Nundah Bank Third Track

Preliminary Environmental Assessment

Australian Rail Track Corporation

June 2010

Upper Hunter Valley Alliance

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3	Inclusion of ARTC comments	28/06/2010	NLB	GJM	GJM

Table of contents

Figures

Tables

Glossary and abbreviations

AHIMS	Aboriginal Heritage Information Management System
ARTC	Australian Rail Track Corporation
CEMP	Construction Environmental Management Plan
Culvert	An enclosed drain under a road or railway
DoP	NSW Department of Planning
Down side	The side of the track on which trains travel away from Sydney
EA	Environmental Assessment
EP&A Act	*Environmental Planning and Assessment Act, 1979*
Headways	The time difference between scheduled train services
Level crossing	A crossing provided at grade (the same level) across the rail tracks
LGA	Local Government Area
Mtpa	Million tonnes per annum
PAD	Potential Archaeological Deposit
PEA	Preliminary Environmental Assessment
Overbridge	A bridge over railway line or road
Rail corridor	Land dedicated to the ARTC for rail purposes
Strategy	The ATRC 2009-2018 Hunter Valley Corridor Capacity Strategy
SEPP Infrastructure	*State Environmental Planning Policy (Infrastructure)* 2007
SEPP Major Development	*State Environmental Planning Policy (Major Development)* 2005
SLEP	Singleton Local Environmental Plan 1996
Triplication	Providing an additional track adjacent to two existing tracks
Turnout	The mechanisms for the meeting of two tracks
UHVA	Upper Hunter Valley Alliance
Up side	The side of the track on which trains travel to Sydney

Executive summary

This Preliminary Environmental Assessment (PEA) has been undertaken by the Upper Hunter Valley Alliance (UHVA) on behalf of the Australian Rail Track Corporation (ARTC) for a proposed third track and ancillary infrastructure at Nundah Bank near Rix's Creek in the NSW Hunter Valley (the proposal). The proposal is located between the towns of Singleton and Camberwell approximately 245 kilometres north of Sydney by rail in the Upper Hunter 1 region of ARTC's NSW lease area (Refer Figure 1.1).

The *2009-2018 Hunter Valley Corridor Capacity Strategy,* 2009 (the Strategy) is the fourth annual strategy by ARTC. It 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 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. In order to meet the expected increase in export coal demand, the upgrade required at Nundah Bank needs to be completed by the third quarter of 2012. Operational modelling by ARTC has shown that triplication at Nundah Bank is the only feasible means to achieve the desired increase in network capacity.

The proposed is described in detail in Section 3 of this document including the options considered and justification for the preferred option. In summary, the key components of the proposal include:

- Approximately 4.26 kilometres of track on the Up side, turnouts, return curves and changes to Camberwell Mine Rail Junction;
- Approximately 54,000 cubic metres of earthworks including track formation, drainage and minor structures;
- New vehicular maintenance access tracks adjacent to the proposed third track on both the Up and Down sides;
- Upgrading the existing signalling system and installing signals on the new track;
- Bridge modification to existing Rix's Creek mine haul road rail overbridge; and
- Ancillary infrastructure such as temporary construction compounds, haul roads and stockpile sites.

The estimated cost of the project is approximately $44 million and it is expected to take approximately 16 months to construct.

The project would be assessed under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) through the action of Schedule 1, Clause 23 of *State Environmental Planning Policy (Major Development) 2005*. The Minister for Planning is the determining authority for all projects assessed under Part 3A of the EP&A Act.

In accordance with Section 75E of the EP&A Act, the proponent is required to submit a project application to the Department of Planning. Accompanying the project application will be this document which will be used by the Department to brief Government about the proposal and on which the formal requirements for the preparation of the Environmental Assessment will be based.

Based on the preliminary project information and environmental risk assessment conducted, the key environmental issues which will require more detailed investigation are:

- Flora and fauna – the clearance of native vegetation potentially including threatened flora and fauna and endangered ecological communities;
- Indigenous heritage - potential disturbance to aboriginal deposits located within and adjacent to the rail corridor; and
- Noise - noise impacts associated with the proposed development at any nearby receivers, including temporary noise impacts associated with construction of the proposal and associated works.

Regarding the other environmental and community issues, it is considered that the application of standard mitigation measures would be sufficient to manage potential impacts noting that the surrounding land uses are dominated by coal mining activities and that the nearest sensitive receiver is approximately 770 metres distant from the works.

Assessment methodologies and mitigation and management measures for each of the environmental and community issues are included in Sections 4 and 5 of this document.

1. Introduction

This Preliminary Environmental Assessment (PEA) has been undertaken by KMH Environmental as part of the Upper Hunter Valley Alliance (UHVA) on behalf of the Australian Rail Track Corporation (ARTC) for a proposed third track and ancillary infrastructure at Nundah Bank. Nundah Bank is located between Singleton and Camberwell on the Main North Line - Whittingham to Muswellbrook.

1.1. Development context

The ARTC is a company wholly-owned by the Commonwealth Government with the primary role of managing the national rail network.

In September 2004, the ARTC commenced a 60-year lease of the interstate and Hunter Valley rail lines in NSW. Since commencing the lease, ARTC have released annual Hunter Valley infrastructure enhancement strategies that set out how ARTC plan to ensure rail corridor capacity stays ahead of the expected rapid growth in coal demand.

The *2009-2018 Hunter Valley Corridor Capacity Strategy,* 2009 (the Strategy) is the fourth annual strategy by ARTC. It 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 means by which these capacity increases will be achieved variously includes by reducing train headways, reducing junction conflicts and by increasing capacity, either through re-signalling of the current infrastructure or by providing additional infrastructure.

The section of track at Nundah Bank is forecasted to become a constraint on the network by the fourth quarter of 2012. If this section is not upgraded, the 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 by ARTC at other locations in the Hunter Valley. In order to meet the expected export coal demand, the upgrade required at Nundah Bank needs to be completed by the third quarter of 2012.

Operational modelling has shown that the increased capacity cannot be achieved by re-signalling of the current infrastructure only. Therefore, triplication of the Main North Line at Nundah Bank is considered the only feasible means to achieve the desired increase in network capacity.

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

1.2. Overview of the proposal

The ARTC proposes to develop a new third track and associated infrastructure at Nundah Bank near Rix's Creek in the NSW Hunter Valley (the proposal). The proposal is located between the towns of Singleton and Camberwell approximately 245 kilometres north of Sydney by rail in the Upper Hunter 1 region of ARTC's NSW lease area (Refer Figure 1.1).

Key components of the proposal include:

- Approximately 4.26 kilometres of track on the Up side, turnouts, return curves and changes to Camberwell Mine Rail Junction;
- Approximately 54,000 cubic metres of earthworks including track formation, drainage and minor structures;
- New vehicular maintenance access tracks adjacent to the proposed third track on both the Up and Down sides;
- Upgrading the existing signalling system and installing signals on the new track;
- Bridge modification to existing Rix's Creek mine haul road rail overbridge; and
- Ancillary infrastructure such as temporary construction compounds, haul roads and stockpile sites.

A more detailed description of the proposal is provided in Section 3 of this document.

1.3. Purpose of structure of this report

This PEA has been prepared to support a major project application under Section 75E of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The PEA provides the following:

- An overview of the relevant planning legislation and approvals process (Section 2)
- A preliminary description of the proposal (Section 3);
- Outlines the findings of a project risk assessment and identifies (Sections 4 and 5);
- A proposed scope for the subsequent Environmental Assessment; and
- Facilitates the receipt of the Environmental Assessment Requirements from the Director-General of the Department of Planning under Section 75F(2) of the EP&A Act, including requirements from other agencies.

2. Planning and approvals process

This section provides a discussion of the relevant legislation, including Acts, environmental planning instruments, and provides discussion regarding the approvals process.

2.1. Environmental Planning and Assessment Act 1979

The EP&A Act and Environmental Planning and Assessment Regulation 2000 are the principal pieces of environmental legislation which provide for development planning and control in NSW.

The *State Environment Planning Policy Major Development,* 2005 (SEPP Major Development) identifies development and critical infrastructure to which development assessment and approval processes under Part 3A of the EP&A Act apply.

Under Schedule 1 Clause 23 of SEPP Major Development (refer below), developments for the purpose of rail and transport facilities that satisfy the following requirements are considered a development to which Part 3A of the EP&A Act applies:

"(1) Development that has a capital investment value of more than $30 million for the purpose of:

(a) Heavy railway lines associated with mining, extractive industries or other industry, or

(b) Railway freight facilities or inter-modal terminals."

The proposal is for heavy rail line which would be used to transport coal (in addition to other freight and passengers services) from various mines in the upper Hunter Valley to the port of Newcastle. The estimated capital investment value of the proposal is greater than $30 million and therefore, the Minister for Planning is the determining authority and the project must be assessed under Part 3A of the EP&A Act.

Part 3A of the EP&A Act has been drafted to apply to major and critical government infrastructure projects in NSW. Projects are either defined as major development under a State Environmental Planning Policy or declared as such by the Minister for Planning. Part 3A provides a separate, streamlined and integrated development assessment and approval regime for projects of State significance.

2.2. Statutory planning

2.2.1. Relevant state environment planning policies

State Environmental Planning Policy (Major Development) 2005
State Environmental Planning Policy (Major Development) 2005 (SEPP Major Development) indentifies development that is a critical or major infrastructure development under Part 3A of the EP&A Act. As discussed above, the proposal is considered to be a development that falls under SEPP Major Development and the project is required to be assessed in accordance with the requirements of Part 3A of the EP&A Act.

State Environmental Planning Policy (Infrastructure) 2007
State Environmental Planning Policy (Infrastructure) 2007 (SEPP Infrastructure) permits rail infrastructure to be carried out on behalf of a public authority without consent on any land (cl79). Therefore, the project is permissible.

As discussed above, the proposed development is considered to be major development under SEPP Major Development and as such an Environmental Assessment is required under Part 3A of the EP&A Act.

2.2.2. Local environment plans

The project is located within the Singleton Local Government Area (LGA). The local council planning instrument of relevance to the project is the Singleton Local Environmental Plan 1996 (SLEP).

The majority of the proposal is within the existing main northern railway corridor which is unzoned land. Other areas (adjacent to the railway corridor) included in the proposal are zoned 1(a) Rural. Development for the purposes of railways is permissible in that land use zone.

Clause 36 of the SLEP describes development that is not restricted or prohibited by SLEP, including railway undertakings. Accordingly, works associated with the proposed third track and associated infrastructure would be permissible under clause 36 on the unzoned land and in zone 1(a) Rural.

Notwithstanding the above, planning approval from Singleton Council is not required as the proposal is subject to assessment under Part 3A of the EP&A Act which prevails over the local planning instrument.

2.3. Mine Subsidence Compensation Act 1961

The proposal is within or closely adjoins land that is within the Patrick Plains Mine Subsidence District under the *Mine Subsidence Compensation Act*, 1961 and as such approval from the NSW Mine Subsidence Board is required to be sought under Section 15 of the *Mine Subsidence Compensation Act*, 1961.

2.4. Other State legislation

Other NSW legislation that may be relevant to the project includes the following:

- *Contaminated Land Management Act,* 1997;
- *Fisheries Management Act,* 1994;
- *Heritage Act,* 1977;
- *Land acquisition (Just Terms Compensation) Act,* 1991;
- *National Parks and Wildlife Act,* 1974;
- *Native title (New South Wales) Act,* 1994;
- *Native Vegetation Act,* 2003;
- *Noxious Weeds Act,* 1993;
- *Occupational Health and Safety Act,* 2000;
- *Protection of the Environment Operations Act,* 1997;
- *Roads Act,* 1993;
- *Rural Fires Act,* 1997;
- *Threatened Species Conservation Act,* 1995;
- *Waste Avoidance and Resource Recovery Act,* 2001;
- *Water Act,* 1912;
- *Water Management Act,* 2000; and
- *Hunter Regional Environmental Plan (Heritage),* 1989.

It should be noted that Part 3A of the EP&A Act (Section 75U) overrides the need for certain additional approvals/ permits/ licences/ authorisations under certain Acts (including some of those listed above). The extent to which this legislation applies to the project will be documented in the Environmental Assessment.

2.5. Commonwealth legislation

Environment Protection and Biodiversity Conservation Act 1999

The project has been examined in relation to the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). At this stage, it is considered unlikely to have a significant impact on any matters of national environmental significance, however this will be confirmed when more detailed studies are undertaken as part of the Environmental Assessment.

Native Title Act 1993

The *Native Title Act 1993* administers processes relating to the recognition, protection and determination of native title and dealings with native title land. Native title is concerned with the rights and interests of Aboriginal and Torres Strait Islander peoples in relation to land and water in Australia and its territories. The Act is administered by the Commonwealth Department of Environment, Water, Heritage and the Arts.

An online search of the Native Title Register held by the National Native Title Tribunal undertaken in January 2010 revealed that there are no active native title applications currently pending in Singleton local government areas.

2.6. ARTC Code of Practice

As the proposal is subject to Part 3A, Clauses 244D-J of Part 14 of the Environmental Planning and Assessment Regulation 2000 (Special Provisions relating to the ARTC) are not relevant. The ARTC *Code of Practice for Environmental Impact Assessment of Development Proposals in New South Wales* is made under those clauses is therefore not relevant to the proposal.

3. Description of the proposal

3.1. Key design and operational features

The proposed single (third) track would be located on the Up side and parallel to the existing Main North Line near Rix's Creek and spans approximately 4.26 kilometres from 245.25 kilometres to 249.5 kilometres. To the east and west of the proposal are Integral Coal and Rix's Creek coal mines. The location of the proposal is shown in Figure 4.0.

The proposal would require changes to the configuration of Camberwell junction and access to the Camberwell coal loop would be provided by a turnout from the existing up main and new third track.

New signalling infrastructure would also be constructed on the Down side of the track. This would involve trenching and laying conduits and pits all the way from chainages 245240 to at 251625. Walk-in huts and signal location cases would also be installed.

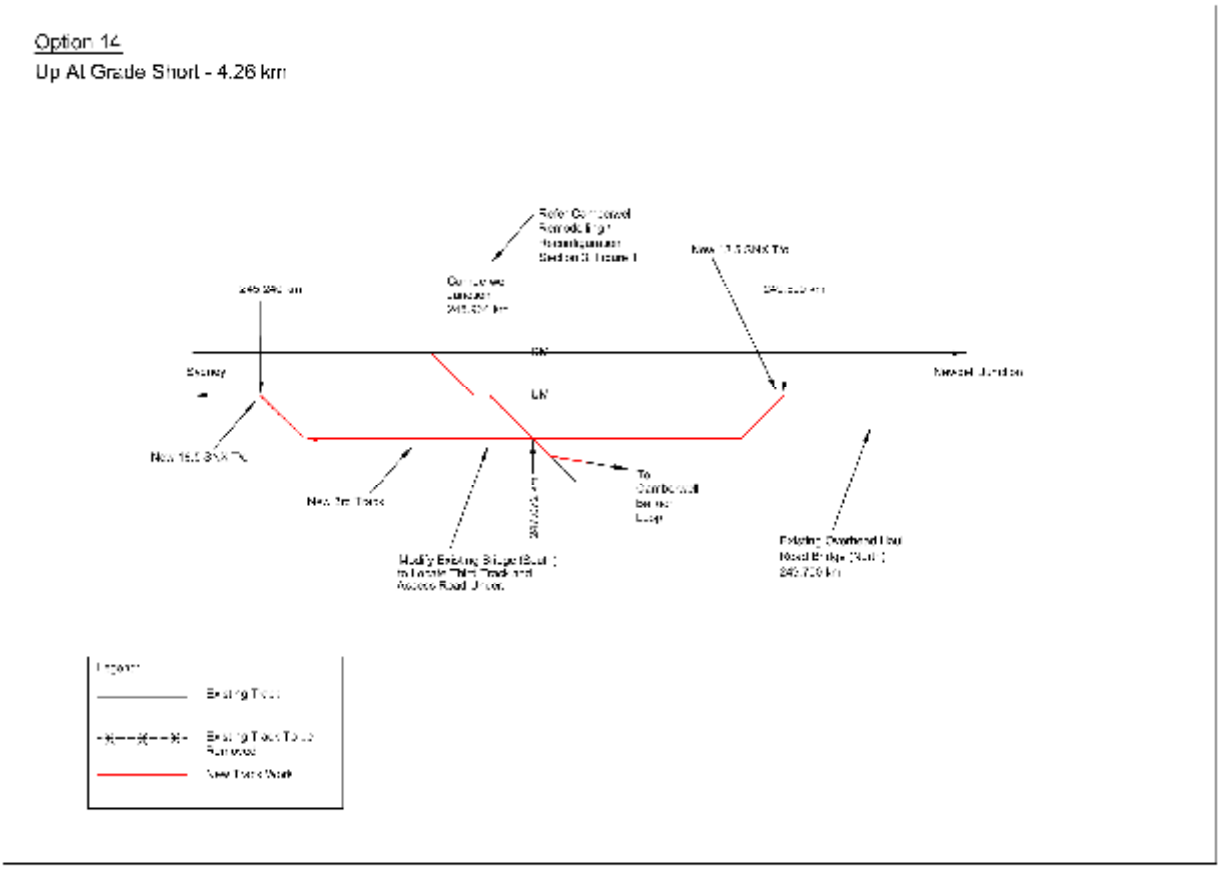
A road overbridge is located at approximately 246.87 kilometres which allows trucks to cross over the railway between the two adjacent coal mines. The eastern support of the overbridge would need to be modified to enable development of the proposed new third track and access road.

New vehicle access tracks will also be constructed on the outside of the new track on both the Up and Down sides to facilitate future access for inspection and maintenance activities.

The estimated capital cost of the proposal is approximately $44 million.

Figure 3.1 shows the proposed integration of the third track with the existing operational rail infrastructure.

Figure 3.1 Operational schematic of the Nundah Bank third track



3.2. Construction overview

3.2.1. Outline construction methodology

The construction period for the proposal would be approximately 16 months. The likely sequence and outline of key construction phases and activities would include:

Mobilisation

- Installation of environmental management controls as appropriate;
- Weed spraying / removal (if required);
- Establishment of site compounds and site accesses; and
- Services relocations (if required)

Earthworks

- Stripping of vegetation and topsoil;
- Bulk earthworks including movement of approximately 54,000 cubic metres of materials and associated stockpiles. The bulk of this material would be generated by the widening of existing cuttings within the project; and
- Grading.

Civil construction and trackwork

- Modification of overbridge and culvert extensions;
- Placement of ballast, laying of new track; and
- Trenching, erection and connection of signalling equipment.

Demobilisation and rehabilitation

- Demobilisation of site compounds, including the removal of stockpiles;
- Rehabilitation of excavated and filled areas; and
- Removal of erosion and sediment control devices.

3.2.2. Plant and equipment

Table 3.1 lists the anticipated construction plant and equipment to be used during construction.

Table 3.1 Construction plant and equipment

Plant		
Concrete truck	Generators	Tamping machine
Concrete vibrator	Pumps	Ballast regulator
Concrete pump	Front end loader	Rail cutting equipment
Cranes (various types and sizes)	Grader	Rail welding equipment
Hydraulic mobile crane	Vibratory roller	Rail grinder
Excavators (various sizes)	Semi trailer/tipper	‘Hi-rail’ vehicle
Backhoe	Dump truck	Bulldozer

3.2.3. Working hours and track possessions

Standard DECCW construction hours would be adopted - 7am to 6pm Monday to Friday and 8am to 1pm on Saturdays or were works are in audible at the nearest sensitive receiver. Work conducted outside of standard working hours would be undertaken in accordance with condition O3 of ARTC’s Environmental Protection License 3142 and may include delivery of oversized materials, safety critical works or works during rail possessions.

A number of scheduled track possessions would be required to facilitate connection of the new infrastructure to the existing. Other ARTC capital and maintenance works may also be undertaken during these possessions.

3.2.4. Ancillary facilities

A primary construction site compound would be established on ARTC land (or adjoining land) if necessary. A potential location is on land adjacent to the Middle Falbrook Road level crossing (north of the proposal) near chainage 251500. The compound would be predominantly used for the site office,

amenities and storage of minor equipment. Entry and exit to this compound would be via Middle Falbrook Road.

Secondary site compounds may also be required and would ideally be located near major construction works eg near the overbridge. Entry and exit to these sites would be further investigated as part of the concept design process and documented in the Environmental Assessment.

3.2.5. Public utility adjustment

No significant utilities adjustments have been identified at this time stage. Various electrical, signalling and drainage infrastructure owned by ARTC would be modified as part of the proposal.

3.2.6. Property acquisition

Construction of the proposal and associated infrastructure would require the partial strip acquisition of approximately 1.4 hectares of land on the Up side adjacent to the existing rail corridor. Approximately 15 properties have been identified as being affected and discussions will be conducted with landowners during the course of the Environmental Assessment.

Negotiations would also be held with other landowners for the temporary use of their land during construction eg for secondary site compounds, sediment control devices or other project requirements if required.

3.3. Options considered

The ARTC have developed and implemented a project management system (PP-157) which guides the staged development and approval of proposed infrastructure projects. The six main stages are as follows:

- Concept assessment
- Project feasibility
- Project assessment
- Project approval
- Project implementation (construction and commissioning)
- Project close-out

Environmental, engineering and economic considerations are integrated into every stage of the above process and a hold point and a number of levels of approval are required prior to progression to the next phase.

As referred to in Section 2.5, the ARTC Code of Practice also provides specific guidance on the environmental assessment requirements for various classes of projects which align with each of these project phases. Part 3A projects are not addressed by the Code as the environmental assessment requirements and processes are specified in legal statute.

The ARTC initially considered 18 options (including a do nothing option) to achieve the identified need and recently (2009) narrowed their consideration to four options for detailed operational modelling and environmental and economic analysis. The four shortlisted options achieve the primary objectives of the project which is to provide the forecast export capacity and minimise the capital expenditure. As part of this process KMH Environmental prepared an environmental overview of the options to assist with preferred option selection (KMH 2010).

The four options considered included:

- Option 10 – New at grade 4.26 kilometre single (third) track on the down side which would operate as a new down main. This option also requires conversion of the existing down main to up main and the existing up main to the up relief.
- Option 12 – New grade eased 3.66 kilometre double (third and fourth) track on the down side which would operate as the new down and up mains. The options also requires conversion of the existing down main to up main and the existing up relief to a spur line.
- Option 14 – New at grade 4.26 kilometre single (third) track on the up side.
- Option 16 – New grade eased 3.66 kilometre single (third) on the up side. The option would also require a tunnel underneath the Camberwell coal loop.

The key characteristics of the final four options are summarised in Table 3.2.

Table 3.2 Key characteristics of the four shortlisted options

Option	Track Position	Scope of Work	Comments/Issues
Option 10	Down side, Short length, At grade	• 4.26km new single track to Down side only. • 2 reverse curves at 245.240 and 248.900. • 1 new 18.5 swing nose crossing (SNX) turnout as a ladder into Camberwell Loop at 246.000 (approx). Two new 18.5 SNX turnouts (T/Os) and return curves. • Convert down main (DM) to up main (UM) and UM to up relief.	• Captial investiment cost - $37 million. • Steep gradients remain. Minimum train speed is 17km/h and risks locomotives stalling. • Operational conflicts also identified with the coal loop - slow departing trains from the loop cause delay on the main line. • No changes at Camberwell Junction. • Minimal earthworks. • Option to extend to 6.11km in future if improved headway is required. • Existing Down Main would require upgrade to become new Up Main. • South end haul road construction option. • Achieves all project objectives.
Option 12	Down Side, Short length, Grade Eased	• 3.66km of new double track on Down side only. • 3 reverse curves at 245.240, 248.700 and 248.900 respectively. • 1 new 18.5 SNX crossover at 244.580 and 3 new 18.5 SNX turnouts and return curves. • Convert DM to UM and UM to spur (bi-directional signalling).	• Captial investiment cost - $73 million. • Vertical grading satisfies operational requirements achieving a minimum train speed of 23km/h going up the hill at Camberwell. • No changes at Camberwell Junction. • Significant excavation earthworks required to achieve grading - approx 289,000m^3. • Option to extend in future. • Construction works would be easier to stage and a safer distance from the operating Up Main at the top of the bank. • Complex and therefore expensive signalling. • Achieves all project objectives.
Option 14	Up side Short length At grade	• 3.66km new single track to Up side. • 2 new 18.5 SNX turnouts and return curves at 245.240 and 248.900. • Changes at Camberwell Junction - 2 new 18.5 SNX crossovers and 2 x 18.5 SNX turnouts .	• Capital investiment cost - $44 million. • Steep gradients remain. Minimum train speed is 17km/h and risks locomotives stalling. • Possibility of reducing specification at Camberwell Junction – modelling required to determine minimum size of track components. • Minimal earthworks – 54,000m^3 • South end haul bridge option of new or modify. • Option to extend to the 6.11kms in the future if improved headway is required. • Achieves all project objectives.
Option 16	Up side, Short length, Grade eased	• 3.66km new single track on Up side. • 2 new 18.5 SNX turnouts and return curves at 245.240 and 248.900 • Grade separation with Camberwell Loop. New cut and cover tunnel or underbridge. • Constructability issues to be addressed.	• Capital investiment cost - $83 million. • Vertical grading satisfies operational requirements achieving a minimum train speed of 23km/h going up the hill at Camberwell. • Increased earthworks – approx 780,000m$^{3.}$ • Option to extend in future. • Large structure is required to cross the 3rd track under the coal loop arrival and departure roads. • Major hydrology issues regarding exisiting mine drainage and dam system affects. • Environmental and property impact is significantly higher than Option 14. • Construction works would be easier to stage and a safer distance from the operating Up Main at the top of the bank. • This option acheives the same capacity as Option 14 but with a substantially higher cost. • Achieves all project objectives.

Detailed operational modelling of the four shortlisted options was undertaken to confirm changes in train headways achieved as well as the overall capacity improvement provided. In conjunction with this, economic analysis of both capital and maintenance costs implications was provided as well as an

environmental overview of the area and impacts from the development. Following a multi-stakeholder workshop held in April 2010, Option 14 was selected as the preferred option based on:

- Achievement of the project objectives at lower capital cost;
- Reduced scope of civil, signalling and earthworks and overall less complexity;
- Reduced environmental and social impacts relative to Options 12 and 16; and
- It provides a brand new up main track.

An environmental risk assessment was subsequently conducted on the preferred option.

4. Preliminary environmental assessment

This section outlines the results of an environmental risk assessment of the proposal described in Section 3. The risk assessment includes a description of the existing environment, potential impacts as a result of the proposal, the proposed scope of any further assessment, identification of any required mitigation measures to reduce the potential impacts and the potential for residual impacts. Figure 4.0 presents the results of desktop research undertaken.

For the purpose of this PEA, the area considered includes the area of land that will be utilised by the proposal as well as any additional areas required for ancillary facilities e.g. site compounds, utility adjustments, etc. Those issues where further detailed investigations are considered necessary are identified and referred to as the key environmental issues for the project. Those other issues for which no further environmental assessment is considered necessary and are expected to be satisfactorily managed through the adoption of best practice or standard environmental mitigation measures are also documented in this section.

4.1. Key issues

4.1.1. Indigenous heritage

Existing environment

The traditional owners of the land covered by the Singleton LGA are the Wanaruah people. The land proposed to be occupied by the proposal includes predominantly land within the existing rail corridor and a small proportion of land adjacent to the corridor on its eastern side. The current uses of this land include for railway operations, agricultural activities and coal mining.

A search of the DECCW Aboriginal Heritage Information Management System (AHIMS) database was conducted in February 2010. The search identified 120 known indigenous heritage sites (mainly open campsites) recorded within one kilometre of the proposal, although none are within close proximity to the proposal. Figure 4.0 shows the location of these previously recorded sites.

Potential impacts

The land on which the proposal would be developed has been substantially modified and disturbed by previous infrastructure development, railway operations, and coal mining and agricultural activities. Nonetheless, the AHIMS search conducted identified a relatively large number of recorded sites. The absence of sites in the specific area of the proposal is not generally conclusive as to the potential level of impact which may result as the location of potential archaeological deposits and other indigenous objects, sites and places may be currently unknown. Unless more detailed investigations are carried out, the locations of these sites or objects may remain unknown and be inadvertently disturbed or destroyed during construction.

Proposed assessment methodology

An indigenous heritage assessment would be undertaken as part of the Environmental Assessment following consultation and identification of traditional land owners. The assessment would identify the presence of indigenous artefacts or places determine the significance of any potential impacts and where necessary, provide appropriate mitigation measures. The work would be guided by and adhere to the relevant NSW Government guidelines including the Department of Climate Change and Water's (DECCW) Interim Guidelines for Aboriginal Consultation and Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation.

The following key tasks would be undertaken as part of the assessment:

- Review the records of known Aboriginal heritage objects and places, including the results of the *AHIMS* database search;
- Identify Aboriginal stakeholders with an interest in the proposal;
- Undertake field investigations of the study area with an archaeologist and representative(s) of registered Aboriginal stakeholders; and
- Complete an impact assessment that identifies the significance of any impacts on Aboriginal objects or places and provides recommended mitigation measures.

Residual impacts

The indigenous heritage assessment is expected to make recommendations regarding the preservation and protection of any indigenous heritage places or objects identified which may be affected by the proposal. Typically, this is implemented through ongoing investigation and mitigation during the construction process. It is expected that any further investigations or activities which may be required will be identified in the mitigation measures specified in the assessment report and agreed with the Aboriginal stakeholder group and therefore there is not expected to be any residual impacts remaining.

4.1.2. Flora and fauna

Existing environment

The land to be used for the proposal is mostly cleared and highly disturbed and as a result supports very little mature vegetation. However, some vegetation remains within and in close proximity to the railway corridor. Dams are also located on adjoining properties in proximity to the rail corridor and would support a variety of native flora and fauna species that should be assessed for their contribution to biodiversity in the area.

A Commonwealth *Environment Protection and Biodiversity Conservation Act,* 1999 (Commonwealth EPBC Act) protected matters search identified the following resources present in the surrounding area:

- The Hunter Estuary Wetlands (of International Significance) which is approximately 70 kilometres from the site
- One threatened ecological community: White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland.
- The following 13 threatened species or their habitat are likely to occur on the land:

  Birds
  - *Anthochaera phrygia* Regent Honeyeater
  - *Lathamus discolor* Swift Parrot
  - *Rostratula australis* Australian Painted Snipe

  Frogs
  - *Litoria aurea* Green and Golden Bell Frog
  - *Litoria booroolongensis* Booroolong Frog

  Mammals
  - *Chalinolobus dwyeri* Large-eared Pied Bat, Large Pied Bat
  - *Dasyurus maculatus* maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)
  - *Nyctophilus timoriensis* (South-eastern form) Greater Long-eared Bat
  - *Petrogale penicillata* Brush-tailed Rock-wallaby
  - *Pteropus poliocephalus* Grey-headed Flying-fox

  Plants
  - *Diuris sheaffiana* Tricolour Diuris
  - *Eucalyptus glaucina* Slaty Red Gum
  - *Prasophyllum* sp. *Wybong* (C.Phelps ORG 5269) a leek-orchid

The DECCW Natural Resources Atlas of NSW identified 61 threatened fauna species and 21 threatened flora species in the Singleton LGA. The NSW Government's Bionet Database identifies 34 flora and 67 fauna threatened species listed in the Singleton LGA.

A preliminary site visit by an ecologist confirmed that there are some adjoining lands that support Iron Bark - Spotted Gum - Grey Box Forest which has a conservation status in NSW of Endangered Ecological Community. It is likely that the presence of these species are as a result of regrowth on previously cleared agricultural land or land that has been rehabilitated following mining.

Figures 4.3a and 4.3b show the known vegetation communities in the assessment area after Peake, TC, 2005.

Potential impacts

Clearing of native vegetation will be required within and adjacent to the existing railway corridor and the loss of this vegetation may impact on species, populations and ecological communities listed under the NSW *Threatened Species Conservation Act 1995* (TSC Act) and the Commonwealth EPBC Act. Potential temporary and permanent impacts and loss to fauna habitat may also result during both the construction and operation of the proposal. The risk of fauna fatalities may also be increased due to increased rail movements and the increased width of infrastructure needing to be crossed. Construction activities may also result in weed invasion that may contribute to the loss of biodiversity in the area. A noxious weed management plan would be required during the construction works and would be included as part of the Construction Environmental Management Plan (CEMP).

Proposed assessment methodology

The EA would include detailed investigations to assess the potential impacts on flora and fauna and to identify appropriate and specific mitigation and management measures.

Flora and fauna investigations would be undertaken in accordance with the *draft Guidelines for Threatened Species Assessment* (DEC 2005) and the *Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities (Working Draft)* (DEC 2004). Assessment would include:

- Literature review and database searches to identify threatened species, populations and ecological communities with potential to occur.
- Compilation of lists of species recorded on-site.
- Detailed flora and fauna surveys to identify and confirm the presence of flora and fauna features of the proposal. This would include targeted surveys of potentially occurring threatened species, fauna habitat survey and floristic survey of vegetation communities and descriptions of the vegetation communities and fauna habitats occurring on-site.
- An assessment of potential impacts during construction and operation including loss of native vegetation, loss of fauna habitat and proliferation of weeds.
- Significance assessments for all threatened species, populations and ecological communities following the heads of consideration and the draft *Guidelines for Threatened Species Assessment under Part 3A* (NPWS 2002) for listing under the TSC Act and the *EPBC Act Policy Statement 1.1 Significant Impact Guidelines* (DEC 2005).
- Preparation of assessments of significance for threatened species likely to occur on-site in accordance with Section 5A of the Environmental Planning and Assessment Act 1979.

Where Commonwealth-listed threatened species may be impacted, a referral under the Commonwealth EPBC Act would be required.

Residual impacts

The flora and fauna assessment is expected to make recommendations regarding the preservation and protection of any flora and fauna that may be identified and that may be affected by the proposal. Typically, this is implemented through ongoing investigation and mitigation during the construction process. It is expected that any further investigations or activities which may be required will be identified in the mitigation measures specified in the assessment report and therefore there is not expected to be any residual impacts remaining.

4.1.3. Noise and vibration

Existing environment

Existing mining operations and rail movements dominate the ambient noise environment. The closest sensitive receiver is approximately 770 metres to the east at Bridgman Road, Obanvale.

Baseline noise levels are estimated to be approximately 55 dB (day) based on attended and unattended monitoring for recent related ARTC projects on the Main North Line.

Vibration emissions from construction or operation at the closest receivers would not be measurable, being at distances of over 770 metres, and therefore no further consideration of either construction or operational vibration is proposed to be undertaken.

Potential impacts

Construction and operational noise emissions may be sustained at nearby sensitive receivers as a result of the project. As mentioned above, vibration emissions will not be observable at sensitive receivers and are not a potential source of impact.

Proposed assessment methodology

An assessment of the potential impact of construction and operational noise associated with the proposal would need to be included in the EA.

The following main tasks would be undertaken as part of the assessment:

- Review aerial photography to identify key sensitive receptors and catchment areas.
- Undertake a site visit to identify appropriate noise monitoring locations and establish the appropriate duration for monitoring.
- Undertake unattended monitoring for a period of 1 week to determine existing rail and ambient noise levels.
- Undertake attended measurements at the unattended logging locations to supplement the unattended measurements and determine pass-by rail noise levels.
- Assess noise data and remove invalid data due to extraneous noise or adverse weather conditions.
- Based on monitoring results, establish project specific noise goals for the construction and operation of the Proposal with consideration to the following:
  - DECCW's Interim Guideline for the Assessment of Noise from Rail Infrastructure Projects (IGANRIP)(2007);
  - Draft Construction Noise Guideline (2008);
- Identify the noise sources during construction and operation and their potential impacts on sensitive receptors.
- Undertake noise-modelling scenarios for the following situations using Computer Aided Noise Abatement (CadnaA) software to predict sound pressure levels emanating from the proposal:
  - Existing situation;
  - Track construction;
  - Operations at commencement date;
  - Operations 10 years after commencement date.
- Prepare a report detailing the results of the noise monitoring and impact assessment including:
  - A brief description of the ambient noise environment;
  - A brief description of construction equipment likely to emit noise;
  - Identification of noise sensitive receivers;
  - Charts of the noise parameters including, Lmax, LA10, LA90, and LAeq for the unattended noise monitoring;
  - Details of noise of pass-by measurements;
  - Discussion of the noise impact and modelling assessment results with relation to the adopted noise goals;
  - Discussion of potential in-principle noise mitigation measures if the assessment suggests that project specific noise goals may be exceeded.

Residual impacts

There will be no vibration impacts during the construction or operation of the proposal. Noise emissions during construction may be audible but are predicted to comply with goal levels of the ICNG. Standard construction noise mitigation measures will be specified in the environmental assessment and implemented during the construction process to reduce temporary impacts.

Where a residual increase in operational noise is predicted, mitigation measures will be identified and specified in the environmental assessment.

4.2. Other issues

4.2.1. Hydrology

Existing environment

Nundah Bank is located within the lower section of the Hunter River Catchment. The Hunter River is located approximately three kilometres south east of the proposal, in the town centre of Singleton. Glennies Creek is located one kilometre north-west of the proposal and flows south towards the Hunter River. No significant waterways or tributaries are located adjacent to the site.

Potential impacts

Preliminary investigations and the surrounding topography indicate that the proposed works are not located within a declared floodplain and the proposal is not expected to have an impact on flooding in the area.

Existing culverts under the railway would be extended where necessary to allow the natural discharge of water and design investigations conducted to ensure the necessary capacity is provided.

Mitigation and management

Surface water runoff volumes and hydraulic capacity of existing culverts would be investigated as part of the concept and detailed design processes and the necessary infrastructure put in place to ensure no ponding of water occurs at the railway.

Any necessary measures to control or direct water runoff would confirm with the relevant Australian or design standards and be incorporated into the design of the project. Measures concerning protection of water quality are addressed in Section 4.2.7.

4.2.2. Planning, land use and property

Existing environment

The majority of the proposal lies within the existing Main Northern Railway corridor which is unzoned land under the Singleton Local Environmental Plan 1996 (SLEP). Areas directly adjacent to the railway corridor and may need to be acquired to implement the proposal are used for mining and agricultural purposes. These areas are zoned 1(a) Rural under the SLEP.

Potential impacts

It is anticipated that approximately 14,000 square metres of land adjoining the railway may need to be permanently acquired. Additional temporary land leases may also be required for other compound sites or environmental management measures.

Mitigation and management

Any land permanently acquired for the proposal would be conducted in accordance with the Land Acquisition (Just Terms Compensation) Act, 1991 if direct negotiations with the land owners are not successful.

Where possible, temporary lease areas would be identified in the Environmental Assessment or criteria used to guide future site selection provided.

A full property search and list of all affected landowners would be compiled and included in the EA and land owners consulted as part of the EA consultation process.

4.2.3. Non-indigenous heritage

Existing environment

Register searches were conducted and there were no Federal or NSW Heritage items identified within the proposal footprint. There is a property listed as a locally significant item, titled “Dulwich” which is located approximately 340 metres west of the Camberwell level crossing. The level crossing is located

at approximately chainage 251.500 kilometres and is 2 kilometres north of the proposed new tracks. Some signalling works will be required near the level crossing as part of the proposal. Given the minor nature of the signalling works at that location and the distance of the proposal as a whole, this item is unlikely to be directly or indirectly affected by the proposal.

Located approximately 4 kilometres from the proposal is a State significant item listed under the NSW Heritage Act 1977, i.e. Middle Falbrook Road Bridge over Glennies Creek. The bridge was built in 1904 by Ernest DeBurgh and is owned by the NSW RTA. The bridge is of timber truss construction and has been listed on the basis of both its technical and historical significance.

Potential impacts

Direct or indirect disturbance to items of heritage significance during construction or operation is possible given the results of searches already undertaken and the remoteness of identified receivers. Updated register searches would be undertaken and documented in the EA and correlated with the observations during site inspections.

Any proposal to use the Middle Falbrook Road bridge for other than normal vehicular traffic would be investigated in further detail along with consultation with its owners and the results documented in the EA. Any necessary precautionary measures would be documented in the Statement of Commitments.

Mitigation and management

The Heritage Act includes precautions and stop work provisions where items of heritage significance are uncovered as part of the construction process. Where necessary for any identified sites, dilapidation surveys may be carried prior to and following construction. Vibration monitoring may also be necessary during construction activities for these structures.

4.2.4. Contaminated land and hazardous materials

Existing environment

There are no contamination notices for the site or surrounding areas in DECCW's Contaminated Land Record. No signal huts or other trackside structures are proposed to be altered or demolished as part of the works. However, the potential for contaminated land to exist within the rail corridor is high as a result of past and present industrial activities.

Stockpiles of ballast have been observed throughout the corridor and a collection of empty plastic oil or fuel containers were noticed south of Camberwell Junction within the rail corridor (at chainage approximately chainage 247.000).

Potential impacts

It is possible there are residual contaminants in railway ballast materials and soils within and adjacent to the railway from railway operations and maintenance activities and from other sources such as the storage and use of pesticides; storage and fuelling of machinery and the use of asbestos cement pipes in irrigation. These may present a hazard to construction workers or others through dermal (skin) contact, ingestion and inhalation.

Mitigation and management

If it is proposed to remove any railway ballast or soils from the rail corridor, samples would be taken to establish the level of contamination that exists and the suitability of the material for off-site use or disposal. Sampling would be undertaken in accordance with DECCW's Guidelines for Consultants Reporting on Contaminated Material and classified in accordance with DECCW's Waste Classification Guidelines.

A risk assessment would be included in the CEMP and be undertaken by the contractor prior to works commencing. This would include contingency events, the outcomes of any contamination investigations undertaken as well as a general watching brief to be undertaken by workers. The use of personal protective equipment to be worn by workers would also reduce potential exposure concerns.

4.2.5. Traffic management

Existing environment

The surrounding regional and local road network includes the New England Highway and includes the following local roads:

- Middle Falbrook Road;
- Rix's Creek Lane;
- Bridgman Road; and
- Nobles Lane.

An existing access track enables vehicle access (as well as maintenance works and inspections) on the eastern (Up) side of the existing line from the north at Middle Falbrook Road at the Camberwell level crossing to the very south at the New England Highway. The very southern part of the rail access road runs past houses in Singleton Heights, between noise barriers and the existing tracks. Due to sightlines to and from the highway to the start of the access track in that location, the speed limit for vehicles on the highway at that point (80 kilometres per hour) and proximity of houses, the southern portion of the access track is not being considered for use as part of the proposal.

Potential impacts

Construction traffic would be generated which would include heavy vehicles transporting ballast, railway sleepers, concrete and other construction materials and supplies.

It is likely that construction traffic would utilise the New England Highway and the identified local roads.

Investigations are currently being carried out in relation to achieving access via unmade roads off Rix's Creek Lane, from other unmade roads in the area, over private property and through the mines. The location and construction of access roads would be included in the scope of the EA (including safety considerations).

Mitigation and management

The EA will document the likely haulage routes to be used and any upgrade of local roads required as well as confirm the likely haulage volumes and period within which haulage will be undertaken. Local road conditions will be assessed as part of the concept and detailed design process to ensure that safety is maintained. Any road intersection or infrastructure upgrades required would be determined as part of this process.

The RTA and other infrastructure owners would be consulted as part of the EA. Road dilapidation inspections would be undertaken prior to and following construction with any change in conditions beyond normal wear and tear rectified at the contractors cost. Any other infrastructure damage would also be captured as part of this process. Any rectification works would be conducted in accordance with the relevant asset owners' standards.

4.2.6. Visual

Existing environment

The existing amenity reflects both rural, mining and railway infrastructure activities and the railway is a dominant feature only at close distance. Some of the adjoining land has been rehabilitated following mining and has the appearance of rural holdings with scattered vegetation. Other dominant visual elements include active mining areas including haul roads and pits, coal stockpiles and infrastructure areas, coal rail loading facilities, the Camberwell Rail loop and various sediment ponds.

The proposed works are unlikely to result in a significant impact on the visual amenity of the area. The majority of the proposed works are located within the existing rail corridor or adjoining the rail corridor between rural holdings and coal mining activities. Being proposed immediately adjacent to the existing rail infrastructure, the proposal would appear to be part of that infrastructure.

Temporary visual impacts may result from the construction works/compounds. These impacts would be temporary and likely to be minor unless the removal of trees and other vegetation is undertaken.

Potential impacts

The proposed works are unlikely to result in a substantial change to the visual amenity of the area. The majority of the proposed works are located within the existing rail corridor or adjoining the rail corridor between private land holdings and coal mining activities and would be similar to existing infrastructure with the majority of views being mid to far-field.

Temporary visual impacts may result from the construction works/ compounds and other construction facilities used. Clearing of native vegetation may add to the perception of visual changes. These changes would be temporary however as the land would be rehabilitated at the conclusion of construction and more gradually over time.

Mitigation and management

The mitigation measures to reduce potential adverse visual impacts will centre upon progressive stabilisation/ rehabilitation of areas as soon as is practical.

4.2.7. Topography, geology and soils

Existing environment

The land lies within an area of undulating topography that has been extensively cleared for grazing. The topography to the east, south and west of the site has been substantially modified by former and current coal mining activities including rehabilitated areas. There are a number of substantial water quality management features in the northern portion of the proposed works area.

The DECCW Natural Resources Atlas indicates that the land is underlain by Quaternary Alluvium and Singleton Coal Measures. The site contains three main soil groups including alluvial soils, yellow podzollic solids and soloths/solodics.

The DECCW Natural Resources Atlas and the CSIRO ASRIS application indicates there is a low possibility of acid sulphate soils occurring in this area.

Potential impacts

The proposed works would not result in any change to the local area topography. Various railway cuttings would need to be widened and some areas filled or cut to ensure the third track and access roads are at a similar grade as railway infrastructure, although overall no major earthworks are required.

Clearance of vegetation and disturbance of soils has the potential to result in erosion and sedimentation unless measures are implemented to protect receiving waterways.

It is not anticipated that there would be any interaction with groundwater due to the limited earthworks proposed; although depending upon the modifications required to the overbridge, some foundation work may need to be conducted resulting in localised deep excavation.

Mitigation and management

Precautions would need to be adopted during construction works to ensure pollution does not enter waterways and drainage is not obstructed. The EA will include commitments to control potential erosion and sedimentation with reference to the NSW Department of Housing Blue Book and as far as possible identify the need for and location of temporary and permanent water quality control structures, if required.

The mitigation measures will also address the risks posed by spillage of fuels and chemicals during construction.

4.2.8. Air quality

Existing environment

The proposal is located adjoining open cut coal mines, a working railway and agricultural lands. Key characteristics of local air quality are likely to be elevated levels of dust arising from these sources.

Potential impacts

Dust would be generated by construction works particularly bulk earthworks and the movement of construction vehicles on unsealed roads or roads overlain with silt or dirt. Emissions from diesel locomotives would also increase as a result of commissioning and the future growth in rail traffic, although given the remoteness of sensitive receivers, no exceedances of criteria or changes in air quality are expected to be observable.

Mitigation and management

Construction dust emissions would be controlled through the application of standard mitigation measures such as covering all loads, ensuring roads are routinely swept (if sealed) or construction roads are liberally watered to reduce dust. All mitigation measures proposed would be included in the Statement of Commitments.

4.2.9. Waste minimisation

Potential impacts

The majority of waste would be generated during the construction phase. The *Waste Avoidance and Resource Recovery Act*, 2001, the *Protection of the Environment Operations Act*, 1997 and relevant regulations and industry guidelines would be used to classify, determine measures for handling, determine storage requirements and appropriate disposal options.

Mitigation and management

Mitigation measures included in the EA would include the preparation of a Waste Management Plan as part of the CEMP with a focus on waste reduction and avoidance and recycling and reuse of construction packaging and office wastes.

4.2.10. Energy efficiency and greenhouse gases

Potential impacts

Greenhouse gas (GHG) emissions would be generated during the construction phase associated with the combustion of fossil fuels in both stationary and mobile construction plant, equipment and vehicles and clearance of vegetation. Additionally, electricity used in offices is another source of greenhouse gas emissions. Embodied energy in construction materials used would also generate increased greenhouse gas emissions.

It is anticipated that the proposal could improve the efficiency of coal and passenger train movements, and reduce waiting (idling) times, however the increase in train movements made possible by the construction of the third track has the potential to increase fuel demand and GHG emissions overall.

Mitigation and management

A GHG emissions inventory and estimate for both the construction and operational phases of the project would be prepared. Opportunities to reduce GHG emissions during both construction and operational phases would be included in the EA.

4.2.11. Social impact

Potential impacts

The proposal would result in a long term, economic benefit in relation to the increased capacity and efficiency of passenger and freight movements (particularly coal) on the Main North Line. The construction of the proposal would also result in direct employment opportunities for socially disadvantaged groups and benefit local and regional service providers.
Temporary social impacts may be sustained during the construction phase as a result of disruption of access, interruption of train services (during rail possessions), land acquisition and increased traffic movements.

Mitigation and management

The EA would document the potential social benefits and impacts of the project and measures to enhance the benefits, where possible.

4.2.12. Cumulative impacts

Potential impacts

Cumulative impacts may occur where issues of a particular nature arise at multiple sites. ARTC are undertaking a number of concurrent upgrades along the Main North Line. There are likely to be cumulative negative impacts during the construction of these improvements such as ecological and social impacts which will be documented.

The same works would also be expected to result in significant cumulative benefits for the future operation of the Main North Line through increased capacity, reduced travel times for freight and improved network flexibility.

Mitigation and management

The EA will present the spatial and temporal environmental effects from the upgrade program and where possible, mitigation measures will be identified in the Statement of Commitments.

5. Stakeholder consultation

A community consultation and stakeholder engagement plan would be developed and implemented for the proposal to identify key objectives and outcomes of consultation activities with the community, stakeholders and government agencies. Community and stakeholder engagement would commence prior to and during the preparation of the EA in order that all issues are detailed and considered. This will ensure that stakeholder requirements are accurately captured and considered in the detailed design and mitigation measures.

ARTC propose to undertake an appropriate level of consultation with relevant communities and stakeholders including:

- Department of Planning (including the Hunter Regional Office);
- Department of Environment, Climate Change and Water;
- Roads and Traffic Authority;
- Industry & Investment NSW;
- Hunter Central Rivers Catchment Management Authority;
- Department of Infrastructure and Investment (specifically the Coal Advisory Board);
- Mine Subsidence Board;
- Department of Environment, Water, Heritage and the Arts (Commonwealth);
- Service and infrastructure providers including Railcorp and Rail Infrastructure Australia;
- Special interest groups including the Local Aboriginal Land Council and Aboriginal stakeholder groups;
- Singleton Council;
- Business Interest Groups;
- Transport and Emergency Services;
- The community, including all potentially effect landowners; and
- Affected landowners and businesses including Integra Coal and Rix's Creek coal mines.

Consultation requirements for the proposal would be outlined in the EA requirements provided by the Director-General of the DoP. The above list is preliminary. Should any additional stakeholders become apparent during the preparation of the EA, appropriate consultation would be undertaken and documented within the EA.

To ensure an appropriate level of consultation, the community consultation and stakeholder engagement plan will include the following:

- Confirmation of the aims of community consultation for the EA as required by the DoP per the Director General's Requirements;
- Identification of affected stakeholders;
- Outline the activities and techniques proposed to effectively engage the community and stakeholders to raise awareness and identify issues; and
- Establishment the scope and responsibility for consultation with the stakeholders from within the project team.
- A planning focus meeting (if required).
- Provision of a website, email address and telephone information line for enquiries.
- Letter to stakeholders introducing the project and providing details regarding the provision of the website, email address and telephone information line for enquiries.
- Continued liaison with stakeholders.
- Consultation including one on one meetings with impacted owners and key stakeholders.

All consultation materials prepared by UHVA will provide accurate and timely information on the proposal's objectives and construction activities, with a view to maintaining stakeholder and community confidence during all phases of the proposal.

6. Environmental Assessment Report

The DoP will require that the EA report will have a structure similar to the following:

- An Executive Summary
- A review of the relevant NSW and Commonwealth legislation and approvals
- An outline of the options assessment process undertaken
- A detailed description of the project which includes:
    - route alignment and corridor investigated
    - key design elements
    - construction methods and outline program
    - description of ancillary facilities
    - outline of land requirements
- An assessment of the key environmental and community issues including description of the existing environment, methodology and approach, standards and guidelines adopted, an assessment of impacts resulting from both construction and operation of the proposal (as relevant) and a description of the measures to avoid, reduce, manage and monitor expected impacts and residual impacts
- An updated environmental risk assessment
- A draft statement of commitments
- Certification by the author that the information contained in the EA is neither false or misleading
- Appendices which contain detailed information relevant to the EA including specialist studies reports.

References

Australian Rail Track Corporation, *Code of Practice for Environmental Impact Assessment of Development Proposals in NSW.*

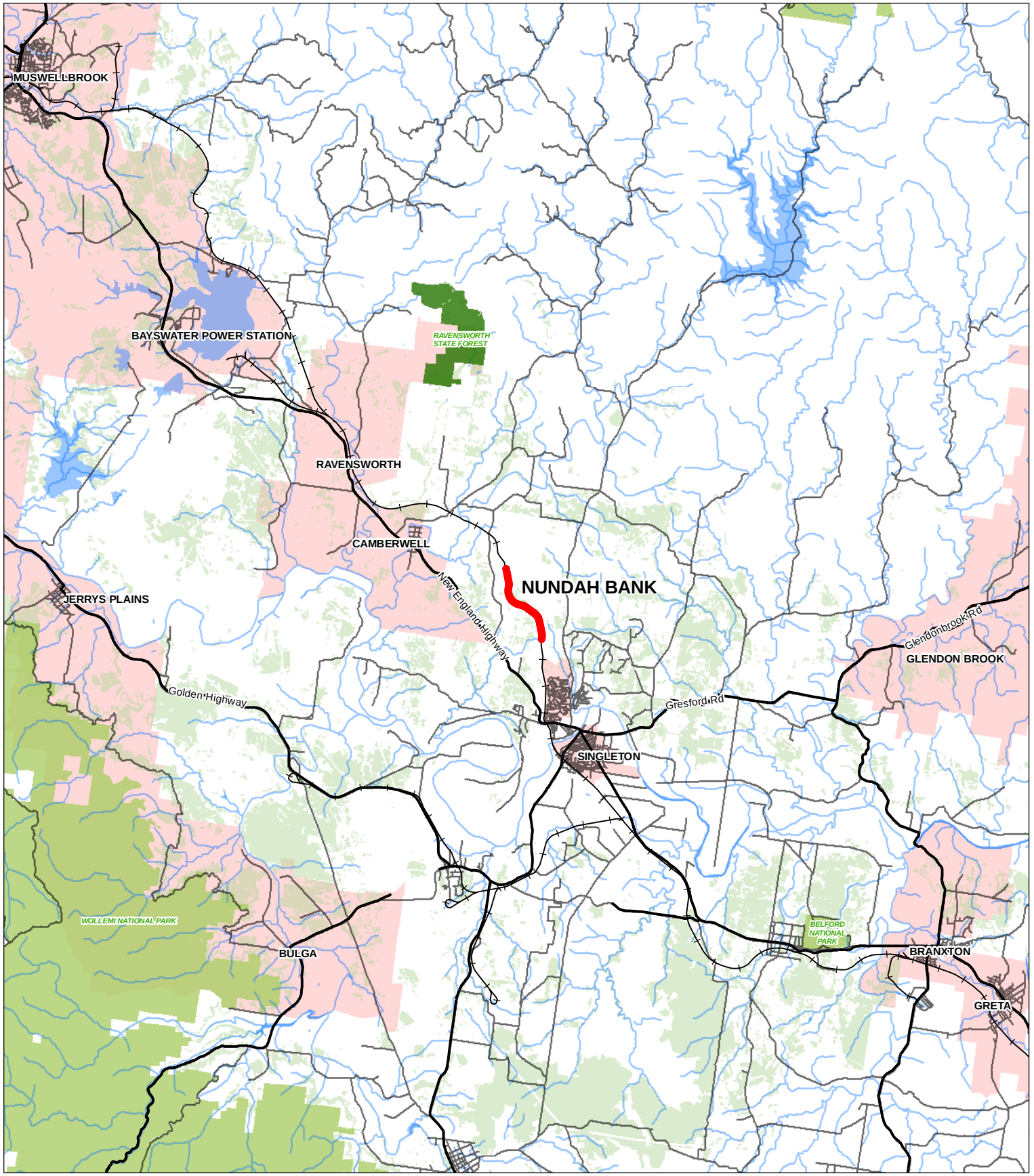
Australian Rail Track Corporation, 2009, *The 2009-2018 Hunter Valley Corridor Capacity Strategy.*

Australian Rail Track Corporation, March 2010, *Nundah Bank – Detail Submission Concept Assessment Report.*

KMH Environmental, 2010, *Nundah Bank – Environmental Overview.*

Peake, TC 2005, *The Vegetation of the Central Hunter Valley, New South Wales. A report on the findings of the Hunter remnant vegetation project. Final Draft Version 1*, Hunter - Central Rivers Catchment Management Authority, Paterson.

SKM, July 2009, *Nundah Bank Concept Assessment Report.*



Indicative Third Track
Main Roads
Major Roads
Rail Lines
National Park
State Forest
Forest or Shrub
Water course
Watercourse Areas
Built Up Areas

A4 Original

0 2.5 5 10

Kilometers

GDA 1994 MGA Zone 56

N

UHVA

ARTC

ARTC
Nundah Bank

Job Number	2110501A
Revision	A
Date	20.05.2010
Scale	1:250,000

Locality Plan

Figure 1.1

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A3 Original

0 0.25 0.5 1

Kilometers

GDA 1994 MGA Zone 56

Vegetation Communites

- Central Hunter Box - Ironbark Woodland
- Central Hunter Bulloak Forest Regeneration
- Central Hunter Ironbark - Spotted Gum - Grey Box Forest
- Central Hunter Swamp Oak Forest
- Hunter Valley River Oak Forest

Known Indigenous Sites

- Artefact Scatter
- Isolated Artefact
- Site Destroyed

UHVA

ARTC

ARTC
Nundah Bank

Job Number	2110501A
Revision	A
Date	25.05.2010
Scale	1:20,000

Key Enviromental Features Figure 4.0

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A3 Original

0 50 100 200

Meters

GDA 1994 MGA Zone 56

Known Indigenous Sites

Site Destroyed

ARTC
Nundah Bank
Heritage Assessment

Job Number	2110501A
Revision	A
Date	25.05.2010
Scale	1:6,000

Known Indigenous Sites Figure 4.1a

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To Camberwell

To Singleton

Adjoins Figure 4.1a

Indicative Third Track

Existing Alignment

Cadastre

A3 Original

0 50 100 200

Meters

GDA 1994 MGA Zone 56

N

Known Indigenous Sites

Site Destroyed

ARTC
Nundah Bank
Heritage Assessment

Job Number	2110501A
Revision	A
Date	25.05.2010
Scale	1:6,000

Known Indigenous Sites Figure 4.1b

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A3 Original

0 50 100 200

Meters

GDA 1994 MGA Zone 56

Vegetation Communites

- Central Hunter Ironbark - Spotted Gum - Grey Box Forest

UHVA ARTC

ARTC
Nundah Bank
Ecology Assessment

Job Number	2110501A
Revision	A
Date	25.05.2010
Scale	1:6,000

Vegetation Communites Figure 4.3a

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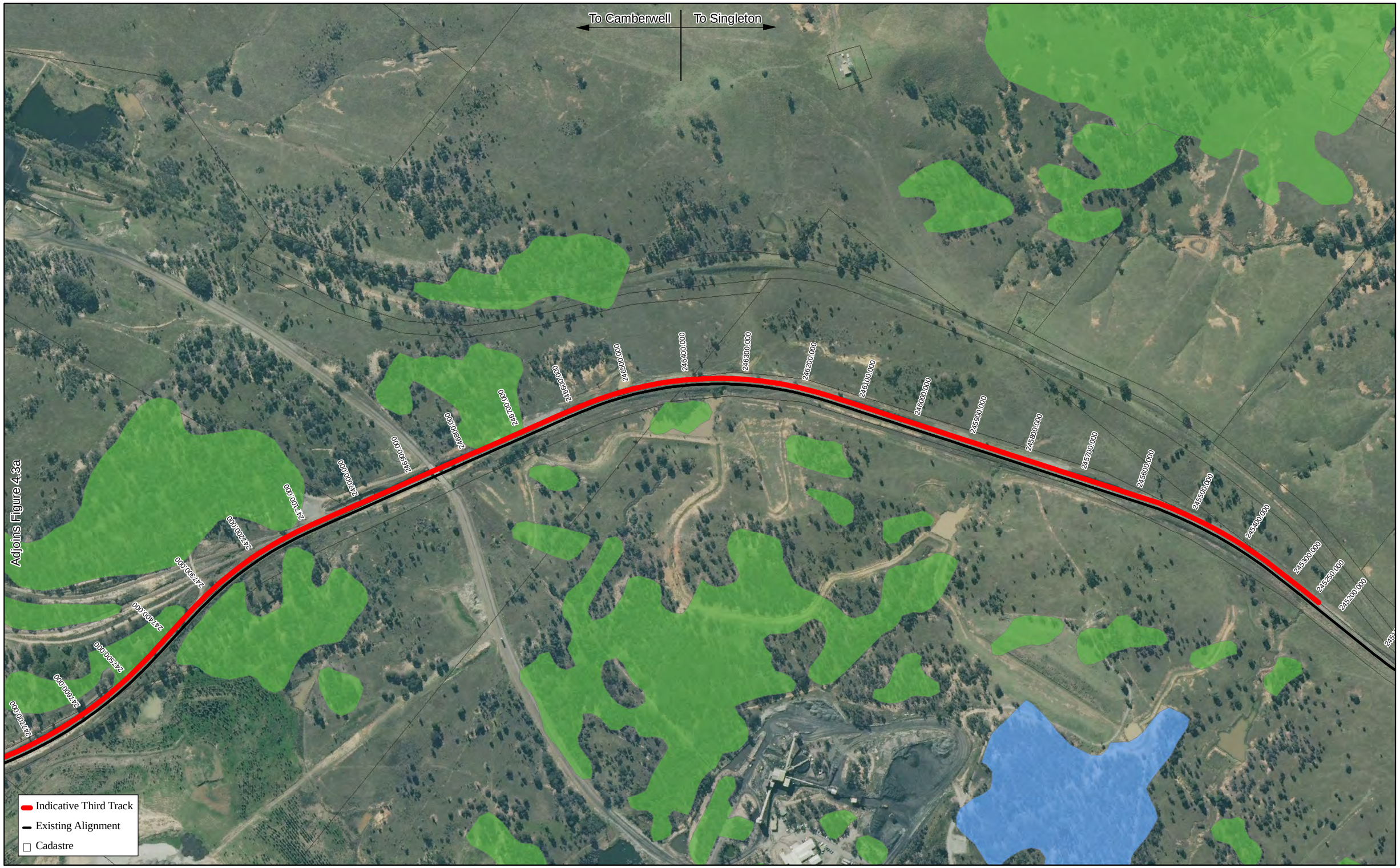

A3 Original

0 50 100 200

Meters

GDA 1994 MGA Zone 56

Vegetation Communites

- Central Hunter Box - Ironbark Woodland
- Central Hunter Ironbark - Spotted Gum - Grey Box Forest

ARTC
Nundah Bank
Ecology Assessment

Job Number	2110501A
Revision	A
Date	25.05.2010
Scale	1:6,000

Vegetation Communites Figure 4.3b

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