Highlands when the new settlers first appeared. Of the roles of women and men, Louisa Atkinson notes:

If they require the skin for cloak-making it is stripped off and pegged out on a small sheet of bark, the fur within, warm ashes are rubbed over it to expedite its drying; after that it is carefully scraped with a sharpened flint or bit of glass, and then carved by being folded in peculiar forms, and the inner skin removed, so that the pattern, usually angles or curves, is rough; into these, red ochre is rubbed; so slow is the process that a single skin will occupy a woman all day to cure. They are squared and neatly sown together with sinews – a slender piece of bone constituting the needle in former days...

The hunting of kangaroo, emu, and native dog is confined to the men; near streams the men are expert in spearing fish; the women will stand all night in water fishing or eeling; they employ a hook.

(Atkinson in Lawson 1989 p.12).

3.3 History of the study area

3.3.1 Exploration and early settlement

The first explorers to visit the Southern Highlands area were John Wilson, John Price and a man known as "Roe" in 1798 (Jervis 1986, p.5); they were part of a larger group sent to quash rumours that China, and an escape from the colony, lay to the south (Jervis, 1986, p. 4-5) Wilson was an ex-convict who had spent a considerable amount of time living with Aboriginal people and he obviously was comfortable travelling through the bush; John Price had been Governor Hunter's servant and "Roe" was possibly another convict. They were all part of a party consisting of another three convicts provided by Hunter, and guards. Soon after the expedition began, three of the convicts and their guards made their way back to the settlement at Port Jackson while Wilson, Price and Roe pushed on to the Wingecarribee River (ADB online, Wilson, John (?-1800); Jervis, 1986, p.5). When John Wilson, Roe and John Price returned from this first expedition in February of 1792 they travelled through what is believed to be the area around Bong Bong, which Price, in his journal, describes:

The country still runs very fine, full of large meadows and some thousands of acres of land without any timber on it, except here and there one tree, and some very large lakes of water some three miles large...

Price in Jervis, 1986, p.5

The second expedition led by Wilson was ordered by Hunter again, this time with Price and another man called Collins (State Library). They reached what is now known as Marulan in February 1798 and continued to Mt Towrang (ADB online, Wilson, John (?-1800)). A description of the expedition was captured in the journal of John Price (available on the State Library online Discover Collection; refer to References 'Discover Collection').

More explorations followed. In 1802 Ensign Barralier explored the area around the Wollondilly River and north of Mittagong (McColgan 1995 p.6). Hamilton Hume and his brother, along with their uncle John Kennedy, passed through the area and reached the Bong Bong flats in 1814 just prior to the settlement of the area by pastoralists (McColgan 1995 p.6). A road from Sutton Forest to Jervis Bay was surveyed by James Meehan and Charles Throsby in 1818 (ADB Meehan, James 1744-1826).

Land grants in the area were delayed because of wild cattle, descendants of the domesticated stock that had escaped in 1788 (Higginbotham 1992 Vol 1, p.13). The slaughter or exploitation of the cattle was forbidden by Governor Hunter after they were found in 1795 (Higginbotham 1992, V1 p.13) and Macquarie was unwilling to allow settlement at Cowpastures or beyond even as late as 1819, because he wanted the cattle rounded up (or at least all attempts made).

However, drought, and possibly predation, reduced the cattle numbers enough for Macquarie to allow passage through and access to the Cowpastures with a permit on a named basis. Civil and military officers were exempt as were the families and employees of John Macarthur and Walter Davidson who already held sheep farms in the area. Previous infringements were pardoned but new illegal activity would incur the death penalty (Higginbotham 1992, V1, p. 14).

Despite land not being released until after 1819, settlement was occurring sporadically in the County of Argyle (Higginbotham 1992, Vol 1 p.13). The earliest pastoralist to lay claim to areas in the Southern Highlands was John Oxley. Although it is unlikely that he ever lived in the area, Oxley's stockmen moved cattle herds south from Camden to the Southern Highlands in 1815 (Dictionary of Biography online) and he was granted 2,400 acres in 1819 to legitimise the presence of his stock in the area. Though many people obtained leases over the land, few buildings were constructed during this time as the lessees themselves did not live on the land, leaving the raising of the cattle to stockmen who built basic huts for themselves as required (Jervis 1986, p.14). Other early settlers included the Atkinson brothers James and John (1821 and 1822 respectively although James' land grants were made in 1822 and John's in 1839).

It was not until 1864 that settlement in the region began in earnest. Difficulties borne of regular flooding and diseased wheat in the Sydney region sent settlers south to the park-like landscape of the County of Argyle. Wheat rust and flooding were being reported as early as 1805 on farms from the Hawkesbury, the government farm at Castle Hill and farms at Prospect, Baulkham Hills, Toongabbie and the banks of South Creek (The *Sydney Gazette and New South Wales Advertiser*, Sunday 1 December 1805, p.1 and 17 November 1805, p.1). The opening of the rail line in 1867 facilitated movement south, and by 1870 the railway had shifted its main route from the old road through Berrima to Bowral, Moss Vale and Mittagong (DMR n.d, p. 9).

3.3.2 Transportation

i Road and rail

The earliest alignment through the region, the Argyle Road, (now the Old Argyle Road) ran south from the County of Cumberland, through the County of Camden and the County of Argyle from around 1810 (Jack 1997, p.36) possibly as early as 1805. The Argyle Road, south from Sydney, ran roughly parallel and east to the present Old Hume Highway, crossing over the Mittagong Range at "the Gib", through Bong Bong and south over the Cookbundoon Range to just north of the Goulburn Plains (DMR n.d).

A few early alignments heading south from Sydney were surveyed including one by William Harper (for Governor Macquarie) in 1821, James Ralfe in 1826 and another in 1829 by H F White. Not all alignments followed the same path, but in 1830, Surveyor General Thomas Mitchell reported that a line of road had been marked) to the west of the Old Argyle Road (RMS 2013, pp. 4, 5; Jack 1997, p.36). This was the South Road, which eventually became the Hume Highway.

Convict gangs were occupied with building the South Road in 1834 to open up the area to pastoralists and settlers and convict stockades were established along the route. Convict stockades were also present along the South Road at Berrima, Black Bobs Creek and Wingello ("some miles from the present township" (Jervis 1986, p.149). The White Horse Inn at Wingello was built on the site of old stockades (Emery 2008 p.125). Convict-built bridges survive at Berrima and Black Bobs Creek (Wingecarribee Heritage Study [WHS] 1991, part 1 of 3, p.14).

The South Road was renamed the Great Southern Road with the *Main Roads Management Act 1858* and became one of the three main roads in the colony. It was also known as the Argyle Road as well as Port Phillip Road and Sydney Road in the south. The current alignment of the Hume Highway crosses earlier versions of the road, most of which occur outside of the project boundary.

The name changed again to Hume Highway, after Hamilton Hume, at the enactment of the *Main Roads Act 1928* (the 1928 Act). The 1928 Act made the road eligible for government assistance and soon after, in the 1930s, the concrete road was built. Prior to the 1928 Act, maintenance was the responsibility of the Councils of Shires and Municipalities through the *Shires Act of 1905* (Eddy 1985, p.30).

Like some of the main roads out of Sydney, the South Road was neglected with an article in the *Goulburn Penny Post* (1901) describing it as:

...a disgrace to any civilised community. It is well a known fact that people with false teeth take them out while driving to Goulburn and back so you have an idea of the state of our road.

(Eddy 1985, p.30)

Today the Hume Highway starts in Sydney at Parramatta Road Ashfield and ends as the Albury-Wodonga Freeway to the Victorian border (RMS 2013). Mitchell's route is still generally the alignment followed by the Hume Motorway (so called in the Southern Highlands and Southern Tablelands of NSW) with some deviations.

The Hume Highway has been dedicated to Victoria Cross recipients and is also known as Remembrance Driveway; VC rest stops, named after Victoria Cross recipients, are placed at intervals along the alignment. Remembrance Driveway covers part of the Hume Highway and the Old Hume Highway (RMS website *History of the Hume Highway* - <http://www.rms.nsw.gov.au/projects/south-western/hume-highway/history-of-hume-highway.html>).

Railways were also an essential part of the development of towns and industry in the region. The period in which the first railways were built in the colony was one of significant labour shortages due primarily to the gold rushes, which attracted skilled labourers away from other endeavours. This shortage was, in part, remedied through the importation of experienced railway workers (known as 'navvies') from Britain. The emigrant ship *David McIvor* brought the first shipment of approximately 160 workers to the colony on 25 August 1853 (RailCorp 2009, p.17). The extension of the railway to Mittagong in 1867 made travel to the region accessible to more people, and opened up the area to tourism and expedited the movement of goods to Sydney.

Expansion outward from the colonial centre, and the economic benefits of pastoralism initiated and boosted the connection of the outlying settlements to Sydney. 1815 saw the expansion of pastoralism beyond the Great Dividing Range, allowing settlers to establish a highly profitable wool industry. The high value of wool contributed to the pastoral/wool industry becoming the colony's dominant exporter and as a result the major pastoralists swiftly became a formidable political force in the colony during the nineteenth century (RailCorp, p.19). This political influence was used to shape policy in colonial New South Wales, particularly in relation to railway development which was a central issue of the time.

Railways in the Southern Highlands followed the establishment of industry – the Fitzroy Ironworks, the Cataract and Black Bobs Creek mines were all established before the railway. Soon all industry in the area, including the shale mine at Joadja, relied on rail (Jack 1997, p. 39-40). These rail lines joined the Main Southern Railway that connected Mittagong to Sydney from 1867, and which extended further to the south in later years.

Following the first passenger train from Sydney to Parramatta in 1855 and the continued expansion of settlement and growth, the rail line was extended in the 1860s to connect Sydney with Bathurst across the Blue Mountains and with Goulburn via the Southern Highlands (Sydney Trains online). Direct access to wharves in Sydney Harbour was facilitated through the opening of the Darling Harbour branch line in 1856 (RailCorp 2009, p.20). Until the Southern Line reached Picton in July 1863 the Darling Harbour branch line did not see much goods traffic. Following the connection to the Southern Highlands Darling Harbour quickly established itself as the central node of the colony's wool and pastoral trade (RailCorp 2009, p.20). The original Picton to Mittagong section of the Main Southern Railway was reportedly inefficient due to the gradient, and delays were caused by the single line (*Southern Highland News* 1 December 2014 online). A petition for a station to be built at Bowral when the line was extended to Goulburn was sent to the *Sydney Morning Herald* in June 1865 and was signed by over 300 land owners in the local area who claimed that without the station they would be greatly inconvenienced (SMH Saturday 24/06/1865).

By 1915, a deviation had been approved "in the interests of the safe, expeditious and economical working of the growing traffic on the Southern line" (SMH 26 February 1916, p.20). The newspaper reported that by 1912, 84,894 tons of goods were hauled by 241 trains. A quarter of these required three engines and over half needed two engines. The new double rail line with its improved gradient required far fewer engines and provided a significant improvement in efficiency.

In April 1873 the Minister for Public Works, John Sutherland, developed a policy to construct the main New South Wales trunk railways prior to the establishment of branch lines. This policy, and as a result of the construction of the southern line to Albury, was in response to the perceived danger that wool from the Riverina and western New South Wales could be diverted to Melbourne via river boats and the Victorian Railway (RailCorp 2009, p.41).

The 1880s saw the emergence of political lobbying to connect the Great Northern Railway with the Great Western Railway as well as the Great Southern Railway in order to establish a linked cross-country railway. As the debate around Federation raged through the tail end of the 19th century the argument for a connected cross-country 'Federal Line' stated that it would serve the interests of the new nation through the facilitation of strategic supply movement between north and south. Although Federation was achieved in 1901 the southern link to the Southern Line via Stockinbingal was not opened until 8 April 1914 (RailCorp 2009, p.78).

3.3.3 Towns

i Bong Bong

One of the earliest towns in the Southern Highlands was the town of Bong Bong, where Bong Bong Common is now. After Macquarie visited in 1820 the site was chosen and Bong Bong was developed as a Government town. A town was laid out in 1821 adjacent to the line of the original South Road, which by 1820 had been completed as far as Sutton Forest (Jack 1993, p.1). The former Old Argyle Road alignment passed through the site but is barely visible now. Buildings to maintain law and order were erected including a barracks (1829), gaol (1826) and commissariat store (1829) (Jack 1993, p.2). A school house was erected and William Bowman built and licensed an inn called the Argyle Inn in 1827 (now "Briars") (Jack 1993, p.2).

The difficult micro-environment that prevailed at Bong Bong – driving winds and high rainfall - made it an undesirable place to reside and construction of the South Road opened up a new area to which the government buildings were moved and residential development took hold. This new town was Berrima (Jack 1997, p.36). The town of Bong Bong is now a low-lying field on the north side of the Wingecarribee. The cemetery, cultivated enclosures are not discernible in aerial photography and the alignment of the Old Argyle Road is barely traceable.

Bong Bong's was a place where new settlers interacted to some degree with the Aboriginal people who lived in the area and with those who passed through. The ceremonial grounds at Bong Bong were visited by people from the Lake George region (*The Monitor*, 29 December 1826, p.3) and oral sources include groups from the South Coast as well.

ii Berrima

Berrima was an alternative location for a town given Bong Bong's unsuitability. Laid out by Surveyor General Sir Thomas Mitchell in 1829, Berrima grew quickly and in 1837 the post office and magistrates functions were moved there from Bong Bong. In 1843 the area of the town was sold to Charles Throsby and became part of his large estate (Jack 1993, p.6–7; Makin Cottage SHR 00104).

In 1841 the population of Berrima was 249 but by 1851 the population had decreased to 192 (Makin Cottage SHR 00104). The discovery of gold enlivened the town but when the rail line bypassed Berrima, the population declined again. Berrima grew again as tourism increased, resulting in the emergence of tourist accommodation and maintenance of the character that invites day-trippers and longer stay visitors.

iii Sutton Forest

Sutton Forest is likely to have been established after dissatisfaction about the location of Bong Bong, and in the early years, was the name given to the surrounding region. At the suggestion of James Atkinson, a spot on the Medway River opposite Charles Wright's farm was considered for Sutton Forest. It was named by Governor Lachlan Macquarie when he passed through the area in 1820 in honour of Sir Charles Manners Sutton, Speaker in the House of Commons (Emery 2008, p.17). A church and cemetery were established by 1830 before residential buildings went up in the surrounding area. A schoolhouse was built in 1831. The village itself was well established by the time the Government surveyor surveyed the town and Sutton Forest was officially recognised in 1854 (Jervis 1986, p.143). Early inns included the Talbot in 1834, the Harp in 1834, and the Red Cow in 1835. In 1882 Sutton Forest was described as a small but picturesque village with its main road passing some of the finest residences in the colony. Nearby were the estates of *Hillview*, *Vine Lodge* and *Ivy Hall* (Jervis 1986, p.30).

iv Exeter

Exeter was established on land belonging to the Badgery family, who owned a large portion of land in the area of present day Exeter, named after the city of Exeter in England where they originated. James and Elizabeth (née Lundie) Badgery named their homestead *Spring Grove* (WHS 2009, p.28) after the land was granted by Governor Macquarie in 1822 (National Trust Exeter/Sutton Forest Landscape Conservation Area data sheet, p4). To either side of the homestead, the sons of James and Elizabeth established their properties – Henry with *Hamletville* to the east and Andrew with *Kirby's Meadows* to the north of that (National Trust Exeter/Sutton Forest Landscape Conservation Area data sheet, p.5). During the early years of colonial settlement, the Badgerys were neighbours to James and Charlotte Atkinson at *Oldbury* and John and Eliza (née Streeter) Nicholson at *Newbury*.

Exeter railway station was opened in 1878 as Badgery's siding and renamed Exeter Station in 1890. Exeter was divided into lots and sold in 1891; Exeter public school was opened the same year and St Aiden's Church and a brick store were erected in 1894.

v Moss Vale

Moss Vale grew out of the subdivision, starting around 1864, of land that was granted to Charles Throsby (JRC 1991, p.119). As with the surrounding settlements, Moss Vale grew slowly and it wasn't until the railway in 1867 that the town started to grow. Initially, the line was to stop in Berrima but the gradient through Mittagong, Bowral and Moss Vale was better suited to a railway line and this route was chosen (Freeman & Jackson-Stepowski 2006, p.7). It was plans for a train station at Moss Vale that influenced the earlier subdivision (JRC 1991, p.119).

Moss Vale, along with its surrounding towns, became a tourist destination and 'country retreat' for wealthy Sydney residents. Tracts of land to the east toward Robertson that were determined to be undesirable for farming were soon cleared and farming, particularly potatoes and cattle, contributed to the growth of the town. Moss Vale was large enough to service surrounding farming communities and thus benefitted from the expanding agricultural industry (JRC 1991, p.119). Early subdivision and road patterns are still discernible in the town today.

3.3.4 Properties and homesteads

i Mereworth

An early property in the project area was established by John Atkinson who arrive in the colony in 1822 (refer also to Section 3.3.6). John made his home in the Southern Highlands probably because his brother James held land and had built a home there. On claiming some land, John proceeded to establish a dairy farm and built an inn facing the Great Southern Road. Atkinson was eventually granted 2000 acres after settling on the property and was then granted another 500. The property, which he named *Mereworth*, spanned the Great Southern Road (Figure 3.1) and was situated just south of the town of Berrima to the north.

Atkinson originally built a 'plain cottage', before he built a two-storey brick house with cellars and outbuilding (*Southern Highland News* 2 May 2011), which was eventually converted to a house. The inn has been described as being situated on the western side of the Old Hume Highway directly north of Medway Rivulet, which puts it in the vicinity of the Mereworth Road/Hume Highway junction just north of Medway Rivulet. Atkinson named it the 'Kentish Arms' after the county of his birth, Kent. On its sale to James Comer in 1839 for £1000 Higginbotham Vol 2, p.40) the name of the inn changed to 'The Three Legs of Man'. It was converted to a family home in around 1885, and demolished in 1918 to make way for an upgrade to the Great Southern Road (SHI Mereworth House and Garden); it is referred to as 'Mereworth House' in the *Southern Mail* (19 April, 1918, p.2).

In a drawing by Isabel Farran (Plate 3.1) and another by Katherine Farran (National Library of Australia; not shown here), the building is depicted as a two-storey brick inn built on sandstone foundations and with a veranda to the front addressing the South Road (Hume Highway). A photograph of the inn in 1887 after it had been converted to a family home clearly shows the size of the building (Plate 3.2).



Plate 3.1 “The Three Legs of Man on the Southern Road near Berrima”, Isabel Farran 1900-1909. The inn is built right on the edge of the road and has probably been removed by later upgrades (Isabel Farran, National Library of Australia, nla. obj-135789431).



Plate 3.2 The former “Three Legs of Man” in 1875 after it was converted back to a family home. Source: Southern Highland News, 2 May 2011.

In 1839 Atkinson mortgaged his property to John Hillas, and again in 1843. The first mortgage was for 2000 acres, which included the 20 acres of land on which the inn was built. The second mortgage, taken out during the height of the depression, excluded the 20 acres that was sold off with the "Kentish Arms". This sale did not help Atkinson with his debts and the property defaulted to John Hillas. John Atkinson then becomes a difficult individual to find in historic sources. A description of the defaulted land was of a "capital messuage with premises thereon", indicating that the land that defaulted to Hillas included a house and outbuildings (Higginbotham 1992 Vol 2, p.47).

From 1912 to 1963, the property was owned by William Thomas Cowley, a grazier (Vol 2232 Fol 143 LPI), after which it went to "Mereworth Pty Limited" until 2012. It was during the time of Mereworth Pty Limited that the old homestead visible in the 1949 aerial photograph was demolished and the current house was built. In 2014 ownership was transferred to PBF 2 Pty Limited, then to S F Pastoral Holdings Pty Ltd in 2015. Hume Coal Pty Ltd purchased the property on 15 February 2015.

ii Evandale

The property of 'Evandale' comprises land which combines a small part of the James Atkinson's 'Oldbury' in the Parish of Bong Bong and Belanglo (1837) as well as land in the Parish of Belanglo which was originally granted to Timothy Beard in two grants (1834 and 1837). It covers Lot 2 DP 1138694 (part of Atkinson's grant) and Lot 2 DP 1009075 (a large portion of Beard's grant).

Part of *Evandale* was transferred to Edward Carter (grazier) in 1882 (Book 258 No. 132), with another part of the property being transferred in 1889 (Book 410 No. 318) Carter retained the property until 1931 when it was transferred to Edward Alfred Hanslow Carter, also a grazier (Book 1626 No. 172). In 1938 the property was transferred to Douglas Burns Reid, a merchant (Book 1813 No.222/Vol 7689 Fol 203). The property became known as *Evandale* when it was transferred to Evandale Pty Limited in 1959 (2/1009075); it was bought by Cavalaire Rural Properties Pty Limited on 20 October 2014.

A parallel chain of title, Lot 2 DP 751251 is for a small parcel of land which was reserved for Water Supply and Access, following by a mining lease application by Loch Catherine Colliery in 1927. This parcel is close to Medway Road and was part of Stanley Taylor's holdings.

The investigation has indicated that the property was built on later in the nineteenth century and inspection of the buildings suggests a date of late nineteenth century with a series of repairs and updating.



Project area overlaid on County of Camden map c.1895 showing land grants

Hume Coal Project

Historic Heritage Assessment and Statement of Heritage Impact

Figure 3.1

3.3.5 Industry

i Pastoralism and agriculture

Governor Macquarie described the region near Throsby Park “particularly beautiful and rich (Jervis, 1986, p.15). In his report to the House of Commons in the United Kingdom (1822) Commissioner Bigge commented on the richness of the soil in Sutton Forest (Jervis 1986, p.15). James Atkinson who settled in Sutton Forest described the County of Argyle, to the south of the project area, and Antrim and the land to the west of the Blue Mountains as being open forest of white and blue gum on a granite soil. He described “large blocks of granite, of a coarse texture, and grey colour, are seen lying about upon the surface”. Atkinson describes most of the land as poor for cultivation but well suited for grazing. In areas where whinstone¹ predominated, the land was suitable for grazing and cultivation (Atkinson 1975, p.5–6). John Price, in his journal describing the expedition to find China described the land around Bong Bong as “fine” (refer to Section 3.3.1).

References to the Bong Bong-Sutton Forest area report on the “richness of soil and beautiful scenery” (Jervis 1986, p.16); Commissioner Bigge described reported that the land “contained some of the richest soil he had seen in New South Wales” (Bigge in Jervis 1986, p.15).

The most recent review of the soil conditions in the project area identified three classes described by the NSW Department of Primary Industries (NSW DPI), which accord with Atkinson’s description of the land. They are Class 3: suited to grazing and pasture improvement; Class 4: suited to grazing but not cultivation; and Class 5: at best suited to light grazing but not for agriculture (EMM 2017d).

Where crops were grown they included wheat, maize, barley, rye, peas, potatoes and turnips. Most of these crops were used for animal feed particularly peas and potatoes to feed the pigs and cattle respectively (Jervis 1986 p.14). In 1832 the homestead *Oldbury* grew a few new varieties of pea, which “did extremely well” (Jervis 1986, p.23); *Newbury* and *Throsby Park* grew wheat (Jervis in WHS 1991 Part 1, p.54). Orchardng was taken up in earnest in the 1870s and was one of many agricultural industries, which included cattle, dairy, wheat and vegetables, in the region. After the turn of the century orcharding became important and in 1918 it was recorded that there were 50,000 fruit trees in the district (Jervis 1986, p.66-67).

In tandem to some cropping, the dairy industry was successful for a time in the region. Three factors contributed to the intensification of dairy farming. First, the railway to Mittagong opened in 1867. Then TS Mort opened a milk-chilling plant at Mittagong in 1875 and eight years later the Fresh Food Co installed the first cream-separators in NSW; this lead to butter factories opening in Robertson, Kangaloon and Glenquarry. Cheese factories were also established. Pig-breeding developed to utilise the skimmed milk by-product (JRC Planning 1991, p.31). Mills were constructed to process the wheat grains. The most well-known was Throsby’s Mill erected at Throsby Park in 1849. Another mill was erected on *Oldbury* in 1837 and the charge for grinding was 1/3d per bushel. A steam powered flour mill was built at Burrawang and ran between 1879 and 1880.

¹ Whinstone is defined as a “popular term for any dark, fine-grained igneous rock” in Kearey 2001 p. 293.

ii Coal and cement

The presence of coal in the Southern Highlands was well known as the Southern Highlands lie over the Wongawilli and Tongarra Seams, and since the mid nineteenth century, various attempts to mine it were made. Coal deposits near Berrima were reportedly accidentally discovered in 1845 by a Mr Atkinson, possibly John Atkinson of *Mereworth* as James died in 1834. The coal was in “a peninsula formed by the tortuous river and a tributary named the Medway Rivulet, and is exposed to view and touch in a gorge varying from 200 to 450 feet in depth” (*Sydney Mail and New South Wales Advertiser* 25 March 1882, p.481).

In 1853 William Keene, a mining surveyor, made a report to identify the extent of the deposits and their viability. The area near Black Bobs Creek was considered the most promising (Emery 2008, p.16; ABD online). Black Bobs Creek, located south of the project area, was the earliest coal mine in the district. It opened in 1854 to supply the Fitzroy Ironworks at Mittagong (1848 to c.1877) but only operated for a few years because transportation over 18 miles of rough roads was difficult. The iron works, having opened 20 years before the railway, had an inconsistent history of success and changed hands a number of times. The importance of the iron works to Australian industry however, is recognised by heritage listings and the volume of research it has generated.

In 1867, the Cataract mine was opened on the banks of the Medway Rivulet by AR Huntley and JR Brereton. The mine supplied the Fitzroy Ironworks until the late 1860s when the iron works closed (various dates are given for the closure of the iron works including 1869 (SHI ID 2681711) and the 1890s (Fitzroy Iron Works 2014). The Cataract mine, which was on the Medway Rivulet, relieved the burden on the Black Bobs Creek mine, which was at best intermittent with its supply of coal to the ironworks. Adits from the Cataract mine, and possibly others, still exist in the study area and across the region. The locations of known adits are shown on Figure 5.3.

A mine was opened at Medway in 1880 by James John Atkinson (son of James Atkinson who built Oldbury). It primarily supplied coal to the NSW Railways for their steam locomotives. The company became official on 31 March 1881, when an act called “The Berrima Coal-mining and Railway Company (Limited)” was created so that a railway from the Berrima Coal mine to the Great Southern Railway near Moss Vale could be built. The rail line was built on a standard gauge and connected the coal mine at a gorge of the Wingecarribee River to the Government rail line at Bong Bong. The formal opening of the Berrima coal mine and railway took place in March the following year (SMH 2 March, 1882 p.6) but was forced to close after less than a decade due to the high cost of transport and low profits. The equipment and rail line fell into disrepair (Illawarra Coal, nd) and the rail line lay unused. During the first decade of the twentieth century the rails were lifted, leaving only the sleepers.

During the 1920s, three new mines opened in the West Berrima area (now Medway). The Loch Catherine Colliery (1923), the Flying Fox Mine and the Medway Colliery. The Medway Colliery was opened in 1924 Arnold Stanley “Stan” Taylor who also took over the Loch Catherine mine and rebuilt the line to Berrima Junction near Moss Vale in 1927 on the original 1881 rail spur built for the Berrima Coal mine (Oberg, 1980). The coal from his mine was used mainly for his cement works. He also owned limestone leases in Marulan, as limestone is a significant component in Portland Cement manufacture. The Township of Medway is a result of Taylor’s Medway mine and railway (refer Government Gazette 19 February, 1932, p.729).

Taylor was a local industrialist – his first company was Australian Blue Metal Quarries Pty Ltd established at the base of Mount Gingenbullen, which was serviced by a short rail line that joined the Berrima rail line and then the Southern Railway at Berrima Junction (*Southern Highland News* 30 July 2012; Plate 3.4). The branch line ran from a siding on the Southern Portland Cement Railway line and turned south to the quarry. Even though it only operated for a few years and was largely dismantled in 1942 (Matthews 1959, p.23), it is visible on the 1949 aerial photograph (Plate 3.3) as well as current aerial photography.



Plate 3.3 A section of the Australian Blue Metal Quarries rail line (indicated) servicing Taylor's Gingen Bullen Quarry.

Until the 1960s, pit ponies hauled coal from the coal face to a clipping where it was transported out on a rope skipway over the river by bridge and up to the railhead. The mine became mechanised in 1968 when modern mining machinery, conveyor belts and electrically hauled cable shuttle cars were introduced and transportation changed from rail to road. Some foundations of the winder house and steam drive traction engine still exist at the Loch Catherine Mine, approximately one kilometre south west of Medway village (*Southern Highland News* 13 November 2013).

Blue Circle Southern purchased the company in 1974. Blue Circle Southern was an amalgamation of a number of Australian cement companies (including Portland Cement) in a joint venture between BHP and United Kingdom Company Blue Circle. Blue Circle Southern was sold to Boral Limited in 1988, who leased the mine to Centennial Coal in 1994. Delta SBD Limited then ran the colliery as a contractor to Boral from 2009 (Ozark 2015, p.11). Berrima Colliery, formerly Medway Colliery, was closed in 2014 after production halted in 2013. So ended operations at what has been described as the smallest and one of the oldest collieries in NSW (Ozark 2015, p.12; Boral 2002 online).

iii Kerosene shale

Kerosene shale was important in the region starting with its discovery by Edward Carter in the Joadja Valley. The eldest son of Ann and Benjamin Carter, Edward took over his father's job of grazing stock in the region and so became familiar with the landscape. It was after the kerosene shale industry became established at American Creek at Mount Kembla and Hartley Vale in the 1860s that Edward realised the land's potential and took out mining leases and land grants (Jack 1995, p.32-32). Carter started mining kerosene shale in 1873 and in 1878 he sold the rights to a consortium that later became the Australian Kerosene Oil and Mineral Co (AKO) (Jack 1995, p.33). The AKO bought other mining leases in the area and went on to find success in the industry until the resource ran out in 1903 and the family turned to orcharding.

The kerosene shale industry developed in the USA, Scotland, Wales and France at the same time that the oil industry took off in the USA. The additional processing methods required for kerosene oil meant that industry favoured crude oil extraction where the resource existed in the USA, and the more labour-intensive kerosene shale industry floundered. Exploration and extraction of kerosene shale continued in the Lothian region of Scotland and in New South Wales (Jack 1995, p.31).

A private railway was constructed linking Mittagong to Joadja, a distance of 25 km. A winding engine that controlled skips on the single track incline is still in place at the end of the railway line (Jack 1997, p.40).

iv Timber-getting and sawmills

Along with mining, sawmilling was an important industry in the district and sawmills were established at Sutton Forest in 1881, Burrawang in 1885 and Robertson in 1905.

v Tourism

The region's strong resemblance to the English and Scottish countryside, and the presence of the vice regal residence at Hillview, were significant factors in the Southern Highlands becoming a tourist destination.

In 1865 tourism in the region received a boost when the NSW Governor, the Earl of Belmore leased Throsby Park in Moss Vale as his summer residence. By 1890, it was said that Bowral “held its own as a fashionable resort”. According to the *Illustrated Sydney News*, the appeal lay in the leafy trees that imparted an English feel in the Australian landscape (SHI, 1999). With improvements to road and rail, the area became more accessible and from the 1870s tourism started to flourish along with partner industries such as accommodation, restaurants and gift shops.

The earliest use of the name “Southern Highlands” found in research was published in *The Argus* on 10 September 1891 (p.6) in the weather forecast: “New South Wales. – Cloudy and threatening rain on southern highlands, elsewhere fine and clear; variable winds and calms”.

3.3.6 Notable local families and individuals

i Dr Charles Throsby

Dr Charles Throsby was one of the earliest settlers to arrive in the area in 1817 along with his friend Hamilton Hume. He travelled through the region twice in 1817, first with his friend Hamilton Hume and later, with James Meehan. Throsby was one of the earliest new arrivals to settle in the Moss Vale area (ADB online, Vivienne Parsons) and his land eventually became the town of Moss Vale (WHS 2009, no page). Throsby had a hut on the north side of the Wingecarribee River before the town of Bong Bong was established; his cattle grazed both sides of the river in this location (Jack 1997, p.39). His nephew, Charles Throsby also lived in the locality of Bong Bong and after the town was moved, Throsby (the younger) purchased the land and also ran his cattle on it.

ii James Atkinson

James Atkinson (1795–1834) arrived in the colony as a free settler in 1820 aboard the *Saracen* (Higginbotham 1992, Vol 2 p.1). He arrived in May and by July had obtained the position of principal clerk in the colonial secretary’s office (ADB online T. Perry). In 1822 he received a permit to occupy an area of land, for grazing purposes, on the right bank of Medway Rivulet. The permit was converted to grants totalling 1,500 acres along the Medway Rivulet and built the estate known as ‘Oldbury’, named after his birthplace in Kent, United Kingdom. Atkinson names the other grant Mereworth after the Kentish town of the same name that his family was from. He was a sheep and cattle farmer who was able to extend his grant to 2,000 acres by the late 1820s.

After his marriage to Anne Waring, James moved to Oldbury full time (Berrima District Historical Society 1991, p.24). James travelled back to the United Kingdom to publish a book on agriculture in the colony of New South Wales (*An account of agriculture and grazing in New South Wales and of some of its most useful natural productions, with other information, important to those who are about to emigrate to that country, the result of several years’ residence and practical experience*, originally published 1825 and republished a number of times after). Some of his observations are reproduced in this assessment. He fathered four children before he died age 39. John’s obituary in the *Sydney Monitor*, describes him as “a gentleman of great energy and considerable talent; and his frugality and economy on his farm and his family, while it did not descend to meanness, operated as a most useful example to the generally extravagant and even profligate habits of all ranks in this Colony” (*Sydney Monitor* 3 May 1834, p.3).

iii Louisa Atkinson

His youngest daughter Caroline Louisa Warring Atkinson (Louisa Atkinson) gained some fame as a novelist, journalist and botanist. Louisa's contributions to Australian botany are commemorated in the names of plants: *Atkinsonia ligustrina* (a rare shrub endemic to the Blue Mountains NSW); *Erechtites atkinsoniae* (Australian fireweed, also known as *Senecio bipinnatisectus*); *Epacris calvertiana* (after her married name "Calvert"); and *Doodia atkinsonii* (a fern).

iv John Atkinson

John Atkinson (b. 1798), the younger brother of James, arrived in the colony as a free man on the *Mariner* in 1822. On arrival, John moved to Sutton Forest close to his brother James and requested a 500 acre grant to add to an existing 2000 acre grant, and with which to accommodate his increasing stock. The 2000 acres had not in fact been granted yet but was promised on 6 November 1823 and granted on 27 September 1839 (Higginbotham 1992, Vol 2, p.36). The official date of the grant did not hinder Atkinson's claim on the land and he set about clearing and building so that by early in his tenure, he had built a cottage and an inn.

John travelled back to England in 1823 and married Jane Martin at Gillingham in Kent. On his return to the colony John was entrusted with the management of *Oldbury* while James went back to England to attend to business (including publishing his book on agriculture and grazing) until 1827, while also managing his own holdings Mereworth. The name *Mereworth* was used by both brothers on their respective land but the name eventually referred to John's property only. The question of where Atkinson's first house was built arose through this investigation. It has been surmised that Atkinson built a homestead with surrounding buildings in the location of the current house (refer to Section 5). He then built a public house (or an inn), known as the *Kentish Arms* beside Medway Rivulet on the western side of the Great South Road. The inn was sold in 1839 (with the 20 acres of land it stood on) and renamed *The Three Legs of Man* (refer to Section 3.3.4).

v John Nicholson

John Nicholson and his wife settled on 1,200 acres known as Newbury in 1821. He was first the Harbourmaster at Port Jackson, later appointed Magistrate of the Berrima Bench and Coroner of the District Court for 15 years. The Newbury estate included *Arolla*, a brick cottage built for the widow of one of the Nicholson family in 1898 and a wooden cottage known as "Auntie's Cottage" which was occupied by two of Charles Nicholson's unmarried daughters after 1907. The family sold the property after the death of Charles Lindsay Nicholson in 1907 (Berrima District Historical Society, p.16).

vi James and Elizabeth Badgery

James and Elizabeth (née Lundie) Badgery arrived in New South Wales aboard the *Walker* as free settlers in 1799 (Emery 2008, p.106; Western Sydney Libraries) and were some of the earliest European settlers in the district (WHS 2009, p.28). James and Elizabeth were from Exeter in Devonshire, England and arrived with their first surviving child, Ann (b. 1800). Elizabeth went on to have four sons, Henry, William, James and Andrew.

James worked with Sir Joseph Banks at Spring Grove in Chelsea and he and his wife left England with Captain William Patterson and his wife Elizabeth. As the Badgerys were not wealthy they were not eligible for a land grant so they went about building a milliner's and then bakery business in Sydney. In 1803, Badgery was granted land in the Hawkesbury district and then in 1809 at Bringelly on South Creek (Western Sydney Libraries). Exeter Farm was built in Bringelly and produced high quality cattle and horses, sheep and grain and the Badgerys continued to expand their holdings.

The Badgery family became strongly linked to the Exeter area after James obtained 500 acres at Sutton Forest in 1821 (WHS 2009, p.28). The Badgerys also built Vine Lodge and Spring Grove as well as Boscobel and Ivy Hall in the Southern Highlands. Vine Lodge was built by Henry Badgery in 1836. *Summerlees* was built by a grandson of Henry Septimus Badgery.

The Badgery family remained prominent landowners in the district after James' death in 1827. Henry Badgery's son, Henry Septimus (1840–1917) was elected to the Legislative Assembly as member for East Maitland in 1878 and at the 1880 general elections he won a position in the district of Monaro and was returned to Monaro again in 1882 (ADB Badgery, Henry Septimus (1840–1917)).

vii Edward and Benjamin Carter

The Carters were a local family who lived in the Joadja Valley, about 16 km (9 miles) north-east of Berrima. Originally from Nottinghamshire England, Ann (née Holmes) and Benjamin Carter settled at Sherwood to the south-west of Berrima. They brought their three children with them, Jane, Edward and Sarah. Another two children, John and Charles, were born in New South Wales. Benjamin took the job of overseer of Newbury before settling himself and his family in Canyonleigh and building *Sherwood*. He later built *Golden Vale* at Sutton Forest for his family. *Golden Vale* is still standing and is listed on the State Heritage Register. The Carters were a prominent family in the region and eventually moved to Crookwell to take up breeding sheep, cattle and fine horses (Golden Vale SHR 00489).

viii Arnold Stanley Taylor

Arnold Stanley Francis Taylor was born November 13, 1895 in Berrima NSW, son of Alfred Leslie and Annie Regina Taylor (née Bender) also of Berrima. Taylor was educated at Berrima Public school.

Taylor began his successful business career in 1910 with the Government Railways, Mittagong. After three years he joined Howard Smith Ltd., Sydney, as a junior. In 1914 Taylor resigned from Howard Smith Ltd and joined Farmers Ltd., Sydney, as a shipping clerk. 1915 saw Taylor appointed as senior clerk to George Wall Ltd., Sydney, and by 1918 he had founded his own business of A. T. Taylor & Co., Shipping Agents. During the period of World War I Taylor capitalised on the internment of skilled German-Australians at Berrima gaol becoming "friendly with many of them, and as most were professional men was able, through them, to assess the great mineral possibility of this district. Subsequently, through this knowledge, Taylor established the Southern Portland Cement Company with a capital of over £1,000,000, mainly from British sources" (*The Southern Mail* 1952, p.2).

Taylor's numerous entrepreneurial pursuits included:

- preparing plans of a hydro-electric scheme capable of supplying Mittagong, Bowral and Moss Vale with electricity;
- interest in the extraction of petrol from shale oil at Berrima;
- sponsor of the Atlas Cement Company at Parramatta River;
- the development of the lime deposits at Marulan and the establishment of the Metropolitan Cement Company at Maldon; and
- purchasing of "Bullio South" property and successfully conducted sheep and fat stock raising there.

Taylor died in 1952 leaving behind his widow Ethel May Taylor (née Pike), five sons and one daughter. He is interred in the Catholic portion of Berrima Cemetery.

Paul Sorensen (1891–1983), a notable figure in landscape architecture in Australia (ADB, Sorensen, Paul Edwin Bielenberg), designed the gardens around the dwelling at *Mereworth*. Born in Copenhagen, Denmark, Sorensen arrived in Australia in 1915 via Germany, France and Switzerland. His first job as a gardener was at the Carrington Hotel in Leura where he also set up his garden maintenance and design business. Sorensen maintained gardens for many wealthier clients in the Blue Mountains including Lady Fairfax at her house Sospel in Leura. He worked closely with Henri van de Velde to design architectural elements for van de Velde's garden at Everglades, also in Leura. Sorensen's home and business was established in the Blue Mountains of NSW where he started with garden maintenance then catering to wealthy clients in garden design. He opened a second nursery in Berrima but closed it after the death of two of his sons during World War II and continued working on relatively small commissions for patrons in the Blue Mountains.

As his fame as a cold climate designer grew Sorensen was engaged to design gardens privately and through the company Anderson & Co. Ltd. One of Sorensen's earliest designs in the Southern Highlands was the garden at Invergowrie, which he established in the late 1930s for Charles Hoskins, around mature conifers that the Yates family had planted. Sorensen was commissioned to return to the garden when Invergowrie was subdivided in the 1960s to create Cherry Dell, to redesign, which also meant moving mature planting from around the house to the boundary (SHI 2680372).

Sorensen's connections to Invergowrie were through Charles Hoskins and his sons, (Sir) Cecil (managing director of Australian Iron & Steel Ltd) and Sidney, who first engaged him to design the garden around their industrial enterprise, Australian Iron & Steel, later to become BHP. There was a strong business relationship between Cecil Hoskins and Paul Sorensen, which is evident in the gardens designed for the Hoskins' businesses in the Southern Highlands and Port Kembla as well as the residence 'Invergowrie' at Exeter, 'Glennifer Brae' in Wollongong, Australian Iron & Steel executive houses at Green Hills and Hillside, the Hoskins Memorial Church in Lithgow and 'Redlands' in Mittagong, which was the residence of a Hoskins employee, Cedric Rouse (ADB Sorensen, Paul Edwin Beilenberg).

The Hoskins family, starting with Charles Henry, were industrialists in the Southern Highlands. Charles and his son Cecil, who received a knighthood in 1960, were instrumental in the growth of iron and steel works in NSW ((ADB) 'Hoskins, Sir Cecil Harold). Cecil acquired Taylor's Southern Portland Cement and Coal Company, and he and his brother became joint managing directors of Hoskins Iron & Steel, which was established in Port Kembla (later acquired by BHP). The twentieth century saw a growing trend toward greening industrial sites.

Sorensen took commissions in the Blue Mountains, Orange, Bathurst, Cassilis and Merriwa. He worked with native and exotic trees and incorporated concrete and asphalt and designed terraces. He was renowned for his ability to seamlessly blend the interface of his gardens with designed bushland; the sense of arrival is a recurring theme in Sorensen's designs where long, curved driveways led to the destination. Trees were used as the main structural element of a garden, either in masses and groves or as individual plantings. Australian modernism was a key factor in his design of *Everglades* (National Trust: *Everglades history*).

Sorensen designed a large number of gardens in NSW, with a focus on the Blue Mountains, where he established a nursery, the Illawarra and the Southern Highlands. In addition to designing residential gardens, Sorensen played a role in the beautification of industrial and public sites. The former Australian Iron & Steel Co in Port Kembla (established 1928, later BHP), the former Southern Portland Cement Company, (now Boral Cement) New Berrima, and the Remembrance Driveway plantation on the Old Hume Highway south of Berrima are three of Sorensen's designs. Claude Crowe planted the garden for the Southern Portland Cement Company (now Boral Cement) with Sorensen (Wingecarribee Heritage Inventory 2680453). Not of Sorensen design but nevertheless examples of industrial sites with designed gardens are those such as the gardens of Potts Hill Reservoir in Sydney (Sydney Water Corporation S170 Register 4573701; SHR 01333), the BHP Administration Building in Newcastle, the Capral Aluminium at Rose Hill and the former Bedford Brickworks Group in Alexandria.

During the 1960s, Sorensen took on larger projects set in rural settings and on Sydney's North Shore as well as continuing the business in the Blue Mountains. Unlike many of his peers, Sorensen committed little to paper and as a result, few records, other than his gardens, exist (Read and AGHS 2008).

Sorensen designed the gardens listed below; those that are on statutory heritage registers are shown with an asterisk:

- *The Old Rectory nursery*, Berrima (1930s to 1940s);
- *Australian Iron & Steel Co.* Office grounds, Port Kembla (c 1936-37);
- *Green Hills and Hillside*, * Figtree (1936-38);
- *Redlands*, Mittagong* (c 1937) (the gardens have since been subdivided and diminished);
- *Invergowrie*, * Exeter (1937 and 1960s);
- *Southern Portland Cement Co*, New Berrima (1937-1938);
- *Gleniffer Brae**, (Wollongong from 1938);
- *Mt Keira Scout Camp*, * Wollongong (from 1939);
- *Remembrance Driveway plantations*, * Old Hume Highway south of Berrima (from c 1945);
- *Mereworth*, * Berrima (1962-64; 1964-66);
- *Cherry Dell*, Exeter (1960? a subdivision of *Invergowrie*);
- *Boogadah*, near Binnaway;
- *Calleen*, near Cowra;
- *Fernhill*,* Mulgoa;
- *Mahratta*,* Warrawee;
- *Blue Mist* and *Talltrees*, Leura;
- *Aola*, Peats Ridge;

- *Forest Park*, Kunura; and
- *Everglades** in Leura, in association with the owner, Henri Van de Velde.

x [John Amory](#)

The architect who designed Mereworth, John Amory, was American born and trained. Amory was trained at Princeton University (USA), served in the US Navy and was the Assistant Director of National Art Gallery Washington DC. Amory married an Australian, Judy Mills, and moved to Sydney in 1954 after an earlier visit in 1950. His works include the conservation of stables at Point Piper and the conversion of stables into a villa at Bellevue Hill in 1957 (Woollahra Council). Amory also designed another French Provincial style house (as with Mereworth) in Pibrac Avenue Warrawee and a house at Bellevue Hill for Caroline Simpson (1960) (Noni Boyd Heritage Officer AIA pers. comm.).

3.3.7 Greening industrial landscapes

As early as 1918, the ideal factory was neat with adjacent grounds devoted to gardens and playing fields, as well as having other healthful properties such as good ventilation (Proud 1918, p.256 in Long 2010, p.4).

Industrial gardens in Australia followed a trend set in Britain at the end of WWI. This trend moved toward improving workers' productivity and health by organising spaces around factories to achieve this. As described by Long,

Model factories constructed in the aftermath of the War (WWI) tapped into a vein of utopian thought which reconfigured factory space into a pivotal site in which the relationship between work, leisure, production, consumption, health and citizenship could be reframed.

Long 2010, p.3

Still in Britain, in 1943 the deputy Chief Medical Officer of the Ministry of Supply described the environment of a Royal Ordnance Factory as "set in a lovely garden, with hanging baskets of flowers" ('The Doctor in Dungarees', *Public Health* 1943, p.88, in Long 2010, p.28). The idea of industrial gardens in NSW gained momentum around the time that Sorensen was designing factory landscapes for the Hoskins.

The concept of planting trees as road memorials originated in Great Britain in 1918 as a way to transform existing highways "to the dignity of Roads of Remembrance adorned with trees" (Remembrance Driveway Committee Inc.). While the concept did not take off in Great Britain, it was adopted by Australia and Canada. The Hume Highway forms part of a larger road of remembrance that starts in Macquarie Place in Sydney and ends at the Australian War Memorial in the Australian Capital Territory.

The Remembrance Driveway program was launched in 1953 by the Premier of NSW, JJ Cahill and donations were accepted resulting in plantings occurring from 1955 to 1979. New plantings declined but the committee cared for the existing plantings while the new Hume Highway alignment design was being decided.

Since the early 1990s, the practice has been renewed as the Roads and Traffic Authority (RTA, now Roads and Maritime Services) took on the sponsorship of the Remembrance Driveway Committee. This led to a large number of plantings in Villawood, Bass Hill and on the Narellan Road interchange at Kenny Hill. The latest plantation was established in 2010 when 45,000 trees were planted along 15.5 km between Prestons and the Mount Annan Botanic Garden (Remembrance Driveway Committee Inc.).

3.3.8 Summary

The first land grants in the Southern Highlands occurred after 1819. Three large land grants, *Newbury*, *Oldbury* and *Mereworth*, were part of the initial settlement of Sutton Forest. Within twenty five years, convict gangs had built the South Road which later became the Great Southern Road, one of the three main roads in the colony. With the coming of the railway in the 1860s, European settlement in the area began in earnest. Being well suited for grazing, dairy farming gradually intensified and gave rise to subsidiary industries such as butter and cheese. Crops were predominantly grown for animal feed, although by the turn of the century, orcharding had also become important.

The discovery of coal deposits near Berrima around 1845 signalled the start of the mining industry in the district, which continues today. Along with mining, sawmilling was an important industry and the first sawmill was established in Sutton Forest in 1881, then at nearby sites in the following decades. The region became popular as a tourist destination early in its history and was considered quite fashionable by the late nineteenth century.

