



Queensland Rail



ENVIRONMENTAL IMPACT



## Northern Missing Link (North Goonyella to Newlands)

### Executive Summary

### Environmental Impact Statement



February 2006

## Executive Summary

The Central Queensland coal rail system currently includes four rail systems – Moura, Blackwater, Goonyella and Newlands, and five coal export ports – two at Gladstone (RG Tanna and Barney Point); two at Hay Point (Dalrymple Bay Coal Terminal (DBCT) and Hay Point Services Coal Terminal (HPSCT)), and one at Abbot Point. The proposed Northern Missing Link (NML) rail line will connect the existing Newlands and the Goonyella railway systems near the coalmines of North Goonyella and Newlands in the North Bowen Basin, Central Queensland (Figure 1). The construction of the NML will assist in providing relief to the coal transportation task on the Goonyella system.

The entire Northern Missing Link project has been divided into three distinct sections:

- » Construction of a rail link between North Goonyella and Newlands (the Northern Missing Link) (Greenfield Development);
- » Track upgrade works between Newlands and Abbot Point (Brownfield Development); and
- » Train turning infrastructure for the Goonyella System (Brownfield Development).

The impact assessment for this Environmental Impact Statement (EIS) is only focused on the Greenfield Development section of the Northern Missing Link between North Goonyella and Newlands (being approximately 69 km long section of single line electrified railway with three passing loops to be contained within a

nominal 60 metre wide corridor). The full project is proposed to be constructed over a number of stages spanning 15 to 20 years with the volume of coal being transported increasing progressively over that period (coal volume increasing from 3 Mtpa to approximately 35 Mtpa across the Link with corresponding train numbers varying from 5 trains per day up to an approximate average of 29 trains per day).

Construction of the Link may commence late 2006 with an 18-24 month construction period, however this timing may vary significantly depending on coal demand, coal system master planning considerations, commitment from mine owners, resolution of funding, financing, pricing and regulatory issues. Construction of the NML will require an average work force of approximately 200 personnel. Movement of construction materials and equipment will be via a combination of road and rail transport, utilising the main road networks in the region. It is envisaged that gravel and ballast materials will be sourced locally from existing quarries and transported via road and rail. Water will likely be sourced from bores within the rail corridor.

Queensland Rail is the Proponent for this project. It operates its business within a corporate Environmental Management System (EMS) with the Environmental Policy being a key component. This policy commits QR to applying sound environmental management practices based on the principles of Ecologically Sustainable Development (ESD).



### Legislative Framework

The Northern Missing Link Project (North Goonyella to Newlands) was declared a significant project by the Queensland Coordinator-General (CoG) pursuant to Section 26 of the Queensland *State Development and Public Works Organisation Act 1971* (the SDPWO Act). This declaration requires QR to prepare an Environmental Impact Statement (EIS) for the project under the SDPWO Act. This process removes duplication with the Commonwealth *Environmental Protection and Biodiversity and Conservation Act 1999* (EPBC Act) and streamlines approval processes under the Integrated Planning Act (IPA) 1997. A referral under the EPBC Act was submitted to the Department of Environment and Heritage

and the project declared 'Not a Controlled Action', therefore an EIS under the SDPWO Act needs to be prepared for the project.

Under *Chapter 2, Part 6* of IPA a Minister or a local government may *Designate Land for Community Infrastructure*. Development under a *designation* is "exempt from assessment" against requirements of local government planning schemes. As such no approvals will be required from local government. It is the intention of the Minister for Transport and Main Roads to *Designate Land for Community Infrastructure* for this project.

The decision-making authority for this project is the Coordinator-General. Key advisory agencies are listed below:

- |   |  |
|---|--|
| » Environmental Protection Agency;            | » Department of Natural Resources and Mines; |
| » Department of Local Government and Planning | » Department of Main Roads;                  |
| » Department of Primary and Industry;         | » Department of Energy;                      |
| » Department Energy;                          | » Department of Housing;                     |
| » Department of Communities;                  | » Department of Emergency Services; and      |
| » DATCIP;                                     | » Queensland Transport.                      |

### Project Alternatives

A number of alternatives were assessed to determine the preferred method of rail system expansion in the Goonyella system. These included:

- » a 'Do Nothing' alternative;
- » a rail link between the Hail Creek Mine Rail Spur and the Newlands system; and
- » a rail link between North Goonyella and the Newlands system.

Assessment of these alternatives indicated that the North Goonyella to Newlands link was the preferred alternative. A number of additional alternative alignments were developed to accommodate mining and cattle property infrastructure and these were assessment against environmental, social, cultural, economic and engineering aspects to determine the preferred alignment (Figure 2).





### **Land Uses, Infrastructure, Topography, Geology and Soils**

The proposed rail corridor traverses through three local government areas (Belyando, Nebo and Bowen) and seven beef cattle properties. The land is mostly zoned as Rural A, being used for beef cattle grazing with coal mining in the close proximity. A number of mining-related leases and exploration permits exist within the project area with the rail alignment designed to avoid sterilization of coal seams. The Sunwater pipeline will be crossed at two locations and the Enertrade North Queensland Gas Pipeline is located west of the rail corridor. The proposed rail line also crosses three stock routes (all will be retained) and two roads (Suttor Developmental Road (flashing light protection) and the Cerito-Elphinstone Road (currently under construction and to be grade separated)).

The project area includes a number of natural environmental features including remnant vegetation, minor watercourses and the Leichhardt Range. The topography of the project area ranges from flat basaltic and clay plains to undulating sandstone rises/tablelands and rocky basaltic plugs. The land systems along the proposed rail corridor are varied, consisting of weathered basalts, clay and alluvial plains and the main soil types crossed by the proposed rail corridor include finely structured self mulching clays, yellow, brown and red duplex soils, massive earths and deep sandy soils.

The proposed railway passes through relatively flat topography and will have minor impacts including a slight increase in water and wind erosion of soil and loss of topsoil during the construction phase resulting in a slight reduction in water quality. Mitigation measures that consider the climatic conditions will be implemented to reduce these impacts.

### **Water Resources**

The rail corridor crosses a number of small ephemeral creeks and drainage lines and is

adjacent to several farm dams and turkey nest storage dams used for stock water supply. Generally the existing water quality is characterised by high turbidity levels due to high erosion rates and salinity levels that are within national guideline limits. Groundwater quality is affected by the coal seams and tends to have high salinity and magnesium levels. Appropriate sediment and erosion control techniques as outlined in *Soil Erosion and Sediment Control- Engineering Guidelines for Queensland Construction Sites* (1996) will be implemented for the project. The construction and operation of the proposed railway should have minimal impact with proposed mitigation measures in place.

### **Nature Conservation (Flora and Vegetation, Fauna & Aquatic Biology)**

The proposed rail corridor is located within the Brigalow Belt Bioregion. It is characterised by flora and fauna species common to open woodlands with the majority of the project area cleared for cattle grazing and only small areas of intact woodlands located mainly on poorer quality soils associated with ridgelines and escarpments. All of the vegetated areas are subject to grazing pressure by cattle and the diversity and quality of the vegetation reflects this disturbance. There are no conservation or reserve areas within the project area.

Twenty regional ecosystems (RE) are located within or adjacent to the rail corridor with the proposed rail corridor crossing four Endangered REs (28.56 ha to be cleared), two Of Concern REs (16.54 ha to be cleared) and six Not of Concern REs (61.92 ha to be cleared) that are listed under the Vegetation Management Act and three endangered ecological communities listed under the EPBC Act including communities of Brigalow (25.61 ha to be cleared) and Bluegrass (17.47 ha to be cleared). One threatened flora species, *Dichanthium queenslandicum* (King Bluegrass) was observed at two locations within the Bluegrass communities in the northern sections of the rail



corridor. This species is listed as vulnerable under the *Environmental Protection and Biodiversity Conservation Act 1999* and vulnerable under the *Nature Conservation Act 1992*.

The majority of the proposed rail corridor is located within existing cleared and degraded areas and has been chosen to avoid disturbance to large areas of remnant vegetation. The construction and operation of the rail corridor will involve the removal of some remnant vegetation but given the level of previous and current disturbance regimes will not adversely affect the long-term viability of any of the vegetation communities in the area. The small loss of the endangered Regional Ecosystems, EPBC Endangered Ecological Communities and habitat for *Dichanthium queenslandicum* is not considered to represent critical habitat to the on-going survival of these communities or taxa.

Four weeds declared under the *Land Protection (Pest and Stock Route Management) Act 2002* are located within the study area, with the most significant weed in the project area being *Parthenium (Parthenium hysterophorus)*, this weed is also declared as a weed of national significance.

A total of 317 fauna species have been previously recorded and 121 observed during field surveys within the project area, of these nine are threatened (including Squatter Pigeon, Ornamental Snake and Black-necked Stork) and have conservation status under State and Commonwealth legislation. In addition, a further 14 are listed as migratory species and are protected by international policies. Six introduced species were observed along the corridor. The project does not support significant habitat for any of the threatened or migratory species and it is not considered to have a significant impact or any threatened or migratory species that inhabit or utilise the area.

There is limited information available on the aquatic ecology of the study area. The waterways and farm dams present along the corridor are likely to be providing habitat for small fish and crustaceans, as well as migratory and water birds. No stream diversions are planned and construction activities are likely to be undertaken predominately in the long dry season so impacts are expected to be low with appropriate mitigation measures.

Mitigation measures to minimise impacts to flora and fauna include:

- » Minimising clearing of remnant vegetation to the minimum necessary to enable the safe construction, operation and maintenance of the railway line;
- » Preparation of a Weed Management Plan (WMP); and
- » Provision of culverts with suitable habitat to allow small fauna such as frogs and snakes, especially the Ornamental Snake the ability to cross beneath the rail corridor.

### **Historic and Cultural Heritage**

The preferred rail alignment crosses land pertaining to three indigenous groups – the Birri group, the Wiri (#2 and #3) groups and the Jangga group. Searches of the Cultural Heritage Database and Register (DNRM) and systematic cultural heritage surveys of Native Title claim areas within the project area were undertaken by qualified archaeologists, in conjunction with representatives of the respective traditional owners together with field inspections by the archaeologist and respective traditional owners in each of their areas. Traditional owners were also consulted to establish an oral history of the region. A number of cultural sites have been identified in the area and Traditional Owners have indicated that prior to construction activities commencing, representatives were to salvage isolated artefacts along the preferred alignment. The proposed rail alignment has been located where



possible to avoid sites of significance or sites unable to be salvaged. A number of key measures will also be implemented to address impacts on the local and regional communities. Cultural Heritage Management Plans (CHMP) have been prepared for the project.

An assessment of the non-indigenous cultural heritage did not identify any items of significance along the preferred alignment.

### **Social and Economic Environment**

The local and regional community affected by the project includes the seven directly affected property landowners (all managing beef cattle), their associated families and/or farm employees, surrounding properties and the local coal mining towns of:

- » Glenden (Nebo Shire);
- » Moranbah (Belyando Shire);
- » Nebo (Nebo Shire); and
- » Collinsville (Bowen Shire).

Employment in the region is predominately in the agricultural and mining industries. There is currently a trade and operator skills shortage in the region as a result the boom in the coal industry which is also resulting in a shortage of accommodation at all local towns. Community and public services infrastructure are well represented within the region with the established coal centres of Collinsville and Moranbah providing the highest level of community and infrastructure services. The proposed additional construction activity will increase pressure on accommodation, however the majority of the work force will reside in construction camps close to the site. Some additional business activity will be generated in the towns. Implementation of strategies to interface with the community is planned.

Consultation with landowners directly affected has been undertaken and their impacts documented together and measures are

proposed to be put in place to manage these impacts. Key measures include:

- » Provision of a phone number to QR train operations to allow landowners to efficiently manage cattle movement across the rail line.
- » Financial compensation for the replacement or duplication of infrastructure (fencing, stock yards, water points).
- » Provision of designated rail-crossing points (combinations of rail bridges and occupational crossings) across the affected properties to allow cattle and vehicle movement.

### **Air Quality**

The air quality in the region is typical of a rural area in central Queensland. There are no nearby major industrial or population based sources of air quality deterioration. Air sensitive receptors within the project area include property homesteads, cattle yards and workers cottages. Two homesteads are located within two kilometres of the preferred alignment.

Dust from stock movement, working cattle yards and high wind is the current main source of particulates within the study area. As the land is primarily utilised for grazing, it is largely cleared and is therefore subject to wind erosion.

Dust will be primary air quality impact and measure has been identified to mitigate this impact.

### **Noise and Vibration**

The proposed rail corridor is located within a rural setting and noise sensitive and vibration receptors within the project area include adjacent homesteads and workers cottages. Two homesteads are located within two kilometres of the preferred alignment. The existing background noise of the project area is consistent with that of most rural areas, consisting primarily of insect, bird and wind noise, with occasional machinery noise from activities at homesteads.

Increased noise will be generated during both the construction and operational phases of the project. Mitigation measures have been identified and noise levels are anticipated to remain below guideline levels.

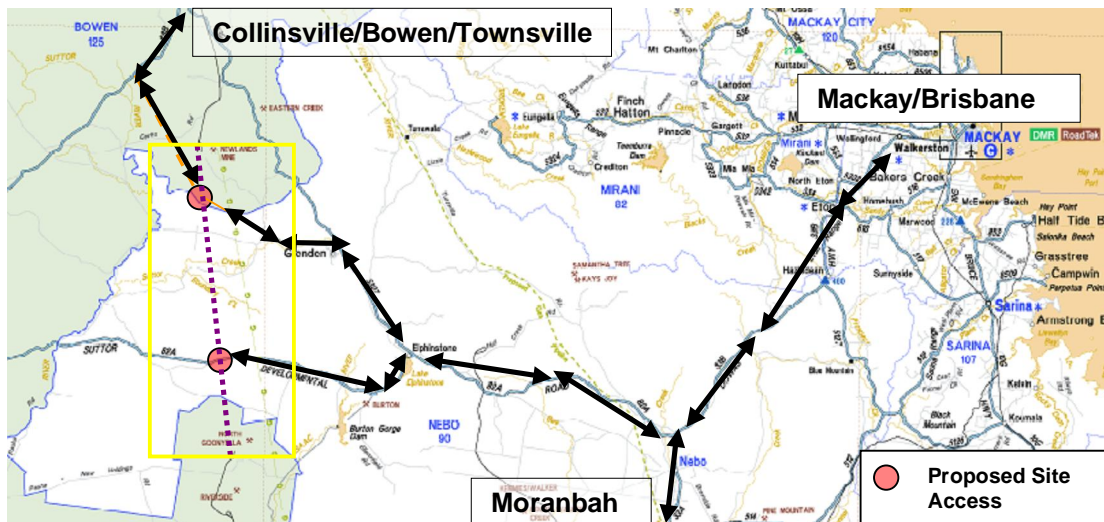
**Waste**

There are a number of activities identified that are associated with generation of solid, liquid, gaseous and hazardous wastes during the construction phase of the project. The potential

exists to recycle or reuse a large proportion of the waste material generated by these activities. This will effectively reduce the cost of disposal and volume of waste sent to landfill over the period of the project. Strategies for dealing with the waste have been identified so as to minimise waste generation and disposal.

**Traffic, Transport and Access Arrangements**

The proposed transport routes for the project are shown below.



**Figure 3 Proposed Transport Routes**

A summary of the existing traffic data for these routes shows a high percentage of heavy vehicle traffic in the region, which has a higher growth than the growth of general AADT. Anticipated volumes of material, supply locations, transportation mode and routes to be used associated with the construction phase have been identified together with impacts (including deterioration of pavement and intersections). A pavement impact scoping assessment has been undertaken using the current information and this indicates that detailed pavement impact assessment will need to be undertaken for the more lightly trafficked roads away from the Peak Downs Highway and Bowen Development Roads at the time of detailed design. The intersections at Sutter Development/ Collinsville-Elphinstone Roads

and Collinsville – Elphinstone/Newlands Mine Roads will also need to be checked. These items will need to be agreed with the MRD and local authorities prior to construction commencing.

The proposed railway will cross two public roads. Grade separation is proposed for Cerito-Elphinstone Road (currently under construction) and flashing lights with bitumen approaches will be used on the Sutter Development Road. This level of protection is confirmed as more than adequate using the ALCAM software (currently used by QT, QR, MRD and Local Authorities and used to determine the works required to comply to achieve compliance with AS 1742.7). The software will also be used to review the level of protection at road/rail public crossing



downstream of the Link works and to assist in determination of any future works that may be required to be undertaken as a consequence of operation the NML.

### **Risk and Hazard**

Risks to the health and safety of employees, the public and the environment will be present during the construction and operation of the rail link. A risk assessment has been undertaken as part of the planning stage of the project. This has identified the risk present are common to all "Greenfield" track construction projects and the risk level is generally low to moderate. There are no identified "Extreme" or "High" risks to track construction, persons or the environment.

Potential risks and hazards have been identified at a high level and a detailed and project specific risk assessment will be completed as part of the rail Construction Safety Management Plan. This will be prepared in accordance with appropriate parts of *AS/NZS Risk Management Standard 4360:1999* and the main QR risk assessment standards.

Similarly, prior to the commissioning of the rail line, a risk assessment for the operation and maintenance of the NML will be undertaken.

Standard QR Emergency Management Plans will be implemented during the construction and operation phases of the project. The construction contractor will liaise with State Emergency Services to develop plans for emergency medical response, fire fighting and first aid matters.

### **Environmental Management**

Environmental Management Plans have been prepared in response to the potential impacts identified in the environmental assessment.

### **Conclusions and Recommendations**

The Northern Missing Link project has been identified as a critical path to facilitate the export of thermal and coking coal, and to allow the Queensland Government to continue its

commitment in developing rail and port capacity ahead of increasing demand for domestic and export coal. It will facilitate a rail linkage allowing coal trains currently operating on the Goonyella system and using the port facilities at Hay Point and Dalrymple Bay, to unload at Abbot Point, near Bowen. Likewise, coal trains loading at Newlands and presently using Abbot Point will have the option of unloading at Dalrymple Bay. It is expected that the project will foster new mines in the region, however its main function will be to provide a linkage from mines in the greater Goonyella area to utilise an additional port on a regular basis as well as providing a strategic emergency link if the existing Goonyella railway or associated ports at Dalrymple Bay and Hay Point are closed or experiencing capacity restrictions.

The major issues and potential impacts identified in this EIS include the following:

- » disruption to property management, including property access, increased safety risk, restrictions to cattle and vehicle movements;
- » introduction and spread of weed species along the alignment;
- » loss of threatened ecological communities;
- » loss of habitat for threatened flora and fauna species;
- » disturbance to areas of cultural significance;
- » benefits to local, regional and state economy; and
- » temporary increase in traffic to the local road network.

This impact assessment concludes that after implementation of the proposed mitigation measures to minimise impacts, the benefits presented by the Northern Missing Link project can be realised without undue risk to environmental, social and cultural values of the project area.