



Queensland Rail
Northern Missing Link

Coordinator-General's Report

October 2006



Queensland Government
The **Coordinator-General**

Table of Contents

Table of Contents.....	2
1.0 Introduction.....	3
2.0 Project Description.....	4
2.1 The Proponent	4
2.2 The Project	4
2.3 Project Rationale	5
3.0 Impact Assessment Process.....	6
3.1 Significant Project Declaration & Controlled Action	6
3.2 Review and Refinement of the EIS Terms of Reference	6
3.3 Public Review of the EIS	6
4.0 Approvals for the Project.....	9
5.0 Key Findings of the EIS	10
6.0 Key Management Strategies of the EIS.....	12
7.0 Management of Specific Issues	14
7.1 Housing in Collinsville	14
7.2 Workforce and Employment	14
7.3 Vegetation Management	15
7.4 Fauna Habitat	17
7.5 Property Management Issues	18
7.6 Proximity of the Proposed Railway to an Existing Gas Pipeline	19
7.7 Impact on Coal Resources and Xstrata Coal's Newlands and Collinsville Operations	20
7.8 Main Roads Operational Permits Construction Camp Development Approvals under IPA	21
7.9 Road Impact Assessment Report and Road Use Management Plan	22
7.10 Suttor Developmental Road/Rail Crossing	24
7.11 Downstream Effects	31
8.0 Conclusions and Recommendations	34
APPENDIX 1 - List of Coordinator-General's Recommendations	36
APPENDIX 2 – Details of the ALCAM process	39

1.0 Introduction

This Report has been prepared pursuant to s.35 of the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act) and provides an evaluation of the Environmental Impact Statement (EIS) process for the Northern Missing Link Rail Project (North Goonyella to Newlands), herein referred to as the Northern Missing Link Project. The EIS was conducted by Queensland Rail and prepared on its behalf by GHD Pty Ltd.

An Initial Advice Statement was lodged with the Coordinator General on 29 June 2005 and the project was declared to be a “significant project for which an EIS is required”, pursuant to s.26(1)(a) of the SDPWO Act, on 12 August 2005. The proposal was determined not to be a ‘controlled action’ under the Commonwealth Government under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) on 14 July 2005.

The objective of this Coordinator-General's Report is to summarise the key issues associated with the potential impacts of the project on the physical, social and economic environments at the local, regional, state and national levels. It is not intended to record all the matters which were identified and subsequently settled. Instead, it concentrates on the substantive issues identified during the EIS process.

This report represents the end of the State impact assessment process. It presents:

- an evaluation of the project, based on information contained in the EIS, submissions made on the EIS, and information and advice from Advisory Agencies and other parties; and
- states conditions under which the project may proceed.

2.0 Project Description

2.1 The Proponent

The Proponent for the Northern Missing Link is Queensland Rail (QR), a Government Owned Corporation.

QR is one of Australia's largest providers of rail transportation solutions for Australia's coal mining industry. In Queensland, QR operates over 400 services per week from over 30 coal mines. In the case of the proposed Northern Missing Link, it is intended that QR would own and operate the proposed rail link.

QR has a global reputation for providing innovative rail-based transport services and is a \$2 billion a year business. On any week day, the QR network operates 900 train services around Australia and moves more than 400 000 tonnes of freight. QR has considerable expertise and is a well respected industry leader in the design and construction of railways and the systems needed to operate them.

2.2 The Project

The Northern Missing Link project proposed by QR will connect the existing rail network serving the Bowen Basin coalfields in Central Queensland to the rail line from Newlands to the port of Abbot Point. The Newlands connection is situated north-west of the town of Glenden, approximately 180km inland of Mackay. The route will initially involve the construction of 69 km of track in a new corridor and, in future subsequent stages, the upgrading of the existing line and electrification. The total project cost is estimated to be \$765 million (Dec 2005 dollars). The proposed stages of the project are outlined in Table 1.

Stage	Works	Link Capacity	Capex
1A	Land acquisition, construction of 69km rail line, interconnection to existing systems at Goonyella and Newlands, upgrade line to increased axle loading	7 mtpa	\$350m
1B	Lengthen loops on Newlands system to accommodate Goonyella length trains	12 mtpa	\$90m
2	Briaba Bank deviation, electrification of system	23 mtpa	\$235m
3	Final upgrade of system, third passing loop	35 mtpa	\$90m

Table 1 – Stages of Northern Missing Link project

The rail line would comprise a single 60 kg rail, 26 tonnes axle loading, track on concrete sleepers with a train speed objective of 80km/h. The rail corridor would be nominally 60m wide and include at least three passing loops. Initially, the line would utilise diesel locomotives.

The rail link will traverse three local authority areas, namely the shires of Belyando, Nebo and Bowen. The land in the new corridor is mostly zoned rural or unzoned, with no proximity to any current settlement zone. The proposed line traverses seven pastoral holdings, each of substantial size. The proposed corridor is adjacent to current mining leases and traverses a number of petroleum and coal exploration permits.

2.3 Project Rationale

The construction of the Northern Missing Link and the Stage-3 expansion of the Abbott Point coal terminal will significantly increase the capacity and flexibility of Central Queensland's coal export infrastructure.

Over the last two years, Queensland has been experiencing a rapidly growing export demand for both thermal and coking coal, and expansion of coal transport infrastructure capacity has become a high priority. In addition to export capacity enhancement, the Northern Missing Link and Abbott Point would also increase the flexibility of the whole northern Bowen Basin coal export system by providing an alternative to the Goonyella rail system and the export terminals at Dalrymple Bay in the event of congestion, accidents or equipment failure.

Currently there are four rail systems operating in the Bowen Basin – Moura, Blackwater, Goonyella and Newlands. The Northern Missing Link would provide for up to 50 million tonnes capacity for coal transport along the Newlands corridor. The project is dependent upon commitment to the Stage 3 expansion of the Abbot Point Coal Terminal by the Ports Corporation of Queensland, which will yield capacity for handling 50 million tonnes per annum of coal. An EIS for Stage 3 expansion of Abbot Point Coal Terminal is being prepared concurrently with the Northern Missing Link project EIS.

3.0 Impact Assessment Process

3.1 Significant Project Declaration & Controlled Action

An Initial Advice Statement (IAS) was lodged with the Coordinator-General on 29 June 2005 and the project was declared to be a “significant project for which an EIS is required”, pursuant to s.26 of the SDPWO Act, on 12 August 2005.

The project was referred to the Commonwealth Government under the Environment Protection and Biodiversity Conservation Act 1999 (Cwlth) (EPBC Act) on 15 June 2005. (Department of Environment and Heritage reference number EPBC 2005/2170). The proposal was determined not to be a ‘controlled action’ under the EPBC Act on 14 July 2005.

3.2 Review and Refinement of the EIS Terms of Reference

An IAS was released for public information and Draft Terms of Reference (ToR) were advertised for public comment on 3 September 2005. Comments were accepted until close of business (CoB) 3 October 2005. A final ToR was issued to the Proponent on 10 November 2005. Comments on the ToR were received from:

- Department of Employment and Training;
- Department of Energy;
- Department of Communities;
- Department of Aboriginal & Torres Strait Islander Policy;
- Department of Main Roads;
- Department of Natural Resources and Mines;
- Department of Primary Industries & Fisheries;
- Local Government and Planning;
- Environmental Protection Agency;
- Bowen Shire Council;
- Nebo Shire Council;
- BJ Pini & JM Pini; and
- Messrs EP, WMP, ME and VA Mason.

3.3 Public Review of the EIS

The EIS was advertised in the Courier Mail and the Daily Mercury (Mackay) on 18 February 2006, and the Bowen Independent on 22 February 2006, inviting submissions from the public until CoB on Monday, 3 April, 2006. The EIS was available for purchase as hard copy for \$140 and as a CD copy for \$15.00 from the Proponent.

The EIS was displayed at:

- Bowen Shire Council;
- Belyando Shire Council;
- Nebo Shire Council;
- Mackay State Development Centre; and
- Environmental Protection Agency Customer Service Centre Brisbane.

The following Advisory Agencies and other stakeholders were approached formally to conduct an evaluation of the EIS:

- Department of Aboriginal and Torres Strait Islander Policy;
- Department of Communities;
- Department of Emergency Services;
- Department of Employment and Training;
- Department of Energy;
- Department of Industrial Relations;
- Department of Housing;
- Department of Local Government, Planning, Sport and Recreation;
- Department of Main Roads;
- Department of Natural Resources Mines and Water;
- Department of Primary Industries and Fisheries;
- Department of the Premier and Cabinet;
- Department of Transport;
- Environmental Protection Agency;
- Queensland Treasury, Office of Government Owned Corporations;
- Queensland Health;
- Belyando Shire Council;
- Bowen Shire Council;
- Nebo Shire Council;
- Industry Capability Network (Qld);
- Powerlink Queensland;
- Department of State Development and Innovation, Mackay State Development & Innovation Centre;
- Colinta Holdings; and
- Five landholders along the proposed route of the missing link.

Copies were sent to the following libraries:

- State Library of Queensland;
- National Library of Australia;
- Premier's and Cabinet Library

Following the 22 business-day public review of the EIS a total of 10 submissions were received from:

- Department of Communities;
- Department of Employment and Training;
- Department of Main Roads;
- Department of Natural Resources Mines and Water;

- Environmental Protection Agency;
- Queensland Transport;
- Nebo Shire Council;
- Colinta Holdings “Byerwen”;
- Enertrade; and
- Xstrata Coal.

The following Agencies signified their acceptance of the EIS as addressing their particular interests:

- Department of Housing;
- Department of Primary Industries and Fisheries;
- Department of Aboriginal and Torres Strait Islander Policy;
- Department of Emergency Services;
- Department of Local Government, Planning, Sport and Recreation;
- Department of Industrial Relations;
- Department of Premier and Cabinet;
- Queensland Treasury;
- Department of Health;
- Department of State Development and Innovation;
- Department of Energy; and
- Industry Capability Network.

No submissions were received from members of the public.

The substantive issues raised in submissions were as follows:

- housing in Collinsville;
- workforce and employment;
- vegetation management;
- fauna habitat;
- Main Roads / transport Issues;
- property management issues; and
- proximity of a gas pipeline.

Submissions were forwarded to QR. Following discussions with QR and its technical consultants, it was determined that preparation of a Supplementary EIS (SEIS) was not necessary. However, QR wrote to each individual stakeholder to address each of their issues. Each of these stakeholders subsequently signified their acceptance of the final position of QR subject to conditions discussed in the assessment below.

The following agencies made comment or provided advice, which has been subsequently noted by QR or included as conditions in this Report:

- Department of Main Roads;
- Department of Natural Resources Mines and Water (NRMW);
- Enertrade; and
- the Environmental Protection Agency (EPA).

Substantive issues raised in submissions are discussed individually in section 7.

4.0 Approvals for the Project

The following are some of the major areas of approval and permits that will be required for the project:

Legislation	Subject	Agency
<i>Integrated Planning Act 1997</i>	Designation of land for Community Infrastructure	Minister for Transport
<i>Integrated Planning Act 1997</i>	Development approval for Construction Camps	Local Authority
<i>Integrated Planning Act 1997</i>	Development approval for Quarrying	Local Authority
<i>Environmental Protection Act 1994</i>	Environmentally Relevant Activities (ERA) <ul style="list-style-type: none"> ○ ERA 15 Sewage Treatment ○ ERA 20 Quarry ○ ERA 60 Concrete 	EPA
<i>Vegetation Management Act 1999</i>	Clearing of vegetation	NRW
<i>Water Act 2000</i>	Riverine Protection Permit 286 Dredging Permit 280 Bore Licence	NRW
<i>Nature Conservation Act 1992</i>	Fauna and flora protection	EPA
<i>Transport Infrastructure Act 1994</i>	Permits for activities in road reserves	Main Roads

5.0 Key Findings of the EIS

Natural Environment

The Northern Missing Link rail corridor has been chosen, where possible, to avoid areas with high environmental values and cultural significance. While the proposed corridor crosses small remnant areas of Brigalow and Bluegrass vegetation communities, the areas of these communities to be cleared are small and will not adversely affect the long term viability of any of these ecosystems. Nevertheless, it has been proposed that specific actions will be taken to collect seeds from native vegetation along the proposed rail corridor (especially from the vulnerable King Bluegrass) for rehabilitation of disturbed areas after construction.

Ephemeral watercourses crossed by the proposed rail line are subject to only seasonal flows and construction can be managed to minimise impacts on both the watercourse and riverine vegetation. The vulnerable Ornamental Snake has been identified in the study area, and the construction of the corridor will need to be managed to enable this snake and other similar fauna to cross the corridor by culverts.

Cultural Heritage

Completed cultural heritage surveys of the rail corridor have identified that any sites of significance have been avoided. Cultural heritage management plan agreements that have been signed by the traditional owners allow for a process of inspection of the corridor and any other project sites during construction, so that any unmapped cultural material found can be appropriately managed.

Landholders

Since the corridor traverses a number of rural grazing properties, landowners identified a number of property management impacts affecting the safety and manageability of their properties. QR has offered landholders provision of a number of private crossings (as level crossings and bridge underpasses) in nominated positions on each property to accommodate livestock vehicle and machinery transfer between each side of the rail corridor. Fencing and other infrastructure will be reconstructed around the corridor, and financial compensation for the corridor area and other disruption has been offered.

Road Network

QR has presented in the EIS a road impact and management strategy to scope the road traffic impacts which would be generated during construction. Peak traffic on the surrounding road system will only be generated during limited times of site establishment and closure. During construction, much of the materials such as ballast and rails will be transported along the corridor from the existing rail network. Before construction, QR proposes to make more detailed road assessments and develop a Transport and Traffic Pre-Construction Agreement in consultation with each of the councils and the Department of Main Roads to address traffic management and road maintenance and upgrade programs.

Two new road-rail crossings will be required for the Northern Missing Link. QR proposed in the EIS that the Cerito Road crossing will be serviced by a grade-separated road-over-rail bridge and the Suttor Developmental Road crossing be managed initially as a controlled level crossing. QR's original EIS proposals for the Suttor Developmental Road crossing have been modified following further discussions with the Department of Main Roads, and these are discussed further in Section 7.10.

Workforce Accommodation

Construction workforce will be accommodated in up to two construction camps located near to the rail corridor at locations to be established. Assessment of these camps will be done by the relevant local authorities following an application for development approval under the *Integrated Planning Act* closer to the construction time, based on the contracting strategy to be adopted when the project is committed. However overall road transport tasks for the workforce are included in the scope of the project transport impacts in the EIS.

Impact on Coal Resources

The QR corridor enters the Newlands Mining Lease across its western boundary to connect with the existing Newlands - Abbot Point rail line. Xstrata were concerned that this permanent corridor might sterilise a minable seam of coal on the lease, and sought a drilling program to confirm the nature and extent of the coal seam.

Drilling studies commissioned by QR and reviewed by both Xstrata and the Bureau of Mines at NRMW indicated that it is highly unlikely that the proposed route for the Northern Missing Rail link in the area studied will sterilise coal resources of economic significance.

6.0 Key Management Strategies of the EIS

Environmental Management Plans

The project intends to develop a suite of Environmental Management Plans (EMP) to guide its development, implementation and operation. These would include EMPs for Planning, Design, Construction, and Operation.

The EIS presents comprehensive draft Environmental Management Plans covering the following topics:

Construction:

- erosion and sediment control;
- water quality;
- clearing and grading;
- flora and fauna protection;
- weed management;
- bushfire prevention and management;
- noise and vibration;
- air quality;
- traffic management;
- waste management;
- handling and disposal of dangerous goods; and
- clean-up and rehabilitation;

Operations:

- access;
- soil and ground stability;
- weed control; and
- bushfire prevention.

In addition, as required by QR policy and strategies, Risk Management and Construction Safety Plans will be drawn up during the construction phase of the project. QR will also apply its standard series of Emergency Management Plans to the construction and operational phases of the project.

Management Commitments

QR has provided in the EIS a set of 47 Management Commitments that are intended to deliver on both the project design proposals and the impact mitigation strategies contained in the EIS. They cover the following subjects in the table below.

Commitment Numbers	Subject
1 – 9	Landforms and Soil and Water Protection
10 – 28	Vegetation, Rehabilitation and Fauna Protection
29	Cultural Heritage
30 – 34	Employment and Community
35 – 37	Waste Management
38 – 42	Transport Management
43 – 47	Risk and Emergency Management

In order to ensure that these EMPs and Management Commitments are carried forward to the construction and operation of the project, I recommend that, in accordance with s.43 of the SDPWO Act the following requirements be applied to the Designation of Land for Community Infrastructure (CID) for the rail corridor under the Integrated Planning Act 1997:

<p>Condition 1 QR shall finalise the Environmental Management Plan (Construction) to the satisfaction of Queensland Transport prior to commencement of construction of the Northern Missing Link.</p> <p>Condition 2 QR shall finalise the Environmental Management Plan (Operation) to the satisfaction of Queensland Transport prior to commencement of operation of coal haulage on the Northern Missing Link.</p> <p>Condition 3 QR shall implement the Management Commitments contained in the EIS for the Northern Missing Link Rail Project dated February 2006, and further identified in the EMPs (Planning, Design, Construction and Operations). Queensland Transport is the responsible agency for this condition.</p>
--

7.0 Management of Specific Issues

The following issues were raised by stakeholders in submissions, and were addressed by QR in a series of communications direct to the stakeholders concerned. Consequently, a separate Supplementary EIS was not considered necessary. For each issue I present my own conclusions on the issue and response.

7.1 Housing in Collinsville

Department of Communities Position

It is recognized that QR's intention is to provide temporary construction camps for the construction workforce, and this will address the major impacts on housing and accommodation. However for those construction workers who are accompanied by families, there may be a need for the housing stock in Collinsville to accommodate this proportion of the workforce.

QR's Position

QR believes that experience of current workforce conditions in the Central Queensland Coal fields region indicates that the vast majority of the construction workforce will be unaccompanied. They will be served by the proposed strategy to provide temporary construction camps close to the corridor. Consequently, it is believed that there will be minimal if any requirement for additional housing in Collinsville. The relatively close proximity of other larger towns such as Bowen and Mackay would allow construction workers to return to their families who are based there, at the end of each work roster period.

Coordinator-General's Conclusion

The presence of a significant number of large construction camps around the Central Queensland coal fields indicates that this form of accommodation is both common and effective at attracting 'unaccompanied workers' to the area. Therefore, it is reasonable to expect that the construction workforce for the Northern Missing Link will attract very few family dependents to the town of Collinsville, and so no special mitigation measures for family housing are required for the construction of the Project in that town.

7.2 Workforce and Employment

Dept of Employment and Training (DET) Position

DET seeks to work with QR and the construction contractor to develop an employment and skilling strategy to ensure project and local community workforce outcomes may be achieved. To this end, further profiles of skills requirements would be needed in advance of the tendering stage. DET requests that QR give

consideration to the active promotion of job opportunities and sourcing of local services, especially in connection with Collinsville and the Bowen Shire.

QR's Position

While QR believes that workforce employment and training policies can more appropriately be developed during the detailed design and tendering stage, it is conscious of the competing demands for skilled workers by industry in the region. In support of Queensland Government policies on training, local industry, and indigenous employment, QR has made three specific commitments in the EIS (numbers 30, 31 and 32) to implement strategies to provide for:

- local employment opportunities, including for the indigenous community;
- ensuring the construction contractor implements training policies; and
- involvement of local groups/businesses during the rail construction.

Coordinator-General's Conclusion

With respect to the Queensland Government's Indigenous Employment Policy, DET has advised that formal implementation of the 20% indigenous employment content of this policy would not be applicable for this project as it is not near any specified indigenous shires as designated by the policy. However, the broad intent of the policy would be achieved by QR Commitment 30 dealing with strategies for local employment. Other elements of State Government employment and training policies are dealt with by QR Commitments 30 to 32, and I am satisfied that their implementation will satisfy the objectives of the relevant Queensland Government employment and training policies.

7.3 Vegetation Management

NRMW Position

NRMW requested that QR:

- makes appropriate realignments of the corridor to skirt around remnant vegetation;
- identify and map where a less than the nominal 60 metre corridor width might be cleared in order to result in superior environmental outcomes;
- provide details of both the level of revegetation proposed for disturbed endangered vegetation in the corridor and the monitoring regime proposed for these revegetated areas.

NRMW also advised that clearing of the rail corridor will be exempt from the requirements of the *Vegetation Management Act 1999* (VMA) if the project meets the *specified activity* exemption (g):

"clearing, for routine transport corridor management and safety purposes, on existing rail corridor land, new rail corridor land, non-rail corridor land or commercial corridor land (within the meaning of the *Transport Infrastructure Act 1994*) that is not subject to a commercial lease".

The VMA will still apply to activities and areas which do not fall under this definition.

QR's Position

It is proposed that the corridor will involve a CID under IPA, whereby new rail corridor land will be declared and purchased. As such, the purpose of the land will be a transport corridor, so QR will claim exemption as a *specified activity* under the VMA and has clarified with NRMW that this is the case over the rail corridor.

With regard to the potential for realignment of the route, QR advised that the route chosen is optimum, taking into consideration impact on vegetation, property management and economics of construction and operation.

With regard to the detailed mapping of areas in the corridor not to be cleared to the full 60m corridor width, QR advised that it will rely on its Commitments 11 and 12 in the EIS to deliver a corridor clearing plan at the appropriate stage of construction which will clearly mark and minimize the removal of vegetation along the corridor.

QR advised that the level of revegetation proposed in the disturbed endangered vegetation corridor can not be predicted prior to construction, as it will depend on the amount and location of clearing actually undertaken, and the amount of disturbance experienced during construction. The project will rely upon the management commitments made in the EIS, specifically Commitments 15, 16 and 17 and the management actions of the EMP (Construction) Section 5.8.1.12 Clean Up and Rehabilitation dealing with revegetation. Furthermore, QR advised that this section of the EMP includes a comprehensive monitoring and reporting regime, involving six monthly photo monitoring for two years, coupled with audits and verification with affected landowners as to their satisfaction with rehabilitation and repairs.

Coordinator-General's Conclusion

I note that the rail corridor will be exempt from requiring a clearing permit under the VMA because it meets the specified activity definition. However other parts of the project, such as access roads and construction camp sites, may not qualify for the same exemption, and on a case by case basis may require application for clearing permits.

I also note that Commitment 13 of the EIS states that construction sites, including the construction camp, will not be located in areas of Bluegrass grasslands (Regional Ecosystem 11.8.11) in the northern section of the corridor.

I am satisfied from the material presented in the EIS that an optimum route for the corridor has been chosen to minimise clearing of remnant vegetation, while taking into account other factors such as proximity to homesteads, issues of property management, cultural heritage, and economic costs and benefits.

As a result of the provisions made by QR in the management commitments and Environmental Management Plans, I am satisfied that measures are specified to ensure that vegetation impacts are minimized and managed in the construction of the project. However, in order to ensure that full effect is given to these commitments, I recommend that the following requirement be attached to any CID applied to the project:

Condition 4

The Clearing and Grading section of the Environmental Management Plan (Construction) shall contain a management action worded as follows: "Sectional Clearing Plans that define the area of land to be cleared along each section of the corridor are to be prepared and approved prior to substantial construction works occurring." Queensland Transport is the responsible agency for this condition.

7.4 Fauna Habitat

EPA Position

The EPA recommended the following measures for fauna habitat protection:

- linkages between areas of glider habitat fragmented by the rail corridor should be instituted where practicable to reduce impacts on glider populations along the route;
- at least two culverts should be provided every kilometre in areas where the route fragments vegetation identified as ornamental snake habitat;
- EPA should be consulted prior to commencement of clearing, on requirements under section 88 of the *Nature Conservation Act 1992* (including requirement for a permit to capture and remove native animals during the construction of the rail line); and
- habitat establishment should be undertaken, where practical, in all disturbed areas subject to rehabilitation works, not only at bridge locations.

QR's Position

QR noted the EPA concern with impacts on the potential presence of glider species along the rail corridor. A detailed fauna survey, which included spotlighting efforts, did not identify the presence of gliders along the corridor. Database (Wildnet) records held by the EPA have also not previously recorded gliders in the area. While it is possible that these species may occur in the area, they are not considered to be in sufficient densities for the project to significantly impact on any of these species. Measures such as the use of glider poles or plain-topped fencing are therefore not considered necessary. Safety considerations would also dictate against the placement of free standing poles beside electrified rail wires.

There are some areas of suitable glider habitat along the alignment, the most significant being the tall eucalypt vegetation along Suttor Creek. Within this location commitments have been made to protect suitable trees and also provide refuge (such as hollow logs) under the bridge to retain the linkage along this creek (Commitment Nos. 20, 24 and 25).

QR advised that the suggestion of the EPA concerning ornamental snake habitat has been investigated, and instead of a single multi opening culvert in ornamental snake habitat areas, a number of culverts will be distributed along that section of habitat at regular spacings as permitted by topography.

Coordinator-General's Conclusion

Given the limited potential for presence of gliders in certain habitats along the corridor I consider that the commitments given in the EIS sufficiently address mitigation of impacts for this species. Similarly, the proposed flora and fauna protection measures contained in the Environmental Management Plan (including the provision of extra culverts for small ground animal crossings, are likely to be sufficient for providing management of impacts on habitat for the ornamental snake.

7.5 Property Management Issues

Landholder Issues

Consultations with property owners whose pastoral holdings would be crossed by the proposed rail corridor revealed that they were concerned about:

- safety of families, employees, and stock;
- potential impacts on cattle and machinery movement within properties;
- access to paddocks, water, fire fighting, fence maintenance;
- disruption from construction workers and activities;
- train operations causing dust, accidents or noise; and
- coordination of the rail construction work program between landholders, QR and contractors.

All of these impacts could alter the way properties would be managed by the landholders during and after construction of the railway. Landholders are generally expecting both adequate compensation and reconstruction of infrastructure, such as fencing and roadways, to enable the properties to continue operation as viable rural enterprises.

QR's Position

QR is managing these expectations by negotiating with each property holder on the compensation and facilities to be provided as part of the corridor acquisition process. To address the above impacts, QR will:

- implement a Land Access Protocol for visiting personnel, consultants, contractors;
- provide cattle, vehicle and machinery crossings (such as occupational level crossings, underpasses, drainage culverts) to connect both sides of the corridor;
- provide service conduits at nominated locations under the railway to allow the laying of water pipes and other services;
- Fence the corridor boundaries;
- pay financial compensation for property severance and any reduced economic viability;
- implement a Weed Management Plan; and
- provide a safety and operational contact phone number.

When the rail construction is undertaken, QR intends to develop a plan with landholders to implement the works in a coordinated manner (EIS Management Commitment 34).

Coordinator-General's Conclusion

QR appears to be adequately addressing landholder concerns by offering option and interface agreements to landholders which provide for negotiated compensation settlements for loss of land and/or reduction of land values, disruption to farm operations, and reduced land amenity or property connectivity.

I did not receive any submissions on the EIS from landholders raising concerns about the property management commitments offered by QR that were reported in the EIS. Therefore, I believe that the proposals that QR presented in the EIS to address property management issues, in particular the number and location of proposed operational crossings, appear to be sufficient to allow landholders continued use of their properties in an acceptable manner.

7.6 Proximity of the Proposed Railway to an Existing Gas Pipeline

Enertrade's Position

At two locations, the proposed rail corridor is separated by a distance of 125 metres and 185 metres respectively from Enertrade's North Queensland Gas Pipeline. If further separation cannot be achieved at these two locations, Enertrade is seeking commitment by QR to implement measures that will mitigate against potential induced voltage effects on a buried gas pipeline from an electrified railway that could be dangerous to personnel working on the pipeline; and disrupt the pipeline's cathodic protection system..

QR's Position

Given the uncertainty of the timing and commitment of rail customers to the project, and the extent of engineering required to investigate and determine the extent of mitigation (if any), it is not proposed to undertake further work for Stage 1A or 1B of the project. However, as part of the project design process for future electrification (Stage 2), QR has committed to enter into discussions with the pipeline owner to determine the extent to which mitigation measures are required.

Coordinator-General's Conclusion

I note QR's written offer to Enertrade to investigate this issue to determine if an interaction between the rail and the pipeline might exist in operation. I note that QR is offering to bear the cost of implementing reasonable mitigation measures, if they are subsequently determined to be required.

It is my view that to address this issue, QR should consult with the pipeline owner as to the extent of likely electrical current interaction between the pipeline and the rail line during design phase for electrification of the railway (currently planned as part of Stage 2 of the project). To support these views, I believe that QR should comply with the following recommendation:

Recommendation 1

During the design phase for the electrification of the railway, QR shall, in consultation with the owner of the North Queensland Gas Pipeline:

- a. determine the likely extent of electrical current interaction between the rail line and the pipeline;**
- b. determine reasonable mitigation measures if such are required; and**
- c. meet the full cost of any required mitigation measures.**

7.7 Impact on Coal Resources and Xstrata Coal's Newlands and Collinsville Operations

Xstrata Position

The QR corridor enters the Newlands Mining Lease across its western boundary to connect with the existing Newlands - Abbot Point rail line. Xstrata was concerned that this permanent corridor might sterilise a minable seam of coal on the lease, and sought a drilling program to confirm the nature and extent of the coal seam.

Xstrata also expressed strong concern that:

- substantial upgrades to the existing rail line between Newlands and Abbot Point required for the Northern Missing Link project might create unacceptable disruption to coal transport from its Newlands and Collinsville operations; and
- QR may require Xstrata to contribute to the capital cost of the project under arrangements that may significantly disadvantage Xstrata, while substantially benefiting its coal producer competitors holding resources south of Newlands.

QR's Position

Drilling studies commissioned by QR and conducted during June indicated no commercially minable coal beneath the corridor. The drilling results were reviewed by both Xstrata and the Bureau of Mines at the Department of Natural Resources Mines and Water (now the Department of Mines and Energy). The information provided demonstrates that the route in the subject area passes over the unprospective and heat affected Fort Cooper Coal Measures and deep basalt channels. Based on this result it is highly unlikely that the proposed route for the Northern Missing Rail link in the area studied will sterilise coal resources of economic significance in the mining lease held by Xstrata.

Consequently, Natural Resources, Mines and Water had no objection to the route proposed for the Northern Missing Link in the area studied.

With regard to the potential disruption of coal transport from Xstrata's operations arising from required upgrades to the existing Newlands rail line, QR presented to Xstrata an itemisation of the works required and the measures that would be undertaken to minimise disruption to coal haulage from Newlands and Collinsville. While this itemisation contains only general commitments to minimise rail service

disruption, a more detailed level of commitment would not be possible until more precise engineering design was complete and operational plans were prepared.

QR has not yet formally proposed any capital arrangements for the construction of the project. Such proposals will require prior consultation with the Queensland Competition Authority. In any case, capital arrangements for the project are outside the scope of the EIS process.

Coordinator-General's Conclusion

Based upon the results of the recent drilling program commissioned by QR and the subsequent assessment of those results by both Xstrata and the Bureau of Mines, there appears to be insufficient coal resource sterilisation to warrant any changes to the currently proposed alignment of the corridor through the Newlands Mining Lease.

With regard to the minimisation of potential disruption of existing coal transport operations arising from upgrades to the Newlands line, I accept that:

- it may not be possible for QR to provide Xstrata with details beyond the level already provided until operational plans are prepared closer to the date of the actual works;
- it is in QR's commercial interest to minimise disruption of its customer's coal haulage services during any upgrade works;
- Xstrata may benefit in the longer term from such upgrades that may result in the Newlands line being able to support faster train speeds and/or larger capacity trains; and
- it is nonetheless reasonable for Xstrata to expect QR to provide quantitative commitments on both coal haulage tonnages from its Newlands and Collinsville operations and Newlands track availability during the period of any new works on that line.

To support these views, I believe that QR should comply with the following recommendation:

Recommendation 2

Prior to the commencement of major capital works on the Newlands Rail Line associated with the Northern Missing Link Project, QR should provide all coal producers using that line with a commitment to maintain track availability and coal transport tonnage levels above specified limits during the period of track upgrade works.

7.8 Main Roads Operational Permits

Construction Camp Development Approvals under IPA

Department of Main Roads (DMR) Position

Under Chapter 6 of the *Transport Infrastructure Act 1994* permits will be required for various aspects of the work in road reserves and for the use of roads by excess mass and dimensioned vehicles. For instance, DMR would need to issue permits for

access intersections to the corridor from public roads. DMR also considers that further road permit requirements will be needed in relation to construction camp sites.

QR's Position

The Community Infrastructure Designation for the rail corridor will not apply to the camp site locations. Approvals for the camp sites will be subject to separate applications under IPA through the relevant local authority. Other road reserve permits will be obtained when more detailed information becomes available during the detailed design and pre-construction stages of the project.

Coordinator-General's Conclusion

Based on examination of the information presented in the EIS on proposed transport routes and an access strategy for the rail corridor, it is likely that sufficient information will be available for DMR to consider permit applications when the project reaches the stage of detailed design and planning. A separate IPA process for construction camp development approvals will also be undertaken when the construction strategy is determined and locations are chosen for the camps. Any requirements by DMR or local authorities will be attached as conditions of the relevant approvals and permits. Since these permits and approvals are required by legislation, and will be the subject of direct applications by QR to the approving authorities, I do not propose to address these matters further in this report.

7.9 Road Impact Assessment Report and Road Use Management Plan

DMR Position

DMR has requested that, before the commencement of construction works, QR submits a:

- Road Impact Assessment Report; and
- Road Use Management Plan (RUMP).

This would enable QR, construction contractor(s) and DMR to be aware of the full road impacts and to clearly establish the amelioration works and other measures required. DMR's issues would then need to be resolved with QR prior to works commencing.

QR's Position

QR is not in a position to prepare the Road Impact Assessment Report and the RUMP now, since the information currently available (which is presented in the EIS) is preliminary. More detailed information will become available during the design and pre-construction stages of the project. Nonetheless, QR maintains that the EIS presents sufficient information on the most likely and logical transport routes that would be followed in construction. The Pavement Impact Scoping Summary presented in the EIS recognizes the scope of the transport tasks and the expected use of road segments, and considers impacts using the DMR Guidelines for Assessment of Road Impacts of Development. Furthermore QR will develop a

Transport and Traffic Pre-Construction Agreement to address issues pertaining to traffic and maintenance of roads during the construction phase.

Coordinator-General's Conclusion

The EIS presents order of magnitude quantitative information to determine the scope of road impacts on the road network surrounding the project area. Since these are impacts of temporary duration during construction, it is likely that management measures can be implemented to mitigate these impacts, and that they are unlikely to be unacceptable impacts on the road segments proposed to carry the traffic for this time period. I accept QR's contention that more detailed and reliable information on the exact transport tasks and routes would become available during the detailed design and pre-construction stages of the project.

The preparation of a Road Impact Assessment Report and a RUMP at the detailed design stage is supported, and should be prepared in accordance with the Main Roads 2006 *Guidelines for Assessment of Road Impacts of Development* or later publication if superseded. A recommendation to this effect is proposed below.

The proposed Transport and Traffic Pre-Construction Agreement should ensure that QR, as the principal in the construction project, will be committed to delivering agreed management outcomes for road management, maintenance, and traffic management during the course of the project.

Accordingly, I recommend the following requirements be attached to the Community Infrastructure Designation, to address road impact management issues:

Condition 5

A Road Impact Assessment Report and Road Use Management Plan shall be prepared by QR for transport tasks associated with the rail corridor construction (including construction camps) and subsequent operation, in accordance with the DMR (2006) *Guidelines for Assessment of Road Impacts of Development* (or current publication if superseded). QR shall submit the Report and Plan for approval to the Director General of DMR within two months of the appointment of the principal construction contractor, and before commencement of rail corridor major construction activities.

Condition 6

QR shall enter into a Transport and Traffic Pre-Construction Agreement with DMR to address issues relating to road use, maintenance, traffic management and contributions for infrastructure upgrading works, within one month of the production of the Road Impact Assessment Report (RIAR) and Road Use Management Plan (RUMP), and before commencement of rail corridor major construction activities. If agreement is not reached within one month of production of the RUMP, then QR will provide a letter of undertaking to DMR to address any outstanding matters defined in the RUMP and RIAR that have not been agreed with DMR.

7.10 Suttor Developmental Road/Rail Crossing

Agency Position

QT, DMR, and the Nebo Shire Council each requested that QR reconsider the proposal for an 'at grade' rail crossing at the intersection with the Suttor Developmental Road, and replace it with a grade separated crossing (road over rail bridge). They raised questions of safety for an east/west aligned road, impact of new rail crossings on existing road users, and inconsistency of treatment between the Suttor and the proposed Cerito Road/rail crossing north-west of Glenden.

QR's Position

It is QR's opinion that providing a grade separation at Suttor Developmental Road is not warranted since modelling analysis of the intersection (using ALCAM software endorsed by national rail and road authorities) has indicated that installation of "flashing lights" would provide more than adequate level of protection at the crossing. The ALCAM model was originally developed by QR and DMR and has been adopted nationally to assess the level of protection required at level crossings, with due consideration of all aspects that impact on the crossing, including safety, traffic characteristics, visibility, human factors, accident mechanisms and Australian Standards.

With regard to the Cerito Road crossing, QR has agreed to construct this as a grade –separated crossing since the road link is a new bitumen sealed link designed to carry increasing traffic from surrounding areas, as this is expected to become a major through traffic connection in time. Its usage will therefore be considerably greater than the Suttor Developmental Road.

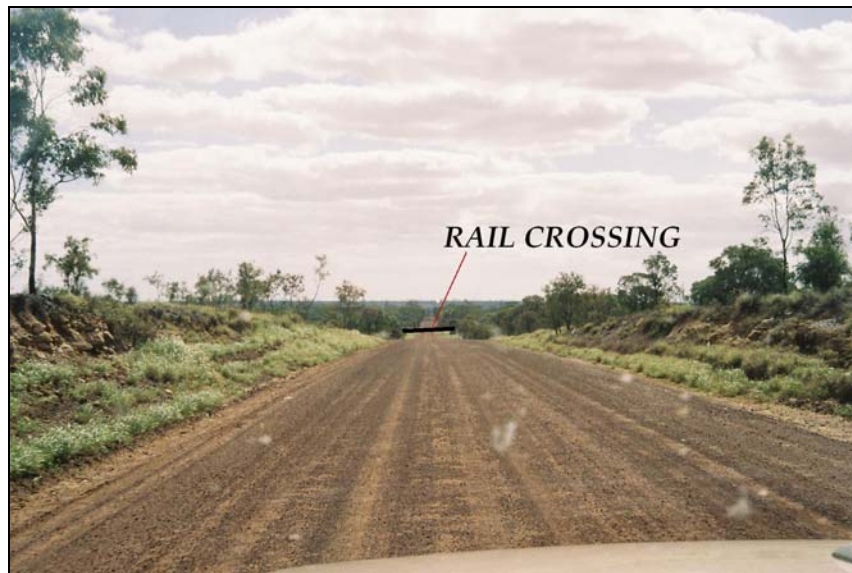
Coordinator-General's Conclusion

The responsibilities for construction and upgrading of level crossings are set out in a *Memorandum of Understanding (MOU) with respect to the Management and Funding Responsibility for Level Crossing Safety* (24 Oct 2003) that exists between the Local Government Association, DMR, QR and QT.

The MOU specifies the institutional responsibilities of the parties, and sets out the process of consultation and negotiation on road-rail level crossing infrastructure, generally for existing installations. However, the MOU does not detail specific criteria to apply to decisions on the type and scope of level crossing protection, or grade separation. Rather, it promotes a negotiated outcome between the parties on a case by case basis. Where an agreement cannot be reached, the MOU specifies an expert determination process by a mutually agreed facilitator, or failing that, by a QT appointed arbiter.

Hence the MOU is not a document which I can use to specify the choice of crossing protection, but it is rather a document which the parties can use to guide their review of crossing situations from time to time.

The Suttor Road at the crossing point is a straight road running east west, having a well graded non-bitumen surface. The current road traffic count is approximately 60 vehicles per day. The rail line crosses open country either side of the road, and there is ample visibility of the crossing along both rail and road directions. The following photographs show the existing road situation from both directions, together with a view of the rail corridor alignment to the south of the road. A plan view of the proposed intersection is also presented.



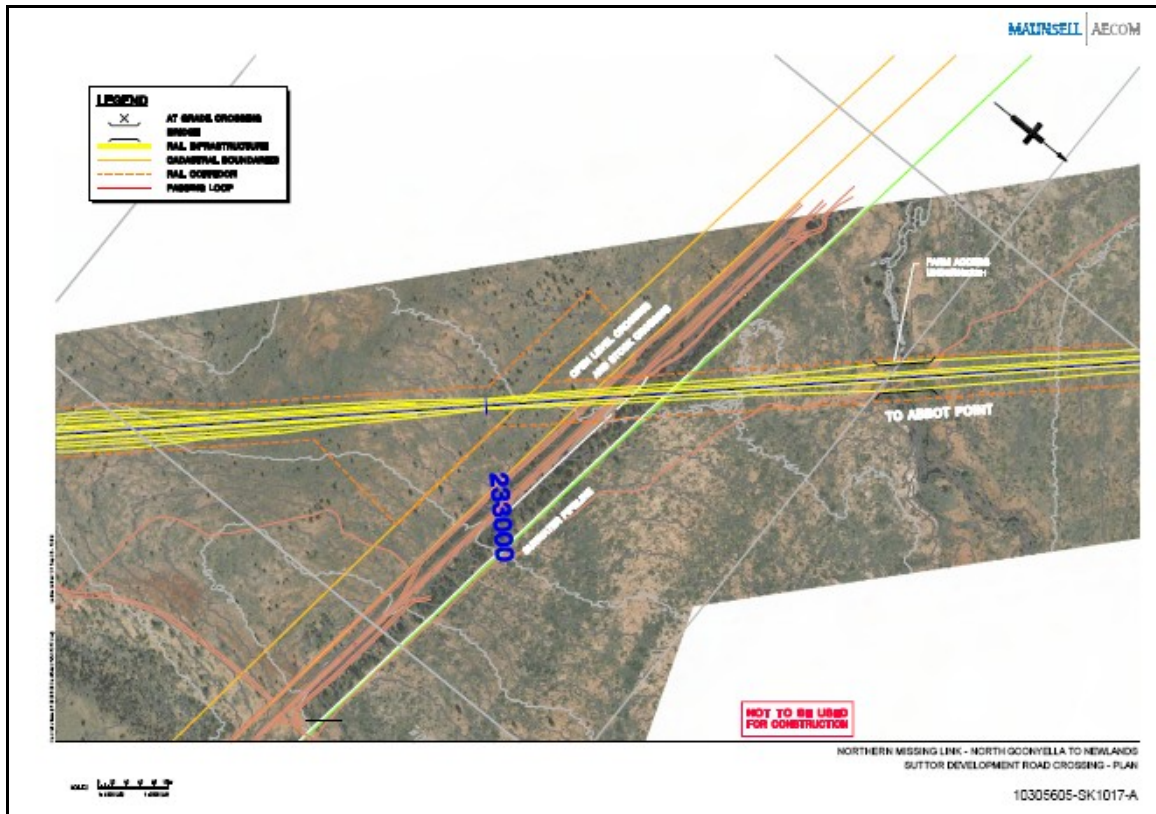
Suttor Road looking west



Suttor Rd looking east



Rail Corridor looking south from Suttor Road



Plan of Suttor Road crossing

In reviewing the alternatives, I find that the arguments relating to the Suttor Developmental Road crossing appear to be as follows:

A. Against a level-crossing

- A number of safety factors mitigate against a level crossing:
 - Motorists travelling on rural roads in general tend to be too complacent about level crossings when they infrequently encounter rail traffic, and may not approach a new level crossing with sufficient caution.
 - Suttor Developmental Road runs east-west and may be subject to rising/setting sun glare to oncoming motorists.
 - Full train visibility from the road is restricted until it emerges from a cutting about 235m from the road.
- There is some precedent for recent construction of grade separated crossings of coal lines – Coppabella/Peak Downs highway; Blair Athol/Gregory Developmental Road; Gregory and Curragh Mines/Capricorn Highway; Hail Creek/Suttor Development Road; and Rolleston Mine/Dawson Highway.
- Main Roads suggests that accident frequency (all types) could be projected to be not more than once in 4 years, and that costs for one fatality could be estimated at \$1.65 million.

B. In support of a Level-crossing

- An ALCAM safety assessment score of 107 allowing for protection by lights and signals on the Suttor Development Road/NML crossing is satisfactorily below the ALCAM standard of 200 for a road traffic count of 100 vehicles per day and maximum train count of 29 per day. (See Appendix 2 for the detail of the ALCAM model results for various scenarios for the Suttor Road crossing).
- The Suttor Developmental Road crossing design basis is a traffic count of 100 cars per day, and an ultimate train count of 29 per day (forecast to be reached only after year 17 of the project life). These are very low when compared with existing values for level crossings located elsewhere on the Newlands rail system and in other parts of the Central Queensland Coal Rail system. Currently, there are over 60 level crossings in this system having more than 29 train movements per day and at least 25 level crossings having a road vehicle count of more than 100 per day.
- The Suttor Developmental Road crossing may not justify a higher level of protection than many existing level crossings in the rail system. It could therefore be considered inequitable to commit funds for a grade separated crossing ahead of a number of other more highly trafficked crossings in the region.

While QR has agreed to install a grade separated crossing installation at the Cerito-Elphinstone Road crossing, its justification is that the Cerito Road is presently being constructed to provide a bitumen connection between Glenden and the Bowen Developmental Road. While no traffic counts are available on this as yet unopened road, it is expected to have heavy usage due to the nearby Newlands mine and the new capability for the public to travel north from Glenden and the Peak Downs Highway to Bowen via a sealed road. Such traffic will greatly exceed the Suttor Developmental Road numbers for the foreseeable future.

On examination of the above factors relating to the Suttor Developmental Road crossing, I find that the following additional information is material:

- While there are some grade separations in the region, these are almost always confined to crossing of highways where considerably more road traffic is encountered than the Suttor Developmental Road.
- There are many examples of level crossings on railways in the Bowen Basin, so the experience is not unusual to motorists in the region.
- The national standard ALCAM assessment indicates that a level crossing in this location, fitted with appropriate signalling protection, achieves the safety criteria for road traffic well above the forecast levels, up to at least 2500 vehicles per day (see Appendix 2).
- As there will be a slow annual growth rate of rail traffic on this line (only seven trains per day during Stage 1, building up to 22 trains per day at the beginning of Stage 3, after 17 years), the crossing safety and operation can be kept under review during its early life, and be dealt with in relativity to other crossing needs, if and when its usage rises.

- It would be inequitable to commit funds for a grade separated crossing at this time, ahead of a number of other more highly trafficked crossings in the region, for example the level crossings on the Bowen Developmental Road between Collinsville and the Bruce Highway.

From this analysis, it appears unwarranted for a grade separated crossing to be installed at Suttor Developmental Road at the commencement of the project.

Normally, after construction, the status and safety of this crossing would be subject to regular evaluation under the terms of the currently operating *MOU in respect of Management and Funding Responsibility for Level Crossing Safety*.

However, in the interests of a more certain future outcome, I propose that the construction of a grade separation crossing for Suttor Developmental Road be undertaken at a future time when predetermined rail and road traffic conditions are experienced and/or rail and road upgrades are commissioned.

While DMR has indicated its requirement that a grade separated crossing be provided at the initial construction of the Northern Missing Link, DMR has agreed that it is exceptionally prepared to accept a lesser at-grade facility as an interim option, with triggers for future upgrading to a grade-separated crossing. QR has accepted this position and has indicated that it is prepared to commit to a grade separated crossing upon achievement of an appropriate trigger point.

In the EIS, QR has indicated that Stage 2 of the project would be triggered when coal haulage is forecast to exceed about 12 million tonnes per annum, or an average of 10-12 train services per day. I consider Stage 2 to be an appropriate point at which to trigger a grade separation decision based on rail traffic.

DMR requested a trigger point of the road traffic number of vehicles per day. A very substantial increase in road traffic volume on the Suttor Developmental Road would appear to be warranted before that cause alone triggers the need for grade separation. Appendix 2 shows that road traffic numbers of 900 and 2500 per day do not, under the ALCAM model, require grade separation. An average daily traffic count of 500 vehicles per day, although well short of any traffic number that would trigger grade separation according to the ALCAM model, would appear to approach the traffic numbers currently experienced at existing level crossings on the Bowen Developmental Road north of Collinsville. I consider that this level might provide an appropriate road traffic indicator at which grade separation is considered in this case. Any lower figure than 500 might be misinterpreted as a suggestion that existing crossings are inadequate.

Alternatively, following the precedent of the decision by DMR to upgrade the Cerito Road link, the road trigger point could come when a commitment is made to upgrade the Suttor Developmental Road to a bitumen standard.

DMR has suggested that a high accident rate on the crossing should also be grounds for triggering grade separation. However, if the crossing does experience an abnormal accident rate over a period of time, sufficient to justify concern as to the safety of the crossing, the normal MOU process described above would enable DMR and QR to agree upon upgrading treatments, including the possibility of grade separation. Since this is available to both parties at any time, and in fact is required of parties to the MOU, I believe that it is not necessary for me to specify a requirement that accident frequency might be the trigger for an upgrade of the crossing.

However, in order to ensure that a regular review takes place of the impact of traffic increases at the crossing, I am prepared to recommend that reviews take place every two years, based on the MOU process described above.

Accordingly, I recommend that the following requirements with respect to the construction of road-rail crossing on the Suttor Developmental Road, be attached to the Community Infrastructure Designation for the rail corridor:

Condition 7

QR shall enter into an infrastructure agreement with DMR to construct the road/rail crossing of the Suttor Developmental Road in accordance with the following stage provisions:

Stage 1

Prior to commencement of rail operations, QR shall provide level crossing facilities with levels of protection including at least the following elements:

- a. flashing lights with back boards to reduce the impact of sunlight glare to oncoming vehicles;**
- b. additional road warning signs ahead of the crossing indicating road/rail crossing to be erected in accordance with the Manual of Uniform Traffic Control Devices;**
- c. a minimum 8 metre wide two lane bitumen road constructed for a minimum of 250 metres either side of the road/rail crossing; and**
- d. road approaches designed in accordance with DMR – Road Planning and Design Manual and constructed in accordance with DMR Standard Drawings and Specifications.**

Stage 2

QR shall undertake biennial reviews, together with QT, DMR and the Nebo Shire Council, of the impact of rail and road traffic increases at the Suttor Developmental Road crossing, based on the provisions of the *Memorandum of Understanding with respect to the Management and Funding Responsibility for Level Crossing Safety (24 October 2003)* or any subsequent document addressing this matter.

Stage 3

QR shall design and construct a grade-separated crossing (road over rail bridge) for the Suttor Developmental Road within 18 months of any of the following:

- a. rail traffic at the crossing is contracted to exceed 12 million tonnes per annum;**
- b. annual average daily traffic count on the road exceeds 500 vehicles per day; or**
- c. written notification by DMR to QR that funding is committed for an upgrading of that road to bitumen standard over its full length and that road construction will be undertaken within eighteen months of the notification.**

Condition 8

QR shall undertake community consultation to inform local government authorities, members of the community and road users of the commencement of rail operations and of the QR commitment to safety.

Likewise, for the treatment of the crossing of Cerito Road, I recommend the following requirement for QR to deliver the grade separation indicated in the EIS:

Condition 9

Prior to the commencement of rail operations QR shall construct a grade-separated crossing where the Missing Link rail line crosses the Cerito – Elphinstone Road. The design of the crossing shall be in accordance with the Main Roads – Road Planning and Design Manual.

7.11 Downstream Effects

DMR Position

DMR is seeking a separate traffic management plan outlining the processes for monitoring, impact assessment, action, and triggers for funding of works in relation to the existing six open level crossings on the Bowen Developmental Road of the existing Newlands to Abbot Point rail line.

DMR also seeks a road impact assessment of the Bruce Highway – Abbot Point Road junction, which incorporates a crossing by the Abbot Point rail line.

QR's Position

The ToR for the EIS called for an outline of the proposed process to be employed in assessing and managing road rail interactions at downstream locations on the rail network. Consequently,, QR outlined in the EIS that impacts of existing downstream crossings will be governed by increased mining activity (i.e. new mines), as well as continuing reviews, using the ALCAM model, of the protection required. This would

be undertaken by using the joint QT/DMR/local authority/QR agreed strategy under the MOU.

At the Abbot Point - Bruce Highway rail line intersection a separate process incorporating both QR and Ports Corporation would be developed in consultation with DMR and QT. This would cover the short and long term traffic issues of the various stages of both projects, and appropriate road management requirements of DMR.

Coordinator-General's Conclusion

The EIS envisaged that any growth of rail traffic on the Newlands - Abbot Point rail line and interaction with Bowen Developmental Road traffic at crossings would arise from:

- organic growth of road and rail traffic from existing users;
- improved access to Glenden and the northern Bowen Basin created by the construction of the new Cerito – Elphinstone Road;
- potential new mines on the existing network (e.g. the proposed Sonoma Coal Mine south of Collinsville); and
- any contribution that might arise from the Northern Missing Link project.

The proposal by QR to utilise existing “agreed strategies” under the MOU for review of these interactions seems to be an appropriate use of these arrangements. While the precise timing of trigger points for significant crossing upgrades cannot be identified with certainty, the projections of rail growth in the EIS indicate that the increases in rail and road traffic will be predictably gradual over a number of years. Therefore, it seems appropriate to use a periodic review process to assess these ongoing changes on a joint stakeholder basis.

In the case of the Abbot Point – Bruce Highway - rail line intersection, it is my understanding that discussions have been held between the parties in connection with both the Abbot Point Stage 2 and Stage 3 Expansion projects. This has resulted in a DMR design for the Highway intersection for Stage 2 that is sufficient for both the construction and operational requirements of the Stage 3 coal terminal expansion. A full account of these outcomes will form part of finalisation of the Abbot Point Stage 3 EIS process.

Accordingly, I recommend the following requirement for managing the downstream effects of the Northern Missing Link on existing level crossings on the Newlands – Abbott Point rail line along the Bowen Developmental Road and other local roads, be attached to the Community Infrastructure Designation for the rail corridor:

Condition 10

QR shall undertake biennial reviews, together with QT, DMR and the Bowen Shire Council, of the impact of rail and road traffic increases at crossings along the Bowen Developmental Road and other local roads, based on the provisions of the *Memorandum of Understanding with respect to the Management and Funding Responsibility for Level Crossing Safety (24 Oct 2003)* or any subsequent document addressing this matter. The first such review shall be conducted within 12 months of the commencement of operations on the Northern Missing Link rail line.

8.0 Conclusions and Recommendations

Having regard to the documentation and other information provided by Queensland Rail, I consider that the EIS for the Northern Missing Link Rail project has adequately addressed the environmental and other impacts of the project, and generally meets the requirements of the Queensland Government for impact assessment in accordance with the provisions of Part 4 of the *State Development and Public Works Organisation Act 1971*.

On the basis of my assessment of the information provided by Queensland Rail in the EIS for the Northern Missing Link Rail Project, including advice from Advisory Agencies, and other information, I recommend that the project can proceed on the corridor as described in the EIS, and that the potential adverse impacts associated with the project can be adequately addressed through the following measures:

- (a) implementation of the project generally in accordance with the arrangements described in the EIS, and the Management Commitments nominated therein;
- (b) finalisation and implementation of appropriate Environmental Management Plans as drafted in the EIS; and
- (c) attachment of recommended requirements from this report (pursuant to s.43 of *SDPWO Act*) as conditions in any community infrastructure designation for the Rail Corridor under the *Integrated Planning Act 1997*, and listed in Appendix 1.

I further recommend that two actions listed as recommendations in Appendix 1, be undertaken by QR in their implementation of the project.

I note that the project as described does not include sufficient detail of proposed construction camp sites to enable me to include such camp sites in the project approval recommendation mentioned above. Therefore, I make no determination on acceptance of impacts for the construction camps. I note that it is intended that these sites will be the subject of separate applications for development approval to the relevant local authorities under the *Integrated Planning Act 1997*.

I also note that separate applications for permits will be required under a number of Acts, as reported in section 4 of this report, and I make no determination on these matters.

Copies of this report will be given to the following entities:

- Queensland Rail, pursuant to s.35(5)(a) of the *SDPWO Act*;
- The Minister for Transport, (pursuant to s.43 of *SDPWO Act*) for advice when considering an application for Designation of the Rail Corridor land for Community Infrastructure purposes, under Chapter 2 Part 6 of the *Integrated Planning Act 1997*; and
- The Shire Councils of Bowen, Nebo and Belyando.

A copy of this report will be made publicly available on the Coordinator-General's website.

Ross Rolfe

Coordinator-General

Date / /

APPENDIX 1

List of Coordinator-General's Recommendations relating to Northern Missing Link Rail Project

A. Requirements for attachment to a Designation of Land for Community Infrastructure

Condition 1

QR shall finalise the Environmental Management Plan (Construction) to the satisfaction of Queensland Transport prior to commencement of construction of the Northern Missing Link.

Condition 2

QR shall finalise the Environmental Management Plan (Operation) to the satisfaction of Queensland Transport prior to commencement of operation of coal haulage on the Northern Missing Link.

Condition 3

QR shall implement the Management Commitments contained in the EIS for the Northern Missing Link Rail Project dated February 2006, and further identified in the EMPs (Planning, Design, Construction and Operations). Queensland Transport is the responsible agency for this condition.

Condition 4

The Clearing and Grading section of the Environmental Management Plan (Construction) shall contain a management action worded as follows: "Sectional Clearing Plans that define the area of land to be cleared along each section of the corridor are to be prepared and approved prior to substantial construction works occurring." Queensland Transport is the responsible agency for this condition..

Condition 5

A Road Impact Assessment Report and Road Use Management Plan shall be prepared by QR for transport tasks associated with the rail corridor construction (including construction camps) and subsequent operation, in accordance with the DMR (2006) *Guidelines for Assessment of Road Impacts of Development* (or current publication if superseded). QR shall submit the Report and Plan for approval to the Director General of DMR within two months of the appointment of the principal construction contractor, and before commencement of rail corridor major construction activities.

Condition 6

QR shall enter into a Transport and Traffic Pre-Construction Agreement with DMR to address issues relating to road use, maintenance, traffic management and contributions for infrastructure upgrading works, within one month of the production of the Road Impact Assessment Report (RIAR) and Road Use Management Plan (RUMP), and before commencement of rail corridor major construction activities. If agreement is not reached within one month of production of the RUMP, then QR will provide a letter of undertaking to DMR to address any outstanding matters defined in the RUMP and RIAR that have not been agreed with DMR.

Condition 7

QR shall enter into an infrastructure agreement with DMR to construct the road/rail crossing of the Suttor Developmental Road in accordance with the following stage provisions:

Stage 1

Prior to commencement of rail operations, QR shall provide level crossing facilities with levels of protection including at least the following elements:

- a. flashing lights with back boards to reduce the impact of sunlight glare to oncoming vehicles;
- b. additional road warning signs ahead of the crossing indicating road/rail crossing to be erected in accordance with the Manual of Uniform Traffic Control Devices;
- c. a minimum 8 metre wide two lane bitumen road constructed for a minimum of 250 metres either side of the road/rail crossing; and
- d. road approaches designed in accordance with DMR – Road Planning and Design Manual and constructed in accordance with DMR Standard Drawings and Specifications.

Stage 2

QR shall undertake biennial reviews, together with QT, DMR and the Nebo Shire Council, of the impact of rail and road traffic increases at the Suttor Developmental Road crossing, based on the provisions of the Memorandum of Understanding with respect to the Management and Funding Responsibility for Level Crossing Safety (24 October 2003) or any subsequent document addressing this matter.

Stage 3

QR shall design and construct a grade-separated crossing (road over rail bridge) for the Suttor Developmental Road within 18 months of any of the following:

- a. rail traffic at the crossing is contracted to exceed 12 million tonnes per annum;
- b. annual average daily traffic count on the road exceeds 500 vehicles per day; or
- c. written notification by DMR to QR that funding is committed for an upgrading of that road to bitumen standard over its full length and that road construction will be undertaken within eighteen months of the notification.

Condition 8

QR shall undertake community consultation to inform local government authorities, members of the community and road users of the commencement of rail operations and of the QR commitment to safety.

Condition 9

Prior to the commencement of rail operations QR shall construct a grade-separated crossing where the Missing Link rail line crosses the Cerito – Elphinstone Road. The design of the crossing shall be in accordance with the Main Roads – Road Planning and Design Manual.

Condition 10

QR shall undertake biennial reviews, together with QT, DMR and the Bowen Shire Council, of the impact of rail and road traffic increases at crossings along the Bowen Developmental Road and other local roads, based on the provisions of the *Memorandum of Understanding with respect to the Management and Funding Responsibility for Level Crossing Safety (24 Oct 2003)* or any subsequent document addressing this matter. The first such review shall be conducted within 12 months of the commencement of operations on the Northern Missing Link rail line.

B. Recommendations to be carried out by QR:

Recommendation 1

During the design phase for the electrification of the railway, QR shall, in consultation with the owner of the North Queensland Gas Pipeline:

- a. determine the likely extent of electrical current interaction between the rail line and the pipeline;
- b. determine reasonable mitigation measures if such are required; and
- c. meet the full cost of any required mitigation measures.

Recommendation 2

Prior to the commencement of major capital works on the Newlands Rail Line associated with the Northern Missing Link Project, QR shall provide all coal producers using that line with a commitment to maintain track availability and coal transport tonnage levels above specified limits during the period of track upgrade works.

End of Appendix 1

APPENDIX 2

Details of the ALCAM process analysing the Suttor Developmental Road Crossing

Objectives of the ALCAM process

ALCAM has been developed as a direct impact of the need to ensure there is a rigorous process in place to prioritise the treatment of disparate level crossings according to their comparative safety risk. ALCAM has and can be used for greenfield sites, such as the proposed Suttor Rd level crossing. It is important to keep in mind that ALCAM is an assessment ***TOOL*** designed to prioritise level crossing safety improvement works as well as ***assisting*** in the determination of the most effective treatments at these sites. The model is a complex scoring algorithm which considers each crossing's physical properties (CHARACTERISTICS and CONTROLS) as well as related human factors to provide the crossing's "Risk Score".

The Risk Score can then be compared with established limits of scores that indicate when crossing safety controls (lights, signs, signal controls) should or must be installed. These limits are the Installation Limit and the Intervention Limit respectively.

Installation Limit - indicates a level below which the level crossing risk is likely to be within acceptable limits and further remedial work to address the identified risks is not necessary. This limit is indicative of a "Risk Score" that should be achieved if a new level crossing was being installed.

Intervention Limit - indicates a level above which there is likely to be safety hazards that require priority attention to mitigate the level of risk to road and rail users. This may require short term and long term actions to reduce the identified risks.

Application of the model to the Suttor Developmental Road crossing

For comparison purposes three scenarios of road and rail traffic volumes were chosen to analyse the acceptability of crossing safety treatments in dealing with usage of the crossing at these levels. Rail traffic was assumed at its maximum envisaged by the EIS. Road traffic volumes were assumed at three levels based on (a) the current low traffic environment; (b) use of the road as regional link; and for comparison, (c) traffic levels experienced on some highways in the region.

The following table illustrates the scenarios chosen for analysis:

Vehicle Volumes / Characteristics			
Description	Scenario 1	Scenario 2	Scenario 3
Trains			
Number of Trains	29	29	29
Longest Train Length	> 1000m	> 1000m	> 1000m
Speed of Trains	60- 80kmph	60- 80kmph	60- 80kmph
Road Vehicles			
Number of Vehicles	100	900	2500
% of heavy vehicles (road)	> 25%	> 25%	> 25%
Speed of vehicles (85 %ile approach speed)	> 80 kmph	> 80 kmph	> 80 kmph

The following table nominates the physical crossing characteristics that are applicable at the location, which take into account the visibility and orientation of road and rail:

Crossing Characteristics (same for all scenarios)	
Proximity to next intersection/ shunting yard / station	>200m
Possibility of short stacking	Nil
Number of lanes (road)	Single Lane
Number of tracks (rail)	1
Road surface on immediate approach / departure	Sealed
S1 - Advance visibility of crossing from road	Measured distance more than calculated distance
S2 - Approach visibility to train (vehicle approaching crossing)	Measured distance less than calculated distance <50%
S3 - Visibility to train (vehicle stopped at crossing)	Measured distance less than calculated distance <50%
Road runs east / west (possible sun glare)	Yes
Rail runs east / west	No
Temporary visual impediments - sighting of crossing	None
Temporary visual impediments - sighting of train	None

The assessment proposes that the following control measures be used at the crossing, to determine whether the model predicts that they are adequate for providing the required degree of protection on the crossing, under each of the three scenarios:

Crossing control measures proposed for crossing (same for all scenarios)

- Active protection – Primary Flashing Lights
- Backing Boards / LED Lights

- R6-25 Signage (confederate flag)
- Duplicated large passive advanced warning (signboards)
- Rail – X pavement marking
- Train Whistle Board
- Maintenance Programme for vegetation, etc.
- Healthy State Monitoring (for Active Protection)
- Localised public education strategies
- Public Emergency Response telephone number on sign

The following table presents the quantitative scores and limits which result from the ALCAM model:

RESULTS			
Description	Scenario 1	Scenario 2	Scenario 3
Risk Score of crossing before Controls	1037	1037	1038
Intervention Limit	400	340	235.63
Installation limit	200	185	158.13
Risk Score with proposed Characteristics & Controls	107	107	107

Conclusions

This shows that under ALL SCENARIOS i.e. all vehicle traffic numbers, the proposed control measures (level crossing lights, signs, signals) have brought the Risk Scores -107 - below the installation limits of 200, 185, and 158.

Thus at maximum train counts, a properly controlled level crossing at the Sutor Developmental Road can safely carry traffic counts up to at least 2500 vehicles per day.

Detailed explanation of the use of the Model in this analysis:

In doing a "Desktop" assessment of this proposed crossing, worst case assumptions are made for all of these physical characteristics and controls as the crossing does not physically exist. The exception to this is that in one of the characteristics, one has to nominate the Road Traffic Volume (two way per 24 hrs). The available options to be inputted under this characteristic are:

- 0 - 1000 vehicles per day (vpd)
- 1000 - 3000 vpd
- 3000 - 5000 vpd
- 5000 - 10000 vpd
- 10000 - 20000 vpd and
- >20000 vpd

As the projected vpd range from 100 to 900 for scenarios 1 and 2, the first condition (dot point 1) was selected. This when combined with no Controls at the crossing gave a "Risk Score" of 1037. The third scenario of 2500 vpd required the second condition (dot point 2) to be inputted. This when combined with no Controls at the crossing gave a "Risk Score" of 1038.

This "Risk Score" is then allocated to various human factor Accident Mechanisms selected from three Groups (A - road user is unaware of the situation, B - road user is unable to avoid the situation, and C - road user is unwilling to recognise situation). The total scores for all these accident mechanisms is still 1037 (Scenarios 1 and 2) and 1038 (Scenario 3).

The determination of Installation and Intervention Limits is calculated by the product of a) Actual road traffic volume two way per 24hrs, b) Actual train volume, two way per 24 hrs, and c) Consequence Score. (Consequence Score is chosen to account for location factors such as heavy vehicles, and train speed factors.) The product of these three is called the RISK EXPOSURE SCORE. The risk exposure score determines the intervention and installation limits.

The results for the 3 Scenarios were:

- Scenario 1 - Risk exposure score 8700, Intervention Limit 400, Installation Limit 200
- Scenario 2 - Risk exposure score 78,000, Intervention Limit 340, Installation Limit 185
- Scenario 3 - Risk exposure score 217,500, Intervention Limit 235, Installation Limit 158

The daily train traffic of 29 and Consequence Score of 3 were constant in all three scenarios, only the traffic volume changed. As can be seen, the model is sensitive to varying traffic volumes in determining the Installation and Intervention Limits.

The Risk Score for all three scenarios is 1037 / 1038. This score is well in excess of all three scenarios Intervention Limits.

To get the Risk Score under the Intervention Limit in all three scenarios, one has to change the various Characteristics to an acceptable risk level (eg Ensuring the crossing conforms to Aust Standards, sealing the immediate approach road surface etc) and entering appropriate controls. The characteristics and controls that had been inputted in all three scenarios are shown on the ALCAM output as "Crossing Characteristics - proposed, Crossing Control Measures – proposed, and Accident Mechanisms with proposed characteristics and controls". The resulting Risk Scores for the three scenarios were:

- Scenario 1 - 107
- Scenario 2 - 107
- Scenario 3 - 107

These are well under the required Installation Limits of 200, 185 and 158 respectively.