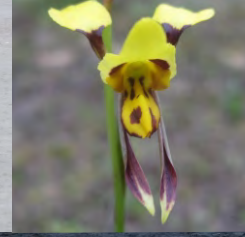
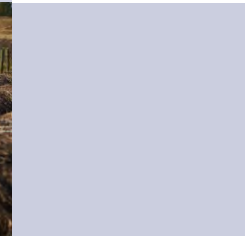
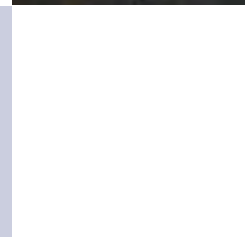
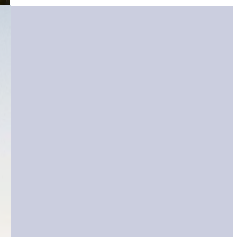
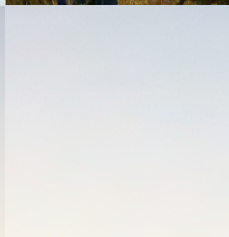
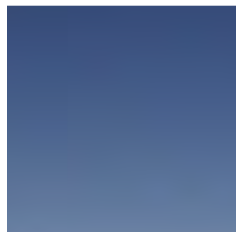
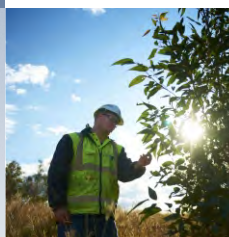


Environmental Impact Statement

BULGA OPTIMISATION PROJECT

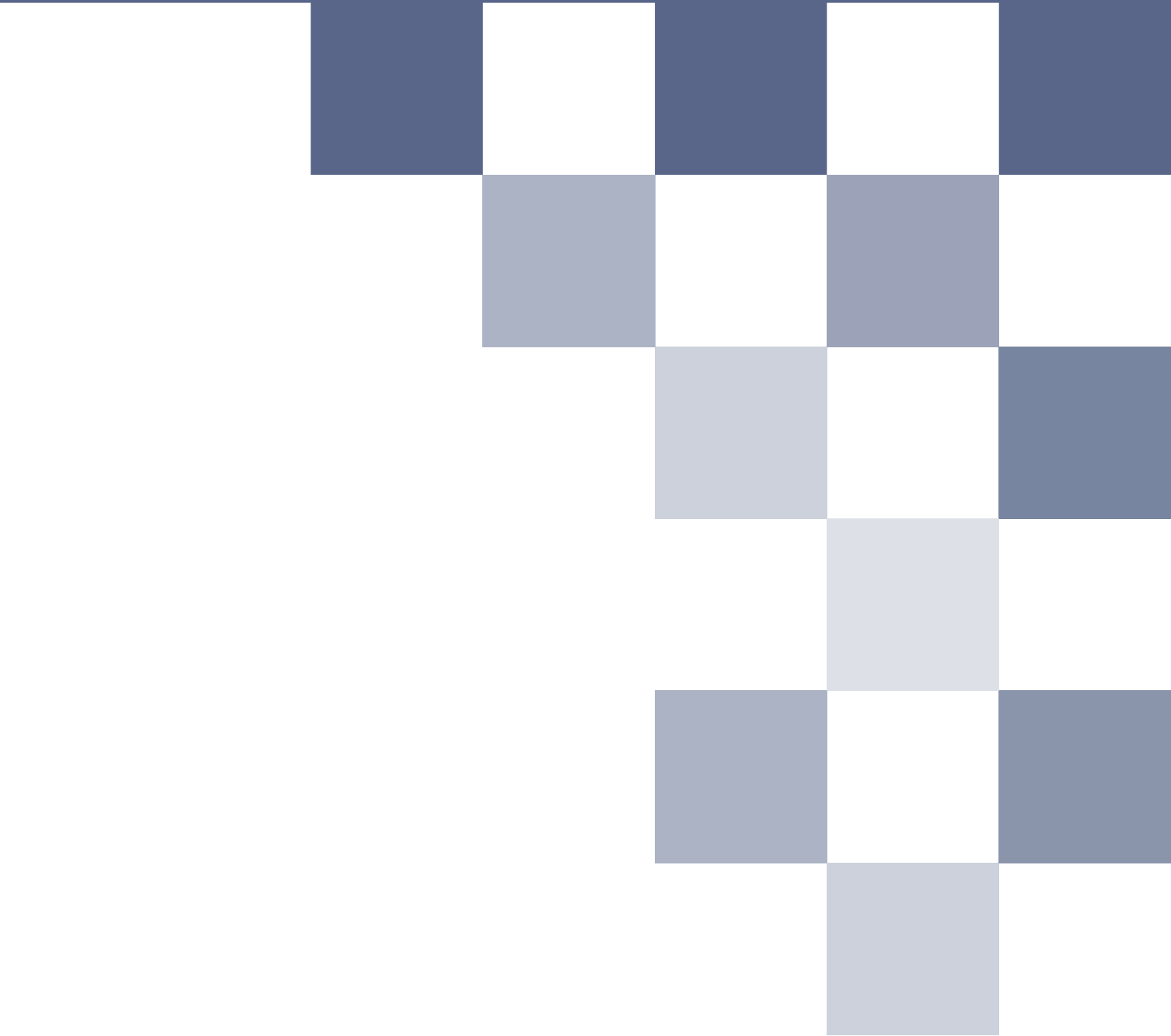
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Volume 8
APPENDICES 14 - 18

Appendix 14

Historic Heritage Assessment





Inspired people | Dedicated team
Quality outcomes



Historic Heritage Assessment

Bulga Optimisation Project

December 2012



Historic Heritage Assessment Bulga Optimisation Project

December 2012

Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Bulga Coal Management Pty Ltd

Project Director: **John Merrell**
Project Manager: **David Holmes**
Report No. **2869/R05/FINAL**
Date: **December 2012**



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Executive Summary

This Historic Heritage Assessment has been prepared as part of a broader application under Part 4 of the *Environmental Planning & Assessment Act* (1979) (EP&A Act) for the continuation of the existing open cut operations at the Bulga Coal Complex (BCC). The Bulga Optimisation Project (the Project) is a proposed continuation of the existing open cut operations to enable mining to continue for a further approximately 22 years (approximately 10 years beyond the existing consent's expiry date) and will enable existing rates of production from the BCC to continue for the life of the Project, optimising utilisation of existing infrastructure at the complex.

Methodology

This report examines the Historic (non-Aboriginal) heritage issues associated with the Project with the aim of assessing and evaluating the potential heritage impacts of the Project. The report identifies the potential heritage sites/items contained within, and in the vicinity of, the Project area, and assesses the significance of these potential sites/items. The report includes a heritage impact statement for these sites/items and recommends mitigation and management measures for the sites/items that are assessed as being significant. In accordance with the DGRs, the report also evaluates the effectiveness and reliability of the proposed mitigation measures.

Listed Heritage Items

No sites/items with any form of statutory heritage listing were identified within the Project area. However, several listed items were identified in the vicinity of the Project area.

A section of the Great North Road forms part of the Project area as current Charlton Road. Although subject to various statutory listings along its length, there is no listing that encompasses the Great North Road in its entirety and Charlton Road itself forms no part of any listing for the Great North Road.

Potential Heritage Items

The previous assessment undertaken as part of the Bulga Open Cut Continued Mining Environmental Impact Statement (ERM Mitchell McCotter 1999) identified no potential sites/items within the 1999 Project area. The *Bulga Coal Continued Underground Operations: Historic Heritage Assessment* (Umwelt 2003) identified several potential sites/items in the surrounding area. As the potential impacts to heritage sites/items associated with the current Project are different than those of Bulga Coal Continued Underground Operations, the sites/items identified as part of the 2003 assessment have been included within this report where appropriate. Further assessment and investigation identified a number of additional potential heritage sites/items within the Project area.

In general, the identified potential historical heritage resource of the Project area reflects the history of the area as cleared agricultural and pastoral land and the importance of dairying as a land use. The resource, with the exception of Charlton Road (which follows the alignment of part of Section 8 of the Great North Road) and the Broke RAAF Landing Ground (one of three satellite airstrips associated with the parent site of Bulga RAAF Base which were planned and constructed between 1942 and 1943) is considered to be typical of the surrounding region and includes former post-and-rail fence lines, former house/dairy sites and timber yard complexes. In general, these sites have been assessed as having no significance, or at best local significance.

The section of Charlton Road which forms part of the Project area has been assessed as being of local significance (Weir Phillips 2012:66). The Broke airstrip has also been assessed as being of local significance.

A number of locally listed heritage items, including Blaxland House, Broke Cemetery and Charlton, are located in the immediate vicinity of the Project area. In addition, a number of previously identified heritage sites/items assessed as being of local significance, including Site BH7 McNamara's Dairy Cottage and Site BH13 Stone Wall, are located outside but in the immediate vicinity of the Project area and required consideration with regards to indirect impacts.

All potential heritage sites/items within the Project area identified during research and both the Aboriginal archaeological and historical heritage surveys have been inspected and assessed as part of this report. Although unlikely, any as yet unidentified potential heritage sites/items that may be present within the Project area are likely to comprise of evidence of former house/dairy sites and timber yards and fencing. If present, these sites/items are likely to be typical of those found throughout the Hunter Valley and rural NSW and be of no, or at best be of local, significance.

Impacts

A number of the potential heritage sites/items identified within the Project area and assessed as being of no, or at best local, heritage significance will be impacted by the proposed mining activities including BH1 (fence posts), BH11 (former farmstead), BH12 (fence line), PS1 to PS6 (house site and sheds), PS11 (former house site), PS12 (timber yard complex), PS14 to PS 16 (yards), PS17 (former house site) and PS19 (former shed site).

Charlton Road (as part of the Great North Road) is located along the western boundary of the Project area. A 4 kilometre section of the road is proposed to be realigned in order to construct a noise and visual bund around the southern and western perimeters of the open cut pit to act as a visual screen and to reduce noise impacts for residents to the south and west. As such, a 4 kilometre section of the road will be directly impacted.

The Broke RAAF Landing Ground is located within the Project area and will also be directly impacted by the construction of the proposed noise and visual bund.

The listed and non-listed heritage sites/items located outside but in the immediate vicinity of the Project area (for example Site BH7 McNamara's Dairy Cottage and Site BH13 Stone Wall) have the potential to be subject to indirect impacts such as vibration from blasting which has the potential to damage historical heritage items if not appropriately managed.

Management

All potential heritage sites/items identified and assessed within this report have been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**). In general, with the exception of Charlton Road, the Broke airstrip and those items within the vicinity of the Project area potentially subject to indirect impacts from blasting activities, no further management is required with regards to the potential historical heritage resource of the Project area.

The proposed realignment of a section of Charlton Road provides an opportunity to undertake further historical and archaeological investigation of this section of the Great North Road to identify if any significant remnant fabric associated with its construction, surfacing or use survives as an archaeological resource. As part of these investigations an interpretation plan and a process for the management of Charlton Road (as part of the Great North Road) will be developed and committed to by Bulga Coal Management (BCM) to ensure an understanding of the significance of Charlton Road and its importance in the wider context of the Great North Road is maintained. Any archaeological investigation or the development of an interpretation strategy will be undertaken in consultation with the Heritage Branch, Office of Environment and Heritage (OEH) and the Convict Trail Project.

Prior to any form of disturbance, a site specific detailed survey and photographic/archival recording should be undertaken of the Broke airstrip in accordance with Heritage Branch, Office of Environment and Heritage (OEH) guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006). In addition, as the primary significance of the former airstrip is historical, further research should be undertaken and all documentary evidence available regarding the site should be compiled as part of the archival recording report.

In the absence of any building specific assessment of the relevant sites/items considered in this report to be potentially at risk from ground-borne vibration, it is recommended that a peak particle velocity of 3 mm/s be adopted for the potential heritage structures outside, but in the vicinity of, the Project area. Where vibration impacts above 3 mm/s have been predicted, blast sizes will be managed to 3 mm/s unless a structural assessment is conducted which confirms a tolerance for higher vibration levels.

In the event that unexpected archaeological remains or potential heritage items (including a burial site or human skeletal material) not identified as part of this report are discovered during the Project all works in the immediate area should cease, the remains and potential impacts should be assessed by a qualified archaeologist or heritage consultant and, if necessary, the Heritage Branch, OEH notified in accordance with Section 146 of the *Heritage Act 1977* (New South Wales (NSW)). In the case of a burial site or human skeletal material being exposed the local police, OEH and the Heritage Branch should be contacted and the remains inspected by a physical or forensic anthropologist to make a determination of ancestry. The management of the remains would then be determined through liaison with the appropriate stakeholders (New South Wales Police Force, forensic anthropologist, OEH, Heritage Branch, registered Aboriginal parties etc.) and in accordance with the *Public Health Act 1991*.

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- B Photograph Catalogue

1.0 Introduction

The Bulga Coal Complex (BCC) consists of two existing coal mining operations; the open cut operations (Bulga Surface Operations) and the underground operations (Bulga Underground Operations). The BCC is located in the Hunter Valley region of NSW within the Singleton Local Government Area (LGA) and is approximately 12 kilometres south-west of Singleton (refer to **Figure 1.1**). The existing surface operations are located approximately 4 kilometres to the south-east of the Bulga village and approximately 4 kilometres north of the village of Broke (refer to **Figure 1.2**).

The Bulga Optimisation Project (the Project) is a proposed continuation of the existing open cut operations to enable mining to continue for a further approximately 22 years (approximately 10 years beyond the existing consent's expiry date) and will enable existing rates of production from the BCC to continue for the life of the Project, optimising utilisation of existing infrastructure at the complex. No change is proposed to either the maximum production rate from the open cut operations or the coal handling and preparation plant (CHPP) throughput.

Umwelt (Australia) Pty Limited (Umwelt) has been commissioned by Bulga Coal Management (BCM) to prepare an Environmental Impact Statement (EIS) for the Project, with this historic heritage assessment undertaken as part of the EIS. This report examines the historic (non-Aboriginal) heritage issues associated with the Project with the aim of assessing and evaluating the potential heritage impacts associated with the Project. The report identifies the heritage sites contained within the Project area and assesses the significance of any impacts on these sites potentially resulting from the Project.

As outlined in Attachment 1 of the Director General's Requirements for the Project, this assessment has been undertaken in accordance with guidelines set out in the *NSW Heritage Manual 1996* (Heritage Office and Department of Urban Affairs & Planning), including *Archaeological Assessments* and *Assessing Heritage Significance* and with consideration of the principles contained in the *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance 1999* (Australia ICOMOS. 2000).

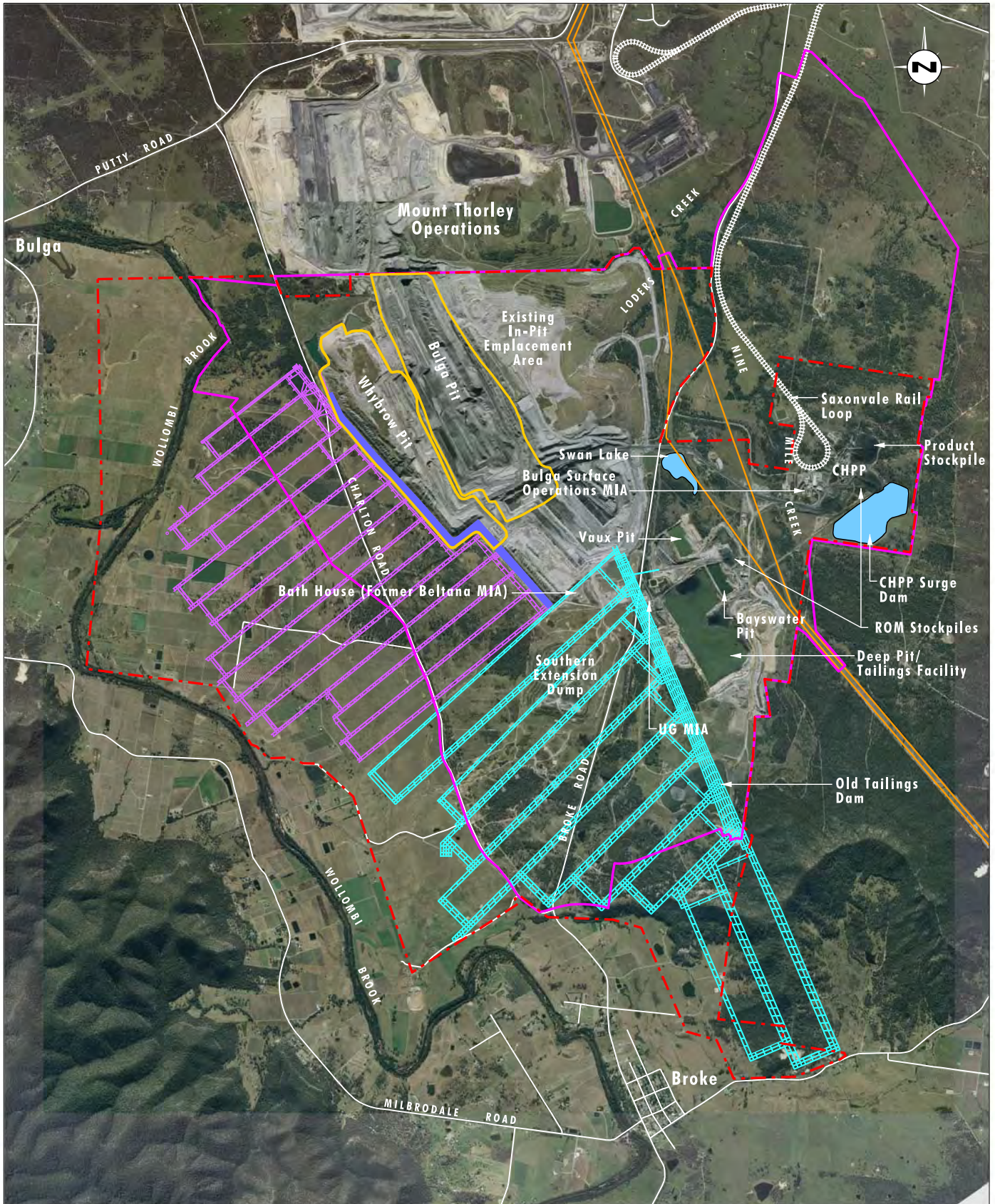
This report does not include an assessment or consideration of any Aboriginal archaeological values or Aboriginal cultural heritage values related to the Project. Aboriginal archaeological values and cultural heritage values are assessed in separate reports prepared by OzArk (*Aboriginal Archaeological Values Assessment: Bulga Optimisation Project*, OzArk 2012) and Connect for Effect (*Bulga Optimisation Project Cultural Heritage Assessment*, Connect for Effect 2012).

1.1 Statutory Overview

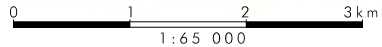
The *Heritage Act 1977* (NSW) and the *Environmental Planning and Assessment Act 1979* (EP&A Act) are the primary statutory controls protecting historic/European heritage within New South Wales. The Project is a State significant development as defined under the *State Environmental Planning Policy (State and Regional Development) 2011* and requires development consent under Part 4 of the EP&A Act. As State significant development, the Minister for Planning is the consent authority and the relevant approval provisions of the *Heritage Act 1977* (NSW) and local planning instruments established under the EP&A Act do not apply.



FIGURE 1.1
Locality Plan



Source: AAM Hatch Pty Limited (March 2012), Xstrata Coal NSW Pty Ltd



Legend

- - - Saxonvale Colliery Holding Boundary
- Project Area
- Existing 330kV Transmission Line
- Main Mine Water Storage Dam
- Completed Underground Mining Operations in Whybrow Seam
- Blakefield South Underground Workings
- Whybrow Highwall

FIGURE 1.2

Existing Mining Operations in Project Area

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However, this does not exempt the Project from requiring a heritage assessment, which may identify heritage sites and provide recommendations for their management. The Director-General's Requirements (DGRs) for the Project require an assessment of the potential impacts of the Project on the historic heritage values of the Project area. Approval conditions relating to heritage may be issued by the Department of Planning and Infrastructure (DP&I) in consultation with the Heritage Council of NSW and delegate officer of the Heritage Branch, Office of Environment and Heritage (OEH). As such, the Project will still be influenced by the approval requirements of the *Heritage Act 1977* (NSW) and any relevant planning instruments established under the EP&A Act.

1.2 Heritage Listings

In order to identify if any historical heritage items are located within or in the immediate vicinity of the Project area, desktop searches were conducted of the NSW State Heritage Register (SHR) and State Heritage Inventory, the Australian Heritage Database (including Commonwealth and National Heritage lists and the Register of the National Estate (RNE)), and local planning instruments (Singleton Local Environment Plan (LEP) 1996).

No listed sites/items were identified within the Project area. However, several listed items were identified within the vicinity of the Project area. These are listed in **Table 1.1** and identified on **Figure 1.3**.

Table 1.1 – Listed Heritage Items Located Outside but within the Vicinity of the Project Area

Item Name	Location	Listing
Blaxland House (Site BH5)	Fordwich Road, Broke. Outside Project area	Singleton LEP – local significance No longer standing (http://www.huntervalleystays.com.au/maranda-broke-fordwich-region.aspx)
General Cemetery (Site BH6)	Charlton Road, Broke. Outside Project area	Singleton LEP – regional significance.
'Charlton' (Site BH14)	Cobcroft Road, Bulga. Outside Project area	Singleton LEP – local significance
Murinbin House Group	Broke Road, Broke. Outside Project area	RNE ¹ – Interim List Commonwealth Heritage List Australian Heritage Places Inventory
St. Andrews Anglican Church	Wollombi Road, Broke. Outside Project area	Singleton LEP – local significance. RNE – indicative place
War Memorial	Singleton Road, Broke. Outside Project area	Singleton LEP – local significance
Maria Immaculate R.C. Church	Broke. Outside Project area	Singleton LEP – local significance
Albert Hall	Broke Road, Broke. Outside Project area	Singleton LEP – local significance

¹The Register of the National Estate (RNE) is a list of natural, Indigenous and historic heritage places throughout Australia. The register ceased to exist as a statutory heritage list 19 February 2012, although it continues to exist as an inventory of Australian heritage places that were registered between 1976 and 2007. Many places in the RNE are now included in other statutory lists, such as the state heritage lists, or local government heritage registers. As a result, those places receive protection under the relevant federal, state, territory or local legislation.

Table 1.1 – Listed Heritage Items Located Outside but within the Vicinity of the Project Area (cont.)

Item Name	Location	Listing
'Mount Leonard' Estate Homestead	Broke Whittingham Rd, Broke. Outside Project area	RNE – Indicative Place
War memorial Gates	Inlet Road, Bulga. Outside Project area	Singleton LEP – local significance
'Mt Leonard' Homestead	Putty Road, Bulga. Outside Project area	Singleton LEP – local significance
Mt. Leonards Public School (now Scout Hall)	Putty Road, Bulga. Outside Project area	Singleton LEP – local significance
Indigenous Place ²	Bulga, NSW. Outside Project area	RNE - Registered Australian Heritage Places Inventory
Bulga Bridge over Wollombi Brook	Main Road 213, Bulga NSW. Outside Project area	Australian Heritage Places Inventory SHR Roads and Maritime Services (RMS) Section 170 Register
'Milbrodale' Estate	Putty Road, Milbrodale. Outside Project area	Singleton LEP – local significance RNE – Indicative Place
Brick Farm House	Jerry's Plains Road, Mt. Thorley. Outside Project area	Singleton LEP – local significance
'Minimbah' and Outbuildings	Broke Road, Whittingham. Outside Project area	Singleton LEP – state significance RNE – Registered Australian Heritage Places Inventory

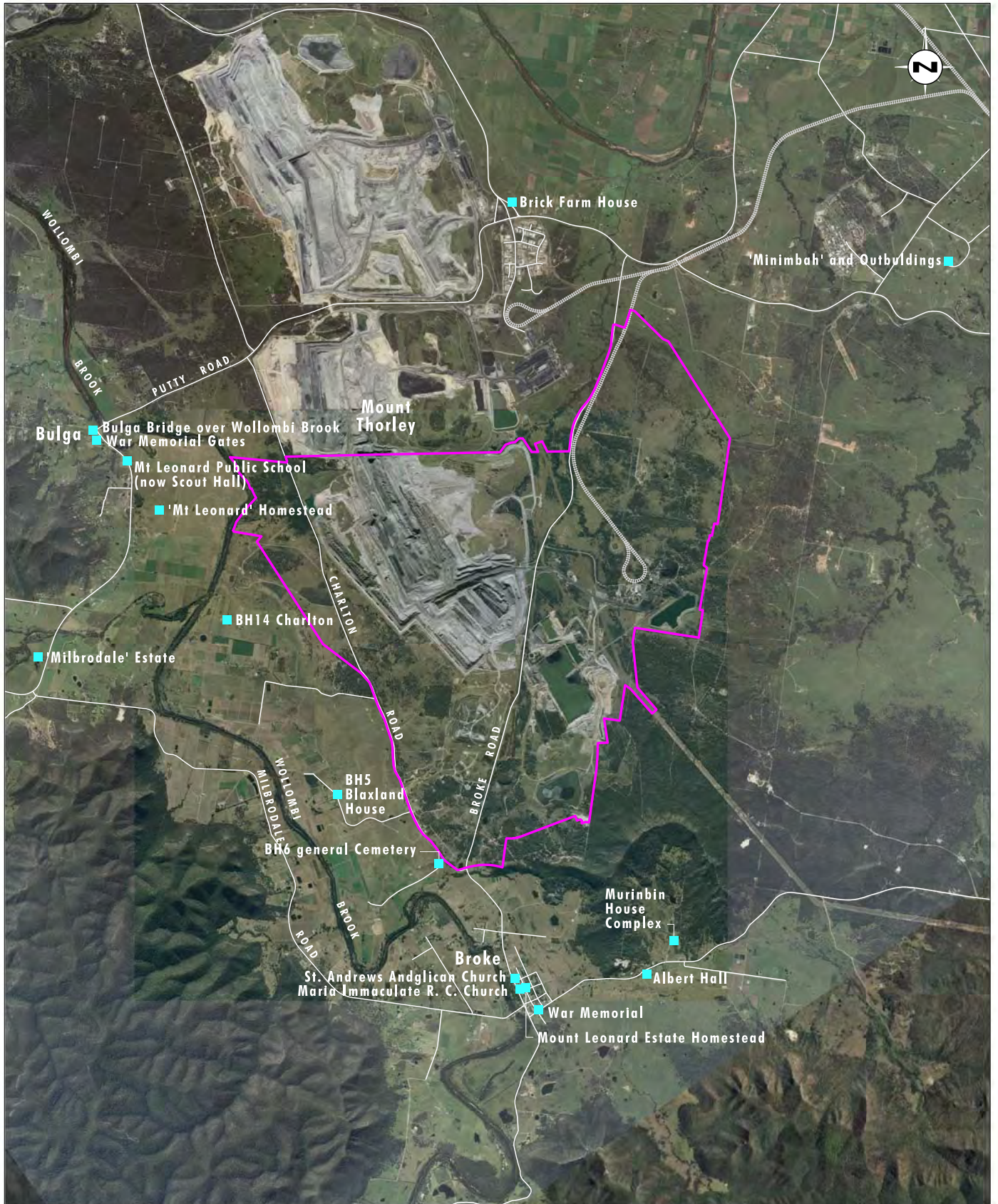
1.3 Great North Road

Charlton Road crosses the Project area and forms part of the Project area's western boundary (refer to **Figure 1.3** and **Section 3.5.1**). Charlton Road is identified as Section 8 (the final section) of the Great North Road (refer to **Section 3.5.1**).

There is no statutory listing that encompasses the Great North Road in its entirety and Charlton Road forms no part of any listing for the Great North Road. However, other sections of the Great North Road are listed in the:

- UNESCO World Heritage List (as one of the eleven sites included as part of the Australian Convict Sites listing);
- The National Heritage List;
- NSW State Heritage Listings (State Heritage Register and S170 Registers);

² The location and description of the Indigenous place is not available on the public registers. The site is not considered further as part of this report. Further information in relation to this site will be provided in the Aboriginal Cultural Heritage report and the *Aboriginal Archaeological Values Assessment: Bulga Optimisation* report.



Source: AAM Pty Limited (March 2012), Xstrata Coal (NSW) Pty Ltd

0 1.0 2.5 5.0km
1:100 000

Legend

- Project Area
- Listed Heritage Item

FIGURE 1.3

Listed Heritage Items Within Proximity of the Project Area

- Local Government Heritage Listings (Ryde, Hornsby, Gosford, Baulkham Hills and Cessnock Council Local Environmental Plans); and
- Non-statutory Heritage Listings (National Trust of Australia (NSW) and Register of the National Estate).

A full discussion of these listings is included as part of the *Heritage Assessment Charlton Road Singleton New South Wales* (Weir Phillips 2012) attached to this report as **Appendix A**.

2.0 Bulga Coal Optimisation Project Overview

The Project is a proposed continuation of the existing open cut operations to enable mining to continue for a further approximately 22 years and allow the extraction of approximately 230 million tonnes (Mt) of additional run of mine (ROM) of coal (an additional approximately 200 Mt over existing approved extraction areas) to be mined by open cut methods from land that is largely within the existing BCC disturbance footprint. The Project will enable existing rates of production from the BCC to continue for the life of the Project, optimising utilisation of existing infrastructure at the complex. No change is proposed to either the maximum production rate from the open cut operations or the throughput of the coal handling and preparation plant (CHPP), which is located adjacent to the Bulga Surface Operations MIA.

The key features of the Project are summarised in **Table 2.1**:

Table 2.1 - Key Features of the Bulga Optimisation Project

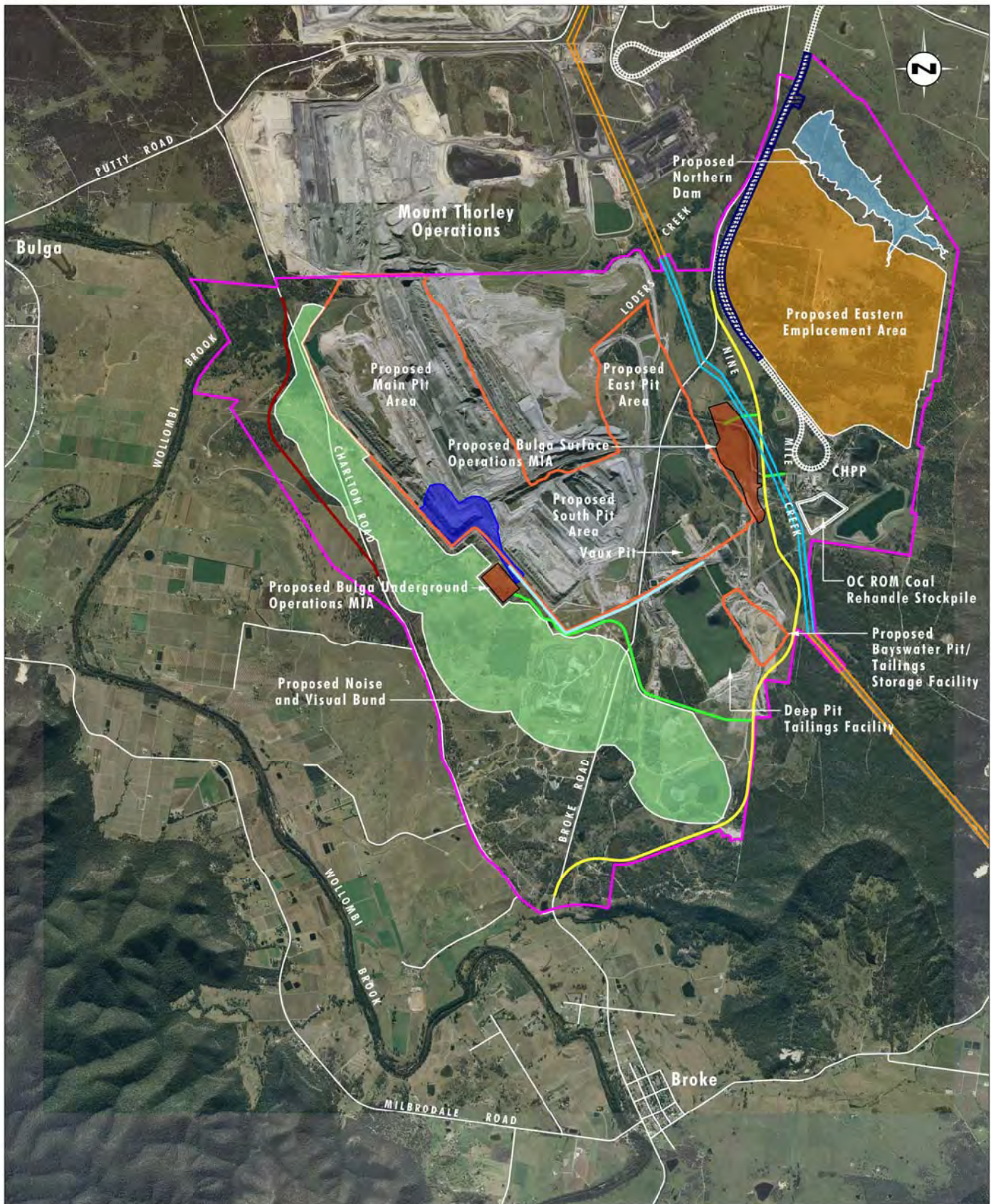
Major Project Components	Proposed Operations
Total Production	Approximately 230 Mt ROM Coal over the life of the Project including approximately 30 Mt of existing approved ROM coal reserves.
Annual Production Limit	No changes from current approved annual limits. Up to 12.2 Mtpa ROM coal from the Bulga Surface Operations and up to 20 Mtpa ROM coal through the CHPP.
Mine Life (Production)	Approximately 22 years with further rehabilitation and closure works being carried out after the end of this period.
Operating Hours	24 hours per day, 7 days per week.
Number of Employees	Continued employment of approximately 700 full time employees, decreasing towards the end of the Project. Approximately 300 construction employees, predominately during the first 3 to 4 years of the Project.
Mining Methods	Open cut mining (including some highwall mining).
Mining Areas	Mining in three contiguous pit areas: <ul style="list-style-type: none"> • a western extension of the existing Bulga Pit and extraction of coal to the base of the Woodlands Hill seam (the Main Pit area); • an eastern extension of the Bulga Pit to mine the deeply dipping seams in the Wittingham Coal Measures (The East Pit area); and • deeper mining down to and including the Broonie seam series (South Pit area). <p>A new pit area, known as the Bayswater Pit, mining shallow coal reserves will also be developed to the northeast of the former Deep Pit. This pit will ultimately be used for wet tailings storage.</p> <p>The Project will also develop a new box cut in the highwall for accessing existing approved underground mining areas.</p>

Table 2.1 - Key Features of the Bulga Optimisation Project (cont.)

Major Project Components	Proposed Operations
Mine Infrastructure	<ul style="list-style-type: none"> • A new open cut mine infrastructure area (MIA). • A new underground MIA as its currently approved location will be affected by the proposed open cut mining. • Upgrades to the existing CHPP to improve throughput efficiency and increase product yield. • Changes to some Bulga Underground Operations infrastructure, including conveyor location, where it will be affected by the proposed open cut mining. • Development of new haul roads to out-of-pit emplacement areas including 2 new bridges over the realigned section of Broke Road. • Enlargement of ROM and product coal stockpile areas. • Construction and use of new approximately 3000 ML water storage dam (Northern Dam) as part of the mine water system. • Changes to mine and clean water diversion, management and reticulation systems. • Changes to ancillary infrastructure, including access roads and the development of construction laydown areas.
Emplacement Areas	<p>Construction of two out-of-pit emplacement areas. The proposed Noise and Visual Bund has been designed to minimise the noise and visual impacts of the ongoing mining operations while the proposed Eastern Emplacement Area enables overburden from the eastern side of the open cut operations to be handled in a manner that minimises noise and air quality impacts to the majority of residents around the Project area.</p> <p>Overburden will also be emplaced in-pit.</p>
Tailings and Rejects Strategy	<p>Tailings will be disposed of in the Deep Pit and Bayswater Pits with tailings also potentially disposed of in the underground workings. Coarse rejects and paste thickened tailings will be co disposed with overburden.</p>
External Coal Transport Infrastructure	<p>No change to approved annual maximum product transported by train. Continued use of Saxonvale Rail Spur.</p> <p>Construction and use of a rail siding adjacent to the existing rail easement capable of parking two coal trains awaiting loading at the BCC.</p>
Electricity Infrastructure	<p>Realignment of sections of two 330 kV transmissions lines and other 66 kV and 11 kV powerlines and other changes to associated electricity infrastructure.</p>
Public Roads	<p>Realignment of sections of Broke Road and Charlton Road and the construction of haul road bridges over the realigned section of Broke Road.</p>
Pipelines and Other Services Infrastructure	<p>The relocation of the Broke Fordwich Private Irrigation District (PID) water pipeline, Singleton Council Broke potable water supply pipeline and other services (such as telecommunications infrastructure) which are associated with the existing public road alignments.</p>
Resource Definition Exploration	<p>Ongoing borehole drilling and sampling in and adjacent to mining areas to better understand the coal resource, coal quality, geological conditions and geotechnical constraints.</p>
Rehabilitation	<p>Rehabilitation of areas disturbed by BCC operations, infrastructure and construction.</p>

The Project has been designed through an integrated multi-disciplined and risk-based approach that aims to maximise resource extraction efficiency whilst minimising impacts on the environment and surrounding community. A more detailed project description is provided in Section 2.0 of the EIS, which this report accompanies.

The key features of the Project are illustrated in **Figure 2.1**.



Source: AAM Hatch Pty Limited (March 2012), Xstrata Coal NSW Pty Ltd

0 1.0 2.0 3km
1:65 000

Legend

- Project Area
- Coal Extraction Area
- Proposed Noise and Visual Bund
- Proposed Eastern Emplacement Area
- Proposed Northern Dam
- Proposed Rail Siding
- Proposed Broke Road Realignment
- Proposed Charlton Road Realignment
- Proposed BCC Access Roads
- Existing 330kV Transmission Line
- Proposed 330kV Transmission Line Realignment
- Proposed Underground Conveyor
- Proposed Box Cut for Underground Access (The Slot)
- Existing Rail Line

FIGURE 2.1

**Bulga Optimisation Project
- Key Features**

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3.0 Historical Background

As part of NSW heritage assessment procedures it is essential to have a full understanding of a site or item based on its historical and physical context. This section of the report comprises a historical context for the Project area and its broader locality to provide an understanding of the significance of any heritage sites within the Project area.

The upper Hunter Valley of NSW has an extensive history of research, and in recent decades, has become one of the most intensively studied regions in NSW with numerous studies conducted in advance of proposed mining activity. This body of research has been focused predominantly on Aboriginal heritage associated with Aboriginal archaeological surveys and excavations. However, there are number of heritage reports relevant to the historical heritage of the Project area and the surrounding region. The following documents have been utilised to prepare the historical context discussed below:

- *Heritage Assessment Charlton Road Singleton Shire New South Wales* – Draft Report (Weir and Phillips 2012). Attached as **Appendix A**;
- *From Brook to Broke: A History of Broke Fordwich* – (Anne Dunne 2012);
- *Heritage Assessment Former RAAF Base Bulga New South Wales* (Weir and Phillips 2007a);
- *Historic Heritage Archival Recording Study: Bulga Coal Continued Operations – Sites BH9, BH11 and BH13* (Umwelt 2005a);
- *Bulga Coal Continued Underground Operations: Historic Heritage Assessment* (Umwelt 2003);
- *World War II Aerodromes and Associated Structures in New South Wales* (Brew 2001); and
- *Stage 1 Conservation Plan for the Great North Road* (Lavelle S., Karskens, G. and RTA Technology 1999).

The Stage 1 Conservation Plan and Weir and Phillips 2012 assessment should be referred to for further details regarding the Great North Road. *A History of the Broke District* draft report should be referred to for further details regarding the general history of the Broke area and the Village of Broke itself. The *Heritage Assessment Former RAAF Base Bulga* should be referred to for further details regarding the history of the RAAF Base Bulga and the satellite sites of Broke, Strowan and Warkworth. In addition, research undertaken by the Singleton Historical Society & Museum Inc. has been utilised during the preparation of this report.

3.1 European Contact

The Central Lowlands of the Hunter Valley is the traditional country of the Wonnarua people, one of the 600 different clan groups or 'nations' present in Australia at the time of European contact. Although early records on traditional tribal boundaries are limited, it is understood that the country of the Wonnarua was centered on the Upper Hunter Valley. Records also identify that the Wonnarua were closely affiliated with the Kamilaroi, whose country extended from the west as far south as Jerry's Plains according to some early authors (Threlkheld 1892, Matthew 1903). The Wonnarua also had close connections with other surrounding groups, such as the Awabakal centred on Lake Macquarie and the Worimi north of the Hunter River. There was apparently considerable contact between all of these groups, with social links connecting the coast and inland areas (Brayshaw 1986:51).

With the arrival of European settlers in the nineteenth century, traditional patterns of Aboriginal life were quickly and dramatically altered. European settlement of the Hunter Valley commenced in the early 1800s and increased from the 1820s onward when the region opened to free settlement. Disease spread through the Aboriginal population of the Hunter Valley, and displacement from traditional lands soon followed, with European settlers taking up land first along the major river systems then spreading inland. Conflict often resulted, with warriors fighting to retain access to land and country, and Aboriginal use of resources – including hunting of settler stock – seen as theft, and quickly punished. Although not all interactions were hostile, some authors (refer to Milliss 1992) argue that there was a general hostility between the European settlers and Aboriginal people, evidenced by violent skirmishes from the earliest European settlement.

Documentary evidence suggests that by 1830 (only 19 years after the first European settlers arrived in the Hunter) ‘all armed resistance by local Aborigines’ had ceased (Davidson and Lovell-Jones 1993:17). By this time, the traditional use of the land by the Wonnarua and their social structure and interactions had been dramatically affected – all within one generation. On the other hand, there are also some accounts of cultural ceremonies being conducted decades later, such as a ceremony held at Bulga in 1852, noted by Blyton *et al.* (2004:9); and a ceremony held at the junction of the Page and Isis Rivers at Gundy reported in the 1870s (McDonald 1878:255-258).

Wollombi Brook is noted as having been a possible transport route, providing a continuous water supply between the base of the Dividing Range and the coastline. The systems morphology suggest it may have been a better resource than the Hunter River and large sites located in its proximity indicate resting areas and repeat visit locations (HLA 2007:18). The Hunter River was subject to drought, making permanent water sources a valued commodity in the area (ENSR 2008: 16).

European impacts were catastrophic on the Wonnarua people located in this area and their traditional culture (Insite Heritage 2008:18). European settlers were attracted to the grassed plains of the Hunter Valley and rapid settlement disrupted the Aboriginal economy in a very short time. Starvation, introduced diseases and massacres decimated the Aboriginal population at a devastating pace (ENSR 2008:16). Historical European records indicate a proliferation of emus and kangaroos in the Hunter Valley grassland areas, with the numbers dwindling as European occupation increased. Other animals observed in the post-European period include species such as the eastern grey kangaroo, the red-necked wallaby and the long-necked tortoise (Umwelt 2005b:3.2-3.3). Historical sources note the Hunter Valley’s abundant resources, with possums and fish for food as well as trees to provide bark for implements (Breton 1833; Eyre 1859; Cunningham 1827; Dawson 1830; ENSR 2008:16). The contemporary area’s woodland community includes such species as forest red gum, yellow box and narrow leaved ironbark. Bulloak and Grey Box open woodland have been noted, along with various grassland species such as three-awned spear-grass, couch, barbed wire grass and Queensland blue grass. These observations indicate what the environment may have been like for early European settlers. Tree clearance through the process of ringbarking was a common method of increasing grass growth in the region (Dean-Jones & Mitchell 1993:24; AMBS 2001:11). Overgrazing later became a problem, and sources from 1833 describe the region as wretched and destitute of grass as a result of such practices (Wood 1972:302; AMBS 2001:11). The contemporary floral landscape has since been heavily impacted by clearance for grazing and industrial purposes (Umwelt 2005b:3.2).

The material culture of Aboriginal people also changed dramatically following contact, with the rapid influx of new technologies and materials. For example, Threlkeld (in Gunson 1974:54, 67) provides two examples of new technologies being utilised by Aboriginal people within the Lake Macquarie area, noting that bottle glass was replacing stone in Aboriginal weapons and that iron and glass were being used for fish hooks. A number of archaeological sites have also been recorded throughout the Hunter Valley evidencing Aboriginal use of introduced materials.

3.2 Exploration and Early Settlement

3.2.1 Newcastle and the Hunter River

In 1770 Captain James Cook sailed past Stockton Bight, noting only Nobby's Island (*Whibayganba*) and Port Stephens. The first knowledge of the Hunter region and its coal reserves came in 1791 through tales told by escaped convicts. In March 1791 William Bryant with his wife Mary, their two children and seven other convicts escaped from Port Jackson in the governor's cutter and sailed for east Timor. They arrived in Koepang 69 days later (Currey 1966). They observed coal during the early stages of their voyage after running their cutter into 'a small creek', thought to have been Glenrock Lagoon to the south of Newcastle (Turner 1997:4). Mary Bryant and four of the other convicts eventually reached England, but William and their children died. The Hunter River was also visited in 1796 by a party of fishermen, who brought samples of coal back to Sydney (Newcastle City Council, nd). In 1797 Lieutenant John Shortland entered the Hunter River estuary and came ashore along Stockton Bight during a search for escaped convicts. He observed the coal resources responsible for much of the later European settlement in the wider Hunter region. Officially the river at this time was named after John Hunter, the colony's governor and Shortland's superior naval officer, but to many it was known simply as Coal River.

Miners and merchants seeking timber soon followed Shortland's observations. Besides coal, vast cedar forests covered a huge area up the Hunter River, providing a source of urgently needed building timber for the infant Sydney colony. Governor King decided to make a more systematic exploration of the area and its natural resources and sent an expedition in HMS *Lady Nelson*, commanded by Lieut. James Grant, to survey these resources and explore the Hunter. On board were Lieut. Col. Paterson, Ensign Barallier, J.W. Lewin, a mining expert, five sawyers, and a crew of nearly 60. The *Lady Nelson*, accompanied by the schooner *Francis* arrived off the mouth of the Hunter River on June 14 1801, and Col. Paterson named the island at the river mouth Coal Island (now Nobby's Island). Paterson prepared a detailed report on the resources of the area, commenting on the potential of coal, salt, lime, fish and pasture. He proposed a permanent settlement at the mouth of the Hunter River (Turner 1997:7).

Impressed by Paterson's report of the rich resources of the area and the already successful coal mining being undertaken, Governor King decided to establish a permanent settlement at Newcastle in 1801. The venture failed within six months and the convicts and their overseers were evacuated back to Sydney Cove. The estuary of the Hunter River was not attractive to agriculturalists and the extent of the swamps and sand dunes in the area ensured that Newcastle would have to depend on its coal and port for its future development.

It was not until 1804 that Newcastle was resettled as a penal colony. Although Governor King planned Newcastle to be more than a penal outpost, the majority of people arriving were sent to serve colonial sentences and formed a large part of the workforce available for the exploitation of the resources of the region; including coal, timber, salt and lime. The convicts were engaged in exploiting these natural resources to supply Sydney with much needed building and heating supplies – the cedar forests and shell middens (most the result of past Aboriginal activity) produced building timber and lime respectively, and coal heated the houses and forges. The lime was produced by gathering and burning the local shells (ENSR 2008:17). The lands were closed to free settlement at the time, with profits from resources going to the Government.

The penal settlement was founded under the administration of Lieut. Charles Menzies with 34 Irish prisoners, exiled by Governor King for their role in the Battle of Vinegar Hill of 1804. Menzies had commanded the detachment of marines who quelled the Vinegar Hill convict rebellion. The expedition to found the new colony left Sydney on 28 March 1804. Menzies was accompanied by Dr James Mileham (surgeon), Isaac Knight (superintendent of convicts), John Tucker (store-keeper), Ferdinand Bauer (artist), George Caley (botanist), 11 military guards and 34 convicts. Among the convicts were three miners, three sawyers/timber cutters, two carpenters, a gardener and a salt bailer (to make salt from salt water for both the new settlement and Sydney). They arrived on 30 March 1804. Menzies named the new settlement Kingstown, but Governor King's own choice, Newcastle, prevailed. Menzies' instructions were to use the convicts in 'getting as many coals as possible', cutting cedar, clearing ground for cultivation and 'to enforce a due observance of religion and good order'. During his term as commandant, Menzies had huts constructed for the military guard and the convicts, built a large stone wharf, established a coal beacon to assist navigation into the harbour, organised the cutting of cedar and the obtaining of salt from salt-pans at Collier's Point and reached satisfactory rates of production of coal (Flowers 1967).

Under Captain James Wallis, commandant from 1815 to 1818, the convicts' conditions improved, and a building boom began. Wallis laid out the streets of the town, built the first church on the site of the present Anglican Cathedral, erected the old gaol on the seashore, and began work on the breakwater which now joins Nobbys to the mainland. The quality of these buildings was poor and only (a much reinforced) breakwater survives. For these works, and for his humane rule in the convict colony, Wallis earned the personal commendation of Governor Macquarie.

At its peak in 1821 the convict population of Newcastle had risen to more than 1100. However, in Governor Macquarie's opinion the Newcastle prison settlement was too close to Sydney and the proper exploitation of the land was not practicable with prison labour. In 1823, military rule in Newcastle ended. The number of prisoners was reduced to 100 and the remaining 900 were sent to Port Macquarie (Newcastle City Council, nd). Although the penal settlement was closed in 1823 in favour of Port Macquarie, convicts continued to toil in Newcastle on public works projects such as the breakwater and in private assignment into the 1840s. In the 1830s the majority of the population of the town were still convicts; a total of 60 percent in 1836 (Turner 1997:14).

The establishment of the new penal station at Port Macquarie allowed Newcastle and the Hunter Valley to be settled.

3.2.2 Hunter Valley

The Pattersons Plains area had been opened to several people from 1813 onwards, including the first free settler John Tucker who settled with his family in 1814. Tenants were allowed to settle in the Wallis Plains area (north of present day Morpeth) but upstream from these farms the land remained untouched by European infiltration. This all changed when the necessity of opening the valley to settlers was recognised by Governor Macquarie. His despatch of 8 March 1819 acknowledged the growing population and the 'extensive rich and fertile land being found at no great distance' along the principal sources of the Hunter River (Campbell 1926:73). Macquarie thought it:

...judicious to establish settlers on the plains along the River Hunter where they would have the combined advantages of a fertile soil of comparatively easy cultivation, and the benefit of water conveyance for their produce to Newcastle and thence by sea to the principal mart of Sydney...(Campbell 1926; 74)

A number of exploratory expeditions had sought to find new routes and open up new areas for colonial development in the Hunter region in the early 1800s. Colonel Paterson may have reached the Singleton area on an exploratory river trip he undertook in the early 1800s, although the furthest point he reached is uncertain due to a lack of recorded data. The earliest recorded journey that did reach the area occurred during October and November in 1817. This expedition was from the Hawkesbury area, journeying to what was most likely the headwaters of Doyles Creek, located to the west of Warkworth. The expedition included William Parr and Benjamin Singleton. Benjamin Singleton returned to the area on another expedition in 1818. Two trips were made into the area in October 1819 and March 1820 by John Howe (Chief Constable of Windsor from 1813 to 1825) looking for a line of road for an overland route between Sydney and Newcastle. John Howe, Benjamin Singleton and the others who took part in these two expeditions, reached the Hunter River in the vicinity of Whittingham after 10 days in March 1820. They were given land grants in the district as their reward for discovering an overland route to the area, signalling the beginnings of European settlement in the area (Dames & Moore 1981: 55; Whitelaw undated; Singleton Argus 1966). The overland route became what is known as the Bulga Track.

In 1821 John Marquett Blaxland found an alternative track from the Hawkesbury to the Wollombi district. Governor Brisbane promised him land in return for his discovery which he later selected as a 640 acre grant on the western side of Wollombi Brook (Dunne 2012:31). John Marquett Blaxland was the eldest son of John Blaxland Snr, who was one of the colony's most prominent landholders; including allocations of land in the Broke area (refer to **Section 3.3.1**).

In 1821, Henry Dangar was commissioned to undertake a survey of the Hunter Valley to assess its suitability for settlement and farming, with the survey of the lower Hunter Valley complete in 1822 and the Upper Hunter Valley complete in 1826 (Brayshaw 1986:9).

With the region opening to free settlement in 1820, settlement followed closely behind Dangar's 1821 survey party, with settlers occupying land as far north as Singleton by October 1821. Early reports describing the suitability of the land for pastoral pursuits resulted in the establishment of large scale pastoral holdings. The discovery of the overland route to the Hunter Region from Windsor meant that stock could now be overlanded from the overcrowded Cumberland Plan (Heritage Office 1996a:46). European settlement expanded quickly in the mid nineteenth century, with a total of 372,141 acres being allotted to European settlers in the Hunter Valley between 1822 and 1826. This was increased to over 500,000 acres by 1867 (Brayshaw 1986:10).

Of all the natural resources noted in European documentation, those which most impressed and attracted early settlers were the grasslands, due to their potential for grazing livestock. John Howe cited the region as containing the finest sheep land he had seen since departing England (Howe 1819; ENSR 2008:17). During the nineteenth century, pastoral grazing was the dominant land use of the Hunter Valley, with more than 25,000 cattle and 80,000 sheep introduced to the area by 1867. As well as grazing, the Hunter Valley was opened up for farming in the 1820s with land granted and areas swiftly developed in the fertile region. Agriculture became important to the growing economy of the region, with a variety of crops cultivated including maize, potatoes, wheat, barley and tobacco.

Wool production, dairy farming and wheat growing became the predominant industries with sheep becoming a major commodity as the wool export industry expanded. Horse breeding also became a thriving industry as early as 1822. Wheat production went into decline in the mid 1800s owing to the disease *rust* which struck severely in 1857 (Turner 1995). The late nineteenth century saw the decline of agriculture along river flats as they were converted to dairying on pastures improved by pump irrigation (Dean-Jones and Mitchell 1993:2). The pastoral and dairy industries continued to dominate into the twentieth century.

Many of the land holders in the region also owned tracts of land inland and the trend in the late 1800s was for these landholders to replace sheep with cattle from their inland runs. Many of the larger holdings were subdivided in the early 1900s, some of which were part of the Soldier Settlement Scheme following the World War I. In the latter part of the twentieth century, many of the smaller holders were reconsolidated into large scale coal mining leases.

Soldier Settlement

Following the World War I the Commonwealth and State Governments cooperated to initiate programs to enable returned soldiers to settle on their own farms or secure their own homes (under the War Service Homes Act of 1918 and soldier settlement schemes). While most land made available to returning soldiers was former Crown land, some freehold land was purchased by the Crown and then made available to returned soldiers. Blocks secured by returned servicemen from World War I that had been surrendered to the Crown under the Act were known as Settlement Purchase Areas (SPA).

3.3 Early Surveys and Land Ownership in the Vicinity of the Project Area

The earliest land taken up in the region of Broke and Fordwich was that of Alexander MacDonald Ritchie (2000 acres 4 November 1824), John Blaxland Snr (4200 acres 8 July 1825) and Thomas Walker (1200 acres 27 August 1825). Ritchie and Walker were both married to daughters of John Blaxland Snr. The first land allocations in this area, on the western side of Wollombi Brook, included Reverend Richard Hill (1200 acres 19 August 1825), Frederick Boucher (800 acres 1824), John Tremayne Rodd (1500 acres 19 August 1825), Robert Adamson (300 acres 15 November 1825) and Joseph Onus (Dunne Consultants 2012:16-18).

Robert Dixon's 1837 Map of the Colony of New South Wales illustrates the locations and size of some of these early allocations in the region of the Project area (refer to **Figure 3.1**). Dixon's map (full title: *Exhibiting the Situation and Extent of the Appropriated Lands, including the Counties, Towns, Villages, Reserves, Compiled from Authentic Surveys*) is commonly known as 'the Squatter's Map' and comprises the earliest documented attempt to show who owned what land in NSW. Dixon (1800-1858) was an explorer and surveyor born in Durham in 1800 who came to NSW in 1821. From 1826 he was the assistant surveyor in the Surveyor-General's Department. The 1837 map was produced while Dixon was on leave

in London and is reported to have been made using other surveys and documents. Surveyor General Major Thomas Mitchell, who had produced his own less informative map of NSW in 1834 is reported to have been offended by Dixon's 1837 map and refused to reappoint Dixon on his return to Sydney after nearly 15 years of service (Warden 2010:16-17).

Henry Dangar's 1828 *Map of the Hunter River, and its Branches* shows three 'Farm Houses' in close proximity to the Project area: an un-named farm house (or homestead) on John Blaxland Snr's land (later named Fordwich), an un-named farm house (likely Mt Leonard Homestead) on the west side of Wollombi Brook and John Rodd's Harrowby to the south of Broke on the western side of Wollombi Brook (refer to **Figure 3.2**).

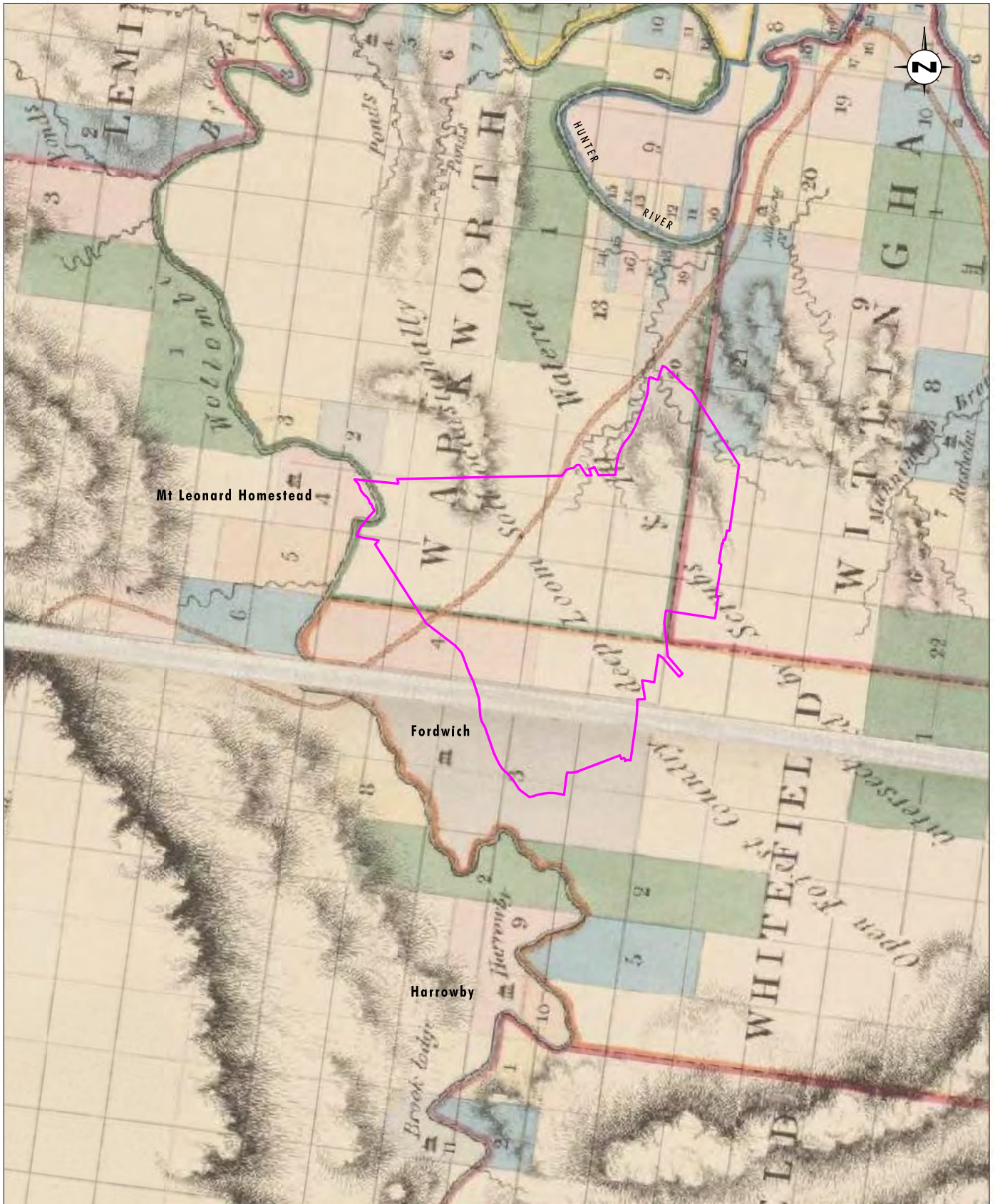
Henry Dangar had emigrated to New South Wales as a free settler and was appointed assistant in the Survey Department with the instructions to survey the country in the vicinity of Newcastle and the Hunter River. In addition to preparing the town plan of Newcastle, he extensively surveyed the Hunter River, its tributaries and the region of the estuary, measuring and marking out village reserves, church lands and allocations for settlers along the lower branches of the Hunter River. He marked out the road from Newcastle to Maitland, explored the present sites of Muswellbrook, Aberdeen and Scone, was the first European to observe the confluence of the Goulburn and Hunter Rivers and crossed the Liverpool Range to the plains beyond. His reports caused an immediate rush of applicants for land grants in these desirable new districts. Dangar was dismissed from government service in 1827 over impropriety in land dealings associated with his survey work. On returning to London his talents as cartographer and surveyor were recognised by the directors of the Australian Agricultural Company (the AA Co) and by 1830 he was back in the Hunter Valley (Gray 1966). The AA Co was established in 1824 by an Act of the British Parliament and brought stability and efficiency to Newcastle's coal industry. Although the Company was granted one million acres with the primary purpose of producing wool, the AA Co also entered the coal industry with the intention of exporting coal to India for use by the steamers of the east India Company. The AA Co held its monopoly over the coal mining industry in the Newcastle area until 1847 when the Company agreed to abandon its protected position in the coal industry in return for the right to sell its estates.

Figures 3.3 to 3.5 (Parish Maps of Wollombi, Vere and Whittingham respectively) also illustrate the locations of early settlers in the region of the Project area. Some of the early settlers with relevance to the Project area are discussed further in the following sections.

3.3.1 Blaxland and the Fordwich Estate

John Blaxland Snr emigrated to NSW in 1807, a year after his younger brother Gregory. John had agreed to invest £6000.00 in the colony in return for 'free passage for his family and servants, free freight for his stores and equipment, a land grant of 8000 acres and 80 convicts, to be clothed and fed for 18 months at the government's expense' (Dunne 2012:29). However, on arrival he was initially only granted 1290 acres at Parramatta, where he established his Newington Estate, and a third of the promised convicts. In 1825 he purchased 4,280 acres of land on the eastern side of Wollombi Brook to the north of the village reserve that would later become Broke. The estate was named Fordwich after Blaxland's birth place in Kent, England. In 1831 he received a further 2560 acres adjacent to the original Fordwich property. Blaxland's eldest son John Marquett Blaxland managed Fordwich for his father. The convict built Fordwich homestead was likely built around 1828 when the *Sydney Gazette* reports the property was first settled. The homestead appears on Dangar's 1828 map (refer to **Figure 3.2**) and in 1829 Surveyor General Mitchell noted that the property was:

...a considerable establishment, much cleared ground and buildings (Dunne 2012:30).



Source: National Library of Australia. MAP NK 646
Note: Not to Scale

Legend

Approximate Location of Project Area

FIGURE 3.2

Detail of Henry Dangar's 1828 Map of the Hunter River

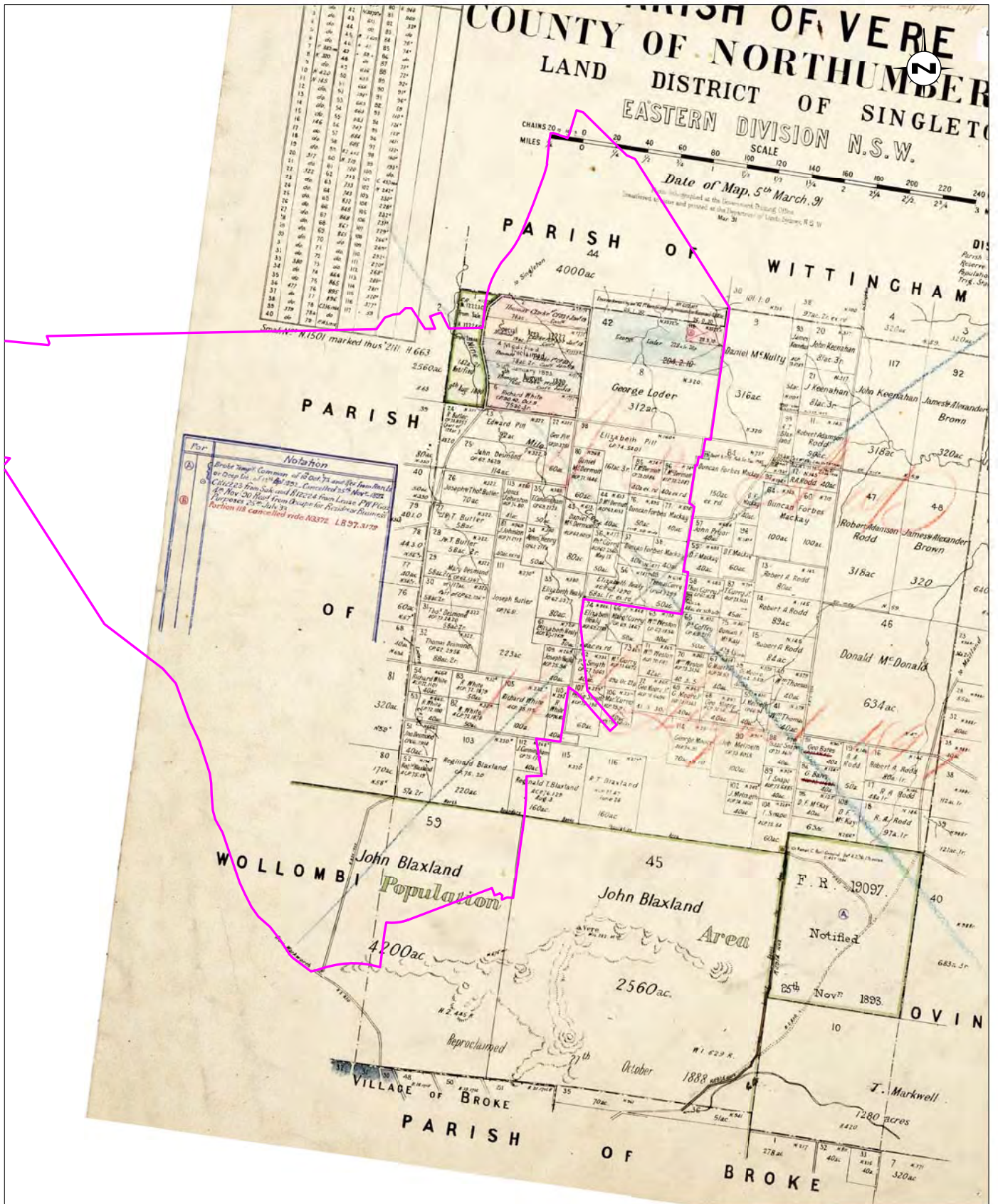


Source: Land and Property Information (1999)

0 1.0 2.0 4km
1:80 000

Legend
 Approximate Location of Project Area

FIGURE 3.3
 1891 Wollombi Parish Map



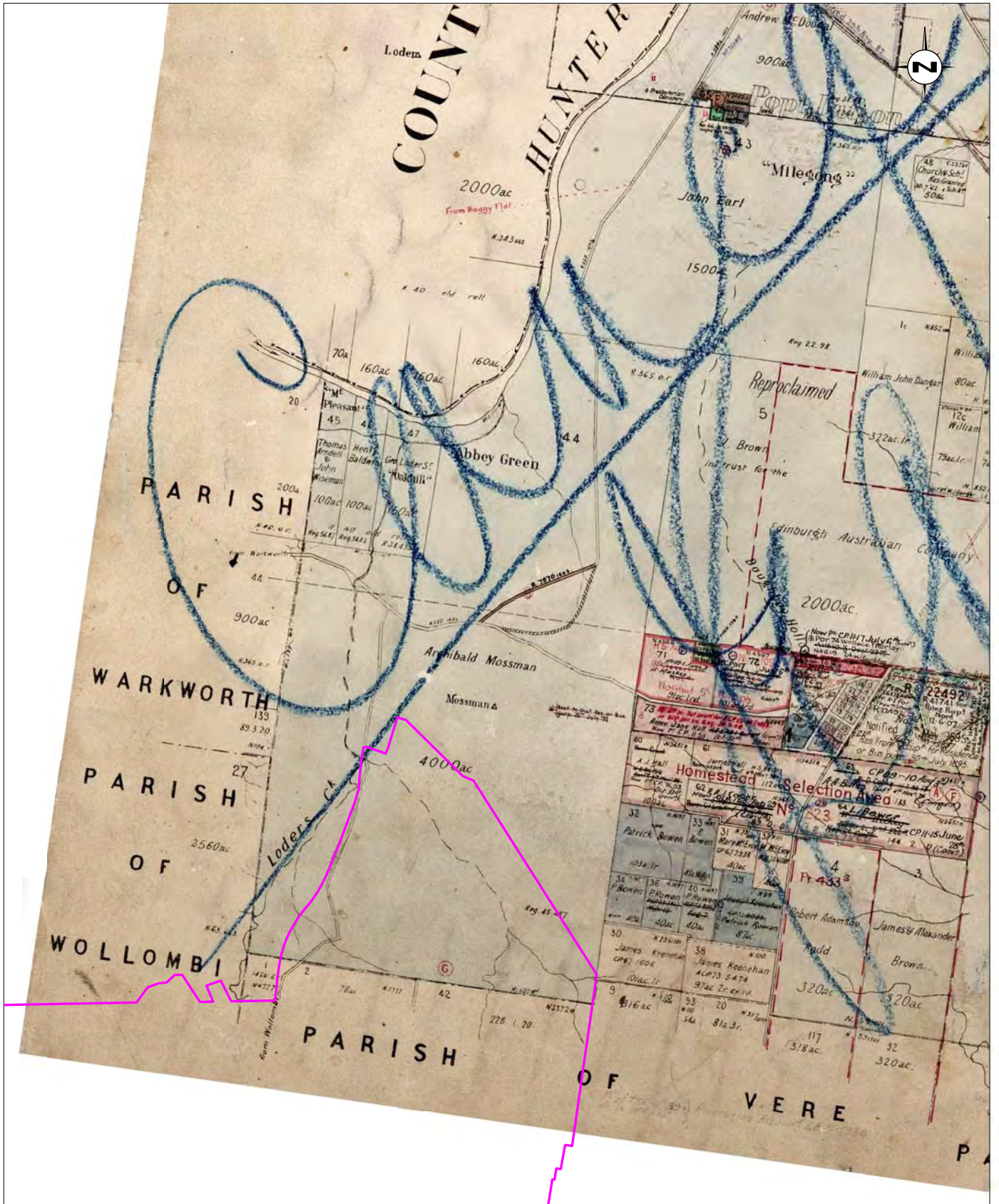
Source: Land and Property Information (1999)

0 1.0 2.0 3km
1:65 000

Legend

Approximate Location of Project Area

FIGURE 3.4
1891 Vere Parish Map



Source: Land and Property Information (1999)

0 1.0 2.0 2.5m
1:50 000

Legend

Approximate Location of Project Area

FIGURE 3.5

1897 Wittingham Parish Map

Mrs. E.C. Collins, who was born in Bulga in 1852, recalled that the homestead was once a beautiful residence enclosed by a stone wall (Dunne 2012:34). The brick built homestead had 10 rooms and a verandah with an adjoining kitchen, laundry and pantry. The outbuildings included a boiling down works, a flour mill and a three storey stone built wool shed. Fordwich was run as a sheep and cattle station with part of the estate under cultivation with wheat and corn. It had a large workforce mainly comprising of convicts labouring as assigned servants. Convicts were used as a cost effective labour force for the early settlers. Convicts were assigned to settlers, who in return for their labour, housed and fed the assigned men. Convicts were generally housed in slab huts erected close to the main homestead (Dunne 2012:30).

John Marquett Blaxland acquired his own land adjacent to his father's; comprising a 640 acre grant on the west side of Wollombi Creek. He also acquired an additional 800 acres adjoining his grant that had originally been promised to Frederick Boucher. John Marquett Blaxland's land was also predominantly used for grazing and he continued to live at the Fordwich Homestead. The Blaxland family had additional extensive land holdings and pastoral estates throughout NSW (Dunne 2012:31).

Following the deaths of John Marquett Blaxland (1840) and John Blaxland Snr (1845) the Fordwich Estate was taken over by Arthur Blaxland, John Blaxland Snr's youngest son. Arthur's son Reginald inherited the property following Arthur's death at Fordwich in 1866. **Figure 3.6** illustrates a Blaxland family picnic at Fordwich in approximately 1896, Emily Blaxland (daughter of Robert and Amelia Rodd – the Rodd family held land on the western side of Wollombi Brook from 1825 refer to **Section 3.3.3**) is on back of the cart and Amelia Blaxland is holding a gun on the back of the horse. By the end of the 1890s, although still owned by the Blaxland family, Fordwich was leased to the Hon. George Greene, a pastoralist, wheat grower and politician. At this time up to 10 stone outbuildings still surrounded the homestead, including former stables and servants quarters. Greene intended to utilise 'every acre of the land either for farming, dairying or fattening (cattle) on an extensive scale' (Dunne 2012:32).

A large portion of Fordwich was acquired by the Commonwealth Government following the World War I as farming allotments for returned soldiers. The homestead was later acquired by the Tulloch winemaking family. By the mid 1930s the homestead was still standing but in a state of disrepair. The house and its outbuildings were demolished in 1939 with material from the site removed to be used as building material elsewhere in the area. In 1974 the Blaxland Barn Restaurant at Pokolbin was built utilising bricks and stone from the site (Singleton Historical Society nd). A line of peppertrees are all the visible remains of the site today (Dunne 2012:33).

3.3.2 Murinbin

Reginald Thomas Blaxland inherited a large portion of land, including 2,560 acres of the Fordwich Estate, following Arthur Blaxland's death in 1866. In 1872 Reginald Blaxland increased his holding, purchasing 70 acres of adjoining land. In 1877 he built the homestead Murinbin on his land along the Broke to Cessnock Road. In 1878 the Singleton Argus described the property as:

...weatherboard on brick foundation; its appearance from the road would be very pleasing if it were not for the glare of the iron roofing (AHD Place ID 105642).

By the early twentieth century the property's outbuildings included a blacksmith's shop, a carpenter's shop, shearing sheds, stables and an engine shed. In 1920 a small creamery was also constructed (Dunne 2012:48-51).



FIGURE 3.6

1896 Photograph of a Blaxland Family Picnic at Fordwich

Following the death of Reginald Snr in 1911, the estate passed to his sons Reginald Newington and Arthur Dudley. Arthur subsequently acquired sole ownership of Murinbin. The property was reduced by sale over the next 80 years. In 1939 Percy McTaggart acquired the property, which was sold in 1968 to David Evans and Rosemary Landy (Dunne 2012:48-51). The house and approximately 5 hectares of land was acquired by the Commonwealth of Australia in 1994 as part of the Singleton Range/Singleton Military Base Area (AHD Place ID 105642).

The extant Murinbin House Precinct includes the mid to late nineteenth century house, a Blacksmith's shop, an early twentieth century timber framed barn, carpenters shop, tack room creamery building, cattle yards and assorted sheds (AHD Place ID 105642).

3.3.3 The Rodd Family

John Tremayne Rodd emigrated to Australia in 1822 and commenced work as an Assistant Surveyor in the Surveyor General's Department. Before retiring in 1829 he was superintendent of convicts at Newcastle. In 1825 Rodd and his son Robert Adamson Rodd selected grants comprising 1,500 acres and 300 acres respectively on the western banks of Wollombi Brook, to the south of the Project area. Henry Dangar's 1828 *Map of the Hunter River, and its Branches* shows John Rodd's Harrowby house to the south of Broke on the western side of Wollombi Brook (refer to **Figure 3.2**). As John Rodd was still living and working at Newcastle at this time the Harrowby property was likely managed by his son Robert. John Terry Hughes, a wealthy Sydney merchant disputed the Rodd's ownership and was given title to the 1500 acre property of Harrowby. Disputes over the selection of land grants before they were officially registered were not unusual at this time.

Robert Rodd had settled on a 700 acre property called Tremayne approximately 6 kilometres to the south of Broke by the 1830s and prospered in the district. John Rodd lived with his son at Tremayne until his death in 1844. Robert married Amelia Marshall in 1840 and their daughter Emily later married John Arthur Blaxland and lived at Fordwich. Auction notices for the sale of a portion of the Tremayne Estate appeared in the local papers at the end of 1849 and Robert Rodd moved to the Minimbah Estate. In the 1870s Robert Rodd moved to Randwick in Sydney and died at Tremayne House in 1876 (Dunne 2012:33-37).

3.3.4 Joseph Onus and Robert Williams

Joseph Onus arrived in NSW in 1803 after receiving a life sentence in 1801 in Kent. He married Ann Eather and in partnership with Robert Williams (his wife's brother-in-law) began to send cattle from Richmond over the Blue Mountains to the Hunter Valley. They held 1,000 acres on the Cockfighter Creek near the junction of Wollombi Brook and Parson's Creek and had soon formed their cattle station, Boorambil, to the north on a stream which became known as Onus' Creek. Separately from his partnership with Williams, Onus also acquired extensive property in his own right, principally in the Wollombi area and Howe's Valley on route from Richmond to Bulga (Wood 1972:215 and Family Tree Circles website). Benjamin Richards (born in Richmond in 1818) married Elizabeth Eather Williams (Robert Williams' daughter) in 1840. Following her father's death in 1839 Elizabeth inherited the northern half of the 1000 acre grant situated on the western side of Wollombi Brook. This was called Mount Leonard where the homestead of the same name stands. Benjamin and Elizabeth's daughter Elvina continued to live at Mount Leonard until 1896. In 1904 she sold the property to the Alexander family of Victoria who sub-divided the land leaving the homestead on 516 acres of land (Singleton Historical Society publication nd).

3.3.5 Reverend Richard Hill

The Reverend Richard Hill arrived in Sydney in 1819 and in 1824 was appointed minister to St James Church, Sydney. St James' Church was constructed between 1819 and 1824 and designed by convict and civil architect Francis Greenway. In 1825 Richard Hill was granted 1,200 acres of land on the western banks of Wollombi Brook, called Milbro Dale. The property was established by convict and free labour in 1828. By 1828 Milbro Dale had:

...many outbuildings, stables, blacksmith shop, butcher shop and piggery...a substantial woolshed was erected by the convicts who quarried the sandstone blocks on the property. It is believed this woolshed was incorporated into the main homestead built later by Parnell (*Singleton Historical Society nd*).

Hill acquired considerable acreage of pastoral land, including an additional 800 acres on Wollombi Brook but remained based in Sydney. Hill died in Sydney in 1836 and Milbro Dale was purchased from the executors of his estate by neighbouring land owners Robert Williams and Thomas Parnell. Parnell soon bought out William's share of the property and is believed to have constructed the sandstone homestead Milbro Dale which was demolished in 1978 (Dunne 2012:40-41).

3.3.6 Charlton

John Blaxland Snr's son-in-law Alexander MacDonald Ritchie held a 2000 acre estate immediately to the north of the Blaxland's Fordwich estate. The Reverend Matthew Devendish Meares held a 1280 acre estate immediately to the north of the Ritchie property. Both former estates fall within the Project area (refer to **Figure 3.3**). Ritchie and Meares were both absentee landlords. Other than the clearing of the land, there is unlikely to have been any other development associated with their estates until after subdivision which commenced in mid 1850s.

John Frederick Cobcroft, a district constable from Wilberforce, started acquiring land north of Broke, near Bulga and moved to the Singleton area in 1843 after resigning from his position as district constable (*Singleton Historical Society nd*). He purchased a subdivided portion of the former Meares grant and in 1857 built a homestead called Charlton constructed utilising sandstone blocks quarried on the property. By the time of his death in 1881 Cobcroft had extended the Charlton Estate to almost 4000 acres. In 1888 the homestead and 1,050 acres of adjoining land were sold to Reginald York. The remainder of the estate was divided into nine farming lots. By the 1920s James Younie Russell owned the homestead block and had established a dairy there. The old homestead building had been destroyed by fire sometime between 1897 and 1920 and was rebuilt in 1926 by the Russell family (*Singleton Historical Society nd*). The 1920s homestead is extant to the west of the Project area and although unoccupied a third generation of the Russell family is farming the Charlton estate (Dunne 2012:43-45).

3.3.7 Archibald Mosman

Archibald Mosman was a merchant and pastoralist originally from Scotland who arrived in Sydney in 1828 from the West Indies where he and his brother George had been growing sugar. In 1831 Governor Darling made a land grant of four acres to both John Bell and Archibald Mosman at the head of Great Sirius Cove for a whaling depot. Mosman soon bought out his competitor (John Bell) and extended his original grant to include a large part of the suburb which was given his name (Stephen nd). Although better known for his association with the whaling industry and for owning land in the New England area of NSW (near Glen Innes and Armidale) he appears to have also owned land in the Upper Hunter region (he is recorded by *The Maitland Mercury & Hunter River General Advertiser* Tuesday 7 October 1856 as having been granted land in County Durham in 1856), including the land forming the northeast portion of the Project area (refer to **Figure 3.5**). He is recorded as having been granted land in County Durham in 1856.

3.4 Land Use

A review of aerial photographs obtained from the Department of Lands dating from 1952 was undertaken as part of this assessment and shows that in the 1950s to 1970s the Project area generally comprised of cleared grazing land with scattered trees indicating the extent of tree clearing that has previously been undertaken in the area (refer to **Figures 3.7** and **3.8**).

3.4.1 Pastoralism

The pastoral industry was the earliest established industry within the Region of the Project area. Benjamin Singleton placed a notice in the Sydney Gazette as early as December 1821 advertising agistment at St Patrick's Plains at 10 shillings a head per annum for not less than three years. In 1823, John Howe was granted permission to graze his stock at Patrick's Plains, agisting 1000 sheep and 1200 cattle. The 1828 census indicates that, of the 191 large (over 1000 acre) estates occupying the Upper Hunter Valley, 'only one third were sheep grazing enterprises with cattle raising being much more common' (Turner 1995:18).

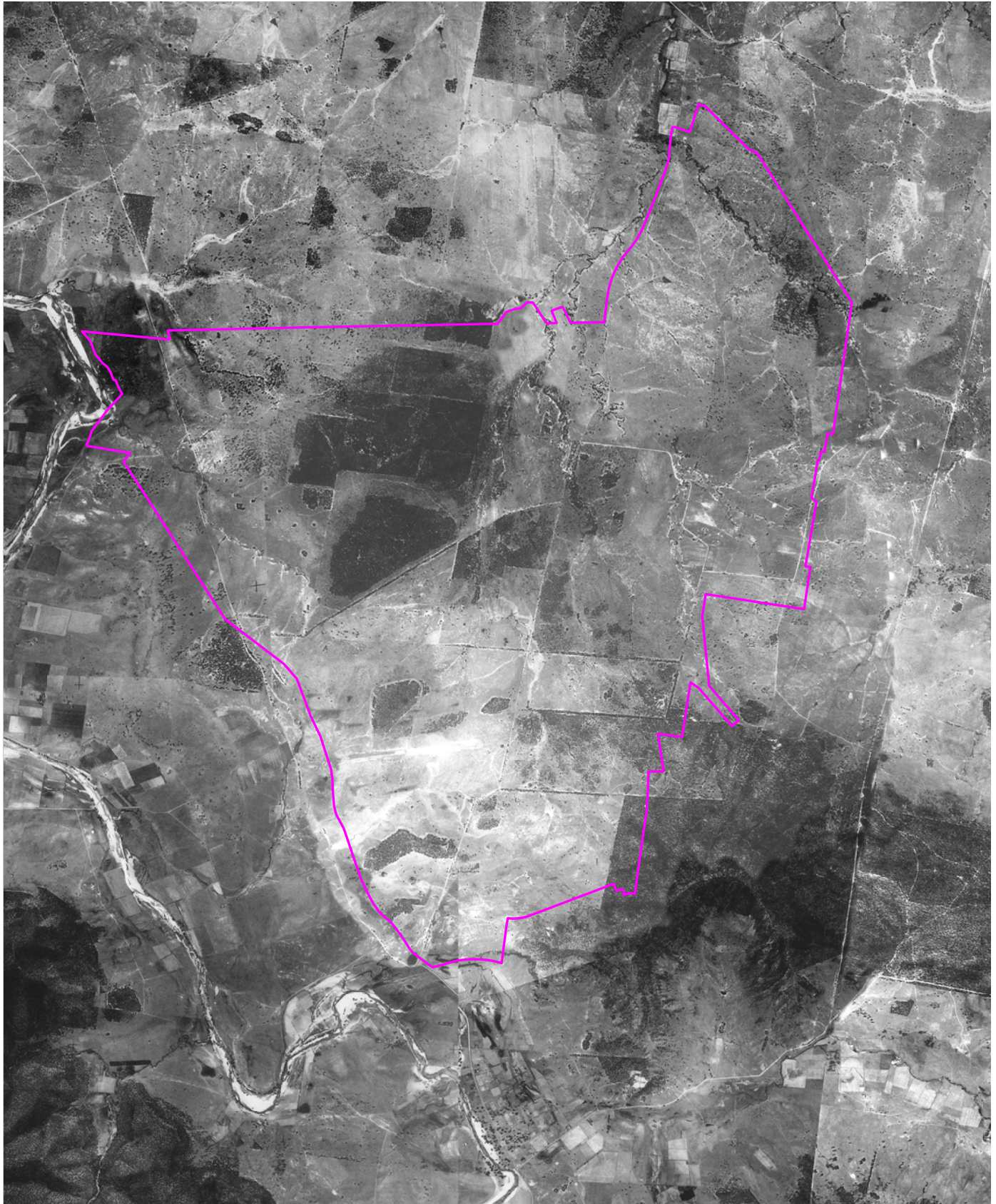
During the nineteenth century the Broke area was a centre of pastoral interests based on sheep and cattle. There was a shift from wool production in the nineteenth century as mixed farming, dairying and to a lesser degree grazing became more important in the twentieth century.

3.4.2 Dairying

Dairying was one of the initial impetuses for the division of large estates in the Upper Hunter. The subdivision of the area's large estates commenced in the mid nineteenth century and by the early twentieth century the Upper Hunter was mostly occupied by dairy farms of up to 500 acres in size (Heritage Office & DUAP, 1996a:49). Dairy farming became an important land use after sheep/wool production began to wane in the late nineteenth century due to parasitic infections in sheep. The importance of dairying as a land use by the 1890s is reflected in the history of the Project area.

By the 1890s dairying had become an important industry in the Upper Hunter. The importance of the dairying industry in the Upper Hunter coincided with the 'development of the mechanical separation of milk and refrigeration causing a re-shaping of the pattern of farming' in the Singleton and Muswellbrook Local Government Area, due to the increased demand for dairy products in Australia and overseas (Turner 1995:19). Dairying increased after the World War I as soldiers were given small holdings and government assistance to establish small agricultural businesses, such as dairy farms (Heritage Office and DUAP 1996a:49). The effect of soldier settlement increased after the World War II in Singleton when the 'country was cut up into wheat-sheep farms' (Heritage Office and DUAP 1996a:49). In 1955 the NSW milk board established quotas for the supply of milk to overcome shortages.

In the second half of the twentieth century the dairying industry went into a gradual decline. Since 1901 the dairy industry in NSW had been controlled by various government bodies. In the mid to late 1960s policies aimed towards specialisation and amalgamation affected the smaller scale dairy farms. Then in the 1970s Britain joined the European Economic Community and Australia lost its main dairy export market. In the early 1970s the Milk Board was replaced with the Dairy Industry Authority resulting in the reallocation of milk quotas and the eventual deregulation of the industry. Farm improvements to meet new regulations and standards, including the installation of refrigerated holding tanks, resulted in many of the typical small dairy farms of the area becoming unviable. The number of dairy farms in NSW dropped from 9,061 in 1970 to 4,626 in 1976 (Dunne 2012:75-81).



Source: Department of Lands 1952 Aerial Photography

0 1 2 3 km
1:65 000

Legend

 Project Area

FIGURE 3.7
1952 Aerial Photograph



Source: Department of Lands 1974 and 1975 Aerial Photography

0 1 2 3 km
1:65 000

Legend

 Project Area

FIGURE 3.8
1974/75 Aerial Photograph

3.4.3 Agriculture

The Singleton locality contained several thousand acres clear of timber and covered with rich alluvial soil which produced heavy crops of wheat, maize, barley, oats, rye, potatoes and natural grasses.

A correspondent of the Australian in 1827 reported the Castle Forbes, Singleton properties yielded 36 bushels (1 bushel = 8 gallons/36.37 litres) to the acre of wheat. He goes on to say there were two stack yards within a mile of each other containing together 10,000 bushels of wheat. Tobacco was another crop grown in the area and a few properties also experimented with cotton which ultimately failed.

Historical records indicate the extent of cultivation in 1831. These records state that the Patrick's Plains district cultivated 1054 acres of wheat, 625 acres of maize, 54 of barley, 10 of oats, 15 of rye, 15 of potatoes, and 17 acres of tobacco. In 1836, the number of acres in the counties of Brisbane, Northumberland, Hunter and Durham under wheat was 27,424 and maize 7899 with 45 tons of tobacco harvested (JRAHS 1953). **Table 3.1** shows the area under cultivation for wheat decline while the area under maize and tobacco increased between 1836 and 1844.

Table 3.1 - Area under Cultivation - Counties of Brisbane, Northumberland, Hunter and Durham (JRAHS 1953)

Crop	1836	1839	1844
Wheat	27,424 acres	15,114 acres	21,534 acres
Maize	7899 acres	10,112 acres	14,226 acres
Tobacco	45 tons	1505 hundred wt	4890 hundred wt

Returns for 1860 show that there were 206 landholders at Patricks Plains which included the counties of Durham, Hunter and Northumberland and they held 161,310 acres. Of this area 155,508 acres were not cultivated. The crop yields were: wheat 22,000 bushels, maize 25,926 bushels, barley 400 bushels, rye 45 bushels, millet 15 tons, potatoes 49 tons, sorghum 243 hundredweights and hay 235 tons (JRAHS 1953).

Wheat crops grown in the Hunter Valley were prone to the disease 'rust', which struck severely in 1857 (Turner 1995). Disease, together with the relatively dry conditions in the Upper Hunter, made wheat a precarious crop and as a result its production declined. The decline in wheat cultivation saw an increase in barley production mainly for stock feed but as the dairy industry began to grow lucerne crops became a more viable option.

3.4.4 Viticulture

As dairying went into decline in the second half of the twentieth century wine growing began to grow in importance in the region. Today's Broke-Fordwich Wine Region has its beginnings with the early settlers experimenting with growing vines on their large estates. The Reverend Richard Hill is reported to have planted over two and a half thousand vines on his Milbro Dale Estate by 1834. However, large scale commercial wine growing in the area was not undertaken until the 1920s when the Fordwich Soldier Settlement viticultural farms were established.

The Tulloch family had started making wines at J.Y.Tulloch's property in Pokolbin. As the number of ex service men struggling with their viticultural farms in the Fordwich area increased the Tulloch family gradually bought up their operations and soon dominated the area. Later, with the 1970s boom of grape growing in the Hunter Valley, Lindemans and Saxonvale Vineyards planted new vineyards in the Broke Fordwich area. As the wine industry developed big wine companies began buying up wineries and vineyards across Australia, this was reflected in the Broke Fordwich area with the Southcorp group and Wyndham Estate. The subdivision of the holdings of these large companies in the 1990s resulted in smaller scale producers and the boom of the boutique vineyards in the area (Dunne 2012:82-85).

3.5 Roads, Railways and Communication

In the Upper Hunter area, roads were the most important means of transport until 1869 when the Great Northern Railway reached Muswellbrook (Turner 1995:32).

The first overland route to the Hunter River was discovered, after several unsuccessful attempts, by John Howe, Benjamin Singleton and others, who travelled from Windsor to near Singleton in late 1819. The route they discovered was officially opened in 1823 and when first opened, travellers required a permit. It became known as the Bulga Track/Road or The Parson's Road, but is now known as Putty Road. The discovery of this route meant that stock could now be taken overland from the Cumberland Plains north to the Upper Hunter Region. However, the route was recognised as being a treacherous journey and fell into disrepair and out of use.

The origins of the New England Highway lie not in the work of early surveyors like Dangar but in that of explorer and botanist Allan Cunningham, who traversed the region in the period 1827 to 1829. Between January and August 1827, Cunningham travelled from the Hunter Valley northwards, crossing the Peel and Dumaresq Rivers, discovering the Darling Downs, before returning to the Hunter Valley and Bathurst. While exploring the Darling Downs, he discovered Spicer's Gap, through which there was access from Moreton Bay to the fine grazing offered by the Downs. Cunningham later found a second gap, Cunningham's Gap, in 1828-1829 (Perry 1966).

The roads leading north through the Hunter Valley were developed in the first part of the nineteenth century. Agitation for a shorter route north than the Putty Road had led Governor Brisbane to issue instructions for the surveying of a new route beginning at Castle Hill, which became known as the Great North Road (refer to **Section 3.5.1**). A second route to the Hawkesbury was developed along Peat's Ferry Road, now the Pacific Highway. By 1850 the main road to the north had extended from Muswellbrook to Murrurundi and onto Tamworth and Armidale. The road north of Murrurundi follows the track over the Liverpool Ranges discovered by William Nowland in 1827. The road forms the basis of the New England Highway of today.

3.5.1 The Great North Road

The Great North Road was constructed between 1826 and 1836 using convict labour. Built in a period of colonial expansion it was the first of a network of 'Great Roads' which radiated out from Sydney to the north, west and south (Lavelle 1999). The road was constructed to provide a route between Sydney and the rapidly growing settlements in the Hunter Valley to facilitate settlement in the Hunter Valley. The original line of the road ran between Baulkham Hills and Wollombi via Wisemans Ferry. From Wollombi it originally ran northeast to Maitland and Newcastle with branches to the upper and middle Hunter being added later (Lavelle 1999).

The rapid growth of settlement in the Hunter Valley, especially the lower Hunter, soon made the Bulga Road (now Putty Road) inadequate. Peter Cunningham, who was granted 1200 acres in the Upper Hunter Valley in 1825 and published the popular *Two Years in New South Wales: a Series of Letters, Comprising Sketches of the Actual State of Society in that Colony...* in 1827 described the Bulga Road as:

...a rugged bridle path over the mountain ridge called the Bulgar, quite unfit to take even an empty cart by (Wood 1972:16).

In 1825 surveyor Heneage Finch was despatched to find a better route north. In April 1826 the early settlers in the area petitioned Governor Brisbane to construct the line of road marked by Finch. As a result the first gang of convicts were posted north of Castle Hill and work began on September 1826 (Lavelle 1999). Lieutenant Jonathon Warner supervised the work north and south of Wisemens Ferry. Warner's successor Lieutenant Percy Simpson is said to have transformed the road 'from a simple cart track to a fine and permanent avenue'. It was during Shortland's period of construction that the road was named the Great North Road (Lavelle 1999). In 1830 Heneage Finch was appointed to superintend the convict gangs further north. The arrival of Surveyor General Major Thomas Mitchell in 1827 provided the impetus for Simpson and Finch's endeavours. Mitchell believed that the:

...best, scientific or true roads were based not on the paths of black natives, nor the tracks of settlers, but on the straightest lines possible (Lavelle 1999).

In 1829 Mitchell resurveyed Finch's original line of road, with points where he deviated from the original line being surveyed and constructed by G.B. White in 1831 on a different line again as Mitchell's straight line of road is likely to have involved too much construction (Lavelle 1999). **Figure 3.9** reproduces Mitchell's *Plan of Roads Northwards from Sydney in a Survey Made in July 1829*. **Figure 3.10** shows a plan of Mitchell's lines of road alongside already established routes.

In 1831 Heneage Finch was replaced by Lawrence Dulhunty, who according to Mitchell was 'not acquainted with the country nor what is to be done on the roads I laid out there' (Lavelle 1999). During Dulhunty's period of supervision the workforce was reduced to two road parties and one bridge party, who were mainly concerned with the nine crossings of Wollombi Creek required by Mitchell's straight line.

The northern section of the Great North Road linking the Upper Hunter Valley was planned by Mitchell with three branches, separating first at Wollombi and then again at Broke. The history of the construction of these branches is not as well documented as southern portion of the road and these northern branches are not likely to have been fully completed. The third planned branch stretched from Broke to Warkworth (including present Charlton Road crossing the Project area) and construction started under the supervision of Assistant Surveyor Peter Ogilvie between 1834 and 1836. This branch of road utilised contract labour to clear the line of road, with convict gangs still undertaking the actual construction. A survey plan by surveyor G.B.White showed Mitchell's intended line to Warkworth, however, apart from a bridge crossing Cockfighter's Creek (constructed in 1835) the road from the crossing of the former Bulga Track from Windsor (present Putty Road) is not thought to have been completed with the convict gangs being removed in 1836 (Lavelle 1999:Section 8 Inventory Sheet). Ogilvie prepared a final report in 1836 listing that work was still to be completed on the Broke to Warkworth section (Lavelle 1999).

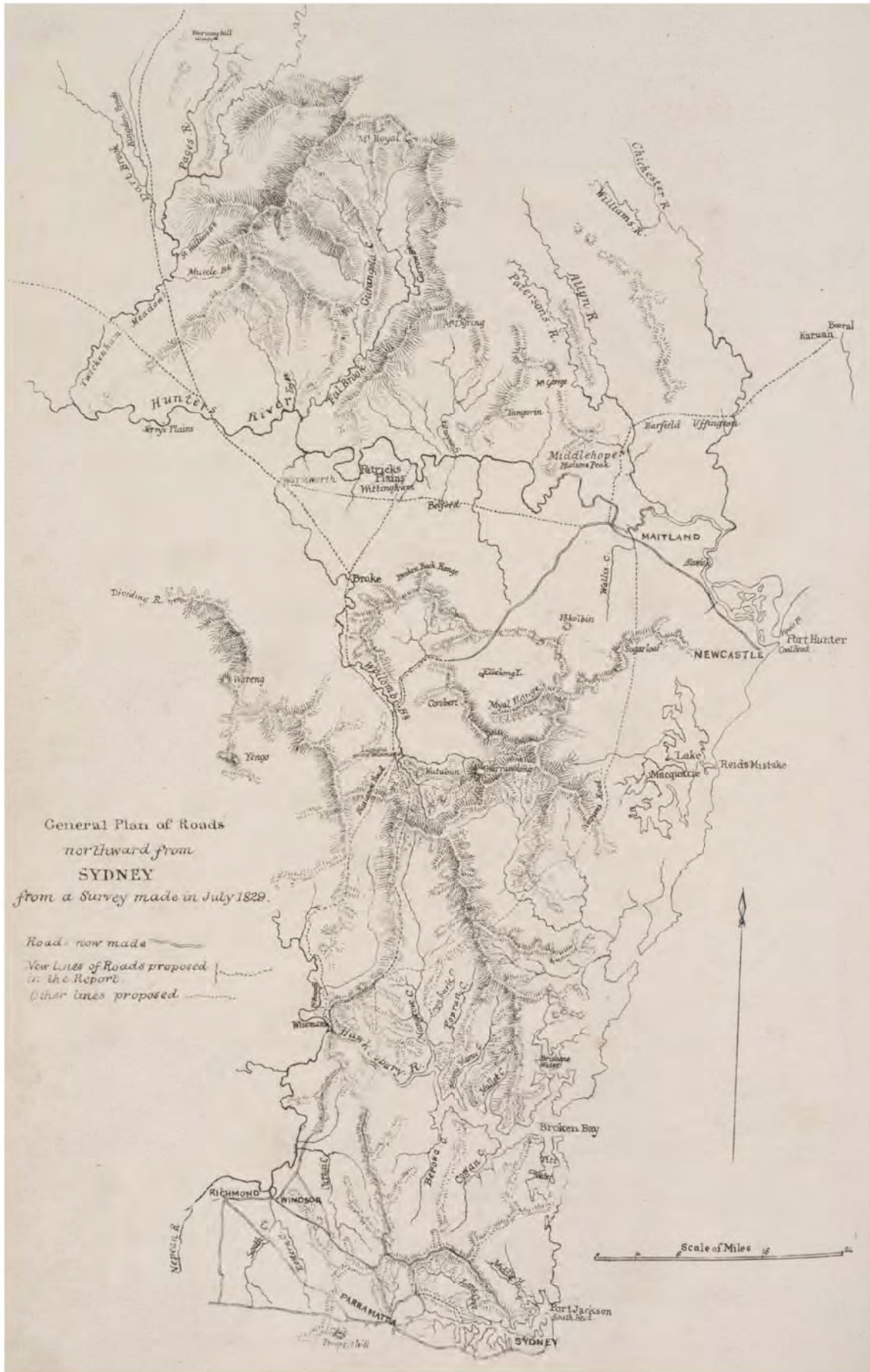


FIGURE 3.9

General Plan of Roads Northwards from Sydney
from a Survey Made in July 1829

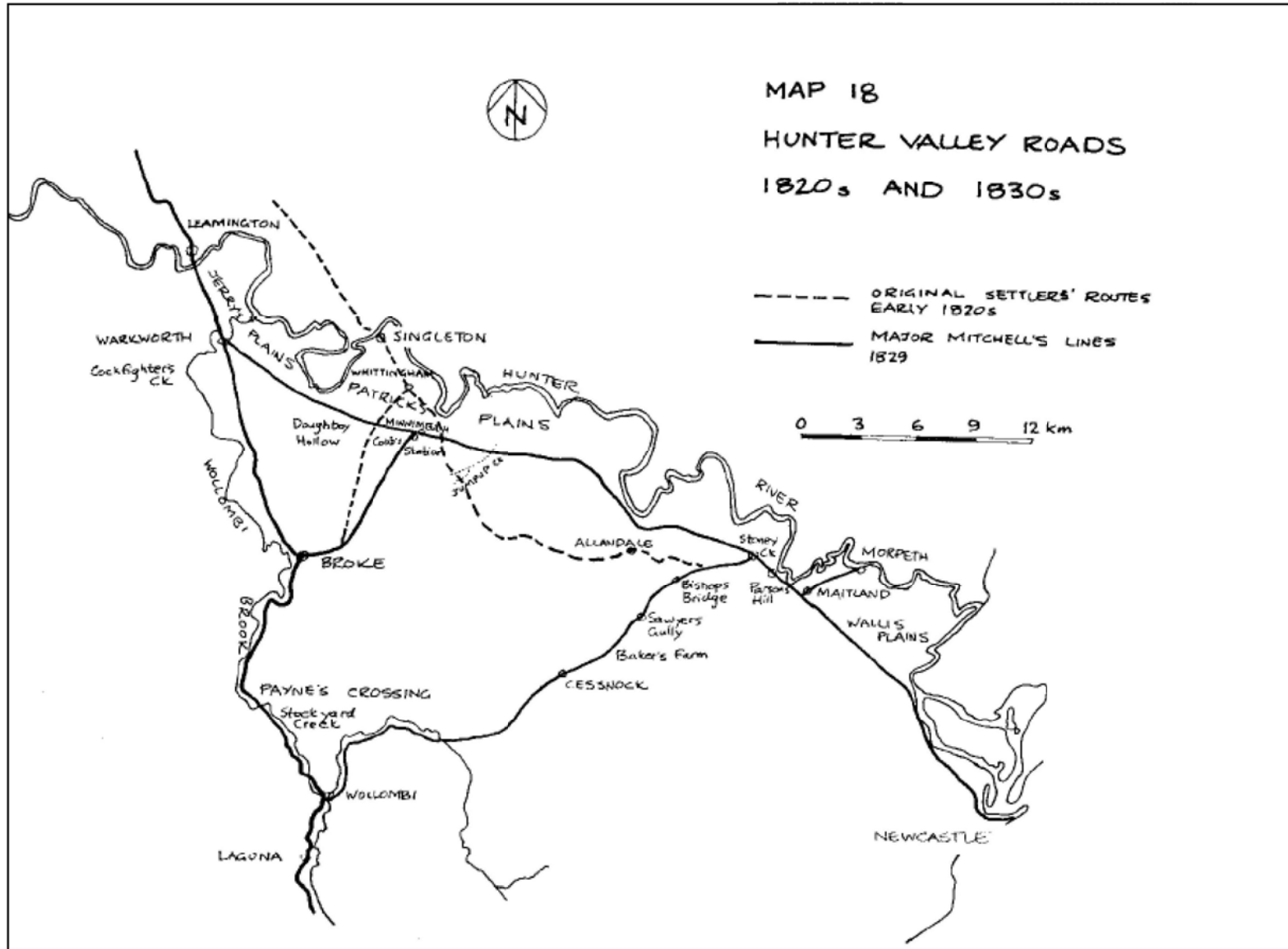


FIGURE 3.10

Plan Showing Mitchell's Lines of Road with Established Settler's Routes

The 1999 Conservation Plan (Lavelle 1999), prepared for the entire length of the Great North Road, divided the road into eight separate sections. Section 6 (from Wollombi to Broke) ended at Broke where the road branched off to Patricks Plains (the eastern branch, Section 7 from Broke to Patricks Plains – ended at Whittingham) and Warkworth (the western branch Section 8 from Broke to Warkworth - present Charlton and Wallaby Scrub Roads). Section 7 is located outside (to the south of) the Project area (refer to **Figure 3.11**). Section 8 (Charlton Road) forms part of the western boundary and crosses the Project area (refer to **Figure 3.11**).

In 1832 the volume of traffic on the road diminished, even before work on the Broke to Warkworth branch had started, with the introduction of a regular steam boat service between Sydney and Newcastle. By 1835 these steamers were considered ‘a more eligible mode of communication and complaints about the poor condition, lack of water and the ‘long and circuitous’ journey were common (Lavelle 1999). While overland droving of stock continued along the Great North Road, other routes (like the Bulga Road) were also used. In 1889 the travelling stock reserves on the Great North road were rescinded suggesting that little stock was being moved along it by this time (Lavelle 1999). Mitchell expressed regret over the roads abandonment, writing in 1850 that the government should have discouraged the use of other tracks, so the ‘roads fit to travel on’ would have ‘compensated for going a little around’ (Lavelle 1999). The opening of the Great North Railway in the second half of the nineteenth century and the completion of the Hawkesbury River Railway Bridge in 1889 (completing the rail link between Sydney and Newcastle) further encouraged the abandonment of the northern roads. Charlton Road is likely to have been poorly maintained from this period and only used as part of the network of local roads in the area. It wasn’t until the 1970s that the road was improved, with the removal of small kinks, and sealed (Weir Phillips 2012:25).

Local historians suggest the entire length of the road from Broke to Warkworth was originally known as Wallaby Scrub Road. The southern section of the road may have been re-named Charlton Road when the intersection of the Great North Road with Putty Road was offset between 1963 and 1974 to prevent accidents (Weir Phillips 2012:25). The name Charlton Road is likely to be a reference to the Cobcroft family’s ‘Charlton Estate’, through which the road passes (Weir Phillips 2012:25).

For additional details regarding the Great North Road and its place in the wider context of colonial road building, the convict system and the development of the Upper Hunter Valley refer to *Heritage Assessment Charlton Road Singleton New South Wales* (Weir Phillips 2012) attached to this report as **Appendix A**.

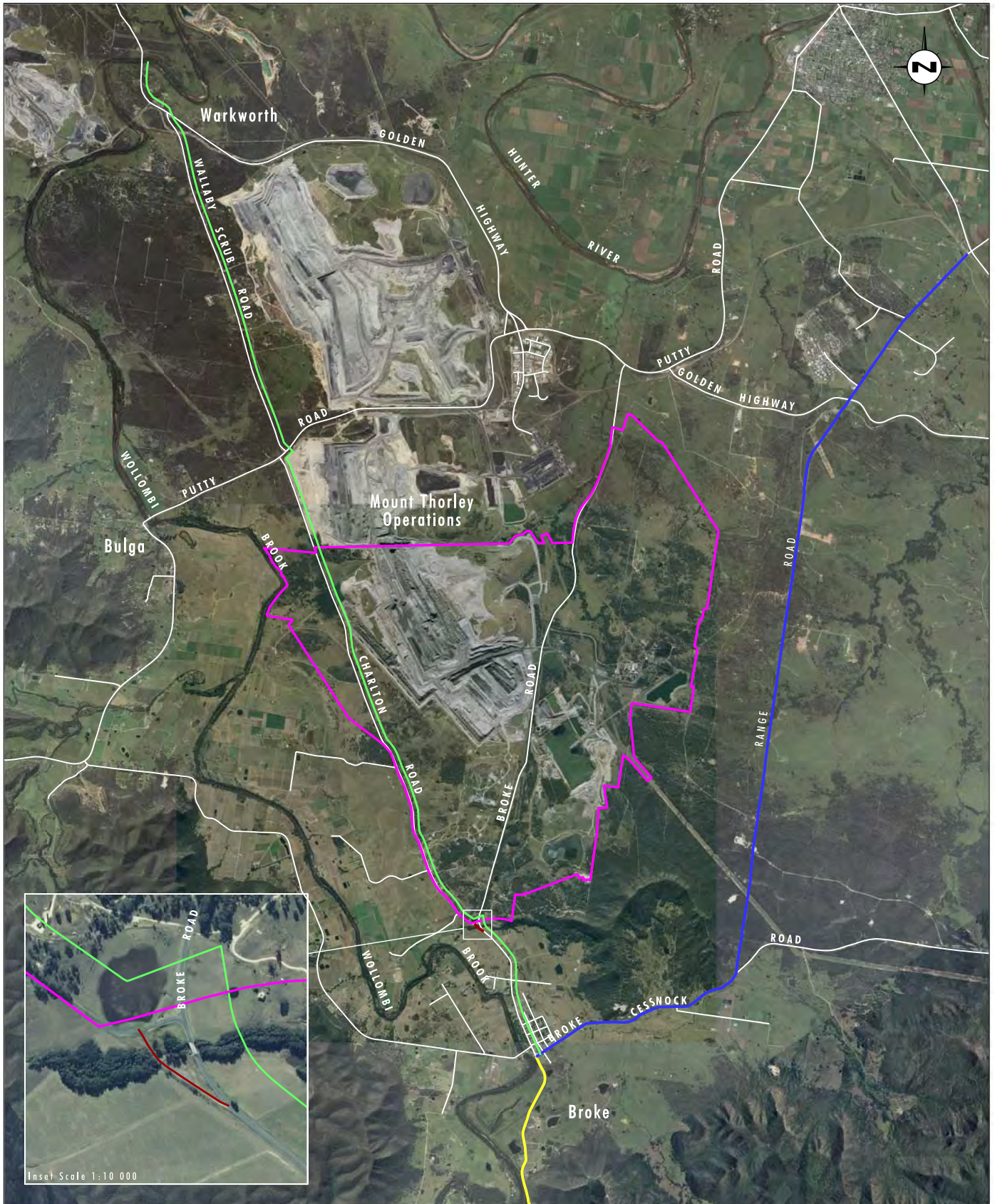
3.5.2 Broke Road

It is not clear when Broke Road was initially established. It is marked on the available Parish Maps dating from 1891 (refer to **Figure 3.3**). Although the available early plans show routes being established from the area of Broke to the northeast, these early routes do not appear to follow the alignment of Broke Road. While the current Broke Road may follow an alignment of an early settler track, it may have been formally established following the establishment of the Village of Broke in the 1860s (refer to **Section 3.6**).

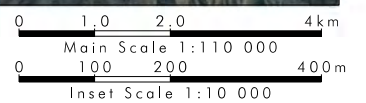
3.5.3 Main Northern Railway Line/Great Northern Railway

The Great Northern Railway or as it is now referred to, the Main Northern Railway, was built in part following the Great North Road in the 1860s to the 1870s. The Main Northern Railway’s first section was built from Newcastle to Victoria Street, Maitland in 1857. It then extended to Singleton (1863), Muswellbrook (1869), Murrurundi in (1872), Werris Creek and west Tamworth (1878), Armidale (1883) and Wallangarra, Queensland in 1888.

The hoped for rail extension of the Great Northern Railway that would have connected Singleton to Wollombi via Broke did not eventuate.



Source: AAM Pty Limited (March 2012), Xstrata Coal (NSW) Pty Ltd



Legend

- ▬ Project Area
- ▬ Great North Road Section 6
- ▬ Great North Road Section 7
- ▬ Great North Road Section 8
- ▬ Section of Abandoned Road Formation - Monkey Place Creek (see inset)

FIGURE 3.11

Great North Road Sections 7 & 8

3.5.4 Travelling Stock Routes

Travelling stock routes and reserves (TSRs) in NSW (also known as the Long Paddock in Australian literature) originated from the need to move stock to pastures and markets. To assist with the stock movements the government established a network of watering points and wide corridors for stock routes. Stock routes evolved from the 1830s onwards, the early routes generally following rivers or roads. By the 1860s legislation was introduced to protect the rights of adjacent run-holders and drovers. The *Occupation Act 1861* and the *Pastures and Stock Protection Act 1880* attempted to regulate the use and administration of stock routes. By this time railway lines were also used as stock routes in some areas. During the 1880s and 1890s improvements were made to administration of the routes, culminating in the *Pastures Protection Act 1902* which established Pastures Protection Districts and Boards (AHMS 2008:39-40).

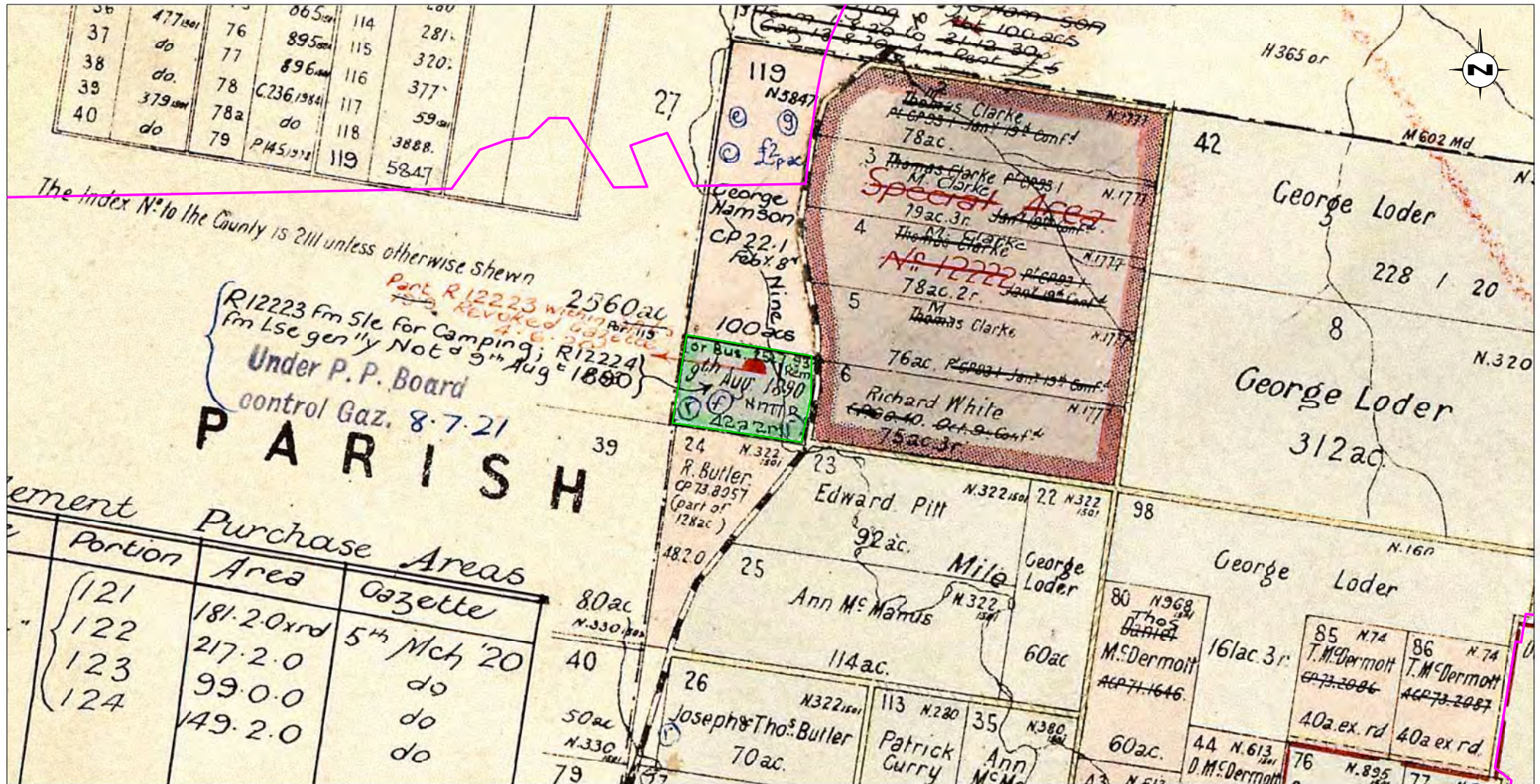
Existing stock routes are not used as often for droving as they were in the past as truck transport provides an alternative. However the use and growth of the routes peaked during the two world wars, and continued in the post-war period particularly during the droughts of the late 1950s. Since then there has been a decline in use of the routes except during drought periods when they are used mainly for grazing stock rather than transporting them. The *Rural Lands Protection Acts* of 1989 and 1998 transferred administration of the routes to Rural Lands Protection Boards. The Boards now manage almost 600,000 hectares of travelling stock routes on crown land throughout NSW (AHMS 2008:39-40). There has been a significant increase in the numbers of stock using traveling stock reserves and public roads since the onset of the drought in the early twenty-first century (Hale 2008). Following the renewed use of the routes, concerns have grown about soil erosion and weed control, and protection of wildlife and remnant native vegetation (AHMS 2008:40).

There is a former TSR present within the Project area along Nine Mile Creek. This area was originally gazetted as being under the control of Pastures Protection Board (P.P. Board) 8 July 1921 however the gazettal has since been revoked (refer to **Figures 3.12** and **3.13**).

3.6 The Village of Broke

Henry Dangar first reserved land for a village in the area of present day Broke in his 1828 survey of the Hunter Valley. Sir Thomas Mitchell further defined the boundaries of the village and provided a name in his survey of the Great North Road. Broke was named after Sir Charles Broke Vere; a major General in the British army. The Village Reserve (VR) can be seen on Dixons 1837 Map to the immediate south of the Project area (refer to **Figure 3.1**), however prior to the 1860s there was only a hotel in operation in what became Broke. The Brook Inn was built in 1839 by Henry Hewitt who also owned the nearby Oakley farm estate (Dunne 2012:54-56).

In 1860 the Village of Broke was surveyed and allotments established ready for sale. By July 1861 the first allotments had been purchased and were being built on. By 1862 Broke is reported to have had a public house, store and a blacksmith's shop. By 1864 the population of Broke and the surrounding area warranted the construction of a Church of England church and school building. In 1867 separate premises for the school were constructed. By 1871 the Village of Broke had 117 inhabitants and in 1873 building was underway on a Roman Catholic Church. By 1878 a public school and teacher's house were built with a first enrolment of 36 children that year. A permanent police officer was appointed in 1873 but it wasn't until 1879 that a lock-up and courtroom was constructed. The second half of the nineteenth century also saw the development of the neighbouring villages of Bulga, Warkworth and Vere.



Source: Land and Property Information (1999)

Legend

- Approximate Location of Northern Boundary of Project Area
- Under Pastures Protection Board Control

FIGURE 3.12

Detail of 1921 Vere Parish Map
Showing area under Pastures Protection Board Control



Source: AAM Pty Limited (March 2012), Xstrata Coal (NSW) Pty Ltd

0 1 2 3km
1:50 000

Legend

- Project Area
- Railway Line
- Travelling Stock Reserve

FIGURE 3.13

Location of Travelling Stock Reserve

Although Broke continued to grow in the late nineteenth century with a new Church of England church (St Andrew's: 1889), a bank (Government Savings Bank: 1895), School of Arts building (Broke School of Arts 1898) and Police Station (1898) the hoped for rail extension of the Great Northern Railway that would connect Singleton to Wollombi via Broke did not eventuate. The decline of the Great North Road meant that the use of Broke as a coach stop for travellers on the Cobb and Co. coach route ended and the village became more isolated and although residential development increased in the late nineteenth century, the commercial centre began to lose businesses (Dunne 2012:56-70).

3.7 R.A.A.F. Landing Ground Broke

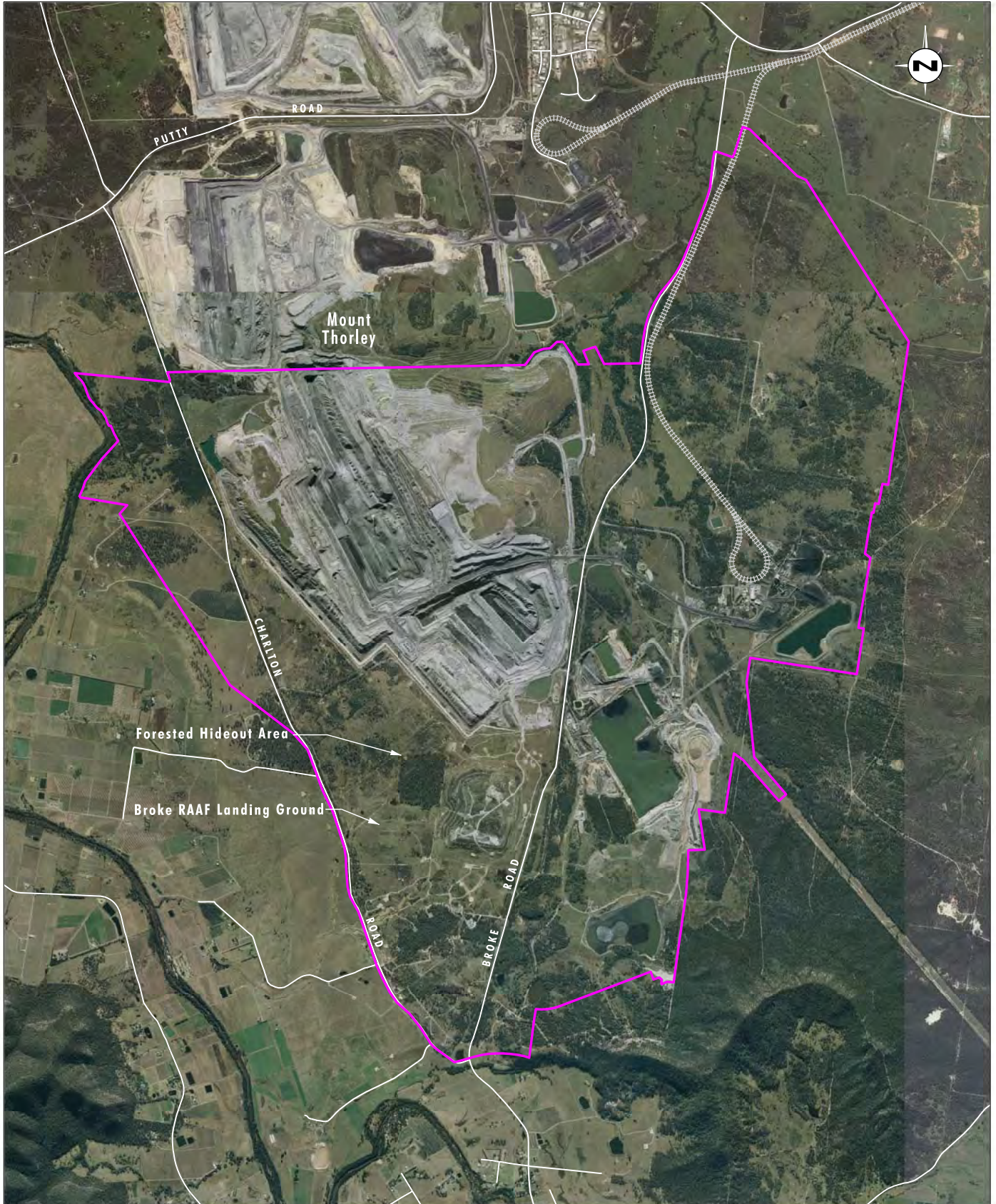
An approximately one kilometre square area of the Project area contains the remains of the former RAAF landing strip at Broke (refer to **Figure 3.14**). The Broke landing strip was one of three satellite dispersal fields, the others being at Warkworth and Strowan (Jerry's Plains), of the parent RAAF Base Bulga commissioned, designed and constructed between March 1942 and mid 1943 (refer to **Figure 3.15**). Satellite airfields or aerodromes were constructed to alleviate congestion at parent aerodromes (Brew 2001: 40).

World War II saw war reach the Australian shore, with the conflict involving the civilian community, indirectly as workers or as victims of the enemy actions. Initially after declaring war in 1939 Australian involvement at home was limited to the RAAF participation in the Empire Air Training Scheme (EATS), which was designed to produce 50,000 trained pilots and aircrew (from across the Commonwealth) as long as there was a need, with 11,000 of these to come from Australia (Brew 2001: 22). This left a considerable impact on the landscape with training schools established around the state.

The 1941 Japanese attacks on Pearl Harbour and subsequent strikes against Malaya led to a rapid Japanese advance towards Australia. To protect Australia at home, defence works were pressed ahead including coastal defences, anti-aircraft batteries, anti-tank defences, ditches, anti-aircraft shelters and slit trenches. Airfields were built and target ranges constructed in remote areas, with 29 aerodromes recorded as existing or under construction in August 1942 in NSW (Brew 2001: 29). Over time some airfields evolved into strategic defence aerodromes. Army camps to house troops and larger areas for manoeuvres were also set up, whilst the Navy also took over suitable locations and built its own facilities (Heritage Branch nd).

The location of aerodromes depended on the proposed function or purpose of the aerodrome; whether it was for training, operational purposes or maintenance. For example the western region of NSW was ideal for the location of aerodromes, especially for training, as the land was flat, there were no nearby mountains and they were protected from attack. Weather conditions, especially near the coast were more favourable than in other areas and the ground proved suitable for heavy traffic (Brew 2001:41-42). The majority of known NSW aerodromes are in the Sydney region, with a total of 23. The Murrumbidgee region has 21 with the Darling Plains and Murray regions having 17 and 16 respectively. The Lower Hunter region has 8 known aerodromes and the Upper Hunter 7. According to tables prepared by Brew as part of *Thematic Study: World War II Aerodromes and Associated Structures in New South Wales* (2001) there were 22 parent aerodromes constructed by 1942, with 103 satellite or independent aerodromes identified. However, Brew notes the difficulty in accurately calculating the number (Brew:2001, p29).

The Bulga Airfield and its associated satellite airstrips at Broke, Warkworth and Strowan were planned and constructed as a result of the 1942 to 1943 defence works. A parent base at Pokolbin, with satellite bases at Rothbury and Ringwood was also planned, however it appears that their construction never commenced.



Source: AAM Pty Limited (March 2012), Xstrata Coal (NSW) Pty Ltd

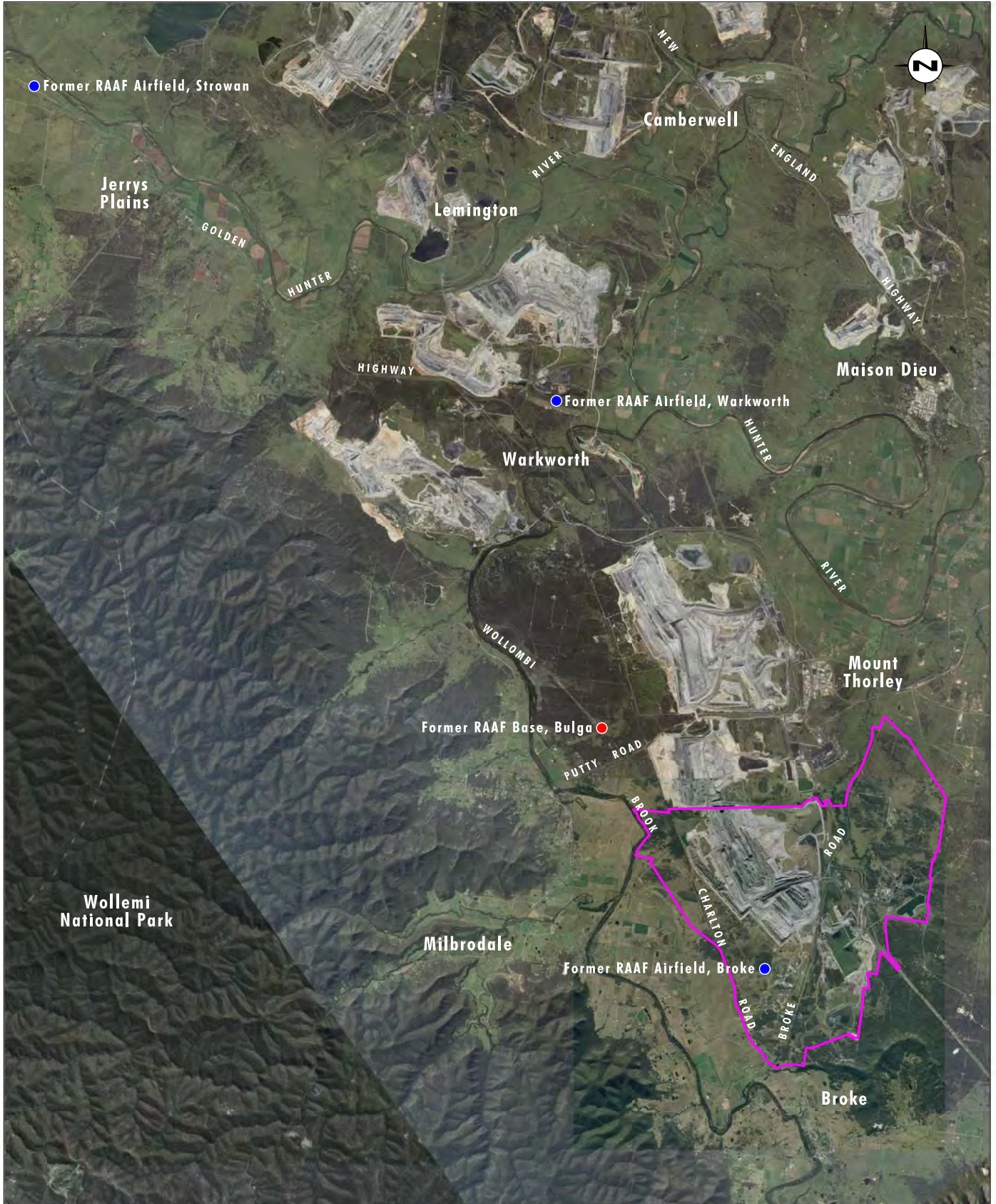
0 1 2 3 km
1:60 000

Legend

Project Area

FIGURE 3.14

Location of Former RAAF
Landing Ground, Broke



Source: AAM Pty Limited (March 2012), Xstrata Coal (NSW) Pty Ltd

0 2.0 4.0 8 km
1:160 000

Legend

- ▭ Project Area
- Former RAAF Base Location
- Airfield Location

FIGURE 3.15

Locations of Former RAAF Base Bulga and Airfields at Broke, Strowan and Warkworth

The Bulga airfield was classed as a General Reconnaissance airfield, which as of 1942/43 had its airfield infrastructure complete, while the ancillary buildings were yet to be constructed. Bulga was the only operational General Reconnaissance airfield proposed or constructed during World War II (Brew 2001 Appendix G). Of the 103 identified satellite aerodromes, 36 satellite airfield locations are listed with the status of being under construction or existing and 10 proposed as at 1942/1943 in tables presented by Brew as part of the Thematic Study (Brew 2001 Appendix G). While there is no evidence or records of the other satellite airfield locations being considered any further by this time, there are airstrip descriptions provided for sites that are not provided a status. However, the tables can be ambiguous in this regard. The Broke, Strowan and Warkworth airfields are all listed as being under construction, with a 5000 by 150 feet airstrip at Broke having been completed by 1942/1943 (Brew 2001 Appendix G, H). Of the airfields under construction, only three airstrips are specifically identified as having been completed, one of these being the Broke airstrip.

In early 1942 the necessity for the construction of the aerodrome at Bulga was an 'urgent war measure' and its construction a matter of 'great urgency' with the spreading of the base over four fields part of the 'dispersal policy'. The need for, general location and designs of the satellite bases were determined by concerns of minimising the possible detection by enemy aircraft and minimise any damage to aircraft and personnel if any of the bases were detected, as well as lessening any collateral damage to civilians (Weir and Phillips 2007a).

Figures 3.16 to 3.19 comprise plans of the RAAF Landing Grounds at Bulga, Broke, Strowan and Warkworth compiled by the Camouflage Section of the Department of Home Security in 1942. The original plans for the parent base and satellite dispersal fields called for 36 hideouts at the end of camouflaged, irregular taxiways. To camouflage the airstrips, straight lines were avoided during clearing and a natural 'edge of clearing' was created to conform to the surrounding country. The runway surfaces were disguised by spreading and staining gravel over the runway to blend into the surrounding contours and any bare ground left after construction was sown with grass and fertilised to speed up its growth. In May 1942 documents indicate that the satellite fields were only to have one runway, with minimal associated buildings and a total of 36 hideouts were required. By August 1942 gravelling was about to commence at the main runway at Bulga, while forming works at Broke and Warkworth were also 'well advanced'. Works at Strowan were 'proceeding slowly'. By October 1942 Bulga and Broke were to each have 18 hideouts, while Warkworth and Strowan were to have 18 spread across them, however by March 1943 only 12 dispersal points were required. Progress by January 1943 at the RAAF bases at Broke and Strowan was given as 'works nearing completion', while at Warkworth the runway was useable, but dispersal services (hideouts) were not complete (Weir and Phillips 2007a).

Technical manuals were written with guidelines on works, buildings, quarters, etc. printed regularly. It was expected that once a month regular maintenance checks were done, which were to consider: surfaces of landing areas, hard surfaced runways, taxiways and hanger aprons, drains, boundary markers and wind indicators and fences. The runway, taxiway and apron areas were to detect surface defects, roughness, unevenness, holes, depressions, bare ground, erosion, boggy patches, softness of the surface, long grass and any debris (Brew 2001:29-30).

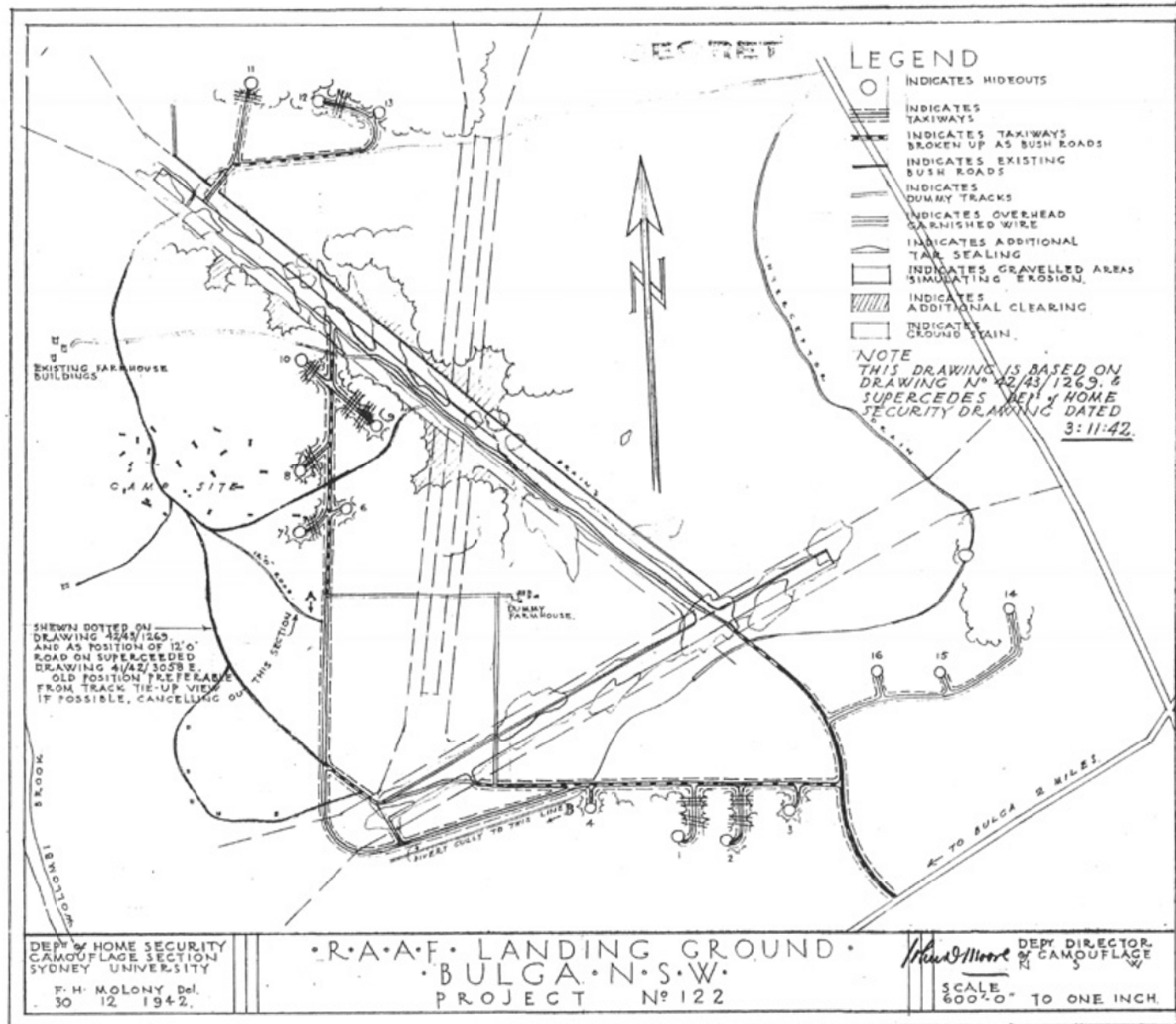


FIGURE 3.16

Plan of Former RAAF Landing Ground, Bulga

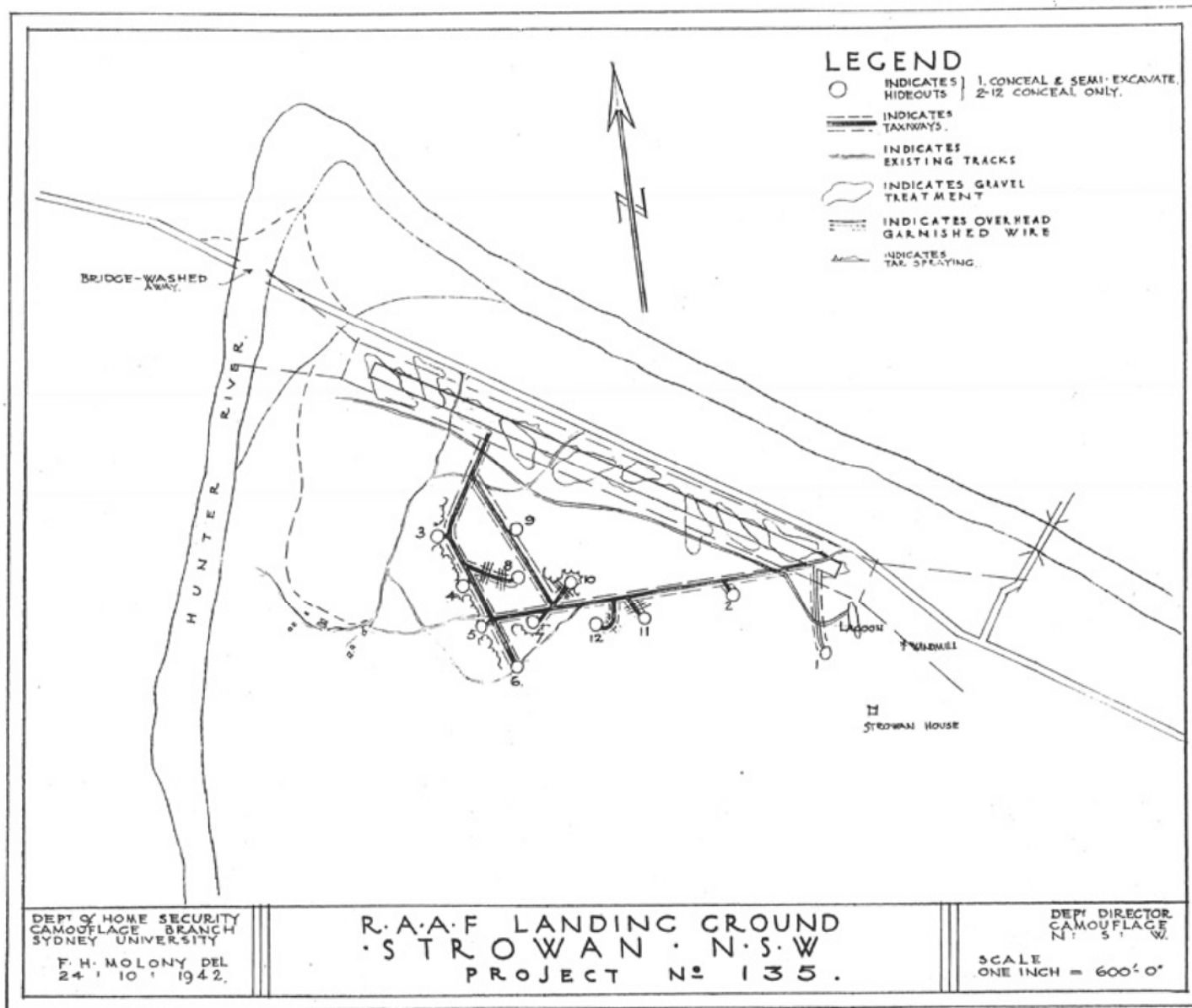


FIGURE 3.18

Plan of Former RAAF
Landing Ground, Strowan

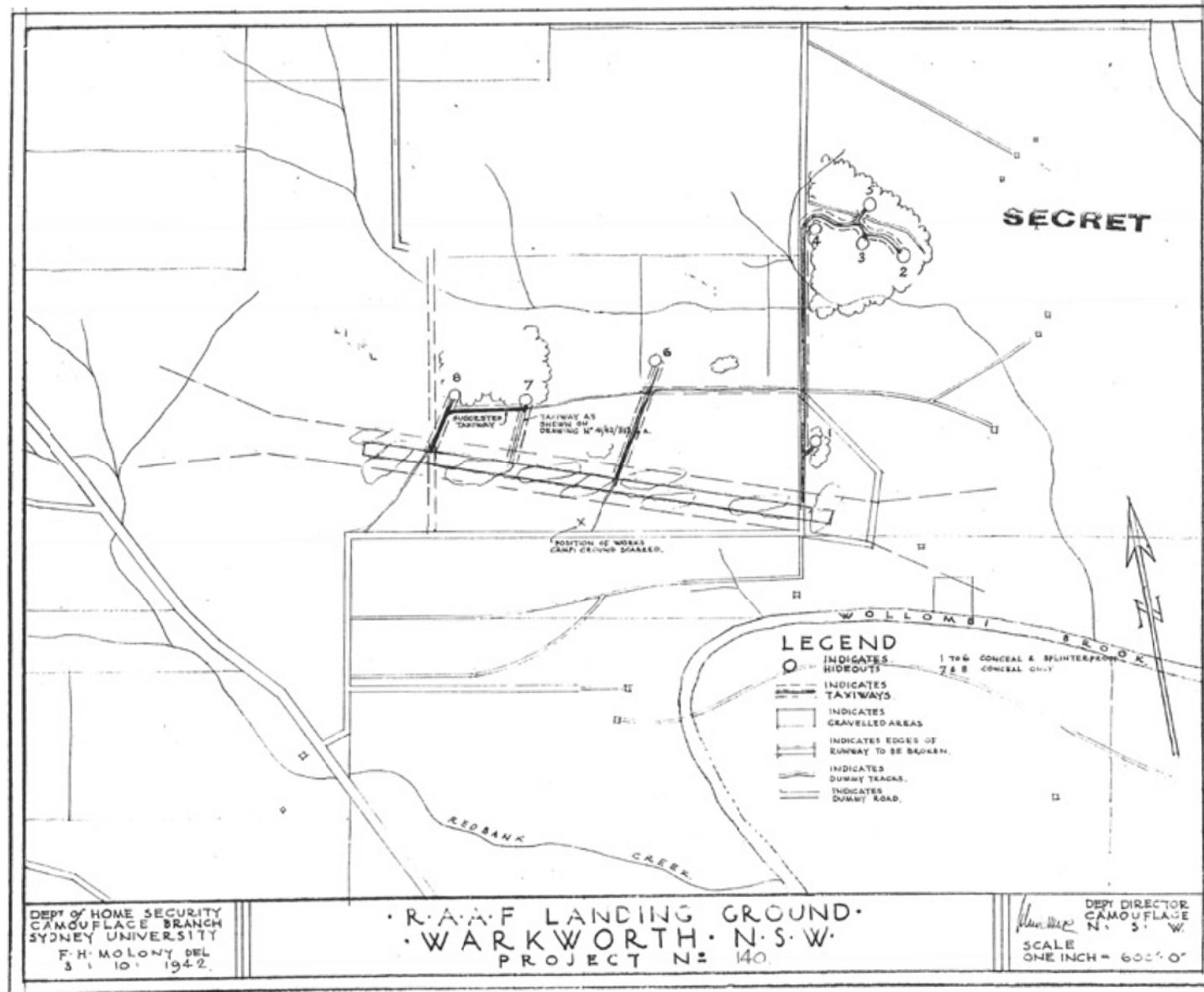


FIGURE 3.19

Plan of Former RAAF
Landing Ground, Warkworth

The plans of the RAAF landing ground at Broke dated 31 October 1942 show the camouflaged landing strip with a horse-shoe shaped taxiway at its western end having eight aircraft hideouts among the trees (refer to **Figure 3.17**). The 1952 aerial photo of the site shows the airstrip with a horseshoe shaped ring around a thick cluster of trees that are interrupted by six or seven spokes representing the likely planned hideout locations (refer to **Figure 3.20**). In the 1975 aerial photo the runway is still visible, however the horseshoe shape and spokes are difficult to distinguish, as it looks like the trees had been cleared by this time (refer to **Figure 3.21**). In the 2008 aerial the runway is visible but blends in to the surrounding farmland and the trees in the forested area have substantially regrown obscuring any of the hideout locations (refer to **Figure 3.22**). A substantial portion of the airstrip has been removed by this time as a result of a partly rehabilitated former overburden emplacement area located in this portion of the Project area (compare **Figure 3.22** with **Figures 3.20** and **3.21**).

It appears that the RAAF Base Bulga, and its satellite sites at Broke, Warkworth and Strowan were never used for war related activities. By mid 1943 the need for and use of the bases at Bulga, Broke, Walworth and Strowan was not longer envisaged, so when the works had been completed to a minimum serviceable standard the consideration turned to future management of the sites (Weir and Phillips 2007a).

At the end of the war, it was decided that the Bulga airfield was to be retained by the RAAF, but not maintained, and the Broke, Strowan and Warkworth airfields could be subject to disposal to their original owners or by sale (Brew 2001:33). In 1944 the Newcastle Aero Club had requested permission to land on the RAAF air strips in the vicinity of Newcastle for practice in forced landings, with consent granted in 1945. By the end of 1952 all government interest in the sites was ending, with the properties returned to the original landowners or their estates (Weir and Phillips 2007a). The satellite airstrip sites at Warkworth and Strowan are both still utilised as airstrips. The airstrip at Warkworth is functioning as the David Parker Airfield and is utilised by the Hunter Valley Gliding Club. The airstrip at Strowan is functioning as a private airstrip.

The 2001 thematic study of WWII aerodromes in NSW recommended that all parent aerodromes be considered for listing on the SHR with a CMP prepared. In considering the relationship between the satellite and parent aerodromes it was recommended that all satellite aerodromes be considered for listing on the respective local council's LEP, however the possibility for SHR listing may need to be considered.

3.7.1 Thematic Listings Program – WWII Aerodromes

World War I and II sites were one of four themes included in the 2009-2010 Thematic Listings Program. The Thematic Listings Program is a Heritage Council strategic initiative to maintain a balanced and credible State Heritage Register that accurately records the most significant places and objects in, and which reflects the cultural richness and diversity of, the State of New South Wales. The World War I and II sites were included to:

...acknowledge the important contribution of servicemen and women during both World Wars and the 70th anniversary of the beginning of WWII (Heritage Branch nd).

Evidence for World War I and II sites in the NSW landscape is widespread but not always well recognised today. The thematic Listings Program aimed to ensure that sites of significance to both World Wars are located, identified and assessed for their heritage values (Heritage Branch nd).



0 100 250 500m
Approx. Scale 1:10 000

FIGURE 3.20
1952 Aerial Photograph showing
Former RAAF Landing Ground, Broke

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FIGURE 3.21

1975 Aerial Photograph showing
Former RAAF Landing Ground, Broke



Source: AAM Pty Limited (June 2012), Xstrata Coal (NSW) Pty Ltd

0 100 250 500m
Approx. Scale 1:10 000

FIGURE 3.22

2012 Aerial Photograph showing
RAAF Landing Ground, Broke

3.8 Singleton Military Area

A considerable portion of land in the area once comprising the early land grants is now part of the Singleton Military Area (refer to **Figure 3.23**) which forms one of two major defence facilities in the Hunter region, the other being the RAAF Base at Williamstown. The Singleton Military Area contains the Lone Pine Barracks (built to house the Infantry Centre in 1989) and the Singleton Training Area which comprises a 14,000 hectare firing range. The Singleton Military Area was resumed by the Commonwealth Government of Australia for training purposes in 1941, however commercial grazing continued on the land until the 1960s. The 1st Australian Armoured Brigade were the first troops to occupy the area in February 1942. Following World War II detachments of the 2 Base Ordnance Depot and the Eastern Command Workshop were set up and exercises and training camps established. The 3rd Training Battalion was established to train recruits following the implementation of the National Service scheme in 1965. After the re-organisation of the army in 1973 the 3rd Training Battalion was replaced with the transfer of the Infantry Centre from Ingleburn to Singleton. The Royal Australian Infantry Corps Museum was also relocated to the Singleton Military Area at this time.

At present the activities of the Singleton Military Area remains infantry based as it now houses the Australian Army School of Infantry, Tactics Wing, Rifleman Wing and the Special Forces Training Centre (Dunne 2012:88-89).

3.9 Mining

The development of coal resources comprises an important part of the region's history of coal mining within the Hunter Valley and began on a limited scale in the early 1900s, prior to a rapid expansion in the 1950s with the establishment of large open-cut mines (Dean-Jones and Mitchell 1993:2).

Coal was known to exist in Singleton and its surrounding areas since early exploration. In 1819 when exploring the Jerrys Plains area John Howe is reported to have been:

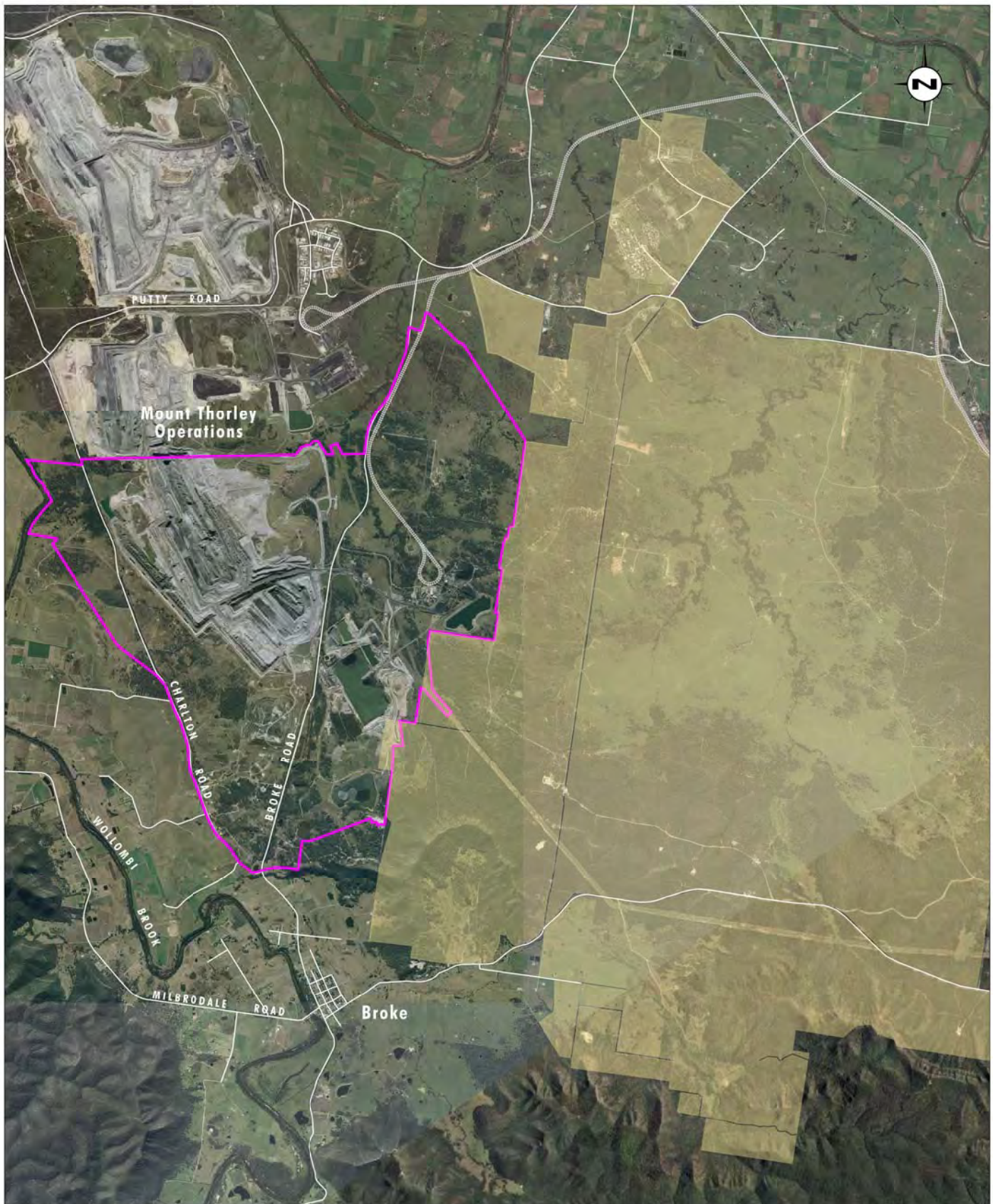
...picking up in the river some large pieces of coal, which they took back to Windsor
(Wood 1972:11).

The first official coal seam was discovered on the Wambo Estate in 1863. Its discovery was reported in the Maitland Mercury:

A rich seam was recently discovered at Wambo, Cockfighters Creek, the estate of William Durham Esq....We believe this is the first coal seam which has been discovered in the country of the Hunter; and as Mr Durham's estate is about 12 miles from Singleton, it is clear proof of the wide spread of the coal deposits in this district (Singleton Historical Society nd).

Coal was first mined in the Upper Hunter in the Rixs Creek area near Singleton in the 1860s (Rappoport 2006:24). However, early coal operations such as this were not commercially viable because of the then underdeveloped transport network. Development and extension of the Great Northern Railway provided the stimulus needed for the development of coal mining in the area (Dunne 2012:88). On 23 September 1886, the 'Singleton News' in the Maitland Mercury reported that:

Since Messrs Nowland opened up their mine, sinking for coal has been actively prosecuted on the Ravensworth estate and we learn that the perseverance of the promoters has been successful to such a degree that they intent to float the undertaking shortly into a company with equal capital of £50,000. A prospectus will be shortly issued.



Source: AAM Pty Limited (March 2012), Xstrata Coal (NSW) Pty Ltd

0 1.0 3.0 5.0 km
1:100 000

Legend

-  Project Area
-  Singleton Military Area

FIGURE 3.23
Singleton Military Area

Noble writes that no further information was found on this venture but it indicates that coal extraction was commencing during this time. According to the Heritage Office and DUAP (1996a:4) 'coal was not commercially exploited until the 1890s in the Upper Hunter'. Although coal was known to exist in the Broke Fordwich area, the area remained dominated by the agricultural industry, with a continued focus on dairying. In 1924 the Singleton Argus reported that Mr Rose, who lived on Broke Road, had sunk an exploratory shaft on his property, however there is no record that any coal was commercially taken from the site (Dunne 2012:87):

Mr. A. Rose, who resides on the Broke Road about three miles from Vere, noticed an outcrop of coal on his property and about a month ago decided to sink a shaft. At a depth of 20 feet an excellent seam was struck, measuring 10 feet wide and probably expansion to 15 feet. Mr. Rose says there are indications of coal all round his property, and the prospects for development are splendid. Some of the coal has been tested in a blacksmith's forge with excellent results (Singleton Argus week-ending November 5 1924).

Coal mining and electricity generation have become major industries in the Singleton area since the 1950s with the first wave of collieries built to meet export demand at Liddell, Foybrook and Liddell State. Since the mid-twentieth century, coal mining operations 'expanded from Cessnock/Maitland area to the triangle bounded by Singleton, Muswellbrook and Denman, using highly mechanised, open cut surface mining techniques in which all overburden is stripped from the surface' (Rappoport 2006:24).

In 1964 the State Electricity Commission commenced construction of the Liddell power station, which was commissioned in 1973. The Bayswater Power station was commissioned in 1980. These projects changed the lifestyle of the residents of Singleton and surrounding local government areas by affecting employment, population, housing, commerce and the character of the locality. The power stations increased the demand for coal, as did the expanding export market.

In 1972 BHP was authorised to prospect for coal in the Broke area and their open-cut proposal for its Saxondale operations marked a new industrial use for the predominantly agricultural area. In 1976 the right to mine coal in the Warkworth area was won by an Australian, United Kingdom and Japanese consortium with operations commencing at Warkworth and Mount Thorley mines in 1981. Coal and Allied Industries Limited runs Mt Thorley today. BHP put Saxondale up for sale in 1986 with ownership eventually being transferred to Elders Resources in 1988 before being acquired by Oakbridge Pty Ltd the following year. Oakbridge was given approval to expand open cut production in 1990 and commenced underground mining in 1994. Mining operations in the Broke Fordwich area now form part of the Bulga Coal Complex managed by Xstrata and comprise longwall underground mining and open cut mining (Bulga Coal Surface Operations).

3.10 Historical Themes

A historical theme is a research tool, which can be used at the national, state or local level to aid in the identification, assessment, interpretation and management of heritage places (AHC 2001:1). Nine national historical themes have been identified by the Australian Heritage Commission (AHC now Australian Heritage Council). The Heritage Branch, OEH has identified thirty-five historical themes for understanding the heritage of NSW. The development of the Project area is broadly reflective of the history of the local region, and can be assessed in the context of the broader historic themes defined by the Heritage Branch, OEH and AHC. In accordance with the Heritage Branch and AHC framework of historic themes, the themes in **Table 3.2** are relevant to the Project area and locality.

Table 3.2 - Historical Themes Relevant to the Project Area and Locality

National	National Sub Themes	NSW Themes	Local Themes	Examples
Peopling Australia	Living as Australia's earliest inhabitants Adapting to diverse environments	Convict	Activities relating to incarceration, transport, reform, accommodation and working during the convict period in NSW.	Landscapes of control, convict built structure.
Developing local, regional and national economies	Developing Primary Production	Pastoralism	Activities associated with the breeding, raising, processing and distribution of livestock for human use.	Rural landscape, hay barn, dairy, vineyard, farmstead, fencing, shed, orchard.
		Agriculture	Activities relating to the cultivation and rearing of plant and animal species, usually for commercial purposes.	Pastoral landscape, homestead, fencing, well, water trough, shearing shed.
		Mining	Activities associated with identification, extraction, processing and distribution of mineral ores.	Mining field or landscape, mine, quarry, processing plant, miners office, collier, mine shaft.
Developing local, regional and national economies	Moving Goods and People	Transport	Activities associated with moving goods and people from one place to another, and systems for the provision of such services.	Highway, lane, stock route, bridge, footpath, aerodrome, horse yard.

Table 3.2 - Historical Themes Relevant to the Project Area and Locality (cont.)

National	National Sub Themes	NSW Themes	Local Themes	Examples
Building settlements, towns and cities	<p>Making settlements to serve rural Australia</p> <p>Remembering significant phases in the development of settlements, towns and cities</p> <p>Supplying Urban Services</p>	<p>Land Tenure</p> <p>Towns, suburbs and villages</p> <p>Utilities</p> <p>Accommodation</p>	<p>Activities and processes for identifying forms of ownership and occupancy of land.</p> <p>Activities associated with creating, planning and managing urban functions, landscapes and lifestyles in towns, suburbs and villages.</p> <p>Activities associated with the provision of services, especially on a communal basis.</p> <p>Activities associated with the provision of accommodation, and particular types of accommodation.</p>	<p>Fence, survey mark, subdivision pattern, stone wall.</p> <p>Town plan, village reserve, subdivision pattern, abandoned town site.</p> <p>Bridge, culvert, weir, well, cess pit, reservoir, dam.</p> <p>Homestead, cottage, house site (archaeological site).</p>
Governing	Defending Australia	Defence	Activities associated with defending places from hostile takeover and occupation.	RAAF base.

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4.0 Physical Context

This section discusses the potential historical heritage items present within the Project area, identified through a search of relevant heritage registers, historical research and site survey. This information, in conjunction with the historical context (refer to **Section 3.0**), forms the basis of the significance assessment, refer to (**Section 5.0**) and management strategy, refer to (**Section 6.0**).

4.1 Physical Context of the Project Area

The Project area is situated in the southern central portion of the Hunter Valley, within the Loders Creek and Wollombi Brook catchments, an area characterised by relatively gentle undulating hills, broad river valleys and floodplains. The topography within BCC has substantially been mined and previously consisted of rolling hills and gentle slopes. The areas surrounding the Project area are predominantly composed of valley floor woodlands, forests and native and exotic pastures derived from the clearing of the woodlands. Mining and cattle grazing activities and past land clearance associated with previous agricultural activity has disturbed much of the Project area, resulting in the vegetation being dominated by pastoral grassland with small isolated pockets of re-growth woodland.

A review of aerial photographs obtained from the Department of Lands dating from 1952 was undertaken as part of this assessment and shows that in the 1950s to 1970s the Project area generally comprised of cleared grazing land with scattered trees (refer to **Figures 3.7 to 3.8**). Vegetation within the Project area showed obvious signs of regeneration by 1974. Coal mining at the BCC commenced in 1982. Mining operations also commenced to the immediate north of the Project area with the opening of the Mount Thorley Warkworth open cut mine. By 1990/1991, mining operations had expanded significantly within the Project area and to the north with the expanding Warkworth operations.

The area to the north and northwest of the Bulga Complex is now dominated by mining activities and has few private residents within close proximity to the proposed operations. The area to the south and west is a rural-residential area with a number of operating vineyards and other horticultural uses as well as traditional broad scale grazing. The land in the northeast of the Project area is currently used as a composting facility for the manufacture and blending of mushroom growing medium. This facility is proposed to be relocated as part of a separate Development Application.

The village of Broke is located to the south of the Bulga Complex and the village of Bulga to the West. The land to the east of the Project area is owned by the Department of Defence (the Singleton Military Area).

The area surrounding the Project supports a range of land uses including:

- open cut and underground coal mining operations;
- freehold grazing and cropping land;
- small rural towns;
- rural-residential and small rural holdings;

- olive groves;
- horticulture;
- viticulture; and
- hospitality and tourist operations including short stay accommodation, winery cellar doors, restaurants/cafes and specialist retail outlets.

4.2 Site Survey

A targeted approach to site survey was undertaken in order to ground truth:

- the results of the research undertaken and presented in **Section 3.0**;
- the review of previously prepared reports (predominantly *Bulga Coal Continued Underground Operations: Historic Heritage Assessment* (Umwelt 2003)) which identified several potential sites/items in the wider area (BH1-BH15);
- the review of existing topographic maps;
- the sites/items identified by the community (BH16);
- the sites/items identified during previous Aboriginal Cultural Heritage works across the Project area (PS 1-7); and
- the sites/items identified during the 2012 Aboriginal survey undertaken by OzArk and Registered Aboriginal Parties.

The majority of the potential sites/items comprised 'ruins' (as identified on topographic maps) and former rural cattle yard complexes. Ground-truthing identified that several of the identified potential sites had previously been impacted (for example as a result of previous mining activities in the area) or were no longer present.

The BH numbering of sites/items identified during the preparation of the 2003 *Historic Heritage Assessment* has been retained for those sites. The subsequently identified potential Historic Heritage sites/items have been numbered PS1, PS2 etc (PS = potential site). Sites/items with existing names (for example the heritage listed Murinbin House Group) have retained their names rather than being renumbered/renamed.

The heritage items identified in Umwelt 2003 (BH1-15) were previously identified as having varying degrees of Local significance (low, moderate or high). Since that time, the Heritage Council of NSW has modified the assessment of Heritage significance and qualifiers of low, moderate or high local significance no longer accord with Heritage Council guidelines. As such the sites previously identified in Umwelt 2003 have been inspected, where relevant reassessed in terms of their heritage significance (refer to **Section 5.0**) and are considered as part of this report where appropriate.

4.3 Survey Results – Potential Historical Heritage Items Identified within the Project Area

Table 4.1 identifies the potential historical heritage sites/items present within the Project area. Figure 4.1 illustrates the locations of these sites in relation to the Project area.

Table 4.1 – Potential Historical Heritage Items Identified within the Project Area

Site/Item	Location	Co-ordinates (MGA)
BH1 – Fence posts	Charlton Road	318432E/6383213N
BH8 – Fence line	Broke Road	323126E/6384960N
BH9 – Dump site	West of Charlton Road	317610E/6383790N
BH11 – Former farmstead - dairy and yards	West of Charlton Road	318160E/6383595N
BH12 – Fence line	East of Broke Road	323203E/6382607N
BH15 – Fence posts and yards	Near Charlton Road	317537E/6383840N
BH16 – House site	West of Charlton Road	317829E/6384201N
PS1 – Post and rail fence	East of Broke Road	322713E/6382449N
PS2 – Hut ruins	East of Broke Road	322612E/6382353N
PS3 - Wooden footings	East of Broke Road	322647E/6382344N
PS4 - Wooden footings	East of Broke Road	322663E/6382347N
PS5 – Cattle Yards	East of Broke Road	322703E/6382118N
PS6 – House site and sheds etc.	East of Broke Road	322589E/6382182N
PS7 – Post and rail fence	East of Broke Road	322592E/6380398N
PS8 – Former House site	Core Storage Area, Broke Road	322942E/6384869N
PS9 - Timber stockyard	Broke Road	323140E/6384334N
PS10 - Concrete slabs	Vere Vineyard area, Broke Road	323197E/6383976N
PS11 - Former House Site	East portion of Project area	323939E/6382237N
PS12 - Timber yard complex	East portion of Project area	324168E/6381624N
PS13 - Former Mine Shaft	East portion of Project area	323748E/6381373N
PS14 - Yards alongside Charlton Road	Charlton Road	318890E/6381856N
PS15 - Yards	Northeast portion of Project area	322760E/6384635N
PS16 - Yards	East of Charlton Road	319523E/6381473N
PS17 - Former Hut Site	Northeast portion of Project area	325386E/6385787N
PS18 - Fence line	East of BCC Bayswater Dump	323810E/6381348N
PS19 – Former shed site	East of Broke Road	322418E/6383662N
Charlton Road	Charlton Road	317828E/6384996 to 321006.5E/6377424N ³
Broke RAAF landing ground	Off Charlton Road	320384E/6380131N
Broke Road	Broke Road	321161E/6377465.5N to 323087E/6385193N ⁴

³ Note co-ordinates are for start and end point of assessed area of Charlton Road; comprising the approximately 8.5 kilometre section of road that runs alongside and within the western boundary of the Project area.



Legend

- Project Area
- Singleton Military Area
- Potential and Known Heritage Sites/Items
- Department of Defence Identified Sites
- Railway Line
- Former Alignment of Broke Road

FIGURE 4.1

Location of Potential and Known Non-listed Heritage Sites/Items within and in the Vicinity of the Project Area

4.3.1 BH1 – Fence Posts

The 2003 *Historic Heritage Assessment* for the Bulga Coal Continued Underground Operations identified Site BH1 (refer to **Figure 4.1**) as:

...two fence posts located approximately 20 metres west of Charlton Road and 10 metres west of a current fence line. The two posts were located approximately three metres apart and were probably the residue of a set of post and rail yards.

The eastern post carried mortises for rails while the western post carried mortises for rails and what appears to have been a loading ramp. The position of the mortises indicates that the post had been at the foot of a loading ramp designed for cattle and would therefore date to possibly the late 1940s with the advent of road transport (Umwelt 2003:5.1).

These two posts are still extant today (refer to **Plate 4.1**).

4.3.2 BH8 – Fence Line

Site BH8 was identified and recorded during the 2003 survey adjacent to Broke Road (refer to **Figure 4.1**). The 2003 assessment described BH8 as:

...four through-mortised posts and rails, two gate posts and metal gate. A single mortise was present at the top of the posts and the rails remained *in situ* with plain and barbed wire installed below. No evidence of any associated structures were observed although further isolated posts were located to the north (Umwelt 2003:5.2).

Site BH8 was not identified during the 2011 site survey. It appears to have been removed since the 2003 assessment and replaced with a metal post and barbed wire fence.

As such Site BH8 is not considered further as part of this report.

4.3.3 BH9 – Dump Site

Site BH9 was identified during the 2003 survey (refer to **Figure 4.1**). The 2003 assessment described BH9 as:

...a number of fence posts which followed the course of a small tributary on both sides for approximately one kilometre. Approximately 200 metres east of the fenceline a dump site was observed consisting largely of sheets of galvanised iron and demolition rubble. This site is located in close proximity to sites BH1 and BH11 and is most likely associated with them (Umwelt 2003:5.2).

Although outside the Project area Site BH9 has been considered in this section as a result of its association with Site BH11, as identified in the 2003 assessment.

Site BH9 was inspected during the 2011 site inspection. The site comprises a number of fence posts and an area of assorted demolition rubble (including corrugated metal sheeting, asbestos sheeting, fragments of broken up concrete slabs, metal fence post, large machine made bricks etc) lining the edge of a small creek (refer to **Plate 4.2**). In places the rubble appears to have been utilised to stabilise the eroding edge of the creek.

⁴ Note co-ordinates are for start and end point of assessed area of Broke Road; comprising the approximately 8 kilometre section of road located within the Project area.



PLATE 4.1
BH1 fence posts, view to East



PLATE 4.2
BH9 Demolition rubble, view to West



PLATE 4.3
BH11 concrete slab, view to North-East



PLATE 4.4
BH11 Timber post yards, view to North-East

4.3.4 BH11 – Former Farmstead Site Including Dairy and Yards

Site BH11 was identified during the 2003 survey (refer to **Figure 4.1**). The 2003 assessment described BH11 as being:

...a short distance of BH1 and BH9 and is most likely associated with them. The material evidence identified at this site comprise several slabs of concrete, the residue of yard and paddock fencing, the remains of a ~1920s motor car, a 1922 beer bottle (salvaged), components from a large fuel stove and building platforms...this evidence has been provisionally interpreted as representing a homestead, two dairy buildings with bails and yards with fragments of original paddock fencing. The site was located close to a former dam on an unnamed drainage line (dam wall breached) and to a dump which appears to contain derelict material from the homestead precinct. This site appears likely also to have a temporal relationship to the fragment of fencing located at site BH1 (Umwelt 2003:5.2-3).

Site BH11 has subsequently been archivally recorded in accordance with Condition 41 of Schedule 4 of the Bulga underground coal mine development consent (DA 376-8-2003) (refer to **Section 6.2.3**).

Site BH11 was inspected during the 2011 site inspection (refer to **Plates 4.3** and **4.4**). Evidence of the dump identified in 2003 was not identified, however the material identified in 2003 may have been removed and added to the demolition rubble at Site BH9. The timber post yards and two concrete slabs (likely former dairy buildings) were still extant (refer to **Plates 4.3** and **4.4**).

4.3.5 BH12 – Fence Line

Site BH12 was identified during the 2003 survey adjacent (to the south of) the current operating haul road (refer to **Figure 4.1**). The 2003 assessment described BH12 as comprising:

...a residual fence line orientated north-south...six posts were identified, two of which remained *in situ* with the remaining four posts lying in close proximity to their original positions. The remnants of two rails were also identified. The posts appear very old and were through-mortised at the top for a rail with most likely plain and/or barbed wire or netting utilised below. This style of fence would serve to enclose both sheep and cattle and the site most likely represents a boundary fence between portion 81 and portions 27/28 Parish Vere, County Northumberland, granted during the early phase of settlement (Umwelt 2003:5.3).

This site, comprising two *in situ* fence posts, is still extant today (refer to **Plate 4.5**) and has been signposted as a Heritage Site in accordance with Condition 42 of the current underground ground consent conditions (refer to **Section 6.2.4**).

4.3.6 BH15 – Fence Posts and Yards

Site BH15 was identified during the 2003 survey (refer to **Figure 4.1**) and inspected as part of the 2011 survey (refer to **Plate 4.6**). The 2003 assessment described BH15 as comprising:

...isolated through-mortised fence posts with further posts located to the north and northwest, possibly the residual remains of yards. This site is located to the northwest of site BH9 and is most likely associated with site BH11. The site is located outside the Project area and will not be affected by continued operations.



PLATE 4.5
BH12 fence posts, view from South



PLATE 4.6
BH15 fence posts, view to North-West



PLATE 4.7
BH16 former cottage site, view to East



PLATE 4.8
BH16 dilapidated hay shed, view to South-East

Site BH15 is located inside the west boundary the Project area but will not be directly impacted by the Project. In addition Site BH15 has been incorporated into the proposed Conservation Agreement (CA) area (currently being discussed between BCM and OEH) and signposted as a 'Heritage Site'.

4.3.7 BH16 – House Site

Site BH16 was identified from the topographic map as *ruins* and inspected during the 2011 survey (refer to **Figure 4.1**). The site comprises a dilapidated hay shed, remains of a former cottage, yards and concrete slabs. The dilapidated hay shed had previously been identified by a community member and subsequently inspected by Lillian Cullen (Singleton Council Heritage Advisor) on 24 September 2010.

Lillian Cullen describes the hay shed as being:

...in a dilapidated state with about half of the iron roof sheeting missing and the remaining roof leaning at an unsafe angle.

The structure of the barn is of round timber logs poles or posts that have had some mortise and tenon construction or notching out and housing of the roof timbers to allow the roof structure to be accommodated. The posts are nearly all missing on one side where there is no roof cladding. Bolts, which now appear rusted, and wire have been included in places to seemingly hold the roof structure together. Roof timbers have been milled and do not appear to be of substantial age (there is still some visual evidence of newer roofing timbers which may have been used as replacement members).

Other debris were noted in the vicinity of the shed such as various flooring and cladding timbers which may have been part of a former cottage or residence. All timbers to this cottage appeared to be milled and generally nails were noted as not being of handmade type. General household debris are scattered around, corrugated iron water tanks and roofing sheet, timber stump stands, bed springs and frames and other domestic paraphernalia (Lillian Cullen email to Ned Stephenson, Environment and Community Superintendent, Bulga Underground Operations Pty Ltd dated 24 September 2010).

In addition to the evidence of a former cottage or residence and the dilapidated hay shed discussed above (refer to **Plates 4.7** and **4.8**), timber built yards and a concrete slab were identified to the south of the hayshed and cottage site (refer to **Plates 4.9** and **4.10**). The concrete slab is likely to comprise the remains of a former small 'creamery' building; however no evidence of a former dairy building was identified. As such, the creamery building is unlikely to have had a commercial function but rather likely to have contained a hand-operated separator (held by the remnant timber post/stump, refer to **Plate 4.10**) designed to provide cream to make butter and cream for domestic use and supply skim milk to feed calves.

4.3.8 Sites PS1 to PS6

Sites PS1 to PS6 were originally identified during previous Aboriginal Cultural Heritage surveys of the BCC complex (refer to **Figure 4.1**). Based on comment from locals, it is understood that these sites/items are all likely associated with the former use of the area for sheep farming in the mid twentieth century. The farmers would likely have utilised the former house (PS6), sheds (PS 2-4) and yards (PS5) on a temporary basis when needed. The sites were inspected as part of the survey undertaken during the preparation of this report.



PLATE 4.9
BH16 yards, view to South-East



PLATE 4.10
BH16 concrete slab, view to East



PLATE 4.11
PS1 post-and-rail-and-wire fence line, view to North



PLATE 4.12
PS1 post-and-rail-and-wire fence line gate, view to East

4.3.8.1 PS1 – Post-and-Rail-and-Wire Fence

Site PS1 comprises an approximately 30 metre length of post-and-rail-and-wire fence with a lace wire fence addition and an associated iron gate (refer to **Plates 4.11** and **4.12**). Wire fence additions were commonly used to make an existing fence lamb proof.

A post-and-rail-and-wire fence is a common hybrid of post-and-rail fencing where wire substitutes one or more of the rails, making it a simpler and faster erection. The wires are run through holes in the posts. The primary advantage of using wire rather than timber rails is the cost and time savings.

Most farmers moved straight to post-and-wire fencing rather than post-and-rail-and-wire as adding a rail cost more, required a shorter panel length and gave the fence a shorter life. Many post-and-rail-and-wire fences survive relatively intact in the Hunter Valley region or have been converted to post-and wire (Pickard 2005 38-39).

4.3.8.2 PS2 – Dilapidated Shed

Site PS2 comprises a remnant former timber shed structure consisting of upright timber posts, collapsed timber posts, corrugated metal sheeting and machine made brick rubble (refer to **Plate 4.13**).

4.3.8.3 PS3 – Wooden Footings

Site PS3 comprises an approximately two by three metre rectangular area of timber post footings with remnant timber floor boards, likely the remains of a former one roomed shed or hut used as temporary accommodation or storage (refer to **Plate 4.14**).

Site PS3 is located approximately 30 metres to the west of PS2.

4.3.8.4 PS4 – Wooden Footings

Site PS4 comprises an approximately three by four metre rectangular area of timber post footings with isolated pieces of sheet metal and timber, likely the remains of a former one roomed shed or hut used as temporary accommodation or storage (refer to **Plate 4.15**).

Site PS4 is located approximately 50 metres to the west of PS2.

4.3.8.5 PS5 – Timber Yards

Site PS5 comprises an area of previously identified timber yards that have since been removed during works in the vicinity of the Vaux Pit.

Site PS5 is not considered further as part of this report.

4.3.8.6 PS6 – House Site and Sheds etc.

Site PS6 comprises the remains of a former house consisting of the remains of a small timber house including remnant timber footings, bearers/joists and floor boards and a remnant brick chimney), a corrugated metal outhouse, timber sheep yards and sheep dip, a concrete slab with concrete machine bases, loose corrugated metal sheeting and an earth loading ramp (refer to **Plates 4.16, 4.17** and **4.18**).



PLATE 4.13
PS2 shed remains, view to North-East



PLATE 4.14
PS3 timber footings, view to East



PLATE 4.15
PS4 timber footings, view to East



PLATE 4.16
PS6 former house site, view to South



PLATE 4.17
PS6 sheep dip, view to East



PLATE 4.18
PS6 concrete slab, view to South-East



PLATE 4.19
PS7 post-and-two rail fence, view to North-West



PLATE 4.20
PS8 circular post and rail fenced yard, view to North-West

4.3.8.7 PS7 – Post and Rail Fence

Site PS7 comprises an approximately 130 metre length of semi derelict post-and-two-rail-and-wire fence (refer to **Figure 4.1** and **Plate 4.19**). Only a few posts are standing and the majority of the rails have collapsed. Barbed wire appears to have been used in places to replace rails and three holes beneath the lower mortise indicate the likely addition of wire to the existing post-and-two-rail fence line.

4.3.9 PS8 – Former House Site

Site PS8 comprises a relatively level area located alongside Broke Road (between Broke Road and Nine Mile Creek) likely to have been a former house site (refer to **Figure 4.1**). The area is currently utilised as a core storage area by BCC with a number of in use modern colorbond storage sheds extant within a metal post and wire fenced area. Between the storage sheds and Broke Road an area of exotic plantings indicates the likely former location of the residence, since removed - likely during construction of the existing storage facility. To the west of the storage facility is evidence of timber yards and concrete slabs. The yards comprise a small circular area of derelict post-and-three-rail fencing, thought to have formerly been a break yard for horses, adjacent to an area of upright timber posts comprising a former post and wire fenced area (refer to **Plate 4.20**). Pepper trees, generally an indicator of an early rural property are also present in association with the yards. A small rectangular area of concrete slab indicates the location of a small dairy, or creamery building (note the the remnant timber post/stump to hold the separator) (refer to **Plate 4.21**). Also present in the area are fragments of metal sheeting, timber and occasional fragments of sandstock brick.

4.3.10 PS9 – Timber Stockyard

Site PS9 comprises an area of white painted timber yards adjacent to Broke Road (refer to **Figure 4.1** and **Plate 4.22**). The yards consist of post-and-three-rail fences; however the rails are bolted to the posts rather than being fitted into mortises. There is a loading ramp with a narrow concrete paver floored run leading to the ramp. Within a wider area of metal post and wire fencing (with lace wire additions indicating the area is likely associated with sheep farming) is an area of peppertrees (often used as feed), a small (three by two metre) rectangular concrete slab with associated timber post frame (likely a small shelter) and associated metal sheet fragments, timber and rubble (refer to **Plate 4.23**).

4.3.11 PS10 - Concrete Slabs/Vere Vineyard

Site PS10 comprises an area of former yards located off Broke Road. These yards were identified on the topographic map in the area of the current Bulga Coal Vere Vineyard (refer to **Figure 4.1**). The remaining evidence of the yards comprises two rectangular concrete slabs. One slab measures approximately two by four metres and has associated collapsed timber posts and scattered metal sheeting fragments (refer to **Plate 4.24**). The second slab measures approximately two by 2.5 metres with a potential burnt timber post/stump at one end (refer to **Plate 4.25**).

The building associated with the Vere Vineyard comprises a two storey semi derelict brick and fibrous cement sheeted structure with no apparent heritage value and is not considered further as part of this report (refer to **Plate 4.26**).



PLATE 4.21
PS8 former dairy or creamery building, view to South-West



PLATE 4.22
PS9 yards adjacent to Broke Road, view to North-West



PLATE 4.23
PS9 slab with timber frame, view to West



PLATE 4.24
PS10 concrete slab, view to North



PLATE 4.25
PS10 concrete slab, view to West



PLATE 4.26
Vere vineyard structure, view to South-East



PLATE 4.28
PS12 timber yard complex, view to North-West



PLATE 4.27
PS12 timber yard complex, view to South-South-East

4.3.12 PS11 – Former House Site

PS11 comprises an area identified as yards on the topographic map (refer to **Figure 4.1**). There were no remains evident on inspection of this area with the exception of occasional timber footings set in concrete, a pomegranate tree and a planting of olive trees. The area until recently had a mid twentieth century residence that has since been demolished (Barry Cox pers. comm.).

4.3.13 PS12 – Timber Yard Complex

Site PS12 comprises a complex of timber and metal constructed cattle yards which include a cattle crush, swinging gates, head bail, cattle race and loading ramp and yards (refer to **Figure 4.1** and **Plates 4.27** and **4.28**). The system of cattle crushes etc. comprises timber post and two rail fencing, however the mortises are not through mortises and many of the rails are bolted to the posts or fixed using wire. Both sawn and split posts and rails have been utilised in its construction. Metal rails, posts (made from metal pipes) and handles are used in the cattle crush and swing doors.

A large rectangular yard area adjacent to the system of cattle crushes etc. appears to have originally comprised of timber post-and two-rail-fencing.

Scattered machine made bricks with large envelope frogs and fragments of iron sheeting suggest a potential structure or shed associated with the yards was formerly present in the area. In addition, alongside the present track running adjacent to site PS12 there are occasional exotic plantings (fruit trees).

4.3.14 PS13 – Former Mine Shaft

Site PS13 comprises a small mine shaft measuring approximately 1.5 by 1.5 metres.

The mine shaft was identified during an Aboriginal Cultural Heritage survey conducted previously for BCC operations (refer to **Figure 4.1**). No 'relics' or artefacts were identified associated with the shaft, nor were there any indications of masonry or structural features/shoring with the exception of some fragments of corrugated metal sheeting.

The depth of the shaft was not able to be measured.

The mine shaft was not identified during the 2011 survey and may have been covered by the current BCC Bayswater Dump since its original identification.

As such Site PS13 is not considered further as part of this report.

4.3.15 PS14 – Yards alongside Charlton Road

A timber post and rail fenced sheep yard is located adjacent to the west side of Charlton Road within the section of road to be re-aligned (refer to **Figure 4.1** and **Plate 4.29**). The timber rails of the yard are either bolted to the posts or fixed the using wire. The posts and rails are all sawn rather than split and in places branches have been used rather than sawn rails.



PLATE 4.29
PS14 timber yards adjacent to Charlton Road, view to West



PLATE 4.30
PS15 cast iron picket fenced area, view to North



PLATE 4.31
PS15 cast iron picket fenced area within yards, view to West



PLATE 4.32
PS16 timber yards, view to West

4.3.16 PS15 – Yards

Site PS15 comprises an area of metal frame and timber built yards in the area of the proposed Eastern Emplacement Area and adjacent to an existing powerline easement. An approximately two by two metre area with cast iron picket fencing was identified adjacent to where the easement meets an existing track and gate, likely to protect a young tree (refer to **Plate 4.30**). This fencing was also utilised in the adjacent yards to fence off trees (refer to **Plate 4.31**). The fencing is typical of that utilised for grave surrounds and may have been taken from the near-by Broke cemetery.

4.3.17 PS16 – Yards

Site PS16 comprises the remains of a semi-derelict area of white painted timber yards, including some fencing, a loading ramp and gates (refer to **Figure 4.1** and **Plate 4.32**). The posts and rails are all sawn rather than split and the rails are bolted to the posts.

4.3.18 PS17 – Former Hut Site

Site PS17 comprises a small one room dwelling and associated infrastructure located at the eastern extent of the proposed water storage dam in the northeast portion of the Project area adjacent to a tributary of Nine Mile Creek (refer to **Figure 4.1**). The dwelling comprises a simple sawn timber framed single room clad in corrugated galvanised iron or with recycled timber doors (refer to **Plate 4.33**). The full length of the corrugated cabled roof extends across the single room (measuring approximately 5 by 2 metres) and an adjoining covered exterior area (measuring approximately five by two metres) and drains into a large corrugated iron tank at the rear of the structure. There is a corrugated iron clad chimney on the northern side of the building. The corrugated iron cladding used has the brand 'RedcliffeTrademark'. This brand of imported British corrugated iron was a cheaper version of the original Lysaght brand of corrugated iron (ORB) exported in large quantities to Australia from 1897. John Lysaght was established in Bristol and commenced manufacture of corrugated iron on 1857 (Warr 2000:3).

The former hut site is on land formerly owned by Archibald Mosman (refer to **Section 3.3.7**). However, the former hut site is unlikely to be associated with Mosman's ownership of the land but rather with the subdivision of many of the larger holdings in the area in the early 1900s.

Associated with the dwelling is a four metre long sawn timber hollowed out log likely used as a feed or water trough for cattle and horses (refer to **Plate 4.34**). The addition of a corrugated iron roof or shelter over the trough is unusual if the trough was utilised for horses or cattle as it would have made access difficult for the large animals.

Access to the former hut site is across a Corduroy crossing over the small creek (refer to **Plate 4.35**). The bank of the creek has been partially excavated to provide access across the corduroy crossing. Corduroy Roads and creek crossings were typically used as a solution to the problems posed by swampy land and as such are most likely to be found on or near damp, swampy or muddy ground. The technique of construction was to use logs of local hardwoods and lay them across the path of vehicular travel. The logs were typically either directly abutted next to each other or with gaps between them for drainage.



PLATE 4.33
PS17 former hut site, view to South-East



PLATE 4.34
PS17 former hut site timber trough, view to North-East



PLATE 4.35
PS17 former hut site corduroy crossing, view to North-West
(Scale = 1metre)



PLATE 4.36
PS18 post-and-two-rail fence, view to South-West

4.3.19 PS18 – Remnant Post-and-Two-Rail Fence Line

Site PS18 comprises an approximately 15 metre length of remnant post-and-two-rail fence line located within the existing transmission line easement to the east of BCC Bayswater Dump (refer to **Figure 4.1** and **Plate 4.36**). The fence line consists of a number of *in situ* posts and collapsed rails extending in a southwest orientation from a corner post and former gate location.

4.3.20 PS19 – Former Shed Site

Site PS19 comprises a dilapidated former timber shed structure consisting of upright timber posts, collapsed timber posts, corrugated metal sheeting and assorted rubble (refer to **Figure 4.1** and **Plate 4.37**).

4.3.21 Charlton Road

An approximately 8.5 kilometre section of Charlton Road runs alongside and within the western boundary of the Project area (refer to **Figure 4.1**). The alignment of Charlton Road follows Section 8 of the Great North Road; as identified in the Great North Road Conservation Plan (Lavelle 1999) (refer to **Figure 3.9**).

The 1999 Conservation Plan was prepared for the entire length of the Great North Road and divided the road into eight separate sections. Section 6 (from Wollombi to Broke) ended at Broke and the road then branched off to Patricks Plains as the eastern branch (Section 7) of the Great North Road from Broke to Patricks Plains (ending at Whittingham) and Warkworth as the western branch (Section 8) from Broke to Warkworth (present Charlton and Wallaby Scrub Roads). Section 7 is located outside (to the south and east of) the Project area (refer to **Figure 3.9**). Section 8 forms part of the western boundary of the Project area and is proposed to be partially re-aligned (refer to **Figure 4.1**). The 1999 CMP sub-divided the 8 Sections of the Great North Road into 39 Precincts in order to further investigate and detail individual items. No individual precincts or items were identified in Section 7. One precinct was identified in Section 8 with one individual item (refer to **Table 4.2**).

Table 4.2 – Great North Road Section 8 Precinct

Precinct	Precinct No.	Major Item
Monkey Place Creek	8.1.0	Abandoned Road Formation

Section 8 is now a sealed two lane road comprising the section of Paynes Crossing Road between Broke and Monkey Place Creek, Charlton Road and Wallaby Scrub Road. At Monkey Place Creek Broke Road diverges from Section 8 of the Great North Road and proceeds north towards Singleton while the Great North Road continues towards Warkworth as Charlton Road. The 1999 CMP identified a small section of abandoned formation surviving at Monkey Place Creek (Precinct 8.1.0), having been replaced by a higher level timber bridge to remove risk of submergence during floods (refer to **Plates 4.38** and **4.39**). The higher level timber bridge has since been replaced with a single span concrete bridge (Monkey Place Creek Millhole Bridge (refer to **Plate 4.40**). There is no evidence of a former bridge or remnant creek crossing/ford across Monkey Place Creek (refer to **Plate 4.41**).



PLATE 4.37
PS19 former shed site



PLATE 4.38
Section of abandoned Great North Road
at Monkey Place Creek, view to North-West



PLATE 4.39
Section of abandoned Great North Road crossing
Monkey Place Creek, view to North-West



PLATE 4.40
Current bridge spanning Monkey Place Creek, view to East



PLATE 4.41
View across former Monkey Place Creek crossing, view to North-West



PLATE 4.42
Six-pipe culvert under Charlton Road,
within realignment area, view to East



PLATE 4.43
Two-pipe culvert under Charlton Road,
within realignment area, view to East



PLATE 4.44
Single rectangular-pipe culvert under Charlton Road,
within realignment area, view to South-West

The CMP identified that with the relatively flat terrain little construction other than the clearing of the line of road is likely to have been necessary along Section 8 and no evidence of 'significant older structures were identified' (Lavelle 1999: Section 8 Inventory Sheet). All culverts were noted in the CMP as comprising modern concrete pipe structures.

Section 7 remains in use as the Broke to Cessnock Road to the south of the Project area before turning north as a partially un-surfaced road running through the Singleton Military Area. The track emerges to the north of the Military Area as Range Road and continues to Whittingham. The CMP identified that:

...minor parts of Section 7 of the Great North Road probably remain in use as current rural roads or tracks within the Army land. Due to the local topography, few elaborate structures were required and no precincts were identified (Lavelle 1998:Section Description Sheet).

The entire length of Charlton Road (Section 8) was inspected to confirm the potential for any evidence of earlier road formations or infrastructure potentially associated with the Great North Road alignment. The inspection confirmed all culverts comprised modern concrete pipe culverts ranging from large 6-pipe culverts to single rectangular pipe culverts (refer to **Plates 4.42, 4.43 and 4.44**). Note these photographs are taken from within realignment area). The single rectangular or double circular pipe culverts are the most common along the alignment of Charlton Road.

Surveyor General Major Thomas Mitchell preferred a 'straight line of road' to be constructed (refer to **Section 3.5.1**). **Plates 4.45 and 4.46** illustrate typical straight sections of Charlton Road within the Project area.

Several cuttings and embankments are present along the alignment; both in the section to be re-aligned and outside the section to be re-aligned (refer to **Plates 4.47 to 4.50**). Generally the location of a cutting and an embankment are adjacent to each other suggesting the fill from the area of cutting has been utilised to raise the adjacent area as needed.

The fencelines alongside Charlton Road are generally metal or timber post and wire fences. In places there are parallel running new and remnant older (post-and-two-rail) fencing. Two lengths of remnant post-and-rail fencing are located within area of proposed impact/realignment (refer **Plates 4.51, 4.52 and 4.53**).

Within the section to be realigned a timber post and rail fenced sheep yard (Site PS14) is located adjacent to the west side of the road (refer to **Section 4.3.14**, and **Plate 4.29**). The timber rails are either bolted to the posts or fixed the using wire. The posts and rails are all sawn rather than split and in places branches have been used rather than sawn rails.

A similar yard is present alongside Charlton Road outside, to the north of, the Project area. The level of Charlton Road appears to have been lowered in this area as the loading ramp associated with the yard sits on top of an area of cut approximately 1.5 metres above the current road level (refer to **Plate 4.54**).

Charlton Road has been extensively upgraded throughout its history (Dunne 2012:21). In the 1970s it is known to have been improved with the removal of small kinks in its alignment. It was also sealed as part of these improvements (Weir Phillips 2012:25). There is physical evidence of several layers of different bitumen road surfacing and there is evidence that some areas are likely to have been lowered/excavated to beneath any original level/surface that may have been present (for example in area of the yards discussed above).



PLATE 4.45
Typical straight section of road within area to be realigned, view to North



PLATE 4.46
Typical straight section of road outside (to North of) area to be realigned, view to North



PLATE 4.47
Area of cutting within area to be realigned, view to North



PLATE 4.48
Area of embankment within area to be realigned, view to South



PLATE 4.49
Area of embankment outside (to South of)
area to be realigned, view to North



PLATE 4.50
Area of cutting (to South of) area to be realigned, view to South



PLATE 4.51
Remnant post and rail fence line alongside Charlton Road
outside (to South of) area to be realigned, view to South



PLATE 4.52
Remnant post and rail fence line alongside Charlton Road
within area to be realigned, view to North



PLATE 4.53
Remnant post and rail fence line alongside Charlton Road within area to be aligned, view to South



PLATE 4.54
Yards alongside Charlton Road outside (to North of) the Project area, view to West



PLATE 4.55
Drain in centre of former Broke Airstrip alignment, view to West



PLATE 4.56
Culvert association with former Broke Airstrip, view to North towards forested area

4.3.22 Broke RAAF Landing Ground

The Broke landing strip was one of three satellite dispersal fields, the others being at Warkworth and Strowan (Jerry's Plains), of the parent RAAF Base Bulga commissioned, designed and constructed between March 1942 and mid 1943 (refer to **Section 3.7** and **Figure 3.13**).

The Broke airstrip and adjacent forested area where aircraft hideouts were planned to be located is located between Charlton Road and Broke Road in the south central portion of the Project area (refer to **Figure 4.1**). The airstrip and forested area was inspected during the site survey conducted during the preparation of this report. Previous mining activities have removed the eastern portion of the airstrip and encroached to the eastern boundary of the forested area (compare **Figures 3.18** and **3.20**). As a result less than half of the airstrip as shown on the 1952 aerial photograph (refer to **Figure 3.18**) survives.

Although the remaining length of airstrip has recently been ripped (approximately four years ago) and trees planted utilising direct seeding, its alignment is still evident on the ground (refer to **Plate 4.55**). Also present is evidence of a system of drains comprising a central drain running east to west along the centre of the former airstrip and north to south running drains and culverts along natural drainage lines (refer to **Plates 4.55, 4.56** and **4.57**). No evidence of any surface material was identified apart from an area of rubble fill around the grate shown in **Plate 4.55**.

Aerial photographs indicate that between 1952 and 1975 the forested area containing the hides was substantially cleared and has since regrown, likely impacting on any remnant evidence of the planned hideouts (compare **Figures 3.18** and **3.19**). Although the 1952 aerial indicates the locations of the hideouts, the locations are difficult to ascertain on the ground today. Several areas of relatively clear areas were identified with tree stumps cut at approximately 1000 to 1200 millimetres above the ground, grubbed out stumps and areas of relatively small creek bed gravels (refer **Plates 4.58** and **4.59**). The height of the stumps indicate that the trees were likely cut down by hand using a cross-cut saw rather than a chain saw which typically leaves lower stumps (Weir and Phillips 2007a:36). The stumps and semi-gravelled areas may indicate former areas planned as hideouts or that the areas were never fully cleared to form useable hideouts for the aircraft.

The satellite airstrip sites at Warkworth and Strowan are both still utilised as airstrips. The airstrip at Warkworth is functioning as the David Parker Airfield and is utilised by the Hunter Valley Gliding Club. The airstrip at Strowan is functioning as a private airstrip.

4.3.23 Broke Road

Broke Road runs through the Project area and is proposed to be re-aligned as part of the Project (refer to **Figure 4.1**).

The entire length of the section of Broke Road located within the Project area was inspected to confirm the potential for any evidence of earlier road formations or infrastructure. The inspection confirmed all culverts comprised modern concrete pipe culverts ranging from single concrete pipe culverts to the large rectangular concrete culverts at Nine Mile Creek (refer to **Plates 4.60** and **4.61**).



PLATE 4.57
Culvert running beneath former Broke Airstrip, view to South



PLATE 4.58
Area of cut tree stumps within forested area, view to West



PLATE 4.59
Cleared gravel area within forested area, view to South-West



PLATE 4.60
Single pipe culvert under Broke Road, view to West



PLATE 4.61
Bridge culvert over Nine Mile Creek, view to West



PLATE 4.62
Area of cutting along Broke Road, view to South



PLATE 4.63
Area of embankment along Broke Road, view to South



PLATE 4.64
BH2 fence posts along Charlton Road, view to South

Several areas of cuttings and embankment are present along the alignment, particularly at the southern end of Broke Road (refer to **Plates 4.62** and **4.63**). Generally the areas of cutting and embankment are adjacent to each other suggesting the fill from the area of cutting has been utilised to raise the adjacent area as needed.

The fencelines alongside Broke Road generally comprise metal or timber post and wire fences.

A portion of Broke Road has previously been re-aligned (refer to **Figure 4.1**). The earlier alignment was inspected, however no evidence of early road surfacing or associated infrastructure was identified.

4.4 Survey Results – Previously Identified Potential Historical Heritage Items within the Vicinity of the Project Area

The Project area associated with the preparation of the *Bulga Coal Continued Underground Operations: Historic Heritage Assessment* (Umwelt 2003) was larger than that of the current study for the Bulga Coal Optimisation Project. As a result a number of potential sites were identified during the 2003 study the locations of which fall outside the current Project area and will not be directly impacted by the Project (refer to **Figure 4.1**). These sites are briefly discussed below.

Table 4.3 – Previously Identified Potential Historical Heritage Items Identified within the Vicinity of the Project Area

Site/Item	Location	Co-ordinates (MGA)
BH2 – Fence posts	Charlton Road	319315E/6380954N
BH3 – Cement footings, bricks, artefacts	Charlton Road	319498E/6380270N
BH4 – Quarry	Fordwich Road, Broke	318743E/6378821N
BH7 – McNamara’s Dairy Cottage	Broke Road, Broke	321326E/6377485N
BH10 – Ruins of Homestead and Orchard	South of Monkey Place Creek	323305E/6376440N
BH13 – Stone wall	Near Broke Road	321857E/6377402N

4.4.1 BH2 – Fence Posts

Site BH2 was identified during the 2003 survey (refer to **Figure 4.1**). The 2003 assessment described BH2 as:

This site comprised four through mortised split posts for post and rail fencing (Umwelt 2003:5.1).

Remnants of site BH2 were identified during the 2011 site survey (refer to **Plate 4.64**).

Site BH2 is outside the Project area adjacent to the west boundary of the Project area, on the western side of Charlton Road to the south of the proposed section of road to be re-aligned, and will not be directly affected by the Project.

As such, Site BH2 is not considered further as part of this report.

4.4.2 BH3 – Cement Footings, Bricks, Artefacts

Site BH3 was identified in 2003 from the topographic map as a *ruin* and inspected during the 2003 survey (refer to **Figure 4.1**). The 2003 assessment described BH3 as:

...cement footings and bricks together with a scatter of large and small artefacts including a metal bathtub and part of a 1920/30 car body.

The footings did not appear to be *in situ* and may have been dragged or pushed from some distance away. The site most likely represents demolition rubble from a former homestead site (Umwelt 2003:5.1).

The cement footings were not identified during the 2011 survey and are likely to have been removed since the 2003 survey.

The former location of Site BH3 is outside the Project area adjacent to the west boundary of the Project area, on the western side of Charlton Road, in an area that will not be subject to any direct impacts.

As such, Site BH3 is not considered further as part of this report.

4.4.3 BH4 – Quarry

Site BH4 was identified during the 2003 survey on private property on the eastern side of Fordwich Road (refer to **Figure 4.1**). The quarry site is located approximately 400 metres to the east of the former Blaxland Homestead site, now the site of Monkey Place Farm on the Fordwich Estate Vineyard.

The quarry is thought to be a clay pit to produce the bricks for the construction of Blaxland's House (Site BH5 - refer to **Section 4.4.2**).

This site is outside the Project area and will not be directly impacted by the Project.

As such, Site BH4 is not considered further as part of this report.

4.4.4 BH7 – McNamara's Dairy Cottage

Site BH7 was identified during the 2003 survey (refer to **Figure 4.1**). The 2003 assessment described BH7 as being:

...located approximately 400 metres east of Broke Road and approximately 350 metres north of Monkey Place Creek on the southern side of a low ridgeline. It falls within the Bulga Complex but outside the proposed continued operations. The site is known as McNamara's Dairy Cottage and was identified in the European Heritage study undertaken by ERM Mitchell McCotter in 2000 where it is described as:

Located on a property locally known as McNamara's Dairy, the cottage is vacant and has fallen into disrepair.

Site inspection revealed that although it is still standing and roofed, much of the timber flooring is decayed and signs of weathering are evident in the brickwork. The site is in an advanced state of disrepair. According to local knowledge, Payton's Flour Mill, constructed in 1859, was located on the opposite side of Monkey Place Creek and it is possible that the hand pressed bricks used in the dairy cottage were fired at the flour mill. Using architectural features, ERM Mitchell McCotter (2000) have dated the cottage to the period c1840- c1890.

Site BH7 is located outside the southern boundary of the Project area at the junction of Charlton and Broke Roads. The structure is signposted as a Bulga Coal Heritage site and a fence has been erected around the building. The structure is in an advance state of disrepair (refer to **Plates 4.65** and **4.66**).

4.4.5 BH10 – Ruins of Homestead and Orchard

Site BH10 was identified during the 2003 survey (refer to **Figure 4.1**). The 2003 assessment described BH10 as being:

...located on the southern side of a ridge and comprised remnant trees of a former orchard along with sheets of rounded corrugated iron and five upright posts over one metre in height, the purpose of which is unclear. The site is located on land originally granted to Blaxland and is most likely to comprise the residue of the orchard and attendant(s) established by Blaxland as a component of the farming undertaking based around Murinbin House (J. Blaxland pers comm).

This site is located outside, to the south of the Project area and will not be directly impacted by the Project.

As such, Site BH10 is not considered further as part of this report.

4.4.6 BH13 – Stone wall alongside Monkey Place Creek

Site BH13 was identified during the 2003 survey on the northern bank of Monkey Place Creek (refer to **Figure 4.1**). The 2003 assessment described BH13 as being:

...located approximately 350 metres to the south-east of BH7 and the two sites are almost certainly associated. It comprised a dry stone wall approximately 80 metres in length located approximately 600 metres east of Broke Road. ERMMM (2000) reported that the wall was a nominal 1.3 metres in height and cut into the creek slope about 10 metres from the present creek line. It is constructed of locally found stone of varying sizes. ERMMM (2000) reports that the wall appears to be a retaining structure for a roadway or track about 5.5 metres wide that follows an east-west orientation. Two fence posts remain along the top of the wall and a 22 metre section of the wall has collapsed due to erosion.

The construction of the dry stone wall is most likely the result of the availability of local stone following the ploughing and cultivation of surrounding fields for dairy cattle. It is unlikely that this road is associated with the Great North Road although it may have been constructed for access to it. Its construction most likely dates to that of either the dairy or the flour mill.

An archival record of site BH13 has subsequently been prepared as a baseline for future monitoring as part of *Historic Heritage Archival Recording Study: Bulga Coal Continued Operations – Sites BH9, BH11 and BH13* (Umwelt 2005a) (refer to **Section 6.3.2**).

The 2005 Archival Recording Study further described the wall as having been:

...built to retain a section of cut and fill roadway...material evidence indicated that the wall had originally been 128 metres in length but owing to a 26.5 metre section of collapse was now separated into two sections, the eastern section being 80 metres in length and the western section 22.4 metres in length. The wall was a consistent height of between 1.2 metres and 1.4 metres in the eastern precinct but tapered off gradually according to the landform at the western extremity (Umwelt 2005a:11).



PLATE 4.65
BH7 McNamara's Dairy Cottage, view to North-East



PLATE 4.66
BH7 McNamara's Dairy Cottage, view to West



PLATE 4.67
BH13 Stone Wall alongside Monkey Place Creek, view to West
(Scale = 1 metre)



PLATE 4.68
BH13 Stone Wall alongside Monkey Place Creek, view to South
(Scale = 1 metre)

The report assessed the wall to be in good condition and interpreted the wall as possibly having:

...initially followed a track established by the local settlers and, in this light it is possible that this formation represents a section of original road constructed by convict road gangs in the mid 1830s (Umwelt 2005a:12).

The report suggests that the site may have links with the construction of the Great North Road.

Site BH13 was inspected during the 2011 survey and does not appear to have deteriorated since the 2003 or 2005 survey (refer to **Plates 4.67** and **4.68**).

This site is located outside, immediately to the south of the Project area and will not be directly impacted by the Project.

4.4.7 Singleton Military Area

A number of sites have been identified from GIS data supplied by the Department of Defence (received on 21/10/2011) outside (to the immediate east of) the Project area within the Singleton Military Area (refer to **Figure 4.1**). Access to the Singleton Military Area was provided on 23 April 2012 and the sites identified from Department of Defence GIS data ground truthed. All but one of the potential sites within the Singleton Military Area, including the listed Murinbin House Complex (refer to **Section 4.6.1**) are outside the Project area. One of the sites listed as 'European Homestead' is located on the Project area boundary (refer to **Figure 4.1**). None of these sites are subject to any form of direct impact. A number of these sites are likely related to the former Vere Township and include the former sites of buildings such as public schools, a blacksmith's shop and a former Roman Catholic Church (refer to **Figure 4.2** showing the 1891 Vere Parish Map indicating the locations of some of these sites). Any potential remains associated with these sites comprise sub surface archaeological remains or at best ruins of former structures and would not be affected by the Project.

4.5 Listed Heritage Items within Vicinity of the Project Area

As discussed in **Section 1.2**, several heritage items with a statutory listing are located outside, but within the vicinity of, the Project area (refer to **Figure 4.3**). These items are listed in **Table 4.4**.

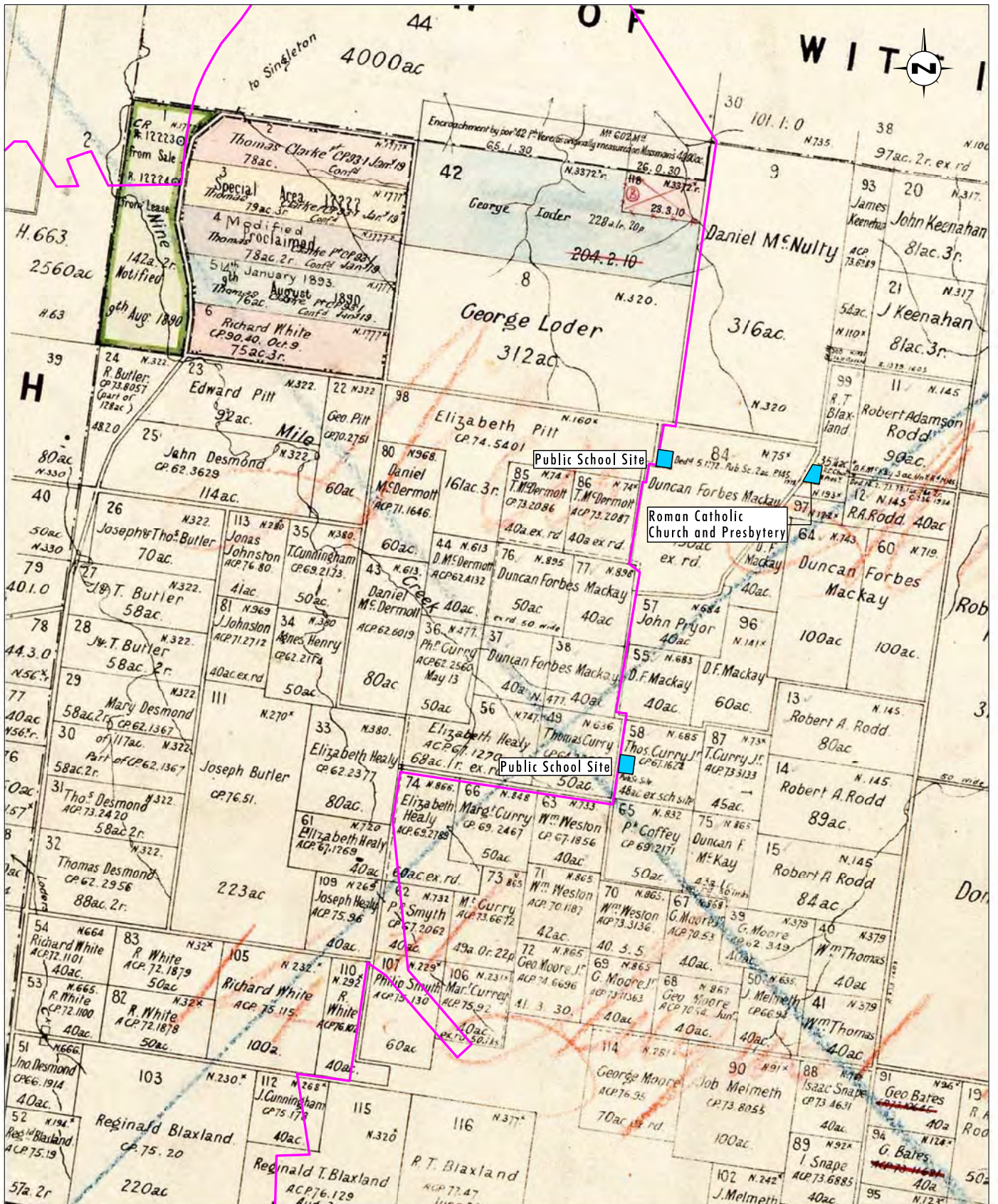
Table 4.4 – Listed Heritage Items Located within Proximity of the Project Area

Item Name	Location	Coordinates (MGA)	Listing
Blaxland House (Site BH5)	Fordwich Road, Broke	318743E/6378821N	Singleton LEP – local significance
General Cemetery (Site BH6)	Broke	320619E/6377545N	Singleton LEP – regional significance
'Charlton' (Site BH14)	Cobcroft Road, Bulga	316564E/6382152N	Singleton LEP – local significance

Table 4.4 – Listed Heritage Items Located within Proximity of the Project Area (cont.)

Item Name	Location	Coordinates (MGA)	Listing
Murinbin House Group	Broke Road, Broke	325009E/6376090N	Register of the National Estate (RNE) – Interim List Commonwealth Heritage List Defence Heritage Register
St. Andrews Anglican Church	Wollombi Road, Broke	322063E/6375412N	Singleton LEP – local significance. RNE – indicative place
War Memorial	Singleton Road, Broke	322500E/6374827N	Singleton LEP – local significance
Maria Immaculate R.C. Church	Broke	322152E/6375211N	Singleton LEP – local significance
Albert Hall	Broke Road, Broke	324512E/6375480N	Singleton LEP – local significance
Mount Leonard Estate Homestead	Broke Whittingham Rd, Broke	326229E/6375253N	RNE – Indicative Place
War memorial Gates	Inlet Road, Bulga	314296E/6385401N	Singleton LEP – local significance
'Mt Leonard' Homestead	Putty Road, Bulga	315463E/6384101N	Singleton LEP – local significance
Mt. Leonards Public School (now Scout Hall)	Putty Road, Bulga	314859E/6385011N	Singleton LEP – local significance
Bulga Bridge over Wollombi Brook	Main Road 213, Bulga NSW	314227E/6385588N	Australian Heritage Places Inventory SHR RMS Section 170 Register
'Milbrodale' Estate	Putty Road, Milbrodale	313216E/6381376N	Singleton LEP – local significance RNE – Indicative Place
Brick Farm House	Jerry's Plains Road, Mt. Thorley	322003E/6389816N	Singleton LEP – local significance
'Minimbah' and Outbuildings	Broke Road, Whittingham	330100E/6388724N	Singleton LEP – state significance RNE – Registered Australian Heritage Places Inventory

The heritage items identified in **Table 4.4** are not within the Project area and are not predicted to be directly impacted by the Project. However their management may still need to be considered, particularly in relation to blasting practices (refer to **Section 6.3**). Several of these items are in close proximity to the western boundary of the Project area (including Blaxland House - Site BH5, General Cemetery - Site BH6 and 'Charlton' - Site BH14) and have previously been identified as part of the 2003 assessment for Bulga Coal Continued Underground Operations (Umwelt 2003). These sites are briefly discussed below.



Source: Land and Property Information (1999)

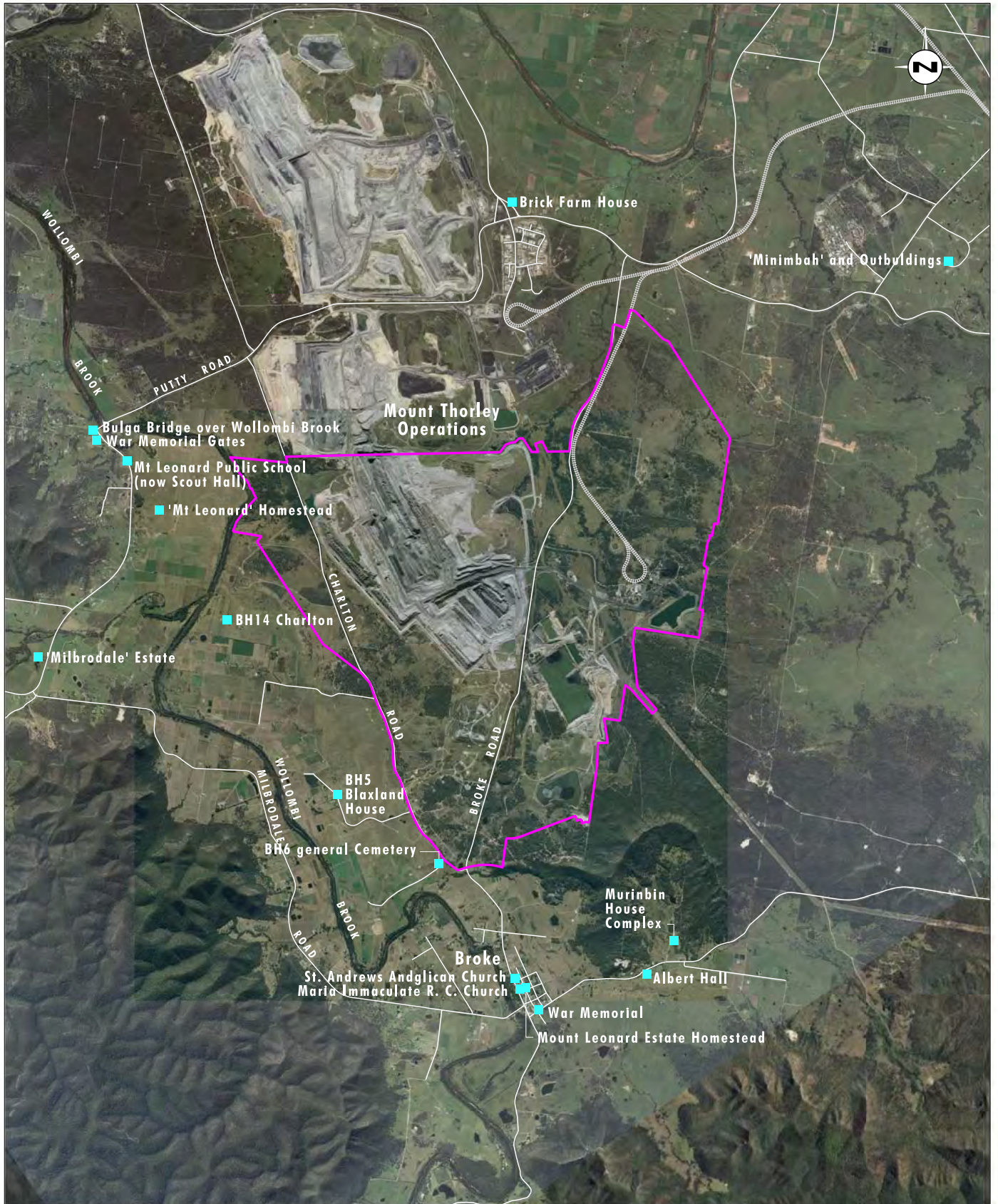
0 0.5 1.0 1.5km
1:30 000

Legend

Approximate Location of Project Area

FIGURE 4.2

Detail of 1891 Vere Parish Map



Source: AAM Pty Limited (March 2012), Xstrata Coal (NSW) Pty Ltd

0 1.0 2.5 5.0km
1:100 000

Legend

- Project Area
- Listed Heritage Item

FIGURE 4.3

Listed Heritage Items Within Proximity of the Project Area

4.5.1 Blaxland House (Site BH5)

Site BH5 is likely the site of the former Blaxland Homestead (refer to **Section 3.3.1** and **Figure 4.3**).

Blaxland House is listed on the Singleton LEP (1996) Schedule 3 Heritage items Part 3 Items classified as being of local significance.

The site was not inspected as it is located on private property and is outside the Project area.

The house and its outbuildings are documented as being demolished in 1939 with a line of peppertrees being the only visible remains of the site today (refer to **Section 3.3.1**).

Any potential remains associated with Blaxland House would likely be sub surface archaeological remains and would not be affected by the Project.

4.5.2 Broke General Cemetery (Site BH6)

Site BH6 comprises the Broke Cemetery located on the corner of Charlton and Butler Road, adjacent to the west boundary of the Project area (refer to **Figure 4.3**).

Broke General Cemetery is listed on the Singleton LEP (1996) Schedule 3 Heritage items Part 2 Items classified as being of regional significance. The cemetery contains monuments dating from 1844 and is well maintained.

This site is outside the Project area and will not be directly affected by the Project.

4.5.3 Charlton (Site BH14)

Charlton is listed on the Singleton LEP (1996) Schedule 3 Heritage items Part 3 Items classified as being of local significance.

The site was not inspected as it is located on private property.

In 1857 John Frederick Cobcroft built a homestead he called Charlton utilising sandstone blocks quarried on the property. By the 1920s James Younie Russell owned the homestead block and had established a dairy there. The old homestead building is reported as being destroyed by fire sometime between 1897 and 1920. In 1926 by the Russell family rebuilt the homestead which is extant approximately two kilometres to the west of the Project area boundary (refer to **Section 3.3.6** and **Figure 4.3**).

This site is outside the Project area and will not be directly affected by the Project.

4.5.4 Murinbin House Group

Murinbin House Group is listed on the Commonwealth Heritage List, the Register of the National Estate and the Defence Heritage Register.

The Murinbin House Group is located approximately 3 kilometres to the south-east of the Project area boundary (refer to **Figure 4.3**) and will not be directly affected by the Project.

The house group was not inspected during the preparation of this report. The listing comprises the Murinbin House Precinct, the Dam and landmark plantings. The House Precinct includes the mid to late nineteenth century house, a Blacksmith's shop, an early twentieth century timber framed barn, carpenters shop, tack room creamery building, cattle yards and assorted sheds (AHD Place ID 105642).

The Murinbin House Group is subject to a Conservation Management Plan (CMP) prepared for the Department of Defence by Suters Architects (*Conservation Management Plan, Murinbin House, Singleton Training Area 2000*).

4.6 Potential Other Sites/Items

4.6.1 Fence Lines and Rural Infrastructure

Rural fences have been built by landholders in NSW since first settlement in 1788. Fences were constructed to mark boundaries, exclude or enclose stock and to facilitate management. They can provide insights into the sequence of land settlement, the development of technology and legislation, environmental changes and the hopes and aspirations of settlers in the Hunter region (Pickard 2009:3). Nineteenth century land legislation in NSW required the fencing of conditional purchase and conditional leases. The post and rail fence is the most iconic of rural NSW fences, however it was expensive and required skill to construct. The use of wire in fencing came about as a way of saving costs (longer panels could be used resulting in fewer posts), as well as being a simpler and faster method of construction.

Based on knowledge of the past use of the land, there may be as yet unidentified evidence of fencing and other rural infrastructure within the Project area. However, any additional, as yet unidentified, fencing and other rural infrastructure that may be present within the Project area is likely to be similar to those items identified within the Project area and already described in this section and are therefore not considered to change the impact assessment findings and management strategy outlined in **Section 6.0**.

4.7 Summary of Historical, Archaeological and Physical Contexts

The potential heritage resource of the Project area generally reflects the documented history of the surrounding region (discussed in **Section 3.0**) which indicates that the land has predominantly been utilised by graziers, agriculturalists and in recent times the mining industry. The potential historical heritage resource of the area generally reflects its history as cleared agricultural and pastoral land and the importance of dairying as a land use. The resource, with the exception of Charlton Road and the Broke airstrip, is considered to be typical of the surrounding region.

The historical heritage evidence of the Project area demonstrates the documented pattern of settlement and use from the early to mid nineteenth century, including its settlement by Europeans and subsequent use of the land for pastoral and agricultural activities. Sheep and cattle grazing were undertaken across the Project area supplemented by agricultural activities with the cultivation of crops. Evidence of former house sites, sheds, yards and other rural structures demonstrate the pattern of land use and historical development of the area. Extant fence lines indicate the enclosing of the landscape to make paddocks and are typical of fences found throughout the Hunter Valley and rural NSW. Farm dams are of some importance as sources of fresh water for dairy cattle and their location relative to fences can help understand how the landscape was used for dairying.

The Great North Road was constructed to provide an overland route between the areas of Windsor and Richmond and the Hunter Valley which was rapidly developing into an important area in the growing Colony's economy. The Great North Road was designed as a road system to serve the entire Hunter Valley. It was one of three 'great roads' designed to draw the Colony together and represented 'a victory over harsh terrain and held out a promise for future prosperity' (Weir Phillips 2012:25). Along with Wallaby Scrub Road, present Charlton Road comprises Section 8 (the final section) of the Great North Road. Only the line of the road survives as there is no surviving fabric that demonstrates colonial engineering, road building or links to historical figures or the convict experience (Weir Phillips 2012:57). However, Charlton Road is one of a number of roads within the Hunter Valley that have remained in use since the early to mid nineteenth century (Weir Phillips 2012:63).

The Bulga Airfield and its associated satellite airstrips at Broke, Warkworth and Strowan were planned and constructed between 1942 and 1943 as part of an elaborate defence system centred on the use of aerial defence to repel sea and airborne attack (Weir Phillips 2007a:42). However, these sites were likely never used for war related activities. A portion of the Broke airstrip and the forested area planned to be used for hideouts are present within the Project area, demonstrating the effort taken to defend Australia from attack during World War II.

On the basis of the historical context and the history of land ownership, any improvements to the Project area would likely have been effected from the early to mid nineteenth century. These improvements were likely initially for sheep management with modifications to provide for cattle management. The general unsuitability of the Hunter for intensive sheep-raising, by comparison with large animals, was being recognised in the early twentieth century although sheep continued to be raised in the vicinity for perhaps another fifty years.

Any additional, as yet unidentified, heritage items that may be present within the Project area are likely to be similar to those items identified within the Project area and described in this section.

The significance of the potential heritage sites/items identified within the Project area and described in this section, is assessed in **Section 5.0** of this report. The impact of the Project on these items and recommended management strategies to address any heritage impacts is discussed in **Section 6.0**.

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5.0 Significance

5.1 Introduction

An assessment of significance is undertaken to explain why a particular place is important and to enable appropriate site management to be determined. In accordance with the Director General's Requirements for the Project, this section comprises a significance assessment of the historic heritage items (including Charlton Road) within the Project area.

The Australian ICOMOS *Burra Charter* 1999 (the *Burra Charter*) defines cultural significance as meaning 'aesthetic, historic, scientific or social value for past, present or future generations' (Article 1.2). The *Burra Charter* was written to explain the basic principles and procedures that should be followed in looking after important places. Cultural significance is defined as being present in the 'fabric, setting, use, associations, meanings, records, related places and related objects'. The fabric of a place refers to its physical material and can include built elements, sub surface remains and natural material (Australia ICOMOS 2000).

5.2 Basis of Assessment

The *NSW Heritage Manual (1996)*, published by the then NSW Heritage Office and Department of Urban Affairs and Planning, sets out a detailed process for conducting assessments of heritage significance. The manual provides a set of specific criteria for assessing the significance of an item, including guidelines for inclusion and exclusion.

The seven criteria defined by the Heritage Branch, OEH, and used by the NSW Heritage Council as an assessment format within NSW are outlined below:

- Criterion (a)** an item is important in the course, or pattern, of NSW's cultural or natural history;
- Criterion (b)** an item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history;
- Criterion (c)** an item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW;
- Criterion (d)** an item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons;
- Criterion (e)** an item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history;
- Criterion (f)** an item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history; and
- Criterion (g)** an item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places or cultural or natural environments.

The following significance assessment is based upon the above seven criteria.

As a component of the holistic concept of significance, archaeological significance has been described as a measure by which a site may contribute knowledge, not available from other sources, to current research themes in historical archaeology and related disciplines (Bickford and Sullivan, 1984 19-26). Archaeology is concerned with material evidence and the archaeological record may provide information not available from other sources. An archaeological study focuses on the identification and interpretation of material evidence to explain how and where people lived, what they did and the events that influenced their lives.

Considerations material to the study of the archaeology include:

- whether a site, or the fabric contained within a site, contributes knowledge or has the potential to do so. If it does, the availability of comparative sites and the extent of the historical record should be considered in assessing the strategies that are appropriate for the management of the site; and
- the degree and level at which material evidence contributes knowledge in terms of 'current research themes in historical archaeology and related disciplines'.

Following Bickford and Sullivan's work on archaeological significance (1984, 19-26) the following questions can be used as a guide to assessing the significance of an archaeological site:

- Can the site contribute knowledge that no other resource can?
- Can the site contribute knowledge that no other site can?
- Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

The Heritage Council of NSW recognises four levels of significance for heritage in NSW: Local, State, National and World. An item has local heritage significance when it is important to the local area. An item has state heritage significance when it is important in NSW. Most heritage in NSW is of local significance.

The significance of the Project area as a whole is considered in the Statement of Cultural Significance in **Section 5.4**.

5.3 Significance of the Heritage Items/Sites within the Project Area

5.3.1 Statement of Significance

The potential and known heritage sites/items located within the Project area (refer to **Section 4.0**) are assessed in **Table 5.1** below.

Table 5.1 – Statement of Significance

Heritage Branch Standard Criteria	Statement of Significance
<p>Criterion (a) Historical</p>	<p>While the Project area has the potential to demonstrate the pattern of land use and development from its early exploration and settlement from the early to mid nineteenth century (including its settlement by Europeans and the subsequent clearing of the land for pastoral and agricultural activities through to its exploitation for coal resources) the area is unlikely to contain historical archaeological remains associated with this development history.</p> <p>There may be potential for evidence of early road surfacing to Charlton Road or evidence of the airstrip surfacing and hides, however this would likely be ephemeral and sensitive to disturbance resulting from subsequent use and development.</p> <p>Any other archaeological evidence associated with the use and development of the area (such as for grazing, agriculture and land clearing) is likely to be patchy at best, and it would be impossible to specify what such remains may entail and where they would be located.</p> <p>Evidence of extant rural buildings/structures (both standing and derelict), fencing and other rural infrastructure demonstrate the pattern of land use and historical development of the area. Remnant concrete slab floors are likely associated with former dairy farms. By the late nineteenth century dairy farming had become an important industry in the Upper Hunter.</p> <p>Broke Landing Ground</p> <p>Broke Landing Ground has historical significance derived from an understanding of its ability, as one of the three satellite airfields of RAAF Base Bulga, to demonstrate Australian defence works following the threat of Japanese invasion.</p> <p>This significance lies predominantly with the existing documented records as with the exception of the airstrip there are no known World War II period structures remaining.</p> <p>Charlton Road</p> <p>Charlton Road has historical significance from the fact that it forms part of the Great North Road. The Great North Road is significant for what it reveals about surveying, engineering and road building in the Colony in the early nineteenth century, about colonial aspirations and about the convict system. However, historical records for the Charlton Road section of the Great North Road are less complete than those for earlier sections and it has none of the physical evidence of convict road construction which coupled with the historical documentation, are the principle reasons why other sections of the road are considered to be significant (Weir Philips 2012:58-59).</p> <p>In general, with the exception of the Broke Landing Ground and the Charlton Road section of the Great North Road, the potential heritage items/sites present within the Project area are unlikely to provide information not already known from the historical record.</p>

Table 5.1 – Statement of Significance (cont.)

Heritage Branch Standard Criteria	Statement of Significance
<p>Criterion (b) Associative</p>	<p>The Project area has associations with several prominent personalities and families in the region (including John Blaxland and family, the Rodd family, the Reverend Richard Hill, the Cobcroft family and Archibald Mosman (refer to Section 3.0).</p> <p>However, while the Project area has this associative significance due to its land tenure history, the potential heritage sites/items identified within the Project area are unlikely to provide evidence of these associations.</p> <p>Note this report does not consider any Aboriginal historic associations with the Project area, refer to the Aboriginal Cultural Heritage Assessment for the Project (Connect for Effect, 2012) for consideration of any such associations or connections.</p> <p>Broke Landing Ground</p> <p>World War II sites in general have associative significance with those that served at the site, however, there is no evidence that RAAF personnel ever served at Broke Landing Ground or its parent site RAAF Base Bulga.</p> <p>Charlton Road</p> <p>Although Charlton Road has associations with Surveyor General Major Thomas Mitchell, other surveyors and convict road gangs in relation to the planning and constructing of the Great North Road (associations shared with many roads surveyed and constructed during the early nineteenth century), it does not demonstrate this criterion to the extent that other sections of the road do.</p> <p>As with other sections of the Great North Road, Charlton Road demonstrates Mitchell's passion for finding the shortest route. However it is not unique in this respect and is a less forceful demonstration than those sections where engineering works were required to achieve it. Documentary records are the only evidence that link Charlton Road to the convict gangs and it may have been cleared by private contract rather than the convict gangs (Weir Philips 2012:59-60).</p> <p>The Project area is not known to have any other associations of particular significance.</p>

Table 5.1 – Statement of Significance (cont.)

Heritage Branch Standard Criteria	Statement of Significance
<p>Criterion (c) Aesthetic</p>	<p>The potential heritage sites/items identified within the Project area do not generally demonstrate distinctive aesthetic qualities or technical innovations, other than those typical of buildings and features found in rural areas characterised by rural landholdings, native bushland and primary industries including agriculture, forestry and extractive industries.</p> <p>The Project area may demonstrate some aesthetic significance as a rural landscape through the creation of a pastoral landscape via the clearing of the native vegetation and construction of fences.</p> <p>The rural infrastructure present throughout the Project area portrays construction techniques common in the Hunter Region from a limited range of materials, principally timber and it may have some aesthetic significance in the context of the surrounding landscape, however there are many other similar and better examples of rural infrastructure in the Hunter area.</p> <p>In general, any buildings extant on the Project area are representative of a range of farm and residential buildings potentially dating from the mid nineteenth century. They may be considered to have some aesthetic qualities arising from their simple unadorned construction from a limited palette of materials, principally timber or as ruins within a rural landscape.</p> <p>Former hut site PS17 has some aesthetic qualities in that it demonstrates local vernacular construction in relation to the small dwelling, trough and corduroy crossing.</p> <p>Broke Landing Ground</p> <p>The former Broke Landing Ground does not meet this criterion.</p> <p>Charlton Road</p> <p>The Charlton Road section of the Great North Road does not contain any of the engineering structures, significant view corridors or landmark qualities present along other sections of the road, which are recognised as illustrating outstanding examples of colonial technology and innovation.</p> <p>The road now passes through a different landscape from the time of its construction – one which has been cleared and now mined (Weir Phillips 2012.60).</p>

Table 5.1 – Statement of Significance (cont.)

Heritage Branch Standard Criteria	Statement of Significance
<p>Criterion (d) Social</p>	<p>The Project area demonstrates the pattern of settlement and development in the area from the early to mid nineteenth century, and is typical of a large rural landscape within the wider regional area. In general, it would be considered unlikely that the Project area would have a strong association with any previous or contemporary community or group (see separate discussion relating to Broke Landing Ground and Charlton Road below).</p> <p>Accordingly, in general the potential heritage sites/items identified within the Project area do not meet this criterion.</p> <p>Note this report does not consider any Aboriginal social, cultural or spiritual associations with the Project area, refer to the Aboriginal Cultural Heritage Assessment for the Project (Connect for Effect, 2012) for consideration of any such associations with both traditional and modern Aboriginal ways of life.</p> <p>Broke Landing Ground</p> <p>World War II sites in general have associative significance with those that served at the site and people who served in the war may still live in the area and have a concern regarding the future of such sites. However, there is no evidence that RAAF personnel ever served at Broke Landing Ground or its parent site RAAF Base Bulga.</p> <p>The former Broke Landing Ground is unlikely to meet this criterion.</p> <p>Charlton Road</p> <p>Charlton Road has significance for the Charlton Trail Inc, whose specific area of interest is the entire length of the Great North Road. This association draws support from a wide range of groups, including government and council bodies and local history groups.</p> <p>The potential significance of Charlton Road has been raised by community members in response to its proposed relocation/realignment.</p>

Table 5.1 – Statement of Significance (cont.)

Heritage Branch Standard Criteria	Statement of Significance
<p>Criterion (e) Scientific</p>	<p>There are unlikely to be any intact archaeological remains associated with the nineteenth and twentieth century development and occupation of the Project area. A high degree of intactness in the archaeological resource is necessary before a substantive contribution can be made to the research potential and hence, the ability of the archaeological resource to answer research questions for the site. Generally any archaeological remains that may be present would be unlikely to have any research potential and would at best provide only a minor contribution to the significance of the area.</p> <p>Evidence of clearing would support the known history of clearing in the area and is unlikely to provide any additional information to that already known for the area.</p> <p>General evidence of rural buildings/structures (both standing and derelict), concrete slabs, yards, roads, tracks and rural fences etc. demonstrate the pattern of land use and historical development of the area and could provide information about how the landscape was used and changed during its use as pastoral land. However, in general as individual items they have little research potential.</p> <p>In general, the known and potential historical heritage items extant on site are typical of the area as a large rural landscape and are unlikely to provide further unknown information regarding the history and development of the area.</p> <p>Broke Landing Ground</p> <p>Broke Landing Ground is unlikely to yield substantial new or further archaeological or scientific information and as such has little archaeological or research potential. Documentary evidence, including plans, would provide the best understanding of the site rather than its physical and archaeological evidence.</p> <p>Charlton Road</p> <p>While the Great North Road, and in particular certain sections of the road, contains rare examples of colonial engineering and convict construction, the Charlton Road section is unlikely to provide information not available from other sections or the already documented resource. There is limited potential for earlier road surfaces and associated evidence of filling etc to be present beneath the current surface. However, the original road may have consisted of a dirt surface which is sensitive to later disturbances and would typically leave little evidence of its existence.</p> <p>The ability of the road to demonstrate Mitchells' passion for straight lines is shared by other sections of the road.</p>

Table 5.1 – Statement of Significance (cont.)

Heritage Branch Standard Criteria	Statement of Significance
<p>Criterion (f) Rarity</p>	<p>The potential heritage sites/items identified within the Project area, including any extant structures, are typical of structures and other sites/items typically found within rural landscapes such as that of the Project area and are unlikely to meet this criteria.</p> <p>The potential heritage resources associated with the Project area are not associated with an unusual or remarkable aspect of the region's history. Although any heritage resource within the Project area is part of an ever decreasing resource, in general the resource does not meet this criteria.</p> <p>Broke Landing Ground</p> <p>There are many former RAAF sites in NSW capable of demonstrating Australian defence strategies and works from World War II. The Hunter region has 15 known aerodromes that date to this time. The Broke Landing Ground is one of three landing grounds associated with the parent site of RAAF Base Bulga. The other two airstrips (Strowan and Warkworth) are still functioning as airstrips.</p> <p>The former Broke Landing Ground does not meet this criterion.</p> <p>Charlton Road</p> <p>The Great North Road was one of three primary routes used to access inland NSW from Sydney. The other two routes, the Great Western Highway and the Hume Highway have maintained their significance through their continued use today while the Great North Road became less important as a transport link. The fact that Charlton Road follows the line of an early road is not rare (Weir Phillips 2012:62).</p>
<p>Criterion (g) Representativeness</p>	<p>The potential heritage sites/items identified within the Project area are representative of the structures items/sites typically found in a rural landscape with a history of pastoral and agricultural activities and the exploitation of timber and mineral resources.</p> <p>Broke Landing Ground</p> <p>The Broke Landing Ground is representative of a World War II RAAF satellite airstrip in terms of runway construction and potential hideout locations.</p> <p>Charlton Road</p> <p>Charlton road is representative of the branch lines of the Great North Road constructed when there were neither the resources nor the political will to ensure construction was of a high standard. Its line across the relatively flat terrain did not require the engineering other sections did to achieve a straight line (Weir Phillips 2012.62).</p>

5.3.2 Archaeological Significance

Archaeological significance is directly linked to the archaeological (or scientific) research potential of an archaeological site or resource. An archaeological site broadly comprises below ground physical evidence of building foundations, occupation/archaeological deposits, features and artefacts (Heritage Office and DUAP, 1996b:2). In general no potential historical archaeological resource has been identified within the Project area, with the exception of potential remains associated with Charlton Road and the Broke Landing Ground. As a result, the three questions derived from Bickford and Sullivan's work on archaeological significance (discussed in **Section 5.2**) have only been further considered in relation to Charlton Road and the Broke Landing Ground.

Can the site contribute knowledge that no other site can?

It is considered unlikely for any substantial intact archaeological remains to be present within the Project area. If uncovered, evidence of the fabric and form of the Charlton Road section of the Great North Road, including former road surfacing or construction techniques (including cuttings and embankments), are unlikely to provide insight into aspects of the history of construction not available from other sections of the Great North Road. However, although any such remains are unlikely to be exposed during the proposed works and any remains present are likely to have been disturbed, the re-alignment of Charlton Road does present an opportunity to archaeologically investigate this final section of the Great North Road.

There is potential for drains associated with the airstrip to be exposed during proposed works which may provide insight into aspects of construction and drainage associated with World War II airstrips not yet recorded from other sites.

Can the site contribute knowledge that no other resource can?

Detailed documentary evidence is available from National Archives of Australia in relation to RAAF World War II sites. This evidence may include the technical manuals with guidelines on works associated with RAAF World War II sites and evidence of maintenance checks which were regularly carried out including consideration of surfaces of landing areas, hard surfaced runways, taxiways and hanger aprons, drains, boundary markers and wind indicators and fences. Any archaeological evidence uncovered could confirm and potentially add to the documentary evidence by filling potential gaps in the historical documentation.

Although there is much already documented regarding the Great North Road evidence of the fabric and form of the Charlton Road section of the early road may be uncovered during any archaeological investigation of the Charlton Road section.

Is this knowledge relevant to general questions about human history or other substantive questions relating to Australian history, or does it contribute to other major research questions?

While it is unlikely for any intact archaeological remains to be present, with the exception of drains associated with Broke Landing ground, there may be an opportunity for an early alignment of the Great North Road and aspects of RAAF works during World War II to reveal aspects of the past through the material remains present on site. If present this archaeological resource may also be suitable for comparative analysis with other similar sites in New South Wales.

5.4 Condition and Integrity of Sites within the Project Area

This section addresses matters that combine with the assessment of significance to allow a formal Heritage Impact Statement to be appropriately validated. The condition and integrity of sites/items is considered as part of the assessment of heritage significance.

A heritage item is said to have integrity if its fabric is still largely intact. In general the condition of the potential historical heritage resource of the Project area is in a poor physical condition represented by standing ruins and ruins of former rural structures and rural infrastructure with very little intact fabric.

There is very little original fabric associated with the Broke airstrip, or of any associated facilities. Its integrity has been compromised by the removal of over half of the airstrip during previous mining and ongoing agricultural land clearing activities have resulted in further removal of and impact to any original fabric that may have previously existed (compare **Figure 3.17** with **3.19**). Paths to and locations of the hideouts are not evident. There is some uncertainty that the hideouts in the wooded area adjacent to the airstrip were ever completed.

Charlton Road shares none of the integrity of other sections of the Great North Road which demonstrate preserved evidence of convict construction – a surviving feature resulting from the fact that the road was less important as a transport link than other roads (for example the Great Western Highway and the Hume Highway) which in turn meant that sections of the Great North Road were bypassed and hence preserved today. Charlton Road follows the line of a section of the Great North Road however there is no extant fabric associated with the early alignment evident today.

5.5 Re-evaluation of Previous Significance Assessments

A number of potential heritage sites assessed in the *Historic Heritage Assessment for Bulga Coal Continued Underground Operations* (Umwelt 2003) as being of Local or 'at best local significance have, where relevant, been re-evaluated in terms of their heritage significance and hence their management with respect to the current Project.

5.5.1 Site BH1 Fence Posts

Site BH1 is located within the Project area and will be impacted as a result of the construction of the proposed noise and visual bund. BH1 has previously been assessed as being of local significance (Umwelt 2003). However, the two isolated fence posts are considered to be typical of timber fence posts used in the construction of post and rail fences and yards in the Hunter region and other rural areas. While the post and rail fence is the most iconic of rural NSW fences there are considered to be many other more intact surviving examples within the area. Site BH1 is not considered likely to provide any information not already known from the historical record and is not thought to have any archaeological research potential. As such Site BH1 has been re-evaluated as having no heritage significance.

5.5.2 Site BH12 Fence Posts

Site BH12 is located within the Project area and will be impacted as part of the works associated with the proposed East Pit. The site comprises two *in situ* fence posts and has been signposted as a Heritage Site in accordance with Condition 42 of the current underground ground consent conditions (refer to **Section 6.2.4**). BH12 has previously been assessed as being of 'at best Local' significance (Umwelt 2003:6.5). However, the fence posts are considered to be typical of timber fence posts used in the construction of post and rail fences and yards in the Hunter region and other rural areas. While the post and rail fence is the most iconic of rural NSW fences there are considered to be many other more intact surviving examples within the area. Site BH12 is not considered likely to provide any information not already known from the historical record and is not thought to have any archaeological research potential. As such Site BH12 has been re-evaluated as having no heritage significance.

5.5.3 Site BH15 Fence Posts and Yards

Site BH15 is located within the Project area to the west of the proposed new alignment of Charlton Road and is not proposed to be impacted as a result of the Project. The site comprises 'isolated through-morticed fence posts and further fence posts located to the north and northwest, possibly the residual remains of yards' (Umwelt 2003:5.4). BH15 has previously been assessed as being of Local significance (Umwelt 2003:6.5). However, the isolated fence posts are considered to be typical of timber fence posts used in the construction of post and rail fences and yards in the Hunter region and other rural areas. While the post and rail fence is the most iconic of rural NSW fences there are considered to be many other more intact surviving examples within the area. Site BH15 is not considered likely to provide any information not already known from the historical record and is not thought to have any archaeological research potential. As such Site BH15 has been re-evaluated as having no heritage significance.

5.6 Summary Statement of Significance

The Project area is typical of a rural landscape within the Upper Hunter region of NSW. The history of the area from the early to mid nineteenth century, including its settlement by Europeans and subsequent use as cleared pastoral and agricultural land through to its exploitation for mineral resources is reflected in the low potential of the archaeological resource and in the evidence of former house sites and other rural structures and infrastructure.

In general terms, with the exception of former hut site PS17, Charlton Road and the former Broke Landing Ground, the identified and potential heritage components of the Project area have been assessed as having no significance with no research potential. The alignment of Broke Road has not been assessed as being of significance. It is unlikely to provide information not already known from the historical record regarding the history and development of the area. There is unlikely to be any evidence of earlier road surfaces, which are particularly sensitive to later activity and disturbance.

Former hut site PS17 has been assessed as being of local significance as a relatively intact small dwelling site with some aesthetic qualities that demonstrates local vernacular construction in relation to the small dwelling, trough and corduroy crossing.

The former Broke Landing Ground was one of three satellite dispersal fields of the parent RAAF Base Bulga. Satellite airfields or aerodromes were constructed to alleviate congestion at parent aerodromes and had a meaningful role in RAAF operations during the war by being ancillary to parent aerodromes (Brew 2001: 40 and 48). The other two satellite dispersal fields, Strowan and Warkworth, still function today as airstrips. In *Thematic Study of World War II Aerodromes and Associated Structures in NSW* (2001) Brew identifies that smaller non active sites like the satellite airstrips should be considered to be of Local significance (Brew 2001:48). While sharing in the historical significance of the Bulga RAAF Base in demonstrating the war reaching Australia and the effort to defend Australia from attack by the Japanese during World War II, the former Broke Landing Ground is considered to be of local significance rather than the State or National significance that may be afforded RAAF Base Bulga and other more intact examples of RAAF Bases that demonstrate the full range of RAAF works including barracks, mess and recreational facilities and hangars (for example RAAF Bases Darwin and Townsville). The historical understanding of the place is derived predominantly from the documented record rather than any physical remains on the site (Weir and Phillips 2007(b):11). No artefacts associated with its use during the period of World War II were identified on site.

The *Heritage Assessment Charlton Road Singleton Shire New South Wales* prepared by Weir Phillips (2012) assessed the heritage significance of Charlton Road as follows:

Charlton Road, Singleton Shire, New South Wales derives historic significance as part of the Great North Road, which was planned and constructed between 1825 and 1836. This road, one of three great lines of road planned during the early colonial period, was designed to link the significant agricultural areas of the Hawkesbury River and the Lower and Upper Hunter Valleys to Richmond-Windsor and hence to Sydney. Charlton Road also has local historic significance as one of a number of roads within the Upper Hunter Valley that have remained in use since the early to mid nineteenth century.

Charlton Road has minor significance within the hierarchy of sections of the road making up the Great North Road because it contains none of the engineering structures and has few of the associated documentary records that make other sections of the road exceptionally significant for what they can reveal about the convict system, surveying, engineering and road building in New South Wales in the 1820s and 1830s. Additionally, the road passes through country that has changed significantly since it was constructed. The road is a late branch of the Great North Road, and, while representative of the type of work carried out towards the end of the construction of the road, at a time when the enthusiasm and resources available were in decline, it does not exemplify the spirit of triumph that characterised the early phases of planning and construction of the road. The road is representative of Surveyor General Sir Thomas Mitchell's scientific approach to surveying and his passion for identifying the ideal, preferably straight, line of road. This approach is demonstrated by many sections along the road and particularly by those sections that required significant engineering works to achieve.

Charlton Road has social significance for the Convict Trail Inc. because it is part of the Great North Road and for locals with an interest in Hunter Valley history (Weir Phillips 2012:63).

Any additional, as yet unidentified, potential heritage sites/items that may be present within the Project area are likely to comprise of evidence of former rural structures and infrastructure. If present, these are likely to be typical of those found throughout the Hunter Valley and rural NSW and of no or at best local significance.

6.0 Heritage Impact Statement and Management Strategy

This section provides a heritage impact statement and management strategy for the heritage sites/items within and where relevant within the vicinity of the Project area. The heritage impact statement identifies the potential impacts from the Project on all known and potential heritage sites/items identified within, and where relevant within the vicinity of, the Project area. The impacts are assessed against the significance of the respective elements.

6.1 Bulga Coal Complex Project

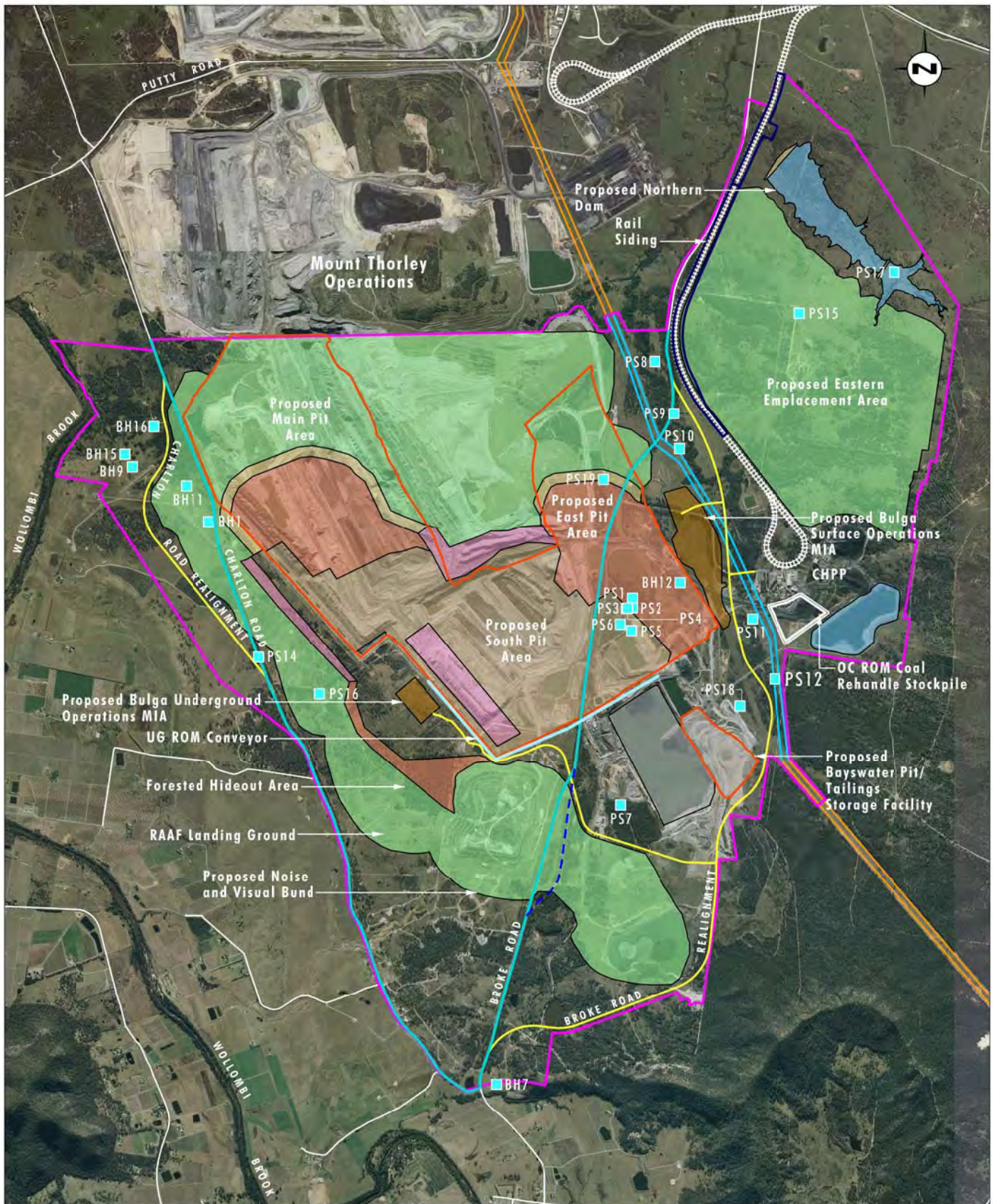
As outlined in **Section 2.0** and illustrated on **Figures 2.1** and **6.1**, the proposed Project includes:

- three pit areas, located largely within the existing open cut pit disturbance areas;
- two out of pit overburden emplacement areas designed to minimise noise, visual and other amenity impacts associated with the Project;
- some minor upgrades to the existing CHPP;
- a new open cut mine infrastructure area (MIA) and a new underground MIA;
- construction and operation of a rail siding adjacent to the existing rail alignment to park trains waiting to be loaded;
- development of a new tailings storage facility;
- enlargement of ROM and product coal stockpile areas;
- realignment of sections of Broke Road and Charlton Road;
- relocation of two 330 kV, a 66 kV and an 11 kV transmission lines;
- relocation of the Broke Fordwich PID water pipeline and Singleton Council Broke Potable water supply pipeline;
- construction of a new water storage and discharge dam forming part of the BCC's mine water management system; and
- construction of new boundary fence between BCC and SMTA and associated boundary road realignment.

6.2 Potential Impact to Identified Sites within the Project Area and Management Strategies

This section addresses the potential impacts resulting from the Project to each of the site/items identified within the Project area and proposes a management strategy to mitigate any impacts.

Figure 6.1 shows the current mine plan in relation to the locations of the identified heritage sites/items within the Project area.



Source: AAM Pty Limited (March 2012), Xstrata Coal (NSW) Pty Ltd

0 1 2 2.75km
1:55 000

Legend

- | | | |
|--|-------------------------------------|--|
| Project Area | Proposed Haul Road Bridge | Water Storage Dams |
| Coal Extraction Area | Active Pit/Mining | Tailings Dam |
| Existing 330kV Transmission Line | Active Overburden | Potential and Known Heritage Sites/Items |
| Proposed 330kV Transmission Line Realignment | Shaped not Seeded | Former Alignment of Broke Road |
| Proposed Road Realignments | Rehabilitation | |
| Railway Line | Temporary Rehabilitation/Stabilised | |

FIGURE 6.1

Location of Sites/Items
within the Project Area

6.2.1 BH1 – Fence Posts

Heritage Impact Statement

Site/item BH1 is located within the Project area and will be impacted as a result of the construction of the proposed noise and visual bund (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

Following the re-evaluation of the significance assessment for site BH1, this site has been assessed as having no significance and no research potential (refer to **Section 5.5.1**).

Recommendation

As a result of the re-evaluation of its significance (refer to **Section 5.5.1**), no further heritage management of site BH1 is required for the Project.

6.2.2 BH9 – Dump Site

Heritage Impact Statement

Site/item BH9 is located within the Project area to the west of the proposed new alignment of Charlton Road but is not proposed be impacted as a result of the Project (refer to **Figure 6.1**). However, Site BH9 has been considered in this section as a result of its association with Site BH11, as identified in the 2003 assessment.

BH9 has previously been assessed as being of ‘at best Local’ significance (Umwelt 2003:6.5).

Previous Recommended Management

The 2003 *Historic Heritage Assessment for Bulga Coal Continued Underground Operations* recommended that ‘further site investigation and archival recording be carried out’ at BH9 including the application for an excavation permit pursuant to Section 140 of the *Heritage Act 1977* if any subsurface excavation was proposed.

Consequently Condition 41 of Schedule 4 of the Bulga underground coal mine development consent (DA 376-8-2003) required that:

The Applicant shall investigate and prepare an archival record of heritage sites BH9 and BH11 in accordance with the requirements of the NSW Heritage Office, and to the satisfaction of the Director-General.

Previous Management

In accordance with Condition 41 of Schedule 4 of the Bulga underground coal mine development consent (DA 376-8-2003) site BH9 was included as part of *Historic Heritage Archival Recording Study: Bulga Coal Continued Operations – Sites BH9, BH11 and BH13* (Umwelt 2005a).

As part of this report the significance of BH9 was reconsidered and the site recognised as having ‘no significant heritage value’ (Umwelt 2005a:12).

Recommendation

No further heritage management of site BH9 is required for the Project.

However, it is recommended that the demolition rubble (which includes asbestos sheeting) is removed as is considered to comprise an OH&S risk if left in its current location.

6.2.3 BH11 – Former Farmstead Site Including Dairy and Yards

Heritage Impact Statement

Site/item BH11 is located within the Project area and will be impacted as a result of the construction of the proposed noise and visual bund (refer to **Figure 6.1**).

BH11 has previously been assessed as being of local significance (Umwelt 2003).

Previous Recommended Management

The 2003 *Historic Heritage Assessment for Bulga Coal Continued Underground Operations* recommended that 'further site investigation and archival recording be carried out' at BH11 including the application for an excavation permit pursuant to Section 140 of the *Heritage Act 1977* if any subsurface excavation was proposed.

Consequently Condition 41 of Schedule 4 of the Bulga underground coal mine development consent (DA 376-8-2003) required that:

The Applicant shall investigate and prepare an archival record of heritage sites BH9 and BH11 in accordance with the requirements of the NSW Heritage Office, and to the satisfaction of the Director-General.

Previous Management

In accordance with Condition 41 of Schedule 4 of the Bulga underground coal mine development consent (DA 376-8-2003) an archival record of site BH11 has been prepared as part of *Historic Heritage Archival Recording Study: Bulga Coal Continued Operations – Sites BH9, BH11 and BH13* (Umwelt 2005a).

Recommendation

No further heritage management of site BH11 is required for the Project as it has been archivally recorded (Umwelt 2005a) in accordance with previous consent conditions.

6.2.4 BH12 – Fence Line

Heritage Impact Statement

Site/item BH12 is located within the Project area and will be impacted as part of the works associated with the proposed East Pit Area (refer to **Figure 6.1**).

Following the re-evaluation of the significance assessment for site BH1, this site has been assessed as having no significance and no research potential (refer to **Section 5.5.2**).

Previous Recommended Management

The 2003 *Historic Heritage Assessment for Bulga Coal Continued Underground Operations* recommended that 'the area be flagged and signposted as a heritage area to avoid accidental destruction'.

Subsequently Condition 42 was included as part of the current underground ground consent conditions (DA 376-8-2003) stating:

The Applicant shall...
(b) mark BH12 to prevent accidental damage

Previous Management

BH12 has been signposted as a Heritage Site.

Recommendation

As a result of the re-evaluation of its significance (refer to **Section 5.5.2**), no further heritage management of site BH12 is required for the Project.

6.2.5 BH15 – Fence Posts and Yards

Heritage Impact Statement

Site BH15 is located within the Project area to the west of the proposed new alignment of Charlton Road but is not proposed be impacted as a result of the Project (refer to **Figure 6.1**). Site BH15 has been incorporated into the proposed Conservation Agreement (CA) area (currently being discussed between BCM and OEH) and signposted as a 'Heritage Site'.

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

The site should be retained in the landscape as it is not proposed to be impacted, however it could be removed without further assessment if required in the future.

No further management of site BH15 is required for the Project.

6.2.6 BH16 – House Site

Heritage Impact Statement

Site/item BH16 is located within the Project area to the west of the proposed new alignment of Charlton Road but is not proposed be impacted as a result of the Project (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Previous Recommended Management

BH 16 has previously been inspected by Lillian Cullen (Singleton Council Heritage Advisor) who recommended the site be:

...retained in the landscape for as long as possible. The structure is not considered to be of great age or significance. Better, more intact examples of farm sheds and barns are still evident in the Singleton area. This hay barn is considered to be in a dilapidated condition. The area should be fenced off to prevent entry by personnel or visitors.

Previous Management

The area of the shed and former cottage has been fenced and signposted as a Heritage Site.

Recommendation

No further management of site BH16 is required for the Project. The site should be retained in the landscape unless required to be removed as a result of being an OH&S risk.

6.2.7 Sites PS1 to PS6 Former House Site, Sheds and Yards

Heritage Impact Statement

Sites/items PS1 to PS6 are located within the Project area and will be impacted as part of the works associated with the proposed East and South Pit Areas (refer to **Figure 6.1**).

These sites have been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

These sites have been assessed as having no significance and no research potential.

Recommendation

No further management of sites PS1 to PS6 is required for the Project.

6.2.8 PS7 – Post and Rail Fence

Heritage Impact Statement

Site/item PS7 is located within the Project area but is not proposed be impacted as a result of the Project (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

The site should be retained in the landscape as it is not proposed to be impacted, however it could be removed without further assessment if required in the future.

No further management of site PS7 is required for the Project.

6.2.9 PS8 – Former House Site

Heritage Impact Statement

Site/item PS8 is located within the Project area but is not proposed be impacted as a result of the Project (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

The site should be retained in the landscape as it is not proposed to be impacted, however it could be removed without further assessment if required in the future.

No further management of site PS8 is required for the Project.

6.2.10 PS9 – Timber Stockyard

Heritage Impact Statement

Site/item PS9 is located within the Project area may be impacted as a result of works associated with the relocation of Broke Road (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

It is recommended that this site be retained in the landscape for as long as possible. However, if required, can be removed as part of the Project.

No further management of site PS9 is required for the Project.

6.2.11 PS10 – Concrete Slabs/Vere Vineyard

Heritage Impact Statement

Site/item PS10 is located within the Project area and is likely to be impacted as a result of the relocation of the 330 kV transmission line (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

No further management of site PS10 is required for the Project.

6.2.12 PS11 – Former House Site

Heritage Impact Statement

Site/item PS11 is located within the Project area and is likely to be impacted as a result of the relocation of the 330 kV transmission line and other mine related infrastructure including construction of a haul road bridge (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

No further management of site PS11 is required for the Project.

6.2.13 PS12 – Timber Yard Complex

Heritage Impact Statement

Site/item PS12 is located within the Project area and is likely to be impacted as a result of works associated with the relocation of the 330kV transmission line (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

It is recommended that this site be retained in the landscape for as long as possible. However, if required, can be removed as part of the Project.

No further management of site PS12 is required for the Project.

6.2.14 PS14 – Yards alongside Charlton Road

Heritage Impact Statement

Site/item PS14 is located within the Project area and is likely to be impacted during the re-alignment of Charlton Road and the construction of the proposed noise and visual bund (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

It is recommended that this site be retained in the landscape for as long as possible. However, if required, can be removed as part of the Project.

No further management of site PS14 is required for the Project.

6.2.15 PS15 – Yards

Heritage Impact Statement

Site/item PS15 is located within the Project area and will be impacted as a result of the proposed Eastern Emplacement Area (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

It is recommended that this site be retained in the landscape for as long as possible. However, it can be removed as part of the Project.

No further management of site PS15 is required for the Project.

6.2.16 PS16 – Yards

Heritage Impact Statement

Site/item PS16 is located within the Project area and will be impacted as a result of the construction of the proposed noise and visual bund (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

It is recommended that this site be retained in the landscape for as long as possible. However, it can be removed as part of the Project.

No further management of site PS16 is required for the Project.

6.2.17 PS17 – Former Hut Site

Heritage Impact Statement

Site/item PS17 is located within the Project area and is likely to be impacted as a result of the construction and use of a new water storage dam in the northeast portion of the Project area (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having local significance and low research potential.

Recommendation

It is recommended that this site be retained in the landscape for as long as possible prior to impact. However, it can be removed as part of the Project.

Given that this site is proposed to be impacted this report (and the photographic record included as **Appendix B**) is considered to be a sufficient record of the site.

Any potential additional associated features that are identified during any works in the area should be managed in accordance with Section 146 of the *Heritage Act 1977* (NSW) (refer to **Section 6.4**).

6.2.18 PS18 – Post-and-Rail-Fence Line

Heritage Impact Statement

Site/item PS18 is located within the Project area but is not proposed be impacted as a result of the Project (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

The site should be retained in the landscape as it is not proposed to be impacted, however it could be removed without further assessment if required in the future.

No further management of site PS18 is required for the Project.

6.2.19 PS19 – Former Shed Site

Heritage Impact Statement

Site/item PS19 is located within the Project area and will be impacted as part of the works associated with the proposed East Pit Area (refer to **Figure 6.1**).

This site has been recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

No further management of site PS19 is required for the Project.

6.2.20 Charlton Road

Heritage Impact Statement

Charlton Road is located along the western boundary of the Project area. A four kilometre section of Charlton Road is proposed to be realigned in order to construct a noise and visual bund around the southern and western perimeters of the open cut pit to act as a visual screen and to reduce noise impacts for residents to the south and west (refer to **Figure 6.1**). The relocated road will be designed in consultation with Singleton Council to meet appropriate standards. The alignment will add approximately 400 metres to the length of the road.

The primary purpose of the noise and visual bund is to limit noise and visual impacts from the Project. The need for an effective noise and visual bund, the alignment of Charlton Road, an area of Warkworth-sands Woodland Endangered Ecological Community (EEC) in the northwest of the Project area and resource extraction objectives were considered during the design of the bund. Various alternate designs of bund were considered in order to minimise the impact on the road and retain the existing road alignment in addition to avoiding impacts to Warkworth-sands Woodland EEC. However, it was not possible to have an effective noise and visual bund and retain the full existing alignment of the road. Therefore, it is proposed to realign an approximately 4 kilometres long section of Charlton Road.

In order to minimise the impact on the Warkworth-sands Woodland community and the alignment of Charlton Road, and yet maintain the effectiveness of the noise bunding (including the minimal footprint necessary to build an effective bund and construct the necessary water management infrastructure), a section of Charlton road will require realigning and a small area of Warkworth-sands Woodland will be removed as a result of the Project to allow the bund to minimise noise and visual impacts.

The entire length of Charlton Road has been inspected and recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

A separate Heritage Assessment of Charlton Road (Weir Phillips 2012, refer to **Appendix A**) has been prepared assessing Charlton Road as being of local significance and identifying that:

- the road never functioned as the primary route to the north;
- the road does not contain significant fabric or engineering works and has been extensively upgraded and resurfaced throughout its history; and
- is not a unique demonstration of Mitchell's obsession with the 'perfect line' and is a less forceful demonstration than many other lines of road.

The 2012 report concluded that:

Deviating a 4km section of the road will thus have a minimal and acceptable impact on the local significance of the road and on the Great North Road as a whole (Weir Phillips 2012:60).

Although proposed to be partially re-aligned, Charlton Road will retain its functionality as a road and all features of the existing Charlton Road (for example straight sections of road, areas of cutting/embankments and cattle yards/fencing located adjacent to the road) evident within the section to be re-aligned are also present along sections of the road that will remain *in situ* and not be impacted.

It is understood that the removal of the Noise and Visual Bund following completion of the Project and the re-instatement of Charlton Road has been considered by BBC. However, after due consideration, while theoretically feasible, this was deemed not to be practical as it would negatively impact on the visual landscape created by the Noise and Visual Bund and the works required to reinstate the road would have unacceptable noise and amenity impacts on the nearby Bulga community as well as adding significantly to the cost of the Project. It is considered by BCM that the proposed mitigation measures provide an overall better outcome considering all of these factors.

Recommendation

The mitigation and management recommendations for Charlton Road (being a branch of the Great North Road) detailed below have been formulated following considerable consultation with the Convict Trail Project (refer to **Section 6.5**). BCM will commit to the implementation of a long term program of mitigation and management measures which has been prepared in respect to the cultural significance of Charlton Road and to assist in mitigating the impacts of the Project. As such BCM will commit \$100,000.00 to develop and implement an interpretation plan for Charlton Road.

Charlton Road/Great North Road Commitments

Working Group

BCM propose to establish a working group which will consist of (where the opportunity to be part of the group is taken up) BCM, the Convict Trail Project, OEH, Singleton Council and a community representative. The interpretation plan will be developed in consultation with the working group. The mechanisms for consultation will be agreed upon by the working group.

Archaeological Survey and Investigation

The proposed realignment of a section of Charlton Road provides an opportunity to undertake further historical and archaeological investigation of this section of the Great North Road to identify if any significant remnant fabric associated with its construction, surfacing or use survives as an archaeological resource. These works will be undertaken in addition to BCM's financial contribution to develop and implement the interpretation plan.

Prior to commencement of Charlton Road re-alignment works the Convict Trail Project (should they elect to be involved) and a suitably qualified archaeologist will undertake a survey on either side (in the form of field walking along transects) of the section of Charlton Road proposed to be realigned. The intent of this survey will be to confirm the absence, or identify the presence, of evidence of early road formations or infrastructure potentially associated with the Great North Road alignment that would then be further investigated as part of the proposed archaeological investigation.

BCM will undertake an on-site archaeological investigation for the section of Charlton Road proposed to be impacted, following the opening of the new alignment. The Convict Trail Project will be provided with the opportunity to be involved in all aspects of the onsite investigative works. The investigations will comprise (subject to consultation with the working group) monitored machine excavation (followed by hand excavation as required) of a number of trenches at suitable locations along the road (for example in areas of embankment) as identified in the archaeological survey. All archaeological excavation/investigation work will be undertaken to normal professional standards, in accordance with a Heritage Branch, OEH endorsed archaeological work method statement.

The results of any archaeological survey and investigation will be incorporated into the development of an interpretation plan. The results of any historical and archaeological investigation undertaken in relation to the proposed relocation of Wallaby Scrub Road (the northern portion of Section 8 of the Great North Road, refer to **Figure 3.9**) as part of the approved Warkworth Extension Project should also be considered when undertaking any archaeological investigation of Charlton Road or the development of an interpretation plan, if they are publically available at that time.

Interpretation Plan

An interpretation plan will be developed in consultation with the working group to ensure an understanding of the significance of Charlton Road and its importance in the wider context of the Great North Road is maintained. The intent of the interpretation plan is to maintain in some manner an acknowledgement of the 'line' of the Great North Road for intergenerational equity. BCM will commit to the enactment of the plan, during the life of the Project and will revise and update the interpretation plan in consultation with, and as determined appropriate by, the working group.

The interpretation plan should communicate the significance of the Charlton Road. It should explain its uses, associations and meanings in relation to both its Aboriginal and historical cultural heritage. Ultimately the interpretation plan should engage the community to assist them to understand the history and importance of the road and its setting, highlighting cultural values and heritage significance in a way that the general community who may utilise the road can identify with.

The plan will provide a conceptual framework for the interpretation of the realigned section of Charlton Road and guidance for the implementation of the plan. BCM have carefully considered the feasibility of a range of options to acknowledge the 'line' of the Great North Road. There are significant challenges and constraints to establishing a physical representation of the original alignment of the Great North Road over the Noise and Visual Bund both during mining and following closure of the mine. These constraints include those associated with engineering and government standards for trafficable roads and walking trails, the gradient of the slope of the bund, water management infrastructure located on the bund, the rehabilitation of the bund and the location of endangered ecological communities. As such, in addition to the commitment of \$100,000.00 to develop and implement an Interpretation Plan, BCM propose to plant a line of trees along the bund on each side of the alignment of Charlton Road as a visual representation of the former line of road. The trees used are proposed to be of a different species from the other trees and plantings utilised during the rehabilitation of the noise and visual bund in order to clearly delineate the former line of road.

In addition to the visual representation discussed above, the financial contribution of \$100,000.00 will be able to be used to develop, through the interpretation plan, further interpretation options as determined by the working group. At least part of this financial contribution will be used to interpret the Charlton Road section of the Great North Road proposed to be impacted by the Project. This could potentially include interpretive signage or historical markers to be located at the point that Charlton Road is deviated away from its current line around the noise and visual bund. The funds could also be used as part of other Great North Road conservation projects, as determined by the working group.

Long Term Management

The long term ownership and maintenance of any interpretation facilities, following closure of the mine, will also be considered by the working group.

Heritage Awareness Training

The working group will develop induction slides in relation to the heritage values of Charlton Road and the Great North Road for inclusion in applicable site environmental training packages.

Table 6.1 summarises the intended program of mitigation and management measures; identifying the desired actions and the timing of the implementation of these actions.

Table 6.1 – Program of Charlton Road Mitigation and Management Measures

Action	Timing
Ongoing consultation with the Convict Trial Project, OEH and Singleton Council and the establishment of a working group.	Year one of the Project and ongoing as determined by the working group.
Archaeological investigation.	After commissioning of the road realignment and prior to impact on the existing Charlton Road alignment.
Development of interpretation Plan.	By the end of year one of the Project.
Revision of Interpretation Plan.	As determined by the working group.
Heritage awareness training.	By the end of year one of the Project.

Monkey Place Creek

The section of abandoned road formation at Monkey Place Creek and the existing location of a plaque at Monkey Place Creek commemorating the construction of the Great North Road should also be maintained.

Section 7 of the Great North Road

As discussed in **Section 4.3.19**, Section 7 of the Great North Road remains in use as the Broke to Cessnock Road to the south of the Project area before turning north as a partially un-surfaced road running through the Singleton Military Area. The track emerges to the north of the Military Area as Range Road and continues to Whittingham.

There is an opportunity, outside the scope of the Project or this report, to undertake of a survey of Section 7 of the Great North Road as part of comparative analysis of a similar surviving section of the Great North Road.

6.2.21 Broke RAAF Landing Ground

Heritage Impact Statement

Broke RAAF Landing Ground is located within the Project area and will be impacted by the noise and visual bund proposed to be constructed around the southern and western perimeters of the open cut pit to act as a visual screen and to reduce noise impacts for residents to the south and west (refer to **Figure 6.1**).

A preliminary recording of the landing ground was undertaken during the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having local significance and low archaeological research potential.

Recommendation

Although the physical evidence on site appears limited, prior to any form of disturbance a site specific detailed survey and photographic/archival recording should be undertaken in accordance with Heritage Branch, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006). During the archival recording the full extent of the surviving airstrip and associated forested area should be further investigated and any features identified and recorded as part of the archival record.

As the primary significance of the Broke Landing Ground is historical, an understanding of the place is likely best achieved through a detailed study of the available documentary evidence. Further research should be undertaken through accessing the appropriate records in the National Archives of Australia and all documentary evidence available regarding the site should be compiled as part of the archival recording report. It would also be appropriate to include further comparative analysis of other similar sites as part of this study.

6.2.22 Broke Road

Heritage Impact Statement

Broke Road runs through the Project area. The full approximately eight kilometre length of Broke Road located within the Project area is proposed to be re-located (refer to **Figure 6.1**).

The entire length of the section of Broke Road located within the Project area was inspected and sections recorded as part of the preparation of this report. The photographic catalogue (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**).

This site has been assessed as having no significance and no research potential.

Recommendation

No further heritage management of Broke Road is required for the Project.

6.3 Potential Impact to identified sites within the Vicinity of the Project Area and Management Strategies

As outlined in **Section 2.0** and illustrated on **Figures 2.1** and **6.1**, the Project involves three pit areas, located largely within the existing open cut pit disturbance areas. As a result drilling and blasting will be required as part of mining operations. Blasting is also likely to be required as part of the road realignments being undertaken as part of the Project.

Operations will undertake blasting in accordance with a detailed design process that will consider operational, geological and environmental constraints. Indirect impacts such as vibration from blasting have the theoretical potential to damage/destroy/disturb historical heritage items.

There is little reliable information available regarding the threshold of vibration induced damage to older ‘heritage’ buildings and standing ruins that may be more sensitive to vibration induced damage. Annex A of the British Standard BS7385:Part2:1993 for the Evaluation and Measurement for Vibration in Buildings states that:

...the age and existing condition of a building are factors to consider in assessing the tolerance to vibration. If a building is in a very unstable state, then it will tend to be more vulnerable to the possibility of damage arising from vibration or any other ground-borne disturbance.

The German standard DIN 4150: Part 3 Effects of Vibration on Structures includes a building type ‘Particularly Sensitive’ which is assigned vibration limits of 3 mm/s (at less than 10Hz), 3 to 8 mm/s (at 10-50Hz) and 8 to 10 mm/s (at 50-100Hz). Swiss Standard SN640 312:1978 also includes a ‘Particularly Sensitive’ structural type which is assigned vibration limits of 3 mm/s (at 10 to 30Hz) and 3 to 5 mm/s (at 30 to 60 Hz). In the absence of a specific Australian Standard which refers to structural vibration in buildings or heritage structures specifically, or any building specific assessment of the relevant sites/items considered in this report, it is suggested that a peak particle velocity of 3 mm/s be adopted for the potential heritage structures in the vicinity of the Project area. However if required by the Project, there is potential for structures to be examined on an individual basis and if appropriate the vibration limit of 3 mm/s increased following the individual structural analysis.

As part of the *Blasting Noise & Vibration Impacts Assessment* prepared for the Project by Wilkinson Murray (Wilkinson Murray 2012) predicted vibration levels were identified for the listed and non-listed heritage items located outside, but in the vicinity of, the Project area.

Table 6.2 details the heritage items located outside, but in proximity to, the Project area that should be considered in terms of potential vibration impacts (refer to **Figure 6.2**). Predicted vibration levels at a range of potential blast sizes as detailed in the blast assessment (Wilkinson Murray 2012) are also indicated. Unless increased following individual structural analysis as required by the Project, a maximum vibration of 3 mm/s should be adopted for these items. For those sites with a predicted vibration level exceeding 3 mm/s, blasts will be designed to ensure a maximum vibration of 3 mm/s unless an alternative limit is confirmed as applicable by a structural assessment. Blasting overpressure will not impact on the structural integrity of any heritage item (Wilkinson Murray 2012:14).

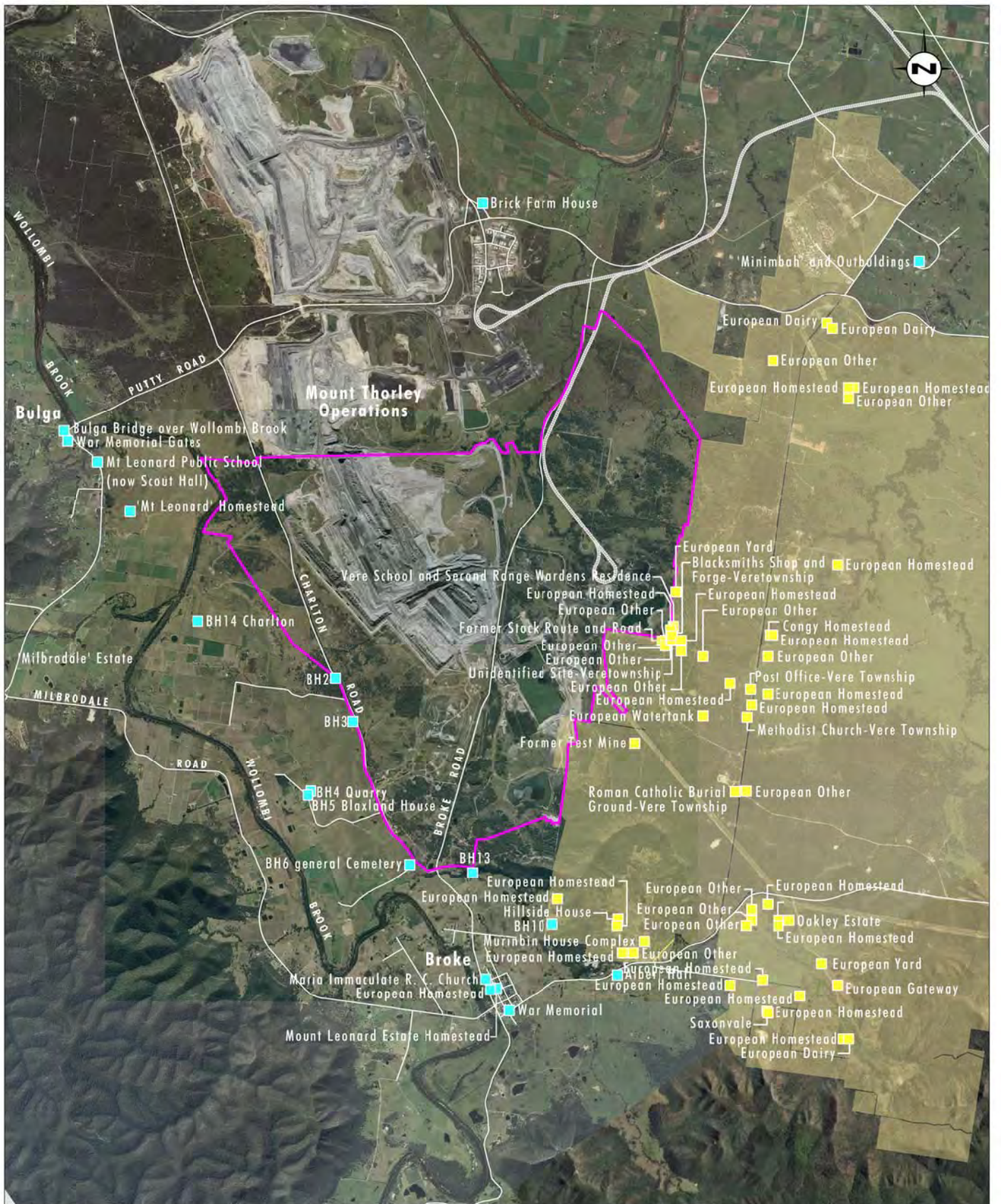
Previously identified sites BH7 and BH13 and the sites in the immediate vicinity of the Project area with some form of statutory listing or with predicted ground vibration levels exceeding 3 mm/s are further discussed below.

Table 6.2 – Listed/Identified Heritage Items Located in the Vicinity of the Project Area and Predicted Ground Vibration due to Blasting

Item Name	Location	Coordinates (MGA)	Listing	Predicted Range of Ground Vibration (mm/s)
Blaxland House (Site BH5)	Fordwich Road, Broke	318743E/6378821N	Singleton LEP – local significance	1 - 3
General Cemetery (Site BH6)	Broke	320619E/6377545N	Singleton LEP – regional significance.	1 - 3
BH7 – McNamara’s Dairy Cottage	Broke Road, Broke	321326E/6377485N	-	1 - 3
‘Charlton’ (Site BH14)	Cobcroft Road, Bulga	316564E/6382152N	Singleton LEP – local significance	1 - 5

Table 6.2 – Listed/Identified Heritage Items Located in the Vicinity of the Project Area and Predicted Ground Vibration due to Blasting (cont.)

Item Name	Location	Coordinates (MGA)	Listing	Predicted Range of Ground Vibration (mm/s)
BH13 – Stone wall	Near Broke Road	321857E/6377402N	-	1 - 3
Murinbin House Group	Broke Road, Broke	325009E/6376090N	Register of the National Estate (RNE) – Interim List Commonwealth Heritage List Defence Heritage Register	1 - 1
St. Andrews Anglican Church	Wollombi Road, Broke	322063E/6375412N	Singleton LEP – local significance. RNE – indicative place	1 - 2
War Memorial	Singleton Road, Broke	322500E/6374827N	Singleton LEP – local significance	1 - 1
Maria Immaculate R.C. Church	Broke	322152E/6375211N	Singleton LEP – local significance	1 - 2
Albert Hall	Broke Road, Broke	324512E/6375480N	Singleton LEP – local significance	1 - 1
Mount Leonard Estate Homestead	Broke Whittingham Rd, Broke	326229E/6375253N	RNE – Indicative Place	1 - 1
War memorial Gates	Inlet Road, Bulga	314296E/6385401N	Singleton LEP – local significance	1 - 2
'Mt Leonard' Homestead	Putty Road, Bulga	315463E/6384101N	Singleton LEP – local significance	1 - 4
Mt. Leonards Public School (now Scout Hall)	Putty Road, Bulga	314859E/6385011N	Singleton LEP – local significance	1 - 3
Bulga Bridge over Wollombi Brook	Main Road 213, Bulga NSW	314227E/6385588N	Australian Heritage Places Inventory SHR RTA Section 170 Register	1 - 2
'Milbrodale' Estate	Putty Road, Milbrodale	313216E/6381376N	Singleton LEP – local significance RNE – Indicative Place	1 - 2
Brick Farm House	Jerry's Plains Road, Mt. Thorley	322003E/6389816N	Singleton LEP – local significance	1 - 2
'Minimbah' and Outbuildings	Broke Road, Whittingham	330100E/6388724N	Singleton LEP – state significance RNE – Registered AHP	1 - 1



Source: AAM Pty Limited (March 2012), Xstrata Coal (NSW) Pty Ltd

0 1 2 5km
1:100 000

Legend

- Saxonvale Colliery Holding Boundary
- Project Area
- Singleton Military Area
- Potential and Known Heritage Sites/Items
- Department of Defence Identified Sites

FIGURE 6.2

Location of Sites/Items
in the Vicinity of the Project Area

6.3.1 Blaxland House (Site BH5)

Site BH5 is likely the site of the former Blaxland Homestead (refer **Section 3.3.1** and **Figure 6.2**).

The site was not inspected as it is located on private property.

The house and its outbuildings are documented as being demolished in 1939 with a line of peppertrees being the only visible remains of the site today (refer **Section 3.3.1**).

This site is outside the Project area. Any potential remains associated with Blaxland House would likely be sub surface archaeological remains and would not be affected by the Project.

6.3.2 Broke General Cemetery (Site BH6)

Site BH6 comprises the Broke Cemetery located on the corner of Charlton and Butler Road immediately adjacent to the west boundary of the Project area (refer to **Figure 6.2**).

This site is outside the Project area and will not be directly affected by the Project. However, as discussed above, unless increased following individual structural analysis, a maximum vibration of 3 mm/s should be adopted for this site. Note the predicted ground vibration levels for this site do not exceed 3 mm/s (refer to **Table 6.2**).

At present, BCC contributes to the maintenance of Broke Cemetery and intends to continue this maintenance.

6.3.3 Site BH7 McNamara's Dairy Cottage

Heritage Impact Statement

Site BH7 is located inside the southern boundary of the Project area at the junction of Charlton and Broke Roads (refer to **Figure 6.1**). The site will not be directly impacted by the Project. However, Site BH7 might be subject to impact from vibration and/or surface movement.

The structure is in an advance state of disrepair.

Previous Recommended Management

The 2003 *Historic Heritage Assessment for Bulga Coal Continued Underground Operations* assessed Site BH7 as being of Local significance and recommended that 'the cottage precinct be fenced and signposted as a heritage area' (Umwelt 2003:8.3).

Consequently Condition 42(c) of Schedule 4 of the Bulga underground coal mine development consent (DA 376-8-2003) required that the applicant:

...fence and signpost BH7.

Previous Management

In accordance with Condition 42(c) of Schedule 4 of the Bulga underground coal mine development consent (DA 376-8-2003) the structure is signposted as a Bulga Coal Heritage site and a fence has been erected around the building.

Recommendation

The predicted ground vibration levels resulting from blasting at this location are between 1 and 3 mm/s (Wilkinson Murray 2012:12). These predicted levels are within the recommended maximum vibration of 3 mm/s to be adopted for heritage items (refer to **Section 6.3**). However, as a result of the site's location close to the southern boundary of the Project area, its previously assessed significance, advance state of disrepair and potential safety concerns, a photographic/archival recording in accordance with Heritage Branch, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006) is recommended prior to any blasting impacts as a result of the Project.

6.3.4 Charlton (Site BH14)

The site of Charlton was not inspected as it is located on private property. The 1926 constructed homestead built by the Russell family still stands on site.

This site is outside the Project area and will not be directly affected by the Project. Although the predicted ground vibration levels for this site are up to 5 mm/s, blast sizes will be managed to 3 mm/s for this heritage item unless a structural assessment is conducted which confirms a tolerance for higher vibration levels.

6.3.5 Site BH13 Stone Wall

Heritage Impact Statement

Site BH13 is located on the northern bank of Monkey Place Creek outside (immediately to the south of) the Project area (refer to **Figure 6.2**). The site will not be directly impacted by the Project. However, as discussed in the 2005 Archival Recording Study (Umwelt 2005a) Site BH13 might be subject to impact from vibration and/or surface movement.

Previous Recommended Management

The 2003 *Historic Heritage Assessment for Bulga Coal Continued Underground Operations* assessed Site BH13 as being of Local significance and recommended that 'monitoring be undertaken, at a minimum, before, during and after mining and a photographic record of the condition and integrity of the site be maintained and any necessary repairs and maintenance be undertaken such that there is no loss in heritage value' (Umwelt 2003:8.3).

Consequently Condition 42(a) of Schedule 4 of the Bulga underground coal mine development consent (DA 376-8-2003) required that the applicant:

...prepare a photographic record of the condition and integrity of heritage site BH13 before, during and after mining.

Previous Management

In accordance with Condition 42(a) of Schedule 4 of the Bulga underground coal mine development consent (DA 376-8-2003) an archival record of site BH13 has been prepared as a baseline for future monitoring as part of *Historic Heritage Archival Recording Study: Bulga Coal Continued Operations – Sites BH9, BH11 and BH13* (Umwelt 2005a).

The 2005 Archival Recording Study identified that the site may have links with the construction of the Great North Road and as a result further recommended that in relation to Site BH13:

...the site should be monitored, by a qualified historical archaeologist, during and after any mining activity in the area that has the potential to impact the site.

...Bulga Coal should take into consideration the potential significance of the site in any future development and in the movement of surface vehicles, personnel and plant in proximity to the site

...the Convict Trail Project be notified of the site for inclusion in their records and for consideration in any future research or investigation that they may undertake (Umwelt 2005a:14)

Recommendation

In addition to the recommendations of the 2003 and 2005 reports discussed above and as a result of the sites proximity to the Project area, an individual structural analysis of Site BH13 should be undertaken by a suitably qualified structural engineer in order to identify if the recommended and predicted maximum vibration of up to 3 mm/s is appropriate for the site and any potential mitigation measures that may be required (in terms of its structural stability) based on the findings of the analysis. Note the predicted ground vibration levels for this site do not exceed 3 mm/s (refer to **Table 6.2**).

6.3.6 Murinbin House Group

The Murinbin House Group is located approximately three kilometres to the southeast of the Project area boundary (refer to **Figure 6.2**) and will not be directly affected by the Project.

This site is outside the Project area and will not be directly affected by the Project. However, as discussed above, unless increased following individual structural analysis, a maximum vibration of 3 mm/s should be adopted for this site. Note the predicted ground vibration levels for this site do not exceed 3 mm/s (refer to **Table 6.2**).

The Murinbin House Group is subject to a Conservation Management Plan (CMP) prepared for the Department of Defence by Suters Architects (*Conservation Management Plan, Murinbin House, Singleton Training Area* 2000). The CMP was not available for review during the preparation of this report. Blasting associated with the Project should be undertaken in accordance with any relevant recommendations of the CMP.

6.3.7 Mt Leonard Homestead

Mt Leonard Homestead is outside the Project area and will not be directly affected by the Project. Although the predicted ground vibration levels for this site are up to 4 mm/s, blast sizes will be managed to 3 mm/s for this heritage item unless structural assessment is conducted which confirms a tolerance for higher vibration levels.

6.3.8 Singleton Military Area

Heritage Impact Statement

As discussed in **Section 4.5**, a number of sites have been identified from GIS data supplied by the Department of Defence outside (to the immediate east of) the Project area within the Singleton Military Area (refer to **Figure 6.2**). All but one of the potential sites within the Singleton Military Area are outside the Project area. One of the sites listed as 'European Homestead' is located on the Project area boundary (refer to **Figure 6.2**). None of the sites, including the 'European Homestead', are subject to any form of direct impact. The sites located in the vicinity of the east boundary of the Project area have been ground truthed. Any potential remains associated with the former Vere Township comprise sub surface archaeological remains or at best ruins of former structures and would not be indirectly impacted as a result of the Project.

As no impacts on these sites are proposed or predicted, no management measures are required as part of the Project.

6.4 Unexpected Finds

6.4.1 Section 146 *Heritage Act 1977* (NSW)

In the unlikely event that unexpected archaeological remains or potential heritage items not identified as part of this report are discovered during the Project all works in the immediate area should cease, the remains and potential impacts should be assessed by a qualified archaeologist or heritage consultant and, if necessary, the Heritage Branch, OEH notified in accordance with Section 146 of the *Heritage Act 1977* (NSW).

6.4.2 Human Skeletal Material

In the unlikely event that a potential burial site or potential human skeletal material is exposed within the Project area, the following procedure should be followed in accordance with the *Policy Directive – Exhumation of Human Remains* (NSW Department of Health 2008), *Skeletal Remains – Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977* (NSW Heritage Office 1998) and the *Aboriginal Cultural Heritage Standards and Guidelines Kit* (NPWS 1997):

- as soon as remains are exposed, work is to halt immediately to allow assessment and management;
- contact local police, OEH and the Heritage Branch;
- a physical or forensic anthropologist should inspect the remains *in situ*, and make a determination of ancestry (Aboriginal or non-Aboriginal) and antiquity (pre-contact, historic or forensic);
- if the remains are identified as forensic the area is deemed as crime scene;
- if the remains are identified as Aboriginal, the site is to be secured and OEH and all registered Aboriginal parties are to be notified in writing; or
- if the remains are non-Aboriginal (historical) remains, the site is to be secured and the Heritage Branch is to be contacted.

The above process functions only to appropriately identify the remains and secure the site. From this time, the management of the remains is to be determined through liaison with the appropriate stakeholders (New South Wales Police Force, forensic anthropologist, OEH, Heritage Branch, registered Aboriginal parties etc) and in accordance with the *Public Health Act 1991*.

6.5 Consultation

General consultation has been undertaken by BCC with government authorities and community stakeholders in relation to the Project (refer to *Environmental Impact Statement Bulga Coal Optimisation Project 2012*). In addition, preliminary consultation has been undertaken with the Heritage Branch, OEH in relation to Charlton Road and the Broke airstrip (1 June 2012). BCM is also regularly consulting with the Convict Trail Project in relation to the relocation of Charlton Road and will continue to involve the Convict Trail Project throughout the Project.

To date there have been five meetings between BCM and the Convict Trail Project to acknowledge the concern of the Convict Trail Project, discuss the feasibility of meeting the suggestions put forward by the Convict Trail Project and to develop appropriate mitigation and management measures (as discussed in **Section 6.2.21**) for the realigned section of Charlton Road.

The meetings to date between BCM and the Convict Trail Project were undertaken on:

- 13 December 2011;
- 1 June 2012; and
- 3 August 2012.

Following commencement of the Project BCM will update the Convict Trail Project on the progress of the program of mitigation and management works at an annual meeting during the development of the noise and visual bund, and then every three years, or as otherwise agreed with the Convict Trail Project.

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7.0 Evaluation of Management Measures

The majority of the potential historical heritage sites/items present within, and in the immediate vicinity of, the Project area have been assessed as having no heritage significance and no research potential. All of the identified potential sites within the Project area have been recorded as part of this report. The photographic catalogue of this recording (photographic record sheets) and photographs (as thumbnail image sheets/proof sheets and burned to CD) are included in this report (as **Appendix B**). As such, no further management is required for the majority of the potential sites identified within the Project area. Those sites assessed as being of local significance and/or recommended as requiring further management are discussed further below.

7.1 Site PS17

Site/item PS17 is located within the Project area and is likely to be impacted as a result of the construction and use of a new water storage and discharge dam in the northeast portion of the Project area (refer to **Figure 6.1**).

Although identified as being of local significance, this site has been recorded as part of the preparation of this report (refer to **Section 4.3.17** and the photographic record comprising **Appendix B**). The recording of the site as part of this report and the photographic record appended to this report (**Appendix B**) are considered to be an appropriate and sufficient level of documentation for this site.

Any potential additional associated features that are identified during any works in the area would be managed in accordance with Section 146 of the *Heritage Act 1977* (NSW) (refer to **Section 6.4**).

7.2 Broke Airfield

Broke RAAF Landing Ground is located within the Project area and will be impacted by the construction of the proposed noise and visual bund (refer to **Figure 6.1**).

This site has been assessed as having local significance and low archaeological research potential.

As recommended in **Section 6.2.19**, prior to any form of disturbance further research is to be undertaken to investigate all available documentary evidence and a site specific detailed survey and photographic/archival recording is also to be undertaken in accordance with Heritage Branch, OEH guidelines *Photographic Recording of Heritage Items Using Film or Digital Capture* (2006).

The primary significance of the Broke Landing Ground is historical, as such an understanding of the place is best achieved through a detailed study of the available documentary evidence. Although physical evidence of the site appears limited, the detailed on site survey and archival recording will ensure any surviving physical aspects of the site are identified and documented prior to any disturbance.

Although the site will be impacted as a result of the Project, the proposed detailed study of available documentary evidence and archival recording will ensure that a full understanding and record of the Broke Landing Ground will be available for future generations.

7.3 Charlton Road

Charlton Road is located along the western boundary of the Project area. A 4 kilometre section of the road is proposed to be realigned and as such will be impacted as a result the construction of the proposed noise and visual bund (refer to **Figure 6.1**).

Although comprising part of Section 8 of the Great North Road (refer to **Section 4.3.19**), Charlton Road has been assessed as being of local significance (Weir Phillips 2012:66) (refer to **Section 5.6**). As part of the preparation of this report a separate Heritage Assessment of the road has been prepared (refer to **Appendix A**) and the entire length of Charlton Road has been inspected and recorded (refer to **Appendix B**).

Although no significant fabric or engineering works have been identified associated with Charlton Road, the recommended historical and archaeological investigation of the section of the road proposed to be impacted will ensure that any significant remnant fabric associated with its construction, surfacing or use will be recorded. This will ensure that information is not unnecessarily lost, will be able to be added to the existing knowledge base (particularly the records held by the Convict Trail Project) and be available for future generations.

All archaeological excavation/investigation work will be undertaken to normal professional standards and accepted best practice procedures, in accordance with an archaeological work method statement. On site archaeological work would likely comprise (subject to consultation with the working group) monitored machine excavation (followed by hand excavation as required) across the width of the road of a number of trenches at suitable locations (for example in areas of embankment).

The development and implementation of an interpretation plan, in consultation with the working group, will further ensure an understanding of the significance of Charlton Road and its importance in the wider context of the Great North Road is maintained. The revision and updating of the plan during the life of the Project will ensure the plan and its implementation is kept current and up to date.

7.4 Blasting/Vibrations

As discussed in **Section 6.3**, a number of listed heritage items and non-listed potential heritage items are located outside, but in proximity to, the Project area that should be considered in terms of indirect impacts such as vibration from blasting, which has the potential to damage/destroy/disturb historical heritage items.

The Project will undertake blasting in accordance with a detailed design process that will consider operational, geological and environmental constraints. However, in the absence of any assessment or structural analysis specific to individual heritage items, the adoption of a conservative peak particle velocity of 3 mm/s for the known and potential heritage structures in the vicinity of the Project area, unless structural assessment of the structure confirms a tolerance to higher vibration levels, should ensure that no structural vibration occurs that could result in any adverse impacts.

Only 'Mt Leonard' Homestead (up to 4mm/s) and BH14 'Charlton' (up to 5mm/s) are predicted to be potentially subject to vibration impacts above 3mm/s. At these locations blasts will be managed to 3 mm/s unless a structural assessment is conducted which confirms a tolerance for higher vibration levels.

Individual examination and structural analysis of items that have been identified as potentially being susceptible to ground-borne vibration will provide that appropriate vibration limits are adopted and any needed management and mitigation measures are undertaken.

7.5 Section 146 *Heritage Act 1977* (NSW)

Adherence to Section 146 of the Heritage Act, including the cessation of work and notification of relevant stakeholders, in the event unexpected archaeological remains (including human skeletal material) or potential heritage items not identified as part of this report are discovered during the Project will ensure that any unexpected archaeological remains or potential heritage items are appropriately managed in accordance with relevant statutory controls and protections.

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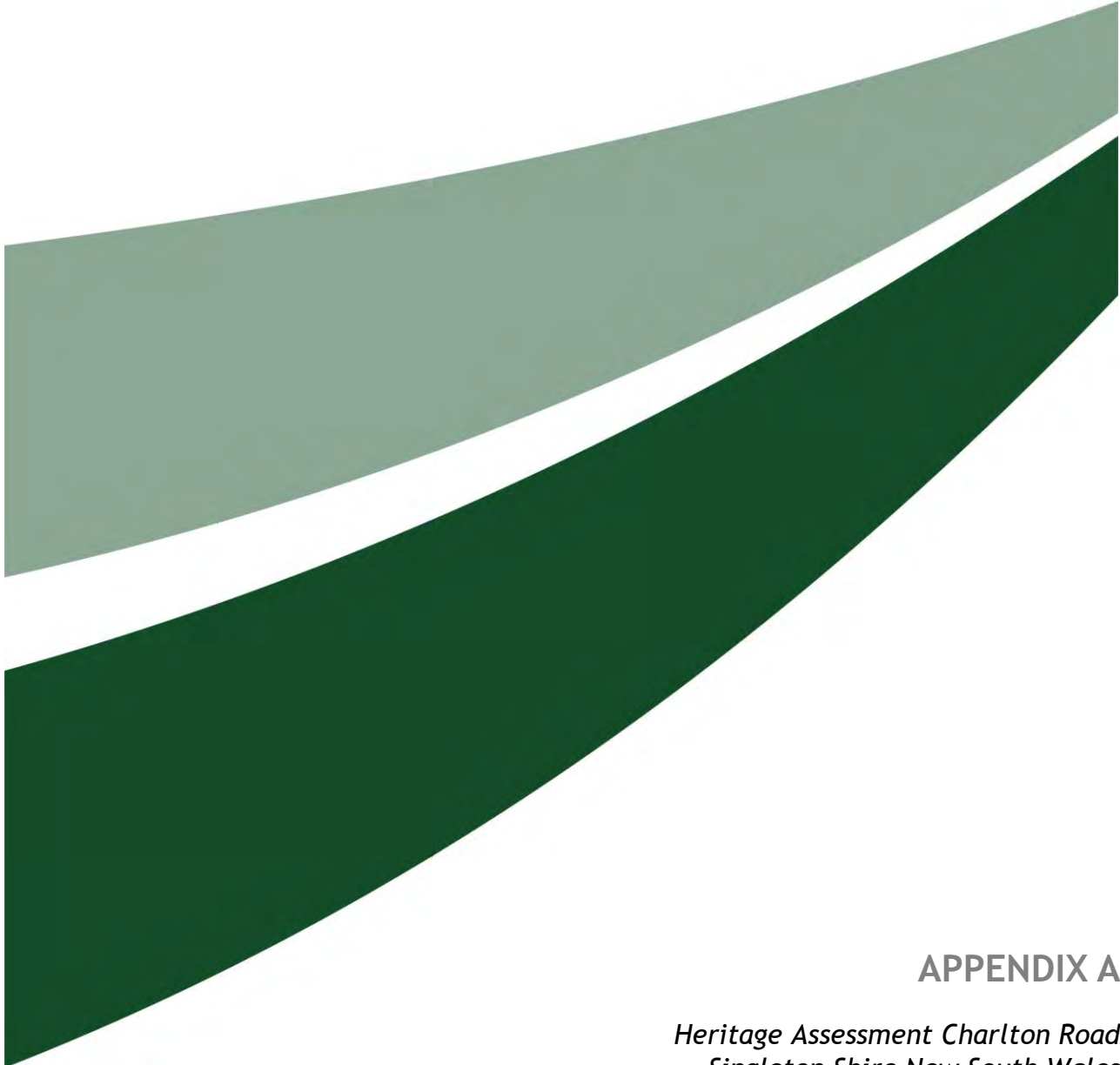
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APPENDIX A

*Heritage Assessment Charlton Road
Singleton Shire New South Wales
Draft Report (Weir + Phillips 2012)*

HERITAGE ASSESSMENT

Charlton Road Realignment – Bulga Optimisation Project Singleton Shire New South Wales



Charlton Road, 2011, within the proposed area of realignment.

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1.0 INTRODUCTION

1.1 Preamble

This report provides a heritage assessment of the proposed re-alignment of part of Charlton Road in Singleton Shire, Upper Hunter Valley, New South Wales, Australia.

Charlton Road runs between Broke Road/Paynes Crossing Road, to the north west of the township of Broke, to where it meets Putty Road, to the east of the township of Bulga. The proposed Bulga Optimisation Project has given rise to a proposal to re-align an approximately 4.0km section of Charlton Road to allow for the construction of a proposed Noise and Visual Bund and hence the need for this assessment.

The Project is a proposed continuation of the existing open cut operations to enable mining to continue for a further approximately 22 years and allow the extraction of approximately 230 million tonnes (Mt) of additional run of mine (ROM) of coal (an additional approximately 200 Mt over existing approved extraction areas) to be mined by open cut methods from land that is largely within the existing BCC disturbance footprint. The Project will enable existing rates of production from the BCC to continue for the life of the Project, optimising utilisation of existing infrastructure at the complex. No change is proposed to either the maximum production rate from the open cut operations or the throughput of the coal handling and preparation plant (CHPP), which is located adjacent to the Bulga Surface Operations MIA.

The key features of the Project are summarised in the following table.

Major Project Components	Proposed Operations
Total Production	Approximately 230 Mt ROM Coal over the life of the Project including approximately 30 Mt of existing approved ROM coal reserves.
Annual Production Limit	No changes from current approved annual limits. Up to 12.2 Mtpa ROM coal from the Bulga Surface Operations and up to 20 Mtpa ROM coal through the CHPP.
Mine Life (Production)	Approximately 22 years with further rehabilitation and closure works being carried out after the end of this period.
Operating Hours	24 hours per day, 7 days per week.
Number of Employees	Continued employment of approximately 700 full time employees, decreasing towards the end of the Project. Approximately 300 construction employees, predominately during the first 3 to 4 years of the Project.
Mining Methods	Open cut mining (including some highwall mining).
Mining Areas	Mining in three contiguous pit areas: <ul style="list-style-type: none">• a western extension of the existing Bulga Pit and extraction of coal to the base of the Woodlands Hill seam (the Main Pit area);• an eastern extension of the Bulga Pit to mine the deeply dipping seams in the Wittingham Coal Measures (The East Pit area); and• deeper mining down to and including the Broonie seam series (South Pit area). <p>A new pit area, known as the Bayswater Pit, mining shallow coal reserves will also be developed to the northeast of the former Deep Pit. This pit will ultimately be used for wet tailings storage.</p> <p>The Project will also develop a new box cut in the highwall for accessing existing approved underground mining areas.</p>

Major Project Components	Proposed Operations
Mine Infrastructure	<ul style="list-style-type: none"> • A new open cut mine infrastructure area (MIA); • A new underground MIA as its currently approved location will be affected by the proposed open cut mining; • Upgrades to the existing CHPP to improve throughput efficiency and increase product yield; • Changes to some Bulga Underground Operations infrastructure, including conveyor location, where it will be affected by the proposed open cut mining; • Development of new haul roads to out-of-pit emplacement areas including 2 new bridges over the realigned section of Broke Road. • Enlargement of ROM and product coal stockpile areas; • Construction and use of new approximately 3000 ML water storage dam (Northern Dam) as part of the mine water system. • Changes to mine and clean water diversion, management and reticulation systems. • Changes to ancillary infrastructure, including access roads and the development of construction laydown areas.
Emplacement Areas	<p>Construction of two out-of-pit emplacement areas. The proposed Noise and Visual Bund has been designed to minimise the noise and visual impacts of the ongoing mining operations while the proposed Eastern Emplacement Area enables overburden from the eastern side of the open cut operations to be handled in a manner that minimises noise and air quality impacts to the majority of residents around the Project area.</p> <p>Overburden will also be emplaced in-pit</p>
Tailings and Rejects Strategy	Tailings will be disposed of in the Deep Pit and Bayswater Pits with tailings also potentially disposed of in the underground workings. Coarse rejects and paste thickened tailings will be co disposed with overburden.
External Coal Transport Infrastructure	<p>No change to approved annual maximum product transported by train. Continued use of Saxonvale Rail Spur.</p> <p>Construction and use of a rail siding adjacent to the existing rail easement capable of parking two coal trains awaiting loading at the BCC.</p>
Electricity Infrastructure	Realignment of sections of two 330 kV transmissions lines and other 66 kV and 11 kV powerlines and other changes to associated electricity infrastructure.
Public Roads	Realignment of sections of Broke Road and Charlton Road and the construction of haul road bridges over the realigned section of Broke Road.
Pipelines and Other Services Infrastructure	The relocation of the Broke Fordwich Private Irrigation District (PID) water pipeline, Singleton Council Broke potable water supply pipeline and other services (such as telecommunications infrastructure) which are associated with the existing public road alignments.
Resource Definition Exploration	Ongoing borehole drilling and sampling in and adjacent to mining areas to better understand the coal resource, coal quality, geological conditions and geotechnical constraints.
Rehabilitation	Rehabilitation of areas disturbed by BCC operations, infrastructure and construction.

A more detailed project description is provided in the Environmental Impact Statement (EIS), which this assessment accompanies.

Charlton Road is a branch of the Great North Road. The Great North Road, begun in 1826, was designed to link three important agricultural areas- the Hawkesbury River region and the Lower and Upper Hunter Valley- with Richmond/Windsor and hence with Sydney. During ten years of construction, 240 kilometres of road were surveyed, cleared and formed, predominately by convict road gangs. Sections of the Great North Road, now known by a variety of names, contain some of the most significant

surviving convict built engineering structures in New South Wales and are thus identified on heritage registers at international, national, state and local levels.

Charlton Road was surveyed and constructed between late 1834 and 1836, as part of the final phase of work on the Great North Road. Charlton Road is not identified on any statutory heritage registers.

This report has been prepared at the request of Umwelt (Australia) Pty Limited as part of the Bulga Coal Optimisation Project. It is designed to be read in conjunction with the EIS prepared for the Project, which this assessment accompanies.

1.2 Authorship and Acknowledgements

This report was prepared by Alice Fuller, B.Appl.Sc. (CCM), M.Hert.Cons.(Hons), and James Phillips, B.Sc.(Arch) B.Arch, M.Hert.Cons.(Hons), heritage consultants of Weir Phillips, Architects and Heritage Consultants.

The authors wish to acknowledge the assistance provided by Grace Karskens' invaluable Master of Arts thesis on the Great North Road entitled '*The Grandest Improvement in the Country': An Historical and Archaeological Study of the Great North Road, New South Wales, 1825-1836*' (University of Sydney, 1985), research materials provided by Elizabeth Roberts, Executive Director of the Convict Trail Project Inc., and by Umwelt.

Research material used in this assessment was also obtained from an earlier report prepared by Weir Phillips for the Wallaby Scrub Road, Singleton Shire, in July 2010.

1.3 Limitations

An assessment of Aboriginal significance and an archaeological assessment did not form part of the brief for this report.

1.4 Methodology

The assessment procedure contained within this report complies with the *NSW Heritage Manual* updates *Assessing Heritage Significance* (2001).

1.5 Physical Evidence

James Phillips, of Weir Phillips, carried out an inspection of the road in May 2012.

Unless otherwise stated, Umwelt provided the photographs contained in this report.

1.6 Documentary Evidence

The following sources were accessed for the preparation of this report:

- State Library of New South Wales.
- State Records Authority of New South Wales.
- The University of Sydney Thesis Collection.

There are references in the footnotes of this report for material from the National Archives of Australia. These are primary sources that were accessed by the authors of this report during the preparation of a Heritage Assessment for the *Former RAAF Base, Bulga*, in May 2007.

The following references were referred to for the preparation of this report:

1.6.1 General References

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1.6.2 Unpublished Material

- Karskens, Grace, *'The Grandest Improvement in the Country': A Historical and Archaeological Study of the Great North Road, 1825-1836*. Historical Archaeology, Master of Arts, University of Sydney, 1985. Copy held by Fisher Library (Rare Books).
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- Singleton Historical Society and Museum Inc., *Charlton*. Undated typed information sheet.
- Weir Phillips Architects and Heritage Consultants, *Heritage Assessment of the Former RAAF Base Bulga*, May 2007.

1.6.3 Planning and Related Documents

- *The Burra Charter (The Australian ICOMOS Charter for Places of Cultural Significance)*, 1999.
- Coal and Allied, *Proposed Warkworth Extension: Environmental Assessment*, April 2010.
- Commonwealth of Australia, *Australian Convict Sites, World Heritage Nomination*, January 2008.
- *Commonwealth of Australia Gazette Special Gazette No. S141*, 1 August 2007,
- Griffin Pty Ltd, *The Old Great North Road Cultural Landscape, Dharug National Park, NSW, Draft Conservation Management Plan*, 2004.
- Lavelle, S., Karskens, G. and RTA Technology, *Conservation Management Plan for the Great North Road*, 1999.
- NSW Heritage Office, *Assessing Heritage Significance*, NSW, The Author, 2001.

1.6.4 Historic Maps and Plans

In addition to the historic maps and plans of the Great North Road cited in the above published references, the following were used in the preparation of this report:

- *General Plan of Roads Northwards from Sydney from a Survey made in July 1829*. Original from State Records. (A.O. 5097).
- H.E. Robinson, *NSW Motorists' Guide with Sectional Map*, NSW, H.E.C. Robinson, 1928 (?).
- *Parish of Wollombi, County of Northumberland, New South Wales*, 1891. NSW LPI, Parish Map Preservation Project.

1.6.5 Newspapers

- *The Maitland Mercury and Hunter River General Advertiser*, 23 September, 1879; 10, February, 1881; 27 September, 1888.
- *The Sydney Gazette and New South Wales Advertiser*, 13 February, 1834.
- *The Sydney Morning Herald*, 4 August, 1841.

1.6.6 Heritage Inventory Sheets

- *Bell001: Bells Line of Road*, Blue Mountains. State Heritage Inventory Database No. 1170900.
- *Great North Road, The*, Cessnock. State Heritage Inventory Database No. 3902005.
- *Great North Road Between Mount Manning and Wollombi*, Hawkesbury. State Heritage Inventory Database No. 5060554.
- *Great North Road (Retaining Walls, Culvert and Road Cutting)*, Baulkham Hills. State Heritage Inventory Database No. 4309678.
- *MT003: Old Bells Line of Road*, Blue Mountains. State Heritage Inventory Database No. 1170630.
- *Old Great North Road Between Devine's Hill and Mount Manning*, Hawkesbury. State Heritage Inventory Database No. 5051461.
- *Old Northern Road, Cutting*, Hornsby. State Heritage Inventory Database No. 1780081.
- *Old Windsor Road and Precincts*, multiple LGAs. State Heritage Inventory Database No. 4301011.
- *Victoria Pass*, Lithgow. State Heritage Inventory Database No. 4301023.

1.7 Site Location

Charlton Road runs in a generally north west direction from its junction with Broke Road/Paynes Crossing Road, north west of the township of Broke, to its junction with the Putty Road, east of the township of Bulga. Figure 1 shows the general location of Broke and Bulga townships within the Upper Hunter Valley.



Figure 1: Site Location

Source: Google Maps, 2012.

Figure 2 shows the line of Charlton Road.

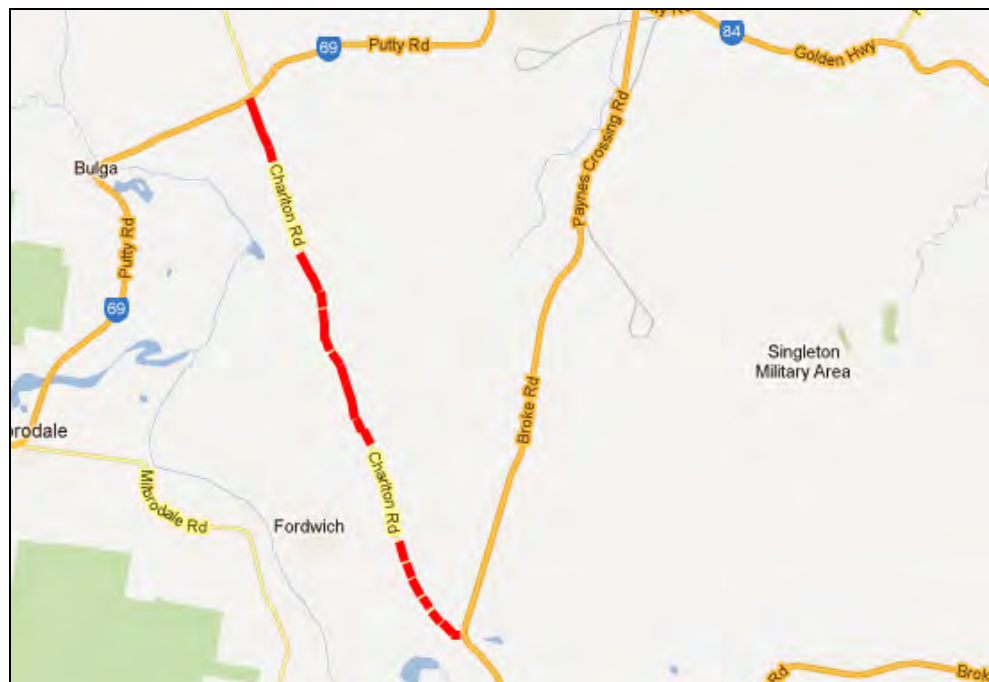


Figure 2: Showing the line of Charlton Road.

Source: Google Maps, 2012; annotation by A.F.

The following plan, Figure 3, should be referred to throughout the remainder of this report. This plan shows the full extent of the Great North Road as it was surveyed and constructed between 1825 and 1836. As demonstrated by this plan, the Great North Road branched at several points in the Upper Hunter Valley, as opposed to being a single line of road. The arrow points to the section of the Great North Road now known as Charlton Road.

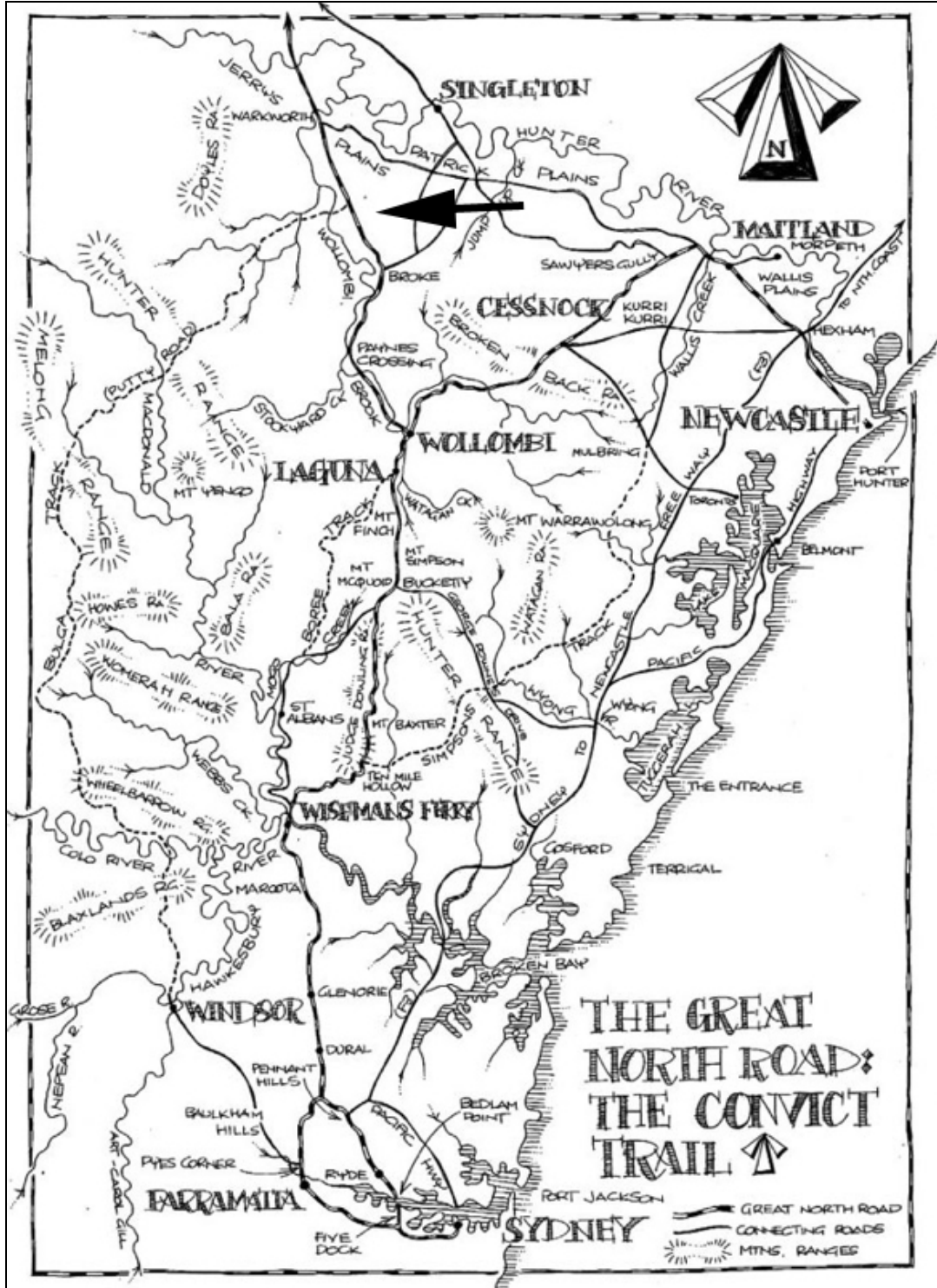


Figure 3: Original Location of the Great North Road and Environs.
 Source: Convict Trail Inc. Website, Accessed 2012.

2.0 HISTORICAL DEVELOPMENT

2.1 Preamble

The following history seeks to place the Great North Road in the wider context of colonial road building, the convict system and the development of the Upper Hunter Valley.

While this report acknowledges that the Wonnarua peoples originally occupied the Singleton region, it does not include an Aboriginal history or an assessment of potential Aboriginal heritage significance. It is noted, however, as established by assessments prepared by others, that there are significant Aboriginal sites close by Charlton Road.¹

2.2 Early European Associations with the Hunter Valley

The First Fleet was despatched from England to New South Wales in 1787 with the expectation that it would soon become a self-sufficient colony. Joseph Banks and James Cook had provided glowing descriptions of the land around their landing site at Stingray (later Botany) Bay in 1770. Upon arrival at Botany Bay at the head of the First Fleet in January 1788, however, Governor Phillip discovered that the suitability of the bay for settlement had been grossly overestimated. The land around the site that Phillip then chose for settlement -Sydney Cove- proved equally unsuitable for agriculture. Exploration of the new colony, particularly with regard to the search for arable land, thus occupied the colonists from the earliest period of settlement.

The earliest European associations with the Hunter Valley, however, lies not in the search for arable land, but in the discovery of coal. In 1791, a party of escaped convicts reportedly found coal in the area. Five years later, a fishing party brought back several samples, most likely obtained from somewhere near present-day Newcastle. The following year, Lieutenant John Shortland 'discovered' what he described as a 'fine coal river', to which he gave the name 'the Hunter River' in honour of the Governor, Captain John Hunter (1795-1800). The name, Coal River, would be commonly used for some time to come.

The colonists were not long in exploiting their new resource; coal from the Hunter River was taken to Sydney as early as 1799. The first settlement in the Hunter Valley, a penal settlement, was established in 1801. The settlement was, however, abandoned the following year, but re-established in 1804. Initially known as Coal River or Kingstown, the name Newcastle was first officially recorded on a commission of appointment in 1804.

During the early decades of the nineteenth century, a number of exploratory and surveying parties explored the Hunter River and surrounding areas. Cedar getters, the forerunners of more permanent settlers in many New South Wales districts, cut timber in the Hunter Valley from around 1810 onwards. Initially, all land in the Colony was declared to be Crown land. Successive governors granted land to individuals from the 1790s onwards in order to encourage cultivation and settlement. Although colonial authorities were anxious to keep the penal colony at Newcastle isolated, Governor Macquarie (1810-1821) permitted limited settlement at Patterson's Plains from 1812 and at Wallis Plains from 1818. By 1820, there were twelve farms at Patterson's Plains and eleven at Wallis Plains.²

At first, transport between Sydney and Newcastle was by sea. Although a rough trail existed between Wallis Plains and Newcastle, it was rarely used; most traffic between these farms and Newcastle was by river.

¹ Refer Umwelt, *Preliminary Environmental Assessment Bulga Coal Optimisation Project*, September 2011, Section 7.8.

² Ian Webb, *Road's End: Building the Great North Road from Mt. Manning to the Hunter River 1824-1836*, NSW, Dhaurg & Lower Hawkesbury Historical Society, 2000, p. 2.

2.3 Finding the Way North

The difficulties involved in finding an inland route through the rugged country separating the Hunter Valley from Richmond-Windsor, and hence Sydney, were appreciated from an early date. Benjamin Singleton led the first recorded attempt to find a land route in 1818. Singleton may have followed part of an existing Aboriginal route. He, however, turned back without breaking through when supplies ran low and he became uncertain of how he would be received by the Aboriginal people.

The first successful land expeditions into the Hunter Valley from Richmond-Windsor were led by the Chief Constable of Windsor, John Howe, who made three journeys of exploration between 1819 and 1820. Howe mostly likely followed at least part of Singleton's route to reach what he named the 'St. Patrick's Plains.' Howe blazed the trees to mark his trail. This trail eventually became known as the Putty or Bulga Road (refer back to Figure 3). Howe explored as far north as the Wallis Plains, recording of the country:

'We came thro as fine a country as the imagination can form...fine land fit for cultivation and equally so for grazing.'³

Several years later Peter Cunningham would similarly praise what was then newly opened country in his book *Two Years in New South Wales*:

'The plains contain several thousand acres clear of timber, and of the richest alluvial soil...'⁴

With reports such as these, it is hardly surprising to find that land was rapidly taken up in the Hunter Valley from 1822, as further discussed in Section 2.4 below.

The first stage in familiarising a new landscape was the application of names to prominent features. Several present-day place names in the vicinity of what is now Charlton Road extend back to the early years of European exploration and settlement. Names were chosen from European and local sources. 'Bulga', for example, an aboriginal word signifying 'mountain' was the name given to the range of mountains bordering Patrick's Plains.⁵

Howe and Singleton were both rewarded with land grants in the Upper Hunter Valley. The township that developed on Singleton's 240 acres grant of 1821, known as Singleton, would develop into an important early Upper Hunter Valley settlement. Howe's much larger 700 acre grant (1821), on the eastern side of Singleton's grant, was named 'Redbournberry' after his home town in Lincolnshire.

The 'discovery' of the Putty Road meant that stock could now be taken overland from the Cumberland Plain. Although cattle were driven along this route from 1820, it was not officially opened until 1823. When the road first opened, travellers were required to obtain a permit which stated who was of the travelling party, when the party intended to travel and the brands on the animals they intended to take with them. While this safeguard was intended to preserve the isolation of the penal settlement at Newcastle:

'... (the) purpose was defeated by the existence of the road itself.'⁶

The Putty Road was never considered a desirable route; the way was circuitous and conditions were grim. Little was done to improve conditions along the track. Peter

³ Howe to Governor Macquarie cited in *Centenary of the Municipality of Singleton, Singleton 1866-1966*, Singleton, Argus, 1966, p. 3.

⁴ Cited in *ibid*, p. 3.

⁵ J. Scholes, 'Bulga/Milbrodale History', *Hunter Valley News*, 20 March 1985, p. 6. NAA Series C3629/1, Item: Bulga.

⁶ Grace Karskens, 'The Grandest Improvement in the Country'. *An Historical and Archaeological Study of the Great North Road, N.S.W., 1825-1836*. Unpublished Thesis, Historical Archaeology, Master of Arts, University of Sydney, 1985, p. 22.

Cummingham was not alone when he described the track in 1827 as a 'rugged bridle path' that was 'quite unfit to take even an empty cart by.'⁷

The search for an alternative route into the Hunter Valley proceeded almost immediately following Howe's discovery. In 1821, John Blaxland marked the trees of a route that became known as Blaxland's Track or Parson's Road.⁸ Although Blaxland claimed that his route was very considerably shorter than the Putty Road, this route was, in reality, almost as circuitous as the Putty Road and was never more than a bridle path and droving track.⁹ Nevertheless, Blaxland was also rewarded for his efforts and later took up 8,000 acres, which he called 'Fordwych,' near present-day Broke (1823). The Reserve of Broke was later located on Blaxland's land.

Although land routes from Richmond into the Hunter Valley had now been discovered, the importance of water transport remained undiminished. In 1824, a boat service began operating between Newcastle and a wharf on the river bank at Wallis Plains, near the eastern end of present-day High Street in Maitland. By the end of 1825, the demand for services was such that a second boat was added to the route.¹⁰ Morpeth (Green Hills), located at the limit for ocean going vessels, would also develop into an important Hunter Valley port. It would appear, however, that the settlers of the Hunter Valley were not completely satisfied with the shipping services on offer and still sought a convenient, secure, road route. In their memorial to Governor Darling in 1826 requesting the construction of a secure, northern land route, they stated that the shipping of their goods caused inconvenience, risk and serious injury.¹¹

2.4 Early Settlement of the Hunter Valley

Three factors characterise the European settlement of the Hunter Valley from the 1820s. First, is the speed with which settlement progressed. Second, is the development of two distinct patterns of settlement, whereby the Lower Hunter Valley was characterised by smaller agricultural holdings while the Upper Hunter Valley was divided into large pastoral estates. Third, is the fact that most of the new settlers were drawn from the increasing numbers of free immigrants arriving in the Colony. As subsequently discussed, these three factors would later influence the planning, construction and use of the Great North Road.¹²

The decision to close Newcastle as a penal settlement and open the Hunter Valley to free settlement was made in 1822. Early in that year, surveyor Henry Dangar was dispatched to Newcastle with instructions to commence a survey of the Hunter Valley. Dangar was to survey squares of 36 miles each, allowing each settler no more than one mile of river frontage. Over the following two years, Dangar surveyed settlers' lots along the lower branches of the Hunter River and as far north as Patrick's Plains. In July of that year, he named Fal and Foy Brooks; in August, he explored the present-day sites of Muswellbrook, Aberdeen, Kingdom Ponds and Dartbrook; and in October 1824, he was among a party who discovered the confluence of the Goulburn and Hunter Rivers. When Dangar crossed the Liverpool Range into the Liverpool Plains beyond, his reports promoted a flood of applications for grants in the new areas.¹³

Between 1821 and 1825, 283 land grants were made within the Hunter Valley, totalling 369,361 acres. Whereas in March 1821, there had been only twenty-one settlers in the Hunter Valley, within four years, the Hunter Valley had

⁷ Arvo Tinni, 'A Tale of the Trails' in John Armstrong (ed.), *Shaping the Hunter Valley*, NSW, Newcastle Division of the Institution of Engineers, Australia, 1983, p. 58.

⁸ Carl Hoipo, 'The Blaxlands and the Wollombi', *The Pick*, Volume 3, 2005, p. 26.

⁹ Blaxland cited in Ian Webb, *op.cit.*, 2000, p. 3.

¹⁰ *Ibid*, p. 3.

¹¹ *Ibid*, p. 5.

¹² Grace Karskens, *op.cit.*, 1985, pp. 23-25.

¹³ Nancy Gray, 'Dangar, Henry (1796 - 1861)', in D. Pike (gen.ed.), *Australian Dictionary of Biography, Volume 1*, Victoria, University of Melbourne Press, 1966, pp 280-282.

‘...more people and more land under cultivation than any other district outside Cumberland.’¹⁴

Correspondent ‘XYZ’ reports in *The Australian* in 1827 that:

‘What was five years ago an unknown desert, inhabited only by a few wandering families of half-starved wretched blacks, living upon the precarious roots and grubs which nature...threw in their way, is now a settlement of English gentlemen, extending above one hundred miles along the banks of a beautiful river, occupying nearby half-a-million acres of land, and who can reckon among them, a property in houses and improvements, horses, sheep and cattle, of 500,000 pounds independent of their land!’¹⁵

2.5 A Closer Focus on Settlement in the Upper Hunter Valley

The opening of the Upper Hunter Valley to European settlement is generally said to have begun on the 200-acre grant promised to Benjamin Singleton in March 1821 as a reward for his part in the discovery of the Putty Road. Singleton later enlarged his grant, using the land to graze stock and grow wheat and maize. Singleton’s inn, ‘The Barley Mow’, established in 1825, became the nucleus of an ‘unofficial’ settlement often referred to as ‘Singleton’s Ford.’ A dray track ran between Wallis Plains and the Ford. The road ran in the general direction of the present New England Highway, but on the high ground to avoid swamps and thick growth.¹⁶ Singleton offered town lots in 1826; by 1829, sufficient wheat was being grown in the area for him to erect a mill, the first of several in the area, further cementing Singleton Ford as an important local centre. Within 12 years, the settlement boasted a population of 565 people, 127 houses, a flourmill, a brewery, two boiling-down works and a number of churches.¹⁷

Other settlements were gradually established through the Upper Hunter Valley. Muswellbrook (also known as Muscleebrook) was gazetted as a government township in 1833 and became a centre for magistrates, mounted police and other government functions. By 1848, Muswellbrook was home to 208 people, had 48 houses and a post office.¹⁸ An important service centre was also established at Scone, first gazetted under the name of Invermein, in 1837. Like Singleton, Scone was a private township controlled by the Dumaresq family, who owned around 13,000 acres of land in the vicinity. Aberdeen was established on a ford on the Hunter River when Thomas McQueen persuaded the government to lay out a township there in 1838, essentially to further his own interests. By 1866, the township boasted several inns, two churches, a post office, a lockup, a school and a number of shops. Other less important Upper Hunter Valley townships later developed at Cassilis, Murrurundi, Merriwa, Wigen, and Broke.

The area surrounding Charlton Road supported its first European settlers from the mid-1820s. Early grants through which Charlton Road now passes include John Blaxland’s ‘Fordwych’ or ‘Fordwich’ (6,760 acres and 800 acres) near Broke; A.M. Ritchie’s 2,000 acre grant of 1824; a series of smaller grants, varying from 175 to 212 acres, to John Cobcroft, later known as the ‘Charlton Estate’ and the ‘Polly John Estate’; and, at its northern most end, grants totalling just under 100 acres made to Reuben Clark (Figure 4).

¹⁴ Grace Karskens, *op.cit.*, 1985, p. 23.

¹⁵ Morriset cited in Ian Webb, *op.cit.*, 2000, pp. 2-3.

¹⁶ Arvo Tinni, *op.cit.*, 1983, p. 63.

¹⁷ Population and house statistics from William Henry Wells, *A Geographical Dictionary or Gazetteer of the Australian Colonies 1848*. This edition is a facsimile edition published in Sydney by The Council of the Library of New South Wales, 1970, p.373. Other information from Heritage Office and Department of Urban Affairs and Planning, *Regional Histories of New South Wales*, NSW, The Author, 1996, p. 47.

¹⁸ William Henry Wells, *op.cit.*, 1970 (1848), p. 279.



Figure 4: Parish of Wollombi, County of Northumberland, New South Wales, 1891.
NSW LPI.

1. John Blaxland (4,200 acres). Free settler.
2. Elizabeth, Arthur McDonald and Alexander Ritchie (2,000 acres).
3. Matthew Devenish Mears (1,280 acres).
4. John Cobcroft (212 acres 3r ex rd).
5. John Cobcroft (205 acres ex rd.).
6. John Cobcroft (205 acres ex rd.).
7. John Cobcroft (175.5 acres).
8. Samuel Neely (195 acres, 2 rds, 24 p.)
9. Reuben Clark (32 acres 2rds; 64 acres, 3 rds.)
10. Emma J. Cobcroft (320 acres, ex rd).
11. Festus Tong (500 acres).

W. H. Well's *A Geographical Dictionary or Gazetteer of the Colony of New South Wales*, first published in 1848, provides little about present day Broke and Bulga. Broke is simply listed as a 'village of N.S.W' named by Sir Thomas Mitchell 'in honour of Sir Charles Broke Vere'; no information as to the number of settlers or dwellings is provided. Although identified as a 'projected village' by Mitchell in 1831, Broke would still be described as a waste-land in 1860; village lots were not offered for sale until this time. Inns and Hotels, however, often put places on the traveller's map, if not in

official directories. Broke's first inn, the 'Brook Inn,' opened its doors in 1839.¹⁹ Although Bulga is not identified as a place in Well's 1842 gazetteer, it boasted an inn, the 'Travellers Inn' in 1834.²⁰

Land in the Upper Hunter Valley was predominately used as grazing land for stock, or simply held and traded for its financial value. Few early holdings were 'improved' by the construction of significant structures.²¹ The *Back to Singleton Souvenir* in 1926 noted of the early settlers of the district:

'...A large percentage of these [grants]... belonged to the mercantile, professional, and leisured classes, most of whom resided in Sydney and related the management of their properties to agents or managers...'²²

The Cobcroft family, whose estate, the 'Charlton Estate', most likely gave the road its name at a later date, were among those who did build a substantial homestead in the area. 'Charlton', constructed on what was originally Meare's grant, was a two storey Regency Style homestead, completed in 1857. The original homestead burnt down in the early twentieth century and a new single storey homestead built using the stone blocks of the original dwelling. This dwelling, now heritage listed, still stands on the Bulga Road.

2.6 Planning the Northern Road

Agitation for a better road into the Hunter Valley began soon after the opening of the Putty Road. In the words of a correspondent who identified himself as 'XYZ' in 1827:

'...Nothing can be done without means of communication. Our progress in prosperity hinges upon our facilities of communication; and the three most essential requirements in New South Wales are roads, roads, roads!'²³

Planning a new route north began in 1825, three years after the decision to close the penal settlement at Newcastle and soon after the first land grants were taken up in the Hunter Valley. The task of carry out a survey to find a better route to the Hunter Valley was given to Assistant Surveyor Heneage Finch.

A number of factors were behind the authorities' decision to commence planning of a new route north at this date. While the influence of wealthy and articulate landowners in the Valley no doubt opened official channels, impetus was provided by the growing importance of the Hunter Valley to the colonial economy. As later surmised by Captain William Dumaresq, whose family was a major land owner in the Upper Hunter Valley, the northern road would provide the link between the 'area of abundance' in the Hawkesbury Region, the 'Garden of the Colony' in the Hunter Valley and the soon to be 'most pleasing', 'little district', of Wollombi.²⁴

The project was also aided by the personal interest that Governor Ralph Darling (1825-1831) showed in providing the Colony with a good and permanent road system. Darling would later class the three 'great roads' heading north, south and west from

¹⁹ Catherine Foggo, *Inns and Hotels 1825-1900*, Sydney (?), Harfield Publications (?), 1990(?). Information as given by the State Library of New South Wales catalogue.

²⁰ William Henry Wells, *op.cit.*, 1970 (1848). Catherine Foggo, *op.cit.*, 1990 (?), n.p. Note dates given for the settlement of Broke vary. The year 1824 is given by Joyce Miles in 'Place Names Along the Convict Trail' in *The Pick*, Volume 5, 2007, p. 27.

²¹ J. Scholes, *op.cit.*, 1985, p.6. NAA Series C3629/1, Item: Bulga.

²² 'Discovery of the District' in *Souvenir: Back to Singleton*, *op.cit.*, 1926, p.19.

²³ 'Letter VII' (5.10.1827) cited in Ian Grantham (ed.), 'XYZ Goes North', *An Account of Trip to Hunter's River' and 'A Visit to the Wollombi and the Cummaroy'*, NSW, Warrimbirra Workshop, 1999, p. 71.

²⁴ William Dumaresq cited in Grace Karskens, 'As Good as Any in England': The background to the construction of the Great North Road' in *Four Essays on the Great North Road. Convict Trail Project Occasional Monograph Series*, NSW, Warrimbirra Workshop, 1988, p. 10.

the Settled Districts as 'among the most important measures of his government.'²⁵
Historian Grace Karskens surmises of Darling:

'...He managed to bring several surveyors who were highly qualified in road-making into the colony, he formed the Roads and Bridges Department to Administer the project and he developed the massive convict road-gang system...to accomplish it...The roads were intended to be Darling's lasting contribution to the colony, and an epitaph to his governorship...

...In a sense, the roads were a metaphor for Darling's period of governorship as a whole. It was one of consolidation of the colony and greatly improved regulations...'²⁶

Darling's ambitions were aided by the influx of convicts that followed the end of the Napoleonic Wars, who provided a ready and cost-effective labour source. The convict road gang system was extensively developed under Darling's governorship. Work in the road gangs- whether in irons or not- was usually reserved for re-offenders. As the number of convicts increased, there was a parallel increase in the number of re-offenders beyond the capacity of places of secondary punishment, such as Port Macquarie, to absorb. Employing these 'undesirables' on road gangs, many of whom were considered unsuitable for assignment to private settlers, removed them from the settlements. By 1826, there were 22 road gangs, comprising 720 convicts working on the colony's roads.²⁷ By 1830, this had increased to 1,755 convicts; 558 of these men were involved in the construction of the northern road.²⁸

The quality of construction and the conditions under which the convicts laboured varied considerably over the length of the 240km of the road and over time. Although many convicts were unskilled and apparently unwilling, they would, nevertheless, accomplish

'...some of the most ambitious and impressive engineering of the colonial period.'²⁹

Equally important as the practical need for roads to further settlement and provide employment for convicts, was the need for symbols to express the Colony's growing confidence in itself and the future. The northern road met this need:

'Not only did they (i.e. the great roads) overcome the barriers of barren, threatening land between Sydney and the rich pastorage of the valleys and plains, but, like grand public buildings, they also became reassuring symbols of permanency, order, and of the 'spread of civilisation itself.'

...The roads themselves, with their promise of heavy traffic and numerous thriving inns, thus became triumphant symbols of the colony's new outlook on itself and its future.³⁰

It would not be until the late 1820s that the road would generally be given the appellation 'Great'.

Finch's method of determining the line of the new road involved a combination of selecting existing tracks, routes newly discovered by settlers and the lines of ridges north and south of Wiseman's Ferry. In this way, Finch traced a line between Baulkham Hills and Wollombi that was:

'...used almost immediately by travellers whose wheels established a bush track and who no doubt made their own improvements long before the gangs reached the various sections. Finch's line was also

²⁵ Governor Darling cited in Grace Karskens, *op.cit.*, 1985, p.29.

²⁶ Grace Karskens, *op.cit.*, 1985, p. 29-30.

²⁷ Numbers cited in Ian Webb, *op.cit.*, 2000, p. 9.

²⁸ Numbers cited in Grace Karskens, *op.cit.*, 1988, p. 16.

²⁹ *Ibid*, p. 72.

³⁰ Grace Karskens, *op.cit.*, 1988, p.18.

considerably altered several times during the construction period. Sections were added and deviations made in response to engineering problems and according to (Surveyor General) Mitchell's grandiose schemes...³¹

Finch's survey did not proceed beyond Wollombi:

'...presumably because either the track was already clearly marked, or because the country was so easily traversed that he did not consider it necessary...'³²

Finch's line, directed via the Wollombi Valley, towards Maitland and Newcastle was particularly useful for settlers in the Lower Hunter Valley. The line was a far less circuitous route for these settlers than the earlier Putty Road, which reached the Valley at Jerry's Plain in the Upper Hunter. Thus, although essentially serving the same area, the construction of the new road meant that the Putty Road was dismissed within a few years of its construction as being of little use. It would, however, continue to be used as a stock route throughout the nineteenth century. Ironically, as further discussed below, similar comments would be made about the northern road, even before its completion in 1836.

2.7 Construction on the Northern Road Begins

William Dumaresq, the Surveyor of Roads and Bridges, and the Surveyor General, John Oxley, marked out the actual line of the northern road to Wisemans Ferry in 1826. Two convict road gangs, comprising a total of 67 men, commenced work at 'Castle Hill North' in September of that year, under the direction of Lieutenant Jonathon Warner. Another 35 men began work on another section of the road, around present-day Dural, later that year.

Surviving works from this early phase of construction, under the direction of Warner, are generally crude, even poorly built. When Warner was succeeded in mid-1828 by Lieutenant Percy Simpson, the quality of work improved considerably. Although his formal qualifications, if any, for road construction are not known, Simpson would, over the following four years, supervise the construction of some of the most impressive stoneworks that survive along the Great North Road.

The northern road was reportedly trafficable as far as the Hawkesbury by March 1828. According to the official returns of the Public Works Department, the construction of the road from 'Dural to Wiseman's' and 'Wiseman's to Newcastle' was completed in 1830.³³

2.8 Sir Thomas Mitchell and the Great North Road

After 1829, the construction of the northern road was driven by the grandiose visions of Oxley's successor as Surveyor General, Thomas Mitchell. The road in the Upper Hunter Valley was planned by Mitchell with three major branches, separating at Wollombi and then again at Broke. Simpson's earlier feats of engineering, combined with Mitchell's grand schemes for the remainder of the road, now elevated the northern road to the status of a 'Great Road'.³⁴

Mitchell's vision for the Great North Road went beyond that of his predecessors. While Simpson's had applied up-to-date road building principals, Mitchell went a step further in his rigid application of scientific principles to the planning stage. Mitchell's method involved the determining of the 'perfect line', i.e. the shortest distance

³¹ Grace Karskens, *op.cit.*, 1988, p. 48.

³² *Ibid*, p. 121.

³³ Arvo Tinni, *op.cit.*, 1983, p. 60.

³⁴ Grace Karskens, *op.cit.*, 1985, p. 128.

between two points, preferably in a straight line. Thus, unlike Finch's earlier approach to the surveying of the northern road, whereby the line of a road was formulated by topography, popular usage and/ or routes discovered by settlers, Mitchell's roads were worked out in accordance with proper survey and principles of geometry. Mitchell's vision is neatly summarised by a sketch he prepared for a report to the Secretary for War and Colonies in 1834 showing his lines for the great roads of the Colony. In this plan, the northern and southern lines are shown as straight diagonals, while the western line is shown as perpendicular to what is shown as a horizontal coast line of New South Wales.

Mitchell's vision for the road extended beyond its role as a link between Sydney and the Hunter Valley. Ultimately, Mitchell hoped that *his* road would one day travel 2,000 miles to Port Essington, in the north, and thus provide a great trade route between Sydney and Asia. The branch of road between Broke and Warkworth (now Charlton Road and Wallaby Scrub Road) was thus intended to link Sydney with the Upper Hunter, the Goulburn River, the Liverpool Plains and continue into the northernmost parts of Australia.

In 1829, when Mitchell assumed control of the Colony's roads, progress on the Great North Road was such that it was deemed necessary to decide on the line of the road from the Hawkesbury River to Wallis Plains. Mitchell considered that the cart track that had been established along Finch's survey line in the interim was unsuitable. Mitchell's report and plans for the line of the road between Finch's property at 'Laguna' and Ten Mile Hollow, and the more general plan he produced for the remainder of the road, highlight his obsession with the concept of the perfect road. Between Laguna and Ten Mile Hollow, for example, he almost completely ignored Finch's (i.e. the established) line of track, writing that he had:

'...endeavoured throughout to combine the straightest direction with that of the least declivity...'³⁵

Figure 5 reproduces Mitchell's *Plan of Roads Northwards from Sydney in a Survey Made in July 1829*. The detailed survey of the road would be ongoing through the early 1830s. In October 1830, the branch road towards Broke and beyond was described as not 'yet been carefully surveyed.'³⁶ In 1833, Mitchell drew up the survey work of his assistant surveyors who had been engaged in surveying roads and proposed roads in the Upper Hunter Valley in 1831 and 1832, into four plans of the lines of roads to be constructed. Changes to these plans during construction were approved only after inspection by Mitchell or his deputy, S.A. Perry.³⁷

In ignoring Finch's line, Mitchell conveyed the impression that he had not only located a shorter line, but also one requiring minimal construction. He had, however, understated the true challenges presented by the countryside through which his line passed. The ascent of Mount Simpson, for example, while described by Mitchell as of 'moderate declivity', would eventually involve some of the heaviest stonework undertaken along the entire road.³⁸ That the road, as constructed, occasionally deviated from Mitchell's line, provides evidence of the true difficulties encountered in some areas during construction. Mitchell's new line north created chaos on works already started and works already completed between Wallis Plains, Patrick Plains and Singleton were made, at least in the eyes of the authorities, redundant.

Mitchell's obsession would have more serious implications than the higher construction costs entailed, particularly within the Upper Hunter Valley. At Wollombi, Mitchell insisted that the Great North Road branch 'at equal angles' to Maitland and Broke respectively,

'The old settler's tracks may have been convenient, but on a large map (and within a larger vision) they appeared circuitous, badly proportioned and

³⁵ Grace Karskens, *op.cit.*, 1985, p.107.

³⁶ Finch to Mitchell, October 1830 cited in Grace Karskens, *op.cit.*, 1985, p. 129.

³⁷ *Ibid.*, p. 41.

³⁸ *Ibid.*, p.108.

lacking in pleasing symmetry. In his 1829 report, Mitchell proposed a line between Broke and Patrick's Plains which was different from the established track (Broke-Whittingham...) and an additional line between Patrick Plains and Warkworth.³⁹



Figure 5: General Plan of Roads Northwards from Sydney from a Survey Made in July 1829.

State Records NSW. Copy provided by the Convict Trust Inc.

³⁹ Grace Karskens, *op.cit.*, 1985, p.123.

As further discussed below, in insisting on these lines, Mitchell ignored the needs of established settlements, thereby laying the seeds that would help make the road obsolete even before it was completed:

‘Mitchell’s mistake in the Upper Hunter was to ignore the presence of Benjamin Singleton’s Plough Inn on the banks of the Hunter and the established track towards it from Broke via Whittingham. Instead, he marked two symmetrical branches to Warkworth and to Patrick Plains at the Minimbah property...Both were avoided by travellers in favour of the earlier line. In 1927 the latter was still described as part of the main route to the Upper Hunter...Of Mitchell’s two branches, only the north-west arm survives- the north east arm is visible only as a broken line on the relevant Parish maps.’⁴⁰

Figure 6 provides a plan of Mitchell’s lines of road alongside established routes. Prior to 1825, there were at least four established roads on the southern side of the Hunter River. The first linked Newcastle to Wallis Plains and was described as early as 1820 as a ‘path going through two morasses.’ The second went from Wallis Plains to Green Hills (Morpeth). The third linked Wallis Plains to Singleton’s Ford and Muscle Creek (Muswellbrook) and was known as Captain Pike’s Road or the Old Settlers Road (c.1825). The fourth linked Richard Wiseman’s and Andrew Murray’s properties on the south arm of the Wollombi Brook to Wallis Plains at Parson’s Hill.⁴¹

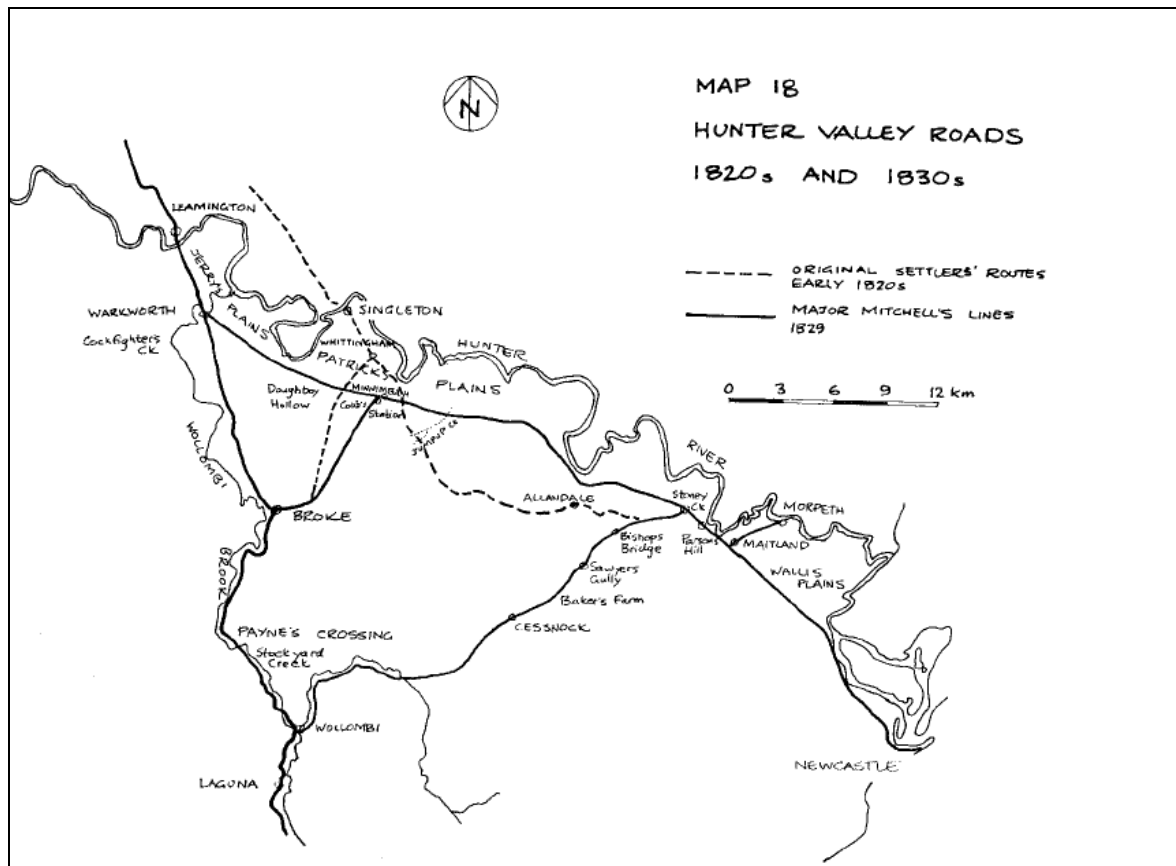


Figure 6: Plan showing Mitchell’s lines of road with established settler’s routes.
Grace Karskens, *The Grandest Improvement in the Country*, 1985.

Note: The original plans held by State Records that show this information are entitled ‘Plan Showing Old Made Road and the New Liens of Road in the District of the Hunter as marked out Major Mitchell, 1833.’ A.O. 5090, 5091 and 5092.

⁴⁰ *Ibid*, p.144.

⁴¹ Ian Webb, *op.cit.*, 2000, p. 4.

The ultimate abandonment by the local people of Mitchell's line of road was not isolated to the Hunter Valley, but was repeated in other areas of the Colony as Mitchell surveyed the lines for new main roads using his rigid principles at the expense of already established patterns:

'An early line between McGraths Hill, near Windsor, and Maroota, via Cattai Creek, also predated Finch's survey, and was marked as a 'made road' in 1829. With settlement at Pitt Town and Cattai Creek, this road was more hospitable than the Great North Road through Glenorie. By 1927 it was marked as the main route to the north, while the North Road was described as 'disused'. Mitchell's branch via Bedlam Point was also largely ignored by local settlers, although it was later incorporated into the network of suburban and outer metropolitan streets and roads. Further north, travellers preferred the early line along the fertile and settled west bank of the MacDonal River to the impressive but rugged and isolated road over the ridge above. The St Albans Road was surveyed in 1864, gradually improved, and officially opened in 1884.'⁴²

2.9 The Great North Road North of Wollombi

As Mitchell made his plans for his road, there was a distinct shift in the way that the Great North Road was perceived. While the road had initially been considered one of the most important works in the Colony, by the early 1830s, there was a noticeable de-emphasis on the significance of the road among colonial authorities. This change had been brought about by a number of factors. First, Governor Darling, who had championed the road's construction, left the colony in 1831. Second, steam ship services began between Sydney and Newcastle in 1832 and later Morpeth (mid-to-late-1830s), providing a rapid and more comfortable link between the ports. For the first time words such as 'comfort', 'ease' and 'rapidity' were applied to a journey between Sydney and Newcastle.⁴³ Even Mitchell conceded as early as 1832 that the introduction of steam ships had made the land route of far less significance. Finally, in 1831, the very able Heneage Finch, who had been given control of construction in the Wollombi District the previous year, was relieved of responsibility for this section of the road. Finch's departure marks a 'turning point' in the road's construction. His successors, L.V. Dulhunty (1831-1834) and Peter Ogilvie (1835-6), showed notably less enthusiasm for the work. There is a parallel decline in surviving records for the road after 1832 and thus few records relating to the construction of the section of road now Charlton Road.⁴⁴

The declining interest in the Great North Road after 1832 is reflected in the quality and extent of work carried out during the final phases of construction. Work along the road after 1832 was generally hastier. Gangs, for example, spent only a year on the difficult section of road between Wollombi and Broke. Work also became more makeshift; the lack of physical evidence suggests that few masonry structures were built.⁴⁵ This lack of stonework cannot solely be attributed to the nature of the terrain. Mitchell's chosen line of road between Wollombi and Broke involved nine crossings of the Wollombi Brook, in addition to several creek crossings. Ultimately, only two bridges were completed; travellers presumably forded the remaining crossings.

By 1832-3, Assistant Surveyor Ogilvie was working with fewer and less-abled convicts. Many convict gangs had been diverted from the Great North Road to other projects; there were only two convict workforces (containing both ironed and un-ironed convicts) working on the road and one bridge party. By this stage of construction, the convict work parties were being overseen by well-behaved convicts, who were appointed with the offer of a Ticket of Leave if they performed well. There is no

⁴² S. Lavelle, G. Karskens and RTA Technology, *Conservation Management Plan for the Great North Road*, 1999, Section 2.4.

⁴³ Early reports cited in Elizabeth A. Robertson, 'Why a Grand Folly' in *The Pick*, Volume 4, 2006, p.2.

⁴⁴ Grace Karskens, *op.cit.*, 1988, p. 32. Verified by a search for records at State Records.

⁴⁵ *Ibid*, p. 135.

mention of a military guard being stationed with the gangs in the Wollombi District. Further details about the strict instructions that were issued for the superintendence and provisioning of road gangs, together with the materials and tools sent to them can be found in the references listed in Section 1.6.⁴⁶ Most work along the road was done by manpower, although bullocks were assigned where necessary. The number of bullocks working in the Wollombi District ranged from four in 1829 to thirty-six in July 1833.⁴⁷ Men in the road parties sometimes left work on the roads to assist settlers in the harvest, provided that the person requesting their services supplied their rations and that they were returned 'not later than two months after they were lent.'⁴⁸

The records relating to the activities of the road gangs working out of Cockfighter's Creek Station (present day Warkworth) in the 1830s do not always specify which part of the road they were working on and are, at times, contradictory. Records place No. 42 Road Party (later No. 13 Road Party) at Cockfighter's Creek in February 1830, where they spent the next month splitting timber and stripping bark to build six huts for a new station. Conditions at the camp were primitive. When James Backhouse visited the station at Cockfighter's Creek in 1836, by which time the station was being run by Oglivie, he noted that the Bridge Party lodged there were housed in huts of split timber which 'admitted much air.' The convicts had only one blanket each, in which they slept on large sheets of bark 'put up like berths in a ship.'⁴⁹ The road gang at the station in 1830 was under instruction to commence 'improving and rendering passable' the road between Cockfighter's Creek (Warkworth) and Blaxland's Station (at Broke). They subsequently stumped and burned 700 rods (3,500m) of road, quarried 70 carts of stone, formed 35 rods of road and cut down 204m of bank 1.5m wide and 1 metre deep during March and April.⁵⁰ This gang was moved in September to near Richard Wiseman's Farm.⁵¹

In mid-1833, No. 13 Road Party (comprising 93 men under Overseer MacDougall) and No. 14 Party (comprising 98 men under Overseer Lane) were again stationed at Cockfighter's Creek, but were working downstream of Wollombi, towards Paynes' Crossing. During May 1833, No. 13 Road Party cut down 520 metres of brush, formed 632 rods of road 21 feet wide and stumped, cleared and burnt 277 rods of road. No. 14 Gang meantime were similarly stumping, quarrying, spreading earth and building walls.⁵² In January 1834, Nos. 13 and 14 Gangs were removed to the new line of road between Warkworth and Maitland.

For a brief period, between 1834 - 1835, clearing work on the road would appear to have been carried out not by convicts, but by private contractors under the direction of Dulhunty and later Oglivie. An advertisement for road clearing appeared in the *Sydney Gazette* in February 1834 as follows:

'Tenders will be received, at the office of the Colonial Secretary, until the 14th March next, for clearing, burning off, and stumping the new line of the road recently marked through the Hunter's new district. The whole width of ninety-nine feet, or a chain and a half, to be cleared upwards, where the ground is not level, and where the ground is quite level, taking the present line of the space to be cleared. The tenders are required to specify the rate per acre, at which the work would be undertaken, upon any of the portions of the following lines of the roads.'⁵³

The line of the

'...new Sydney road from its junction with the Maitland Road as before mentioned, near Cockfighter's Bridge, back to the junction of the Patrick's

⁴⁶ Refer particularly to Grace Karskens, *op.cit.*, 1985 and Ian Webb, *op.cit.*, 2000 for further information.

⁴⁷ Ian Webb, *op.cit.*, 2000, p. 24.

⁴⁸ Notice published 21 October, 1830 cited in Ian Webb, *op.cit.*, 2000, p. 52.

⁴⁹ Cited in Grace Karskens, *op.cit.*, 1985, p. 15.

⁵⁰ Ian Webb, *op.cit.*, 2000, p. 43.

⁵¹ *Ibid*, p. 46.

⁵² *Ibid*, p. 53. Original copy from the State Archives also cited.

⁵³ *The Sydney Gazette and New South Wales Advertiser*, 13 February, 1834.

Plain road at the Village Reserve of Broke; thirteen miles eighteen chains...⁵⁴

was included among these contracts.

The contract for the clearing of the road between Broke and Cockfighter's Creek was won by Mr. Coulson.⁵⁵ While other contractors had apparently not completed work to appropriate standards, Mr. Coulson's work was satisfactory and he was awarded a second contract in June 1835 to clear the line just north of Broke, where it had been altered from the original line.⁵⁶ The experiment with private contractors was short-lived and towards the end of Bourke's term as Governor, road gangs were once again employed for clearing.

The section now Charlton Road would thus appear to have been constructed between late 1834 and 1836 concurrent with the other roads under Ogilvie's direction. Where land was level on the Great North Road, as along the greater part of Charlton Road, there would appear to be no formation works involved. The line was simply cleared, levelled and crushed stone or gravel laid over compacted broken stone. The road makers by this time understood the importance of correct drainage for the long term stability of the road. Side drains would originally have lined the entire road on both sides of flat land and descents and on the uphill side where the road was on a slope.⁵⁷ Where the road passed through private farms in the Wollombi District, three rail wooden fences were typically erected on either side of the road.

By May 1836, Assistant Surveyor Ogilvie was beginning to doubt his ability to complete the road lines under his direction. Of the road to Maitland, he stated that it would take 'some years to finish', partly because he had few labourers (and most were, according to Ogilvie, crippled) and partially because of the distance of which he was responsible:

'I am led to believe that before the Eastern extremity of the line could be completed, the Western would be quite out of repair.'⁵⁸

In fact:

'Whether or not the last branches of the Great North Road were actually finished is unclear. In 1836, Ogilvie presented another long and dismal report enumerating the large amount of work still to be done between his station and Maitland, particularly at the creek crossings, and bemoaning the lack of labour to complete it. He was removed shortly after and was not replaced, and the Hunter Valley and Great North Roads were left, presumably unfinished.'⁵⁹

There are no readily apparent surviving structures along this part of the road. The convicts did, however, leave at least one tangible legacy in the name of Monkey Place Creek at the southern most end of the road. The name has been attributed to the convict road gangs, who are said to have mistaken the koalas in the trees for a more familiar animal.⁶⁰

⁵⁴ *The Sydney Gazette and New South Wales Advertiser*, 13 February, 1834.

⁵⁵ Ian Webb, *op.cit.*, 2000, p. 30.

⁵⁶ *Ibid*, p. 30.

⁵⁷ Ian Webb, *op.cit.*, 2000, p. 278.

⁵⁸ Cited in *ibid*, p. 146.

⁵⁹ *Ibid*, p. 146.

⁶⁰ Joyce Miles, *The Joys (and Sorrows) of Toponymic Research*, Placenames Australia, ANPS, March 2004, p.4, cited in 'How Did the Howqua get its name?', *Newsletter of the Australian National Placenames Survey*, March 2009.

2.10 Great Road or Folly?

Charlton Road was constructed at a time when the Great North Road was attracting considerable criticism with regard to the cost of construction, its poor condition and the fact that much of it was disused. *The Australian* and *The Sydney Morning Herald*, which had earlier lauded the road, now roundly condemned it. The final stages of the Great North Road were:

‘...characterised by Ogilvie’s pessimism, by the government’s de-emphasis of the Great North Road in terms of reduced and inadequate convict labour, and by futility in the sense that settlers continued to use the original more useful lines they had established towards and in the Hunter Valley. It thus appears that roads under Ogilvie’s supervision were doomed to abandonment before they were commenced.’⁶¹

Criticism of the road gathered momentum and continued over the following ten years as the number of steam ships increased and other land routes remained more popular. Writing of the difficulties of transerving the Great North Road between the Hawkesbury and Wollombi, an unknown traveller of the early 1840s remarked:

‘...Great North Road...and although as a works of enterprise, its formation was highly creditable to the Government of the day and one of extensive labour- I question whether travellers of the present day, were they aware of the difficulties...would not prefer the grand route by steam than chance- the present dilapidated state of many portions of the road...’⁶²

The final blow to the Great North Road came in the mid-century, as work began on the Great Northern Railway in 1855. Stations opened at Maitland in 1857, Singleton in 1863, Muswellbrook in 1869, Aberdeen in 1870 and Scone in 1871. The opening of the Hawkesbury River Railway Bridge in 1889 completed the rail link between Sydney and Newcastle. This made the port of Newcastle pre-eminent in the Hunter Valley and the need for stock to travel from the Cumberland Plain overland to the Hunter Valley decreased accordingly.

The northern roads gradually fell into disuse and disrepair as a result of the dominance of rail transport:

‘With the introduction, and growth, of an extensive railway system, there was a corresponding diminution in the use of roads for through traffic purposes. The importance of the roads north of Sydney dwindled to almost zero and it was not until the introduction of the motor car that brought about once again, demand for adequate through roads.’⁶³

W.S. Campbell’s description of a road in the Northern River’s District in 1899 could be applied to the Hunter Valley in general:

‘...[the road] having the tendency to knock the sentiment out of even the most enthusiastic in search of the beautiful, for the method now adopted of making roads throughout the whole district is cruel in the extreme, not only to man, but to the unfortunate horses as well.’⁶⁴

Drovers, too, appear to have used other routes as indicated by the fact that the travelling stock reserves on the Great North Road were rescinded in 1889. This however, is equally a reflection of the use of the railway to transport cattle, the presence of abattoirs in the Hunter Valley and the development of refrigerated transport.

⁶¹ Ian Webb, *op.cit.*, 2000, p. 147.

⁶² Unidentified correspondent in *The Sydney Morning Herald*, 4 August, 1841.

⁶³ Arvo Tinni, *op.cit.*, 1983, p. 61.

⁶⁴ Cited in *ibid*, p. 62.

There are references to small sums being spent on the repair of roads between Wollombi and Warkworth in the newspapers of the 1860s and 1870s. Parts of original line of road were bypassed. In the 1860s, for example, deviations eliminated four crossings of the Wollombi Brooke between Wollombi and Broke.

2.11 How the Upper Hunter Valley Developed

Throughout the late nineteenth century, the Upper Hunter Valley continued to be dominated by substantial land holdings. In his *Wealth and Progress of New South Wales 1888-9*, Coghlan noted that the Upper Hunter Valley was the general exception to the rule that the older settled areas of the colony comprised smaller holdings than the newly settled districts. The average size of the holdings in the Upper Hunter Valley in the year 1887-8 was 1, 295 acres.⁶⁵ While the *Robertson Land Act* of 1861 had encouraged small holder settlement in some areas, it had little impact on the Upper Hunter Valley, where fourteen men still held over 220,000 acres of land into the 1890s.⁶⁶

A period of change then followed. In the face of further land reforms and increased land taxes, together with rising land costs, the pastoral estates that had dominated the early European history of the Upper Hunter were finally broken up. John Cobcroft's estates, for example, 'Polly John' and 'Charlton' were subdivided into lots ranging in size from 200 acres to over 600 acres and offered for sale as 'good grazing and agricultural land' in the late 1880s.⁶⁷ Many smaller holdings were developed as dairies and orchards, taking advantage of the rich alluvial plains in a way that the early use of the land for sheep and cattle grazing had not.

Dairies became particularly important during the early 1900s. The opening of the Hawkesbury River Railway Bridge in 1889 gave the Hunter Valley dairies access to the lucrative Sydney markets. Thus by 1926, dairying had become the:

'... most important industry [in the Singleton District] and is particularly successful on the Hunter River Flats, where carefully selected herds, modern machinery and methods, are producing wonderful results...

The cows on registered dairies within the district number 30,300 and the total yield of milk from such cows during last year was 8,640,484 gallons...'⁶⁸

With regard to fruit growing at this time:

'Some of the finest fruit in the State comes from the Singleton district, particularly citrus fruits. The yield for the year under review was- Oranges 11,000 bushels; mandarins, 282 bushels; lemons, 515 bushels; other citrus fruits, 282 bushels. Bulga Inlet and most of the back creeks produce first grade oranges, some of which have been sent to England, where they are classed as the best ever imported into that country.

The yield of other fruits was as follows...Apples 2,922 bushels; pears, 645 bushels; early peaches 6,907 bushels; canning peaches ...nectarines...plums... apricots...whilst clemis, prunes, quinces, figs, persimmons, loquats bear prolificly in most parts of the district.'⁶⁹

The early agricultural crops of the district continued to be grown on a reduced scale, with some 17,129 acres grown in 1925, a third of which was lucerne. Lucerne-growing areas were particularly noted as being around Appletree Creek, Bulga, Broke

⁶⁵ T.A. Coghlan, *The Wealth and Progress of New South Wales 1889-90*, Sydney, Government Printer, 1889, p. 228-9.

⁶⁶ Heritage Office and Department of Urban Affairs and Planning, *op.cit.*, 1996, p. 48.

⁶⁷ See: Advertisement in *The Maitland Mercury*, 27 September, 1888.

⁶⁸ 'Australia's Garden on Eden', in *Souvenir: Back to Singleton, 15-26 September, 1926*, Singleton, Back to Singleton Week Executive Committee, 1926, p. 35.

⁶⁹ *Ibid*, pp. 34-36.

and Milbrodale. Maize, oats, wheat, barley, rye, broom millet, potatoes, pumpkins, tomatoes, sundry root crops and cotton were also noted.⁷⁰ Viticulture, also an early industry, continued, with both grapes for wine and table grapes being noted, the latter particularly around Bulga. Grazing continued, albeit on a much reduced scale.

The *Souvenir* of 1926 also provides some information as to the state of the townships in the area. Neither Broke, Bulga or Warkworth could be regarded as being of more than average importance. Bulga was described in 1926 as a 'compact little village' with two churches, a school of arts, a public school, and general store:

'...and with its telephonic facilities and quick motor transport it is anything but an out-back settlement.'⁷¹

Contemporary Broke was less overtly praised, but was still noted as containing

'...a hotel, and churches..., a police station, a large entertainment hall, a telephone exchange, and a daily mail from Singleton.'⁷²

Ironically, given the current dominance of coal mining in the immediate surrounding area, the *Souvenir* of 1926, while noting the coal reserves, had little to say about the exploitation of minerals in the district. It did, however, foresee that:

'...it is quite reasonable to assume that at no very distant date the coal mining industry will become an important factor in the prosperity of the district.'⁷³

The only mention of the Great North Road is as a point of historical interest. It is noted that the 'main highway' through to Windsor ran through Broke:

'...and it is said that in the early days as many as a thousand head of stock passed along this road every week.'⁷⁴

Dairying, orcharding, grazing and timber felling for firewood and milling remained the dominant industries practiced in the area surrounding Bulga, Warkworth, Strowan and Broke until after World War II. A different activity briefly disturbed the area during World War II as works were carried out to create a base airfield at Bulga, with satellite facilities at Warkworth, Strowan and Broke. The Putty Road was upgraded as an alternative inland route to Sydney at this time. Work on these projects ceased with little having been constructed as the Japanese threat receded in 1942-3.

Anecdotal evidence indicates that Charlton and Wallaby Scrub Roads, although poorly maintained, were used by local people throughout this period as part of the network of local roads.⁷⁵ When the road became known as Charlton Road is not clear. Local historians suggest that entire length of road from Broke to Warkworth was originally known as the Wallaby Scrub Road. The southern end of the road may have been re-named Charlton Road when the intersection of the Great North Road with the Putty Road was moved to an offset position between 1963 and 1974 to prevent accidents.⁷⁶ The line of the road was 'improved' to remove small 'kinks' and sealed in the 1970s.

The origin of the name Charlton Road is not clear. As noted above, however, it is likely to be a reference to the Cobcroft family's 'Charlton Estate', through which the road passes. The owner of the Charlton Estate, John Frederick Cobcroft was described as one of the oldest 'native born' white men in the Colony when he died at

⁷⁰ *Souvenir: Back to Singleton, op.cit.*, 1926, p. 17;

⁷¹ *Ibid*, p. 15.

⁷² *Ibid*, p. 17.

⁷³ *Ibid*, p. 37.

⁷⁴ *Ibid*, p. 17.

⁷⁵ From Conversations with Dr. Bill Greenhalgh and Stewart Mitchell.

⁷⁶ Aerial photographs (full reference not available) obtained from the NSW Lands Department during the course of research for Bulga RAAF Base.

the age of 85 in 1881.⁷⁷ Cobcroft is buried close by Charlton Road in the Broke General Cemetery.

Significant change in the immediate area was heralded by the issuing of coal mining leases in the late 1970s and early 1980s. Mining has been carried out within the Bulga Coal Complex since 1981, when a truck and shovel open cut coal mine, known as the Saxonville Colliery, was opened to the east of the Broke Road. The former open cut pits of this mine are now used as a washery reject embankment area for the BCC. In 1990, approval was granted for an expansion to the west of Broke Road. As further outlined in the Preliminary Environmental Assessment, approval was granted in 1999 to enable open cut mining to continue until 2025. Six modifications to this approval have been granted since 1999. Separate approvals were also granted for longwall mining beneath Charlton Road in 1993 and 2000.

Interest in the Great North Road has been growing since the early 1990s when the Convict Trail Inc, was established by the Bucketty and Wollombi communities, who were concerned with the degradation of the remains of the road in their areas. Today, over 30 groups have joined the Convict Trail Inc., including local councils, community groups, tourist organisations, government agencies and heritage organisations. A wide range of bodies is responsible for different sections of the road, including local councils, the National Parks and Wildlife Service and the Roads and Traffic Authority of New South Wales.⁷⁸ Conservation Management Plans exist for some sections of the road. In 1999, a Conservation Management Plan was prepared for the entire length of the road.

In 2002, a plaque commemorating the construction of the Great North Road was unveiled near Monkey Place Creek, at the southern end of Charlton Road, by the Mayor of Singleton. The plaque reads:

‘The Convict Trail- The Great North Road

Monkey Place Creek, near Broke.

Construction history of this branch of the Great North Road is not as complete as that for sections further south.

The branch of the GNR to Warkworth was constructed from late 1834 to 1836 under the supervision of Assistant Surveyor Peter Ogilvie, who was also responsible for a linking road from Warkworth to Cobb’s Station, lower down the Valley.

An abandoned loop, about 150 metres in length, is visible south of the present sealed road. The creek was possibly crossed by way of a ford. Presence of 20th century gravel and bitumen aggregate pavement on part of the older formation suggests it was in use until relatively recently.

The Great North Road, the first made north of the Hawkesbury, was constructed by convict gangs between 1826 and 1836. Some parts of the Road have carried traffic continuously since this time. Other sections have been abandoned or have become little used.

The GNR was made when settlers were pushing up the Hunter Valley and when sailing ships found it difficult to get into the harbour at Newcastle.

Today you can walk or ride ‘the convict trail’ from kerbed and guttered suburban streets to the dry, rocky ridges and spectacular forests around Wiseman’s Ferry and St. Albans, to the pretty Wollombi Valley and onto the open plains of the Hunter Valley. Along the way you will find much that will amaze you. Get a map and explore.’

⁷⁷ ‘Death of an Old Native’, *The Maitland Mercury & Hunter River General Advertiser*, 10 February, 1881.

⁷⁸ From the Convict Trail Inc. website.

2.12 Some Concluding Remarks

The 240km long Great North Road was constructed between 1826 and 1836 to provide an overland route between Richmond/Windsor, and thus Sydney, and the Hunter Valley, then rapidly developing as an important area in the Colony's burgeoning economy. The road was designed to serve the entire Valley and thus branched at Wollombi and again at Broke to link Wallis Plains (Maitland), Patrick Plain's (Whittingham) and Warkworth in the Upper Hunter Valley.⁷⁹ The Great North Road in the Upper Hunter Valley is thus a road system, rather than a single line of road.

When begun, the Great North Road was intended not only to fulfill the practical need of overland communication and transport, but also fulfill a symbolic need. It was one of three 'great roads' (the others heading south and west) designed to draw the Colony together. The road represented a victory over harsh terrain and held out a promise for future prosperity:

'...the construction work at least was intended by its builders to convey certain unmistakable impressions to observers. The plans and ambitions of men such as Ralph Darling, Thomas Mitchell, Percy Simpson and Heneage Finch were purposefully represented in the steeply climbing retaining walls and extravagant bridges. The road also illustrates the problems they encountered, and the general preoccupations and difficulties of a small colony in a vast land. Set in the wider historical context, the Great North Road is a material expression of contemporary attitudes and expectations of the colony with regard to its future.'⁸⁰

The significance of the Great North Road can be summarised as:

'...(The Great North Road) can illuminate a number of facets of the history of New South Wales, including early nineteenth century governmental policy and administration; the working and living conditions of the convicts in the many road gangs of the time; early nineteenth century governmental policy and administration; the working and living conditions of the convicts in the many road gangs of the time; early nineteenth century modes of transport; the effect of the new road-planning philosophies and the adaptation of English road building techniques to Australian conditions. Underlying all these facets connected with the road and its construction, however, is the way in which the Great North Road came to represent a new, optimistic and responsible outlook concerning the colony's future which developed in the period of expansion of 1813 to 1830.'⁸¹

While the Great North Road had undoubted influence as a symbol, particularly during the earliest phases of construction, and has high significance for what it reveals about colonial surveying and engineering, as well as the convict system, the actual role that it played in the development of local and wider economies is less easy to determine. Within the Upper Hunter Valley, Mitchell's passion for scientifically determined lines ignored the needs of the very people that the road was designed to serve. Settlers continued to use the old, existing roads that had been created by patterns of use, rather than Mitchell's new road. Mitchell's mistake in the Upper Hunter was to ignore Singleton's 'Plough Inn' and the established track to it from Broke via Whittingham. Thus the road

⁷⁹ Grace Karskens, *op.cit.*, 1988, p.9.

⁸⁰ *Souvenir: Back to Singleton*, 1926, p.15; p. 6.

⁸¹ Grace Karskens, *op.cit.*, 1988, p. 11.

‘... represents a vision of rural development, of close settlement, small-scale agriculture and thriving, orderly villages which never really became widespread.’⁸²

Nor was this mistake limited to the Upper Hunter Valley.

The lack of use of the Great North Road was one of many reasons why it was increasingly criticised from the early 1830s. In 1832, steam ships began a regular trade between Sydney and Newcastle, more or less negating the road as the preferred route north; a little over twenty years later, construction of the Great Northern Railway would begin and interest in road systems would decline until motor transport became more popular in the period 1910-20. Ironically, it is because the road did not fulfill its promise as the great way north that sections survive intact today.

3.0 SITE ASSESSMENT

3.1 Preamble

For the following, refer to Figure 7, which provides an aerial image over Charlton Road, showing the proposed realignment. The ‘IMG’ numbers refer to photographs cited in this section.

⁸² S. Lavelle, G. Karskens and RTA Technology, *Conservation Management Plan for the Great North Road*, 1999, Section 2.5.

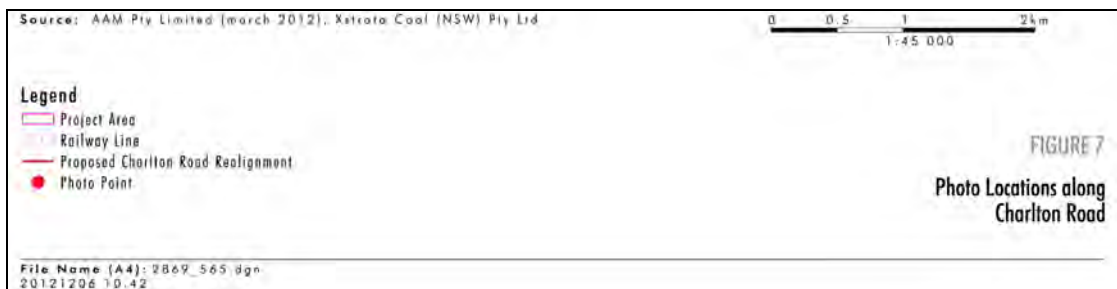


Figure 7: An aerial photograph showing Charlton Road, the proposed realignment and the nature of the countryside through which it passes.
Umwelt 2012.

3.2 Charlton Road and Environs

Charlton Road is owned by Singleton Shire Council and classed as a local road. The road is approximately 12km long and runs in a generally north-westerly direction from its junction with Broke Road/Paynes Crossing Road to its junction with Putty Road.

Section 6.0 of Umwelt's *Preliminary Environmental Assessment* of the project, to which the reader is referred, provides an analysis of the climate, soils and vegetation within the surrounding area. The following is noted from this analysis:

- The Bulga Coal Complex located adjacent to the Great Dividing Range. The foothills of the Wollemi National Park lie approximately 2.5km to the west and form a dominant land feature.
- The topography in the Bulga Coal Complex has been substantially mined, particularly on the eastern side of Charlton Road. Previously, it consisted of rolling hills and gentle slopes with relief of up to 90m.
- The Bulga Coal Complex is located within the catchment of Wollombi Creek (which lies to the west of Charlton Road) and Loders Creek. The southern and western areas of the area, including Charlton Road, drain into the Wollombi Brook through two un-named tributaries.
- Bulga Coal, and adjoining mines, owns the land immediately to the east of Charlton Road. Adjoining the road to the west, the land is owned by private freehold and the mines.
- Mining and cattle grazing activities and past land clearances associated with earlier agricultural activities has disturbed much of the area, resulting in the vegetation being dominated by pastoral grasslands with small isolated pockets of predominately re-growth woodland.
- A number of vegetation communities have been recorded within the BCC, including within close proximity of Charlton Road. There are scattered patches of Central Hunter Box-Ironbark Woodland along the length of the road. Approximately 2.0 km from the northern end of Charlton Road, there is an area of Warkworth Sands Woodland.
- The surrounding area supports a range of activities including: open cut and underground coal mining operations; freehold grazing and cropping land; small rural towns; rural-residential and small rural holdings; olive groves; horticulture and viticulture; and tourism related uses.

The following description of Charlton Road relates to the section of Charlton Road that starts just to the south of the Broke Road/Paynes Crossing intersection.

At the southern most end of Charlton Road, approximately 150m of the original line of road has been by-passed. The original line of road lies to the west and below the current line of road and is clearly visible in the detailed aerial photograph, Figure 8.



Figure 8: Aerial photograph over the southern end of Charlton Road, near Monkey Place Creek, showing the original line of the road and the current line of road.

Google Maps; annotations by A.F.

When this deviation was carried out is not clear, but may have occurred in the early 1950s when a timber beam bridge was erected across Monkey Place Creek.⁸³ The original line of road curves slightly and has the remains of a composite gravel and bitumen surface. The road edges merge with the grass verges to either side. The road falls gently as it approaches Monkey Place Creek, before rising on the northern side to meet the current line of Charlton Road. On the southern side of the Creek, a vineyard extends to the west and south. Trees line the creek bed.

There are no remnant convict structures along the by-passed section. A modern road sign and interpretation plaque, erected by the Convict Trail Project, stands on the western side of the road, on the southern side of the creek. In the absence of physical or documentary evidence to the contrary, the sign concludes that the creek was originally crossed by means of a ford. The wording from the sign was reproduced in Section 2.11 above.

Figures 9 to 14 illustrate the original line of road on the southern side of Monkey Place Creek. The number in brackets after the description relates to the image number given by Figure 7.

⁸³ Tenders for the erection of a timber beam bridge over Monkey Place Creek out of Broke were advertised in *The Sydney Morning Herald*, 19 January, 1952.



Figure 9:
The original line of the Great North Road and the current line of road, looking north west towards Monkey Place Creek (IMG 1182).



Figure 10:
Continuing along the original line of the road, looking northwest towards Monkey Place Creek (IMG 1183).



Figure 11:
Interpretation plaque erected by the Convict Trail on the southern side of Monkey Place Creek. (IMG 1185).



Figure 12:
Monkey Place
Creek, looking north
west on the southern
side of the creek
crossing (IMG 1194).



Figure 13:
The original line of
road as it crosses
Monkey Place Creek
(IMG 1195).



Figure 14:
The above section of
road (i.e. to the
south of Monkey
Place Creek),
looking south east
towards the junction
with the current line
of road (IMG 1199).



Figure 15:
The current line of road
where it crosses Monkey
Place Creek (IMG
1193).

As demonstrated by Figures 16 to 20, the original line of the road on the northern side of Monkey Place Creek is similar in character and rises steadily as it travels to meet the current line of road.



Figure 16:
Original line of the
road, on the northern
side of Monkey Place
Creek, looking south
east (IMG 1201).



Figure 17:
Looking across Monkey
Place Creek to the south
east towards the current
line of road (IMG 1206).



Figure 18:
Looking up the
original line of road
to the east (IMG
1207).



Figure 19:
Intersection of the
original line of road
with the current
Charlton Road
(IMG 1208).



Figure 20:
Intersection of the
original line of road
with the current
Charlton Road,
looking south east
(IMG 1223).

Figure 21 illustrates the intersection of Charlton Road with Broke Road, while Figure 22 shows a modern concrete culvert beneath Charlton Road, close by the intersection.



Figure 21:
Intersection of
Charlton Road and
Broke Road, looking
west (IMG 1216).



Figure 22:
Modern concrete
culvert beneath an
embankment
Charlton Road close
by its intersection
with Broke Road,
looking south east
(IMG 1217).

Continuing along Charlton Road, north west of the point where it meets the original line of road, the road curves before straightening and rising gently towards its intersection with Butlers Road, just over 500m from the Broke Road intersection. The road is bitumen surfaced and without lines, with wide grass reserves to either side; the edges are marked with timber marker posts. The road passes through irregular stands of trees to either side.

Beyond the grass verges, timber and wire fences border rolling pastures and cropping land. The foothills of the Wollombi National Park lie in the distance to the west and are a significant element in the landscape. Broke General Cemetery, with burials from 1844 onwards, including that of John Cobcroft of 'Charlton', lies on the western side of the road, near the Butlers Road intersection.

Figures 23 to 27 illustrate the general character of this stretch of road.



Figure 23:
Looking north along
Charlton Road
beyond its
intersection with the
original line of road
(IMG 1220).



Figure 24:
Charlton Road,
looking north,
beyond the Butlers
Road intersection at
MGA
320606/6377852
(IMG 1238).



Figure 25:
Looking south along
the road from near
its intersection with
Fordwich at MGA
320134/6378498.
(IMG 1251).



Figure 26:
General view of the road, looking south back towards the Fordwich Road intersection at MGA 320007/6378900 (IMG 1247).

To the north of the intersection of Charlton Road with Fordwich Road, the road continues in a generally straight line with gentle undulations, to its intersection with Cobcroft Road. Refer to Figure 27.



Figure 27:
Looking north along Charlton Road from near the Fordwich Road intersection, MGA 320134/6378498 (IMG 1248).

About 1.5km north of the intersection with Fordwich Road, a modern six pipe concrete culvert runs beneath the road at an unnamed creek channel. The bank beside the culvert is stabilised with timber sleepers and stone rubble. Refer to Figures 28 to 31.



Figure 28:
Modern six pipe
concrete culvert
beneath the road
approximately
1.5km north of the
Fordwich Road
intersection at MGA
319973/6379751
(IMG 1428).



Figure 29:
Bank stabilisation at
the above culvert,
looking west (IMG
1431).



Figure 30:
Creek channel at the
above culvert,
looking to the west
(IMG 1432).



Figure 31:
Typical fencing and
countryside along this part
of Charlton Road at MGA
319806/6379751. Looking
west (IMG 1438).

Close by the above, there is a second, five pipe, concrete culvert. Refer to Figure 32.



Figure 32:
Five pipe culvert to the
north of the above, looking
west at MGA
319772/6379888 (IMG
1442).

A kilometre to the north, Charlton Road intersects with Cobcroft Road on its western side. Refer to Figure 33.



Figure 33:
Cobcroft Road intersection,
looking north at MGA
319479/6380599 (IMG
1446). Note the Central
Hunter Box-Ironbark
Woodland on either side of
the road.

Less than 500m to the north, the road passes through a shallow cutting on the eastern side. On the western side, the level of the road has been raised with fill. Refer to

Figures 34 and 35. Two concrete culverts of the type shown by Figure 36 can be found just to the north.



Figure 34:
The cutting, looking south at MGA 319371/6380926 (IMG 1451).



Figure 35:
Fill, looking north at MGA 319327/6380989 (IMG 1457).



Figure 36:
Two pipe concrete culvert at MGA 319232/6381074 (IMG 1464)

Heading north towards the area of the proposed realignment, the road is generally straight. Trees by the road partially screen the open cut mining operations that extend towards the Broke Road to the east (refer back to Figure 6).



Figure 37:
Looking north along
Charlton Road at
MGA
319092/6381365
(IMG 1473).

Figures 38 to 56 illustrate the 4km stretch of Charlton Road that it is proposed to realign.

The road continues to be unmarked; metal safety barriers line some sections. There are a number of two, three and six pipe culverts along this stretch of road. The road passes through pastoral land on the western side and open cut mining operations on the eastern side. Irregular stands of trees and shrub line the road. Refer to Figures 38 to 49.



Figure 38:
Three pipe concrete
culvert and modified
ditch at the southern
end of the proposed
realignment at MGA
318886/6381856
(IMG 1493).



Figure 39:
Looking north from the
above culvert (IMG
1502).



Figure 40:
Three pipe concrete
culvert at MGA
318758/6382269 (IMG
1504)



Figure 41:
Looking north from the
above culvert (IMG
1513).



Figure 42:
Two drain culvert,
looking east at MGA
318555/6382728 IMG
1526).



Figure 43:
View north of the above
culvert (IMG 1525).



Figure 44:
Six pipe culvert at MGA
318452/6383280, looking
east (IMG 1544).



Figure 45:
View to the north
from the above
culvert (IMG 1546)



Figure 46:
View to the south
from the above
culvert (IMG 1547).



Figure 47:
Modern concrete
culvert on the
eastern side of the
road at MGA
318170/6384064
(IMG 1591).



Figure 48:
View along the road to the north from MGA 318170/6384064 (IMG 1594).

Within this section, there is evidence of the use of fill to build up the road surface, minor cuttings of up to 1.5 m and of layered road surfaces indicative of a road that has been resurfaced numerous times. Refer to Figures 49 to 53.



Figure 49:
Evidence of the use of fill to build up the road level at MGA 318452/6383280. Looking south along the road (IMG 1551).



Figure 50:
Shallow cutting of up to 1m at MGA 3184096383500, looking north along the road (IMG 1554).



Figure 51:
Sandstone within the
above cutting at
MGA
3184096383500,
looking north (IMG
1559).



Figure 52:
Evidence of change
in road surfaces at
MGA
318409/6383500
(IMG 1556).



Figure 53:
Cut on the western
side of the road,
looking north at
MGA
317984/6384572
(IMG 1626).

Different fencing types line the road. In some places, there are parallel running new and old fencing. Refer to Figure 54.



Figure 54:
Two rail post and rail fence, outside the line of a new post and wire fence at MGA 318051/6384371 (IMG 1606).

Figures 55 and 56 illustrate the road, looking north and south, at the end of the proposed re-alignment.



Figure 55:
Looking north from the end of the proposed realignment at MGA 317828/6384882 (IMG 1682).



Figure 56:
Looking south from the end of the proposed realignment at MGA 317828/6384882 (IMG 1680).

From the end of the proposed realignment to the road's junction with the Putty Road, the road continues in a generally straight line, with minor deviations and gentle undulations (Figure 57). There are a number of concrete culverts of the type shown by the above photographs.



Figure 57:
Looking north of the
proposed realignment at
MGA 317728/6385280
(IMG 1648).

A bridge crosses a large concrete culvert approximately 500m north of the proposed realignment. Refer to Figures 58 and 59.



Figure 58:
Looking south over the
bridge at MGA 317618/63
(IMG 1652).



Figure 59:
Detail of the culvert
beneath the above bridge,
looking south east (IMG
1653).

Further north, the road passes over several culverts and through shallow cuttings to either side. Figures 60 to 65.



Figure 60:
Looking south
through the cutting
at MGA
317518/6385854
(IMG 1661)



Figure 61:
Detail of the above
cutting (IMG 1665).



Figure 62:
Cattle ramp near the
above cutting (IMG
1666).



Figure 63:
Culvert, western side
of the road, at MGA
317279/6386539
(IMG 1678).



Figure 64:
View south along the
road from the above
culvert (IMG 1680).



Figure 65:
View north along the
road from the above
culvert (IMG 1682).

The line of what is now Charlton Road once formed a direct continuation from the Wallaby Scrub Road (both being sections of the Great North Road), forming a crossroads with Putty Road. At some time between 1963 and 1974, Wallaby Scrub Road was diverted to form a 'T' intersection with Putty Road and as a consequence the intersection of Charlton Road also became a T intersection. Figures 66 to 68 show the intersection of the Charlton and Putty Roads.



Figure 66:
Intersection with the Putty
Road to the north east IMG
1684).



Figure 67: Intersection
with the Putty Road to the
north west (IMG 1696).



Figure 68:
Culvert at intersection with
the Putty Road, looking
east (IMG 1688).

4.0 ASSESSMENT OF SIGNIFICANCE

4.1 Existing Listings and Citations

4.1.1 Charlton Road

Charlton Road is not identified as a heritage item by the Australian Heritage Database, which includes listings on the World Heritage List, National Heritage List, Commonwealth Heritage List and Register of the National Estate.

Charlton Road is not identified as a heritage item under the auspices of the *NSW Heritage Act 1977*.

Charlton Road is not identified as a heritage item by the NSW RMS *s170 Register* as maintained by the RMS under the *NSW Heritage Act 1979*.

Charlton Road is not identified as a heritage item by Schedule 3 of the *Singleton Local Environmental Plan 1996*.

Charlton Road is identified as part of the Great North Road by the Conservation Management Plan prepared for the road for Convict Trail Inc in 1999. This section of the road is identified as Section 8 by this plan (Figure 69). There is one structure identified as being of significance within this section being the abandoned formation at Money Place Creek. This item is given the Ranking C, where C is defined as:

Level C indicates that retention / conservation of the item is preferred with the same proviso as the previous level (i.e. Under Level B: **Level B** retention/conservation is a requirement although some level of intervention or adaptation **may** be acceptable depending on the circumstances and manner of intervention).⁸⁴

⁸⁴ S. Lavelle, G. Karskens and RTA Technology, *Conservation Management Plan for the Great North Road*, 1999, Section 4.6.

GREAT NORTH ROAD - STAGE 1 CONSERVATION + MANAGEMENT PLAN			
SECTION DESCRIPTION SHEET			SECTION NO. 8
Locality from Broke	Current Road Name Charlton Road Wallaby Scrub Road		Maps 19 to 21
Locality to Warkworth			
Local Government Areas	Owner	Management Agency	Existing Heritage Listings
Singleton	Public (refer to Management Agency)	Singleton	refer to individual precinct/item Historic Themes Convict Transport
Statement of Significance			
<p>Section 8 of the Great North Road remains in use as current rural roads. Due to the local topography, few elaborate structures were required, and no significant older structures were identified. The intended line of the road was possibly never fully completed or constructed. The rural setting of the current surviving road(s) approximates that envisaged at the time of its initial tracing and construction.</p>			
Historical Notes			
<p>The Great North Road to the Upper Hunter Valley, was planned by Mitchell with three major branches, separating first at Wollombi and then again at Broke. Construction history of these branches is not as well documented as those further south. The third main branch was from Broke to Warkworth. The branch to Warkworth was constructed from late 1834 to 1836 under the supervision of Assistant Surveyor Peter Ogilvie, who was also responsible for a linking road from Warkworth to Cobb's Station, down the Hunter Valley. This branch also saw a brief experiment whereby some contract labour was also used to clear the road line, although actual construction was still by convict gangs. At 14 km from Broke the Great North Road crossed the Bulga Track from Windsor (now the Putty Road, to Windsor =155 km). This branch also appears to have had only minimal construction. The survey by G B White 1833, shows Mitchell's intended line to Warkworth as being symmetrical with the line from Broke to Patrick's Plains. Warkworth was the official title given to Cockfighter's Creek, where a substantial bridge was constructed in 1835. In 1836 the gangs were removed and the road was left, presumably unfinished.</p>			
Description			
<p>The western branch from Broke, Section 8, proceeded to Warkworth, a distance of some 22 km. The road is a sealed two lane road. At 2.5 km north of the village of Broke, at Monkey Place Creek, another road diverges from the western (Warkworth) branch of the GNR and proceeds via Bulga, north towards Singleton. The western branch of the GNR, here named Charlton Road, continues towards Warkworth. At Monkey Place Creek a small section of abandoned formation survives, having been replaced by a higher level timber beam bridge. Along the rest of the sealed road the terrain is relatively flat, and little construction (other than clearing) would appear to have been necessary. All culverts observed during fieldwork were modern concrete pipe structures. The present Cockfighter's Bridge at Warkworth is a modern high level concrete and steel girder bridge built in 1956. No evidence of any older structures was noted to survive in the vicinity of the creek crossing.</p>			
Precincts	Precinct No.	Major Items	
Monkey Place Creek	8.1.0	Abandoned Road Formation	
Threats Unsympathetic upgrading.			
Recommended Action for Conservation/Management			
<p>Some of this section remains in use as trafficable rural roads. Some interpretation to communicate the historic links of this road Section is desirable. Further research and more detailed fieldwork is also desirable.</p>			
References Karskens, 1985, MA Thesis (including Appendix 1 - Archaeological Reports, p 570) AONSW Map 5091, G B White 1833. (= Karskens Map 16).			
Bella, Karskens, RTA Technology - for the Convict Trail Project, 1998			

Figure 69: Charlton and Wallaby Scrub Roads.
 Description Sheet for Section 8.0 from the *Great North Road CMP* 1999.

4.1.2 Great North Road

There is no statutory heritage listing that encompasses the Great North Road in its entirety nor does the NSW Heritage Branch foreshadow listing in this capacity.

Identifying those sections of the Great North Road that are listed by heritage registers, together with the reasons why they are of significance, will assist in determining the level of significance of Charlton Road.

4.1.2.1 World Heritage Listings

A section of the Great North Road, referred to as 'The Old Great North Road, within the Hawkesbury Local Government Area, is one of eleven sites around Australia included in the UNESCO **World Heritage Listing** 'Australian Convict Sites'.⁸⁵ This section of the road is also identified on the State Heritage Register, the RTA s170 Register, *Hawkesbury LEP 1989* and on non-statutory heritage registers.

Constructed between 1826 and 1836, this section of the road of the Great North Road is an outstanding surviving example of an intact convict built road because:

- of the massive structural engineering works required to construct it;
- the range of original structures and fabric that survives along it;
- the accompanying body of historic records that provide details about its planning and construction;
- the fact that it passes through a largely unaltered setting that is likely to be preserved because it is located within a National Park and;
- of the high level of community interest in retaining it.

Figures 70 to 73 provide examples of the type of structures that survive along this section of the Great North Road. In addition to stonework, there are remnant timber structures, such as guardrails and culverts, and related physical evidence such as convict-made graffiti.



Figure 70: Retaining wall and buttress, Devine's Hill.

Figure 71: Side drain picked into rock, between Western Commission Track and Ten Mile Hollow.

Old Great Northern Road Management Plan, December 2008.

⁸⁵ See 'Australian Convict Sites', UNESCO website.



Figure 72: Stone culvert in retaining wall, Devine's Hill.

Figure 73: Timber and stone culvert, Mitchell's Loop.

Old Great Northern Road Management Plan, December 2008.

4.1.2.2 Commonwealth Heritage Listings

A similar section of the road to that listed by UNESCO is listed on the **National Heritage List** under the name 'Old Great North Road' under the auspices of the *Environment Protection and Biodiversity Conservation Act 1999*.⁸⁶

4.1.2.3 NSW State Heritage Listings

The following sections of the Great North Road are listed as heritage items on the **State Heritage Register** under the auspices of the *NSW Heritage Act 1979*:

- Great North Road, between Mount Manning and Wollombi (St Albans Road Ramp, Bucketty, Mt McQuoid, Ramsays Leap, Mt Simpson, Fernances Crossing, Murrays Run, Thompsons Bridge, Laguna)⁸⁷
- Great North Road, between Devine's Hill and Mount Manning.⁸⁸

These sections of road contain physical evidence of convict construction, including examples of culvert and flume construction, as well as cuttings, side drains and pavements.

The following sections of road are listed by **s170 Registers** under the auspices of the *NSW Heritage Act 1979*:

- Great North Road, 1km south of Wiseman's Ferry. RMS s170 Register.

This section of the road provides evidence of convict built retaining walls, culverts and road cuttings.

The ***Hunter Regional Environmental Plan 1989 (Heritage)*** is now considered a State Environmental Planning Policy. The following sections of road are listed under the schedules of this document:

- Old North Road (1827–1831): Section from Mount Manning to Paynes Crossing.

⁸⁶ See 'Assessment of Significance' from the *Commonwealth of Australia Special Gazette No. S141*, 1 August, 2007.

⁸⁷ State Heritage Inventory Database No. 5060554.

⁸⁸ State Heritage Inventory Database No. 5051461.

This section of the road retains convict era retaining walls, buttresses, culverts, drainage ditches and remains of abutments and pillars for bridges.

4.1.2.4 Local Government Heritage Listings

Sections of the Great North Road that are listed by local council areas on their respective Local Environmental Plans are as follows:

- Great North Road, Bedlam Point to Eastwood. Ryde Council.
- Great North Road- b/w West Pennant Hills and Dural. Hornsby Council.
- Great North Road- b/w Baulkham Hills and Wiseman's Ferry. Hornsby Council.
- Old Northern Road Cutting, SE of Maroota. Hornsby Council.
- Great North Road (Old), Wiseman's Ferry to Bucketty. Gosford Council.
- Great North Road (retaining walls, culvert, road cutting), 1km south of Wiseman's Ferry. Baulkham Hills Council.
- Great North Road between Devine's Hill and Mount Manning. Cessnock Council.⁸⁹

4.1.2.5 Non-Statutory Heritage Listings

The **National Trust of Australia (NSW)** lists the following sections of the road:

- Road between Wisemans Ferry and Mt Manning (Classified).
- Road from Glenorie to Wisemans Ferry (Classified).
- Road between Mt Manning and Paynes Crossing (Classified).

The Wisemans Ferry Stockade and Wiseman's Inn; the Gladesville Wharf (Bedlam Point); and the Pyes Creek Bridge are also classified by the National Trust.⁹⁰

The following sections of the road are listed on the **Register of the National Estate**.

- Great Northern Road - Extension, Great Northern Rd, Wollombi, NSW, Australia.
- Great Northern Road Section, Great North Rd, Wisemans Ferry, NSW, Australia.
- Old Great North Road, The Old Great Northern Rd, Wisemans Ferry, NSW, Australia.

4.1.3 Examples of Other Nineteenth Century Roads Listed as Heritage Items in New South Wales

The Great North Road was one of three 'great' roads of the colonial era, heading north, south and west. None of these roads are listed in their entirety by New South Wales heritage registers.

The original road to the **west**, over the Blue Mountains was constructed by convict labour under the supervision of William Cox in 1814-1815. The road cut by Cox was little more than a bush track 101 miles long and approximately 12 feet wide. Towards the end of 1829, Mitchell was instructed to re-survey the existing road between Mount York and Bathurst to find a better passage. Mitchell interpreted his instruction to avoid

⁸⁹ As identified by the State Heritage Register.

⁹⁰ Inquiry made to the National Trust of Australia (NSW), July 2010. Copies of listing sheets provided to the author.

Mount York altogether and, instead, looked towards a ridge running parallel to Mount York that would provide a more linear, direct, route. The new line, through the Victoria Pass, opened in 1832. Mitchell subsequently changed the line of the road on the eastern escarpment through Lapstone Creek, which was bridged by David Lennox in 1833. The Victoria Pass (listed by the RMS on their s170 and by Lithgow Council) and the Lennox Bridge at Lapstone (SHR) are two examples of listed heritage sites along the western line of road.⁹¹

Figure 74 shows Victoria Pass, which provides an outstanding demonstration not only of colonial engineering and construction, but also of Mitchell's passion for linear routes, regardless of the difficulties of terrain. Victoria Pass also has significance because it played a central role in facilitating trade and settlement in central and western New South Wales, has inspired artists and writers and retains its scenic qualities.



Figure 74: Victoria Pass Causeway.
State Heritage Inventory Sheet.

Less information is readily available for the third of the 'great' roads of the colonial era, the road leading **south**. Mitchell completed a survey for a line as far south as Goulburn in 1830, suggesting the formation of a single line from Bargo Brush to Berrima to replace the two existing roads to the Goulburn Plains. Mitchell also recommended a road from Bong Bong (Moss Vale) along the ridge to a point between Kiama and Gerringong and then a descent to the coast. Mitchell was only given permission to follow part of this proposed line. Mitchell recommended further improvements to the south road, between Sydney and Parramatta and Sydney and Liverpool, conforming to his principles for straight lines. He was later castigated by the Governor for wasting his time, locating roads where they were not needed. Mitchell's new lines for Sydney-Parramatta and Liverpool - Mittagong, were never constructed.⁹² On those sections that were constructed, there are several culverts on the old line of road north of Goulburn and remains of a 1830s convict stockade near Towrang.

Of other significant early roads in the Colony, parts of the **Old Windsor Road** or Windsor Road, being the original route to the Hawkesbury region, laid out in 1794 and realigned in 1812-13, are identified by the s170 Register Inventory of RMS; it is not clear, however, whether the listing has been gazetted. Local Councils have also identified sections of this road as being of significance. The road and its alignment influenced patterns of development in the region from 1794 onwards, including the

⁹¹ *The Roadmakers: A History of Main Roads in New South Wales*, NSW, Department of Main Roads, New South Wales, 1976, pp. 28-30.

⁹² *Ibid*, p.33.

settlement pattern. It was the Hawkesbury Region's primary overland transport route and, as such, vital to the settlement of the north-western Cumberland Plain.⁹³

The **Old Line of Bells Road** (also Charlies Row, Jacob's Ladder and The Elbow) is listed as a heritage item by the Blue Mountains City Council, together with individual sites along the road.⁹⁴ This road follows an early bridle track established c. 1823 and formed, to some degree in the 1840s. The works listed date from the early 1870s and the era of the Windsor Road Trust. These works are assessed as having local significance because they are closely linked to the western expansion of Sydney's northwest region with the central west through the Blue Mountains.⁹⁵

Peats Ferry Road provides a third example of nineteenth century road where a section of road is listed by the RMS *s170 Register* and by a local council. This road is considered a good example of nineteenth century road construction following the end of transportation. The techniques used to construct this road are essentially the same as were used on the Great Northern Road. The listed section of road (in Hornsby Shire) has notable stoneworks, including walls and a bridge, that are in good condition and can be readily understood.⁹⁶

4.3 Integrity

Charlton Road largely follows the line determined by Mitchell in 1829-1833, with the notable exception of the southern most end of the road at Monkey Place Creek. It is clear that the road has been resurfaced numerous times since the 1830s. The extent of change to the level of the road with the addition of surface material (etc.) over the years is not known. Whether the cuttings and embankments are the work of convicts is not clear from the physical evidence to hand; all culverts are modern. There are no convict structures.

The countryside through which Charlton Road passes has undergone significant changes since the road was constructed as the land has been increasingly cleared of native vegetation to create a pastoral and cropping landscape and, more recently, as extensive open cut coal mining has taken place.

4.4 Comparative Analysis

The sections of the Great North Road, and other historic roads, listed on New South Wales heritage registers and identified in Sections 4.1.2 and 4.1.3 above have several characteristics in common:

- The survival of physical remains from the convict era of construction of high or moderate technical significance.
- Most of the heritage listed roads have played a role in local or regional development by either providing a link to other areas and/or determining patterns of development.
- Many pass through country that has altered little since the time the road was constructed, providing valuable context.
- Many have high aesthetic significance arising out of their physical remains/and or setting. Some, such as Victoria's Pass, have inspired artists and writers.
- Most have identified significance for local communities.

⁹³ *The Roadmakers*, 1976.

⁹⁴ State Heritage Inventory Sheets 1170630, 1170900 and 1170631.

⁹⁵ *Ibid.*

⁹⁶ RTA Listing Sheet, 4311605.

Of the surviving roads of the early to mid nineteenth century, the 'great roads' leading north, south and west from the Settled District about Sydney are of considerable significance for what they reveal about colonial governance, politics and aspirations, and the convict system. There are sections of road on each of these lines that continue in use and others which have fallen into disuse. Processes of upgrading and of by-passing form an important and ongoing tradition of road re-development and improvement.

The Great North Road presents an interesting quandary when assessing significance. Substantial sections of the road have survived with a high degree of original fabric because they were abandoned at an early date. Thus while the road is of exceptional significance for what it reveals about the Colony during the early nineteenth century, the role that the road played in the pattern of development in the surrounding countryside, particularly with regard to the Hunter Valley, is less easily defined. It is not even clear if the road was completed through the Upper Hunter Valley. Even before completion, there were complaints that the road did not serve the needs of local communities and was thus neglected in favour of other routes; more significantly, the development of steam ships (and later the railway) took over as the main link to Sydney even before the road was complete.

Most of the original line(s) of the Great North Road are represented by physical evidence, whether it is simply through the survival of the line(s) itself and/or the survival of substantial remains. Some sections, such as Charlton Road, continue to carry traffic and thus demonstrate continual use since construction, while others have been bypassed and are used as walking and bike tracks. The CMP prepared for the Convict Trail Inc. provides three possible levels of significance, none of which provide for any section of the road to be considered as having either no or low significance. There are several sections of the road that are accorded the highest level of significance (Level A). These are the sections that are identified by national and state heritage listings and which contain substantial stone works and some survival of context. By contrast, Charlton Road is given the designation 'C', the lowest of the three levels used. This reflects the fact that only the line of the road survives. There is no surviving fabric that demonstrates colonial engineering or road building, illuminates the experiences of the convicts that constructed the road or which demonstrates unique ties to key historical figures.

Specific concern has been raised about the potential significance of Charlton Road as a demonstration of Surveyor General Mitchell's passion for 'straight lines.' The road is not unique in this respect. Mitchell's philosophy was imposed along all those sections of the Great North Road with which he was involved and on other roads throughout the Colony. Charlton Road is a less forceful example than those sections of the road that required considerable engineering works to drive a straight line between two points.

In contrast to other sections of the Great North Road, there are few contemporary records, outside of plans showing the line of the road, that provide insight into the construction of what are now the Charlton and Wallaby Scrub Roads. While the mid years of construction along the road are well recorded in a wide range of government and non-government records, and in physical fabric, the records relating to the gangs working out of the Cockfighter's Creek Station in the early to mid 1830s are few; it is often difficult to determine exactly which part of the road was being worked on. Many of the surviving records from this period relate to works being carried out on the section of road leading from Warkworth to Maitland, as opposed from Warkworth to Broke.

There are several other lines of road within the Hunter Valley that date from the early period of settlement. The Putty Road, which generally follows the line of the original road, and the New England Highway, provide two other examples.

4.5 Assessment Under New South Wales Heritage Branch Criteria

4.5.1 Preamble

Once the historical and physical evidence has been established, it is possible to assess the heritage significance of a place. The *Burra Charter* defines heritage significance as ‘aesthetic, historic, scientific or spiritual value for past, present or future generations.’⁹⁷ Heritage significance may relate to how rare or representative a place may be and or its relationship to its setting and context, whether historical, contemporary, physical or social. It may relate to the place as a whole or to some of its components. The NSW Heritage Branch has developed a series of criteria based on the principles of the *Burra Charter*. These criteria are outlined below.

Few of the aspects of significance discussed below are exclusive: a characteristic may, for example, have both historical and aesthetic significance.

The tables providing guidelines for inclusion and exclusion are as provided by the NSW Heritage Branch.

4.5.2 Criterion (a)

An item is important in the course, or pattern, of NSW’s cultural or natural history (or the cultural or natural history of the local area).

Guidelines for Inclusion	Guidelines for Exclusion
<ul style="list-style-type: none">shows evidence of a significant human activity	<ul style="list-style-type: none">has incidental or unsubstantiated connections with historically important activities or processes
<ul style="list-style-type: none">is associated with a significant activity or historical phase	<ul style="list-style-type: none">provides evidence of activities or processes that are of dubious historical importance
<ul style="list-style-type: none">maintains or shows continuity of a historical process or activity	<ul style="list-style-type: none">has been altered so that it can no longer provide evidence of a particular association

Charlton Road derives historic significance from the fact that it forms part of the Great North Road. Briefly, the Great North Road has significance under this criterion for what it reveals about surveying, engineering and road building in the Colony in the early nineteenth century, about colonial aspirations and about the convict system. The road building programme of the 1820s and 1830s is representative of the more ordered style of government introduced into the Colony by Governor Darling, as the economy expanded and the population grew. The road, as one of three ‘great’ roads leading north, south and west, was designed to link the increasingly far-flung settlements to markets and provide the necessary communication required for good governance. The road also served as a symbol of progress made and the promise of progress to come. Just how significant the Great North Road was in terms of its actual (rather than symbolic) influence on settlement in New South Wales is more difficult to determine. In the Upper Hunter Valley, as elsewhere along its line, other roads were favoured; parts of the Great North Road were abandoned or quickly superseded. Water (and later rail transport) was the main form of communication. The road was already superseded before it was completed, so that at no time did the line operate as the main route north in its entirety.

The level of use and significance of what is now Charlton Road, as a branch of the Great North Road, never reached the heights envisaged by Surveyor General Mitchell. It is not clear whether the branches of road constructed towards the end of work on the Great North Road were ever completed. Warkworth and Broke were both slow to develop; lots were not sold at Broke township until thirty years after the road went through. The branch was never continued northwards, as envisaged by Mitchell, to

⁹⁷ Article 1.2, *The Burra Charter (The Australian ICOMOS Charter for Places of Cultural Significance)*, 1999.

create a great Asian trade route. The level of significance is also impacted upon by the fact that the records pertaining to this section of the road are less complete than those for earlier sections. Furthermore, Charlton Road has none of the physical evidence of convict road construction, combined with relatively extensive documentation, that are the principal reasons why other sections of the road are represented on national, state and local heritage registers.

Charlton Road would appear to have been in continual use since the 1830s as one of a network of roads (officially and unofficially created) that operated throughout the Upper Hunter Valley. It is not unique in being an early road that has continued in use. The Putty Road and the New England Highway provide two other regional examples.

4.5.3 Criterion (b)

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

Guidelines for Inclusion	Guidelines for Exclusion
<ul style="list-style-type: none"> shows evidence of a significant human occupation 	<ul style="list-style-type: none"> has incidental or unsubstantiated connections with historically important people or events
<ul style="list-style-type: none"> is associated with a significant event, person, or group of persons 	<ul style="list-style-type: none"> provides evidence of people or events that are of dubious historical importance
<ul style="list-style-type: none"> maintains or shows continuity of a historical process or activity 	<ul style="list-style-type: none"> has been altered so that it can no longer provide evidence of a particular association

Charlton Road has an association with the New South Wales Surveyor General Thomas Mitchell and his staff. This is an association shared with many roads surveyed and constructed during the 1820s and 1830s. As for all sections along the Great North Road determined by Mitchell, Charlton Road demonstrates his passion for finding the shortest route between two points, i.e. the 'perfect line.' The road, however, is not unique in this respect and is a less forceful demonstration of this desire than those sections where substantial engineering works were required to achieve it.

Charlton Road, as is the remainder of the Great North Road, is associated with the convict road gangs who built it. The convict road gangs of the 1820s-1840 are an important and recognisable body of people within the Colony of this period. The road gangs were increased under Governor Darling and maintained under Governor Brisbane. Documentary records are, however, the only evidence that link this road to the convict gangs. While it is known that gangs worked out of Cockfighter's Creek between 1830 and 1836, there are few records that specifically relate to work on this section. Unlike other sections of the road, there is no known physical evidence that clearly demonstrates the work of the convict gangs. Sections of the road would also appear to have been cleared by private contract. The sections of the road nominated for world, national, state and local significance all have a far better ability to demonstrate associations with the convict system. Charlton Road does not contribute to the way in which these other sections demonstrate these associations.

Charlton Road does not demonstrate the associations with significant people involved in the planning and construction of the Great North Road to the extent that other sections of the road do.

4.5.4 Criterion (c)

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

Guidelines for Inclusion	Guidelines for Exclusion
<ul style="list-style-type: none">• shows or is associated with, creative or technical innovation or achievement	<ul style="list-style-type: none">• is not a major work by an important designer or artist
<ul style="list-style-type: none">• is the inspiration for creative or technical innovation or achievement	<ul style="list-style-type: none">• has lost its design or technical integrity
<ul style="list-style-type: none">• is aesthetically distinctive or has landmark qualities	<ul style="list-style-type: none">• its positive visual or sensory appeal or landmark and scenic qualities have been more than temporarily degraded
<ul style="list-style-type: none">• exemplifies a particular taste, style or technology	<ul style="list-style-type: none">• has only a loose association with a creative or technical achievement

In and of itself Charlton Road has low significance under this criterion. While the Great North Road, of which it forms part, contains some of the most outstanding examples of colonial technology and innovation in New South Wales, Charlton Road does not contain any of the engineering structures, significant view corridors or landmark qualities that make other sections of the road of particular note to colonial and present-day travellers and locals. The road passes through a different landscape from the time that it was created. When constructed, the land was in the process of being cleared for grazing and cropping. This process is now complete. In recent years, open cut mining has impacted upon the landscape, particularly to the east of the road.

4.5.5 Criterion (d)

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

Guidelines for Inclusion	Guidelines for Exclusion
<ul style="list-style-type: none">• is important for its association with an identifiable group	<ul style="list-style-type: none">• is only important to the community for amenity reasons
<ul style="list-style-type: none">• is important to a community's sense of place	<ul style="list-style-type: none">• is retained only in preference to a proposed alternative

Charlton Road has significance for the Convict Trail Inc., whose specific area of interest is the Great North Road in its entirety. This association draws support from a wide range of groups, including government and council bodies and local history groups. Interest in the road by the Convict Trail and local council is indicated by the interpretation panel on the southern side of Monkey Creek.

The potential heritage significance of Charlton Road has been raised by members of the local community in response to the proposed Bulga Optimisation Project. It should be noted, that these concerns were sometimes coupled with issues of general amenity, travel times and opposition to mining.

4.5.6 Criterion (e)

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

Guidelines for Inclusion	Guidelines for Exclusion
<ul style="list-style-type: none">has the potential to yield new or further substantial scientific and/or archaeological information	<ul style="list-style-type: none">has little archaeological or research potential
<ul style="list-style-type: none">is an important benchmark or reference site or type	<ul style="list-style-type: none">only contains information that is readily available from other resources of archaeological sites
<ul style="list-style-type: none">provides evidence of past human cultures that is unavailable elsewhere	<ul style="list-style-type: none">the knowledge gained would be irrelevant to research on science, human history of culture

Charlton Road provides no information that cannot be gained from other sections of the Great North Road. Indeed, it does not provide as good an information resource as those sections where there are significant physical remains, a relatively unaltered landscape and for which good documentary records survive. The ability of the road to demonstrate Mitchell's 'perfect line of road' is shared by most sections of the road that he was involved with and is better demonstrated in sections that required substantial engineering works to achieve this line.

4.5.7 Criterion (f)

An item possesses uncommon, rare or endangered aspects of New South Wales' cultural or natural history (of the cultural or natural history of the local area).

Guidelines for Inclusion	Guidelines for Exclusion
<ul style="list-style-type: none">provides evidence of a defunct custom, way of life or process	<ul style="list-style-type: none">is not rare
<ul style="list-style-type: none">demonstrate a process, custom or other human activity that is in danger of being lost	<ul style="list-style-type: none">is numerous but under threat
<ul style="list-style-type: none">shown unusually accurate evidence of a significant human activity	
<ul style="list-style-type: none">is the only example of its type.	
<ul style="list-style-type: none">demonstrate designs or techniques of exceptional interest	
<ul style="list-style-type: none">shown rare evidence of a significant human activity important to a community	

Many roads in New South Wales can trace their origins to the early nineteenth century. Some, such as Charlton Road, were determined by Government surveyors in accordance with a wider system, while others resulted from repeated use of informal bush tracks. That Charlton Road follows the line of an early road is not rare; nor is the extent and reach of the Great North Road, as it was one of the three primary routes used to access inland New South Wales from Sydney, the others heading south and west. The other two lines, The Great Western Highway and the Hume Highway (originally Great South Road), have maintained their significance through their continued, and greatly increased, use today. That the Great North Road became less important as a transport link meant that sections have been bypassed and little work carried out, preserving the evidence of convict construction. It is this integrity that gives the road its greatest significance. The Great North Road, particularly in the Upper Hunter Valley, in no way matches the influence that the Great Western and Hume Highways have had as a transport route and the means by which the development of inland New South Wales was achieved.

4.5.8 Criterion (g)

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

Guidelines for Inclusion	Guidelines for Exclusion
<ul style="list-style-type: none">• is a fine example of its type	<ul style="list-style-type: none">• is a poor example of its type
<ul style="list-style-type: none">• has the potential characteristics of an important class or group of items	<ul style="list-style-type: none">• does not include or has lost the range of characteristics of a type
<ul style="list-style-type: none">• has attributes typical of a particular way of life, philosophy, custom, significant process, design, technique of activity	<ul style="list-style-type: none">• does not represent well the characteristics that make up a significant variation of type
<ul style="list-style-type: none">• is a significant variation to a class of items.	
<ul style="list-style-type: none">• is part of a group which collectively illustrates a representative type	
<ul style="list-style-type: none">• is outstanding because of its setting, condition or size	
<ul style="list-style-type: none">• is outstanding because of its integrity or the esteem in which it is held	

Charlton Road is representative of the branch roads of the Great North Road constructed in the mid 1830s within the Upper Hunter Valley at a time when there were neither the resources nor political will to ensure that construction was of a high and lasting quality. Additionally, the logical route across the relatively flat terrain, which is also representative of Mitchell's 'straight line', did not require the heavy engineering that makes other areas of the Great North Road so outstanding.

The Great North Road is one of three great roads of early nineteenth century New South Wales capable of providing insight into the mindset and technology of the early nineteenth century. While the great southern and western roads were, and continue to be, more heavily used, it is because the Great North Road never became the significant route north that it was designed to be that sections of the road remain significantly intact. It is these sections of road, identified by statutory heritage listings at all level, which provide the greatest significance attributable to this road.

4.6 Statement of Significance for Charlton Road

Charlton Road, Singleton Shire, New South Wales derives historic significance as part of the Great North Road, which was planned and constructed between 1825 and 1836. This road, one of three great lines of road planned during the early colonial period, was designed to link the significant agricultural areas of the Hawkesbury River and the Lower and Upper Hunter Valleys to Richmond-Windsor and hence to Sydney. Charlton Road also has local historic significance as one of a number of roads within the Upper Hunter Valley that have remained in use since the early to mid nineteenth century.

Charlton Road has minor significance within the hierarchy of sections of the road making up the Great North Road because it contains none of the engineering structures and has few of the associated documentary records that make other sections of the road exceptionally significant for what they can reveal about the convict system, surveying, engineering and road building in New South Wales in the 1820s and 1830s. Additionally, the road passes through country that has changed significantly since it was constructed. The road is a late branch of the Great North Road, and, while representative of the type of work carried out towards the end of the construction of the road, at a time when the enthusiasm and resources available were in decline, it does not exemplify the spirit of triumph that characterised the early

phases of planning and construction of the road. It is not known if the last branches of the Great North Road, including Charlton Road, were ever completed. The road is representative of Surveyor General Sir Thomas Mitchell's scientific approach to surveying and his passion for identifying the ideal, preferably straight, line of road. This approach is demonstrated by many sections along the road and particularly by those sections that required significant engineering works to achieve.

Charlton Road has social significance for the Convict Trail Inc. because it is part of the Great North Road and for locals with an interest in Hunter Valley history.

5.0 THE PROPOSAL

The Bulga Coal Optimisation Project seeks a continuation of existing surface operations to access deeper, open cut reserves of coal substantially within the existing Bulga Coal Complex disturbance footprint. As part of this project, it is proposed to construct a Noise and Visual Bund around the southern and western perimeters of the open cut pit to act as a visual screen and to reduce noise impacts for residents to the south and west. In order to construct this Noise and Visual Bund, a 4 km section of Charlton Road will need to be realigned. The relocated road will be designed in consultation with Singleton Council to meet appropriate standards. The alignment will add approximately 400m to the length of the road.

Figure 75 locates the Noise and Visual Bund (in pale green) and where it crosses the existing line of the road (in white). Figure 76 reproduces an earlier figure from this report, showing the proposed line of the deviation (in red).

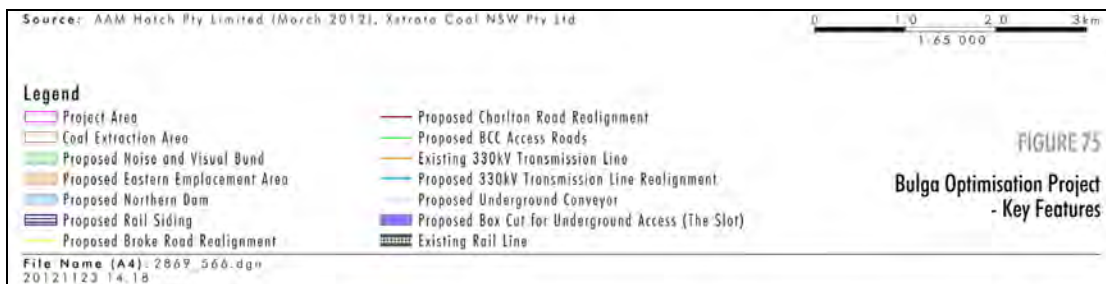
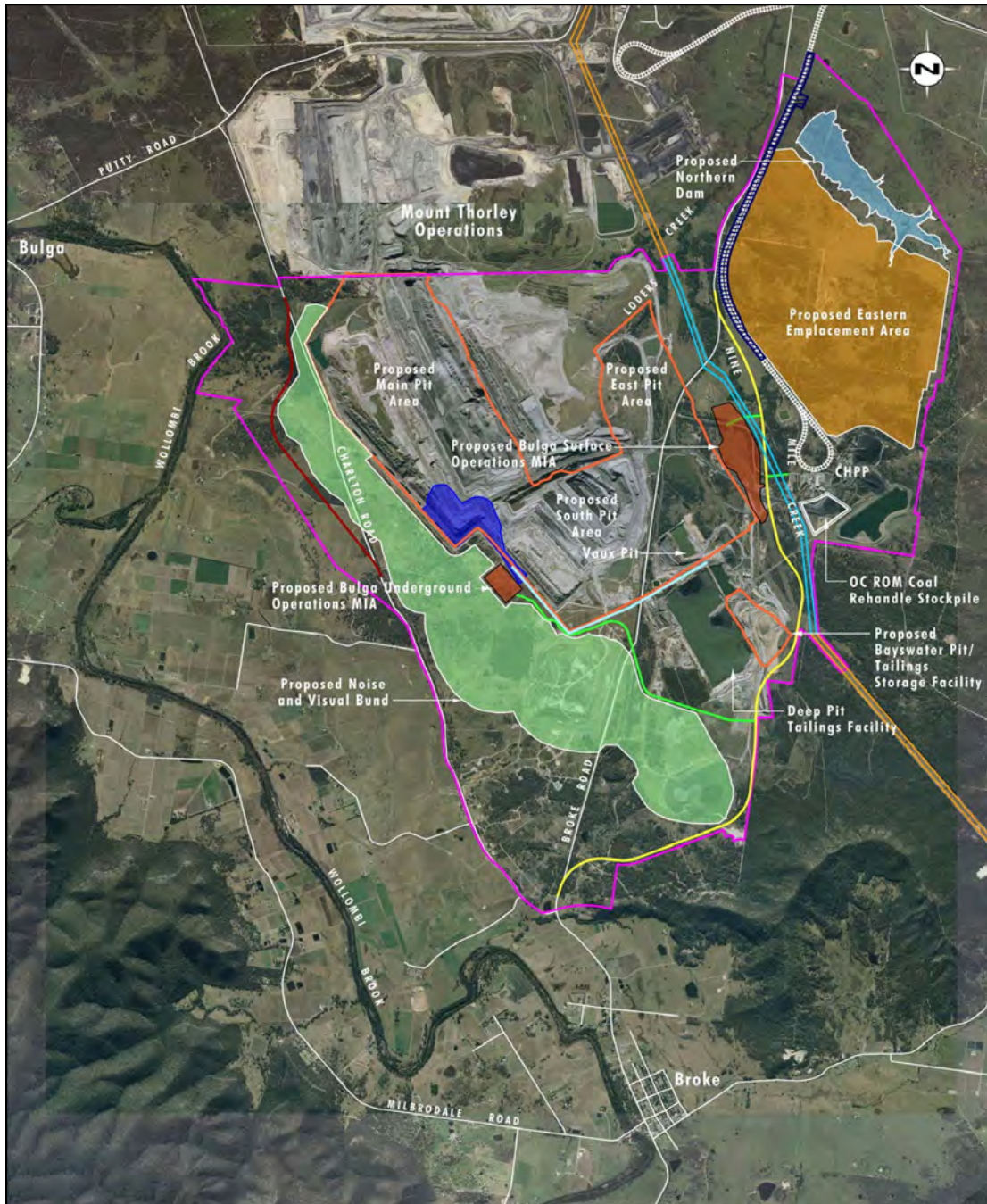


Figure 75: The green shaded area shows the proposed location of the Noise and Visual Bund.
Umwelt.

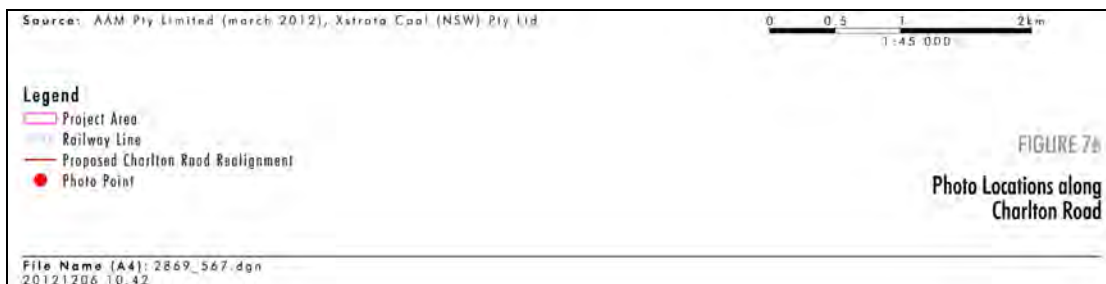


Figure 76: The purple line shows the project boundary; the red line shows the proposed deviation.

Umwelt.

6.0 HERITAGE IMPACT

The proposed deviation and construction of a Noise and Visual Bund will have an impact on Charlton Road in that its straight line will be disrupted for a distance of 4km and the Noise and Visual Bund will be visible from the road.

The proposed deviation will have a limited impact on understanding the historic significance of Charlton Road and of the Great North Road as a whole. The significant sections of the Great North Road have been identified and are appropriately listed. Within the overall hierarchy of the various sections of the road, Charlton Road is of low significance. The only section of Charlton Road identified by the CMP for the Great North Road as having significance (and then only moderate significance) is the deviation near Monkey Place Creek, which is not impacted upon by the proposed works. Understanding that Charlton Road is part of the Great North Road lies predominately in historic records. Outside of these records, Charlton Road does not provide further understanding of those sections of the road that have a higher level of significance. It is further noted that what historic records have survived are limited when compared to other sections of the road. In the absence of any physical evidence of convict construction, Charlton Road reads as any other bitumen surfaced rural road. Historic records and interpretative signs, such as the sign at Monkey Place Creek, will continue to provide the best evidence of the history and significance of Charlton Road.

There are many instances where the original line of the Great North Road has been deviated or by-passed over time. Those deviations already made have not altered the overall understanding that the Great North Road extended 240km and was a significant colonial undertaking.

Charlton Road provides a representative example of Mitchell's 'passion for straight lines'. This characteristic is demonstrated by other roads that he surveyed and built. Straight roads are not unique: they are the shortest distance between two points and, where engineering works are not required, the most economical to build. Where topography permits, they are common throughout Australia. Charlton Road is a less forceful example of Mitchell's ideals than those roads where substantial engineering works were required to achieve a straight line. An understanding of Charlton Road as a predominately straight road will be maintained because the beginning and end sections and the intersections with roads along its length are retained. Travellers will still be able to experience the 'straight line' in those sections of the Charlton Road that will not be realigned.

The new Noise and Visual Bund will be visible from, and in conjunction with, Charlton Road. It will alter the perception of the otherwise gently undulating pastoral and cropping lands that are the result of almost 200 years of European occupation. This landscape was beginning to emerge at the time that Charlton Road was constructed. The impact must be weighed against the fact that mining has already profoundly altered the landscape to the east of the road, just as the re-surfacing of the road and the construction of culverts has altered the experience of the traveller over the road. The visual impact of the Noise and Visual Bund must also be weighed against the considerable benefits, in terms of amenity, that it will provide to local residents. The aim of the Noise and Visual Bund is to reduce noise and visual impacts on the local community as a result of mining operations. The Noise and Visual Bund is not the most economic mining option and is a significant commitment as part of the proposed Project to minimise the impacts of the ongoing mining operations. Over time, the growth of vegetation on the Noise and Visual Bund will help mitigate its visual impact. It is noted that BCM has engaged a landscape architect and liaised with the community regarding designing and rehabilitating this Noise and Visual Bund in a manner that will make it visually pleasing. The view across open pasture and cropping lands to the west of Charlton Road, towards the mountain ranges in the distance, will remain.

7.0 SUMMARY

Charlton Road was constructed between 1834 and 1836 as one of the final branches of the Great North Road. The Great North Road, constructed between 1825 and 1836, was designed to connect Sydney with three important food producing areas- the Hawkesbury, the Lower Hunter Valley and the Upper Hunter Valley. The southern part of the road contains some of the finest examples of colonial engineering and convict road construction in New South Wales. While the significance of the road as a symbol and demonstration of the convict system and colonial engineering is high, its influence on the historic development of New South Wales is less easily defined, given that the road never reached its full potential as a transport artery in the same way that the Great Western Highway and the Hume Highway did. At no time, did it function in its entirety as the main route to the north.

The Great North Road has been extensively studied and surveyed. The significance of sections of the road has been identified and listed on heritage registers. These sections have several characteristics in common:

- The survival of physical remains from the convict era of construction of high or moderate technical significance.
- Most of the heritage listed roads have played a role in local or regional development by either providing a link to other areas and/or determining patterns of development.
- Many pass through country that has altered little since the time the road was constructed, providing valuable context.
- Many have high aesthetic significance arising out of their physical remains/and or setting. Some, such as Victoria's Pass, have inspired artists and writers.
- Most have identified significance for local communities.

The following can be concluded about Charlton Road. Charlton Road:

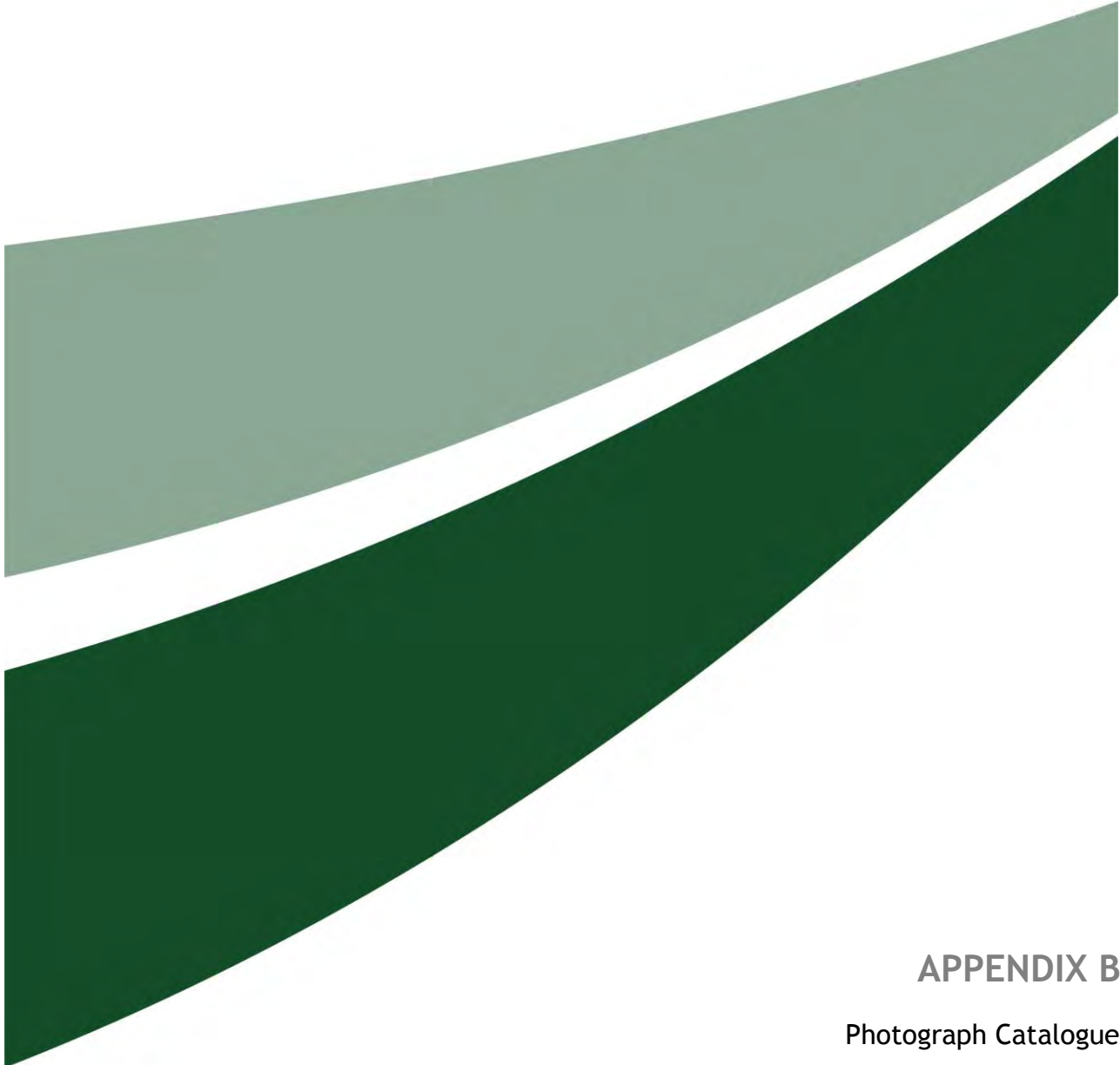
- Follows the general line determined by Sir Thomas Mitchell and forms a minor branch of the Great North Road.
- Was constructed between 1834 and 1836, predominately by convict labour.
- Formed part of the local road network of the early to mid nineteenth century, which was partially determined by official government survey and partially arose through use. The road carried predominately local traffic. The Great North Road never functioned as the primary route to the north.
- Does not contain significant fabric or engineering works and has been resurfaced on numerous occasions.
- Is not as well documented in historic records as other sections of the road.
- Is not a unique demonstration of Mitchell's obsession with the 'perfect line' and is a less forceful demonstration than many other lines of road.

Given the above, it can be concluded that Charlton Road has minor significance within the hierarchy of the individual roads making up the Great North Road. The physical remains of other sections of the road are better documented and are better able to demonstrate what gives the Great North Road its greatest level of significance, i.e. what it reveals about the convict road gang system, technology and mindset of the colony. Historic records and interpretative signs, such as the sign at

Monkey Place Creek, will continue to provide the best evidence of the history and significance of Charlton Road.

Deviating a 4km section of the road will thus have a minimal and acceptable impact on the local significance of the road and on the Great North Road as a whole.

The visual impact of the Noise and Visual Bund is balanced by the amenity it will provide to residents and is mitigated by appropriate landscape design and by the fact that the landscape on the eastern side of the road has already been significantly altered by mining.



APPENDIX B

Photograph Catalogue

Image/ File No	Description - BH1 Fence posts		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1534	BH1 – 2 fence posts aligned different ways with sandstone	To West	318433 E 6383213 N
IMG_1535	BH1 – 2 fence posts aligned different ways with sandstone	To West	318433 E 6383213 N
IMG_1536	BH1 – 2 fence posts aligned different ways with sandstone	To East	318433 E 6383213 N
IMG_1537	BH1 – 2 fence posts aligned different ways with sandstone	To East	318433 E 6383213 N
IMG_1538	BH1 – 2 fence posts aligned different ways with sandstone	To West	318433 E 6383213 N
IMG_1539	BH1 – 2 fence posts aligned different ways with sandstone	To South	318433 E 6383213 N
IMG_1540	BH1 – 2 fence posts aligned different ways with sandstone	To South	318433 E 6383213 N
IMG_1541	BH1 – 2 fence posts aligned different ways with sandstone	To East	318433 E 6383213 N

BH1



IMG_1534.JPG



IMG_1535.JPG



IMG_1536.JPG



IMG_1537.JPG



IMG_1538.JPG



IMG_1539.JPG



IMG_1540.JPG



IMG_1541.JPG

Image/ File No	Description - BH4 Quarry & BH5 Blaxland House		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1252	BH5 – Fordwich Estate – entry gate	To West	
IMG_1253	BH5 – Fordwich Estate – entry gate, detail	To West	
IMG_1254	BH5 – Fordwich Estate – vineyard	To South	
IMG_1255	BH5 – Fordwich Estate – vineyard, detail	To South	
IMG_1257	BH5 – Fordwich Estate – vineyard	To South	
IMG_1258	BH5 – Fordwich Estate – vineyard	To South	
IMG_1411	BH4 – Quarry – from Fordwich Road	To East	
IMG_1412	BH4 – Quarry – from Fordwich Road	To East	
IMG_1421	BH4 – Quarry – from Fordwich Road	To East	
IMG_1422	BH4 – Quarry – from Fordwich Road	To East	
IMG_1424	BH4 – Quarry – from Fordwich Road	To East	

BH4 & BH5



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IMG_1424.JPG

Image/ File No	Description – BH6 Broke Cemetery		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1225	BH6 Broke Cemetery – Butlers Road intersection	To West	
IMG_1226	BH6 Broke Cemetery – Charlton Road and Butlers Road intersection	To North	
IMG_1227	BH6 –Broke Cemetery – Butlers Road intersection, detail	To West	
IMG_1228	BH6 – Broke Cemetery – Charlton Road and Butlers Road intersection	To South	
IMG_1229	BH6 – Broke Cemetery – Charlton Road in front of cemetery	To South	
IMG_1230	BH6 – Broke Cemetery – Charlton Road in front of cemetery	To South	
IMG_1231	BH6 – Broke Cemetery – Charlton Road in front of cemetery	To South	
IMG_1232	BH6 – Broke Cemetery – Charlton Road in front of cemetery	To South	
IMG_1233	BH6 – Broke Cemetery	To West	
IMG_1234	BH6 – Broke Cemetery	To West	
IMG_1235	BH6 – Broke Cemetery	To West	
IMG_1236	BH6 – Broke Cemetery	To South	
IMG_1237	BH6 – Broke Cemetery	To Southwest	

Broke Cemetery



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IMG_1237.JPG

Image/ File No	Description - BH7 McNamara's Dairy Cottage		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1389	BH7 – cottage, shed, yard timbers, dam, complex overview	To West	
IMG_1390	BH7 – dam, detail	To South	
IMG_1391	BH7 – cottage and shed, overview	To Southwest	
IMG_1392	BH7 – tin shed, detail	To Southeast	
IMG_1393	BH7 – cottage and timber fence	To Southwest	
IMG_1394	BH7 – cottage, overview	To South	
IMG_1396	BH7 – cottage, north elevation	To South	
IMG_1397	BH7 – cottage, south elevation	To North	
IMG_1398	BH7 – cottage,	To Southeast	
IMG_1399	BH7 – cottage, west elevation	To East	
IMG_1400	BH7 – cottage,	To Northeast	
IMG_1401	BH7 – cottage plantings	To South	
IMG_1402	BH7 – cottage south elevation	To North	
IMG_1403	BH7 – cottage with tin shed	To North	
IMG_1407	BH7 – cottage	To Northwest	
IMG_1408	BH7 – cottage, east elevation	To West	
IMG_1410	BH7 – cottage	To Southwest	

BH7



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IMG_1410.JPG

Image/ File No	Description - BH9 Dump site		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1839	BH9 – tin, asbestos cladding, tyre, concrete slabs, metal, brick on north bank of creek	To North	317610 E 6383790 N
IMG_1840	BH9 – tin, asbestos cladding, tyre, concrete slabs, metal, brick on north bank of creek	To North	317610 E 6383790 N
IMG_1841	BH9 – tin, asbestos cladding, tyre, concrete slabs, metal, brick on north bank of creek	To North	317610 E 6383790 N
IMG_1842	BH9 – asbestos cladding, and metal in creek	To North	317610 E 6383790 N
IMG_1843	BH9 – asbestos cladding, and metal in creek, detail	To North	317610 E 6383790 N
IMG_1844	BH9 – concrete slabs at west end of dump	To North	317610 E 6383790 N
IMG_1845	BH9 – brick and asbestos at east end of dump	To East	317610 E 6383790 N
IMG_1846	BH9 – brick and asbestos at east end of dump, detail	To East	317610 E 6383790 N
IMG_1847	BH9 – brick and asbestos at east end of dump	To East	317610 E 6383790 N
IMG_1848	BH9 – concrete slabs in creek	To West	317610 E 6383790 N
IMG_1849	BH9 – tin, asbestos cladding, tyre, concrete slabs, metal, brick on north bank of channel	To West	317610 E 6383790 N
IMG_1850	BH9 – tin, asbestos cladding, tyre, concrete slabs, metal, brick on north bank of channel	To West	317610 E 6383790 N
IMG_1851	BH9 – tin, asbestos cladding, tyre, concrete slabs, metal, brick on north bank of channel	To South	317610 E 6383790 N
IMG_1852	BH9 – tin, asbestos cladding, tyre, concrete slabs, metal, brick on north bank of channel	To West	317610 E 6383790 N
IMG_1854	BH9 – concrete slabs on north bank of creek along edge	To West	317610 E 6383790 N

BH9



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IMG_1854.JPG

Image/ File No	Description - BH11 Former farmstead site		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1791	BH11 – complex overview	To Northeast	
IMG_1793	BH11 – sheet metal scraps	To Northeast	
IMG_1794	BH11 – yards and pepper tree	To Northeast	
IMG_1795	BH11 – yards detail	To East	
IMG_1796	BH11 –yards and pepper tree, detail	To Northeast	
IMG_1797	BH11 – yards, detail	To Southwest	
IMG_1798	BH11 – concrete slab, yards, pepper tree overview	To Northwest	
IMG_1799	BH11 – concrete slab, yards, pepper tree overview	To Northwest	
IMG_1800	BH11 – concrete slab, detail	To Northwest	
IMG_1801	BH11 – timber posts and brick	To Northwest	
IMG_1802	BH11 – posts with wire and yards	To Southwest	
IMG_1803	BH11 – posts with wire, detail	To Southwest	
IMG_1804	BH11 – post with sheet metal, detail		
IMG_1805	BH11 – yards with collapsing fence along edge of spur	To Northwest	
IMG_1806	BH11 – collapsing fence along edge of spur	To Northwest	
IMG_1807	BH11 – brick, detail		
IMG_1808	BH11 – 2.5m x 3.5m concrete slab	To Southwest	
IMG_1810	BH11 – 2.5m x 3.5m concrete slab, detail	To Northeast	
IMG_1811	BH11 – 2.5m x 3.5m concrete slab, detail	To Northeast	
IMG_1812	BH11 – 2.5m x 3.5m concrete slab, detail	To Northeast	
IMG_1813	BH11 – bricks, detail		
IMG_1814	BH11 – view of gap in fence with pepper tree and car	To North	
IMG_1815	BH11 – c1920s car under pepper tree, detail	To Northwest	
IMG_1816	BH11 – c1920s car under pepper tree, detail	To Northwest	
IMG_1817	BH11 – c1920s car under pepper tree, detail	To North	
IMG_1818	BH11 – c1920s car under pepper tree, detail	To Northwest	
IMG_1819	BH11 – c1920s car under pepper tree, detail	To Northwest	
IMG_1820	BH11 – c1920s car under pepper tree, detail	To Northwest	
IMG_1821	BH11 – view of fence line with yards on SE side of fence, pepper tree and car on NW side	To Southeast	
IMG_1822	BH11 – view of gap in fence line with yards beyond	To Southeast	
IMG_1823	BH11 – view of fence line with creek beyond	To Southeast	
IMG_1824	BH11 – view of fence line yards on SE side of fence, pepper tree and car on NW side	To Southeast	
IMG_1826	BH11 - drain from large slab towards yards	To Southeast	
IMG_1828	BH11 – drain from large slab	To Southeast	
IMG_1829	BH11 – drain from large slab, detail	To Southeast	
IMG_1830	BH11 – yard fence	To South	
IMG_1831	BH11 – yard fence, detail	To South	
IMG_1832	BH11 – yard fence, detail with wire	To South	

BH11 1/2



IMG_1791.JPG



IMG_1793.JPG



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IMG_1832.JPG

Image/ File No	Description - BH12 Fence Line		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_0341	BH12 – signage with fence posts		
IMG_0343	BH12 – fence line, overview		
IMG_0344	BH12 – fence post, detail		
IMG_0345	BH12 – fence post, detail		
IMG_0346	BH12 – fence post, detail		
IMG_0348	BH12 – signage with fence posts		

BH12



IMG_0341.JPG



IMG_0343.JPG



IMG_0344.JPG



IMG_0345.JPG



IMG_0346.JPG



IMG_0348.JPG

Image/ File No	Description - BH13 Stone wall		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_0329	BH13 – track alongside Monkey Place Creek above stone wall	To East	
IMG_0330	BH13 – track alongside Monkey Place Creek above stone wall	To West	
IMG_0331	BH13 – paddock at the end of track alongside Monkey Place Creek above stone wall	To East	
IMG_0333	BH13 – stone wall alongside Monkey Place Creek	To West	
IMG_0335	BH13 – second section of stone wall alongside Monkey Place Creek and fencepost	To West	
IMG_0336	BH13 – washed out/collapsed section of stone wall alongside Monkey Place Creek	To West	
IMG_0337	BH13 – washed out/collapsed section of stone wall alongside Monkey Place Creek	To West	
IMG_0338	BH13 – washed out/collapsed section of stone wall alongside Monkey Place Creek	To East	
IMG_0339	BH13 – washed out/collapsed section of stone wall alongside Monkey Place Creek	To West	
IMG_0340	BH13 – washed out/collapsed section of stone wall alongside Monkey Place Creek	To East	
IMG_1377	BH13 – stone wall alongside Monkey Place Creek (scale = 1 metre)	To West	
IMG_1378	BH13 – Stone Wall alongside Monkey Place Creek (scale = 1 metre)	To West	
IMG_1379	BH13 – stone wall alongside Monkey Place Creek (scale = 1 metre)	To South	
IMG_1381	BH13 – stone wall alongside Monkey Place Creek (scale = 1 metre)	To South	
IMG_1383	BH13 – timber fence post above stone wall alongside Monkey Place Creek	To South	
IMG_1384	BH13 – timber fence post above stone wall alongside Monkey Place Creek	To South	
IMG_1386	BH13 – stone wall alongside Monkey Place Creek	To South	
IMG_1387	BH13 – stone wall alongside Monkey Place Creek	To East	

BH13



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IMG_0330.JPG



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IMG_1383.JPG



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IMG_1386.JPG



IMG_1387.JPG

Image/ File No	Description - BH15 Fence posts and yards		Photo Location
	Subject and Detail	Orientation	MGA Co-ordinate
IMG_1858	BH15 – fence posts	To Northwest	317539 E 6383840 N
IMG_1860	BH15 – fence posts	To Northwest	317539 E 6383840 N
IMG_1861	BH15 – fence posts	To North	317539 E 6383840 N
IMG_1862	BH15 – fence posts	To Northeast	317539 E 6383840 N
IMG_1864	BH15 – fence posts	To Northwest	317539 E 6383840 N
IMG_1865	BH15 – fence line	To Northwest	317539 E 6383840 N
IMG_1866	BH15 – fence posts	To North	317539 E 6383840 N
IMG_1867	BH15 – fence posts at base of spur	To East	317539 E 6383840 N
IMG_1868	BH15 – fence posts	To West	317539 E 6383840 N
IMG_1869	BH15 – fence posts near dam	To North	317539 E 6383840 N
IMG_1870	BH15 – fence posts in eroded creek with ponding	To Northwest	317539 E 6383840 N
IMG_1871	BH15 – fence posts in eroded creek with ponding, detail	To Northwest	317539 E 6383840 N

BH15



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IMG_1860.JPG



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IMG_1870.JPG



IMG_1871.JPG

Image/ File No	Description - BH16 House site		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
DSC_0558	BH16 – general view of ruins	To West	
DSC_0559	BH16 – general view of ruins	To West	
DSC_0564	BH16 – general view ruins	To West	
DSC_0565	BH16 – bricks and footings	To East	
DSC_0579	BH16 – bricks and footings	To Southeast	
DSC_0581	BH16 – glass bottles, detail		
DSC_0589	BH16 – glass bottles, detail		
DSC_0591	BH16 – ruins, detail	To West	
DSC_0598	BH16 – ruins, detail	To West	
DSC_0601	BH16 – ruins, detail	To Northwest	
DSC_0610	BH16 – ruins, detail	To Southeast	
DSC_0615	BH16 – ruins, detail	To Northeast	
DSC_0617	BH16 – yards and view to creek	To South	
DSC_0624	BH16 – yards, detail	To Southwest	
DSC_0627	BH16 – yards, sheep loader, detail	To North	
DSC_0635	BH16 – yards, sheep loader, detail	To North	
DSC_0636	BH16 – yards, sheep loader, detail	To Northeast	
DSC_0644	BH16 – yards, sheep loader, detail	To Northeast	
DSC_0648	BH16 – yards, sheep loader, detail	To Northeast	
DSC_0658	BH16 – yards, sheep loader, detail	To Northeast	
DSC_0661	BH16 – yards, sheep loader, detail	To East	
DSC_0667	BH16 – yards with view to creek	To South	
DSC_0670	BH16 – dairy slab view to hayshed	To Northeast	
DSC_0679	BH16 – dairy slab – stump for separator,	To North	
DSC_0682	BH16 – dairy slab – stump for separator	To North	
DSC_0693	BH16 – dairy slab – stump for separator	To East	

BH16



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DSC_0679.JPG



DSC_0682.JPG



DSC_0693.JPG

Image/ File No	Description Sites PS1 to PS6		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
DSC_0961	PS1 – fence line – west end	To East	
DSC_0963	PS1 – fence line into creek	To East	
DSC_0974	PS1 – wire gate detail	To Southeast	
DSC_0979	PS1 – fence	To North	
DSC_0926	PS2 – hut remains and pepper trees	To West	
DSC_0934	PS2 – hut remains and pepper trees	To West	
DSC_0937	PS2 – view to mine from hut remains	To Northwest	
DSC_0940	PS2 – hut remains	To Northeast	
DSC_0950	PS2 – brick rubble	To East	
DSC_0951	PS2 – brick rubble	To East	
DSC_0893	PS3 – timber footing remains	To North	
DSC_0902	PS3 – timber footing remains	To East	
DSC_0914	PS3 – timber footing remains	To Southwest	
DSC_0922	PS3 – timber footing remains	To West	
DSC_0885	PS4 – timber footings	To North	
DSC_0892	PS4 – timber footings	To East	
DSC_0797	PS6 – building remains, brick and wood fittings with chimney	To South	
DSC_0806	PS6 – building remains, brick and wood fittings with chimney	To Northeast	
DSC_0808	PS6 – building remains, brick and wood fittings with chimney	To Northeast	
DSC_0817	PS6 – outhouse, detail	To East	
DSC_0818	PS6 – outhouse, detail	To East	
DSC_0826	PS6 – outhouse, detail	To West	
DSC_0828	PS6 – chicken coop	To Southeast	
DSC_0836	PS6 – chicken coop	To West	
DSC_0838	PS6 – yards in front of chicken coop and shed, general	To North	
DSC_0845	PS6 – yards in front of chicken coop and shed, detail	To North	
DSC_0846	PS6 – concrete slab near yards	To South	
DSC_0857	PS6 – sheep dip	To East	
DSC_0866	PS6 – corrugated iron in sheds	To Northwest	
DSC_0867	PS6 – concrete dairy, general	To Southeast	
DSC_0875	PS6 – concrete dairy, detail	To Southeast	
DSC_0877	PS6 – complex, overview	To Southeast	

Sites PS1to PS6



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Image/ File No	Description - PS7 Remnant post and two rail fence line		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_0311	PS7 – standing fence post		
IMG_0312	PS7 – standing fence post		
IMG_0314	PS7 – leaning fence post		
IMG_0315	PS7 – leaning fence post		
IMG_0316	PS7 – fence post leaning against tree		
IMG_0318	PS7 – two fence posts		
IMG_0320	PS7 – two fence posts		
IMG_0322	PS7 – three fence posts with rail		
IMG_0323	PS7 – leaning fence posts		
IMG_0324	PS7 – leaning fence posts		
IMG_0325	PS7 – leaning fence posts		
IMG_0327	PS7 – leaning fence posts		

PS7



IMG_0311.JPG



IMG_0312.JPG



IMG_0314.JPG



IMG_0315.JPG



IMG_0316.JPG



IMG_0318.JPG



IMG_0320.JPG



IMG_0322.JPG



IMG_0323.JPG



IMG_0324.JPG



IMG_0325.JPG



IMG_0327.JPG

Image/ File No	Description - PS8 Former House Site		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1261	PS8 – Yards, detail	To West	
IMG_1263	PS8 – Yards, detail	To West	
IMG_1265	PS8 – Yards	To East	
IMG_1266	PS8 – Circular yards	To North	
IMG_1267	PS8 – Circular yards	To North	
IMG_1269	PS8 – Circular yards	To Northwest	
IMG_1270	PS8 – Circular yards	To South	
IMG_1271	PS8 – Circular yards	To South	
IMG_1272	PS8 – Circular yards	To South	
IMG_1273	PS8 – Circular yards	To East	
IMG_1274	PS8 – Circular yards	To North	
IMG_1275	PS8 – Dairy area	To Southeast	
IMG_1276	PS8 – Dairy area, slab and post for separator	To Southwest	
IMG_1277	PS8 – Dairy area, slab and post for separator	To South	
IMG_1278	PS8 – Dairy area, slab and post for separator	To Southwest	
IMG_1279	PS8 – Dairy area, slab and post for separator	To Southeast	
IMG_1280	PS8 – Dairy area, slab and post for separator	To West	
IMG_1281	PS8 – Dairy area, slab and post for separator	To Southwest	
IMG_1282	PS8 – brick fragment, detail		
IMG_1283	PS8 – sheet metal remains, detail		
IMG_1284	PS8 – timber remains, detail		
IMG_1285	PS8 – sheet metal remains, detail		
IMG_1286	PS8 – water tank remains, detail		
IMG_1288	PS8 – peppertree yard area	To Northeast	
IMG_1289	PS8 – Newcastle Wallsend Coal Company sign, detail		
IMG_1290	PS8 – peppertree yard area	To East	
IMG_1323	PS8 – plantings around site	To West	
IMG_1324	PS8 – plantings around site	To West	

PS8



IMG_1261.JPG



IMG_1263.JPG



IMG_1265.JPG



IMG_1266.JPG



IMG_1267.JPG



IMG_1269.JPG



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IMG_1271.JPG



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IMG_1273.JPG



IMG_1274.JPG



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IMG_1288.JPG



IMG_1289.JPG



IMG_1290.JPG



IMG_1323.JPG



IMG_1324.JPG

Image/ File No	Description – PS9 Timber Yards		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1326	PS9 – gate from Broke Road	To Northeast	
IMG_1327	PS9 – timber stockyard alongside Broke Road	To Northeast	
IMG_1328	PS9 – timber stockyard alongside Broke Road	To East	
IMG_1329	PS9 – timber stockyard alongside Broke Road	To South	
IMG_1330	PS9 – timber stockyard alongside Broke Road	To Northeast	
IMG_1331	PS9 – timber stockyard alongside Broke Road	To North	
IMG_1332	PS9 – star picket and wire rectangular fenced enclosure with pepper trees	To East	
IMG_1333	PS9 – star picket and wire rectangular fenced enclosure with pepper trees	To East	
IMG_1334	PS9 – star picket and wire rectangular fenced enclosure with pepper trees	To West	
IMG_1335	PS9 – dam inside star picket and wire rectangular fenced enclosure with pepper trees	To Southwest	
IMG_1336	PS9 – tin, timber, rubbish	To East	
IMG_1337	PS9 – 3m x 2m slab with timber frame	To North	
IMG_1338	PS9 – 3m x 2m slab with timber frame	To South	
IMG_1339	PS9 – 3m x 2m slab with timber frame	To West	
IMG_1340	PS9 – 3m x 2m slab with timber frame, detail	To Southwest	
IMG_1341	PS9 – tin, timber demolition rubbish	To East	
IMG_1342	PS9 – overview to Broke Road	To West	
IMG_1343	PS9 – timber stockyard alongside Broke Road	To South	
IMG_1345	PS9 – timber stockyard alongside Broke Road, sheep run	To East	
IMG_1346	PS9 – timber stockyard alongside Broke Road, gate	To North	

PS9



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IMG_1342.JPG



IMG_1343.JPG



IMG_1345.JPG



IMG_1346.JPG

Image/ File No	Description - PS10 Concrete slabs/Vere Vineyard		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1347	PS10 – slab 1 with posts and scattered tin	To South	
IMG_1348	PS10 – slab 1 with posts and scattered tin	To South	
IMG_1349	PS10 – slab 1 with posts and scattered tin	To West	
IMG_1350	PS10 – slab 1 with posts and scattered tin	To North	
IMG_1352	PS10 – scattered timber	To North	
IMG_1353	PS10 – slab 2; rough concrete slab with burnt post	To South	
IMG_1354	PS10 – slab 2; rough concrete slab with burnt post	To South	
IMG_1355	PS10 – slab 2; rough concrete slab with burnt post	To West	
IMG_1356	PS10 – slab 2; rough concrete slab with burnt post	To North	
IMG_1357	PS10 – slab 2; rough concrete slab with burnt post	To North	
IMG_1358	PS10 – Vere Vineyard structure	To South	
IMG_1359	PS10 – Vere Vineyard structure	To South	
IMG_1360	PS10 – Vere Vineyard structure	To Southeast	
IMG_1361	PS10 – Vere Vineyard structure	To West	
IMG_1362	PS10 – Vere Vineyard structure	To West	
IMG_1363	PS10 – Vere Vineyard structure	To Northwest	
IMG_1364	PS10 – Vere Vineyard structure	To Northwest	
IMG_1365	PS10 – Vere Vineyard structure	To Northwest	
IMG_1366	PS10 – Vere Vineyard structure	To North	
IMG_1367	PS10 – yards next to Vere Vineyard structure	To East	
IMG_1368	PS10 – yards next to Vere Vineyard structure	To East	
IMG_1369	PS10 – yards next to Vere Vineyard structure	To East	
IMG_1370	PS10 – yards next to Vere Vineyard structure	To North	
IMG_1371	PS10 – yards next to Vere Vineyard structure	To West	
IMG_1374	PS10 – yards next to Vere Vineyard structure	To West	

PS10



IMG_1347.JPG



IMG_1348.JPG



IMG_1349.JPG



IMG_1351.JPG



IMG_1352.JPG



IMG_1353.JPG



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IMG_1370.JPG



IMG_1371.JPG



IMG_1374.JPG

Image/ File No	Description - Site: PS11 Former house site		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
DSC_0778	PS11 – fence posts, overview	To Southeast	
DSC_0786	PS11 – fence posts, detail	To Southwest	
DSC_0787	PS11 – fence posts, detail	To Southeast	
DSC_0796	PS11 – pomegranate tree	-	

PS11



DSC_0778.JPG



DSC_0786.JPG



DSC_0787.JPG



DSC_0796.JPG

Image/ File No	Description - PS12 Timber yard complex		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
DSC_0694	PS12 – square yards, overview	To West	
DSC_0701	PS12 – square yards, detail	To Southwest	
DSC_0703	PS12 – yards	To Northwest	
DSC_0708	PS12 – yards	To North	
DSC_0710	PS12 – sheep run	To East	
DSC_0717	PS12 – sheep run	To East	
DSC_0718	PS12 – swing door	To Northwest	
DSC_0724	PS12 – swing door	To North	
DSC_0726	PS12 – swing door	To Southwest	
DSC_0733	PS12 – yards	To South	
DSC_0734	PS12 – yards complex, overview	To South-southeast	
DSC_0741	PS12 – swing door and cattle crush	To Southwest	
DSC_0744	PS12 – swing door and cattle crush	To Southeast	
DSC_0750	PS12 – swing door and cattle crush	To East	
DSC_0753	PS12 – brick rubble	To Southeast	
DSC_0759	PS12 – brick rubble	To Southeast	
DSC_0761	PS12 – yards complex, overview	To West-southwest	
DSC_0768	PS12 – yards complex, overview	To Southwest	
DSC_0769	PS12 – Exotic tree on track above complex	To Northeast	

PS12



DSC_0694.JPG



DSC_0701.JPG



DSC_0703.JPG



DSC_0708.JPG



DSC_0710.JPG



DSC_0717.JPG



DSC_0718.JPG



DSC_0724.JPG



DSC_0726.JPG



DSC_0733.JPG



DSC_0734.JPG



DSC_0741.JPG



DSC_0744.JPG



DSC_0750.JPG



DSC_0753.JPG



DSC_0759.JPG



DSC_0761.JPG



DSC_0768.JPG



DSC_0769.JPG

Image/ File No	Description - PS14 Yards alongside Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1481	PS14 – yards alongside Charlton Road	To Northwest	318890 E 6381856 N
IMG_1482	PS14 – yards alongside Charlton Road	To Northwest	318890 E 6381856 N
IMG_1483	PS14 – yards alongside Charlton Road	To Northwest	318890 E 6381856 N
IMG_1484	PS14 – yards alongside Charlton Road	To West	318890 E 6381856 N
IMG_1485	PS14 – yards alongside Charlton Road	To West	318890 E 6381856 N
IMG_1486	PS14 – yards alongside Charlton Road	To West	318890 E 6381856 N
IMG_1487	PS14 – yards alongside Charlton Road	To West	318890 E 6381856 N
IMG_1488	PS14 – yards alongside Charlton Road	To Northwest	318890 E 6381856 N
IMG_1489	PS14 – yards alongside Charlton Road	To Northwest	318890 E 6381856 N
IMG_1490	PS14 – yards alongside Charlton Road	To South	318890 E 6381856 N

PS14



IMG_1481.JPG



IMG_1482.JPG



IMG_1483.JPG



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IMG_1489.JPG



IMG_1490.JPG

Image/ File No	Description - PS15 Yards		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1298	PS15 – track between paddocks in mushroom dump area	To North	
IMG_1299	PS15 – track between paddocks in mushroom dump area	To North	
IMG_1300	PS15 – cast iron picket fence constructed around sapling	To North	
IMG_1301	PS15 – cast iron picket fence constructed around sapling	To East	
IMG_1302	PS15 – cast iron picket fence constructed around sapling	To South	
IMG_1304	PS15 – cast iron picket fence constructed around sapling	To South	
IMG_1306	PS15 – timber and natural conglomerate chunks near cast iron picket fence	To East	
IMG_1307	PS15 – yards, overview	To South	
IMG_1308	PS15 – yards, cast iron picket fence constructed around tree	To West	
IMG_1309	PS15 – yards, cast iron picket fence constructed around tree, detail	To West	
IMG_1311	PS15 – yards, sheep run and cast iron picket fence around tree	To North	
IMG_1312	PS15 – yards	To South	
IMG_1313	PS15 – yards	To Southwest	
IMG_1314	PS15 – yards	To West	
IMG_1315	PS15 – yards	To Northwest	
IMG_1316	PS15 – yards, gate, detail	To Northwest	
IMG_1317	PS15 – yards, ramp, detail	To Southwest	
IMG_1318	PS15 – yards, ramp, overview	To Southwest	
IMG_1320	PS15 – yards, internal gate	To West	
IMG_1321	PS15 – yards, internal gate	To West	
IMG_1322	PS15 – yards, overview	To South	

PS15



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IMG_1299.JPG



IMG_1300.JPG



IMG_1301.JPG



IMG_1302.JPG



IMG_1304.JPG



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IMG_1322.JPG

Image/ File No	Description - PS16 Timber Yards		Photo Location
	Subject and Detail	Orientation	MGA Co-ordinate
IMG_1771	PS16 – overview of yards	To North	319522 E 6381473 N
IMG_1772	PS16 – fence, detail	To North	319522 E 6381473 N
IMG_1773	PS16 – loading ramp, overview	To North	319522 E 6381473 N
IMG_1774	PS16 – overview of yards	To Northeast	319522 E 6381473 N
IMG_1775	PS16 – loading ramp	To Northeast	319522 E 6381473 N
IMG_1776	PS16 – loading ramp, overview	To West	319522 E 6381473 N
IMG_1777	PS16 – loading ramp, detail	To West	319522 E 6381473 N
IMG_1779	PS16 – collapsed fence	To South	319522 E 6381473 N
IMG_1780	PS16 – loading ramp	To South	319522 E 6381473 N
IMG_1781	PS16 – loading ramp	To South	319522 E 6381473 N
IMG_1782	PS16 – open gate	To West	319522 E 6381473 N
IMG_1783	PS16 – fence with wire, overview	To South	319522 E 6381473 N
IMG_1784	PS16 – fence with wire, detail	To South	319522 E 6381473 N
IMG_1785	PS16 – gate of yards, overview	To South	319522 E 6381473 N
IMG_1786	PS16 – crossbeam gate of yards, detail	To South	319522 E 6381473 N

PS16



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IMG_1772.JPG



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IMG_1775.JPG



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IMG_1780.JPG



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IMG_1782.JPG



IMG_1783.JPG



IMG_1784.JPG



IMG_1785.JPG



IMG_1786.JPG

Image/ File No	Description - PS17 Former house site		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_0367	PS17 – view to corduroy crossing from creek bank above		
IMG_0368	PS17 – view to corduroy crossing from creek bank above		
IMG_0369	PS17 – corduroy crossing		
IMG_0370	PS17 – corduroy crossing		
IMG_0372	PS17 – corduroy crossing (scale = 1 metre)		
IMG_0373	PS17 – corduroy crossing (scale = 1 metre)		
IMG_0374	PS17 – corduroy crossing (scale = 1 metre)		
IMG_0375	PS17 – front of dwelling, overview		
IMG_0376	PS17 – front of dwelling		
IMG_0377	PS17 – side of dwelling		
IMG_0378	PS17 – rear of dwelling		
IMG_0379	PS17 – rear of dwelling, trees around water tank		
IMG_0380	PS17 – side of dwelling, chimney		
IMG_0381	PS17 – dwelling, overview		
IMG_0382	PS17 – front of dwelling		
IMG_0383	PS17 – side view of chimney		
IMG_0385	PS17 – sign on door of dwelling		
IMG_0387	PS17 – interior of dwelling, fireplace		
IMG_0389	PS17 – view into dwelling		
IMG_0390	PS17 – water tank at rear of dwelling		
IMG_0391	PS17 – side of dwelling		
IMG_0392	PS17 – side of dwelling		
IMG_0393	PS17 – front of dwelling		
IMG_0394	PS17 – front of dwelling		
IMG_0395	PS17 – front of dwelling		
IMG_0396	PS17 – dwelling, overview		
IMG_0397	PS17 – corduroy crossing		
IMG_0398	PS17 – corduroy crossing		
IMG_0399	PS17 – corduroy crossing		
IMG_0401	PS17 – corduroy crossing (scale = 1 metre)		
IMG_0404	PS17 – ‘Redcliffe Trademark’, detail		
IMG_0407	PS17 – back of dwelling with water tank		
IMG_0410	PS17 – trough, with dwelling in background		
IMG_0411	PS17 – dwelling, overview		
IMG_0412	PS17 – trough, overview		
IMG_0413	PS17 – trough, overview		
IMG_0414	PS17 – trough, overview		
IMG_0415	PS17 – trough, overview		
IMG_0416	PS17 – covered end of trough		
IMG_0417	PS17 – covered end of trough		
IMG_0418	PS17 – trough		

Image/ File No	Description - PS17 Former house site		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_0419	PS17 – trough		
IMG_0420	PS17 – saw mark in trough, detail		
IMG_0421	PS17 – joint construction of trough, outer side, detail		
IMG_0422	PS17 – joint construction of trough, inner side, detail		
IMG_0423	PS17 – trough frame		
IMG_0424	PS17 – nail in trough frame		
IMG_0425	PS17 – recycled timber door as a wall, interior		
IMG_0427	PS17 – view into dwelling		
IMG_0429	PS17 – damming of creek at corduroy crossing		
IMG_0431	PS17 – damming of creek at corduroy crossing		
IMG_0432	PS17 – corduroy crossing		
IMG_0433	PS17 – approach to corduroy crossing		



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IMG_0369.JPG



IMG_0370.JPG



IMG_0372.JPG



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IMG_0382.JPG



IMG_0383.JPG



IMG_0385.JPG



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IMG_0389.JPG



IMG_0390.JPG



IMG_0391.JPG



IMG_0392.JPG



IMG_0393.JPG



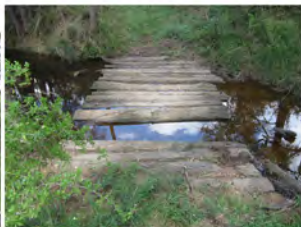
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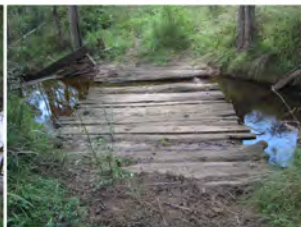
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IMG_0432.JPG



IMG_0433.JPG

Image/ File No	Description - PS18 Remnant post and two rail fence line		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_0352	PS18 – fence line		
IMG_0353	PS18 – fence line		
IMG_0354	PS18 – fence line		
IMG_0355	PS18 – fence line		
IMG_0356	PS18 – fence line		
IMG_0357	PS18 – fence line		
IMG_0358	PS18 – fence line, Bayswater dump in background		
IMG_0359	PS18 – fence line, Bayswater dump in background		
IMG_0360	PS18 – fence line, Bayswater dump in background		
IMG_0361	PS18 – fence line, Bayswater dump in background		
IMG_0363	PS18 – post and wire, detail		
IMG_0366	PS18 – fence line		

PS18



IMG_0352.JPG



IMG_0353.JPG



IMG_0354.JPG



IMG_0355.JPG



IMG_0356.JPG



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IMG_0358.JPG



IMG_0359.JPG



IMG_0360.JPG



IMG_0361.JPG



IMG_0363.JPG



IMG_0366.JPG

Image/ File No	Description – PS19 former shed site		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
Site PS19	PS19 – former shed site	-	



Site PS 19.jpg

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1180	Charlton Road – Monkey Place Creek – south side of creek; interpretive sign	To Northwest	
IMG_1182	Charlton Road – Monkey Place Creek – south side of creek; 1834 Line of the Great North Road	To Northwest	
IMG_1183	Charlton Road – Monkey Place Creek – south side of creek; 1834 Line of the Great North Road	To Northwest	
IMG_1184	Charlton Road – Monkey Place Creek – south side of creek; interpretation sign for the Great North Road	To West	
IMG_1185	Charlton Road – Monkey Place Creek – south side of creek; interpretation sign for the Great North Road	To West	
IMG_1186	Charlton Road – Monkey Place Creek – south side of creek; interpretation sign for the Great North Road	To West	
IMG_1187	Charlton Road – Monkey Place Creek – south side of creek; interpretation sign for the Great North Road	To West	
IMG_1188	Charlton Road – Monkey Place Creek – south side of creek; interpretation sign for the Great North Road	To West	
IMG_1189	Charlton Road – Monkey Place Creek – south side of creek; interpretation sign for the Great North Road	To West	
IMG_1190	Charlton Road – Monkey Place Creek – south side of creek; intersection of Charlton Road and Broke Road	To Southeast	
IMG_1191	Charlton Road – Monkey Place Creek – south side of creek; 1834 Line of the Great North Road	To Northwest	
IMG_1192	Charlton Road – Monkey Place Creek – south side of creek; view to the Broke Road crossing from 1834 line of the Great North Road	To East	
IMG_1193	Charlton Road – Monkey Place Creek – south side of creek; Broke Road bridge over Monkey Place Creek	To East	
IMG_1194	Charlton Road – Monkey Place Creek – south side of creek; 1834 line of the Great North Road crossing Monkey Place Creek	To Northwest	
IMG_1195	Charlton Road – Monkey Place Creek – south side of creek; 1834 line of the Great North Road crossing Monkey Place Creek	To Northwest	
IMG_1196	Charlton Road – Monkey Place Creek	To East	
IMG_1197	Charlton Road – Monkey Place Creek – south side of creek; 1834 line of Great North Road crossing Monkey Place Creek	To Northwest	
IMG_1199	Charlton Road – Monkey Place Creek – south side of creek; 1834 line of the Great North Road	To Southeast	
IMG_1200	Charlton Road – Monkey Place Creek – south side of creek; 1834 line of the Great North Road	To Northwest	
IMG_1201	Charlton Road – Monkey Place Creek – north side of creek; 1834 line of the Great North Road	To Southeast	
IMG_1202	Charlton Road – Monkey Place Creek – north side of creek; 1834 line of the Great North Road	To Southeast	
IMG_1203	Charlton Road – Monkey Place Creek – north side of creek; 1834 line of the Great North Road crossing Monkey Place Creek	To Southeast	
IMG_1205	Charlton Road – Monkey Place Creek – north side of creek	To East	

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1206	Charlton Road – Monkey Place Creek – north side of creek	To East	
IMG_1207	Charlton Road – Monkey Place Creek – north side of creek; 1834 line of the Great North Road intersection with Charlton Road	To North-northwest	
IMG_1208	Charlton Road – Monkey Place Creek – north side of creek; 1834 line of the Great North Road intersection with Charlton Road	To Northwest	
IMG_1209	Charlton Road – Monkey Place Creek – north side of creek; 1834 line of the Great North Road intersection with Charlton Road	To East	
IMG_1210	Charlton Road – Monkey Place Creek – north side of creek- intersection of Broke Road and Charlton Road	To Northeast	
IMG_1212	Charlton Road – Monkey Place Creek – north side of creek- intersection of Broke Road and Charlton Road	To East	
IMG_1213	Charlton Road – Monkey Place Creek – north side of creek- intersection of Broke Road and Charlton Road – view to Site BH7	To East	
IMG_1214	Charlton Road – Monkey Place Creek – north side of creek- intersection of Broke Road and Charlton Road – view to Site BH7	To East	
IMG_1215	Charlton Road – Monkey Place Creek – north side of creek- intersection of Broke Road and Charlton Road – view to Site BH7	To East	
IMG_1216	Charlton Road – Monkey Place Creek – north side of creek- intersection of Broke Road and Charlton Road	To West	
IMG_1217	Charlton Road – Monkey Place Creek – north side of creek- culvert under Charlton Road	To Southeast	
IMG_1218	Charlton Road – Monkey Place Creek – north side of creek- culvert under Charlton Road	To South	
IMG_1219	Charlton Road – Monkey Place Creek – north side of creek- Charlton Rd with 1834 Great North Road intersection	To West	
IMG_1220	Charlton Road – Monkey Place Creek – north side of creek; Charlton Road past the 1834 Great North Road alignment	To North-northwest	
IMG_1221	Charlton Road – Monkey Place Creek – north side of creek; Charlton Road past the 1834 Great North Road alignment	To Southeast	
IMG_1222	Charlton Road – Monkey Place Creek – north side of creek; Charlton Rd intersection with 1834 GNR line	To Southeast	
IMG_1223	Charlton Road – Monkey Place Creek – north side of creek; Charlton Rd intersection with 1834 Great North Road line	To Southeast	
IMG_1224	Charlton Road – Monkey Place Creek – north side of creek; Charlton Rd intersection with 1834 Great North Road line	To Southeast	
IMG_1238	Charlton Road – general view	To North	320606 E 6377852 N
IMG_1239	Charlton Road – general view	To South	320606 E 6377852 N
IMG_1240	Charlton Road – Bulga Gate	To East	
IMG_1241	Charlton Road – Bulga Gate, detail	To East	
IMG_1242	Charlton Road – road surface, detail	To North	

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1247	Charlton Road – Fordwich Road intersection	To North	320134 E 6378498 N
IMG_1248	Charlton Road – Fordwich Road intersection	To North	320134 E 6378498 N
IMG_1250	Charlton Road – Fordwich Road intersection	To South	320134 E 6378498 N
IMG_1251	Charlton Road – Fordwich Road intersection	To South	320134 E 6378498 N
IMG_1425	Charlton Road – general view	To North	320007 E 6378900 N
IMG_1427	Charlton Road – general view	To South	320007 E 6378900 N
IMG_1428	Charlton Road – 6 pipe culvert under Charlton Road	To East	319973 E 6379751 N
IMG_1430	Charlton Road – 6 pipe culvert under Charlton Road	To East	319973 E 6379751 N
IMG_1431	Charlton Road – bank stabilisation at the 6 pipe culvert under Charlton Road	To West	319973 E 6379751 N
IMG_1432	Charlton Road – creek channel at 6 the pipe culvert under Charlton Road	To West	319973 E 6379751 N
IMG_1433	Charlton Road – 6 pipe culvert under Charlton Road	To West	319973 E 6379751 N
IMG_1437	Charlton Road – general view	To North	319806 E 6379751 N
IMG_1438	Charlton Road – general view; typical fence	To West	319806 E 6379751 N
IMG_1439	Charlton Road – general view	To South	319806 E 6379751 N
IMG_1441	Charlton Road – general view; typical fence	To West	319806 E 6379751 N
IMG_1442	Charlton Road – 5 pipe culvert under Charlton Road	To West	319772 E 6379888 N
IMG_1443	Charlton Road – 5 pipe culvert under Charlton Road	To West	319772 E 6379888 N
IMG_1444	Charlton Road – 5 pipe culvert under Charlton Road	To East	319772 E 6379888 N
IMG_1446	Charlton Road – Cobcroft Road intersection	To North	319479 E 6380599 N
IMG_1447	Charlton Road – Cobcroft Road intersection	To South	319479 E 6380599 N
IMG_1448	Charlton Road – Cobcroft Road intersection	To South	319479 E 6380599 N
IMG_1449	Charlton Road – view of cut	To South	319371 E 6380926 N
IMG_1450	Charlton Road – view of cut	To South	319371 E 6380926 N

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1451	Charlton Road – view of cut	To South	319371 E 6380926 N
IMG_1454	Charlton Road – view of cut	To South	319371 E 6380926 N
IMG_1455	Charlton Road – view of cut	To South	319371 E 6380926 N
IMG_1456	Charlton Road – view of cut	To South	319371 E 6380926 N
IMG_1457	Charlton Road – view of embankment	To North	319327 E 6380989 N
IMG_1458	Charlton Road – view of embankment	To North	319327 E 6380989 N
IMG_1462	Charlton Road – culvert	To South	319232 E 6381074 N
IMG_1464	Charlton Road – culvert	To East	319232 E 6381074 N
IMG_1465	Charlton Road – early fence post at culvert	To South	319232 E 6381074 N
IMG_1466	Charlton Road – early fence post at culvert	To South	319232 E 6381074 N
IMG_1467	Charlton Road – early fence post at culvert	To North	319232 E 6381074 N
IMG_1468	Charlton Road – early fence post at culvert	To North	319232 E 6381074 N
IMG_1470	Charlton Road – culvert	To Northeast	319232 E 6381074 N
IMG_1471	Charlton Road – post and wire fence	To West	319232 E 6381074 N
IMG_1472	Charlton Road – embankment	To North	319232 E 6381074 N
IMG_1473	Charlton Road – general view of straight section along road	To North	319092 E 6381365 N
IMG_1476	Charlton Road – general view of straight section along road	To South	319092 E 6381365 N
IMG_1478	Charlton Road – general view at the start of the proposed realignment	To North	318998 E 6381619 N
IMG_1480	Charlton Road – general view at the start of the proposed realignment	To South	318998 E 6381619 N
IMG_1491	Charlton Road – culvert and ditch modified to manage drainage	To South	318886 E 6381856 N
IMG_1493	Charlton Road – culvert and ditch modified to manage drainage	To South	318886 E 6381856 N
IMG_1494	Charlton Road – culvert and ditch modified to manage drainage	To East	318886 E 6381856 N
IMG_1495	Charlton Road – culvert and ditch modified to manage drainage, detail	To East	318886 E 6381856 N

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1496	Charlton Road – culvert and ditch modified to manage drainage, detail	To East	318886 E 6381856 N
IMG_1497	Charlton Road – culvert and ditch modified to manage drainage	To West	318886 E 6381856 N
IMG_1500	Charlton Road – general view along road at Culvert	To South	318886 E 6381856 N
IMG_1502	Charlton Road – general view along road at Culvert	To North	318886 E 6381856 N
IMG_1504	Charlton Road – 3 pipe concrete culvert, westside of road	To East	318758 E 6382269 N
IMG_1506	Charlton Road – 3 pipe concrete culvert, eastside of road	To West	318758 E 6382269 N
IMG_1507	Charlton Road – 3 pipe concrete culvert, eastside of road	To West	318758 E 6382269 N
IMG_1508	Charlton Road – fence at 3 pipe concrete culvert, eastside of road	To East	318758 E 6382269 N
IMG_1509	Charlton Road – fence at 3 pipe concrete culvert, westside of road	To Southwest	318758 E 6382269 N
IMG_1511	Charlton Road – view along road from 3 pipe culvert	To South	318758 E 6382269 N
IMG_1513	Charlton Road – view along road from 3 pipe culvert	To North	318758 E 6382269 N
IMG_1517	Charlton Road – view along road	To South	318599 E 6382637 N
IMG_1518	Charlton Road – view along road	To North	318599 E 6382637 N
IMG_1519	Charlton Road – culvert	To East	318599 E 6382637 N
IMG_1520	Charlton Road – culvert	To East	318599 E 6382637 N
IMG_1521	Charlton Road – culvert	To West	318599 E 6382637 N
IMG_1522	Charlton Road – view along road	To South	318555 E 6382782 N
IMG_1525	Charlton Road – view along road	To North	318555 E 6382782 N
IMG_1526	Charlton Road – culvert	To East	318555 E 6382782 N
IMG_1527	Charlton Road – culvert	To West	318555 E 6382782 N
IMG_1528	Charlton Road – change in road surface	To North	318533 E 6382822 N
IMG_1529	Charlton Road – change in road surface	To North	318533 E 6382822 N
IMG_1530	Charlton Road – change in road surface	To South	318533 E 6382822 N
IMG_1532	Charlton Road – change in road surface		318533 E 6382822 N

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1533	Charlton Road – change in road surface		318533 E 6382822 N
IMG_1542	Charlton Road – 6 drain culvert	To East	318452 E 6383280 N
IMG_1543	Charlton Road – 6 drain culvert	To East	318452 E 6383280 N
IMG_1544	Charlton Road – 6 drain culvert	To East	318452 E 6383280 N
IMG_1545	Charlton Road – 6 drain culvert	To Southwest	318452 E 6383280 N
IMG_1546	Charlton Road – view from culvert	To North	318452 E 6383280 N
IMG_1547	Charlton Road – view from culvert	To South	318452 E 6383280 N
IMG_1548	Charlton Road – embankment	To North	318452 E 6383280 N
IMG_1549	Charlton Road – embankment	To North	318452 E 6383280 N
IMG_1550	Charlton Road – embankment	To South	318452 E 6383280 N
IMG_1551	Charlton Road – embankment	To South	318452 E 6383280 N
IMG_1552	Charlton Road – area of cut up to 1m	To North	318409 E 6383500 N
IMG_1554	Charlton Road – area of cut up to 1m	To North	318409 E 6383500 N
IMG_1555	Charlton Road – area of cut up to 1m	To North	318409 E 6383500 N
IMG_1556	Charlton Road – road surfaces at area of cut up to 1m	To North	318409 E 6383500 N
IMG_1557	Charlton Road – area of cut up to 1m	To South	318409 E 6383500 N
IMG_1558	Charlton Road – area of cut up to 1m	To South	318409 E 6383500 N
IMG_1559	Charlton Road – sandstone in area of cut up to 1m	To North	318409 E 6383500 N
IMG_1560	Charlton Road – sandstone in area of cut up to 1m	To North	318409 E 6383500 N
IMG_1561	Charlton Road – area of cut up to 1m	To North	318409 E 6383500 N
IMG_1562	Charlton Road – area of cut up to 1m	To South	318409 E 6383500 N
IMG_1563	Charlton Road – area of cut up to 1m	To South	318409 E 6383500 N
IMG_1564	Charlton Road – area of cut up to 1m	To South	318409 E 6383500 N
IMG_1565	Charlton Road – remnant post-and-two-rail fence line on west side of road	To North	318252 E 6383861 N

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1566	Charlton Road – remnant post-and-two-rail fence line on west side of road	To North	318252 E 6383861 N
IMG_1567	Charlton Road – remnant post-and-two-rail fence line on west side of road	To North	318252 E 6383861 N
IMG_1568	Charlton Road – remnant post-and-two-rail fence line on west side of road	To South	318252 E 6383861 N
IMG_1570	Charlton Road – remnant post-and-two-rail fence line on west side of road	To North	318252 E 6383861 N
IMG_1571	Charlton Road – remnant post-and-two-rail fence line on west side of road	To North	318252 E 6383861 N
IMG_1572	Charlton Road – remnant post-and-two-rail fence line on west side of road	To North	318252 E 6383861 N
IMG_1573	Charlton Road – embankment about 1.5m on west side of road	To South	318252 E 6383861 N
IMG_1575	Charlton Road – embankment about 1.5m on west side of road	To South	318252 E 6383861 N
IMG_1576	Charlton Road – road alignment	To South	318252 E 6383861 N
IMG_1577	Charlton Road – road alignment	To South	318252 E 6383861 N
IMG_1578	Charlton Road – road alignment	To North	318252 E 6383861 N
IMG_1579	Charlton Road – embankment on east side of road	To South	318252 E 6383861 N
IMG_1580	Charlton Road – embankment on east side of road	To South	318252 E 6383861 N
IMG_1581	Charlton Road – culvert on west side of road	To West	318252 E 6383861 N
IMG_1582	Charlton Road – culvert on west side of road	To West	318252 E 6383861 N
IMG_1584	Charlton Road – culvert on east side of road	To East	318252 E 6383861 N
IMG_1588	Charlton Road – pothole in road		
IMG_1590	Charlton Road – culvert on west side of road	To South	318170 E 6384064 N
IMG_1591	Charlton Road – culvert on east side of road	To West	318170 E 6384064 N
IMG_1592	Charlton Road – culvert on east side of road, detail	To West	318170 E 6384064 N
IMG_1594	Charlton Road – view of road	To North	318170 E 6384064 N
IMG_1595	Charlton Road – view of road	To North	318170 E 6384064 N
IMG_1596	Charlton Road – view of road	To South	318170 E 6384064 N
IMG_1597	Charlton Road – view of road	To South	318170 E 6384064 N

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1598	Charlton Road – view of road	To North	318051 E 6384371 N
IMG_1599	Charlton Road – view of road	To North	318051 E 6384371 N
IMG_1600	Charlton Road – view of road	To South	318051 E 6384371 N
IMG_1601	Charlton Road – view of road	To South	318051 E 6384371 N
IMG_1602	Charlton Road – remnant post-and-two-rail fence line on west side of road	To South	318051 E 6384371 N
IMG_1604	Charlton Road – remnant post-and-two-rail fence line on west side of road	To South	318051 E 6384371 N
IMG_1606	Charlton Road – remnant post-and-two-rail fence line on west side of road	To Southeast	318051 E 6384371 N
IMG_1607	Charlton Road – remnant post-and-two-rail fence line on west side of road	To Southeast	318051 E 6384371 N
IMG_1610	Charlton Road – remnant post-and-two-rail fence line on west side of road	To Southeast	318051 E 6384371 N
IMG_1613	Charlton Road – remnant post-and-two-rail fence line on west side of road	To South	318051 E 6384371 N
IMG_1615	Charlton Road – culvert	To Southeast	318038 E 6384419 N
IMG_1616	Charlton Road – culvert	To Southeast	318038 E 6384419 N
IMG_1618	Charlton Road – culvert	To Southwest	318038 E 6384419 N
IMG_1619	Charlton Road – view along road	To North	318038 E 6384419 N
IMG_1620	Charlton Road – view along road	To South	318038 E 6384419 N
IMG_1621	Charlton Road – culvert		318003 E 6384512 N
IMG_1622	Charlton Road – culvert, detail		318003 E 6384512 N
IMG_1623	Charlton Road – culvert		318003 E 6384512 N
IMG_1624	Charlton Road – cut, mainly on west side of road	To North	318798 E 6384572 N
IMG_1625	Charlton Road – cut, mainly on west side of road	To North	318798 E 6384572 N
IMG_1626	Charlton Road – cut, mainly on west side of road	To North	318798 E 6384572 N
IMG_1627	Charlton Road – cut, mainly on west side of road	To Northwest	318798 E 6384572 N
IMG_1628	Charlton Road – cut, mainly on west side of road	To Southwest	318798 E 6384572 N
IMG_1629	Charlton Road – cut, mainly on west side of road	To West	318798 E 6384572 N

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1630	Charlton Road – cut, mainly on west side of road	To North	318798 E 6384572 N
IMG_1631	Charlton Road – cut, mainly on west side of road	To South	318798 E 6384572 N
IMG_1632	Charlton Road – straight section of road	To North	317928 E 6384726 N
IMG_1633	Charlton Road – straight section of road	To South	317928 E 6384726 N
IMG_1636	Charlton Road – end of the proposed realignment	To North	317828 E 6384882 N
IMG_1637	Charlton Road – end of the proposed realignment	To North	317828 E 6384882 N
IMG_1638	Charlton Road – end of the proposed realignment	To South	317828 E 6384882 N
IMG_1640	Charlton Road – end of the proposed realignment	To South	317828 E 6384882 N
IMG_1642	Charlton Road – culvert on west side of road	To Southeast	317828 E 6384882 N
IMG_1643	Charlton Road – culvert on east side of road	To Southwest	317828 E 6384882 N
IMG_1645	Charlton Road – straight section of road north of the proposed realignment	To South	317728 E 6385280 N
IMG_1648	Charlton Road – straight section of road north of the proposed realignment	To North	317728 E 6385280 N
IMG_1649	Charlton Road – culvert east side of road	To West	317681 E 6385377 N
IMG_1650	Charlton Road – culvert west side of road	To East	317681 E 6385377 N
IMG_1652	Charlton Road – bridge over culvert	To South	317618 E 6385589 N
IMG_1653	Charlton Road – bridge culvert west side of road	To Southeast	317618 E 6385589 N
IMG_1655	Charlton Road – bridge culvert east side of road	To Southwest	317618 E 6385589 N
IMG_1656	Charlton Road – bridge culvert east side of road	To Southwest	317618 E 6385589 N
IMG_1657	Charlton Road – view to north	To North	317618 E 6385589 N
IMG_1661	Charlton Road – cutting	To South	317518 E 6385854 N
IMG_1662	Charlton Road – cutting	To North	317518 E 6385854 N
IMG_1663	Charlton Road – cutting	To South	317518 E 6385854 N
IMG_1664	Charlton Road – cutting	To South	317518 E 6385854 N
IMG_1665	Charlton Road – cutting	To North	317518 E 6385854 N

Image/ File No	Description – Charlton Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1667	Yards alongside Charlton Road – loading ramp. To north of Project area	To South	317518 E 6385854 N
IMG_1668	Yards alongside Charlton Road with loading ramp. To north of Project area	To Southeast	317518 E 6385854 N
IMG_1669	Yards alongside Charlton Road with loading ramp. To north of Project area	To Northeast	317518 E 6385854 N
IMG_1670	Yards alongside Charlton Road – back fence. To north of Project area	To Northeast	317518 E 6385854 N
IMG_1671	Yards alongside Charlton Road overview. To north of Project area	To Southeast	317518 E 6385854 N
IMG_1672	Yards alongside Charlton Road overview. To north of Project area	To South	317518 E 6385854 N
IMG_1673	Yards alongside Charlton Road with loading ramp. To north of Project area	To Northeast	317518 E 6385854 N
IMG_1674	Yards alongside Charlton Road with loading ramp. To north of Project area	To North	317518 E 6385854 N
IMG_1675	Yards alongside Charlton Road – fenced area. To north of Project area	To West	317518 E 6385854 N
IMG_1676	Charlton Road – culvert east side of road	To West	317279 E 6386539 N
IMG_1677	Charlton Road – culvert east side of road	To West	317279 E 6386539 N
IMG_1678	Charlton Road – culvert west side of road	To East	317279 E 6386539 N
IMG_1680	Charlton Road – view along road	To South	317279 E 6386539 N
IMG_1682	Charlton Road – view along road	To North	317279 E 6386539 N
IMG_1684	Charlton Road – intersection with Putty Road	To Northeast	
IMG_1686	Charlton Road – intersection with Putty Road	To Northwest	
IMG_1687	Charlton Road – intersection with Putty Road	To Southeast	
IMG_1688	Charlton Road – culvert at intersection with Putty Road	To East	
IMG_1689	Charlton Road – culvert at intersection with Putty Road	To East	
IMG_1691	Charlton Road – intersection with Putty Road	To South	
IMG_1694	Charlton Road – intersection with Putty Road	To North	
IMG_1696	Charlton Road – intersection with Putty Road	To Northwest	

Charlton Road 1/7



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IMG_1182.JPG



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Charlton Road 2/7



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Charlton Road 3/7



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Charlton Road 4/7



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Charlton Road 5/7



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Charlton Road 6/7



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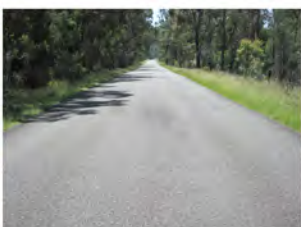
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Charlton Road 7/7



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Image/ File No	Description - Broke RAAF Landing Ground		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1698	Broke RAAF landing ground	To East	320396 E 6380092 N
IMG_1701	Broke RAAF landing ground	To West	320396 E 6380092 N
IMG_1706	Culvert under landing strip, overview	To South	320384 E 6380131 N
IMG_1707	Culvert under landing strip	To South	320384 E 6380131 N
IMG_1708	Culvert under landing strip	To South	320384 E 6380131 N
IMG_1711	Culvert under landing strip	To North	320384 E 6380131 N
IMG_1712	Culvert under landing strip, drain detail	To South	320384 E 6380131 N
IMG_1713	Culvert under landing strip, drain detail	To South	320384 E 6380131 N
IMG_1714	Culvert under landing strip	To East	320384 E 6380131 N
IMG_1715	Drain in centre of landing strip, detail	To East	320381 E 6380045 N
IMG_1716	Drain in centre of landing strip	To East	320381 E 6380045 N
IMG_1719	Drain in centre of landing strip, overview	To West	320381 E 6380045 N
IMG_1720	Drain in centre of landing strip, detail	To West	320381 E 6380045 N
IMG_1721	Drain in centre of landing strip, detail	To West	320381 E 6380045 N
IMG_1722	Fill in grass around drain in landing strip		
IMG_1723	Fill in grass around drain in landing strip		
IMG_1724	Fill in grass around drain in landing strip, detail		
IMG_1726	General view of forested hideout area	To North-northeast	
IMG_1727	General view of forested hideout area	To North-northeast	
IMG_1728	General view of forested hideout area	To North-northeast	
IMG_1729	General view of forested hideout area	To North-northeast	
IMG_1730	N. H. Thompson, Fordwich – marked jug		
IMG_1733	N. H. Thompson, Fordwich – marked jug, detail		
IMG_1734	N. H. Thompson, Fordwich – marked jug, detail		
IMG_1736	Tin sign in centre of forested hideout area	To East	320608 E 6380693 N
IMG_1737	Tin sign in centre of forested hideout area	To East	320608 E 6380693 N
IMG_1739	Cement slurry and small post within forested hideout area	To South	

Image/ File No	Description - Broke RAAF Landing Ground		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1740	Cement slurry and small post within forested hideout area, detail	To South	
IMG_1741	Cement slurry and small post within forested hideout area, overview	To South	
IMG_1742	Possible track to bay within forested hideout area	To South	
IMG_1744	Tree stumps around gravel covered open space within forested hideout area	To Southwest	320686 E 6380738N
IMG_1745	Tree stumps around gravel covered open space within forested hideout area	To Southwest	320686 E 6380738N
IMG_1746	Tree stumps around gravel covered open space within forested hideout area	To West	320686 E 6380738N
IMG_1747	Tree stumps around gravel covered open space within forested hideout area	To Southeast	320686 E 6380738N
IMG_1748	Cleared gravel covered open space within forested hideout area	To Southwest	
IMG_1749	Cleared gravel covered open space within forested hideout area	To Southwest	
IMG_1751	Cleared gravel covered open space within forested hideout area, gravel detail	To Southwest	
IMG_1752	Cleared stump area with gravel within forested hideout area	To West	
IMG_1753	Cleared stump area with gravel within forested hideout area	To West	
IMG_1754	Cleared stump area with gravel within forested hideout area	To West	
IMG_1755	Southern boundary of forested area	To South	
IMG_1756	Southern boundary of forested area	To South	
IMG_1757	Possible track near NE corner of forested hideout area	To Southwest	
IMG_1765	East-west track along north edge of forested hideout area	To West	
IMG_1766	East-west track along north edge of forested hideout area	To West	
IMG_1767	Concrete surface of track along north edge of forested hideout area, overview	To West	
IMG_1769	Concrete surface of track along north edge of forested hideout area, detail	To West	
IMG_1787	Warkworth RAAF landing ground - David Parker Airfield	To Northwest	IMG_1787
IMG_1790	Warkworth RAAF landing ground – David Parker Airfield	To Northwest	IMG_1790
IMG_1950	Warkworth RAAF landing ground - David Parker Airfield	To Northwest	DSC_0520
IMG_1951	Warkworth RAAF landing ground - David Parker Airfield	To Northwest	DSC_0524
IMG_1952	Strowan RAAF landing ground	To Northeast	DSC_0530
IMG_1953	Strowan RAAF landing ground	To North	DSC_0544
IMG_1954	Strowan RAAF landing ground	To North	DSC_0549

Broke Airstrip 1/2



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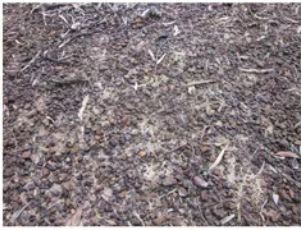


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Broke Airstrip 2/2



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Image/ File No	Description - Broke Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1879	Broke Road – general view along road at PS9	To North	
IMG_1881	Broke Road – general view along road at PS9	To South	
IMG_1883	Broke Road – across Nine Mile Creek	To South	323067 E 6384200 N
IMG_1884	Broke Road – across Nine Mile Creek	To South	323067 E 6384200 N
IMG_1890	Broke Road – culvert bridge over Nine Mile Creek, east side	To West	323067 E 6384200 N
IMG_1894	Broke Road – mine overpass	To North	322439 E 6382921 N
IMG_1895	Broke Road – mine overpass, detail	To North	322439 E 6382921 N
IMG_1896	Broke Road – view just past mine overpass	To South	322439 E 6382921 N
IMG_1897	Broke Road – new alignment toward mines	To North	321761 E 6379564 N
IMG_1898	Broke Road – new alignment toward old alignment	To South	321761 E 6379564 N
IMG_1899	Broke Road – old alignment	To North	321929 E 6379736 N
IMG_1900	Broke Road – old alignment	To South	321929 E 6379736 N
IMG_1901	Broke Road – old (straight) section Broke Rd	To North	321489 E 6348676 N
IMG_1902	Broke Road – fence adjacent to old (straight) section Broke Rd	To Southeast	321489 E 6348676 N
IMG_1903	Broke Road – straight section Broke Rd	To South	321489 E 6348676 N
IMG_1904	Broke Road – single pipe culvert	To West	321400 E 6378363 N
IMG_1906	Broke Road – 6 pipe culvert	To West	321366 E 6378247 N
IMG_1907	Broke Road – 6 pipe culvert	To West	321366 E 6378247 N
IMG_1910	Broke Road – 6 pipe culvert	To West	321366 E 6378247 N
IMG_1911	Broke Road – view along road from 3 pipe culvert	To Southwest	321366 E 6378247 N
IMG_1914	Broke Road – view at cutting in realignment	To North	321331 E 6378116 N
IMG_1915	Broke Road – view at cutting in realignment	To South	321331 E 6378116 N
IMG_1917	Broke Road – view at cutting in realignment	To South	321331 E 6378116 N
IMG_1919	Broke Road – culvert	To Northeast	321249 E 6377849 N

Image/ File No	Description - Broke Road		Photo Location MGA Co-ordinate
	Subject and Detail	Orientation	
IMG_1923	Broke Road – culvert	To East	321249 E 6377849 N
IMG_1925	Broke Road – embankment	To South	321249 E 6377849 N
IMG_1928	Broke Road – culvert	To West	321249 E 6377849 N
IMG_1930	Broke Road – embankment	To North	321249 E 6377849 N
IMG_1933	Broke Road – embankment	To North	321249 E 6377849 N

Broke Road



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