

Technical paper 5

Non-Indigenous heritage



Nundah Bank Third Track: Non-Aboriginal Cultural Assessment

FINAL

February 2010

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PROJECT Nundah Bank Third Track

BIOSIS PROJECT NO 11303

REPORT FOR KMH Environmental

REPORT TITLE: Nundah Bank Third Track: Non-Aboriginal Cultural Heritage Assessment

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EXECUTIVE SUMMARY

The Australian Rail Track Corporation proposes to construct a third track and ancillary infrastructure at Nundah Bank, Singleton Local Government Area (LGA), NSW under approval of Part 3A of the *Environmental Planning and Assessment (EP&A) Act 1979*.

The application was supported by a Preliminary Environmental Assessment (PEA) Report, prepared by KMH Environmental, on behalf of the Upper Hunter Valley Alliance (UHVA). The PEA included information about the proposed development, its potential environmental impacts and a proposed scope for the subsequent environmental assessment.

KMH Environmental, on behalf of the UHVA, is preparing an Environmental Assessment (EA) for the development. Under Section 75F of the EP&A Act, the Director General of the Department of Planning is to issue *Director General's Requirements* which determine the matters to be considered in the Environmental Assessment. *Director General's Requirements* for the project were issued on 27 July 2010 and include matters pertaining to non-Aboriginal heritage values.

There are no listed heritage items located within the Project Area. Three listed items occur in the vicinity of the Project Area. Two of those items, *Dulwich* a homestead at Nundah and the Coke Ovens at Rixs Creek are within 1 km of the Project Area; the third, the Middle Falbrook Bridge over Glennies Creek, is over 3 km from the Project Area.

Background research and survey of the Project Area identified sections of the former Great Northern Railway, constructed in 1869 during the tenure of John Whitton as Engineer-In-Chief of the NSW Railways. Elements of the original Great Northern Railway include culverts with the addition of a railway platform at Rixs Creek in 1885. The Rixs Creek Village, now demolished, at the southern extend of the Project Area may survive as an archaeological site either side of the existing access road but features relating to this are not visible within the extent of the survey. It is likely that relics from the village survive but that they are on either side of the road. Other elements such as timber fence lines and isolated posts also survive, which may represent the original road corridor from the village to the train platform, and which add to the rural character and historical landscape of the area around Rixs Creek.

The Statement of Heritage Impact identified one area of impact to the Great Northern Railway embankment where a haulage road is proposed; management recommendations have been made to ameliorate those impacts. Other items in the vicinity of construction activity have also been identified and recommendations have been made for their protection.

The recommendations have been formulated with consideration of the proposed and potential impacts to the surrounding cultural (non-Aboriginal) environment and its identified elements. Whilst not all of the items identified have been assessed as being of great cultural significance, they contribute to the rural character within and surrounding the Project Area. For this reason, the philosophy of the ICOMOS *Burra Charter* has been applied and the recommendations are to ensure that as much as necessary and as little as possible is done to impact items of identified heritage, within the limits of the proposed works.

Recommendation 1: Adopt the **mitigation/amelioration table** as a management tool to safeguard the identified heritage items.

Recommendation 2: Exclusion zones should be highly visible and personnel should be inducted to understand the importance of avoiding these sites. An appropriate material would be brightly coloured para-webbing, creating a 2 m buffer around each individual item.

Recommendation 3: Stop work in the event of unexpected heritage items or archaeological sites being uncovered during the project. Contact a qualified archaeologist to make an assessment of the find. Should the find be a relic, the Heritage Council will require notification under Section 146 of the *Heritage Act 1977*.

Recommendation 4: Consult with Council with regard to the **upgrade** works proposed for the timber beam bridge. Should major changes to the bridge be necessary, an archival record using digital capture and a measured drawing of the bridge should be made prior to, and at completion of, the upgrade.

Recommendation 5: Make good any impacts to heritage items identified in this report. They include:

- Former Rixs Creek Railway Platform (03)
- Great Northern Railway Embankment at Rixs Creek (04-3)
- Box culvert (04-3)

Recommendation 6: Ensure that all personnel employed on this project are informed of the importance of safeguarding heritage in the Project Area. This can be accomplished by including a heritage induction in the project and safety induction undertaken by all personnel.

Recommendation 7: Should the proposed impacts vary from those detailed in this report and impacts to identified heritage items become unavoidable, a detailed assessment of the item will be required in order to establish a detailed site history and assessment of significance. These details would be required in order to guide specific mitigation measures for identified impacts.

Recommendation 8: Ensure that the SHR listed Middle Falbrook Bridge over Glennies Creek is not used by heavy construction vehicles.

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1.0 INTRODUCTION

1.1 Background

The Australian Rail Track Corporation proposes to construct a third track and ancillary infrastructure at Nundah Bank, Singleton Local Government Area (LGA), NSW. The ARTC has applied to the Minister for Planning for project approval under Part 3A of the *Environmental Planning and Assessment (EP&A) Act 1979*.

The proposed works have been declared a Major Project (number MP 10_0094) under State Environmental Planning Policy (SEPP) Major Development 2005 as they constitute a development for railway lines associated with mining or freight with a capital investment in excess of 30 million dollars. The Minister for Planning is the Determining Authority (DA) for all projects assessed under Part 3A of the *EP&A Act 1979*.

The application was supported by a Preliminary Environmental Assessment (PEA) Report, prepared by KMH Environmental, on behalf of the Upper Hunter Valley Alliance (UHVA). The PEA included information about the proposed development, its potential environmental impacts and a proposed scope for the subsequent environmental assessment.

KMH Environmental, on behalf of the UHVA, is preparing an Environmental Assessment (EA) for the development. Under Section 75F of the EP&A Act, the Director General of the Department of Planning is to issue *Director General's Requirements* which determine the matters to be considered in the Environmental Assessment. *Director General's Requirements* for the project were issued on 27 July 2010 and include matters pertaining to non-Aboriginal heritage values.

1.2 Purpose and scope of this report

This report was prepared in order to address the *Director General's Requirements* for the project in so far as they relate to non-Aboriginal heritage values within and in the vicinity of the Project Area. These requirements involve the identification of significant items, areas or archaeological sites, an assessment of their significance, and an analysis of the potential impacts of the project on that significance.

1.3 Project Area

The Project Area is located within the suburbs of Glennies Creek, Obanvale, Rixs Creek, and Camberwell in the Singleton Local Government Area, in the Parishes of Broughton, Darlington and Auckland in the County of Durham (Figure 1). Nundah was a name formerly used for the northern part of the Study Area and a railway platform named Nundah was located in this area. Nundah Bank is the name which has been given to the stretch of Main Northern Railway which runs between the towns of Singleton and Camberwell and the Upper Hunter 1 region of the ARTC's lease area.

The proposed third track route specifically is located between the Integra Coal and Rixs Creek mines approximately 245 km north of Sydney by rail and would occupy approximately 1.4 ha of land on the up side of the existing Main Northern Railway line (Figure 2).

The Project Area affects the following parcels of land over which the proposed third track route extends:

Table 1: Allotments over which the proposed third track route extends

LOT	SECTION	DEPOSITED PLAN	OWNER
Lot 150	-	DP 752442	Four Mile Pty. Ltd.
Lot 83	-	DP 752442	
Lot 239	-	DP 829334	
Lot 237	-	DP 829334	RHA Pastoral Pty. Ltd. (leased to Integra Pty. Ltd)
Lot 22	-	DP 752442	
Lot 22	-	DP 752442	

Land within which ancillary infrastructure associated with construction works the following parcels adjacent to the proposed track route:

Table 2: Allotments adjacent to the proposed track route likely to be included as locations for infrastructure associated with track

LOT	SECTION	DEPOSITED PLAN	OWNER
Lot 235	-	DP 752455	Four Mile Pty. Ltd.
Lot 219	-	DP 752455	
Lot 94	-	DP 752442	
Lot 1	-	DP 1139094	
Lot 238	-	DP 829332	
Lot 236	-	DP 829334	
Lot 1	-	DP 441840	State Rail Authority
Lot 235	-	DP 829334	RHA Pastoral Pty. Ltd. (leased to Integra Pty. Ltd.)
Lot 1	-	DP 652434	N. Long
Lot 2	-	DP 449423	

1.4 Proposed Development

The ARTC propose to construct a third track and ancillary infrastructure. The proposed development is part of the *2009-2018 Hunter Valley Corridor Capacity Strategy, 2009* (the Strategy). The Strategy identifies the constraints on the Hunter Valley coal network, the options to resolve these constraints and a proposed course of action to achieve the necessary increase in coal exports from the region.

The existing section of track at Nundah Bank has a current capacity of 87 million tonnes per annum (mtpa). The Strategy outlines an operational requirement for this section of track to achieve a capacity of 198 mtpa by 2018. If this capacity is not achieved, this section of track will act as a bottleneck on the overall capacity of the Main North Line and substantially reduce the economic benefits associated with other recently completed and ongoing capacity upgrades undertaken by ARTC. Operational modelling by ARTC has shown that triplication at Nundah Bank is the only feasible means to achieve the desired increase in network capacity.

Completion of the proposal would provide increased rail capacity on the Main Northern Railway line and facilitate the expected future increases in coal exports from the region.

Development Components

Key components of the proposal include:

- Construction and operation of approximately 4 kilometres of new single track at grade on the up side of the existing up main;
- Reconditioning of the existing up main to facilitate sharing of traffic between the new up relief (third track) and up main;
- Upgrades to Camberwell Junction to provide two new crossovers and two new turnouts to the existing balloon loop;
- Construction of new vehicular maintenance access tracks adjacent to the proposed third track on both the up and down sides;
- Decommissioning of the existing signalling system and installation of new signals;
- Permanent acquisition of approximately 19 hectares of land for the third track and maintenance access roads as well as approximately 37 hectares for construction purposes;
- Approximately 100,000 cubic metres of earthworks for track formation, maintenance access tracks, drainage and minor structures;
- Construction of temporary ancillary infrastructure such as construction compounds, haul roads, sedimentation basins and stockpile sites; and
- Services and utilities adjustments.

Development Related Landscape Impacts

The construction of the proposed development would include the following landscape impacts:

- Bulk earthworks of approximately 54,000 m² of materials and associated stockpiles, primarily associated with the widening of existing rail cuttings to accommodate the proposed new track, but also minor structures and drainage
- The installation of new signals would involve trenching and laying conduits and pits

- Stripping of vegetation and topsoil
- Grading

The anticipated vehicles associated with the proposed development activities that would be driving throughout the Project Area would include concrete truck(s), front end loader(s), cranes (various types and sizes, including a hydraulic mobile crane), excavators (various sizes), semi trailer/tipper(s), 'Hi-rail' vehicle(s), backhoe(s), dump truck(s), bulldozer(s) and cars.

1.5 Report Methodology

This report was prepared in accordance with the guiding document *Statements of Heritage Impact: a Model* published by the Heritage Office (NSW) 1998 and the philosophy of the ICOMOS *Burra Charter*.

The level of research undertaken in the preparation of this report is commensurate with the level of potential impacts that will result from the proposed work.

A note on the numbering system used for items identified in this report: The numbering system was consecutive eg. 01, 02 etc with an addition number included to denote a group. For instance Item 04 are the remnants of former Great Northern Railway and 04-3 is the surviving embankment. Where numbers are missing, they have been taken out because of final changes to the proposal.

1.6 Authorship

This report was prepared by Pamela Kottaras and Peter Woodley and was reviewed by Martin Lawler. The mapping in this report was prepared by Ashleigh Pritchard.

1.7 Limitations

Field survey was conducted within the Project Area only. Consequently the full extent of one item that crosses the landscape (where the item survives) can not be mapped. This item is the 1869 railway embankment which lies within and beyond the Project Area. Discussion surrounding the railway embankment is limited to the locations where it was noted within the Project Area.

1.8 Acknowledgments

Biosis Research acknowledges the contribution of the following people and organisations in preparing this report:

Naomi L'Osté-Brown	KMH Environmental
Greg Marshall	KMH Environmental
Lachlan Sweeney	Upper Hunter Valley Alliance
Librarians	Singleton Local Council Library
Ian Berger	Heritage Officer, Roads and Traffic Authority

1.9 Abbreviations

ARTC	Australian Rail Track Corporation
EA	Environmental Assessment

EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
LEP	Local Environmental Plan
MP	Major Project
MTPA	Million tonnes per annum
PEA	Preliminary Environmental Assessment
RTA	Roads and Traffic Authority
S.170	Section 170 of the <i>Heritage Act 1977</i> (Heritage and Conservation Registers of State government instrumentalities)
SHI	State Heritage Inventory
SHR	State Heritage Register
UHVA	Upper Hunter Valley Alliance

2.0 HERITAGE ITEMS AND STATUTORY REQUIREMENTS

2.1 Heritage Items

A search has been made of Commonwealth, State and local government heritage lists, registers and schedules to determine the location of any heritage items within the Study Area or in the vicinity.

No listed heritage items are located within the Project Area. The results are summarised below:

Table 3: Heritage Items in or within the vicinity of the Study Area

<i>STATUTORY LIST OR REGISTER</i>	<i>ITEMS IN THE STUDY AREA</i>	<i>ITEMS WITHIN THE VICINITY</i>
National Heritage List	Nil	Nil
Commonwealth Heritage List	Nil	Nil
Register of the National Estate	Nil	Nil
State Heritage Register	Nil	Nil
S.170 Heritage and Conservation Register	Nil	Nil
Singleton LEP 1996, Schedule 3	Nil	<ul style="list-style-type: none"> ◦ Rixs Creek Coke Ovens, New England Highway, Rixs Creek ◦ “Dulwich”, Middle Falbrook Road, Nundah

There are no listed heritage items within the Study Area. The two items within the vicinity of the Study Area are both listed under Schedule 3 of the Singleton LEP 1996. Their details are as follows:

- **Rixs Creek Coke Ovens:** situated to the west of Rixs Creek opposite the southern end of the Study Area (Figure 3 & Figure 4) on Lot 2 DP 598097 and Lot 4 DP 1123099.
 - Listed in Schedule 3 Part 2 of the LEP (“Items classified as being of regional significance”).
- **The homestead “Dulwich”:** situated to the west of Middle Falbrook Road, south west of the northern end of the Study Area (Figure 3 & Figure 4) on Lot 2 DP 810309.
 - Listed in Schedule 3 Part 3 of the LEP (“Items classified as being of local significance”).

In addition to the above two sites, which are located in the vicinity of the Study Area, one item has been identified at a greater distance from the Study Area. This item is:

- **Middle Falbrook Bridge over Glennies Creek** at Middle Falbrook - a DeBurgh timber Truss Bridge completed in 1904 (Figure 4). Listed on:
 - The State Heritage Register
 - The RTA’s Heritage and Conservation Register
 - The Register of the National Estate

The bridge however is situated over 3 km from the Study Area and is therefore not considered to be within the vicinity of the Study Area and will not be impacted by the current proposal.

2.2 Statutory Requirements

The Nundah Bank Third Track Project has been declared a Major Project under Part 3A of the EP&A Act and consequently the Minister for Planning is the consent authority. Development consent under the Singleton LEP 1996 is not required nor is approval under the *Heritage Act 1977* required to disturb any archaeological relics which might be situated within the project area.

The key statutory requirement is to be found in the Director-General's Requirements which have been issued for the project in accordance with Section 75F of the EP&A Act (Department of Planning 2010). Non-indigenous heritage has been identified as a key issue which must be addressed in the Environmental Assessment for the project. The Director General's Requirements state that the following matters must be addressed in relation to non-indigenous heritage:

[The] identification of items, archaeology and areas of heritage significance within, along or adjacent to the corridor or affected by construction activities (including the Middle Falbrook Road Bridge). This should include an analysis of the potential impacts to the values, setting and integrity of the items and archaeology, taking into account NSW Heritage Guidelines.

The identification and assessment of heritage impacts outlined in the Director-General's Requirements is not restricted to heritage items on a statutory list or register. For the purpose of this report "item" is taken to have the same meaning as under the *Heritage Act 1977*:

"item means a place, building, work, relic, moveable object or precinct"

"Archaeology" is taken to have the same meaning as "relic" under the *Heritage Act 1977*:

"relic means any deposit, artefact, object or material evidence that:

- (a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and
- (b) is of State or local heritage significance."

The purpose of this report is to provide supporting information to enable the Environmental Assessment of the project to satisfy the Director-Generals Requirements. This report therefore does the following:

- (a) identifies and assesses the significance of items or relics situated in or within the vicinity of the project area;
- (b) assesses the potential impact the development would have on any items or relics assessed as having heritage significance; and
- (c) recommends measures to avoid, minimise or mitigate any detrimental impacts which have been identified.

3.0 HISTORICAL DEVELOPMENT OF THE STUDY AREA

The history of the Study Area since European colonisation falls into the following key phases:

1. Early land grants, land clearing and grazing (1820 – 1860)
2. Coal mining and the Great Northern Railway (1860 – 1909)
3. Decline to the resumption of coal mining (1909 to present)

Each of these historical phases is addressed below. This section concludes with a summary of key historical events and activities and indicates known or potential evidence of these events and activities within the Study Area.

An Aboriginal archaeological and cultural assessment was prepared for this project. Refer to the *Third Track Nundah Bank: Aboriginal Archaeological and Cultural Assessment* prepared by Biosis Research October 2010.

3.1 Early land grants, land clearing and grazing (1820 – 1860)

The first exploratory party to reach the Singleton area did so in 1801 via the Hunter River from Newcastle. Settlement in the area however, did not begin until the early 1820s after an exploratory party succeeded in finding an overland route from Windsor to the upper Hunter. The party, led by John Howe and including Benjamin Singleton, reached the Hunter River east of Singleton in March 1840. Howe named the region St Patrick's Plains. Howe's party, which comprised free settlers and convicts, also included two Aboriginal guides (Singleton Historical Society, 1995).

From late 1820 Howe was permitted, by Governor Macquarie, to use Patrick's Plains for grazing and in the following year the first land grants in the area were made to members of Howe's expedition, the nearest to the study area being Benjamin Singleton's 200 acre grant which subsequently developed into the town of Singleton.

The early history of the study area is associated with pastoral estates. The first land grants in the Study Area were made in 1824. They were grants to William Nowland (169 acres) and to James Glennie (2080 acres) (Plate 1).

James Glennie's *Dulwich* estate was the most significant of the early land grants (Figure 3). The northern end of the Study Area near the junction between Middle Falbrook Road and the Main Northern Railway is situated within the area of Glennie's grant. Glennie was initially assigned 100 convicts to clear the estate. By 1828 there were 21 convicts at *Dulwich*, a herd of 604 cattle and a flock of 673 sheep (NEXUS, 2008: 13). The centre of activity at *Dulwich* was around the existing homestead site and along Glennies Creek to the west. Glennie sold his estate in 1845 to Alexander Fotheringham. It was in turn purchased by Thomas Ware Smart in 1876 who built the existing homestead (NEXUS, 2008: 13-17).

Parts of the study area are likely to have been used for grazing cattle and sheep however, the extent and intensity of such activity within the Study Area is not as clear as it is within the *Dulwich* property. A description from 1865 of the south end of the Study Area at Rixs Creek near the New England Highway suggests that much of the area was still uncleared bushland at that time (Maitland Mercury, 07/09/1865).

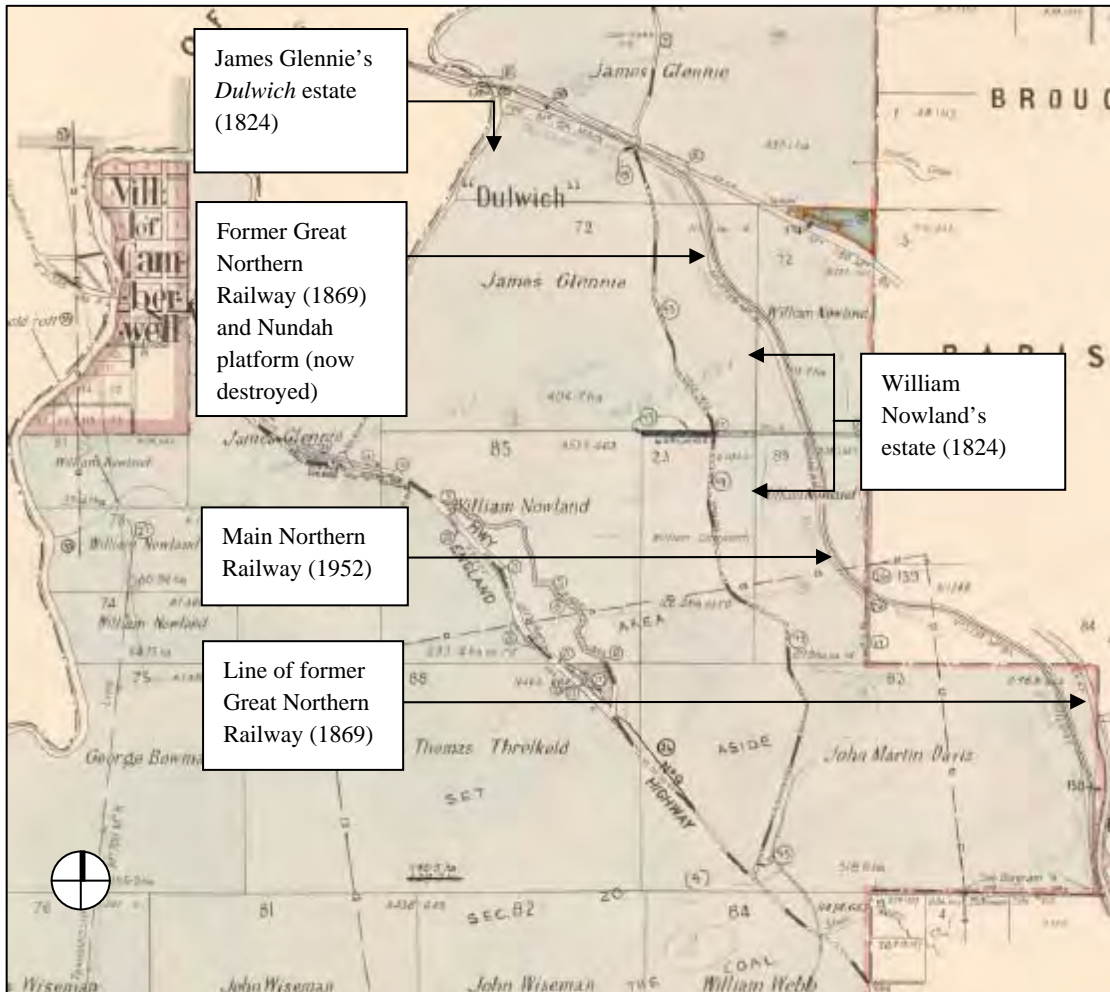


Plate 1: Auckland Parish, County of Durham, Regional Charting Map (1972). Shows the first registered landholders as well as subsequent land owners and infrastructure including the existing line of the Main Northern Railway (1952) and part of the former line of the Great Northern Railway (1869). The Study Area is situated on the edge of three parishes (Auckland, Darlington and Broughton).

3.2 Coal mining and the Great Northern Railway (1860 – 1909)

From the 1860s to the early 20th century, the key activity in relation to the Study Area was coal mining at Rixs Creek. The success of mining here was greatly assisted by the opening of the Great Northern Railway beyond Singleton in 1869.

Newcastle had been connected by rail to Maitland in 1857. When the line of the railway beyond Maitland was being planned it was either going to run via Singleton or Jerry's Plains. The Jerry's Plains route was at first chosen but this decision was subsequently changed and the railway line was directed to Singleton and hence through the Project Area. It took another six years for the Great Northern Railway to be extended to Singleton and this section of the line opened in May 1863. The extension of the line northwards to Muswellbrook (and through the Study Area) was opened in May 1869 (Whitelaw, n.d.: 12; Singleton Historical Society, 1995: 27; NSWrail.net). The embankment of the original railway alignment (it was rerouted to its present course in 1952) is still evident for much of its length between Singleton and the Integra Open Cut mine (Figure 3 & Figure 4).

In 1859-1860 a pit was sunk on the *Dulwich* estate to mine coal but it was very shortly discontinued. A mine at Rixs Creek opened at about the same time but was much more successful, partly because it was situated closer to Singleton and therefore closer to its market. Coal from the Rixs Creek mine was sold at Singleton and at the mine itself (Maitland Mercury, 02/08/1860: 3). Well before the Great Northern Railway beyond Singleton was opened in 1869, the mine at Rixs Creek had already been earmarked as a possible supplier for the railway.

According to a newspaper report from March 1863, the only mine in operation near Singleton at the time was that at Rixs Creek on land owned by a Mr. Campbell. The quality of the coal was noted and it was reported that the mine could easily be linked via a tramway to the railway which was to be constructed nearby. The presence of coal on the *Dulwich* Estate was also noted but no mines operated on this property at the time (Maitland Mercury, 1863: 4).

In 1865 Rixs Creek had a large brick hotel and a couple of huts located near the road (now the New England Highway) though it was reported that there were more huts in the bush back from the road (Maitland Mercury, 07/09/1865). In 1867 a post office directory for Singleton recorded nine residents at Rixs Creek of which only two may have worked for the mine (Callaghan).

One source suggest there were at least 16 coal mines operating in the Rixs Creek area from the 1860s but apparently most of these were small individual operations (Singleton Historical Society, 1995: 30). In 1868 there were 13 men employed at the Rixs Creek Coal Mine and by 1870 there were up to 30 people employed there. The leaseholder of the mine, Mr Elliot, was seeking to expand its facilities including the construction of a tramway to connect the colliery to the Great Northern Rail about 2 miles away. The colliery was already supplying coal to the railway at this time as well as the principal towns of the upper Hunter (Maitland Mercury, 04/07/1868: 4; 02/02/1869: 4; 08/02/1870: 2). The exact location of the tramway was not evident in the research conducted for this report however it was apparently situated within close proximity to the Rixs Creek platform which was built in 1885 (Maitland Mercury, 09/05/1885; 03/10/1885: 3). A junction and embankment is visible on aerial photographs (Figure 3) but is situated outside the area physically surveyed for this report.

The coal from Rixs Creek was reputed to have been of a very high quality and especially good for gas making. This reputation was confirmed when coal from Rixs Creek was sent to the Paris Exhibition in 1867 and was tested against other coals from NSW: It was declared to be the best coal for gas making (Maitland Mercury, 23/09/1886: 7).

In 1878 William and Thomas Longworth and their father, Thomas senior, opened a mine at Rixs Creek and in 1884 Thomas senior and 13 miners died in a roof collapse. William and Thomas Longworth then formed a syndicate with Albert Gould, W. Robinson and Richard Reed to mine at Rixs Creek and to build coke ovens there. In 1894 the syndicate (now including A.A. Dangar) had reopened the Great Cobar copper mine and formed the Great Cobar Mining Syndicate. The Rixs Creek mine, managed by William Longworth, provided coke for the Great Cobar mine (Atchinson, 1986). The operation at Rixs Creek was known as the Singleton Coal & Coke Company.

By 1884, the *Sands Country Directory* for Patrick's Plains district recorded 43 residents at Rixs Creek (not including other family members), almost all of whom were miners. They included the operators of the mine, William and Thomas Longworth, and the mine manager, Ralph Minto (Callaghan).

A newspaper article from October 1885 described the developments which had been taking place at Rixs Creek:

During the past few years, considerable progress has been made in the mining industry here, and our neighbourhood is fast assuming the form of a village or the embryo of a rising town. Houses are clustering together more closely every month ... An enumeration of business places would not, however, be a long one; but still two stores, on a small scale, can keep a satisfactory stand, as well as one for the sale of colonial wine. The most attractive object in our midst is the newly erected public school, which stands to great advantage on a nicely elevated piece of land adjoining the Great Northern Road. ... We have a branch line of railway extended to us for the old iron horse with his noisy cars to convey the black diamond to market. The mining business is carried on under the auspices of ... the Singleton Mining Company, the manager being Mr. W. Longworth. A considerable sum of money has been expended in the construction of this line, it being something like a mile from the main Northern to the scene of operations.

(Maitland Mercury, 03/10/1885: 3).

A platform near the junction between the main line and the branch line to the mine was constructed on the main rail line at Rixs Creek in 1885. The new platform was reported to be about a mile from where most of the miners were living at Rixs Creek (Maitland Mercury, 09/05/1885; 03/10/1885: 3). There were fatalities on the track near the platform in 1887 and 1891, and in 1890 coal trucks detached themselves from a locomotive and were derailed nearby (Maitland Mercury, 26/07/1887; May 1890; 12/03/189). In 1892 a new cutting was opened between Nundah and Glennies Creek which significantly lowered the grade of the railway line in this section (NSWrail.net).

Another coal mine was opened in the 1880s on the Rosedale Estate between Rixs Creek and Glennies Creek and operated by A. and H. Nowland and managed by a former manager of the neighbouring Singleton Coal Company mine at Rixs Creek. The mine was situated in close proximity to the railway (Maitland Mercury, 09/05/1885: 13; 23/09/1886: 7). This mine was located in the area of the current Integra Open Cut mine (Figure 2).

In 1906 the Great Cobar Mining Syndicate which ran the Rixs Creek colliery was floated on the London stock market, becoming Great Cobar Limited. The colliery at Rixs Creek was only one of many concerns which the company had and it was by no means one of the largest (West Australian, 25 May 1906: 7; Atchinson, 1986).

The end of the first period of mining at Rixs Creek was partly due to industrial disputes. In late 1907 the miners at Rixs Creek went on strike over a wages dispute. At this time the miners did not belong to a union. The strike ended in early January 1908 but another strike was called in the same month and the miners resolved to form a union (Sydney Morning Herald, 31/12/1907: 8; 03/01/1908: 7; 10/01/1908: 8; 22/01/1908). In September 1908 the Miner's Federation accepted the Rixs Creek miners into the union (Sydney Morning Herald, 26/09/1908). At the time of the December 1907-January 1908 strike it was reported that most of the coal from Rixs Creek was used for the railway and that the remainder was divided between local consumption and coke making. It was only the relatively high price of Rixs Creek coke sold at Cobar which allowed the colliery to meet its expenses (Sydney Morning Herald, 22/01/1908).

In March 1909 the miners again went on strike, this time over working hours, and were consequently locked out of the mine. The company had been considering closing the mine for

some time and as a result of this fresh dispute the mine was closed indefinitely. It was reported that the mine was barely profitable when fully operating and had been working at a loss during the industrial disputes (Sydney Morning Herald, 04/03/1909; 10/03/1909). It appears the colliery never reopened and in October 1916 the Great Cobar Company put the Rixs Creek colliery up for sale including the mining leases, plant, the coke ovens and the private railway line (Maitland Mercury, 25/10/1916).

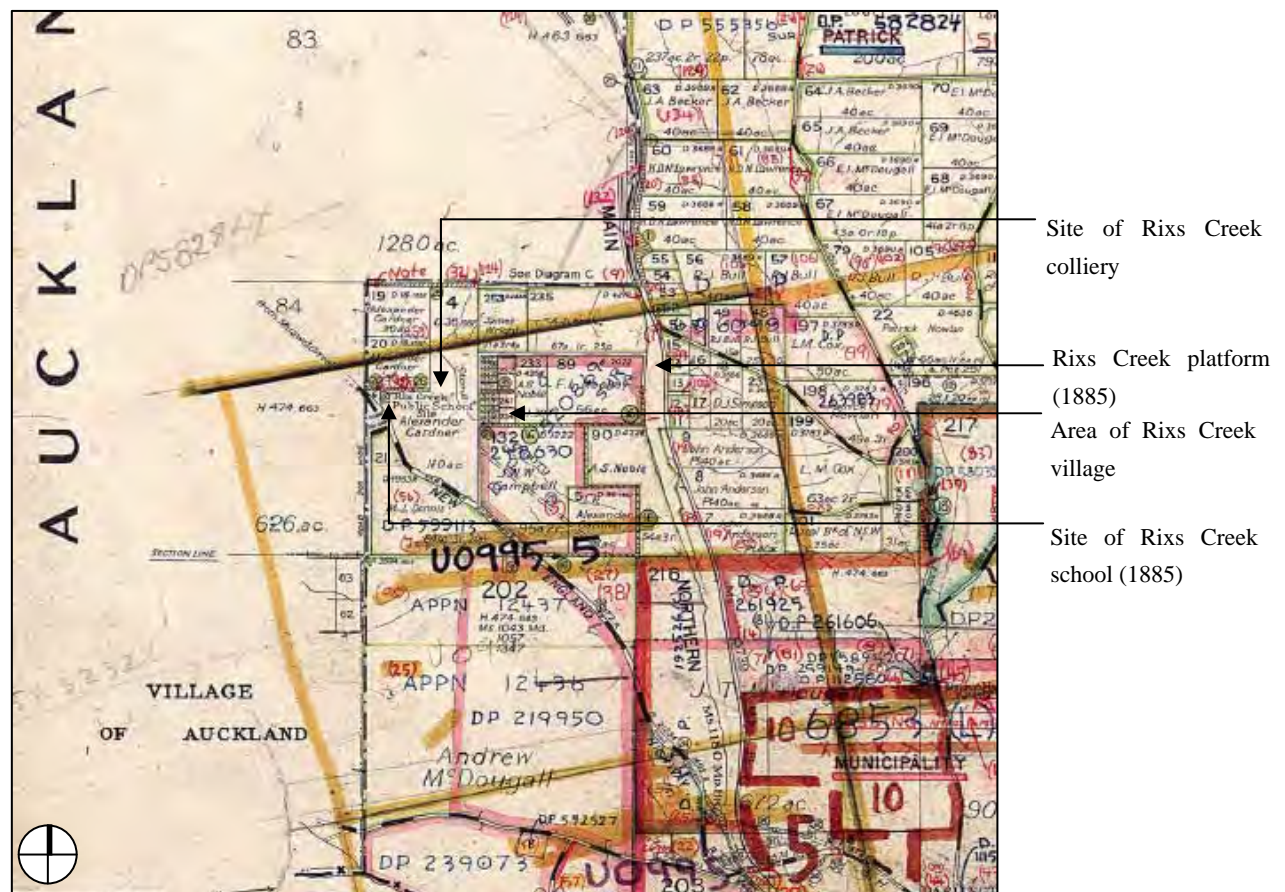


Plate 2: Darlington Parish, County of Durham, LTO Charting Map (1972). Shows the first registered landholders and subsequent additions including the line 1869 and 1952 railway alignments, the subdivision of smaller plots in the village of RixsCreek and the site of the RixsCreek public school.

3.3 Decline to the resumption of coal mining (1909 – present)

Owing to the closure of the colliery the village which had grown up around the mine fell into decline. The railway platform at Rixs Creek was closed in 1938 though platforms at Nundah and Glennies Creek continued to operate. Aside from the coke ovens on the site of the former colliery at Rixs Creek, there is little documentary evidence above ground to indicate the existence of the former village at Rixs Creek.

The original section of the Great Northern Railway between the Hunter River and Nundah was closed in December 1952 and replaced by the existing rail line. A new Nundah platform was built to replace the one on the old section of line. The Nundah and Glennies Creek platforms were subsequently closed in June 1975 (NSWrail.net).

Mining on a large scale resumed in the area in 1991 with the opening of the Integra Open Cut mine (formerly the Camberwell Coal Mine) in the northern half of the Study Area (NEXUS

2008) and the Rixs Creek Coal Mine south and west of the Study Area in 1995 (DIPNR n.d.). The Integra Open Cut mine has had a significant impact on some of the historic features identified above, including the destruction of much of the Great Northern Railway embankment and the former platform at Nundah. Integra is currently seeking approval to extend the open cut mine to include the site of *Dulwich* homestead (Major Project Applications MP 08-0102 and MP 08-0101).

3.4 Summary of key historical events and activities

The table below provides a timeline of key events and activities in the historical development of the Study Area. It also indicates physical evidence of these events and activities which is known to exist or potentially exists within the Study Area. This summary formed the basis for the physical survey of the Study Area, the results of which are presented in the following section.

<i>Year/Period</i>	<i>Event/activity</i>	<i>Evidence</i>
1820 - 1860	Land clearing and grazing	Evidence of early land clearing and grazing activities (burned out stumps, campsites, postholes, artefact scatters) could possibly survive within those parts of the study area which have not been affected by mining operations or railway construction, however none were identified during the site survey. <i>Dulwich</i> homestead is the key physical evidence for this period in the locality but lies outside the Study Area.
1860	Coal mining begins at Rixs Creek.	Potential for archaeological remains of early mining and settlement activity at Rixs Creek (Figure 4).
1865	A brick hotel and several huts were situated on the New England Highway at Rixs Creek.	
1869	The section of the Great Northern Railway between Singleton and Muswellbrook is opened. A tramway connecting the railway to the Rixs Creek mine is opened at the same time.	Sections of the Great Northern Railway alignment are situated within the southern half of the Study Area as is the junction with the tramway to the Rixs Creek coal mine (Figure 3 & Figure 4).
1878	Thomas senior, William and Thomas Longworth start coal mining at Rixs Creek.	
1884	William and Thomas Longworth form a mining syndicate to operate the mine at Rixs Creek. The first coke ovens are constructed there.	The surviving coke ovens at Rixs Creek are situated opposite the southern end of the Study Area to the west of Rixs Creek Lane (Figure 3 & Figure 4).

1885	Rixs Creek platform opened.	The platform at Rixs Creek is situated within the Study Area (Figure 3 & Figure 4).
1880s	A coal mine opens on the Nowland family's <i>Rosedale</i> estate close to the railway line at Nundah.	The site of the Nowlands' mining operation could potentially fall within the northern part of the Study Area. However, this area has been substantially altered by mining activity and the construction of the existing railway line in 1952.
1894	The Longworths expand their syndicate to become the Great Cobar Mining Syndicate and which operated the mine at Rixs Creek as the Singleton Coal and Coke Company.	
1906	The Great Cobar Mining syndicate becomes a public company, Great Cobar Limited, and continues operation of the Rixs Creek colliery.	
1907 – 1909	A series of strikes at Rixs Creek leads to the closure of the colliery in 1909.	
1916	Great Cobar Limited proceeds to sell the Rixs Creek colliery (leases, plant, coke ovens and tramway).	
1938	Rixs Creek platform closed.	
1952	The railway is rerouted between the Hunter River and Nundah to the present route of the Main Northern Railway. A new platform replaces the original one at Nundah.	The core of the Study Area is the route of the existing railway line constructed in 1952. The original platform at Nundah is situated outside the Study Area and has been destroyed by mining activity.
1975	Nundah and Glennies Creek platforms close.	
1991 - present	Mining resumes between Glennies Creek and Rixs Creek.	

4.0 SITE ANALYSIS

4.1 Introduction

The following section presents the results of the physical survey of the Study Area. Although the entire Project Area was inspected as per the methodology for Aboriginal Survey (refer Biosis Research 2010a and Section 4.2 this report), areas requiring further scrutiny were identified through aerial photography, historical research and Heritage Inventory searches. This was particularly important as the Project Area does not have any non-Aboriginal heritage items listed within its boundaries, although the region has a significant industrial past, as well as known former structures, of that past in evidence. The combination of historical research and local knowledge suggested that the likelihood of surviving evidence of former land-uses would be high.

4.2 Survey Method

Field survey was conducted during the week beginning Monday 6 September and completed, with regard to non-Aboriginal heritage, on Thursday 9 September. The majority of the survey effort was conducted in the company of the team investigating Aboriginal heritage, thus the survey focused on both Aboriginal and non-Aboriginal tangible sites. The survey undertaken on the afternoon of Thursday 9 September was attended solely by Pamela Kottaras. The majority of the survey was conducted during clear weather, other than Thursday 9 September, when it rained in the afternoon. An additional area of survey was included while on site, reducing the time spent at the embankment close to the telecommunications tower.

The survey team comprised:

Allen Paget	Ungooroo Aboriginal Corporation
Wayne French	Yarrawalk Enterprises
Sarah Hall	Tharawal Local Aboriginal Land Council
Lachlan Sweeney	Upper Hunter Valley Alliance
Dominic Brady	Archaeologist, Biosis Research
Pamela Kottaras	Team Leader, Cultural Heritage, Biosis Research

The survey was undertaken on foot in accordance with the document *Nundah Bank Third Track: Proposed Aboriginal Cultural Heritage Process and Assessment* prepared by Biosis Research (2010a), which is reproduced in part below:

The third track alignment is approximately 4.26 km long. The field survey team will assess the proposed areas of impact within and outside the proposed track corridor.

The concept design and exact location of ancillary infrastructure associated with construction works is being explored presently. These development sites will also be assessed by the field survey team. Further details will be provided as soon as they become available.

The daily field survey team for the project will consist of representatives of the Aboriginal community and archaeologist(s) with experience with Aboriginal cultural heritage. The involvement of the Aboriginal community and archaeologist(s) in the survey will be determined by KMH Environmental.

The team will navigate through and around the Project Area with the aid of aerial and topographic maps, a compass, street directory and a hand-held Global Positioning System.

The Project Area will be surveyed systematically with team members spread evenly apart, walking parallel transects where possible. The team will also target areas and features within the Project Area:

- *Predicted as more likely to be associated with Aboriginal cultural heritage (in this case non-Aboriginal heritage was also searched for and recorded. The results of the Aboriginal survey are included in the Biosis Research 2010b)*
- *Flagged by the Aboriginal people involved in the field survey and/or previously noted by the Aboriginal parties.*

Biosis Research 2010a: 33

In addition to targeting areas that were predicted to contain Aboriginal archaeological sites, attention was paid to areas and items in the landscape that had the potential to possess non-Aboriginal heritage significance. Background research was undertaken prior to the field survey in order to provide guidance as to the type of item(s) that may survive within the Project Area. In addition to investigating items that were predicted to occur on the site, the survey effort attempted to identify unexpected non-Aboriginal items.

4.3 Predictive Statement

The focus of the non-Aboriginal survey was on a small number of key features identified through the background research. They were:

In the Project Area

- Evidence of the mining village at Rixs Creek (1860s). Within the Project Area, on either side of the unsealed road that will be used as an access road during construction.
- Evidence of historical uses such as remnant roadways, fence posts, slab buildings etc. The cadastral plan shows a road reserve continuing east of the existing unsealed road to the location of the former Rixs Creek train platform.
- Rixs Creek rail platform (1885). Within the Project Area. The general area is proposed for a site compound.
- Great Northern Railway (1869) embankment and associated elements. Within Project area. Proposed impacts would be heavy plant crossing the embankment to access the existing rail line and location of the proposed third track.
- Timber road-bridge close to the northern extent of the Project Area.
- Existing railway line (1952). Within the Project Area. Impacts will be minor where third track would be connected.

In the Vicinity of the Project Area

- Rixs Creek Coke Ovens (1884). In the vicinity of the Project Area.

Unexpected Features

- Unexpected features may include slab buildings that have not been discovered in documents consulted for this report and archaeological evidence of outbuildings. Unexpected items are more likely to be identified within the Project Area only, because that is where the survey will be focused.

4.4 Survey Results

During the survey a number of features were identified which provide evidence of activities and events within the Study Area over time. They are presented in this section of the report as a summary with detailed data sheets included in Section 8.0. The results follow the order of the alignment from south to north rather than the order of the survey; the data collected during the survey has been summarised below to reflect the order in which they appear in Section 4.3 Predictive Statement. It is recommended that the data sheets in are also consulted as these have more detail and higher resolution photographs. The survey was non-invasive, with only photographs, co-ordinates and notes being taken.

In the Project Area

- **Item 02: Evidence of historical uses such as remnant roadways, fence posts, slab buildings etc**

Survey along the proposed Rixs Creek Lane extension that would continue east of the existing unsealed lane was undertaken in order to identify remnants of an earlier road to Rixs Creek train platform. The landscape is predominantly gently undulating and is cut with small creek lines, one of which has been blocked to form a dam. No evidence of an earlier road was noted, although some erosion, which has stabilised with vegetation cover) is evident. A small number of fence posts located in the paddock were noted and photographed and these may indicate the edges of the road to the train platform. It is likely that a road to the Rixs Creek platform was never made and it was predominantly used as a walking track by the inhabitants of the mining village.

- **Item 03: Rixs Creek rail platform (1885)**

The rail platform is within the Project Area at the end of the paper road, which continues east from the terminus of the unsealed lane at Rixs Creek. The platform is situated along the Great Northern Railway embankment and was placed there 16 years after the train line began operating. It was closed in 1938 (http://www.nswrail.net/locations/show.php?name=NSW:Rixs+Creek&line=NSW:main_north:0)

The masonry platform survives in fair condition (but retains a high restoration and interpretation potential) on what would have been the western side of the rail line, before the rail line was removed. The cutting for the rail line is clear and relatively un-impacted. The bank on the eastern side of the former rail line survives and is level with the landscape on the platform side.

A small sandstone box culvert is located approximately 60 m to the north of Rixs Creek platform. The culvert type and its location beneath the embankment strongly suggest that it predates the platform and is more likely to belong to the early phase of the Great Northern Railway (1869).

The general area is proposed for a site compound.

- **Item 04: Great Northern Railway (1869) embankment and associated elements**

A substantial section of the Great Northern Railway embankment survives within the Project Area and is likely to survive outside this area as well. The section of surviving embankment within the Project Area is located to the south upon which is built the Rixs Creek rail platform (discussed above), a small box culvert and a large sandstone culvert of particular interest.

- **Item 04-1: The box culvert** is located on the western side of the existing rail line, beneath the rail embankment. It has collected silt on the floor and was not flowing during the survey. Both headwalls were partially visible on either side of the embankment. The headwalls are constructed of at least five visible sandstone blocks; the floor of the feature was not visible. Each block is approximately 250 mm in height; lengths and widths were not ascertained because the item is largely obscured.

Item 04-3: Great Northern Railway Embankment. The former railway embankment varies in height along its length and in some cases appears to incorporate natural raised levels in the landscape. Within the Project Area it survives in the Rixs Creek platform location but is at a much smaller scale to elsewhere in the vicinity, being approximately 10 m higher than the undulating farm landscape to the west.

The full extent of the surviving remnant of the Great Northern Railway Embankment was not ascertained as it meandered in and out of the Project (and therefore, the survey) Area.

- **Item 05: Timber road-bridge close to the northern extent of the Project Area.** Located at the northern extent of the Project Area, this is a short single-span timber beam bridge over Station Creek on Middle Falbrook Road. It has timber sheeting abutments, lateral decking over the cross planks on girders and timber kerb pieces. The railings are timber, notched into the side beams.

Individual decking planks have been replaced as evidenced by planks in various states of repair, some retaining bitumen and others displaying less wear. The date of this bridge has not been ascertained but it is possible that Station Creek has been bridged at least since the rail line was built. Being of a short span, it does not display any diagnostic features that would place it in either the pre- or post-1894 category (RTA 2000: 17-21).

- **Item 06: Existing railway line (1952); within the Project Area.** The existing railway line travels through the entire project area. It is of standard design and is constantly maintained. It is not considered to be a heritage item but has been considered as an element of the overall Project Area.

In the Vicinity of the Project Area

- **The Rixs Creek Coke Ovens (1884) in the vicinity of the Project Area**

No evidence of the Coke Ovens was noted from the survey. It is understood that remnants of these features survive but that they are beyond the Project Area and will not incur impacts associated with the Third Track project.

- **Great Northern Railway Embankment (part of Item 04-3):** A large section of the embankment survives outside the Project Area to the north east. The embankment varies in height along its length and in some cases appears to incorporate natural raised levels in the landscape. It is particularly imposing to the north of the Project Area where a large culvert is located, at approximately 25 m (possibly more) above the landscape on the west and 2 km north of the east-west alignment of Rixs Creek Lane and the historic rail platform. In this location, the embankment is at the base of a very steep incline to its east, with the landscape abruptly levelling down to a gentle slope directly on the western side.

Views from the embankment at this point are commanding and uninterrupted to the distant Rixs Creek Mine.

- **Tram line (1869).** The Rixs Creek tram line diverged from the main train line in the vicinity of Rixs Creek Platform where it turned to the west. Surviving evidence was sought for but not located during the survey. It is likely that the former tram line lies north of the area that is proposed to be impacted.

- **Evidence of the mining village at Rixs Creek (1860s)**

No clear evidence of the mining village at Rixs Creek was noted. The survey was confined to the unsealed road and road reserve, which did not show any signs of expansion onto formerly built-upon areas. It is considered likely that the road has not been widened since the demolition of the village because the current width of the road appears to be marked out by early (undated) timber fence posts (refer below).

- **Evidence of historical uses such as remnant roadways, fence posts, slab buildings etc**

The surface of the roadway and adjacent items were examined for evidence of early use. No definitive evidence of the early road was noted, nor were any slab buildings, culverts beneath the road or other infrastructure noted in the vicinity of the unsealed road.

The only surviving features along the road way that are not recent is the row of early timber and wire fence posts and the timber entrance gate to 88 Rixs Creek Lane (lot 21 DP 248630).

The timber fence posts survive intermittently along the northern side of the unsealed road across a weedy, unlevelled road shoulder. It is possible that the fence line marks the edge of the road reserve.

The timber entrance gate is in keeping with the rural character of the area but is unlikely to be of significant age or technical achievement, although it does display evidence of replaced and earlier timber elements.

- **Dulwich Homestead (1876).** The homestead is listed on the Singleton LEP and was built in 1876 by Thomas Ware Smart over an earlier homestead with the same name. *Dulwich* is at least 340 m from the Project Area.
- **Middle Falbrook Bridge over Glennies Creek** is at a distance of at least 3 km from the Project Area and 650 m from passing construction traffic. The bridge will not be used to access the Project Area during construction and therefore will not incur impacts related to the current proposal.

4.5 Items which require assessments of significance

Among the items identified in the survey above the following provide evidence of key events or activities in the historical development of the Study Area (Section 3.0). These items therefore require an assessment of significance in order to determine whether they are of heritage significance and consequently whether the proposed development will impact on any significant heritage values in the Study Area. The items which require an assessment of significance:

- Potential archaeological relics of mining and settlement activity at Rixs Creek.
- Evidence of historical uses such as fence lines, isolated fence posts and other elements or structures that demonstrate the history of the place

- The former Great Northern Railway (including the embankment, culvert, Rixs Creek platform and tramway junction);
- The Main North Line (the operating line, including the embankment and culverts);
- The timber road bridge on Middle Falbrook Road.

5.0 SIGNIFICANCE ASSESSMENT

5.1 Assessing Heritage Significance

Cultural heritage legislation protecting Aboriginal and historic heritage places applies in New South Wales. These places are an important part of our heritage. They are evidence of more than 50,000 years of occupation of New South Wales by Aboriginal people, and of the more recent period of post-contact settlement.

Heritage places can provide us with important information about past lifestyles and cultural change. Preserving and enhancing these important and non-renewable resources is encouraged.

It is an offence under sections of legislation to damage or destroy heritage sites without a permit or consent from the appropriate body.

When a project or new development is proposed, it must be established if any cultural heritage places are in the area and how they might be affected by the project. Often it is possible to minimise the impact of development or find an alternative to damaging or destroying a heritage place. Therefore, preliminary research and survey to identify heritage places is a fundamental part of the background study for most developments.

The first stage of a study usually incorporates background research to collect information about the land relevant to the proposed development project (the Project Area). A second stage often involves a field survey of this area.

Possibly the most important part of the study involves assessing the cultural heritage significance of heritage places in the Project Area. Understanding the significance of a heritage place is essential for formulating management recommendations and making decisions.

The following section identifies the significance (nature and level of significance) of items within the Project Area and heritage items within the vicinity. This forms the basis for the assessment of the impact of the proposed development.

5.2 Method

The items identified in Section 4.4 within are assessed in Section 5.3 below in accordance with the NSW Heritage Assessment criteria (NSW Heritage Office, 2001) in order to determine their heritage significance (if any). The assessment criteria are as follows:

- Criterion (a) An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area);
- Criterion (b) An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);
- Criterion (c) An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);
- Criterion (d) An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural or spiritual reasons;

- Criterion (e) An item has potential to yield information that will contribute to an understanding of NSW’s cultural or natural history (or the cultural or natural history of the local area);
- Criterion (f) An item possesses uncommon, rare or endangered aspects of NSW’s cultural or natural history (or the cultural or natural history of the local area);
- Criterion (g) An item is important in demonstrating the principal characteristics of a class of NSW’s
- cultural or natural places; or
 - cultural or natural environments.
- (or a class of the local area’s
- cultural or natural places; or
 - cultural or natural environments.)

The individual assessment of each item is concluded with a succinct Statement of Significance.

Items within the vicinity of the Study Area include the heritage items Rixs Creek Coke Ovens and *Dulwich* homestead. The significance of these items has previously been assessed and is reflected in their listing as heritage items under the Singleton LEP 1996. *Dulwich* homestead has also had its significance assessed in the context of a proposal to expand the operation of the Integra Open Cut mine (NEXUS 2008). For the purpose of this report the significance of these items as previously assessed is accepted and they have not been reassessed.

5.3 Assessments of Significance

5.3.1 Potential archaeological relics of mining and settlement activity at Rixs Creek (Item 01)

The village is in close proximity to, but not within the Assessment Area.

Criterion (a)	<i>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);</i>
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The creation of a village at Rixs Creek is a response to the opportunities that arose from the growth of the coal mining industry in the Hunter Valley. Should evidence of the village survive it is likely to include domestic, commercial and civic building such as houses, shops and the public school respectively.

The indicative historical significance of the Rixs Creek mining village site is *local*

Criterion (b)	<i>An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW’s cultural or natural history (or the cultural or natural history of the local area);</i>
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Research conducted to date has not uncovered the association of a person or group of persons of any significance to the local area or the state of NSW.

Criterion (c)	<i>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);</i>
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The level or research conducted for the current project has not highlighted creative or technical achievements associated with Rixs Creek Village.

Criterion (d)	<i>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;</i>
The site of the former Rixs Creek Village does not fulfil this criterion	
Criterion (e)	<i>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);</i>
The site of the former Rixs Creek Village is likely to yield information that will contribute to an understanding of the local area's development should a moderate to high level of archaeological sensitivity be predicted. The types of evidence that may be present on the site are sub-surface archaeological deposits, including structural remains and artefacts. The presence of such deposits would be identified through archaeological techniques such as trial excavation or Ground Penetrating Radar.	
The indicative scientific significance of the Rixs Creek mining village site is <i>local</i>	
Criterion (f)	<i>An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);</i>
The level of research undertaken for the current project can not answer this criterion. Deserted and then fully demolished settlement sites are rare in NSW, particularly entire villages that flourished for a short period and were then (apparently) entirely vacated; for this reason, the site is potentially of local significance.	
The site is of <i>local</i> significance as it is rare in the local context and potentially in a State context.	
Criterion (g)	<i>An item is important in demonstrating the principal characteristics of a class of NSW's</i> <i>• cultural or natural places; or</i> <i>• cultural or natural environments.</i> <i>(or a class of the local area's</i> <i>• cultural or natural places; or</i> <i>• cultural or natural environments.)</i>
The site of the former Rixs Creek Village is likely to yield information relating to a mining village dating from the 1860s to its abandonment in the 1930s. Surviving relics are likely to provide information relating to the earliest phases of the village and its subsequent growth and decline.	
The site has representative value at a <i>local</i> level. Further research and information from archaeological excavation may modify the assessment under this criterion.	
Statement of Significance	
Should intact archaeological deposits associated with the former Rixs Creek Village survive, they are likely to yield information relating to domestic, commercial and civic activities of the inhabitants. It is also likely that the different phases of the village's growth and decline are embodied in the potential archaeological deposits. The site of the former Rixs Creek Village is likely to be of local significance.	

5.3.2 Evidence of Historical Uses (Items 02-1, 02-2 & 02-3)

Criterion (a)	<i>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);</i>
<p>Surviving fence lines, isolated fence posts and timber gate have value in their ability to demonstrate the historical uses of the place. In particular, the timber fences, fence posts and gates along the made (but unsealed) section of Rixs Creek Lane as well as the area of the Rixs Creek Lane extension, retain the ability to demonstrate the historical width of the road to Rixs Creek Platform and therefore the connection of the village to the rail platform.</p> <p>The group comprised of timber fence lines, isolated timber posts and timber gates that as a group contribute to the character of the surrounding landscape and identify historic boundaries.</p>	
Criterion (b)	<i>An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);</i>
<p>Research conducted to date has not uncovered the association of a person or group of persons of any significance to the local area or the state of NSW.</p>	
Criterion (c)	<i>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);</i>
<p>The items do not fulfil this criterion.</p>	
Criterion (d)	<i>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;</i>
<p>The items do not fulfil this criterion.</p>	
Criterion (e)	<i>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);</i>
<p>The survival of the timber fence lines, isolated posts and the timber gate (although the gate's age has not been ascertained) have the potential to yield information about the early historical uses of the place, in particular the extension of Rixs Creek Lane to the rail platform. The survival of the timber posts (02-3) have the ability to interpret the former road (or path), which is not almost indistinguishable from the surrounding paddocks.</p> <p>The items have <i>local</i> significance under this criterion.</p>	
Criterion (f)	<i>An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);</i>
<p>As an isolated group of features (02-3), the posts within the paddock represent elements in the local area that are rare surviving evidence of the former mining village and the place's connection to the region is discernible in the surviving but fragmentary fabric.</p> <p>The items are of indicative <i>local</i> significance as it is rare in the local context.</p>	
Criterion (g)	<i>An item is important in demonstrating the principal characteristics of a class of NSW's</i>
<ul style="list-style-type: none"> • <i>cultural or natural places; or</i> • <i>cultural or natural environments.</i> 	

<p style="text-align: center;"><i>(or a class of the local area's</i></p> <ul style="list-style-type: none"> • <i>cultural or natural places; or</i> • <i>cultural or natural environments.)</i>
<p>The items are representative, if in an ephemeral way, of improvements to infrastructure to accommodate a growing village and associated transportation.</p>
<p>Statement of Significance</p> <p>The timber fence posts and gates are of indicative <i>local</i> significance for the ability to demonstrate road boundaries between Rixs Creek Village and the local rail platform. The roadway at the end of the unsealed road is unlikely to have ever been made, but instead was marked out, the information presented by this physical evidence allows for the interpretation of the original road layout of the village. Further research may confirm the assessment.</p>

5.3.3 Former Great Northern Railway (including the embankment, culverts, Rixs Creek platform and tramway junction)

<p>Criterion (a)</p>	<p><i>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);</i></p>
<p>Item 04: Remnants of the former Great Northern Railway (comprising a large earthen embankment, sandstone culvert, Rixs Creek Platform and a tramway junction) are what remain of a significant transportation system that shaped the region famous for its wealth in coal. The elements of the surviving features being the embankment, sandstone culverts and rail platform demonstrate the important role that the railway played in the economy of the region and to NSW in general. The existence of the railway also demonstrates the importance the mining industry played in the economy of the region.</p> <p>Item 03: Rixs Creek Platform, constructed in 1885 to access to transportation for the community at Rixs Creek demonstrates the growth of the region due to economic growth through mining activities.</p> <p>The Great Northern Railway and component parts are of indicative <i>local</i> significance.</p>	
<p>Criterion (b)</p>	<p><i>An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);</i></p>
<p>The Great Northern Railway is a product of railway expansions during John Whitton's tenure as engineer-in-chief to the NSW Railways (185-1890). However, research has not suggested that Whitton had a direct role in the design or construction of the item.</p> <p>The item does not fulfil this criterion.</p>	
<p>Criterion (c)</p>	<p><i>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);</i></p>
<p>Elements of the Great Northern Railway that survive within the Project Area demonstrate varying degrees of technical achievement.</p> <p>Item 04: The Railway embankment is an engineering feat of great proportions. The level of the rail line remained consistent and above the flood plain as it crossed the landscape. This meant that in some places the scale of the embankment was such that it dominated the landscape; this is</p>	

particularly obvious where the Project Area traverses through Obanvale.

The item is of indicative *local* significance.

Criterion (d)	<i>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;</i>
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The elements of the Great Northern Railway that occur within the Project Area have not been identified as having any such strong or special association on any heritage registers or documents accessed for this study. It is likely that these items do not fulfil this criterion.

The item(s) does not fulfil this criterion.

Criterion (e)	<i>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);</i>
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Further detailed documentary research is likely to yield information that will contribute to an understanding of the development of the local area as well as that of the state of NSW.

The item(s) has been assessed as possessing indicative *local* significance based on the level of research undertaken for this report.

Criterion (f)	<i>An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);</i>
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The disused railway is embankment uncommon in that it survives intact in a number of places between Singleton and Camberwell. A large sandstone culvert beneath the embankment survives beyond the Project Area and may be one of a number of elements that have yet to be recorded.

The item has been assessed as possessing indicative *local* significance based on the level of research undertaken for this report.

Criterion (g)	<i>An item is important in demonstrating the principal characteristics of a class of NSW's</i> <ul style="list-style-type: none"> • <i>cultural or natural places; or</i> • <i>cultural or natural environments.</i> <i>(or a class of the local area's</i> <ul style="list-style-type: none"> • <i>cultural or natural places; or</i> • <i>cultural or natural environments.)</i>
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The elements of the Great Northern Railway assessed in this report clearly demonstrate the principal characteristics of the colonial infrastructure. The scale, representative box culvert, unusual, and a potentially rare large culvert (beyond the Project Area), standard platform masonry design that has withstood the ravages of dereliction to survive largely intact is a testament to the care and thought that was applied to the construction of infrastructure in the 19th century.

Concentrated research is likely to yield information that has the potential to identify a higher number of significant elements associated with the railway embankment.

The Great Northern Railway group is considered to possess indicative *local* significance.

Statement of Significance

The remnant features of the former Great Northern Railway, as they survive within the Project Area, are of local significance for their ability to demonstrate the technical achievements of the

NSW Government Railways during the period of John Whitton's control, as well as the importance of coal mining to the economy of the local region. Further research is required to determine if the former Great Northern Railway and its components are of State significance for their rarity value, technical and aesthetic achievement as well as its role in the development of the state of NSW.

5.3.4 Main North Line (embankment and culverts) (Item 06)

Criterion (a)	<i>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);</i>
The item is important as it demonstrates changing technologies in rail transport. Its current uses and the necessity for the third track demonstrate the continued importance of the coal mining industry to the economy of the local region and to the state of NSW as well as the nation.	
Criterion (b)	<i>An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area);</i>
The item does not fulfil this criterion.	
Criterion (c)	<i>An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW (or the local area);</i>
The item does not fulfil this criterion.	
Criterion (d)	<i>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;</i>
The item does not fulfil this criterion.	
Criterion (e)	<i>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);</i>
The item does not fulfil this criterion.	
Criterion (f)	<i>An item possesses uncommon, rare or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area);</i>
The item does not fulfil this criterion.	
Criterion (g)	<i>An item is important in demonstrating the principal characteristics of a class of NSW's</i> <ul style="list-style-type: none"> • <i>cultural or natural places; or</i> • <i>cultural or natural environments.</i> <i>(or a class of the local area's</i> <ul style="list-style-type: none"> • <i>cultural or natural places; or</i> • <i>cultural or natural environments.)</i>
The item does not reach the threshold for <i>local</i> or <i>State</i> significance for its ability to demonstrate the prevailing government techniques	

Statement of Significance

The Main North Line, in its operational form, is an important in the transportation network within NSW and between NSW and Queensland. It is also significant as a means of transportation of coal and other mining related material to the economy of the nation. As an operating railway line however, the Northern Railway is **not** a heritage item and therefore does not require management as a heritage item.

5.3.5 Timber beam bridge on Middle Falbrook Road over Station Creek (Item 05)

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);*

The item is located in a position across Station Creek where access would have been required from the period of expansion of the region. It is not associated with any identified historical events in the area, nor is it of importance in the course or pattern of the region's development.

The item does not fulfil this criterion.

Criterion (b) *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);*

The timber beam bridge (Item 05) does not fulfil this criterion.

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);*

The item is a standard single span timber beam bridge that demonstrates evidence of numerous repairs with new fabric.

The item does not fulfil this criterion.

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;*

Evidence suggesting that the timber beam bridge has strong associations with any community or cultural group in the area has not been discovered during research conducted for the current project.

The item does not fulfil this criterion.

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);*

The timber beam bridge is of standard design with out remarkable design features. Elements of the bridge have been replaced over time with new material, where required.

The item does not fulfil this criterion.

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

Although the item at present does not possess aspects that are rare in the local or State context, it

does represent an item type that is becoming increasingly endangered as river crossings are being upgraded to comply with current safety standards.

The timber beam bridge does not fulfil this requirement at present.

Criterion (g)

An item is important in demonstrating the principal characteristics of a class of NSW's

- *cultural or natural places; or*
- *cultural or natural environments.*
- (or a class of the local area's*
- *cultural or natural places; or*
- *cultural or natural environments.)*

The timber beam bridge is representative of standard timber beam bridges that were constructed from 1840s onwards over small waterways. The bridge demonstrates the principle characteristics of items of this type, being built to a standard design and being of a type that is found across the rural (and undeveloped) landscape of NSW. It also demonstrates the practice of ongoing maintenance that undertaken with these items.

Statement of Significance:

The single-span timber beam bridge over Station Creek is a “work” that has indicative *local* significance as a representative example of items of its type within NSW.

6.0 STATEMENT OF HERITAGE IMPACT

6.1 Introduction

This section identifies the potential impact of the proposed development, if any, on the heritage values identified in the preceding Significance Assessment (Section 5.0). It concludes with a number of recommendations which aim to avoid, minimise or mitigate potential impacts which have been identified.

KHM has demonstrated a level of flexibility with the placement of ancillary features required for the construction program, with the aim of reducing impacts to heritage items identified in this report. The location of those structures has taken into considered the presence of heritage items identified in this report.

6.2 Impact Assessment

An assessment of potential impacts has been undertaken within the zones of identified impact. These include two compound sites as well as two access roads. The areas where the compound and access roads are proposed are shown in Figure 2.

The assessment of potential impacts addresses each impact site from north to south. Where heritage items, or the potential for heritage items, have been identified the impacts and considered alternatives is included.

The third track does not have the potential to impact heritage items within the railway corridor; it is ancillary works that may have an effect on the heritage values identified in this report.

Proposed Use

1. Stockpile Sites

Location: Undetermined; within assessed Project Area

Proposed Changes: N/A

Impacts: Areas of heritage or archaeological sensitivity have been identified in this report. Provided that stockpiles are not included in these areas, mitigation measures do not apply.

2. Rixs Creek Road Extension:

Location: The continuation of Rixs Creek Road along an existing road reserve through paddocks. The road extension is location close to the southernmost extent of the Project Area.

Proposed changes: A small volume of construction traffic will enter the site via Rixs Creek Lane for the downside access track construction and signalling works and continue to the railway line.

The existing, unsealed section, of Rixs Creek Lane will remain as is and is expected to carry a small volume of traffic within its current width.

Vehicles associated with the construction works will include light vehicles (workers travelling to and from site and start and finish of shifts), semi trailers delivering construction plant and equipment, truck and dogs delivering quarry materials and mobile cranes.

The anticipated number of vehicles entering the site on a typical working day is:

Light vehicles 30

Heavy vehicles 10

The anticipated number of vehicles entering the construction site via Rixs Creek Lane during track possession periods is listed below. There will be 5 track possessions lasting three to 4 days each.

Light vehicles 30

Heavy vehicles 20

Impacts: Potential impacts to identified heritage items include the removal of isolated fence posts within the paddock. As these posts may represent the width of the track to Rixs Creek Platform, they have some interpretative value.

3. Secondary Compound

Location: The compound is proposed to be on the down side (west) of the live rail track and will be accessed by the Rixs Creek Lane extension. The compound is proposed to be located within ARTC land. The secondary compound is proposed for the area with the box culvert (Item 04-1) and former Rixs Creek Railway Platform (Item 03).

The locations of the items are listed below; co-ordinates are in GDA format:

Item 04-1 Box Culvert (approximate only – this is temporary) 326617E; 6399658N

Item 03 Former Rixs Creek Platform and cutting

Northern extent 326575E; 6399573N

Southern extent 326559E; 6399516N

Proposed Changes: Temporary buildings such as site sheds and ablution blocks will be placed in this area. The Great Northern Railway embankment at Rixs Creek will require levelling to accommodate construction vehicles and haul roads would be constructed on both sides of the corridor, parallel to the existing tracks to enable construction traffic to move independently on either side without the need for a rail crossing. The haul road on the up side (east) will be accessed from the proposed road from Bridgman Road.

Impacts: The potential for impacts to the former Great Northern Railway embankment (04-3), the box culvert (04-1) and the former Rixs Creek Railway Platform (03) exists in this section of the Project Area.

The exact location of each item has been provided and it is anticipated that the items at risk of physical impact will be incorporated into exclusion zones. The embankment is a sturdy element of the former railway group and provided that it is utilised only for support compound elements such as temporary site sheds, the impacts will be minimal and acceptable.

4. Access to Project Area from Middle Falbrook Road

Location: At the northernmost extent of the Project Area

Proposed Changes: It is not proposed to modify the existing roadway to the live rail corridor, however it is proposed to upgrade the timber beam bridge (Item 05) over Station Creek to ensure that it is capable of supporting construction traffic for the life of the project.

The anticipated number of vehicles entering the site on a typical working day is:

Light vehicles 50

Heavy vehicles 30

The peak number of vehicles entering the construction site via Middle Falbrook Road is as follows:

Light vehicles 80

Heavy vehicles 40

Impacts: Impacts to the timber beam bridge would involve strengthening the structure to support construction traffic.

The Director-General's Requirements indicated that potential impacts on the Middle Falbrook Road Bridge (listed on the State Heritage Register) were to be considered. This bridge is situated over 3 km north of the Study Area and has not been considered in this report as an item within the vicinity of the Study Area. It is located well outside the area where impacts from the project will occur (including both physical and visual impacts).

7.0 MITIGATION & MANAGEMENT OF IMPACTS

In order to avoid, minimise or mitigate the impacts identified in section 6.1 above, the following recommendations are made. These recommendations should be incorporated into the draft Statement of Commitments for the project as required by the Directory-General's Requirements. The table below identifies the proposed use and provides mitigation strategies to either avoid impacts to the identified heritage items or recommendations to ameliorate impacts that are unavoidable. Items in the "Mitigation/Amelioration" column that have been **bolded** are further explained in the recommendations.

Proposed use	Heritage Items	Mitigation/amelioration
1. Stockpile site	None	N/A
2. Rixs Creek Lane Extension - continuing through road reserve	Item 02-1 timber fence post; 02-3 timber fence post & 02-2 timber gate Item 04-3 Great Northern Railway Embankment at Rixs Creek	Although impacts to these items are not expected, inadvertent impacts may occur. In order to avoid inadvertent impacts ensure the following: <ul style="list-style-type: none"> ◦ Areas of sensitivity such as old timber fence posts (Item 02-1 & 02-3) and timber gate (Item 02-2) should be identified in exclusion zones and avoided. ◦ Avoid all timber posts within the road extension. ◦ Stop work if relics are encountered. The embankment will be levelled to allow vehicles access from the Rixs Creek extension to the secondary compound. <ul style="list-style-type: none"> ◦ Level only as much of the embankment as necessary ◦ Make good at the completion of the project ◦ Ensure that levelling of the embankment is not undertaken where heritage items have been identified ◦ Ensure that if heritage items are identified while pegging out the haul road, the alignment is either moved or a heritage consultant is contacted for advice.
3. Secondary Compound Rixs Creek	Item 03 – Former Rixs Creek Railway Platform; Item 04-1 box culvert; Item 04-3	Although impacts to these items are not expected, inadvertent impacts may occur. In order to avoid inadvertent impacts ensure the following: <ul style="list-style-type: none"> ◦ Identify heritage items and include in an exclusion zone.

<p>4. Access to Project Area from Middle Falbrook Road</p>	<p>Item 05 - timber beam bridge</p>	<p>It is proposed to upgrade the timber beam bridge over Station Creek. The bridge is functioning road infrastructure that demonstrates evidence of constant maintenance and upgrade.</p> <ul style="list-style-type: none"> ◦ Upgraded to ensure that it withstands construction traffic is acceptable provided that the upgrade measures do not deviate from the traditional materials that would be used for maintenance of this type of bridge.
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7.1 Recommendations

The recommendations have been formulated with consideration of the proposed and potential impacts to the surrounding cultural (non-Aboriginal) environment and its identified elements. Whilst not all of the items identified have been assessed as being of great cultural significance, they contribute to the rural character within and surrounding the Project Area. For this reason, the philosophy of the ICOMOS *Burra Charter* has been applied and the recommendations are to ensure that as much as necessary and as little as possible is done to impact items of identified in this report, within the limits of the proposed works.

Recommendation 1: Adopt the **mitigation/amelioration table** as a management tool to safeguard the identified heritage items.

Recommendation 2: Exclusion zones should be highly visible and personnel should be inducted to understand the importance of avoiding these sites. An appropriate material would be brightly coloured para-webbing, creating a 2 m buffer around each individual item.

Recommendation 3: Stop work in the event of unexpected heritage items or archaeological sites being uncovered during the project. Contact a qualified archaeologist to make an assessment of the find. Should the find be a relic, the Heritage Council will require notification under Section 146 of the *Heritage Act 1977*.

Recommendation 4: Consult with Council with regard to the **upgrade** works proposed for the timber beam bridge. Should major changes to the bridge be necessary, an archival record using digital capture and a measured drawing of the bridge should be made prior to, and at completion of, the upgrade.

Recommendation 5: Make good any impacts to heritage items identified in this report. They include:

- Former Rixs Creek Railway Platform (03)
- Great Northern Railway Embankment at Rixs Creek (04-3)
- Box culvert (04-3)

Recommendation 6: Ensure that all personnel employed on this project are informed of the importance of safeguarding heritage in the Project Area. This can be accomplished by including a heritage induction in the project and safety induction undertaken by all personnel.

Recommendation 7: Should the proposed impacts vary from those detailed in this report and impacts to identified heritage items become unavoidable, a detailed assessment of the item will be required in order to establish a detailed site history and assessment of significance. These details would be required in order to guide specific mitigation measures for identified impacts.

Recommendation 8: Ensure that the SHR listed Middle Falbrook Bridge over Glennies Creek is not used by heavy construction vehicles.

8.0 DATA SHEETS

The results of the survey are illustrated in the following photographs.

Data sheet/Item	01	GPS Point: 001 6399817N 325597E
Location	Corner of Rixs Creek Road and paper road, Rixs Creek	
Study Area/Vicinity	Vicinity	
Point of Interest	In the location of the Rixs Creek mining village (demolished)	
Landform	Gently inclined lower slope	
Condition:	Not applicable	
Visibility	c. <5% off the track; c. >90% on the track	
Exposures	Vehicle track as well as erosional exposures off the track	
Heritage items/relics	None noted	



Photo: DSC_0002; View: East

Notes: The road is now flanked by paddocks and recently constructed dwellings and sheds.

Only the road was surveyed from the corner of this lane and the corner of Rixs Creek Lane as the remainder of the surrounding area (including the extension of Rixs Creek Lane) is private property. No evidence of relics relating to the early village was noted on the road or in the grassed road reserve.



Image: DSC_0004 View: North

Notes: Corner of Rixs Creek Lane (sealed) and unsealed road. The section of Rixs Creek Lane visible to the right is on private property and was not accessed during the survey. The view is across the paddock on the corner of Rixs Creek lane in the location of the Rixs Creek mining village. No relics or potential sites were noted from the road where the photograph was taken.



Image: DSC_0006; View: South east

Notes: View across paddocks on the south side of the unsealed road where relics of the Rixs Creek mining village may survive. No relics or potential sites were noted from the road where the photograph was taken. The buildings in the background are recent.

Data sheet/Item	02-1	GPS Point: 003 6399812N 325695E
Location	Timber fence posts on the north side unsealed road in location of Rixs Creek Village	
Study Area/Vicinity	Vicinity	
Landform	Very gently inclined mid-slope	
Condition	Fair to poor	
Visibility	Good	
(Potential) heritage items/relics	The timber fence posts have some aesthetic value and may be remnant from the last days of the village.	



Photo: DSC_0011; View: North east

Notes:

A double row of fence posts lines part of the property on the north side of the unsealed lane, one of which is constructed of timber and barbed wire. The timber posts have deteriorated so their construction method is not clear. The fence is in poor condition but adequately intact to demonstrate an earlier fence line, hence the condition assessment of “fair to poor” above (note the more recent fence to the left).

The fence begins approximately 100 m from the junction of Rixs Creek Lane and the unsealed road (refer Data sheet 01) and continues intermittently for the length of the track. It is possible that it marked the road reserve as shown in the 1972 Parish Map (Plate 2).

Data sheet/Item	02-2	GPS Point: 008 6399765N 325937E
Location	88 Rixs Creek Road, Rixs Creek, on southern side of unsealed road	
Study Area/Vicinity	Vicinity	
Point of Interest	Timber gate with beams of varying ages	
Landform	Very gently inclined mid-slope	
Condition	Good with replacement timbers	
Visibility	N/A	
(Potential) heritage items/relics	Potential; has aesthetic value in keeping with the rural surroundings	



Photo: DSC_0017; View: South

Notes: The southern flank of the entrance gate into the property identified by lot 21 DP 248630.



Photo: DSC_0018; View: East

Notes: The northern flank of the entrance gate (as above) showing older and replacement timbers. This item is unlikely to be of significance age but has some aesthetic value in keeping with the rural environment.

Data sheet/Item	02-3	GPS Point: 009 326156E 6399732W
Location	Within paddock within area to be extended from unsealed road to rail line	
Study Area/Vicinity	Study Area	
Point of Interest	Row of timber fence posts and isolated timber fence posts	
Landform	Gently inclined lower slope	
Condition	poor	
Visibility	N/A	
(Potential) heritage items/relics	May represent the earlier alignment of road to Rixs Creek Platform	



Photo: DSC_0020; View: south west

Notes: The fence line visible in the background follows the line of the road reserve to the former Rixs Creek Platform. The item in the foreground appears to be a poorly preserve timber post, rather than the remnants of a once living tree and may mark the northern side of the road reserve. This section of the Project Area is currently incorporated into the surrounding paddocks on either side.



Photo: DSC_0021; View: north east

Notes: Photo DSC_0021 is a view north east of the unformed road reserve (paper road) taken from the same location as Photo DSC_0020. The landscape is gently undulating with a first order creek line visible in the middle ground, sloping to the north west (left in photo). The creek has been dammed.

Some depressions within the dry creek line were recorded. There are approximately 1 m in diameter and without any clear indication of function or origin; it is likely that these depressions represent removed trees.

Data sheet/Item	03	GPS Points: 047 326575E 6399573N & 048 326559E 6399516N
Location	Within the existing live rail corridor approximately at the end of the road reserve (paper road)	
Study Area/Vicinity	Study Area	
Point of Interest	Former Rixs Creek Platform	
Landform	Constructed embankment	
Condition	Good; some repairs required	
Visibility	N/A	
(Potential) heritage items/relics	Former platform servicing Rixs Creek Village. One platform, earthen bank opposite and rail cutting	



Photo: DSC_0175; View: south

Notes: The platform structure is in good condition but with sections of brick removed. The wall of the platform is comprised of 13 visible courses of dry-pressed brick, which includes a base course and top soldier course. The bricks are bonded together with lime mortar and a moderately thick patina of soot survives on the surface. The top of the platform is grassed over.

The platform is approximately 1400 mm high at the highest point and tapers down at either end. It is approximately 57 m in length and was measured by taking a GPS point at each end (refer to the coordinates above).

An earthen bank opposite the platform is the result of bank construction then cutting to accommodate the train line.



Photo: DSC_0176; View: west

Notes: The northern section of the train platform wall where it begins to taper down. This photograph provides some indication of the condition of the item, which appears to be the result of natural element rather than any active forces.

Data sheet/Item	04-1	GPS Points: Eastern headwall 326612.7E 6399691N Western headwall 326612.1E 6399691N
Location	On the Great Northern Railway embankment (Item 04) close to Rixs Creek Platform	
Study Area/Vicinity	Study Area	
Point of Interest	Box culvert in Great Northern Railway Embankment	
Landform	Constructed embankment	
Condition	Fair? Partly obscured	
Visibility	N/A	
(Potential) heritage items/relics	As an individual element and as a group of the Great Northern Railway.	



Photo:DSC_0170; View: east

Notes: The photograph shows the western headwall of the culvert, which is comprised of five sandstone blocks. The base is silted and the culvert is partially obscured by soil creep from the embankment. It appears to be a box culvert of simple design. Its true dimensions are unknown.




Photo: DSC_0171; View: east

Notes: Detail of Item 04-1.



Photo: DSC_0181; View: west

Notes: The location of the east headwall of the box culvert (Item 04-1). The range pole is lying along the lintel.

Data sheet/Item No.	04-3	GPS Point: None but is at the same coordinates as Items 04-1 and 04-3
Location	Diverging from live rail corridor at Rixs Creek and arcing back in towards live rail. A large portion of the embankment has been destroyed through mining operations in area adjacent to the north of the Project Area.	
Study Area/Vicinity	Study Area	
Point of Interest	Great Northern Railway embankment (remnant)	
Landform	Constructed earthen embankment of varying size	
Condition	Some sections are intact, other destroyed	
Visibility	N/A	
(Potential) heritage items/relics	The Great Northern Railway embankment retains components originally constructed as part of the rail line. These include culverts, surveyor's marks (not in the Project Area) and the embankment itself.	
		
Photo: DSC_0174; View: south		
Notes: The height of the former Great Northern Railway embankment is at a significantly smaller scale in the area of Rixs Creek. The former railway platform (Item 03) is not visible but approximately 200 m to the south. The live rail corridor is to the east (left) and Rixs Creek Lane is to the west (right). The rail tracks have been removed and the corridor is used for vehicular traffic. This section of the embankment is within ARTC land.		

Data sheet/Item	05	GPS Points: None
Location	On Middle Falbrook Road over Station Creek at the northern extent of the Project Area	
Study Area/Vicinity	Study Area	
Point of Interest	Single span timber beam bridge	
Landform	flat	
Condition	Good. Displays few elements of early construction and constant maintenance	
Visibility	Good	
(Potential) heritage items/relics	Has some heritage value	



Photo: DSC_0134; View: east

Notes: A single span timber beam bridge over Station Creek, with timber sheeting abutments. The northern abutment shows additional piling for support. The timber deck planks are held down by timber kerb pieces and the railings are timber and notched into the side beams as per what is likely to be the original design.

The form is of a standard timber beam bridge and does not display any features that would assist with ascribing a date to the structure.



Photo: DSC_0138; View: East

Notes: Detail of the lateral decking of the timber beam bridge. Note the various timber planks, some with bitumen still attached in place, showing evidence of replacement. Often timber beam bridges were upgraded with the addition of longitudinally running sheeting planks, which this item does not have. The underside of the bridge is

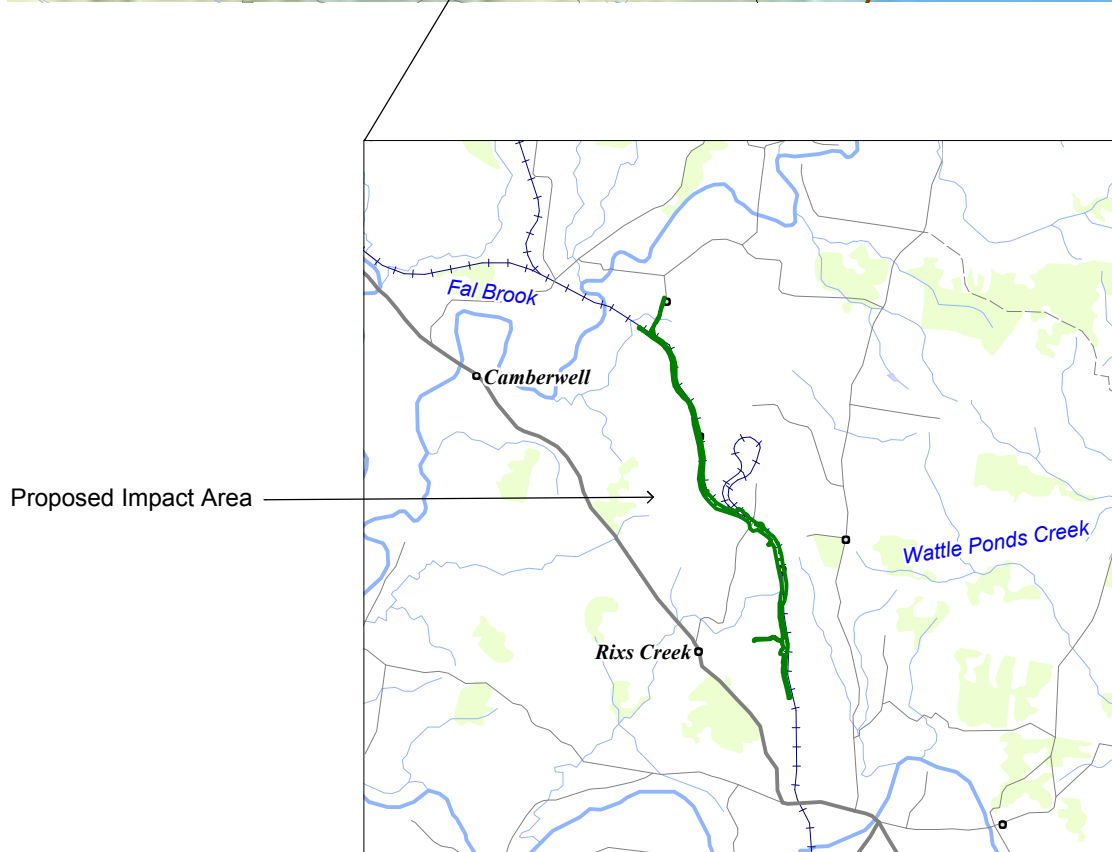
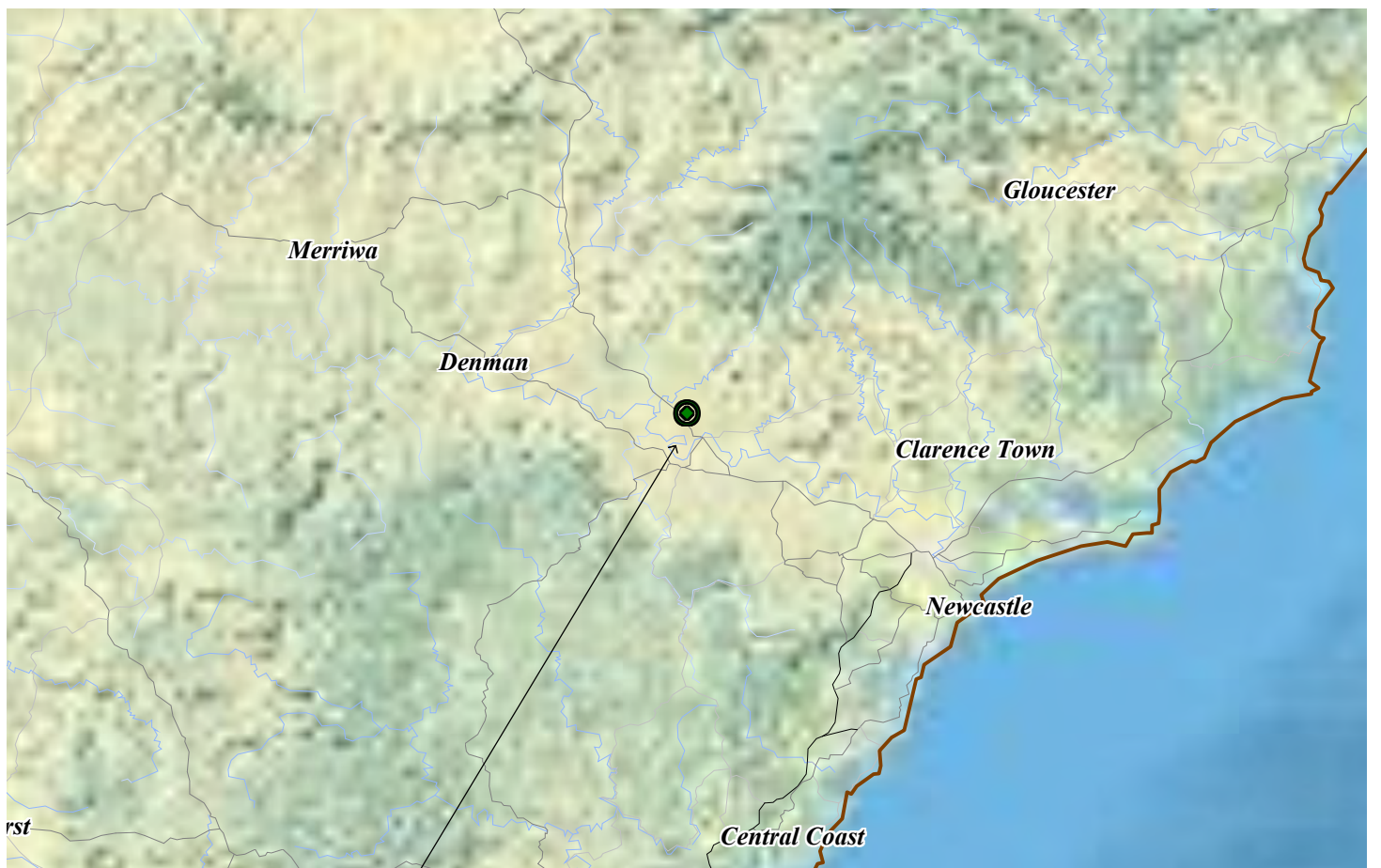


Photo: DSC_0145; View: south east

Notes: View of the underside of Item 05 showing the timber sheeting abutment and support piling.

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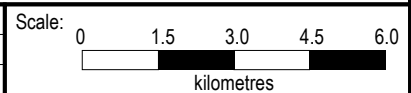
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Figure 1: Location of the Proposed Impact Area in a regional context

Date: 11 February 2011	Drawn by: ANP
File number: 11303	Checked by: PBK
Location: P:\11300s\11303 Nundah Bank\SHARED\Mapping\Historical Maps and Plans\FINAL Report Figures\11303 F1_Locality.WOR	





Legend

Proposed Impact Area

Third Track

Rixs Creek Lane extension

Secondary Compound (Downside)

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Figure 2: Overview of the Proposed Impact Area and Impact Sites.

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Location: ...P:\11300s\11303 Nundah Bank\SHARED\Mapping\Historical Maps and Plans\FINAL Report Figures\11303 F2_Overview.WOR	

0 0.25 0.5 0.75 1.0 1.25
 kilometres

Scale: 1:25,000 at A3
 Map Projection: Universal Transverse Mercator
 Horizontal Datum: Geodetic Datum of Australia 1994
 Map Grid: Map Grid of Australia Zone 56



Figure 2



Legend

Proposed Impact Area

Figure 3: Overview of the Proposed Impact Area.

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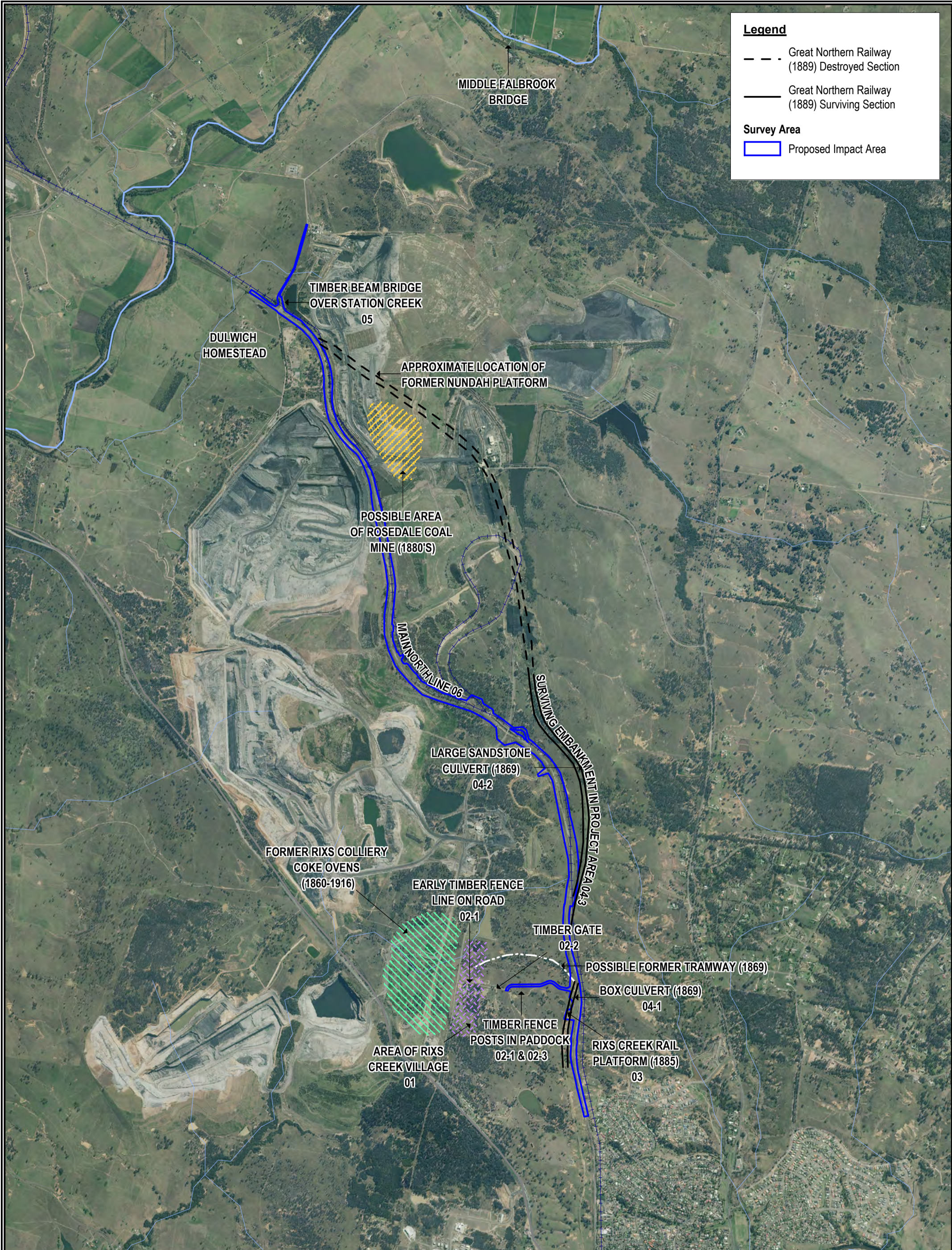
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0 0.2 0.4 0.6 0.8 1.0
 kilometres

Scale: 1:20,000 at A3
 Map Projection: Universal Transverse Mercator
 Horizontal Datum: Geodetic Datum of Australia 1994
 Map Grid: Map Grid of Australia Zone 56



Figure 3



Legend

- - - Great Northern Railway (1889) Destroyed Section
- Great Northern Railway (1889) Surviving Section

Survey Area

- Proposed Impact Area

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Figure 4: Historic features in or near the Proposed Impact Area; features with numbers were surveyed.

Date: 14 February 2011	Drawn by: ANP
File number: 11303	Checked by: PBK
Location: ...P:\11300s\11303 Nundah Bank\SHARED\Mapping\Historical Maps and Plans\FINAL Report Figures\11303 F4_Historic Features.WOR	

Scale: 1:30,000 at A3
 Map Projection: Universal Transverse Mercator
 Horizontal Datum: Geodetic Datum of Australia 1994
 Map Grid: Map Grid of Australia Zone 56

Figure 4