



Planning

**MAJOR PROJECT ASSESSMENT:
Maitland to Minimbah Third Track
(MP 09_0024)**



Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

December 2010

ABBREVIATIONS

CIV	Capital Investment Value
Department	Department of Planning
DGRs	Director-General's Requirements
Director-General	Director-General of the Department of Planning
DSEWPC	(Commonwealth) Department of Sustainability, Environment, Water, Population and Communities
EA	Environmental Assessment
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPBC Act	<i>Environmental Protection and Biodiversity Conservation Act 1999</i>
EPI	Environmental Planning Instrument
EPL	Environmental Protection Licence
ESD	Ecologically Sustainable Development
Infrastructure SEPP	<i>State Environmental Planning Policy (Infrastructure) 2007</i>
MD SEPP	<i>State Environmental Planning Policy (Major Development) 2005</i>
Minister	Minister for Planning
Part 3A	Part 3A of the <i>Environmental Planning and Assessment Act 1979</i>
PEA	Preliminary Environmental Assessment
PFM	Planning Focus Meeting
PPR	Preferred Project Report
Proponent	Australian Rail Track Corporation
The Project	Maitland to Minimbah Third Track Project

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EXECUTIVE SUMMARY

The Australian Rail Track Corporation (ARTC) has sought project approval for the construction and operation of a third rail line adjacent to the existing Main Northern Railway, between Maitland and Minimbah. The proposed rail line is approximately 30 kilometres in length and is located within the Singleton, Cessnock and Maitland Local Government Areas in the Hunter Valley.

Currently, there is substantial pressure on the Hunter Valley Rail Network, with bottlenecks constraining the efficient operation of the rail network. Additionally, due to the forecast increase in coal throughput at the Port of Newcastle, ARTC has proposed a number of improvements to the Hunter Valley Rail Network. This includes a proposed third track between Maitland and Whittingham, incorporating the approved Minimbah Bank section and the Maitland to Minimbah section subject to the current Project Approval. The primary objectives of the project are to provide network capacity ahead of coal industry demand, minimise maintenance impacts on the operation of the network, reduce headways from ten to eight minutes, and to have no impact on mainline operations.

The project is consistent with the priorities of the *NSW State Plan 2006*, and the directions of the *Lower Hunter Regional Strategy 2006-2031*. Rail is considered the most effective means of long distance transport of coal in Australia and, therefore, the preferred option for transportation of coal in the Hunter Valley.

Following a detailed assessment of the Proponent's Environmental Assessment and Submissions and Preferred Project Report, and the submissions received during the exhibition period for the project, the Department has identified the project's key issues as:

- noise, vibration and blasting impacts;
- biodiversity;
- non-Aboriginal and Aboriginal heritage;
- construction traffic and transport; and
- air quality.

These issues were particularly reflected within the 54 submissions received from State Government agencies, local councils, and the local community during the exhibition of the Environmental Assessment between Wednesday 9 June 2010 and Monday 12 July 2010.

Potential impacts have been addressed through the design of the project and further design refinements proposed. There is also an appropriate level of reliance on management and mitigation measures to minimise the impact and disruption to the community. This is reflected within the recommended conditions of approval and the Proponent's statement of commitments.

The Department acknowledges that there will be residual impacts on the environment and local community, particularly with respect to the impacts on the noise environment in the vicinity of the corridor. However, the Department considers that these impacts are acceptable and that the recommended conditions of approval for the project would provide for the mitigation and management of key impacts associated with the project.

Consequently, the Department recommends that the Minister for Planning approve the Maitland to Minimbah Bank Third Track project subject to the recommended conditions of approval.

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1 BACKGROUND

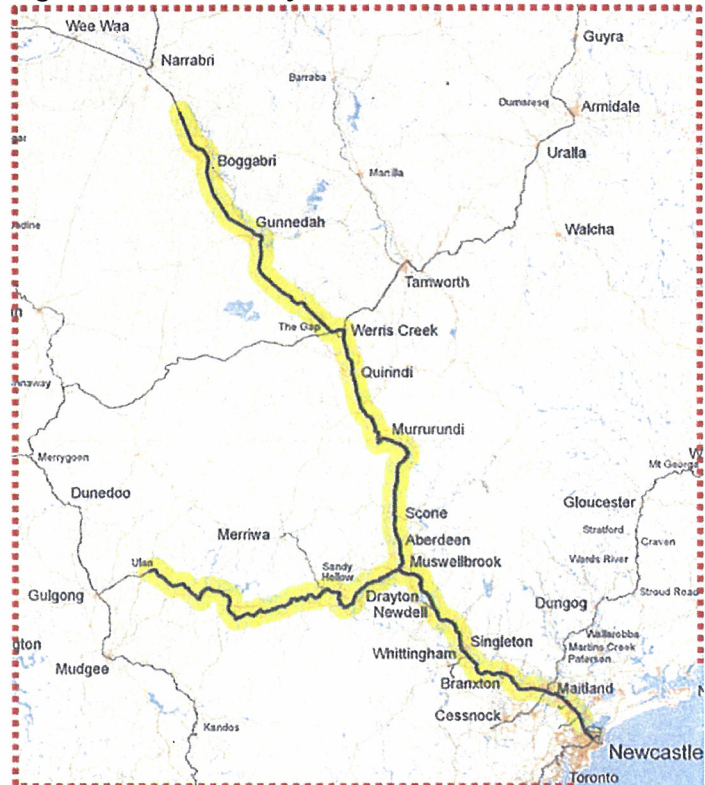
1.1 Project Background

On 5 September 2004, the Australian Rail Track Corporation (ARTC) commenced a 60 year lease of the interstate and Hunter Valley Rail Network in NSW. ARTC is a Commonwealth Agency which manages approximately 10,000 kilometres of standard gauge interstate track, in South Australia, Queensland, Victoria, Western Australia, and New South Wales.

The Hunter Valley Rail Network extends broadly from the Port of Newcastle north to Narrabri, and from Muswellbrook west to Ulan (refer to Figure 1).

Due to the forecast increase in coal throughput at the Port of Newcastle, ARTC have proposed a number of improvements to the Hunter Valley Rail Network. One of the key improvement projects included in the ARTC ten-year strategic plan is a proposed third track adjacent to the existing Main Northern Railway between Maitland and Whittingham. The Maitland to Whittingham Third Track Project was announced as part of the Government's Nation Building package in November 2008.

Figure 1: Hunter Valley Rail Network



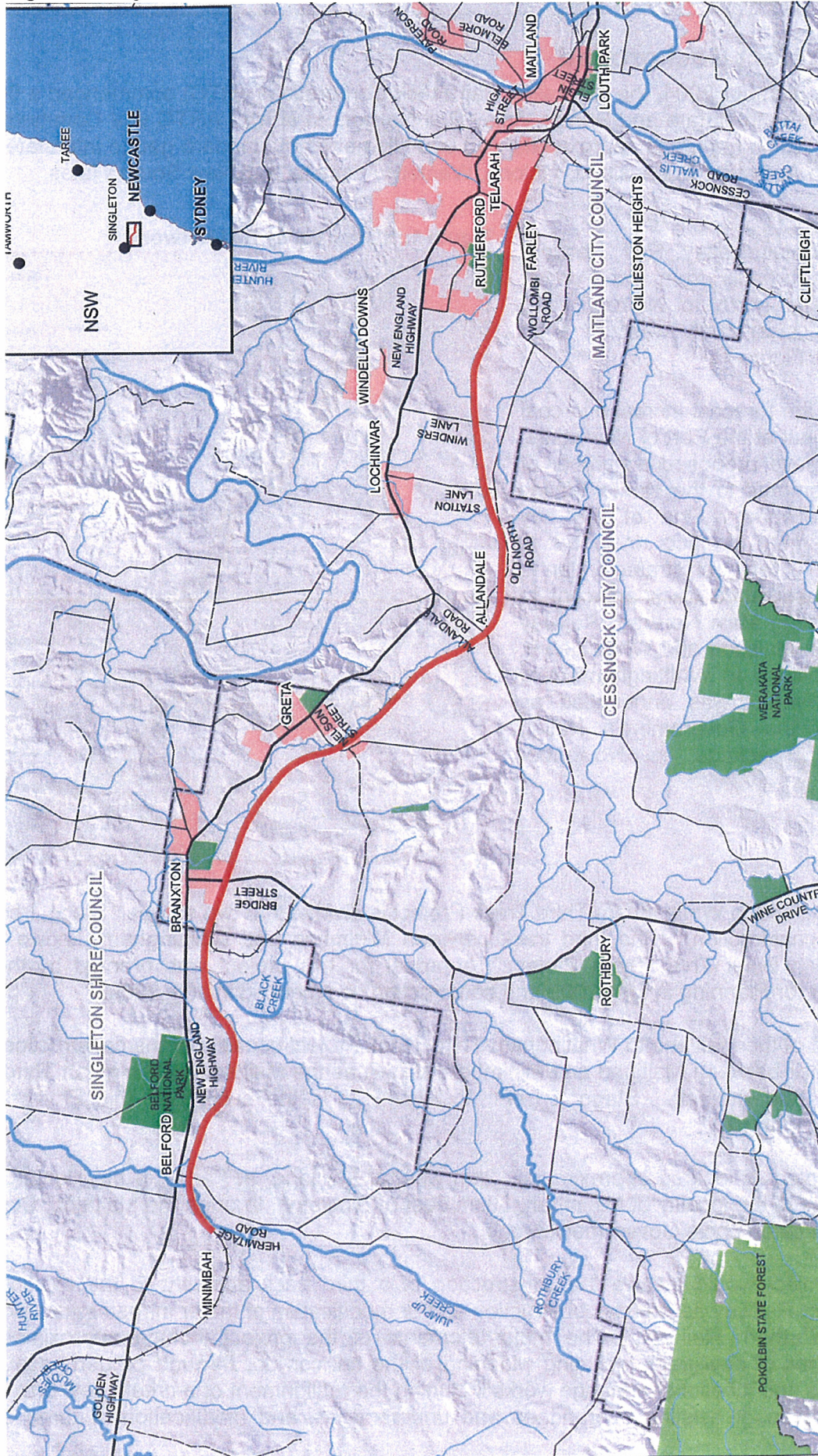
The Maitland to Whittingham Third Track Project is divided into two stages. Stage 1 consists of the construction of the third track between Minimbah and Whittingham, known as the Minimbah Bank Third Track Project. Approval for this project was granted by the then Minister for Planning in May 2009 and construction commenced in July 2009.

Stage 2 of the Maitland to Whittingham Third Track Project consists of the construction of the third track between Maitland and Minimbah, known as the Maitland to Minimbah Third Track Project (the Project). Stage 2 (refer to Figure 2) is the subject of this Environmental Assessment (EA).

The Project is located approximately 2km west of Maitland, at Farley in the Hunter Valley, and runs to the locality of Minimbah, 30km east of Singleton, through the Maitland, Cessnock and Singleton Local Government Areas.

The Project would involve the construction of a third track adjacent to the existing Main Northern Railway as well as construction and/or modification of major infrastructure along the Main Northern Railway. The major elements of the project include approximately 30 kilometres of new track including widening of the rail corridor through property acquisition, turnouts and junctions, drainage works including the realignment of a creek, new bridges and modification of existing overbridges and underbridges, and modification of three existing railway stations.

Figure 2: Project location



1.2 Surrounding Land Use

Topography along the alignment ranges from low lying valleys and flood plains through to undulating hills as the project moves west towards Singleton. A number of watercourses cross the project and are of varying quality. These generally drain into the Hunter River, and include Sawyers, Anvil, Stony, Jump-up and Black Creeks. The existing rail line has been either cut or filled along its path to suit its application.

Vegetation communities vary greatly, and while most areas exhibit signs of modification as a result of agricultural activity or urbanisation, some areas support fauna species and movement. Belford National Park is located in close proximity to the project.

Transport infrastructure within the project area includes the existing Main Northern Railway (double track configuration), and the New England Highway which generally follows a similar alignment to the north. The Hunter Expressway alignment is located to the south of the project for a proportion of the project, crossing near Branxton. A number of classified, local and private roads also cross the rail corridor. Upgrades to some of these roads are currently subject to Part 5 assessments by the Proponent under the *Environmental, Planning and Assessment Act 1979* (EP&A Act).

Land use within the project area ranges from small urban centres (Branxton, Greta and Lochinvar) to highly urbanised areas (Rutherford, Telarah). Rural residential, commercial, light industrial and agricultural activities such as grazing and viticulture are also present. Broadly, agricultural land which currently exists along the corridor is subject to urban pressure, with a number of locations identified as potential areas for redevelopment. A number of areas have been rezoned and have been approved for master plan redevelopment, including at Greta, and at Lochinvar, Branxton and Farley where urban investigations are currently underway. These sites generally have been identified in the Department's Lower Hunter Regional Strategy (2006) and/or Strategic land use documents produced by Local Councils, such as the Maitland Urban Settlement Strategy 2008.

A train provisioning facility is also proposed in the vicinity of Greta to assist in the Hunter Valley rail operations for Pacific National. At Rutherford, there is also a proposed expansion of the National Ceramic tile manufacturing facility to increase production from 12.8 million sqm of tiles to 25.6 million sqm of tiles a year.

2 PROPOSED PROJECT

2.1 Project Description

The project involves the construction and operation of a new third track adjacent to the Main Northern Railway. Heritage sites at both stations and the close proximity of Anvil Creek at Greta require the track to be located on the Down side at these two locations. Table 1 provides an overview of the key components of the project.

Table 1: Key Project Components

Component	Description
<i>Third Track</i>	Approximately 30 kilometres of new track including turnouts and junctions. Relocation of turnouts from Minimbah and Branxton to Belford. Upgrade of maintenance siding turnouts at Branxton. Track reconditioning of existing Up Main at Greta and Branxton Stations and of the Branxton crossovers.
<i>Earthworks</i>	A number of major cut and fill earthworks along the route, with preliminary spoil estimates at 1,400,000m ³ . Excess spoil is expected to be in the vicinity of 250,000m ³ . A temporary haul road would be constructed alongside the track for the duration of works.
<i>Bridge Structures</i>	Six new underbridges to be constructed at Wollombi Road, Stony Creek, Allandale Road, Anvil, Sawyers, Jump Up and Black Creeks. Alterations are proposed to the existing rail overbridge at Bridge Street in Branxton. A bridge on the existing Main Northern Railway in the vicinity of Anvil Creek would be replaced. The Old North Road bridge would be demolished.
<i>Drainage</i>	A combination of central track, cess and cross drainage structures. Amendments to 53 culverts for cross drainage, extending existing structures under the third track. Sawyers Creek is proposed to be realigned for approximately 120m near Greta Station.
<i>Property acquisition</i>	The initial area required for acquisition was revised in the Submissions and Preferred Project Report, now requiring partial or entire acquisition of 107 lots from 79 landowners.
<i>Property access</i>	Private property access would be maintained during construction and operation, with the exception of a private rail crossing to be decommissioned at Rix's Road, a stock overpass at Farley to be decommissioned, and demolition of the Old North Road overbridge.
<i>Lochinvar Station</i>	Construction of a new footbridge and access to the east of the existing platforms. Minor modifications at the eastern and western ends of the platforms. A new car park to the south of the station.
<i>Greta Station</i>	Minor platform modifications are proposed, namely converting the present down platform into an island platform.
<i>Branxton Station</i>	An additional track would be constructed south of the proposed new track as a siding. Minor platform modifications are proposed, namely converting the present down platform into an island platform.

NB:

The *Down side* is the side of the track on which trains travel when they are heading away from Sydney and is usually positioned to the right when facing towards Sydney.

The *Up side* is the side of the track on which trains travel when they are heading towards Sydney and is usually positioned on the left when facing towards Sydney.

The capital value of the project is approximately \$210 million and ARTC anticipates that a construction workforce of 650 personnel would be required at the height of construction. Construction is expected to take approximately 18 months to complete. The main construction phases can be broadly described as:

- preconstruction – site establishment, including compound locations;

- construction – cut, fills and general earthwork activities along the corridor; drainage works; bridge works; station modifications; track works, including laying of new track, track slews, turnouts, sleepering and ballast; and rehabilitation, landscaping and environmental controls; and
- de-commissioning – operation of site, handover and demobilisation including site clean up and removal of compounds.

2.2 Project Need and Justification

Australia is the world's largest exporter of coal and the Port of Newcastle is Australia's oldest and one of the largest tonnage throughput ports, with coal exports representing more than 90% of total throughput tonnage. The Main Northern Railway carries the majority of coal produced in the Hunter Valley to the Port of Newcastle for export.

Whilst the current rail configuration between Maitland and Minimbah has sufficient capacity to last until port capacity expands, there is limited potential to accommodate the growth which is predicted to occur with the commissioning of a third coal loading terminal on Kooragang Island. At present, export coal capacity of the Hunter Valley rail network averages around 95 million tonnes per annum. Current industry forecasts indicate demand on the Hunter Valley rail network will increase to 190 million tonnes per annum by 2012.

The key constraint for the growth is the requirement for headways to be in excess of 10 minutes. Headways are defined as the closest spacing between the fronts of two following trains so the second train can safely maintain the same speed as the first. To accommodate for the forecast coal demand, headways will need to be reduced to eight minutes south of Singleton, Whittingham Junction. Additionally, the existing track is built on a relatively poor quality embankment formation. There is a strong prospect that with the forecast increase in traffic volume this formation will require a significant increase in maintenance frequency and intensity, resulting in loss of capacity for coal trains and disruptions to CityRail passenger services.

The objective of the Maitland to Minimbah Third Track project is to increase the rail capacity, and improve the reliability and operational performance of the track between the Hunter Valley and the Port of Newcastle. The core objectives of the project are to:

- provide network capacity ahead of coal industry demand;
- minimise maintenance impacts on the operation of the network;
- reduce headway for loaded coal trains to eight minutes between Maitland and Whittingham;
- increase line capacity (from 95 million tonnes) to 200 million tonnes per annum;
- ensure compatibility with the outcomes for the Minimbah Bank Third Track works;
- locate the third track on the 'Up' side to maximise capacity and minimise maintenance; and
- have no impact on mainline operations.

The project is consistent with *NSW State Plan 2006* Priorities P1 – Increased Business Investment, P2 – Maintain and Invest in Infrastructure, and P6 – Increased Business Investment in Rural and Regional Australia.

The project is also consistent with the directions of the *Lower Hunter Regional Strategy 2006-2031*, through the provision of employment during construction of the project, as well as long-term economic and employment benefits through the improved efficiency in transportation of coal and other commodities, and through the upgrade of transport facilities and the rail network.

Rail is considered the most effective means of long distance transport of coal in Australia. The alternative to provision of a third track is transportation of coal by road, which is

considered to be unviable due to current infrastructure being unable to cater for large scale transport, labour costs, and increased noise and greenhouse impacts associated with additional vehicles on the road.

Should the project not proceed, the coal industry would continue to rely on the existing two bi-directional tracks for transportation of coal, limiting capacity of the lines and creating severe service disruptions and increased rail wear.

3 STATUTORY CONTEXT

3.1 Major Project

The proposal is a major project under Part 3A of the Act because it is development for the purpose of 'heavy railway lines associated with mining, extractive industries or other industry' that has a capital investment value of more than \$30 million under clause 23 of Schedule 1 of *State Environmental Planning Policy (Major Development) 2005*. Therefore the Minister for Planning is the approval authority.

On 27 April 2009, the Director-General of the Department of Planning, as delegate of the Minister for Planning, declared the project to be subject to Part 3A of the Act under section 75B of that Act. Therefore the Minister for Planning is the approval authority.

3.2 Permissibility

The project falls within the three local government areas of Singleton, Cessnock and Maitland. As shown in Table 2, the project is permissible with consent in the various zones that apply, with the exception of Zone 6(b) – Private recreation, which is prohibited in Maitland City Council.

Table 2: Local Environmental Plan (LEP) Zonings

LEP Zoning	Permissibility
Singleton LEP 1996	
<i>Zone 1(a) Rural</i>	Only with development consent
Cessnock LEP 1989	
<i>Zone 1(a) Rural 'A'</i>	Only with consent
<i>Zone 1(c) Rural-Residential/Rural (Small Holdings)</i>	Only with consent
<i>Zone 5(b) Special Uses (Railways)</i>	Only with consent
Maitland LEP 1993	
<i>Zone 1(b) Secondary Rural Land</i>	Development allowed only with development consent
<i>Zone 4(a) General Industrial</i>	Development allowed only with development consent
<i>Zone 4(b) Light Industrial</i>	Development allowed only with development consent
<i>Zone 5(b) Special Uses Railways</i>	Development allowed only with development consent
<i>Zone 6(b) Private Recreation</i>	Development which is prohibited

Notwithstanding the LEP provisions, clause 79(1) of *State Environmental Planning Policy (Infrastructure) 2007* states that "Development for the purpose of a railway or rail infrastructure facilities may be carried out by or on behalf of a public authority without consent on any land". Clause 5 defines public authority as: "in respect of development connected with rail corridors or railway infrastructure facilities, includes the Australian Rail Track Corporation Limited (ACN 081 455 754)". All works will be carried out by or on behalf of the Proponent and therefore the project is permissible within all zones.

3.3 Environmental Planning Instruments

There are no environmental planning instruments that substantially govern the carrying out of the project.

3.4 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The relevant objects are:

- (a) *to encourage:*
 - (i) *the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
 - (ii) *the promotion and co-ordination of the orderly and economic use and development of land,*
 - (iii) *the protection, provision and co-ordination of communication and utility services,*
 - (iv) *the provision of land for public purposes,*
 - (v) *the provision and co-ordination of community services and facilities, and*
 - (vi) *the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and*
 - (vii) *ecologically sustainable development, and*
 - (viii) *the provision and maintenance of affordable housing, and*
- (b) *to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and*
- (c) *to provide increased opportunity for public involvement and participation in environmental planning and assessment.*

The objects stipulated under Section 5 are significant factors informing determination of the application, except for 5(a) (v) and (viii), as the project does not raise significant issues relating to community services and facilities, or affordable housing.

The Department in its assessment, has considered: the need to encourage the proper management and conservation of natural resources such as natural areas, water resources, towns and villages for the purposes of promoting the social welfare of the community and a better environment; the orderly development of land; the protection of communication and utility services; the provision of land for public purposes; and the protection of the environment.

In addition to the above, the agency and community consultation undertaken as part of the assessment process (see Chapter 4 of this report), address objects 5(b) and (c) of the Act.

3.5 Ecologically Sustainable Development

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- (a) *the precautionary principle;*
- (b) *inter-generational equity;*
- (c) *conservation of biological diversity and ecological integrity; and*
- (d) *improved valuation, pricing and incentive mechanisms.*

The principles of ESD have been addressed in the EA prepared by the Proponent for the project. The EA includes detailed studies in the form of Technical Papers prepared by specialists in the areas of biodiversity, noise and vibration, hydrology, traffic and transport, landscape character and visual amenity, Aboriginal and historic heritage. The results of the abovementioned investigations and specialist studies have been summarised within the main body of the EA to ensure that the principles of ESD have been adequately addressed as part of the assessment of the project.

Mitigation and management measures have been committed to by the Proponent and would be implemented as part of the project to ensure that project impacts are minimised. On this basis, and the Department's assessment of key issues outlined in Section 5 of this report, the Department is satisfied that the project promotes the principles of ESD.

3.6 Statement of Compliance

In accordance with section 75I of the EP&A Act, the Department is satisfied that the Director-General's environmental assessment requirements have been complied with.

3.7 Environment Protection and Biodiversity Conservation Act

On 18 June 2009, the project was determined to be a "controlled action" under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), as it was considered that the proposal would have:

- a significant impact on the environment from a Commonwealth Action (section 28); and
- a significant impact to listed threatened species (section 18).

The project has been assessed through an accredited assessment process between the Commonwealth and NSW Governments. This means that separate assessment processes are not required under both the EPBC Act and the EP&A Act, and the NSW assessment process has been accredited by the Commonwealth. However, the Commonwealth Minister for Sustainability, Environment, Water, Population and Communities maintains an independent approval role, which may include separate conditions if the project is approved. The Department has consulted with the Department of Sustainability, Environment, Water, Population and Communities (DSEWPC) (previously *Department of Environment, Water, Heritage and the Arts*) throughout the assessment process, and DSEWPC has provided input to certain stages of the assessment process.

4 CONSULTATION AND SUBMISSIONS

4.1 Exhibition

Under section 75H(3) of the EP&A Act, the Director-General is required to make the EA of an application publicly available for at least 30 days. After accepting the EA, the Department publicly exhibited it from 9 June 2010 until 12 July 2010 on the Department's website, and at the following exhibition locations:

- Nature Conservation Council of NSW;
- Singleton Council Administration Centre and Singleton Library;
- Cessnock City Council and Cessnock Library;
- Maitland City Council; and
- Rutherford Library.

The Department also advertised the public exhibition in *The Australian*, *Cessnock Advertiser*, *Singleton Argus*, *Maitland Mercury*, and *Newcastle Herald* newspapers on 8 and 9 June 2010.

The Department received 54 submissions during the formal exhibition period of the EA, including 9 submissions from public authorities and 45 submissions from the general public. A summary of the issues raised in submissions is provided below.

4.2 Public Authority Submissions

The *NSW Office of Water (NoW)* advised that a licence would be required for dewatering activities, and activities must be undertaken in accordance with the requirements of the *Hunter Unregulated and Alluvial Water Sources 2009, Water Sharing Plan*. The proposed groundwater monitoring is considered insufficient, and further conditions to be incorporated in the Groundwater Monitoring Program have been recommended. NoW also expressed concern that there must be sufficient baseline data established for all waterways with permanent water and those that flow regularly after small rainfall events. Conditions have been recommended to ensure that the surface water monitoring program is reviewed and approved as appropriate.

Transport NSW stated the importance and benefits of this freight task to the NSW economy and supports the project, however consider that all issues raised by RailCorp and RTA should be addressed. Transport NSW also noted that acquisition of property and operational noise need to be appropriately managed.

RailCorp identified that any alterations to access at Lochinvar, Branxton and Greta stations, must comply with the *Disability Discrimination Act 1992*. RailCorp requires that the Proponent work with RailCorp to ensure that the outcome meets the Disability Standards for Accessible Public Transport (associated with the *Disability Discrimination Act*) and RailCorp design standards.

The *Roads and Traffic Authority (RTA)* raised no objections to the proposal, but advised that it has interest in the road network, traffic and broader transport issues. The RTA put forward a number of requirements, including that a range of intersection treatments be implemented in accordance with RTA and Council requirements to mitigate impacts, protection of pedestrian and cyclist facilities, the need to provide appropriate signage at key access points, and preparation of a Construction Traffic Management Plan to be submitted to the RTA and Council for acceptance. Cumulative impacts arising from concurrent construction of the Hunter Expressway and the need for lines of communication were also identified.

The *NSW Department of Industry and Investment (NSW I&I)* (Fisheries) expressed concern about any potential impacts that the proposal may have on aquatic species and habitats in

the vicinity of the project. NSW I&I (Mineral Resources) expressed interest in effectively collecting fossil specimens from Allandale Bank for scientific and educational purposes.

The *Department of Environment, Climate Change and Water* (DECCW) noted that the EA predicts a range of operational noise exceedences and suggested that the Proponent further investigate reasonable and feasible noise mitigation measures to see if exceedences can be mitigated, including noise attenuated locomotives, limiting the speed on third track day and night, and restricting trains at night. DECCW also consider that further detail on the compensatory habitat strategy needs to be provided, and evidence of the majority of Aboriginal stakeholders' position on proposed mitigation and management measures provided.

Department of Planning (Heritage Branch) stated that the mitigation measures identified in the EA to manage project impacts on heritage are insufficient and identified proposed mitigation for impacts to heritage items and sites.

Maitland City Council noted the proximity to residential receivers for much of the proposed track within the Maitland LGA which have caused some significant concerns for Council and its residents. Council considers that:

- the project should take into account any impacts on Council's road drainage system and ensure that the third track does not interfere with current flows;
- pedestrian and cyclist facilities should be upgraded to meet current demand;
- the existing Wollombi Road underbridge should be widened;
- construction traffic management measures should be discussed with Council and the RTA, particularly in relation to the New England Highway;
- substantial work has been undertaken in planning for future urban development in Lochinvar, Farley and Rutherford, and it would be inappropriate and would not be in the public interest if this was overlooked, in particular with regards to effects of noise and vibration, air quality, visual quality, and impact on heritage items; and
- the proposal will impact existing urban allotments at Telarah and Rutherford, and details of noise and vibration attenuation methods should be provided.

4.3 Public Submissions

A total of 45 submissions were received from the public. This included submissions from the Hunter Environment Lobby Inc and Two More Trains for Singleton special interest groups, and local residents, landholders, developers and businesses.

Of the 45 public submissions, 17 (38%) objected to the project, 4 (9%) supported the project and 24 (53%) did not object to the project in its entirety, but raised concerns over key elements of the proposal. The key issues raised in public submissions are listed in Table 3. The Department has considered the issues raised in submissions in its assessment of the project, included in Chapter 5 of this report.

Table 3: Summary of Key Issues Raised in Public Submissions

Issue	Proportion of submissions (%)
<p><i>Operational Noise & Vibration</i></p> <p>Operational noise and vibration was identified as the key issue raised in submissions. All submissions received on this matter identified existing operational noise as an unresolved issue. Vibration impacts and resultant structural damage to property were also identified. Concerns, applying to both existing dwellings and future development, included:</p> <ul style="list-style-type: none"> • operational noise arising from the third track and its resultant amenity impacts at sensitive receivers; 	89%

Issue	Proportion of submissions (%)
<ul style="list-style-type: none"> • unresolved mitigation and management measures for a range of land uses; • operation of the third track will compound existing vibration problems with trains idling and/or passing by the properties; and • potential for structural damage to properties as a result of increased rail movements, length and weight of trains with little to no mitigation available. 	
<p><i>Construction Impacts</i></p> <p>A key issue raised was potential impacts on the amenity of residents due to the 18 month long construction period. In particular, concerns included:</p> <ul style="list-style-type: none"> • traffic impacts and safety due to the increased numbers of vehicles on the surrounding road network, which has been identified as already at capacity; • impacts of erosion and clearing on surrounding watercourses which are used to water stock and for irrigation; and • construction hours should be daytime Monday to Friday only, and no blasting should be allowed on Saturdays. 	31%
<p><i>Refinements to the Project</i> – Submissions suggested design changes, including a proforma letter which suggested terminating the third rail line further at around chainage 195km (Rutherford), where it would be located adjacent to an industrial area.</p>	27%
<p><i>Air Quality</i> – Submissions raised concern over potential impacts of coal dust and trains, including dust in water tanks, and accurate modelling.</p>	24%
<p><i>Surface Water</i> – Submissions raised concern that the third track and lengthened drainage infrastructure will impact on the natural flow of flood water in the area, and potentially translate into property damage and/or loss of redevelopment potential.</p>	18%
<p><i>Non Aboriginal heritage</i> – Submissions raised concern over a number of heritage listed structures located in vicinity and adjacent to corridor, and that the project may impact on the sensitive structures, including the Dunoon and Clifton properties, and Branxton and Greta Stations.</p>	13%
<p><i>Traffic & Transport</i> – Submissions discussed design issues regarding provision of level crossings, and over and under bridges.</p>	13%
<p><i>Station Access</i> – A number of submissions considered the need to retain access to the station precincts and all platforms to maintain passenger services throughout construction and operation. Current station facilities and infrastructure are of poor standard and need to be upgraded to appropriate standards.</p>	13%
<p><i>Biodiversity</i> – A number of submissions considered the project would contribute to habitat fragmentation, and that offsets and connectivity should be employed for the project.</p>	11%
<p><i>Devaluation of Property</i> – Submissions raised concern of marketability and rentability of properties.</p>	11%
<p><i>Visual Impact</i> – Submissions raised concern regarding the impact on landscape and amenity, in particular removal of trees to screen the rail line from properties.</p>	11%

4.4 Proponent's Response to Submissions

The Department required the Proponent to provide a response to the issues raised in submissions (see Appendix C). The response included a Preferred Project Report which outlined amendments to the project as a result of proposed staging of construction, and through amendments to the project design and construction methodology, including the following:

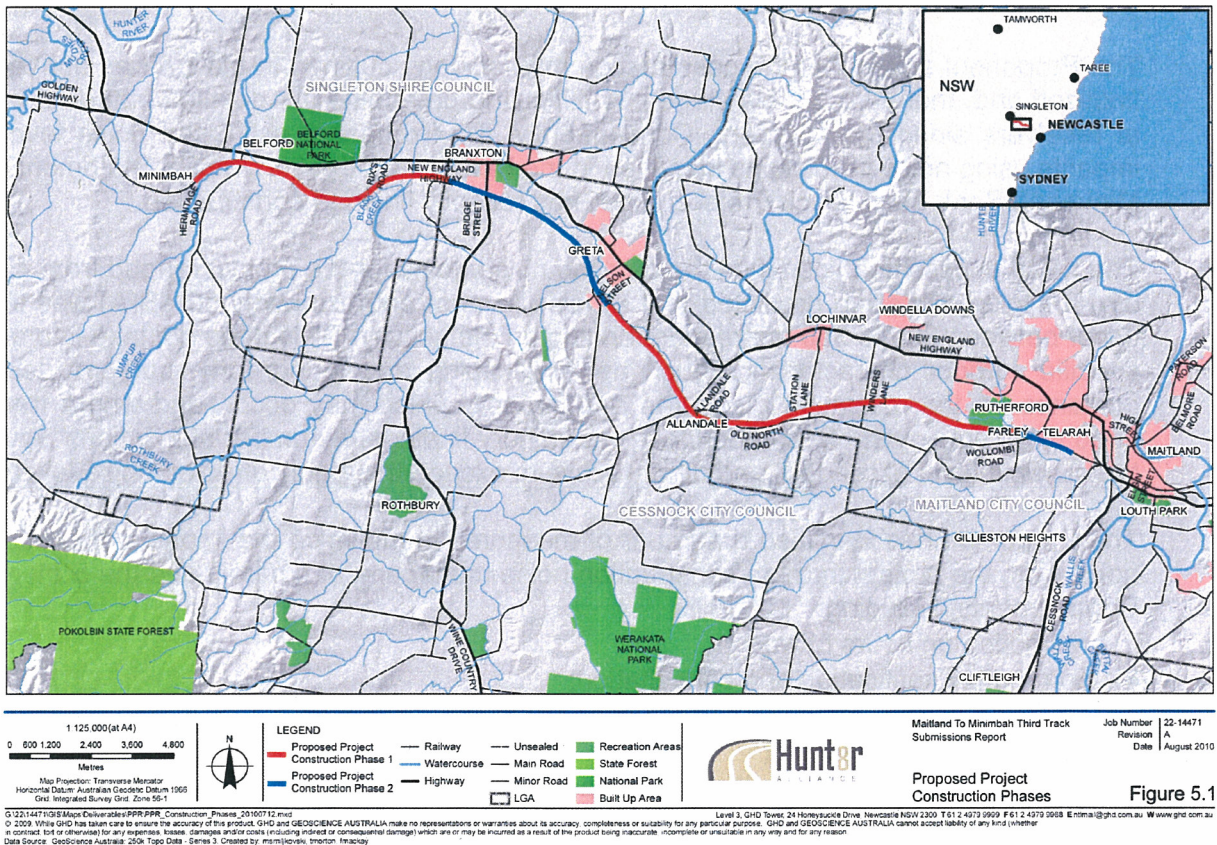
- Splitting construction activities into two phases, as shown in Figure 3:

- Phase 1 – approximately 21.9 kilometres of new track including turnouts and junctions between Farley and Greta (chainages 196.100km to 209.840km), and between Branxton and Belford (chainages 216.340km to 224.200km).
- Phase 2 – approximately 8.1 kilometres of new track including turnouts and junctions between Telarah and Farley (chainages 194.500km to 196.100km), and between Greta and Branxton (chainages 209.840km to 216.340km).
- Modifications to the proposed operation noise and vibration attenuation, including provision of noise attenuation to properties adjacent to the Phase 1 works where Interim Guidelines for Assessment of Noise from Rail Infrastructure Projects (IGANRIP) is predicted to be exceeded following commissioning of the third track.
- Amendments to the earthworks design required for the third track, including modification to the design of the Down side access track which would generally be at existing ground level and not at track level.
- A reduction in the required property acquisition resulting from the amendments to the earthworks design.
- Additional potential spoil disposal areas and the addition of potential sources of appropriate track construction material adjacent to the rail corridor.
- Relocation of primary construction compound at Station Street, Branxton to near Black Creek, Branxton, with associated changes to traffic access and management. Proposed secondary compound at Gardiner Street, Rutherford.
- Installation of additional turnouts to facilitate rail operations until completion of the final phase.

The proposed amendments do not significantly change the nature and scope of the original proposal, rather they are refinements to the project's delivery and the submission of further detail in relation to issues already identified in the EA.

The Submissions and Preferred Project Report was placed on the Department's website on 27 September 2010.

Figure 3: Proposed project construction phases



5 ASSESSMENT

5.1 Noise, Vibration and Blasting Impacts

Issue

The existing land use surrounding the project area is predominantly rural and rural residential, with residential areas at Branxton, Greta and Telarah, and with some areas of industrial development at Rutherford. Noise and vibration impacts would occur during construction and operation of the rail line. These issues, potential impacts and proposed management measures, are discussed below.

Construction noise

Noise monitoring was undertaken at 17 locations during preparation of the EA to identify background noise levels. The approximate range of background noise levels measured were:

- day – 32 to 42 dB(A);
- evening – 34 to 44 dB(A); and
- night – 30 to 39 dB(A).

DECCW's *Interim Construction Noise Guideline (2009)* (ICNG) sets noise management levels at residential properties within and outside standard construction hours. The ICNG identifies that at the boundary of the most affected residential properties (or within 30 metres from a residence where the property boundary is more than 30 metres from the residence) noise management levels for construction should aim for:

- adopted rating background level +10 dB(A) within standard construction hours;
- adopted rating background level +5 dB(A) outside standard construction hours; and
- a highly affected noise level of 75 dB(A).

It should be noted that these levels are not absolute. Rather, they are levels for which the Proponent must mitigate impacts as far as practicable using reasonable and feasible measures.

The Proponent states that the construction methodology outlined in the EA has not yet been finalised and, therefore, at this stage it is difficult to determine the detailed nature of impacts at receivers along the corridor. Consequently, the Proponent estimated noise levels and impacts using noise predictions identified in the Noise and Vibration Impact Statement for the Minimbah Bank Third Track Project, which has recently finished construction.

The noise assessment identified the daytime noise goals for the project ranged from 42 to 52 dB(A). Noise modelling predicted that a noise level of approximately 50 dB(A) was likely to occur between 200 to 350 metres, depending on the activity. This does not take into account specific corridor characteristics such as landscaping and topography, but provides initial guidance on the mitigation measures and impacts which may occur, and where they may need to be employed. Based on these preliminary findings, a number of locations would see the daytime level exceeded, and other receivers exceed the highly affected noise level.

The Proponent has identified a number of measures to minimise the impacts of construction noise from the project through construction noise management controls and the Statement of Commitments, including:

- restriction on hours of work;
- community notification and consultation;
- selection of work methods and machinery;
- training of site personnel;
- preparation of noise and vibration impact statements; and
- noise and vibration monitoring where impacts are anticipated.

Construction vibration and blasting

The EA assessed the likelihood of activities having an impact on neighbouring properties, specifically in terms of structural damage and concluded that properties between 10 and 50 metres may be affected. The Proponent has proposed Statement of Commitments and vibration management controls to minimise the impacts of construction vibration, including:

- preparing Vibration and Blasting Impact Statements for specific phases of work;
- building condition surveys at potentially affected dwellings; and
- undertaking vibration monitoring, in particular where vibration generating activities are undertaken with 30 metres of a residence and investigating alternative work methods where building risk is identified, to reduce impacts to acceptable levels.

Blasting is proposed to be undertaken at potentially 14 locations along the project corridor. Blasting is predicted to impact upon noise and vibration levels within the area of blasting activities. Based upon the methodology proposed for blasting the EA predicted that potential blasting impacts are generally restricted to receivers within 500 metres of the blasting location.

The Proponent has committed to preparing blasting designs at locations identified to be within 500 metres to assist in minimising noise and vibration impacts. The blasting designs would take into account the geotechnical design of each location. The design parameters of each blast would take into consideration factors such as depth and diameter of the blast hole, type and amount of explosives, type of rock, and distance to the nearest receiver.

Operational noise

The Proponent has identified that a substantial increase in rail movements would occur, in response to increasing demand for coal. Predicted coal and freight train numbers are outlined in Table 4.

Table 4 – Predicted number and distribution of coal and freight trains (Noise and Vibration Impact Assessment, Hunter 8 Alliance, May 2010)

Year	Existing Up Track		Existing Down Track		Proposed Third Track (Up Relief)	
	Daytime	Night time	Daytime	Night time	Daytime	Night time
2009	23	15	22	15	n/a	n/a
2012	23	15	35	24	14	9
2022	25	15	44	30	23	16

In addition to the number of freight and coal trains increasing, the type and capacity of locomotives is also anticipated to increase. This trend generally translates into increased noise levels at nearby receivers, to the point where a number of exceedences already exist alongside the corridor. In addition, longer and heavier trains also generate vibration, proportional to the speed of the locomotive, when the wheels cause friction with the track.

The noise and vibration assessment in the EA generally identified:

- a good correlation between the background and rail noise levels, indicating that rail noise is the primary noise source at most monitoring sites;
- The IGANRIP trigger levels (being average daytime 65 dB(A) and average night time 60 dB(A) and maximum 85 dB(A)) are already exceeded at five of the 17 locations monitored for the project for the average noise levels (L_{Aeq}) and 11 of the 17 monitored locations for the maximum (L_{Amax}) noise levels;
- that future average (L_{Aeq}) noise levels, with the introduction of the project, are predicted to increase by 2 to 3 dB(A) by 2022;

- the predicted daytime and night time rail noise levels are similar, due to train frequencies being comparable over the 24 hour period, consequently the night time trigger levels would also lead to compliance with the day time trigger levels; and
- that predicted noise levels for future operation of the project exceed the IGANRIP trigger levels at a total of 16 noise catchments (eight of 11 Up side noise catchments and eight of 12 Down side noise catchments), with some of these sites triggered in 2012 and some in 2022.

In relation to passenger trains the Proponent has based the noise and vibration assessment on the assumption that passenger trains would remain stable over the same period.

To mitigate these predicted exceedences, the Proponent has committed to meeting the principles as identified in IGANRIP, namely through an Operational Noise and Vibration Management Plan (ONVMP) which details:

- Best Management Practice: The use of operational procedures to minimise noise while maintaining efficient operations. This may include limiting train speeds, use of project outside daylight hours, maintenance of equipment and worker education. This is employed where engineered treatments are considered too expensive.
- Best Available Technology Economically Available: The use of a reasonable and feasible engineered response to mitigate impacts including:
 - ‘at source’ treatments which generally include the use of noise mounds and barriers made from solid materials and considered to be a cost effective solution in areas where residences are closely grouped, where the barriers do not affect property access and where they are accepted by residents from a visual or other personal perspective. A noise wall of 4.5m in height is currently proposed at Telarah; and
 - ‘at receiver’ or building treatments which generally consist of a combination of measures including mechanical ventilation (ventilation systems or air conditioning to allow for fresh air with doors and windows closed), sealing of wall vents, upgraded windows, glazing and doors.

The Proponent has identified that the exact measures would not be known until a more detailed assessment is undertaken as part of the ONVMP.

Operational vibration

Monitoring of existing train vibration levels indicate that levels were well below the vibration limits for structural damage at all monitoring locations. Vibration monitors were positioned in order to simulate the distance between the proposed new third track and nearest structures. Consequently, the levels identified during the monitoring were considered to be representative of the levels likely to be experienced by the project. The Proponent therefore, anticipates that vibration level for structural integrity will comply once the project is operational.

In relation to human comfort goals, the Proponent considers that there is a risk for human comfort goals to be exceeded where properties are within 40 metres of the rail corridor in 2022. This is confined to approximately five locations, and comprises six dwellings (excluding the Telarah urban area). In Telarah, the Proponent has not specified affected properties though notes that exceedences would occur at this location. The Proponent has identified that the majority of these would occur in the 2022 operating scenario and proposed a suite of track or receiver improvements to reduce levels, where appropriate.

Consideration

Construction Noise, Vibration and Blasting

The Department notes that potential impacts associated with construction noise are a key concern to the community, which is reflected in the submissions received. Specific high noise generating activities such as blasting and piling were identified as being of particular concern.

The Department considers that the use of the noise levels from the recently completed Minimbah Bank Third Track Project to guide the assessment of noise impacts for the project is an appropriate methodology. The projects are adjacent, and generally exhibit similar environmental characteristics and construction of similar elements. Impacts therefore are likely to be representative.

The Proponent has proposed a hierarchy of management and mitigation measures, as identified in the statement of commitments including:

- standard and out-of-hours construction hours;
- development of Noise and Vibration Impact Statements;
- development of a Pile Vibration Control Plan;
- undertaking building condition surveys;
- construction monitoring and reporting commitments; and
- implementation of mitigation measures, including opportunities for alternate accommodation in instances where significant impacts are identified.

The Department supports this approach as this framework is generally used in large scale infrastructure projects and is considered to include appropriate noise management and mitigation measures. In addition to the Proponent's identified commitments, the Department has recommended the following further conditions of approval:

- reiterating the appropriate construction hours and out-of-hours construction requirements;
- restriction on the use of driven piles (unless otherwise approved through the Vibration Control Plan); and
- a requirement to meet relevant human exposure and structural damage criterion where reasonable and feasible.

In terms of blasting impacts, the Department notes community concerns and has similar concerns in areas that are highly urbanised or areas of natural heritage significance, such as Allandale Bank. The EA commits to development of blast designs in these locations and has detailed a range of key mechanisms that would be employed to reduce impacts.

The Department notes this advice and that the potential impacts are based on early designs that may change with the benefit of greater design detail should the project proceed. It is understood that the potential impacts are a conservative estimate and may not necessarily occur at all the locations identified in the EA. The measures outlined by the Proponent are in line with industry practice. Notwithstanding, the Department has recommended a condition of approval requiring the Proponent to clearly stipulate that blasting should be avoided where possible on the project. Where blasting is required, a number of specific levels have been set, as well as the requirement for blasting trials to protect adjoining property and infrastructure.

Further discussion on blasting impacts within the Allandale bank area are provided in the non-Aboriginal heritage section of this report.

Operational Noise

The assessment of operational rail noise and vibration is guided by IGANRIP. In accordance with IGANRIP, the Proponent must assess noise impacts and investigate reasonable and feasible mitigation where:

1. the project will increase existing rail noise by 2dB(A) L_{Aeq} / 3dB(A) L_{Amax} or more; and
2. the resulting rail noise levels will exceed the recommended noise criteria (referred to as 'noise trigger levels'). For redevelopment of existing rail lines, as is the case for this project, trigger levels are 65 dB(A) for the daytime period (as $L_{Aeq(15-hour)}$), 60 dB(A) for the night time period (as $L_{Aeq(9-hour)}$) and 85 dB(A) at any time (as $L_{Aeq(max)}$).

The combination of the criteria reflects the accepted view that increases below 2dB(A) L_{Aeq} / 3dB(A) L_{Amax} would not have a noticeable impact on amenity. Additionally, such contributions to overall noise levels would be addressed over time through long-term noise management strategies, such as initiatives to reduce noise emissions from rolling stock.

It is important to note that IGANRIP provides for trigger values above which all reasonable and feasible noise mitigation measures must be considered. The trigger values are not noise criteria. In line with IGANRIP, the Proponent appropriately undertook an assessment of operational noise for three scenarios; current, opening year (2012) and ten years after opening (2022).

Significant community concern was raised in relation to both the existing acoustic environment and following the commencement of operations associated with the third track. The IGANRIP requires an assessment to consider the noise and vibration impacts of new rail infrastructure projects. Noise and vibration from existing operations are not required to be assessed as part of a noise and vibration assessment.

The Department considers that in terms of this project, for the greatest impacts on the rail network, namely in 2022, based on current locomotive types and rolling stock, the Proponent has considered all relevant operational noise impacts consistent with the Director-General's requirements for the project.

A number of submissions raised concerns in relation to the lack of sufficient detail provided in the EA on the proposed noise and vibration mitigation measures. In response, the Proponent undertook a preliminary review of the mitigation measures available to minimise noise levels. The review concluded that noise mounds would provide the appropriate mitigation at 15 of the 16 noise catchments where the trigger levels were exceeded. For the remaining sub-catchment (U11) at Telarah, a noise wall was proposed due to the nature of the topography and the space available at this location.

DECCW considered that the additional information and changes outlined in the Submissions and Preferred Project Report satisfactorily demonstrated measures to reduce the operational noise levels of the project.

In order to ensure that the most appropriate noise mitigation measures are implemented, the Department has recommended a condition requiring the Proponent to prepare (in consultation with DECCW, councils, RailCorp and the community) an Operational Noise and Vibration Review (ONVR) prior to the commencement of operations. The ONVR is to confirm operational noise and vibrations levels for existing sensitive receivers, confirm all proposed noise and vibration mitigation measures and identify specific physical and other mitigation measures at both the source and receiver. Furthermore, the ONVR is to include a consultation strategy to seek feedback from directly affected property owners on the proposed mitigation measures.

During construction of the project, the Proponent advised that detailed property inspections and negotiation with land owners would confirm the final measures to be put in place. The proponent provided a clear intention to implement the noise mitigation measures in place prior to the project becoming operational.

In addition, one of the other main issues raised in submissions was the impact on areas of land adjoining the corridor currently identified for future urban development. The status of these proposed developments and investigation areas are at various stages in the planning process from being adopted in local and regional planning strategies to re-zoning and subdivision applications being considered by councils and the Department. The proposed developments and investigation areas are outlined in Table 5.

Table 5 – Proposed future land release and urban development areas

Proposed Development	Type	Status
Huntlee new town	Residential and recreational	Currently being assessed as a potential State Significant Site by the Department of Planning
Anvil Creek	Residential and recreational	Staged development consent granted by Cessnock Council
Lochinvar investigation area	Residential	Identified in Maitland City Council's 2008 <i>Urban Settlement Strategy</i> , and currently at preliminary stage of rezoning process
Preliminary Investigation Area (Maitland LGA)	Rural residential	Identified on Maitland City Council's 2008 <i>Urban Settlement Strategy</i>
Rutherford Industrial Investigation Area	Industrial	Identified on Maitland City Council's 2008 <i>Urban Settlement Strategy</i>
Rutherford Industrial	Industrial	Development consent granted by Maitland City Council
Heritage green	Residential and recreational	Rezoned by Maitland City Council
Farley investigation area	Residential	Identified on Maitland City Council's 2008 <i>Urban Settlement Strategy</i>

Concerns raised in the submissions relate to the adequacy of the proposed measures to mitigate noise and vibration for these future urban release areas including for residential, community, public and recreational purposes.

In relation to this issue, the Department considers that a balanced approach between at source mitigation, strategic land use planning and development design must be undertaken. The Department also acknowledges that future development is also required to consider and mitigate rail noise in accordance with *State Environmental Planning Policy (Infrastructure) 2007*. Specifically, Clause 87 of the *State Environmental Planning Policy (Infrastructure) 2007* provides internal noise levels that a development (for residential use) must not exceed.

The Department has therefore recommended conditions of approval to ensure that:

- The project is designed and operated with the objective of achieving the IGANRIP trigger levels; and
- A noise and vibration compliance assessment undertaken within three months after the commencement of operations for the project. The assessment would confirm the final measures to be adopted for the project based on final project design. As part of this review the Proponent must consider any land use changes that have occurred during the the construction of the project and must outline additional mitigation measures where exceedences of the noise levels are identified.

The Department also considers that it is essential for the Proponent to continue to liaise with the Department and councils on strategic land use matters to facilitate a balanced approach to noise mitigation and has recommended a condition of approval to this effect.

Additionally, a project application (09/0233) is currently being assessed by the Department for a train support facility at Greta. The train support facility is proposed as a re-fuelling and maintenance facility and is located adjacent to the Main Northern Line at Greta. The EA for the Greta train stabling facility also identifies potential operational noise impacts on adjacent properties in the area, including the proposed Huntlee development.

The Department is aware that due to the adjacent nature of the project with the Greta train support facility there is a potential for cumulative noise issues to result. Consequently, the Department has proposed that the operational noise and vibration compliance assessment consider the cumulative impact of both projects and that a co-ordinated monitoring regime is implemented.

The Department notes a number of organisations who have interests along the rail corridor commissioned independent reviews of the noise and vibration assessment. The two reviews identified that the noise and vibration assessment was undertaken in accordance with IGANRIP. However, the reviews questioned some of the inputs (mix of coal and freight trains reflecting normal operating patterns, quieter ambient days being included, train operational assumptions and rolling versus locomotive noise) to noise operational noise model. The Proponent clarified that the revisions to these inputs would not result in an appreciable change in the predicted noise levels.

The Department acknowledges noise impacts would occur as a result of the construction and operation of the project, but considers that these can be appropriately managed through the proposed measures identified by the Proponent, and that the recommended conditions of approval would ensure that noise contributions from the project are minimised.

In conclusion, the Proponent has demonstrated general compliance with IGANRIP to minimise the impacts of the project. Additionally, with the responsibilities of adjoining developments under the *State Environmental Planning Policy (Infrastructure) 2007* an acceptable shared strategic land use outcome can be achieved.

Operational Vibration

Vibration impacts have been considered against the DECCW document *Assessing vibration: A technical guideline* (2006). The DECCW guideline provides preferred and maximum vibration dose criteria, with a low probability of disturbance to building occupants at vibration values below the preferred criteria. Complaints may be expected if vibration values approach the maximum criteria. Impact to structures arising from trains operating along the corridor was also assessed in accordance with German Standard DIN 4150-3 (*structural vibration - effects of vibration on structures*) as no Australian Standard currently exists.

A review of predicted structural vibration levels along the corridor identified that levels generally met the guidelines and therefore did not warrant the need for further mitigation. Whilst the Department acknowledges the findings, some community concerns were raised in relation to the impacts. Therefore, the Department considers that following commencement of operation of the project, the Proponent must undertake an operational review of vibration measures to determine if the levels comply with relevant standards, and provide mitigation measures if this is not the case.

In relation to human comfort levels, the Department notes the predicted impacts at the five locations and has recommended a condition of approval requiring that operation of the project meet the vibration goals of the relevant standards.

5.2 Biodiversity

Issue

The Proponent assessed aquatic and terrestrial flora and fauna impacts along the corridor, which broadly concluded that the majority of vegetation to be removed for the project would be within pastureland. However, some threatened flora communities and fauna species are present within Belford National Park and on private land, which would be impacted by the project.

The project has been designed along the principles of avoidance, mitigation and offsetting, in that order of preference. Where avoidance of impacts was not possible, the project has been designed to minimise impacts on Endangered Ecological Communities (EECs) and the Commonwealth vulnerable species Slaty Red Gum, by reducing the construction impact zone and corridor, and locating site compounds and access tracks in existing cleared areas. The overall impact on EECs and threatened flora and fauna species should be acceptable provided that an adequate land offset is developed.

Flora

All vegetation clearing for the project would occur along the edge of the existing cleared railway easement. The degree of impact to the vegetation communities to be cleared varies. The impacts are mostly associated with vegetation clearing and edge effects along the rail corridor and adjacent rural residential and agricultural areas.

Table 4 outlines the total anticipated loss of vegetation and endangered ecological communities, across both phase one and two of the project, as identified in the Submissions and Preferred Project Report. The total vegetation clearing identified in the EA of approximately 61.1 hectares, has increased to approximately 66.2 hectares as a result of several design modifications. The areas that were identified to be cleared in the EA for each vegetation type are outlined in the first column of Table 6.

Table 6 – Vegetation communities (as defined in the Preferred Project Report, Hunter 8 Alliance, September 2010)

Flora species/Ecological community	Area of impact (hectares)		
	Phase 1	Phase 2	Total
Vulnerable species, EPBC Act (Commonwealth)			
Slaty Red Gum (total area impacted as identified in EA – 2.7 hectares)	1.2 (and 2 scattered trees)	1.9 (and 52 scattered trees)	3.1
Endangered Ecological Community, Threatened Species Act (NSW)			
Lower Hunter Spotted Gum Ironbark Forest (total area impacted as identified in EA – 13.2 hectares) (total area impacted as identified in EA (Mountain Grevillea) – 1.6 hectares)	2.3	11.8	14.1 (incl. 1ha Mountain Grevillea)
Forest Red Gum Open Forest (total area impacted as identified in EA – 19.7 hectares)	5.8	17	22.8 (incl. 3ha Slaty Red Gum & 1ha Mountain Grevillea)
Swamp Oak Riparian Forest (total area impacted as identified in EA – 14.9 hectares)	4.4	13.1	17.5
Grey Box Spotted Gum Ironbark Forest (total area impacted as identified in EA – 12.7 hectares)	0.3	11	11.3

Flora species/Ecological community	Area of impact (hectares)		
	Phase 1	Phase 2	Total
Freshwater Wetland (total area impacted as identified in EA – 0.6 hectares)	0.2	0.3	0.5
Non-listed native vegetation			
Hakea Scrub (total area impacted as identified in EA – 0.7 hectares)	0.7	0.3	1
Cleared with scattered trees/open pasture/ weedy area	35	169.7	204.7
Plantation (total area impacted as identified in EA – 0.06 hectares)	0.3	1.1	1.4

All vegetation clearing would occur on the edge of the existing cleared railway easement. Additionally, all vegetation communities recorded during the survey extended well beyond the limits of the revised construction impact zone.

The Proponent has proposed to establish offset areas and revegetation works for all EECs cleared in Table 6 as the main mitigation measure. By including sufficient offset areas for EECs, the EA concluded that the Project is unlikely to result in a significant impact on EECs

The project was deemed by the Federal Environment Minister to have a significant impact on EPBC Act listed threatened species, including the Slaty Red Gum.

Slaty Red Gum (*Eucalyptus glaucina*), listed as vulnerable under the EPBC Act, was identified within the project corridor. The survey found that the population of Slaty Red Gum within the project area is already fragmented by the existing railway line. The proposed clearing for the project would slightly increase the distance of the separate parts, but not to the extent that exchange of genetic material would cease to occur. The flora and fauna assessment concluded that:

- whilst the project is anticipated to clear a total of 3.1 hectares of Slaty Red Gum, the species are locally abundant with over 1 million individuals recorded at Singleton Military Area;
- there are adjacent areas extending outside the construction footprint that show good regenerative potential;
- the project is unlikely to permanently result in an increase in weed invasion provided appropriate mitigation measures are included and implemented through the Weed Management Plan and Flora and Fauna Management Plan; and
- whilst the project may result in changes to the floodplain characteristics it is unlikely that this would adversely affect the continued viability of the Slaty Red Gum in this area.

With these issues in mind, and commitment to the implementation of a vegetation offset strategy for Slaty Red Gum and all EECs, the Proponent concluded that the project is unlikely to have a significant impact on the Slaty Red Gum community provided appropriate vegetation offsetting is undertaken.

As part of the Lower Hunter Spotted Gum Ironbark Forest the *Grevillea Montana* was identified in the project corridor. *Grevillea Montana* has been identified as a Rare or Threatened Australian Plant (ROTAP). However, the ROTAP listing does not have any legal status and the species has not been listed under the *Threatened Species Conservation Act 1995* (TSC Act) or under the EPBC Act.

Although approximately one hectare of Mountain *Grevillea* would be removed by the project, large areas of habitat would remain unaffected. The flora and fauna assessment identifies

that this species is known to thrive after disturbance and can establish within newly disturbed areas. The flora and fauna assessment concluded that the project would be unlikely to place the species at risk of extinction.

Fauna

Ten threatened fauna species under the TSC Act and three vulnerable species under the EPBC Act have the potential to be impacted by the project, as identified in Table 7.

Table 7 – Impacted fauna species

Common Name	Scientific Name	EPBC Act listing	TSC Act listing
Grey-headed Flying fox	<i>Pteropus poliocephalus</i>	V	V
Swift Parrot	<i>Lathamus discolor</i>	E	E
Regent Honeyeater	<i>Anthochaera phrygia</i>	E / M	E
Grey-crowned Babbler	<i>Pomatostomus temporalis temporalis</i>		V
Squirrel Glider	<i>Petaurus norfolkensis</i>		V
Eastern Freetail-bat	<i>Mormopterus norfolkensis</i>		V
Eastern Bent-wing Bat	<i>Miniopterus schreibersii oceanensis</i>		V
Large-footed Myotis	<i>Myotis macropus</i>		V
Varied Sittella	<i>Daphoenositta chrysoptera</i>		V
Speckled Warbler	<i>Pyrrholaemus sagittatus</i>		V

V – Vulnerable / E – Endangered / M – Migratory Species

The Proponent identified that clearing of vegetation would result in:

- a decreased potential foraging area and a reduction in roosting and nesting sites for woodland, grassland and wetland farm and dam species;
- a small increased level of local habitat fragmentation and edge effects; and
- ten hollow dependent mammals having the potential to be significantly impacted by tree felling if small and discreet populations are present.

For non-threatened fauna species, the Proponent concluded that the removal of the habitat would not pose a significant impact. This is based on the relatively small area to be removed compared to the remaining overall area and the availability of nearby similar or better quality habitat.

The Proponent undertook a seven part test to determine potential impact on the threatened species. The seven part test concluded that the project is unlikely to have a significant impact on the threatened species with the likelihood of potential habitat within the project area. The project was deemed by the Federal Environment Minister to have a significant impact on EPBC Act listed threatened species, including the Grey-headed Flying-fox, Swift Parrot and Regent Honeyeater.

Additionally, the Proponent highlighted that the implementation of mitigation and offset measures would reduce the level of impacts on fauna species and their habitats. The mitigation measures would include:

- implementation of tree felling protocols during construction;
- establishment of nesting boxes for hollow-dependant fauna;
- having an ecologist present during construction and removal of roosting sites; and
- development of a compensatory habitat strategy (offset strategy), in consultation with DECCW and DSEWPC.

Aquatic ecology

In addition to the clearing of vegetation, the project would also result in the removal of several farm dams and the realignment of Sawyers Creek for approximately 100 metres up stream of the existing rail track. The re-alignment would be designed in accordance with the NSW I&I guidelines. The realignment would also result in similar flow characteristics to the existing environment and would not constitute a key threatening process as listed in the *Fisheries Management Act 1994*.

No threatened species detected in the fauna surveys rely on the farm dams for habitat. Accordingly, the removal of farm dams was not anticipated to impact on threatened fauna species, although it would remove foraging and breeding habitat for common native fauna such as waterbirds and frogs.

Consideration

The Department recognises that the project has the potential to result in adverse impacts on the biodiversity values of the area. However, when impacts are balanced against the option of a new corridor and the resultant environmental, social and property impacts, the Department considers that co-location of infrastructure, through the positioning of the third track alongside the existing track, is the least impacting option.

The Department understands that there is little scope to further reduce the footprint of the proposal as the Proponent is bound by safety and operational requirements to leave sufficient space along the edge of the rail track and boundary fencing to ensure conflicts between vehicles, trains, employees and the general public are avoided.

The Department considers that, due to the presence of the existing rail corridor, the majority of impacts have previously occurred as part of clearing that was required for the original corridor, including edge effects. Therefore, while 66.2 hectares of native vegetation would require clearing, the Department is satisfied that the project would not significantly alter the barrier and/or edge effects that already occur along the existing rail corridor, other than extending these impacts further into the remnant vegetation patches.

The Department considers that potential impacts on biodiversity as a result of construction and operation of the project, can be appropriately addressed through mitigation measures and offsets.

The mitigation measures described in the EA and the Proponent's statement of commitments includes requirements to:

- minimise vegetation clearing and retain mature trees where possible;
- undertake pre-clearance surveys;
- implement a tree felling protocol, establishment of next boxes, and relocation of habitat features that may be utilised by fauna, such as fallen logs, where possible;
- use of existing disturbed corridors where possible;
- rehabilitation and replanting of native vegetation for areas of newly created bare soil;
- minimise impacts of noxious weeds;
- implementation of offset areas; and
- preparation of a Flora and Fauna Management Plan.

A Biodiversity Offset Strategy for the project is currently being developed by the Proponent in consultation with the Department of Planning, DECCW, and DSEWPC, and has been committed to by the Proponent in statement of commitments 7 and 16. The Department considers that biodiversity offsets are the key component in ensuring management of the loss of vegetation as a result of the project, and has recommended conditions to ensure completion of the Biodiversity Offset Strategy prior to commencement of any construction work that would result in the disturbance of any existing native vegetation, and completion of

a Biodiversity Offset Package within six months of approval of the Biodiversity Offset Strategy.

DECCW supported the Proponent's proposal to use the Biobanking program for the vegetation offsets, however considers that further details in relation to a quantitative appraisal of the offset package that would offset the predicted impacts are required.

DECCW also raised concerns in relation to a previous development consent issued by Maitland City Council in July 2005 for the subdivision of land at Rutherford adjacent to the rail corridor. The Department understands that the majority of additional vegetation clearing for the project is proposed within this land, required for the purposes of a Site Compound Area, but which would not be offset for the removal of vegetation within this land.

The land referred to in the development consent at Rutherford has been cleared of vegetation with the exception of the vegetation corridor / detention basin located on the western boundary of the site. The land is currently vegetated with mature and regenerating Lower Hunter Spotted Gum Iron Bark (listed as an EEC), and identified in the area to be used for the construction worksite on this land. It would therefore appear that since the clearing of vegetation took place some regeneration has occurred. The DECCW submit that as the Proponent proposes to undertake additional clearing of EEC vegetation within part of this area for a worksite, that vegetation offsets are required.

The Department considers that clearing of any native vegetation approved for clearing as part of the existing DA is not applicable to this assessment. However, should native vegetation clearing not the subject of the DA be required, offsetting would be required. This would be required to be included in the Biodiversity Offset Strategy and Package.

The Department considers that the Proponent has appropriately considered the impacts to aquatic ecology. The mitigation measures proposed in the EA and the Proponent's statement of commitments, would ensure that potential impacts to aquatic species and their habitats is minimised, and impacts that are likely to occur from the realignment of Sawyers Creek and the impacts to riparian vegetation would be minimised. The Proponent has proposed to prepare a revegetation plan to re-instate riparian vegetation characteristic of the Red Gum Open Forest.

5.3 Non-Aboriginal Heritage

Issue

The study area has been identified in terms of its archaeological context, historical context, and physical context. More than 50 individual elements associated with former historical activities / events were identified within the existing rail corridor, as identified in Table 8.

Table 8 – Identified heritage items

Site	Heritage Significance	Assessed Heritage Impact
Site 1: 'Clifton' Homestead, Station Lane, Lochinvar	Local	Neutral/Positive
Site 2: Allandale Wine Cellars / Penfolds Winery	Local (Rare)	Negative
Site 3: Underbridge, Jump Up Creek, Belford	None	Neutral
Site 4: Underbridge Precinct, Black Creek, near Branxton	Local (Rare)	Neutral
Site 5: Underbridge and Culvert, Sawyers Creek, near Greta	Local	Neutral
Site 6: Underbridge, Anvil Creek tributary, near Allandale	Local (Rare)	Neutral
Site 7: Underbridge, Wollombi Road, Farley	Local	Neutral

Site	Heritage Significance	Assessed Heritage Impact
Site 8: Underbridge, Stoney Creek, Farley	Local (Rare)	Neutral
Site 9: Overbridge, Old North Road, Lochinvar	Local (Rare)	Negative
Site 10: Belford RailWay Station Precinct	Local	Neutral
Site 11: Branxton Railway Station Precinct	State	Negative
Site 12: Greta Railway Station Precinct	State	Negative
Site 13: Allandale Railway Station Precinct	Local	Neutral
Site 14: Rutherford Junction Railway Station Precinct	Local	Neutral
Site 15: Farley Railway Station Precinct	Local	Negative
Site 16: Level crossing, Hermitage Road, Belford	None	None
Sites 17 to 49: Brick culverts	Various – Local /Local (Rare) /None	Various – Negative /Neutral /None
Sites 50 to 53: Stone culverts	Local (Rare)	Negative

The main construction impacts would result in a loss and/or modification of heritage resources, expected to result from:

- earthworks which would cause disturbance and modification;
- the construction process itself;
- the establishment of site compounds within close proximity to heritage items;
- the amplification of underbridges, overbridges and culverts;
- the burial, by fill, of heritage structures such as culverts;
- demolition of Old North Road bridge; and
- the demolition, relocation and/or modification of station platforms.

The main operational impacts on the heritage items include:

- potential vibration adjacent to structures;
- new bridges obscuring the view of existing listed bridges; and
- excavation uncovering relics.

In order to mitigate the impacts to heritage structures occurring within the project area, the Proponent has proposed a number of mitigation measures, including:

- briefing of all project personnel on their responsibilities under the Heritage Act;
- archival recording of heritage resources that have the potential to be impacted and engagement of an archaeologist to monitor these impacts; and
- where existing brickwork is disturbed at Greta and Branxton railway stations, a representative length will be reinstated along the new platform alignment.

A natural heritage area within a 1 kilometre radius of the Old North Road overpass, Allandale Bank, has also been identified as directly affected by the project. The Allandale Bank contains fossils that are of major significance to the study of spatial and temporal distribution of similar formations found along the east coast of Australia. The fossils found in this area are highly representative of early Permian Allandale formation. The area is approximately 80 hectares in size and is listed on the Register of the National Estate.

It is noted that the majority of material has previously been removed by authorised and unauthorised persons, with current exposure limited to either damaged or material not easily accessible. The EA identifies that a maximum of 2.8 hectares (or approximately 3.5%) of the Allandale Bank would be disturbed by the Project. As the remaining area not impacted by

the project equates to over 96.5%, the area to be disturbed by the project is small and would not pose a significant impact on the integrity and heritage value of the remaining Allandale Bank.

Consideration

The Department notes that the Proponent's proposed statement of commitments would address any potential impacts to heritage items, in particular ensuring all staff are aware of the provisions of the Heritage Act, managing the potential heritage impacts at Greta and Branxton Stations, managing the potential heritage impacts at Allandale Wine Cellars / Penfolds Winery, and minimising the impacts on the natural heritage of Allandale Bank.

Furthermore, in relation to Greta and Branxton Stations, the Heritage Branch raised issues regarding the uncertain timing of phase two of the project, and the possible crossover of modifications to Branxton and Greta stations by RailCorp. In response, the Department has recommended a condition of approval which requires the Proponent to ensure that the existing condition of the stations is recorded prior to the commencement of construction.

The Department has also recommended a condition of approval to ensure appropriate designs for Branxton and Greta stations are endorsed by the Heritage Council and approved by the Director-General, prior to the commencement of construction of Phase 2.

Owners of private properties including "Dunoon" and "Clifton House" also provided submissions raising concerns over the project's impacts on these properties. The submissions highlighted that in many cases, it is not just the structures themselves but ancillary items such as landscaping and outbuildings that contribute as a whole, and any direct or indirect impact to these may have adverse consequences.

To ensure that all heritage items potentially impacted by the project are appropriately protected, the Department has recommended a condition of approval which requires the Proponent to prepare a Non-Aboriginal Heritage Management Plan, in consultation with the Department of Planning – Heritage Branch. The intent of the Plan is to:

- identify heritage items and archaeological sites impacted by the project;
- detail management measures to be implemented to prevent impact in the vicinity of heritage items and sites;
- detail protocols for archival recording of items to be modified;
- detail training and induction requirements for all staff;
- detail monitoring requirements on heritage structures for construction vibration; and
- detail procedures and protocols for engaging specialists to provide heritage and conservation advice.

The Department considers that implementation of the Plan would ensure that all heritage items, including private homesteads, the Allandale Wine Cellars/Penfolds Winery, bridges and culverts, and station precincts, are appropriately protected or recorded during construction and operation of the project.

To construct the third track, the Proponent proposes to extend the existing corridor which would involve cutting into the face of the Allandale Bank where fossil material is located. The Department notes that limited guidelines are available for the management and mitigation of impacts at the Allandale Bank and in this instance, a proactive approach in the form of a management plan, is considered to be the most appropriate tool to alleviate direct and/or indirect impacts as far as practicable. The Department further notes that the lead agency responsible for such activities, NSW I&I, supports this approach.

The Department notes that, based on preliminary design, blasting is proposed for the Allandale Bank. The Department does not support this methodology. Whilst the Department notes that a representative sample will be further investigated in collaboration with interested

parties, there is the potential, if not managed correctly, that irreversible damage may occur to the Bank. Therefore, the Department has recommended a condition of approval that the Proponent prepare an Excavation Management Plan in consultation with the NSW I&I. The intent of the Plan is to further reduce the level of impact through refinement of construction and detailed design methodologies and provide certainty that collection of material will occur through legitimate means and be used for educational or research purposes.

5.4 Aboriginal Heritage

Issue

The Proponent undertook investigations into Aboriginal heritage along the project corridor, the investigation areas consisted of:

- Modified investigation areas – comprised approximately 27% of the total investigation area. These areas had been previously impacted by earthworks as a result of the existing Main Northern Railway. The potential for Aboriginal heritage to survive in these areas were considered negligible; and
- Unmodified investigation areas – comprised approximately 73% of the total investigation area. There is considered some potential for Aboriginal heritage to survive.

The Aboriginal heritage assessment relied upon a search of the Aboriginal Heritage Information Management System (AHIMS) register, previous heritage searches, and reports in the area and field inspections. Field inspections were undertaken for the majority of the investigation area, with the exception of approximately 9%, where inspections were limited due to property access restrictions.

The Proponent undertook consultation with the Aboriginal community in accordance with the requirements of DECCW's *Interim Community Consultation Requirements for Applicants (2004)*. The consultation process sought registration of interested parties in being involved in the project, 20 organisations or individuals registered with the Proponent.

As a result of the changes to the construction area proposed in the Submissions and Preferred Project Report the number of Aboriginal heritage sites increased. The revised Aboriginal heritage assessment recorded a total of 105 (previously 92 in EA) Aboriginal heritage sites within 50 metres from the investigation area, comprising:

- 90 (77 in EA) open artefacts and one grinding groove site;
- 13 previously recorded open artefact sites listed on the AHIMS but not relocated; and
- one previously recorded open artefact site not listed on the AHIMS register, but not relocated.

The Aboriginal heritage assessment found that of the 105 recorded sites, the project was considered likely to impact 86 of these. An assessment of the significance of the 86 sites was undertaken, based around the educational, historic and aesthetic values. The significance assessment found:

- three sites of high significance;
- one site of moderate to potentially high significance;
- four sites of low to potentially high significance;
- four sites of low to moderate significance;
- eight sites of low to potentially moderate significance; and
- 66 sites of low significance.

Overall the Aboriginal heritage assessment concluded that without mitigation, the impacts of the project would be high within a local context, but relatively low within a regional context. Consequently, the Proponent has proposed a number of mitigation measures, including preparation of an Aboriginal Heritage Management Plan, which would outline the policies and actions proposed to manage the potential impacts of the project on Aboriginal heritage. The

plan would be prepared in consultation with registered Aboriginal stakeholders and DECCW. Specifically, the plan would provide procedures and processes for:

- excavating, collecting and salvaging artefacts within specific sites;
- recording evidence collected;
- training of site staff;
- surveys of areas not already sampled in the Aboriginal heritage assessment; and
- management of unrecorded sites.

After implementation of these measures the Aboriginal heritage assessment concluded that the risk of residual impacts to Aboriginal heritage would be relatively low.

Consideration

DECCW made a submission in relation to Aboriginal heritage raising concern that only six out of 20 of the registered Aboriginal stakeholders expressed support for the proposed mitigation measures. DECCW noted that this was not a majority of stakeholders.

In relation to consultation with Aboriginal stakeholders, the Proponent undertook consultation in accordance with the DECCW *Interim Community Consultation Requirements for Applicants (2004)*. The Department notes that the Proponent sent invitations to appropriate stakeholders in consultation with councils, DECCW and the Department of Aboriginal Affairs. Of the invitations sent, 20 stakeholders registered an interest in the project and 14 provided comments on the Aboriginal heritage assessment. Accordingly, the Department considers that the Proponent adequately consulted with Aboriginal stakeholders during preparation of the EA.

Subsequent to initial the consultation, the Proponent established an Aboriginal Liaison Committee, which involves five of the registered Aboriginal stakeholders. The committee was formed to discuss and address issues raised by Aboriginal stakeholders during the initial days of the surveys. The Proponent considered the liaison committee an avenue to build an ongoing relationship with the Aboriginal community in the Project area.

However, the Department considers that the establishment of the Aboriginal Liaison Committee with only five of the registered stakeholders is not adequate for ongoing consultation. The Aboriginal Heritage Management Plan must be circulated to all the registered stakeholders identified on pages 64 to 66 of the Aboriginal Heritage Impact Assessment technical paper for the EA. As such, the Department has recommended a condition of approval requiring the Proponent to prepare an Aboriginal Heritage Management Plan in consultation with registered Aboriginal stakeholders and DECCW.

The Department has recommended a condition to require the Proponent to undertake necessary surveys within the 9% of Investigation Area that could not be accessed due to property access being limited. Overall, with the recommended condition the Department considers that the surveys undertaken are appropriate.

The Department considers that the Proponent's statement of commitments and the Department's recommended conditions of approval are adequate for managing impact to Aboriginal heritage items and areas during construction and operation of the project.

5.5 Construction Traffic and Transport

Issue

The main impact to traffic is anticipated to be on local roads during the construction period. The New England highway generally runs parallel to the Main North Railway line. A number of collector streets connect to the New England Highway, as well as traversing the Main North Railway line via at-grade or grade-separated crossings.

Potential impacts are generally anticipated to consist of:

- increased travel times on local roads due to construction traffic;
- increased number of traffic conflict points;
- risks to safety on roads, including sight lines;
- impediments to pedestrians and cyclists; and
- increased traffic volumes and road closures.

The traffic intersection modelling undertaken for the EA indicates that four of the six intersections within the study area are currently at Level of Service (LOS) D (nearing capacity) or below. With the addition of construction traffic, six intersections are anticipated to be over-capacity, as shown in Table 9.

Table 9 – Construction traffic impact on intersection capacity

New England Highway Access	Suburb	Current Intersection Performance	Additional construction traffic intersection performance	Proposed treatment
<i>Wollombi Road</i>	Telarah	LOS F – Over capacity	LOS F – Over capacity	Traffic signals
<i>Station Lane</i>	Lochinvar	LOS D – Nearing capacity	LOS F – Over capacity	Manned traffic controllers
<i>Nelson Street</i>	Greta	LOS E – At capacity	LOS F – Over capacity	Manned traffic controllers
<i>Station Street</i>	Branxton	LOS D – Nearing capacity	LOS F – Over capacity	Traffic signals
<i>Rix's Road</i>	Belford	LOS A – Good	LOS F – Over capacity	Lane closure/realignment
<i>Allandale Road</i>	Allandale	LOS F – Over capacity	LOS F – Over capacity	Lane closure/realignment

The project would also directly impact upon four road bridges, specifically:

- construction of a new underbridge at Wollombi Road, Farley;
- demolition of the existing overbridge at Old North Road, Allandale;
- construction of a new underbridge at Allandale Road, Allandale; and
- modification of the existing over bridge at Bridge Street, Branxton.

The Old North Road overbridge at Allandale would be demolished and not replaced. The structure is currently closed to through traffic however, still carries pedestrian and stock between properties. A stock overpass at Farley would be similarly decommissioned.

The construction phase is anticipated to have a negative impact on road user safety during construction through:

- increased traffic in designated school zones at Station Lane, Lochinvar, and Station Street, Branxton;
- alterations to rail corridor access gates at Wollombi Road, Farley and Allandale Road, Allandale; and
- additional traffic entering and exiting the project sites from the New England Highway would marginally increase the risk of traffic accidents.

Consideration

The Department acknowledges that some impacts to road intersections as a result of increased traffic movements during the 18 month construction period are anticipated. The

Proponent provided an updated Traffic and Access Study in the Submissions and Preferred Project Report, as a result of the revised construction impact zone. The key changes to the updated Traffic and Access Study related to traffic volumes and access arrangements as a result of the changes to the size and location of temporary construction compounds. The revised location, size and number of the proposed construction compounds would change the level of construction traffic and therefore the traffic impact on affected roads and intersections reported in the EA, however management requirements identified in the EA would still apply.

The Traffic and Access Study indicates that traffic intersections during construction are still anticipated to result in six of the nine intersections (three during each phase of construction) operating at over-capacity (level of service F).

The RTA advised that they did not support the proposed management measures at the intersections of the New England Highway with Allandale Road and Rix's Road. At these intersections the Department has recommended a condition of approval which requires the Proponent to undertake further investigation of options to address road safety and traffic efficiency at these intersections. The Proponent would also be required to ensure that final design of all road changes in associated infrastructure is prepared in consultation with the relevant road authority.

Additionally, under the recommended conditions, the project would be required to be constructed with the aim of ensuring that existing intersections operate at a level of service as close as practicable to existing levels where existing levels are at C or better, or no worse than existing levels where existing levels are at D or F.

Many of the public submissions received in relation to traffic raised concerns with potential impacts anticipated during construction of the project. The issues raised related generally to the ability of local roads to accept higher volumes and heavier construction vehicles. Road safety concerns and controlling the speed of construction vehicles on local roads were also raised in submissions.

In relation to the concerns raised in submissions the Proponent has committed to undertaking a number of measures to manage the impacts to the road network during construction. The measures would reflect final specific construction staging scenarios and be prepared in consultation with the RTA and local councils (where appropriate), and provided through the provision of:

- Traffic Management Plans – provide for final management strategies and measures to minimise the impact of the project on the road network.
- Traffic Control Plans – prepared locations where the project will have an impact on the road network, including site compound access points. The plans would detail vehicle, pedestrian, bus and cyclist restrictions and protection measures.

The Proponent has indicated that the Hunter Expressway is anticipated to be opened at the end of 2013. The opening of the Hunter Expressway is likely to substantially reduce the traffic volumes on the New England Highway through the project area. The Proponent has indicated that the timing for construction of Phase 2 may occur after the completion of the Hunter Expressway.

The Department has included a condition of approval which allows the staging of the project, including staging of compliance with the conditions of approval. This would allow the Proponent to determine the appropriate impacts and mitigation measures prior to commencement of construction for Phase 2.

The RTA also raised concerns in relation to the potential cumulative impacts of construction traffic for the Maitland to Minimbah Third Track and Hunter Expressway projects, and

suggested that the Proponent undertake ongoing consultation with the RTA throughout the construction of the project.

In addition to the impacts identified in the EA, the Proponent has advised that construction of the Hunter Expressway is likely to be undertaken at the same time as the project, however it is unlikely that the two projects would use the same roads. Notwithstanding, to ensure any impacts are managed effectively the Proponent has committed to co-ordination with the RTA as the construction program for each project progresses.

The Department acknowledges that traffic impacts are limited to the construction phase only and therefore are temporary in nature. The Proponent has provided appropriate measures in the EA through statement of commitments to adequately manage and mitigate the impacts. The measures outlined in the EA are further strengthened through the recommended conditions of approval.

5.6 Air Quality Impacts

Issue

Regional air quality monitoring data obtained from the DECCW monitoring station at Beresford (approximately 4km from the southern end of the project) indicated that existing background air quality is generally below DECCW goals. The primary sources of air pollution contributing to the background levels are likely to be dust from agricultural activities, smoke from wood heaters, vehicle exhaust emissions (particularly from the New England Highway) and existing rail operations along the Main Northern Railway, including coal dust from the existing freight trains.

During construction the main types of emissions are anticipated to be dust emissions from earthworks, and exhaust emissions from motor vehicles and construction machinery. Mitigation of air quality impacts would be needed around sensitive land uses located approximately 500 metres away, with particular focus on receivers within 100 metres.

In addition to normal practice dust mitigation strategies for construction sites the Proponent has committed to implementing various mitigation measures to minimise the impacts to air quality including:

- real time dust and weather monitoring, including warning against high wind speeds, which would enable appropriate action to be taken to minimise dust impacts; and
- installation of dust screens and physical barriers.

During operation of the rail line the main source of air emissions are anticipated to be:

- coal dust from a range of diffuse sources generated by passing trains and wagons;
- coal dust emissions from uncovered wagons; and
- diesel train exhaust emissions.

The projected increase in train movements would result in a proportional increase in coal dust emissions. To determine the impact coal dust would have, the assessment undertook a comparison against predicted PM₁₀ emissions from diesel freight trains not carrying coal versus those carrying coal. The PM₁₀ emissions were predicted to be two to three times greater on freight trains carrying coal. This demonstrates a worst case scenario and is subject to a number of other factors, including moisture content and particle size of the coal, wagon vibrations, coal load profile, and exposure to wind and rain.

The exhaust emissions of diesel locomotives include carbon monoxide, oxides of nitrogen, sulphur dioxide, PM₁₀ and trace hydrocarbons. The concentration of these elements were predicted to comply with DECCW goals, with the exception of annual average nitrogen dioxide concentrations which were predicted to be slightly above DECCW goals within 50 metres of the track in 2012 and 2022. These exceedences were considered to be marginal

given the conservative nature of the assessment, and nitrogen dioxide emissions from rail infrastructure is not anticipated to offer a significant contribution to total nitrogen dioxide emissions in the wider Hunter Valley area.

Cumulative PM₁₀ impacts from diesel locomotives plus coal dust from wagons may potentially exceed DECCW goals within 50 metres of the third track. The predicted concentrations are anticipated to exceed DECCW goals by 10% in 2012 and 12% in 2022. Beyond 50 metres the predicted emissions would not exceed the DECCW goals.

In order to minimise the impacts to air quality the proponent proposes to implement the following mitigation measures:

- railway verges and exposed surfaces would be re-vegetated or covered where possible to reduce dust emissions;
- where possible, minimise idling of trains near sensitive receivers; and
- consider maintaining or establishing trees or other suitable vegetation at properties adjacent to the Project.

Additionally, the Proponent's environment protection licence requires it to prepare a pollution reduction program for dust emissions. The Proponent has advised that the pollution reduction program is currently being prepared, with the objective of significantly reducing coal dust emissions on the rail network.

Consideration

A number of submissions raised concerns in relation to the health impacts of coal dust from trains. The concerns particularly related to the impact of coal dust on roofs washing into tank water, which is the main source of drinking water to houses in the surrounding area.

As indicated above the air quality assessment, which is considered conservative, found that dust is predicted to be less than 10 per cent above the DECCW criteria within 50 metres of the rail track. The Proponent has also identified a number of mitigation measures that are proposed to be implemented to further reduce these impacts.

Additionally, the pollution reduction program that DECCW have placed on the Proponent's environment protection licence is also considered to provide longer term improvements to air quality from coal trains across the whole freight network. The Proponent has advised that the pollution reduction program has completed the first phase, which involved submitting a work plan to DECCW outlining the measures to be adopted to significantly reduce coal dust emissions across the NSW ARTC network.

The Department therefore considers that the Proponent has taken all reasonable steps to reduce air quality impacts and that the predicted residual air quality impacts are considered to be acceptable. The implementation of a pollution reduction program will also offer significant benefits in the longer term from coal dust emissions.

5.7 Other Issues

Surface Water

Issue

The project passes through seven waterway catchments, with 59 waterways intersecting the rail alignment. There are a total of six underbridges and 53 culverts that convey water under the rail corridor within the project area. Waterways have been modified over time by land clearance, the existing Main Northern Railway line and other agricultural practises. Water flows within a majority of the waterways are ephemeral in nature.

The project has the potential for these waterways to be impacted by new or extended structures and/or widening of the rail embankment. The main impacts anticipated during construction are:

- decline in water quality – as a result of erosion and stream bed changes, altering of stream features such as aquatic vegetation, and potential pollutants from construction processes;
- increase in flood levels – as a result of the modified waterway crossing flow area being less than the natural width upstream of the crossing;
- changes in localised water flows from removal of vegetation and mangroves, and channel disturbance;
- alteration to surface flow paths at Black Creek due to storage of spoil – the hydraulic assessment concluded that the increase would only be minor (approximately 1%) in a flood event, which is not predicted to have an adverse impact on existing structures;
- encroachment of the proposed embankments into Stony Creek and Jump-Up Creek are likely to increase flood levels, and at these locations the Proponent has proposed to increase batter slopes or construct retaining walls to minimise impact on water quality;
- increase in scour and sediment deposition;
- culvert extension works and waterway causeways at access tracks required for the project may isolate fish habitation, and restrict fish passage and spawning; and
- culvert extensions and re-alignment of Sawyers Creek may result in changes to the hydraulic conditions of waterways and the flow of sediment.

To mitigate the potential impact the Proponent has identified a number of measures:

- mulching cleared areas and spreading over disturbed areas to protect against erosion;
- installation of erosion and sediment controls, including:
 - sediment filters, traps and basins;
 - temporary catch and diversion drains; and
 - stabilise exposed surfaces as soon as practical following completion of construction.
- appropriate storage of materials to prevent leaching into waterways;
- locating and designing construction worksites away from waterways;
- refuelling construction equipment within areas with appropriate controls or bunding or offsite;
- spill kits available on site;
- designing configuration of causeways in consultation with the NoW; and
- defining final extent of culvert and Creek realignments during detailed design.

During the operational phase of the project the results of hydrologic calculations confirm that there would be minimal change in the hydrology of the surrounding catchments. In turn, this would also not adversely impact on private or public infrastructure. In relation to Probable Maximum Flood (PMF), the EA confirms that provided the project does not increase the height of the rail embankment, there would be no adverse impacts on the PMF levels.

Consideration

The NoW raised a concern that there must be sufficient baseline data established for all waterways with permanent flows and also those that flow regularly after small rainfall events. NoW expressed concern that the Proponent was deferring the preparation of a surface water monitoring program as part of the Construction Environmental Management Plan, and considers that the Proponent should review and approve the proposed protection and rehabilitation measures.

NoW also raised concerns in relation to the appropriate identification of specific measures for protection and rehabilitation of scour, bank and bed erosion. NoW considers that any measures constructed should be in accordance with the *NSW Office of Water, Guidelines for Controlled Activities*.

The Department considers that the Proponent has appropriately committed to a range of mitigation measures in the statement of commitments, including the preparation of a Spoil and Fill Management Plan, implementation of erosion and sediment controls, implementing controls outside the specific work area, spill containment, implementation of a surface water-monitoring program, review of the extent of encroachment into existing waterway areas, minimising impacts on Sawyers Creek, and consideration of fish passage through culverts.

However, to ensure that all potential impacts are managed as far as practicable, the Department has recommended a number of additional conditions of approval, which require the Proponent to:

- provide evidence to the NoW of all groundwater monitoring bores prior to the commencement of construction;
- install and maintain sedimentation and erosion control measures consistent with *Managing Urban Stormwater: Soils and Construction* (Landcom 2004), for the duration of construction works;
- ensure that the detailed design of the project does not significantly increase flooding characteristics;
- where flooding characteristics are altered and affect access, property and infrastructure, identify and implement further mitigation measures; and
- consult with DECCW, NoW and NSW I&I during the detailed design of all crossings of watercourses, creek realignments and works within riparian zones.

The Department considers that with the proposed statement of commitments in place, and the Department's recommended conditions of approval, the potential impacts to surface water would be adequately managed.

Soils and Geology, Groundwater, and Contamination

Issue

The existing rail alignment includes areas of:

- potentially soft alluvial soils, with potentially high ground water levels;
- localised areas of instability on existing rail embankments;
- localised areas of potential instability in the natural terrain;
- localised areas of erosion along the existing corridor and in the natural terrain;
- disturbed terrain, likely to be associated with fill and possibly soil contamination;
- preferred drainage paths; and
- areas prone to water logging.

Potentially problematic soils that could be encountered along the route also includes acid sulfate soils, acid soils, reactive soils, and dispersive and erodible soils.

The project would involve conventional earthworks and widening of existing embankments and cuttings, and therefore there is potential for geotechnical and soil erosion issues and risks associated with construction of the project. General geotechnical maintenance issues that would re-occur along the rail corridor during operation are likely to comprise cess drainage and drainage works, loose rock and tree removal from cuttings, and embankment batter instability. Standard best practice mitigation measures would be implemented.

Construction of the project would involve modifications to existing infrastructure and construction of new infrastructure, but is not anticipated to impact on availability, depth, quality or flow of groundwater. The works would involve working within close proximity of groundwater sources but would not directly intercept groundwater. Short term, localised dewatering for construction purposes would be required at Wollombi Road. Due to the temporary nature of the dewatering of a few weeks, and that the impact is localised, it is

unlikely to have any significant long term impact. Standard best practice mitigation measures would be implemented.

A preliminary site contamination investigation was undertaken for the project and identified that no records relating to specific contamination or remediation were identified within Council and DECCW searches. Based on the historical review and site inspection, the most likely sources of contamination would be associated with the agricultural activities, imported fill and the rail line.

Based on the investigations undertaken, soils excavated from the agricultural properties and the rail corridor are considered suitable for use on site, with regards to potential contamination risk to human health and the environment. Standard best practice mitigation measures would be implemented.

To mitigate the potential impact the Proponent has appropriately committed to a suite of mitigation measures regarding impact on soils, groundwater, and contamination issues, including:

- development of a Spoil and Fill Management Plan to ensure minimising potential disturbance of soil erosion, sedimentation, potential acid sulfate soils, and reactive or dispersive soils;
- implementation of an Acid Sulfate Soil Management Plan;
- procedures for handling, stockpiling and assessing potentially contaminated materials during works in the Spoil and Fill Management Plan, and undertake Phase 2 Contamination assessments at particular properties;
- management of any asbestos, as identified in an Asbestos Management Plan if required;
- minimising groundwater quality impacts through monitoring; and
- implementation of storage areas and development of a response plan to deal with any accidental spills or leaks.

Consideration

The Department considers that the Proponent has appropriately committed to a suite of mitigation measures regarding impact on soils, groundwater, and contamination issues, including preparation of a Spoil and Fill Management Plan, an Acid Sulfate Soil Management Plan, and Phase 2 Contamination assessments at particular properties;

The Department has further recommended a condition of approval requiring preparation of the Phase 2 Contamination Report prior to the commencement of bulk earth activities or construction in potentially contaminated areas, with recommendations to be suitably incorporated into the Construction Soil and Water Quality Management Plan.

The Department considers that with the proposed statement of commitments in place, and the Department's recommended conditions of approval, the potential impacts as a result of earthworks would be adequately managed.

Property Impacts and Access

Issue

The majority of land adjacent to the project corridor is rural land with most land being used for grazing in one form or another. Small scale viticulture is also carried out at a number of properties within the Cessnock and Singleton local government areas. There are also some industrial land uses adjacent to the rail corridor, primarily at the Maitland end of the project. The national ceramics facility is located at Rutherford. Additionally, the Department is currently considering an application for a proposed new train support facility to be constructed at Greta adjacent to the rail corridor.

The main land use impact of the project is anticipated to be property acquisition that would occur along a narrow strip adjacent to the track on both sides. As a result of the changes to

the construction area proposed in the Submissions and Preferred Project Report the number of properties proposed to be acquired decreased from 145 to 92 properties.

There are a number of proposed residential developments and sub-divisions adjacent to the rail corridor at various locations, where property acquisition will be required. Some of these have been identified within the Department's *Lower Hunter Regional Strategy 2006*, contributing to enabling the release of up to 69,000 new greenfield lots in a coordinated way, with improved neighbourhood design and more efficient use of infrastructure. Major development sites include:

- Anvil Creek - up to 1,364 dwellings and mixed uses including a golf course, vineyard, retail/commercial, education and open space. Proposed land acquisition in this area would only result in a minor encroachment into the proposed open space buffer.
- Heritage Green - up to 450 residential lots, golf course, hotel and associated facilities. Proposed land acquisition would potentially reduce the development area slightly and may require redesign of parts of the development.

Small parcels of land are also proposed to be acquired at a Vineyard in Belford and two industrial properties at Telarah. The vineyard would lose two to three rows of vines. The Proponent considers that there would be no impact in the viability of the industrial properties.

Residential properties proposed to be acquired would also potentially impact on 13 farm dams and five structures, including residential properties, garages, farm sheds, pump house and stables. The access to two properties would be affected by the closure of the stock crossing underpass at Chainage 195.666km and the demolition of Old North Road Bridge.

The Proponent recognises acquisition of properties through negotiation is the preferred method for affected properties. Where negotiation is not successful, the Proponent would consider acquisition through compulsory measures under the *Land Acquisition (Just Terms Compensation) Act 1991*, through RailCorp as a state government agency. Commonwealth land would be acquired under the *Commonwealth Property Disposals Policy*.

Additionally, to minimise the impact on properties the Proponent would:

- provide fencing along newly defined property boundaries prior to removal of existing fences;
- negotiate appropriate mitigation or compensation with the property owner and DECCW (where necessary through licensing requirements), where a dam would be disturbed or removed; and
- access requirements for construction would be discussed with individual landowners prior to access being affected.

Consideration

A number of submissions raised concerns regarding potential devaluation of property as a result of adverse construction and operational impacts. The Department acknowledges that while construction impacts would occur these would be temporary in nature. There may also be some residual operational impacts in areas, particularly noise as a result of operation of the project and potential for flooding in some areas (refer to assessment of noise in Section 5.1 and flooding in Section 5.6). The Department is satisfied that the Proponent has provided a suite of measures to be implemented during construction, including undertaking further detailed design, preparation of a CEMP, and during operation to ensure impacts to residents are minimised.

With regards to property access, the Department is satisfied with the Proponent's commitment to maintain property access throughout the construction period, unless otherwise agreed by the landowner. The Department has further recommended the following conditions of approval to ensure protection to properties and property access:

- any access physically affected by the Project is to be reinstated to at least an equivalent standard, unless agreed with the property owner;
- the Proponent shall construct the project in a manner that mitigates indirect and direct impacts to properties and property infrastructure, including landscaping, fencing, walls, dams, bores and the like;
- the Proponent, in consultation with the property owner, shall arrange and fund the repair of damage to a standard comparable to that in existence prior to the damage; and
- prior to the commencement of construction, or each part of the project that may impact on surrounding properties, including those within 200m of blasting, the Proponent shall:
 - arrange for a risk assessment and undertake inspections of properties at risk from damage;
 - contact the owners of all properties on which property inspections are to be conducted at least two weeks before the inspection;
 - provide a copy of the property inspection report to the owner of each property inspected at least one week prior to construction that could affect the property; and
 - maintain a register of all properties inspected by the Proponent.

Submissions received also raised concerns in relation to the property acquisition consultation and negotiation process. The Department acknowledges that the property acquisition process is guided by the requirements in the *Land Acquisition (Just Terms Compensation Act) 1991*. The Proponent has also committed to undertaking acquisition through negotiation as a first step, before using powers to compulsorily acquire properties, which is in accordance with the requirements of the *Land Acquisition (Just Terms Compensation Act) 1991*.

Landscape and Visual Impacts

Issue

The landscape and visual impacts of the project are assessed as being of moderate significance. Whilst some noticeable impact would occur, these are considered to be within reasonable limits and not excessive.

The majority of landscape and visual impact would result from activities carried out in the construction phase of the project. These activities include the clearance of vegetation, the presence of construction machinery and activities in an otherwise rural landscape, and the construction of earthworks batters.

Some impacts would occur during the operation of the project. In some locations, vegetation clearance during the construction phase would result in views of coal and commuter trains being made available to residences that currently do not have views to such elements. In other locations, earthworks batters would be located closer to residences than they currently are.

Mitigation measures proposed by the Proponent include development of a Landscape Rehabilitation Strategy and Landscape Strategy, as well as other measures to manage adverse visual impacts during construction and operation.

Consideration

The Department considers that the Proponent has adequately considered the visual impacts arising from the project and committed to appropriate mitigation measures, including minimising loss or damage to vegetation and minimising light spillage, integration of infrastructure requirements into the surrounding environment, and managing changes to the landscape, including vegetation and design solutions.

Notwithstanding, the Department considers that although the rail corridor already exists, there is some scope to improve the visual impacts of the project, in particular vistas from key

- prepare a Landscape Plan for the project in consultation with relevant councils and the community to identify landscaping measures to mitigate impacts of the project; and
- make available advanced native plants of local provenance for any resident likely to experience a significant visual impact from the project for screening.

These will serve to complement the Proponent's commitments to address the visual impacts arising from the Project.

6 RECOMMENDATION

The Main Northern Railway carries the majority of coal produced in the Hunter Valley to the Port of Newcastle for export. Whilst the current rail configuration between Maitland and Minimbah has sufficient capacity to last until port capacity expands, there is limited potential to accommodate the growth which is predicted to occur.

The objective of the Maitland to Minimbah Third Track project is to increase the rail capacity, and improve the reliability and operational performance of the track between the Hunter Valley and the Port of Newcastle.

The Department considers that the Maitland to Minimbah Third Track is justified on the basis that it is a vital infrastructure project, and in the public's interest. Should the project not proceed, the coal industry would continue to rely on the existing two tracks for transportation of coal, limiting capacity of the lines and creating severe service disruptions and increased rail wear.

Following a detailed assessment of the Proponent's Environmental Assessment and Submissions and Preferred Project Report, and the submissions received from agencies, councils and the public during the exhibition period for the project, the Department is satisfied that the impacts of the project can be appropriately mitigated or managed to acceptable levels. The Department therefore recommends that the project be approved subject to the recommended conditions of approval.

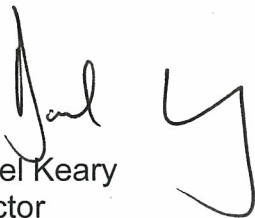
The Department acknowledges that there will be residual impacts on the environment and local community, particularly with respect to the impacts on the noise environment in the vicinity of the corridor. The Proponent has demonstrated general compliance with IGANRIP to minimise the impacts of the project. Additionally, with the responsibilities of adjoining developments under the *State Environmental Planning Policy (Infrastructure) 2007* an acceptable shared strategic land use outcome can be achieved.

The Department considers that the recommended conditions of approval for the project would provide for the mitigation and management of key impacts associated with the project during the detailed design, construction and operational phases of the project. These include specific environmental conditions for noise and vibration impacts, traffic and transport impacts, ecological impacts, air quality and dust impacts, soil and water impacts, spoil and waste management, heritage impacts, property impacts, and landscaping requirements.

The Department has also recommended conditions of approval for environmental management, including the requirement for a Construction Environmental Management Plan, a Construction Traffic Management Plan, a Construction Noise, Vibration and Blasting Management Plan, a Spoil and Fill Management Plan, a Surface Water Management Plan, a Groundwater Management Plan, and an Aboriginal Heritage Management Plan. Noise and vibration auditing would also be required to confirm compliance with the predictions referred to in the Operational Noise and Vibration Review, and if the monitoring indicates an exceedence of the noise and vibration targets, the Proponent would be required to implement further reasonable and feasible measures.

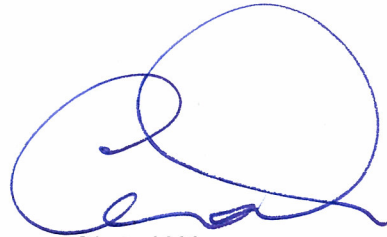
The Department believes that these requirements would provide for the implementation of best management practices during all phases of the project, and would ensure that the construction and operational impacts of the project on the surrounding environment and the amenity of local residents are managed to acceptable levels.

Consequently, the Department recommends that the Minister approve the Maitland to Minimbah Third Track project, subject to the recommended conditions of approval.



13/12/10

Daniel Keary
Director
Infrastructure Projects



13.12.10

Chris Wilson
Executive Director
Major Projects Assessment



14/12/10

Richard Pearson
Deputy Director-General
Development Assessment & Systems Performance

APPENDIX A ENVIRONMENTAL ASSESSMENT

See the Department's website at

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=2924.

APPENDIX B SUBMISSIONS

See the Department's website at

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=2924.

APPENDIX C PROPONENT'S RESPONSE TO SUBMISSIONS

See the Department's website at

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=2924.

APPENDIX E RECOMMENDED CONDITIONS OF APPROVAL
