



Coordinator-General's evaluation report for an environmental impact statement

Moura Link – Aldoga Rail Project

October 2009

**Under part 4 of the *State Development and Public
Works Organisation Act 1971***



Moura Link – Aldoga Rail Project

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Coordinator-General's report synopsis

This Coordinator-General's 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 Moura Link – Aldoga Rail Project (MLARP, 'the project'). The Department of Infrastructure and Planning (DIP) managed the impact assessment process for this project on my behalf in accordance with the SDPWO Act.

This report includes an assessment and conclusion about the environmental effects of the project and any associated mitigation measures. Assessed material includes: the EIS; properly made submissions and other submissions that have been accepted; and any other material that is relevant to the project—such as comments and advice from advisory agencies and other entities, technical reports and legal advice.

QR Limited (QR, 'the proponent') is proposing a major expansion of its rail network in the less populated areas to the immediate north of greater Gladstone.

The project, as proposed in the EIS, comprises the following key elements:

- construction of a new rail link, the 'Moura Link', to carry Moura/Surat traffic arriving via the Moura Short Line (MSL) from the south west to the existing North Coast Line (NCL) south east of the Mount Larcom township—connecting with the proposed Wiggins Island Coal Terminal (WICT) rail loops and other rail tracks in the Gladstone region
- a rolling stock maintenance yard and provisioning facilities—the 'Aldoga Rail Yard'—in the north of the Gladstone State Development Area (GSDA) just to the east of the township of Mount Larcom
- retention of the two existing North Coast Line (NCL) tracks; an additional two narrow-gauge, electrified, rail tracks south of the existing lines on the existing NCL alignment from the new Aldoga Rail Yard to the proposed WICT rail infrastructure in the Aldoga Bank area, east of Yarwun township; provision for an additional two tracks on the NCL—totalling six tracks (note: this is referred to in this report as the 'Aldoga Bank Duplication Option').
- additional tracks along the East End Mine Branch Line (EEMBL)
- provision for future tracks within the project area
- provision of rail access for potential third party operators at Aldoga.


The capital value of the project is estimated to be \$500 million and it is expected to create approximately 350 jobs during the two year construction program. Approximately 550 permanent operational jobs will be created at ultimate development.

The project is proposed to service and be developed in parallel with the proposed WICT facilities, which are to be constructed on Wiggins Island near Golding Point in the Port of Gladstone. In response to feedback received during the WICT EIS consultation phase, QR decided to proceed with this revised concept for rail works further to the north of greater Gladstone.

The Coordinator-General's report on the WICT EIS is located at:

<http://www.dip.qld.gov.au/projects/energy/coal/wiggins-island-coal-terminal.html>

Construction of the Moura Link – Aldoga Rail Project is expected to commence in late 2010/early 2011 and operations commence approximately two years later. The progress of this project is however dependent on the support of the coal mining industry and implementation of the WICT.



Two options within the Gladstone Regional Council local government area were investigated for the Moura Link connecting the existing MSL, NCL and the EEMBL, namely:

- 1) Moura Link Eastern Option – QR’s preferred alignment linking the MSL and NCL (represents a saving of approximately \$27 million over the Western Option)
- 2) Moura Link Western Option – alternative alignment linking the MSL and NCL—which avoids the potential Castle Hope Dam footprint.

An initial advice statement (IAS) was lodged with the Coordinator-General on 11 September 2007 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 26 September 2007.

On 11 October 2007, the project was referred to the Australian Government Minister for the Environment, Heritage and the Arts to assess whether it was a ‘controlled action’ under the Commonwealth Government *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act).

On 7 December 2007, the Australian Government Department of Environment, Water, Heritage and the Arts (DEWHA) determined that the project was not a controlled action under the EPBC Act (Decision Notice EPBC 2007/3773).

On 11 January 2008, representatives of local government and state agencies were invited to act as ‘advisory agencies’ for the EIS process.

Draft terms of reference (TOR) for the EIS were publicly advertised on 12 January 2008 inviting submissions until 12 February 2008. Briefings on the draft TOR were held in Gladstone on 6 February 2008 and in Brisbane on 7 February 2008. Fourteen submissions on the draft TOR were received. Final TOR were issued to the proponent on 11 March 2008.

QR submitted a draft EIS to DIP on 6 June 2008. After some minor amendments as instructed by the department, it was determined that the EIS substantially addressed the TOR.

The key issues dealt with by the EIS focussed on potential impacts to surrounding rural land and the communities of Yarwun and Mount Larcom. These issues included:

- private properties, grazing leases and service providers that will be directly impacted by the project
- the clearing of approximately 95 hectares of mapped regional ecosystems (REs) and 471 hectares of other vegetation (including grasslands)
- four threatened species identified from habitats within the project area—squatter pigeon, tusked frog, black-necked stork and little pied bat
- habitat removal and modification as a result of vegetation clearing and associated edge effects
- impacts on the ecological value of the Calliope River, Larcom Creek and associated floodplain communities
- impacts on water quality, and the management of industrial waste, wastewater and sewage
- noise, dust, vibration, lighting and visual amenity impacts, especially on the communities of Yarwun and Mount Larcom
- workforce issues including local and indigenous recruitment, skills and training, accommodation and local business opportunities.

The EIS was publicly advertised on 12 July 2008, inviting submissions until 25 August 2008. Agency briefings on the EIS were held in Gladstone on 5 August 2008 and in Brisbane on 7 August 2008. In total, 20 submissions on the EIS were properly received by DIP. Thirteen submissions were from advisory agencies and seven were general public submissions. These were recorded by DIP and provided to QR for consideration and response.

The substantive issues raised in submissions that required additional attention by QR included the following subjects:

- Moura Link Eastern and Western Options and proposed Castle Hope Dam site
- construction and operational workforce accommodation and implications for housing availability in the Gladstone region
- residential amenity, particularly of Yarwun and Mount Larcom, and the impacts of noise, vibration, dust, lighting and visual amenity
- habitat connectivity
- watercourse crossings
- soil salinity
- waste, waste water and stormwater
- weeds—particularly giant rat's tail grass.

Following receipt and analysis of submissions, it was determined by DIP that a supplementary environmental impact statement (SEIS) would not be required for the project and that issues could be resolved satisfactorily by an exchange of correspondence between advisory agencies/public submitters and the proponent. QR was instructed to address the issues that had been raised.

Wherever any substantive issue required a technical resolution, QR corresponded and liaised directly with each submitter to resolve outstanding concerns to the satisfaction of those submitters and DIP. During this process, QR and DIP officers met with officers of the Gladstone Regional Council (GRC) and the (then) Department of Natural Resources and Water (NRW) Central Queensland Region on 2 October 2008, and the (then) Environmental Protection Agency (EPA) Central Office on 3 October 2008.

Advisory agencies were then requested to provide confirmation in writing acknowledging that issues of concern had been satisfactorily addressed by QR and/or to provide possible conditions that might allow the project to proceed.

Shortcomings associated with the NCL Duplication Option at Aldoga Bank became apparent during the EIS process as a result of preliminary findings from the GLPRRIS, the MLARP preliminary engineering and environmental studies, and stakeholder concerns.

As a consequence, QR undertook a supplementary study to investigate and compare the feasibility and impacts of alternative rail route alignment options within the GSDA from the NCL through the Aldoga Bank area—between the Aldoga Rail Yard and WICT rail infrastructure.

The draft Aldoga Bank Rail Options Study (dated 11 May 2009) was circulated to relevant advisory agencies (DERM, DTMR and GRC) for comments.

The final Aldoga Bank Rail Options Study (dated 26 June 2009) investigates and compares two additional rail route deviation options between approximate railway chainages¹ of 546 kilometres and 552 kilometres (including existing equality discrepancies):

- Aldoga Bank Deviation Option A (full deviation) – provision of four new tracks on an improved horizontal and vertical alignment to the north of the existing NCL with provision for two additional tracks; the existing NCL tracks in that section to be decommissioned upon completion of the new tracks
- Aldoga Bank Deviation Option B (partial deviation—split-system) – retention of the two existing NCL tracks; provision of two new tracks on an improved horizontal and vertical

¹ Reference chainages for the rail deviation / duplication run in the opposite direction to the NCL chainages, and are linked to chainage references under the MLARP.



alignment through a greenfield area to the north of the existing NCL with provision for two additional tracks (i.e. eventual duplication of the deviation).

The final Aldoga Bank Rail Options Study investigates and compares the environmental, engineering and planning issues and the recommendations of the advisory agencies on the draft options. The study recommends the Aldoga Bank Deviation Option B (partial deviation).

Key findings from the options study were provided by QR to DEWHA to consider whether the preferred Aldoga Bank Deviation Option B (partial deviation—split-system) may be a 'controlled action' under the EPBC Act. DEWHA notified on 2 June 2009 that Aldoga Bank Deviation Option B (partial deviation—split-system) will not be a controlled action (Decision Notice EPBC 2009/4884).

QR also provided the key findings from the options study to the Yarwun Targinnie Progress Association for public display to the Yarwun community.

At the conclusion of this process the EIS, supplemented by the outcomes of additional correspondence, was comprehensive and complete.

In evaluating the environmental effects, I have considered the EIS, a range of studies and technical reports undertaken in the course of the EIS and environmental management plans prepared by QR including its technical consultants; public submissions received on the EIS; comments on the EIS and other advice provided by state and local government authorities.

Having regard to the above, I consider that the EIS process conducted for the MLARP has adequately addressed the environmental and other impacts of the project and meets the requirements of the Queensland Government for impact assessment in accordance with the provisions of Part 4 of the SDPWO Act.

Therefore, I recommend that the Moura Link – Aldoga Rail Project proceed subject to the conditions contained in schedules A and B of this report and the project commitments made by QR contained in schedule C of this report.

.....
Colin Jensen

Coordinator-General

Date: Signed 7 October 2009



1. 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 Moura Link – Aldoga Rail Project (MLARP, 'the project'). The EIS was conducted by the proponent, QR, and prepared on its behalf by its principal consultants, Connell Hatch.

An initial advice statement was lodged with the Coordinator-General on 11 September 2007 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 26 September 2007.

On 7 December 2007, the Australian Government Department of Environment, Water, Heritage and the Arts determined that the project was not a controlled action under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (Decision Notice EPBC 2007/3773) and therefore assessment by the Australian Government was not required.

The objective of this 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 Queensland Government impact assessment process. Essentially, it is 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. The report also states conditions under which the project may proceed.

2. Project description

2.1 The proponent

The proponent for the Moura Link – Aldoga Rail Project (MLARP – ‘the project’) is QR Limited (QR). (Note: any references in this report to QR can also be read as ‘QR Limited’ ‘the project proponent’ or ‘the proponent’.)

QR provides rail-based transport services and in 2007/08 annual revenue was \$3.4 billion. Within Queensland, QR is the largest provider of rail transportation solutions for Australia’s coal mining industry. In 2008/09, QR transported 170 million tonnes of coal in Queensland, of which approximately 10 million tonnes was for domestic use and the remainder exported.

In Queensland, QR operates over 400 services per week from over 30 coal mines. It rails coal to six existing export coal terminals and domestically to electricity generation and minerals processing industries. These services are operated on QR’s interconnected coal network of over 2000 kilometres of track (75 per cent electrified).

All references in this report to commitments made by QR and recommendations and conditions applying to QR for this project, also apply to all parties engaged/assigned to construct and/or operate any part of the project and to any party to which QR may assign the MLARP.

2.2 Project elements


QR is proposing a major expansion of its rail network in the less populated areas to the immediate north of greater Gladstone (Figure 1). The proposed MLARP includes the construction and operation of track and facilities to support electrified and non-electrified haul trains.

The project, as originally proposed in the EIS, comprised the following key elements:

- construction of a new rail link, the ‘Moura Link’, to carry Moura/Surat traffic arriving via the Moura Short Line (MSL) from the south west to the existing North Coast Line (NCL) south east of the Mount Larcom township that will connect with the proposed WICT rail loops and other rail tracks in the Gladstone region
- a rolling stock maintenance yard and provisioning facilities, the ‘Aldoga Rail Yard’, in the north of the Gladstone State Development Area (GSDA) just to the east of the township of Mount Larcom
- retention of the two existing North Coast Line (NCL) tracks; an additional two narrow-gauge, electrified, rail tracks south of the existing lines on the existing NCL alignment from the new Aldoga Rail Yard to the proposed WICT rail infrastructure in the Aldoga Bank area—east of Yarwun township; provision for an additional two tracks of the NCL—totalling six tracks (note: this is referred to in this report as the ‘Aldoga Bank Duplication Option’)
- additional tracks along the East End Mine Branch Line (EEMBL)
- provision for future tracks within the project area
- provision of rail access for potential third party operators at Aldoga.

The proposed rail infrastructure will include a combination of electrified and non-electrified tracks with provision to electrify all tracks in the future, if required. The Aldoga Rail Yard will be designed with capacity to service rail traffic in the Aldoga and Gladstone areas, as well as to provide capacity relief to the Callemondah Rail Yard in Gladstone.

Initial road access to the Aldoga Rail Yard area is proposed along Flynn Road off Gladstone–Mount Larcom Road.



In addition, a number of existing local government and state controlled roads will be affected by the project. This includes the Bruce Highway, Dawson Highway, Gladstone–Mount Larcom Road and Calliope River Road.

The capital value of the project is estimated to be \$500 million and it is expected to create approximately 350 jobs during the two year construction program. Approximately 550 permanent operational jobs will be created at ultimate development.

Construction is expected to commence in late 2010/ early 2011 and operations commence approximately two years later. The progress of this project is however dependent on the support of the coal mining industry and implementation of the WICT.

Two options within the Gladstone Regional Council local government area were investigated for the Moura Link connecting the existing MSL, NCL and the EEMBL. The options were:

- 1) Moura Link Eastern Option – which is QR's preferred alignment linking the MSL and NCL (represents a saving of approximately \$27 million over the western option)
- 2) Moura Link Western Option – alternative alignment linking the MSL and NCL – which avoids the potential Castle Hope Dam footprint.

The project, as proposed in the EIS, provides for an additional two tracks for the NCL on its existing alignment through the Aldoga Bank area of the GSDA.

2.3 Project rationale

2.3.1 Primary aims of the project

The primary aims of the Moura Link – Aldoga Rail Project are to provide:

- a new rail link, the Moura Link, to carry Moura/Surat traffic arriving via the MSL from the south west to the existing NCL
- rolling stock maintenance yard and provisioning facilities – the Aldoga Rail Yard
- provision of an additional two tracks for the NCL from the new Aldoga Rail Yard to the proposed WICT rail infrastructure
- additional tracks along the EEMBL
- provision for future tracks within the project area
- provision of rail access for potential third party operators at Aldoga.

2.3.2 Relationship of MLARP to WICT

QR aims to upgrade the Moura and Blackwater rail systems to accommodate the growth from coal and general freight to suit industry demand. Thus the Moura Link – Aldoga Rail Project is considered to be critical to enabling the Blackwater/Moura rail systems to handle up to 90 million tonnes per annum. The ultimate capacity will be refined during the preliminary and detailed engineering and design phases.

The project is proposed to service and be developed in parallel with the proposed WICT facilities— which are to be constructed on Wiggins Island near Golding Point in the Port of Gladstone.

2.3.3 Alternatives

QR examined a number of alternatives prior to adopting the scheme proposed. In particular, a number of rail options were investigated for connection of the MSL and NCL to the proposed WICT.

These initial studies identified that rail provisioning and rolling stock maintenance facilities should be located in the vicinity of the WICT to provide the lowest cost option. This option was assessed in detail during the WICT EIS.

However, during the WICT EIS there was significant community opposition to the increased transportation of coal to the WICT through existing and growing rural residential areas along the existing MSL. Also a land, port, rail and road infrastructure study (undertaken by the Department of Infrastructure and Planning (DIP) at the same time as the WICT EIS) identified infrastructure corridors through the GSDA.

The study raised the possibility of providing a single rail provisioning and rolling stock maintenance facility south of Mount Larcom to service the GSDA precinct and existing and future port developments north of the Calliope River—including the WICT.

The new proposed corridor passes through rural areas to the west of the Bruce Highway, outside the GSDA and crosses into the GSDA at its southern boundary where the corridor then parallels the Bruce Highway on the eastern side until it intersects the EEMBL and NCL.

From the northern end of this new link, Moura/Surat traffic will follow the same path as Blackwater traffic along a widened NCL corridor to the WICT rail loop, thus avoiding the greater Gladstone urban area (Figure 1). This effectively bypasses the rural residential area of Beecher and is a key strategic benefit of the proposal. It is a direct response to the community's clearly-stated preference (from the WICT EIS process) that the city not be exposed to such a significant increase in rail haulage of coal through Gladstone.

2.3.4 Moura Link Eastern and Western Route options

The Moura Link component of the project proposes the construction of a new rail link west of Gladstone between the existing MSL, NCL and EEMBL, partly within the GSDA (north of the Bruce Highway) and partly within the GRC local government area.

Multiple route options were initially investigated for the portion of the proposed Moura Link between the existing MSL and the Bruce Highway within the GRC local government area (near the southern boundary of the GSDA).

During the preparation of this EIS, NRW (now DERM) was consulted particularly in relation to the potential Castle Hope Dam site on the Calliope River. NRW advised that this dam site represents a major water source development option in the Gladstone region.

An options study was undertaken to assess the advantages and disadvantages of a number of alignments for the Moura Link. The study confirmed two options for further consideration during preparation of the EIS, these being:

- 1) Moura Link Eastern Option – which is QR's preferred alignment through the potential Castle Hope Dam site (a saving of approximately \$27 million over the western option)
- 2) Moura Link Western Option – alternative alignment linking the MSL and NCL—which avoids the Castle Hope Dam footprint.

Both options traverse private property within the Gladstone Regional Council local government area.

The Moura Link may be constructed in stages as determined by the coal haulage capacities required at any point in time. Options may include:

- stage 1:
 - a single rail line from the MSL to the EEMBL
 - a single passing loop
 - a single rail line from the EEMBL to the NCL and Aldoga rail yard.
- future stages:
 - duplication of the Moura Link from south of the Calliope River to the NCL
 - additional holding lines.

Further discussion on the Moura Link options is provided in section 5.1.

2.3.5 Aldoga Bank duplication

The area referred to as 'Aldoga Bank' is a narrow strip of relatively flat terrain to the south of Mount Larcom within the GSDA extending from the Calliope River Road crossing under the NCL (immediately north of the township of Yarwun) west for a distance of approximately three kilometres to the eastern end of the proposed Aldoga Rail Yard (Figures 3 and 4).

The area represents a 'gap' in the north south running Mount Larcom range that divides the Aldoga area of the GSDA from the coastline north of Gladstone. This narrow gap represents a major topographic constraint to the provision of infrastructure between the Aldoga area of the GSDA and the Port of Gladstone.

In the Aldoga Bank area the project, as proposed by QR and investigated in the EIS, provides for the retention of the two existing NCL tracks: an additional two narrow-gauge, electrified, rail tracks on the existing NCL alignment (i.e. 'duplication' of the NCL) and provision for an additional two tracks of the NCL (i.e. an eventual 'quadruplication' of the NCL).

However, it was recognised during the EIS process that this rail duplication proposal, should it proceed, would add to the existing constraints on the provision of major linear infrastructure potentially required to service the Aldoga precinct of the GSDA.

Further information on the Aldoga Bank Duplication Option is provided in section 5.2 and Figure 4.

2.3.6 Aldoga Bank deviation options

Further to the duplication of the NCL in the Aldoga Bank area, as originally proposed in the EIS, QR undertook a supplementary route alignment options study for the NCL between approximate railway chainages² of 546 kilometres and 552 kilometres (including existing equality discrepancies). Two additional options were proposed:

- Aldoga Bank Deviation Option A (full deviation) – provision of four new narrow-gauge tracks on an improved horizontal and vertical (deviation) alignment to the north of the existing NCL, with provision for a future additional two tracks—the existing NCL tracks in that section to be decommissioned upon completion of the new tracks
- Aldoga Bank Deviation Option B (partial deviation) – retention of the two existing NCL tracks and provision of two new tracks on an improved horizontal and vertical (deviation) alignment to the north of the existing NCL – with provision for a future additional two tracks (i.e. eventual duplication of the deviation).

Further information on the Aldoga Bank deviation options is provided sections 5.2 and 3.4, and Figure 4.

Figure 1: Moura Link – Aldoga Rail Project locality plan

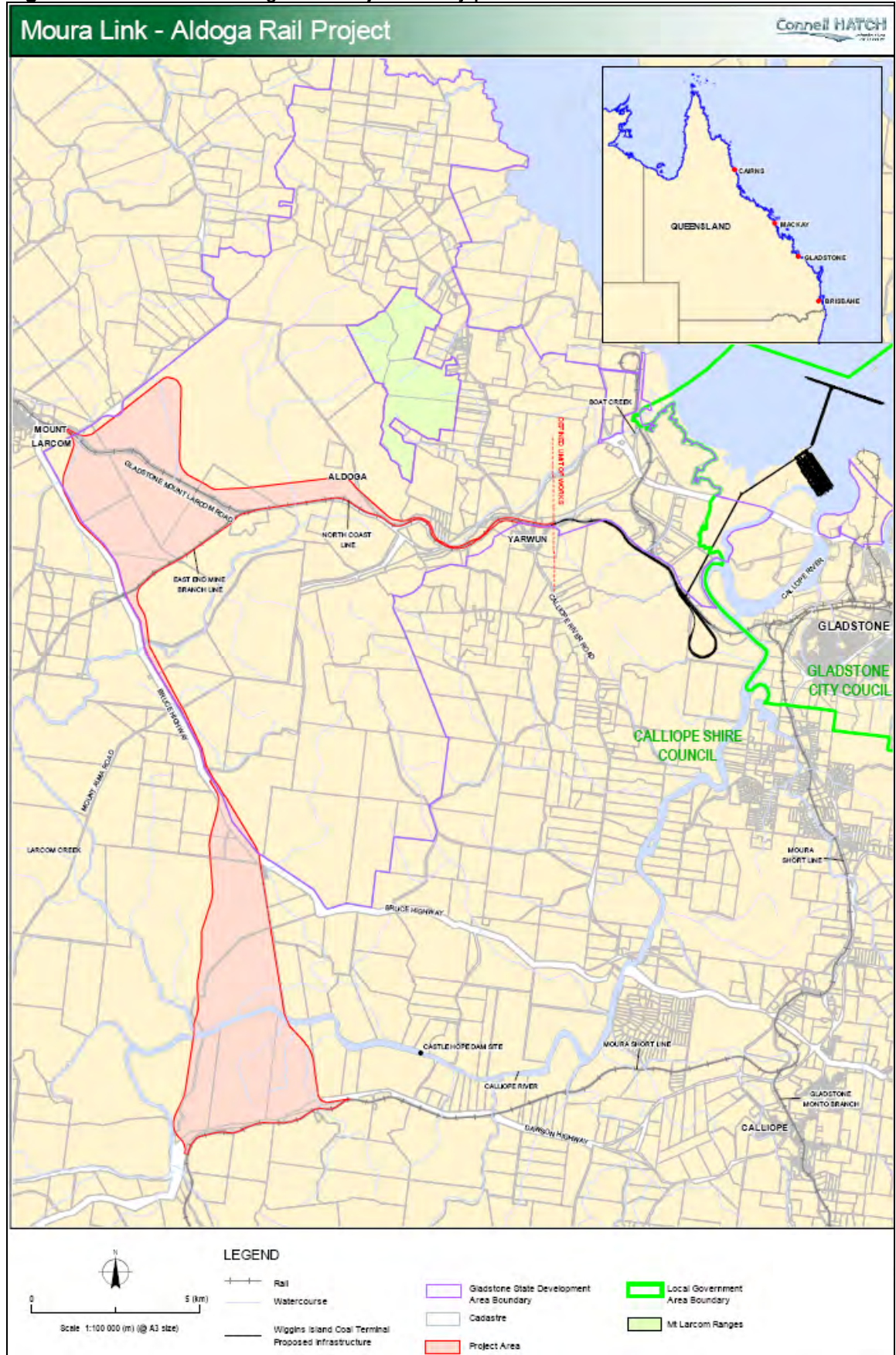


Figure 2: Moura Link – Aldoga Rail Project area showing Moura Link Eastern and Western Options

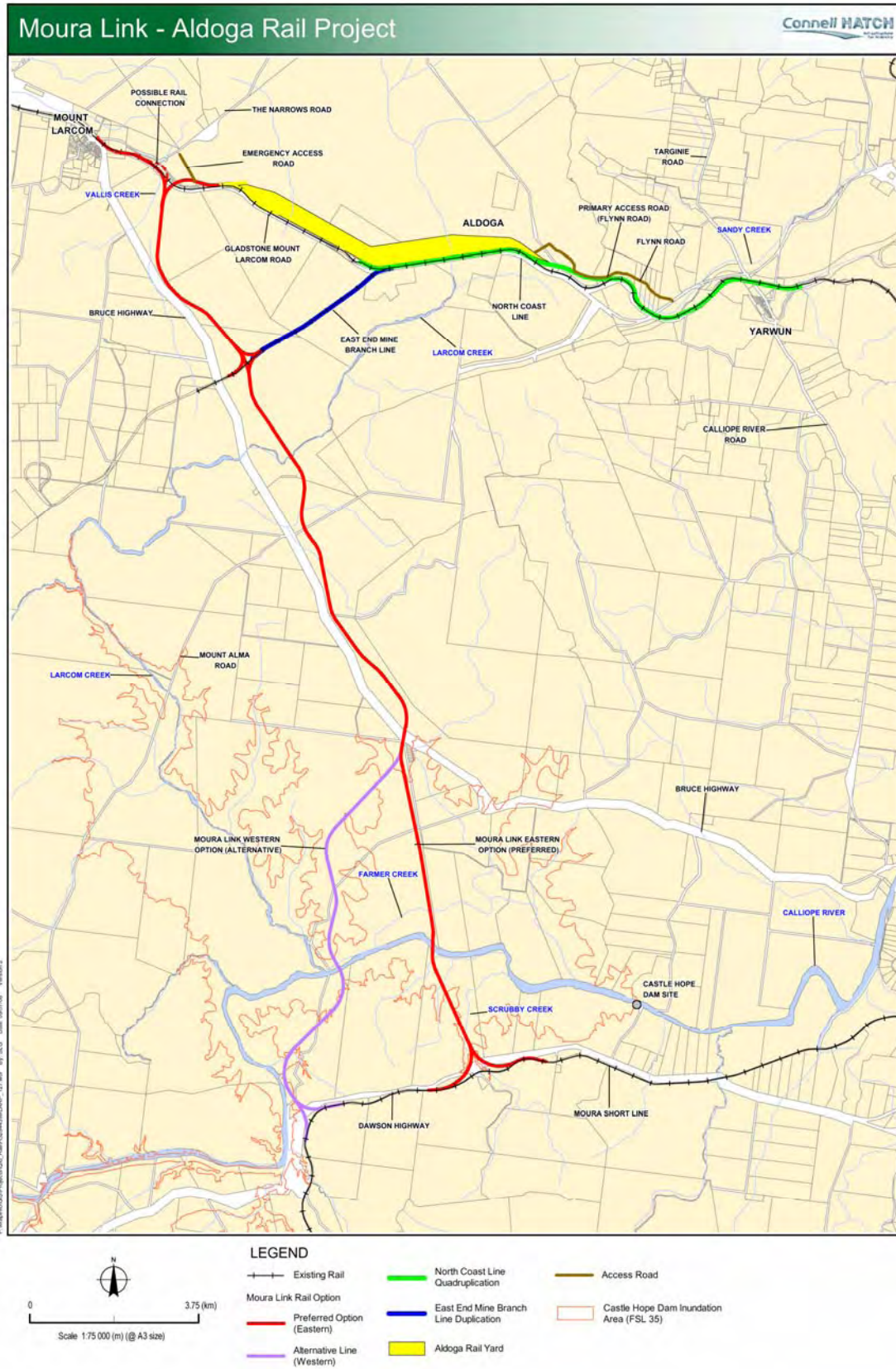


Figure 3: Moura Link – Aldoga Rail Project area photographic image

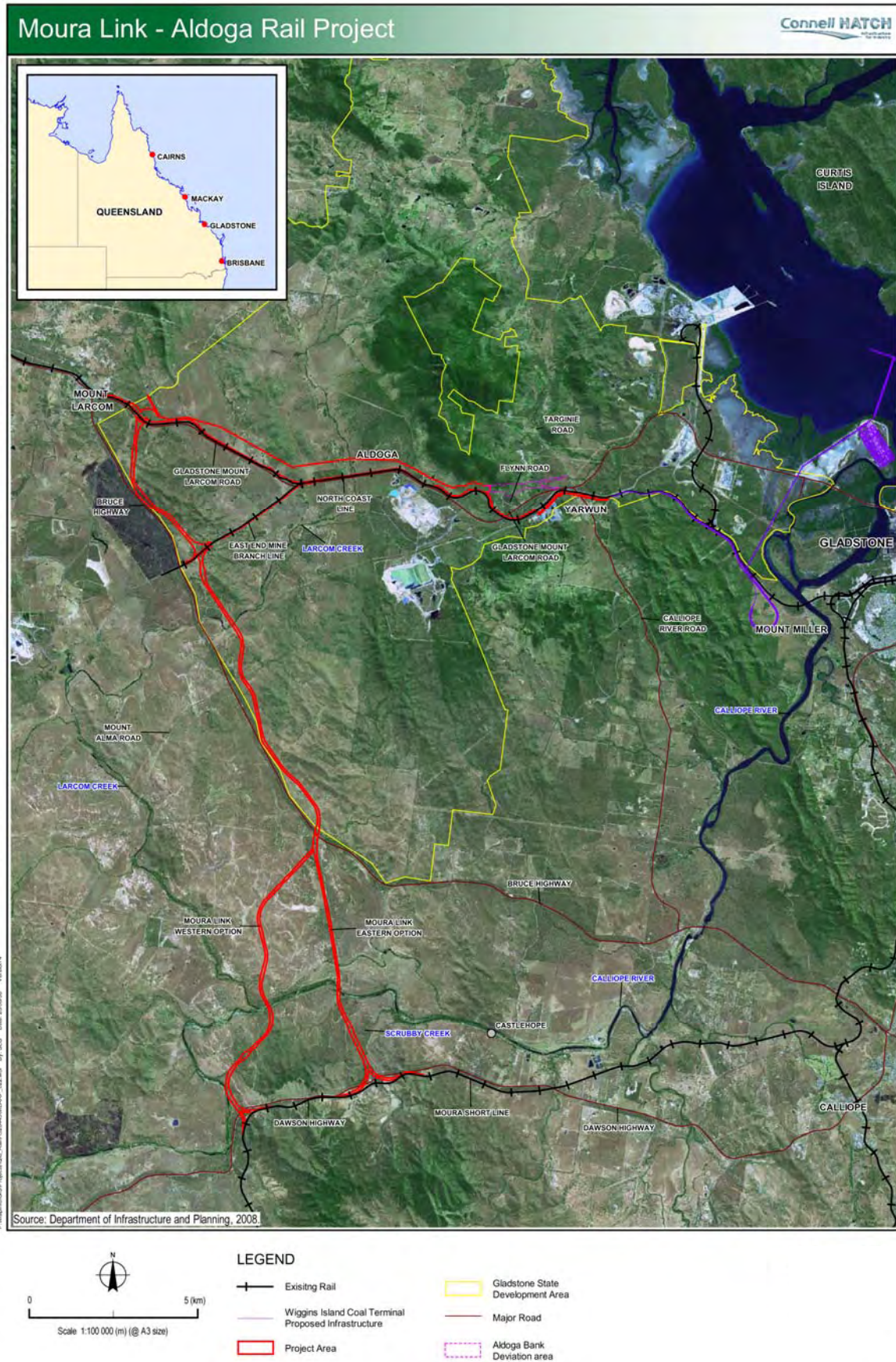
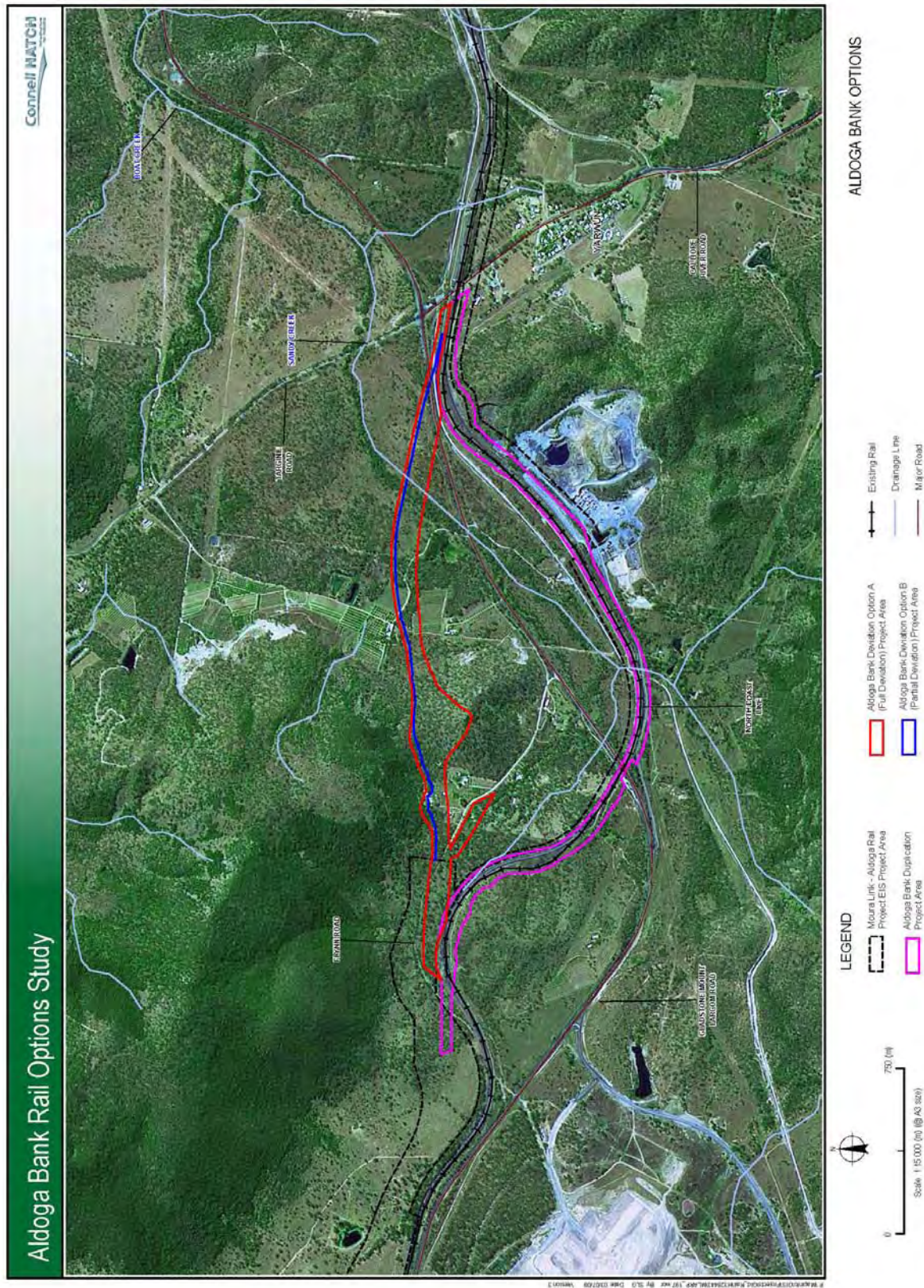


Figure 4: Moura Link – Aldoga Rail Project area indicating the Aldoga Bank duplication and deviation options



3. Impact assessment process

DIP coordinated the impact assessment process for this project on behalf of the Coordinator-General in accordance with the SDPWO Act.

3.1 Significant project declaration and controlled action

An initial advice statement (IAS) was lodged with the Coordinator-General on 11 September 2007 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 26 September 2007.

On 11 October 2007, the project was referred to the Australian Government Minister for the Environment, Heritage and the Arts to assess whether it was a 'controlled action' under the EPBC Act.

On 7 December 2007, DEWHA determined that the project was not a controlled action under the EPBC Act (Decision Notice EPBC 2007/3773) therefore there is no Australian Government approval required.

3.2 Review and refinement of the EIS terms of reference

On 11 January 2008, representatives of state agencies and local governments were invited to act as advisory agencies³ for the EIS process. These included:

- Department of Communities
- Department of Emergency Services
- Department of Education, Training and the Arts
- Department of Mines and Energy
- Department of Employment and Industrial Relations
- Department of Housing
- Department of Local Government, Sport and Recreation
- Department of Main Roads
- Department of Natural Resources and Water
- Department of Primary Industries and Fisheries
- Department of the Premier and Cabinet
- Department of Tourism, Regional Development and Industry
- Queensland Transport
- Environmental Protection Agency
- Queensland Treasury
- Queensland Health

³ Due to Machinery of Government changes from 26 March 2009 (see *Public Service Department Arrangements Notice (No.2) 2009*), changes were made to Queensland Government departments referred to in this report – see section 9 abbreviations and acronyms.

- Queensland Police Service
- Calliope Shire Council⁴.

Draft terms of reference (TOR) for the EIS were publicly advertised on 12 January 2008 in The Courier Mail and Gladstone Observer newspapers, inviting submissions until 12 February 2008.

Advisory agency briefings were held in Gladstone on 6 February 2008 and in Brisbane on 7 February 2008.

Fourteen submissions were received by DIP with 12 from advisory agencies and two from the general public. Comments, where appropriate, were incorporated into a final TOR. Submissions were received from:

Advisory agencies

- Department of Main Roads
- Department of Natural Resources, Mines and Water
- Department of Primary Industries and Fisheries (2 submissions from DPI&F – Regional and Central Office)
- Department of Housing
- Department of Communities
- Department of Emergency Services
- Department of Infrastructure and Planning (State Development Areas Unit)
- Queensland Transport
- Department of Tourism, Regional Development and Industry
- Department of Education, Training and the Arts
- Calliope Shire Council.

General public

- Pacific National
- one private submission.

Final TOR were issued to the proponent on 11 March 2008.

3.3 Public review of the EIS

QR submitted a draft EIS on 6 June 2008. Subsequent to some minor amendments directed by DIP, the EIS was determined to substantially address the TOR.

The EIS was approved by the Coordinator-General for release and publicly advertised on 12 July 2008 in The Courier Mail and The Gladstone Observer newspapers, inviting submissions until 25 August 2008.

The EIS was available from the proponent free of charge on a CD-ROM or in hardcopy for \$200.

The IAS, TOR and EIS executive summary were made publicly available on the DIP significant projects website

www.dip.qld.gov.au/projects/transport/rail/moura-link-aldoga-rail.html,

⁴ Following Queensland local government amalgamations that took effect on 15 March 2008, the then Gladstone City, Calliope Shire and Miriam Vale Shire Councils merged to become the Gladstone Regional Council (GRC).



which also linked to the full EIS report published on the QR MLARP website networkaccess.qr.com.au/customer/Moura_Link_Aldoga_Rail_EIS/default.asp.

The EIS was displayed at the:

- Gladstone Regional Council libraries in Gladstone City and Calliope township
- Queensland Parliamentary library
- Queensland State Library in Brisbane
- Department of Premier and Cabinet library.

Advisory agency briefings on the EIS were held in Gladstone on 5 August 2008 and in Brisbane on 7 August 2008.

A total of 20 properly made submissions on the EIS were received by DIP: 13 from advisory agencies and 7 general public submissions. These were recorded by DIP and provided to QR for appropriate consideration and response. Submissions were received from:

Advisory agencies

- Department of Natural Resources and Water
- Environmental Protection Agency (Regional and Central Office)
- Department of Mines and Energy
- Department of Communities
- Department of Main Roads
- Department of Primary Industries and Fisheries
- Department of Housing
- Department of Tourism, Regional Development and Industry
- Queensland Treasury
- Department of Emergency Services
- Department of Infrastructure and Planning (State Development Areas)
- Gladstone Regional Council.

General public

- Yarwun Targinie Progress Association
- Jemena East (Alinta)
- The Mac Services Group
- four private submissions.

The main issues dealt with by the EIS focussed on potential impacts to surrounding rural lands and the communities of Yarwun and Mount Larcom (see section 5).

These issues included:

- land management of private properties and grazing leases that will be directly impacted by the project
- the clearing of approximately 95 hectares of mapped regional ecosystems (REs) and 471 hectares of other vegetation (including grasslands)
- four threatened species identified from habitats within the project area – squatter pigeon, tusked frog, black-necked stork and little pied bat
- habitat removal and modification as a result of vegetation clearing and associated edge effects

- impacts on the ecological value of the Calliope River, Larcom Creek and associated floodplain communities
- impacts on water quality and the management of industrial waste, wastewater and sewage
- noise, dust, vibration, lighting and visual amenity impacts on the communities of Yarwun and Mount Larcom
- workforce issues including local and indigenous recruitment, accommodation, skills and training, and local business opportunities.

The substantive issues raised in submissions requiring additional attention following the EIS public review process (see section 3.4) included the following subjects (see section 5):

- residential amenity, particularly of Yarwun and Mount Larcom, and the impacts of noise, vibration, dust and lighting
- construction and operational workforce accommodation and implications for housing availability in the Gladstone region
- employment, training and business opportunities
- transport and traffic
- habitat connectivity
- watercourse crossings
- soil salinity
- waste, waste water and stormwater
- Moura Link options and potential Castle Hope Dam site
- weeds—particularly giant rat's tail grass.

3.4 Responses to the EIS

Following the receipt and analysis of submissions, it was determined by DIP officers that a supplementary EIS would not be required and that unresolved issues could be directly negotiated by an exchange of information between QR, advisory agencies and public submitters. QR proceeded to correspond and liaise directly with advisory agencies and public submitters to resolve any outstanding issues.


As part of this process, QR and DIP officers met with officers of the GRC and NRW central Queensland region on 2 October 2008 and the EPA central office on 3 October 2008.

Wherever a substantive issue required a technical resolution, QR provided a written response to the EIS submission. For example, QR provided a supplementary information paper on salinity to NRW to address issues raised in its written submission and elaborated on in subsequent meetings (see section 5.5.2).

Advisory agencies were then requested to provide confirmation that their issues had been satisfactorily addressed by QR or alternatively to provide possible recommendations and/or conditions that might allow the project to proceed.

As mentioned in section 2.3.6, as a consequence of issues that were examined during the EIS process, QR undertook a supplementary study of rail route options for the NCL in the Aldoga Bank area near Yarwun.

A draft Aldoga Bank Rail Options Study (dated 11 May 2009) investigates and compares two additional rail route deviation options against the duplication option presented in the EIS. This draft study was circulated by QR to key advisory agencies (DERM, DTMR and GRC) for comments. These agencies have immediate planning, development and/or operational/maintenance and environmental issues concerning the Aldoga Bank locality and its adjacent surrounds.



Comments were received from DERM, DTMR (both (ex-) Queensland Transport (QT) and (ex-) Main Roads (MR)), and GRC.

Key issues of concern included:

- DERM – if any watercourse crossing were required, that all provisions of the *Water Act 2000* apply, and that crossings and diversions comply with the DERM's recommended guidelines.
- GRC – had no objections to QR's preferred partial deviation option and wishes to continue liaison during detailed design, construction and operation.
- DTMR/MR – preferred road-over-rail crossing of the Gladstone–Mount Larcom Road, but if QR opts for rail-over-road crossing then design should abide by DTMR/MR guidelines.
- DTMR/QT – found the rationale for QR's preferred partial deviation ambiguous and not fully persuasive as it seemed to describe a compromise, and requested revisions to the draft text to improve easy comparison of the options and stronger justification for QR's preference.

QR, DIP and QT officers met on 11 June 2009 to discuss and resolve QT's outstanding concerns with the draft options study and enable revision of the report.

The revised study was then recirculated to the targeted advisory agencies seeking confirmation that outstanding concerns had been satisfactorily addressed.

The results of the Aldoga Bank Deviation Options Study were also provided by QR to DEWHA, to consider whether the Aldoga Bank Deviation Option B (partial deviation—split-system) may be a 'controlled action' under the EPBC Act. DEWHA notified on 2 June 2009 that the Aldoga Bank Deviation Option B (partial deviation—split-system) will not be a controlled action (Decision Notice EPBC 2009/4884).

The final Aldoga Bank Rail Options Study was provided to DIP on 26 June 2009 and recommends QR's preference for a partial deviation option.

QR also provided the key findings from the options study to the Yarwun Targinnie Progress Association for public display to the Yarwun community.

This issue is further explained in section 5.2 and Figure 4.

4. Key findings and management strategies of the EIS

4.1 Introduction

The SDPWO Act defines 'environment' to include:

- ecosystems and their constituent parts including people and communities
- all natural and physical resources
- the qualities and characteristics of locations, places and areas however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community
- the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned above.

'Environmental effects' means the effects of development on the environment, whether beneficial or detrimental. These effects can be direct or indirect, of short, medium or long-term duration and cause local or regional impacts.

This section outlines the major environmental effects identified in the EIS, submissions on the EIS and consultation with advisory agencies and other key stakeholders.

Where appropriate, I have provided comment on these matters to explain the rationale supporting any conclusions that I have reached and, where necessary, I have recommended development approval conditions to mitigate any potential adverse impacts of the project that have been identified in the EIS.

4.2 Key findings in the EIS

Section 21.1 of the EIS identified the key findings as:

- the Moura Link Eastern Option as the QR preferred rail alignment due to reduced land use impacts and lower construction costs compared to the Moura Link Western Option
- a number of private properties, grazing leases and service providers will be directly impacted by the project
- the construction of rail infrastructure (including the Moura Link Eastern Option) and associated easements will result in the clearing of approximately 95 hectares of mapped regional ecosystems (REs) and 471 hectares of other vegetation (including grasslands)
- during the field surveys 192 fauna species were recorded from the project area. Generally, the fauna species encountered within the project area are common and widespread within the region and are associated with dry sclerophyll woodlands and forests
- four threatened⁵ species were identified from habitats within the project area (see EIS Table 6.1), being:
 - squatter pigeon (*Geophaps scripta scripta* – vulnerable under NC Act and EPBC Act)
 - tusked frog (*Adelotus brevis* – vulnerable NC Act)

⁵ "Threatened" species are those that are listed as "endangered", "vulnerable" or "rare" (EVR) under the *Nature Conservation Act 1994* (Qld) and/or "near threatened", "vulnerable" or "endangered" under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth).



- black-necked stork (formerly Jabiru – *Ephippiorhynchus asiaticus* – rare NC Act)
- little pied bat (*Chalinolobus picatus* – rare NC Act)
- habitat removal and modification as a result of vegetation clearing and associated edge effects is anticipated to be the main impact to native fauna. This will result in the displacement of some fauna species to surrounding habitats
- the project is likely to have a minimal impact on the ecological value of the Calliope River, Larcom Creek and associated floodplain communities
- potential impacts on water quality will be minimal due to implementation of appropriate erosion and sediment control and spill containment during construction and operation
- an industrial wastewater treatment plant and sewage treatment plant is proposed for the Aldoga Rail Yard for recycling and reuse of wastewater in order to minimise potential water quality impacts
- major changes to the existing flooding regime are not expected as a result of the project
- construction and operation are expected to have a relatively minor impact on the existing groundwater regime
- the project is not anticipated to have any significant impacts on local or regional air quality or to adversely affect human health
- modelling shows that dust emissions from the project can be managed to reduce impacts at sensitive locations within the vicinity of the project
- construction noise and vibration can be mitigated by implementing construction noise and vibration measures that are considered accepted construction practices on infrastructure projects
- waste minimisation, reuse and recycling policies and procedures will be implemented during construction and operation to minimise the impact of the project on the waste stream
- prior to construction a detailed traffic management plan will be prepared to mitigate impacts to existing traffic
- no indigenous or non-indigenous cultural heritage sites are expected to be directly affected by the project. A cultural heritage management plan will be implemented during construction to minimise the potential impact on any cultural heritage items disturbed during earthworks activities
- the project will be visible from a number of locations in the surrounding area, including the Gladstone–Mount Larcom Road, Bruce Highway, Dawson Highway and the North Coast Line
- in comparison to the workforce numbers of other projects proposed in the Gladstone region and the anticipated timing of construction workforce peaks of the project, it is expected the project will have a minimal adverse social impact. However, a construction accommodation strategy will be pursued to minimise the potential construction workforce impacts associated with the project.

5. Management of specific issues

The public and advisory agency review of the EIS raised the following issues of concern. These topics required additional attention by QR following the public review process for the EIS that involved further liaison, information exchange and analysis, and negotiation between QR and the advisory agencies and public submitters.

5.1 Moura Link Eastern and Western Options

EIS findings

For the Moura Link component of the project, the EIS considered two options: Moura Link Eastern Option and Moura Link Western Option (see section 2.3.4 and Figures 2 and 3).

The options assessment included the potential engineering and environmental issues associated with both options, including moving the Moura Link Eastern Option if the Castle Hope Dam goes ahead in the future. The results of the options assessment identified the eastern option as QR's preferred option based on reduced engineering work, reduced land impacts (e.g. property severance) and reduced bridge length over the Calliope River. QR estimates the preferred eastern option, at a cost of \$390 million, represents a saving of \$27 million over the western option.

In its submission on the EIS, NRW advised of its concerns regarding the eastern option because of its impact on the potential Castle Hope Dam site. It stated that:

“Castle Hope Dam site represents a major water source development option in the Gladstone region and it is prudent that the dam site and its storage area be preserved for future development, particularly given its strategic location relative to the highly industrialised Gladstone area.

While the Central Queensland Regional Water Supply Strategy (CQRWSS) does not include the Castle Hope Dam as a preferred option to meet the short-term needs (10 to 15 years) identified in the strategy, this should not preclude it from being developed some time in the future as future reviews of the CQRWSS may include Castle Hope Dam.

The Queensland Water Plan 2005–2010 identifies that Queensland has relatively few future storage sites with development potential and a need for those sites to be protected to ensure their availability should they be needed.


At this time, NRW is of the view that the Castle Hope Dam storage site must be protected.

It is understood that the alternative western link option will cost approximately \$27 million more than the eastern link option. However, considerable more cost would be involved should the rail link need to be relocated in the future.”

Furthermore, the NRW submission to the EIS recommended that, should the Coordinator-General approve the project for construction on the QR preferred eastern option:

“the western option be provided for in the Gladstone Regional Council Planning Scheme. This will aid in ensuring that suitable land for the western link remains free from development, in the event that the Castle Hope Dam is constructed and the rail line is required to be relocated.

Consideration should be given to the extent that QR might contribute to the costs of relocating the rail link in the event that Castle Hope Dam is developed, to ensure the viability of the dam. QR has stated that, should the dam be required in 20 years time, the rail line would have been paid for and have no residual value. NRW believes that in such a scenario, QR would be requesting compensation from NRW for the still-operational tracks and equipment to offset costs of constructing a new link.”



The Gladstone Area Water Board (GAWB), in its strategic water plan (released in November 2004) developed as part of its strategic water planning project, described the social and environmental impacts associated with construction of the Castle Hope Dam as adverse. GAWB, which owned the site for the potential Castle Hope Dam, sold it for private use in February 2006.

Conclusion

Construction of the Castle Hope Dam is clearly a low priority as a potential water supply for the region. This is evidenced by the fact that the CQRWSS (released December 2006) does not include it as a preferred option to meet the region's needs for the next 10 to 15 years. It ranks 7 and 8 based on selling price and reliability in the GAWB list of options available for augmenting water supply to Gladstone. Furthermore, it does not feature in the recommended list of 5 options to be considered further by GAWB's Strategic Water Planning Project.

Also, GAWB sold the land required for the dam for private land use in February 2006 and therefore if a decision is made to proceed with the dam it would be necessary to buy back the land, purchase significant additional land (inundation area) and acquire land for the new rail corridor.

The CQRWSS states that, in the longer-term, it is expected that the Gladstone area high priority urban and industrial demands will be met from the Lower Mackenzie–Fitzroy River sub-region via a pump station and pipeline system from the Fitzroy River Barrage to the Gladstone Area Water Board's reticulation system.

Given the additional \$27 million capital cost required for construction, the low priority of the Castle Hope Dam site as a potential water supply and uncertainty of such a proposal to ultimately gaining environmental/regulatory approvals, I cannot justify directing the proponent to adopt the western link option.

Furthermore, I do not consider it appropriate to preserve an alternative Moura Link Western Option rail corridor in the Gladstone Regional Council Planning Scheme and regional planning schemes (e.g. Central Queensland Millennium Plan). Securing a potential future corridor for rail purposes in the planning scheme now may have a significant adverse impact on the affected landowners impeding further development of the affected land and affecting property values.

In addition, should the situation change in the future and Castle Hope Dam is raised as a higher order preference, the prospect of closer settlement in the vicinity of the western corridor seems unlikely for the medium to long-term, which means that there is no real purpose to be served by such a planning scheme provision.


There is also a risk that any such western corridor identified now may ultimately prove to be unsuitable in the future. To do so may pre-empt future engineering solutions, have a significant adverse impact on the affected landowners and is likely to impede further development of the land parcels affected. A western corridor may lower the property prices, expose QR to unnecessary claims for compensation for the sterilisation of land in the said western corridor and assumes that any future dam would be constructed to a particular water level. In addition, the prospect of closer settlement in the vicinity of the western corridor seems unlikely for the medium to long-term, which means there is no real purpose to be served by such a planning scheme provision.

Therefore, I approve the Moura Link Eastern Option. I do this on the basis that—in the event that the Moura Link rail line at some time in the future needs to be relocated as a result of construction of the Castle Hope Dam—QR or any successor will contribute to the cost of relocation.

I state the following imposed condition:

Imposed condition 1

In the event that the Moura Link rail line, at some time in the future, needs to be relocated as a result of construction of the Castle Hope Dam, QR or any successor will contribute to the relocation of the rail line provided it is authorised by the Queensland Competition Authority to



include relocation costs in the regulated asset base. Such contribution will equate to the deferred capital cost—being the estimated cost to design, construct and commission the relocated section of rail line less the estimated cost to design, and construct and commission the eastern link as determined at the date the decision is made to construct the Castle Hope Dam.

I nominate the Department of Environment and Resource Management as the responsible agency for imposed condition 1.

5.2 Aldoga Bank options

5.2.1 Background

The Gladstone Integrated Regional Transport Plan (GIRTP) (2001) was undertaken in collaboration between (then) QT, QR and other key stakeholders to guide the region's future transport needs. One of the key actions from the GIRTP was to investigate options for the Aldoga Bank area.

Furthermore, as part of the Gladstone Land, Port, Rail, Road Infrastructure Study (GLPRRIS) commissioned by DIP (in progress), it was identified that there may be advantages in providing new rail infrastructure as part of a realignment through the Aldoga Bank area. The advantages identified under the GLPRRIS included:

- provision of a more efficient rail alignment to meet the longer term needs of main line freight as well as improvements for coal freight
- co-location of rail infrastructure within the Aldoga Bank area with other planned infrastructure (conveyors, piping, haul roads and public roads etc.) to minimise lineal infrastructure impact on the GSDA and other existing infrastructure.

Consideration was also given to improving or replacing the existing NCL in the Aldoga Bank area to achieve the advantages of higher travel speeds, reduce curvature and provide flatter grades to allow for longer train lengths up to 1500 metres.

5.2.2 EIS findings—Aldoga Bank duplication option

The MLARP EIS proposed the retention of the two existing NCL tracks, an additional two tracks on the existing NCL alignment (i.e. 'duplication' of the existing NCL) for a distance of approximately 3.7 kilometres—with provision for a future additional two tracks of the NCL (i.e. six tracks in total).

Features of the duplication option are:


- minimal impact on land use and environmental values due the highly disturbed character of the existing NCL corridor
- wholly within the GSDA and traverses 16 parcels of land
- estimated construction cost is approximately \$46 million.

There are, however, limitations associated with the duplication option:

The duplication is constrained to follow the existing horizontal and vertical alignments, which precludes the movement from Gladstone of north-bound loaded coal and heavy freight trains along the NCL (as recommended by the GIRTP and the GLPRRIS) due to the step uphill grade, and restricts the speed of trains travelling north.

The duplication would not be in accordance with the overarching state and Commonwealth strategy (i.e. GIRTP, GLPRRIS and Auslink Strategic Requirements) of realignment and improvement of the Aldoga Bank to facilitate freight (coal and non-coal) growth and movement.

Duplication would close off any future options for rail route improvement as other future infrastructure and industry development within the multi-purpose infrastructure corridor and



adjacent GSDA area would cause the rail corridor expansion to be effectively frozen in the GSDA Master Plan.

Duplication would further constrain the provision of other future, major linear infrastructure (e.g. gas pipelines, pre-assembled modules etc.) due to the congested, narrow gap topography of the Aldoga Bank.

As a consequence, QR undertook a supplementary study (the Aldoga Bank Rail Options Study) to investigate the feasibility and impacts of alternative rail route alignment options through the Aldoga Bank area within the GSDA and between the proposed Aldoga Rail Yard and WICT rail infrastructure.

5.2.3 Aldoga Bank Rail Options Study

A draft Aldoga Bank Rail Options Study (dated 11 May 2009) was circulated by QR to key advisory agencies (DERM, DTMR and GRC) for comments (see also section 3.4). These agencies have immediate planning, development and/or operational/maintenance and environmental issues concerning the Aldoga Bank locality and its adjacent surrounds.

Comments were received from DERM, DTMR (both QT and DMR) and GRC.

Key issues of concern included:

- DERM – for any watercourse crossing, that all provisions of the *Water Act 2000* apply, and that crossings and diversions comply with the DERM's recommended guidelines
- GRC – had no objections to QR's preferred partial deviation option, but wished to continue liaison during detailed design, construction and operation
- DTMR/MR – preferred road-over-rail crossing of the Gladstone–Mount Larcom Road, but if QR opts for rail-over-road crossing then design should abide by DTMR/MR guidelines
- DTMR/QT – found the rationale for QR's preferred partial deviation ambiguous and not fully persuasive as it seemed to describe a compromise, and requested revisions to the draft text to improve easy comparison of the options and stronger justification for QR's preference.


QR, DIP and QT officers met on 11 June 2009 to review the study and discuss and resolve QT's outstanding concerns with the draft options study.

The revised study was then recirculated to the targeted advisory agencies seeking confirmation that outstanding concerns had been satisfactorily addressed.

Results of the Aldoga Bank Deviation Options Study were also provided by QR to DEWHA, to consider whether the Aldoga Bank Deviation B (partial deviation—split-system) may be a 'controlled action' under the EPBC Act. DEWHA notified on 2 June 2009 that the Aldoga Bank deviation Option B (partial deviation—split-system) was not a controlled action (Decision Notice EPBC 2009/4884).

The final Aldoga Bank Rail Options Study (dated 26 June 2009) investigated and compared two additional rail route deviation options against the duplication option:

- Aldoga Bank Deviation Option A (full deviation) – provision of four new tracks on an improved horizontal and vertical alignment to the north of the existing NCL with provision for future additional two tracks—the existing NCL tracks in that section to be decommissioned upon completion of the new tracks
- Aldoga Bank Deviation Option B (partial deviation—split-system) – retention of the two existing NCL tracks and provision of two new tracks on an improved horizontal and vertical alignment to the north of the existing NCL—with provision for future additional two tracks (i.e. eventual duplication of the deviation).



The two new deviation options are located to the north of the existing NCL, between approximate NCL railway chainages⁶ of 546 kilometres and 552 kilometres (including existing equality discrepancies), and are approximately 3 kilometres in length (see Figure 4).

Features of each deviation option are:

- full deviation:
 - ideally the most suitable option as it sets up all tracks on the deviation, provides smoother grades, shorter track length and frees up existing NCL corridor for other developments
 - ideally the preferred option for both the GIRTP and the GLPRRIS
 - will facilitate north-bound movement of loaded coal trains to potential future coal terminals north of Gladstone, thus improving the operational efficiency, enhanced throughput capacity and provide alternate coal transport options
 - the most expensive option at \$104 million, i.e. \$58 million more than the duplication option
 - largest earthworks volumes of all three options
 - largest environmental footprint (i.e. 44 hectares) of all options, requiring the loss of 11.8 hectares of REs
 - pushes the future infrastructure and transport corridors (by others) further northward encroaching into the environmentally sensitive areas and potentially increasing the risk of impact on matters of national environmental significance
 - wholly within the GSDA and traverses 24 parcels of land.
- partial deviation:
 - QR's preferred option as it is a practical compromise between the duplication option and the full deviation
 - costs \$68 million (\$22 million more than the duplication option, however is \$36 million less than full deviation with most of the desired operational improvements)
 - also facilitates north-bound movement of loaded coal trains to potential future coal terminals north of Gladstone, thus improving the operational efficiency, enhanced throughput capacity and provides alternate coal transport options
 - designed to avoid known threatened flora species
 - largely satisfies the requirements of the WICT/MLARP project needs, as well as the GIRTP/GLPRRIS long-term vision and strategic plan for the greater Gladstone area
 - compatible with DIP state development areas planning for future linear infrastructure and development options of the Aldoga Bank area
 - follows a similar alignment as full deviation, however the project footprint area is 33 hectares, requiring the loss of 10.5 hectares of REs
 - wholly within the GSDA and traverses 22 parcels of land.

Other shared environmental features of both deviation options are as follows.

The deviation options have been specifically aligned to minimise disturbance to endangered REs (RE 11.11.18 SEVT) and plant species listed under the EPBC Act.

The habitat of the deviation options area is primarily notophyll/microphyll vine thicket with open eucalyptus woodlands on the lower slopes.

The deviation options area has the potential to support a number of threatened fauna species, however no specimens have been recorded from the site. These species include:

- black breasted button quail (*Turnix melanogaster*), listed as vulnerable under the NC Act and the EPBC Act
- the northern quoll (*Dasyurus hallucatus*), listed as least concern under the NC Act and endangered under the EPBC Act

⁶ Reference chainages for the rail Deviation and Duplication Options run in the opposite direction to the NCL chainages, and are linked to chainage references under the MLARP EIS.

- the spotted-tailed quoll (*Dasyurus maculatus*), listed as endangered under the EPBC Act and the NC Act.

Field surveys did identify other EPBC listed bird species including the rainbow bee-eater (*Merops ornatus*) and the blacked-faced monarch (*Monarcha melanopsis*). Both species are listed as migratory under the EPBC Act. In addition to these threatened species, the squatter pigeon (*Geophaps scripta scripta*) has been recorded from vegetation communities adjacent to Sandy Creek. This species is listed as vulnerable under the EPBC Act and the NC Act and has been recorded throughout the local area.

The partial deviation option (option B) is QR's preferred option for the following key reasons:

- the partial deviation option (costing \$68 million) meets the overarching state and Commonwealth strategic requirements for the greater Gladstone area
- partial deviation will facilitate north-bound movement of loaded coal trains to potential future coal terminals north of Gladstone, thus improving the operational efficiency, enhanced throughput capacity and provide alternate coal transport options
- this option will minimise the environmental impact on sensitive vegetation as there is sufficient separation between the new two tracks and the known threatened species populations, north of the alignment near the base of the Mount Larcom range, to accommodate future tracks
- this option also provides the opportunity for future infrastructure and transport corridors (by others) to be positioned further southwards (compared with the full deviation option) thereby minimising the environmental impact on sensitive vegetation
- this option provides for dual gauge rail from the Aldoga Precinct through the Aldoga Bank area should it be required in the future (it is probable that the geometry of the existing NCL would not be suitable).
- the full deviation (costing \$104 million) also meets the state and Commonwealth requirements but costs \$36 million more than the partial deviation option
- the duplication option, which has the lowest cost (\$46 million) of all three options, does not meet the state and Commonwealth strategic requirements and precludes northward movement of loaded coal trains
- the duplication option will close out options for any deviation option in the future as other GSDA multi-purpose infrastructure corridors and industry development in the area will cause the rail corridor expansion to be effectively frozen in the GSDA Master Plan.


Conclusion–Aldoga Bank options

During the EIS process for the Moura Link – Aldoga Rail Project, shortcomings of the original proposal to duplicate the North Coast Line in the vicinity of the Aldoga Bank necessitated a reconsideration of alignment and rail network design options.

I am satisfied that the improved operational efficiencies and improved scope for future use of the Aldoga Bank area are sufficient to justify the partial deviation option.

I am satisfied that any adverse impacts to the soils, geology, hydrology, and native flora and fauna of the Aldoga Bank area will be minor and can be adequately managed through the mitigation measures and commitments in EIS and EMP.

I am also satisfied that the key advisory agencies with interests in the Aldoga Bank area have been appropriately consulted, and are aware of the advantages and disadvantages of the route alignment options. Those advisory agencies have generally supported QR's preference for the partial deviation option, provided that QR maintains consultation during design construction and operation that all statutory approvals are in place and that all recommended design guidelines and policies are adhered to.



Therefore, I conclude that the approval for the Moura Link – Aldoga Rail Project includes approval for the Aldoga Bank Deviation Option B—partial deviation of the North Coast Line between approximate NCL chainages of 546 kilometres and 552 kilometres (including existing equality discrepancies), as recommended by QR as its preferred option within the Aldoga Bank Rail Options Study.

5.3 Workforce and workers' accommodation

EIS findings

QR acknowledges that the project will require a workforce with a broad range of skills particular to each stage of construction and operation. The precise number of workers in each occupational group is unknown and will be determined during detailed planning and design. In its response to the EIS, GRC stated that it expected QR to confirm the construction and operational workforce numbers prior to commencement of the project.

In response to the EIS submissions by the GRC and the Department of Housing, QR considers that, based on information about the Gladstone housing market and its discussions with GRC concerning proposed residential developments in the region, the accommodation for the MLARP operational workforce can be met locally.

QR also provided GRC with more detailed, revised figures of construction and operational workforce. The MLARP construction workforce is anticipated to be between 200 and 300 at peak capacity and the operational workforce requirement is expected to increase gradually over a 10 year period (or longer) peaking to 700 by 2019.

Section 16 of the EIS outlines workforce accommodation options pursued by QR. QR is actively pursuing the 'Maroon Group Calliope River Road' workforce village proposal for 2265 room/units. In the event that the Maroon Group option is not realised, QR intends to pursue an option for a workforce village on land immediately north west of the GSDA near Mount Larcom. QR's third option, the development of a portion of Lot 200 on SP116496 (Euroa Homestead), was rejected by DIP as it is inconsistent with the development scheme for the GSDA.

Any proposals for a workers' accommodation village within the GRC local government area will be assessed by the GRC against its planning scheme under the *Integrated Planning Act 1997*.

Commitments


In response to the EIS submission by the Department of Communities, QR has committed to adopting policies and strategies to utilise and train local workforce and resources, including QR's traineeship and graduate programs. Its employment strategy (EIS section 16) includes recruitment and skills initiatives for local labour and to assist people with on the job training, targeting particular groups, e.g. unemployed, those with a disability, and indigenous people.

QR has committed to pursue a construction workers' accommodation strategy to cater for the proposed construction workforce.

In response to a private (commercial) submission, QR is prepared to discuss accommodation services capabilities with private providers during the detailed planning and design phases.

Conclusion

I am satisfied that the workforce accommodation strategy pursued by QR is sufficient to address the construction and operational workforce accommodation requirements for the project.



Furthermore, the workforce, employment and skills policies and strategies that QR has committed are sufficient to ensure the recruitment and training of a diverse cross-section of the local labour force.

5.4 Vegetation, fauna, habitat, weeds and pests impacts

5.4.1 Vegetation clearing, habitat connectivity and offsets

EIS findings

Table 5.2 of the EIS summarises the regional ecosystem (RE) types mapped within and adjacent to the project area and Figure 5.2 of the EIS displays their approximate locations.

The EIS identifies that construction of rail infrastructure would result in the clearing of approximately 95 hectares of mapped REs and 471 hectares of other vegetation (e.g. grasslands). This includes approximately 0.83 hectares of endangered⁷ RE associated with the NCL in the GSDA and 19 hectares of 'of-concern' RE associated with the Moura Link Eastern Option in the GRC local government area. No protected flora species were identified within the project area.

The vegetation and rehabilitation sub-plan of the EMP (see section 7) will identify measures to protect and/or minimise impacts on native vegetation, including rare and threatened species in addition to targeted rehabilitation strategies.

The final detailed spatial extent of the area proposed for clearing will be ascertained during detailed design. QR envisages that by implementing the commitments included in the EIS (e.g. co-location of linear infrastructure and alignment through previously disturbed areas) the area anticipated to be cleared will be effectively reduced.

In its submission on the EIS, NRW requested that sufficient information be provided by QR to allow assessment of any vegetation clearing approvals.


NRW highlighted that in order to meet certain requirements of the *Regional Vegetation Management Code: Brigalow Belt and New England Tablelands Bioregions* (NRW, 11/2006), and the *Regional Vegetation Management Code: Coastal Bioregions* (NRW, 11/2006), QR may be required to provide vegetation offsets. Furthermore, there may be particular connectivity issues relating to the performance requirement of those codes (s.4) that can not be addressed through vegetation offsets.

Aldoga Bank Rail Options

The final Aldoga Bank Rail Options Study (26 June 2009) (see section 5.2.2 of this report), revises the area of vegetation that may be cleared for the project.

Both the full deviation and partial deviation options (within the GSDA) are aligned to avoid disturbance to endangered RE 11.11.18.

⁷ Endangered RE 11.11.18 – Semi-Evergreen Vine Thicket (SEVT) occurring on undulating plains, rises and gentle slopes of ranges.



The full deviation options would result in the loss of approximately 11.8 hectares of mapped RE, including approximately 2 hectares of remnant of-concern RE (i.e. 10 per cent more than proposed in the EIS), and 21.5 hectares of unmapped vegetation. The partial deviation option would result in the loss of approximately 10.5 hectares of mapped RE, including approximately 2 hectares of remnant of-concern RE (i.e. 10 per cent more than proposed in the EIS), and 17.6 hectares of remnant vegetation.

Proposed vegetation offsets

QR has begun to implement a strategy for the provision of land offsets for a number of projects, including those covered by the WICT and MLARP significant projects, to meet statutory vegetation offsets obligations.

DERM (ex- EPA/QPWS) has agreed to an offer by QR of part of Lot 2 on RP602532 and Lot 6 on CL4074 and the adjoining QR property (Lot 1 on RP602532, totalling about 374 hectares), as compensation for the area of about 51.4 hectares to be revoked from Calliope Conservation Park and Mt Stowe State Forest for the WICT Project—as well as for the potential area of about 24 hectares from Sonoma State Forest—at a ratio of 2:1. DERM has also agreed to hold the residual area of compensatory land (about 225 hectares) as an offset credit against other QR projects. QR has also acquired Lot 2 on SP163783, adjacent to the Calliope River, which will add approximately 81 hectares to the 225 hectare land bank.

The intention is for the land to be registered as an ‘advanced offset’ under the *Queensland Government Environmental Offsets Policy*, provided to DERM (ex-QPWS) and allocated to a conservation management tenure under the *Nature Conservation Act 1994*.

QR considers this land bank to be a major state and community asset as it provides a strategic offset by consolidating QR obligations. It has significant environmental benefits as a large extension to the existing protected areas of Mt Stowe State Forest and Calliope Conservation Park, providing habitat connectivity to the Calliope River. It also has the potential to provide a major community environmental and nature-based outdoor recreational area given its proximity to Gladstone and Calliope and accessibility from Reid Road.

Commitments

QR has made a general commitment to minimise the area of vegetation required to be cleared by the project (section 21.2 of the EIS).

QR has committed to DERM to seek relevant approvals should any protected flora species be found to be affected by the project during detailed design.

QR will identify the actual area of required vegetation offsets once the project final, detailed design footprint has been confirmed.

Furthermore, QR has committed to provide DERM with sufficiently detailed information and spatial property plans, before the detailed design phase, in order to comply with the relevant statutory and policy requirements including the relevant Regional Vegetation Management Codes, and any requirements for vegetation offsets that apply to vegetation clearing.

Approvals

As discussed in sections 6.2 and 6.3 of this report, due to the 'urban area'⁸ classification of the GSDA, only clearing of endangered vegetation within the GSDA requires development approval under IPA and the *Vegetation Management Act 1999* (VM Act).

NRW considered that the vegetation clearing exemption for a 'specified activity'⁹ under the IPA does not apply to the project, so a vegetation clearing permit (operation works) under IPA may be required. DERM may then impose additional conditions.

In addition to any IPA and VM Act development approval for clearing vegetation, a clearing permit may be required under s.89 of the *Nature Conservation Act 1992* (NC Act) to 'take a protected plant'¹⁰.

Conclusion

Much of the QR land bank offered for offsets is covered with a minerals exploration permit under the *Mineral Resources Act 1989*. Therefore the views of the agency administering that Act must be sought, particularly if the land is intended to be allocated to a conservation management tenure under the *Nature Conservation Act 1994*.

These parcels of land have yet to be assessed by DERM against the provisions of the *Vegetation Management Act 1999*, the *Policy for Vegetation Management Offsets*¹¹ (NRW, September 2007), the *Queensland Government Environmental Offsets Policy* (2008), and the *Queensland Government Policy for Biodiversity Offsets* (consultation draft, 2009).

Because the vegetation on these lots is principally mapped as remnant and endangered regrowth under the *Vegetation Management (Regrowth Clearing Moratorium) Act 2009*, extra offset areas outside of these lots may be required to meet the requirements of the applicable regional vegetation management codes.

QR has proposed that the land bank area will comprise part or all of the final vegetation offsets package. QR acknowledges that, depending upon constraints due to the minerals exploration permit over the land, and the RE classification, extent and condition of any vegetation on that land, further measures may also be required—such as the purchase of additional land or a monetary contribution to Ecofund Queensland.

In order to ensure that adequate offsets are provided for the cleared native vegetation, I state the following imposed condition:

8 Schedule 8, Table 4, Item 1A, of IPA provides exemptions for operational works that is clearing of native vegetation [on various tenures]... 'for urban purposes in an urban area'. IPA, section 10 – dictionary, defines 'urban purposes' (various) and an 'urban area' (various).

9 'Specified activities' refer to *Integrated Planning Act 1997*, Schedule 8, Table 4, Item 1A, exemptions for a development permit for operational works that is clearing of native vegetation ... (on various tenures)... 'for a specified activity'. 'Specified activities' (various) are defined in IPA, section 10 - dictionary .

'Specified activity (g)' is: "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."

10 Nature Conservation Act 1992, schedule dictionary, defines 'protected plant' as a plant that is prescribed under this Act as threatened, rare, near threatened or least concern wildlife; and 'take' as gather, pluck, cut, pull up, destroy, dig up, fell, remove or injure the plant or any part of the plant.

11 The Policy for Vegetation Management Offsets (NRW, September 2007) applies to an offset proposed to meet a performance requirement in an applicable *Vegetation Management Act 1999* Code.

Imposed condition 2

Whilst acknowledging the minimum requirements for vegetation offsets required by the *Vegetation Management Act 1999*, the applicable Regional Vegetation Management Codes for the project area, the *Queensland Government Environmental Offsets Policy* (July 2008), the *Policy for Vegetation Management Offsets* (NRW, September 2007), and the *Queensland Government Policy for Biodiversity Offsets* (consultation draft, 2009), QR is required to contribute a vegetation offset equating to a ratio of at least 3:1 for any cleared, remnant, endangered and of-concern REs and 1:1 for any cleared, remnant not-of-concern REs.

QR must come to agreement with the agencies that administer the *Vegetation Management Act 1999*, the *Nature Conservation Act 1994* and the *Mineral Resources Act 1989*, the business unit of DIP that is responsible for planning and development approval within the GSDA, and Ecofund Queensland, to offset the loss of approximately 95 hectares of mapped REs, with the final figure to be determined following detailed design.¹²

The vegetation offsets will:

- equate to a ratio of at least 3:1 for any cleared, remnant, endangered and of-concern REs and 1:1 for any cleared, remnant not-of-concern REs
- equate to a ratio of at least 3:1 for any assessable vegetation associated with any natural significant wetland or watercourse, in accordance with the provisions of the *Policy for Vegetation Management Offsets* (NRW, September 2007)
- be based on the extent of remnant RE clearing, to be determined during the final detailed design
- where possible, consider the suitability of the QR 'land bank' in the vicinity of the Calliope to contribute to the vegetation offsets, whilst acknowledging that this land may be subject to constraints due to the minerals exploration permit over the land, and the RE classification, extent and condition of any vegetation on that land
- depending upon the applicability of the 'land bank' to provide necessary offsets, source alternative offset mechanisms, including a direct land contribution that complies with all applicable legislation and state government policy and/or a monetary sum to Ecofund Queensland
- be determined in conjunction with any development approval to clear native vegetation for the project (if required).

Any amount of contribution to Ecofund Queensland will be determined by Ecofund Queensland based on the cost of acquiring residual land suitable for acquisition as a protected area, plus an ongoing management fee.


To ensure compliance with this imposed condition, QR shall provide a report for the Coordinator-General's approval describing the final agreed vegetation offsets at least 30 business days prior to the proposed construction commencement date.

The Coordinator-General will be responsible for imposed condition 2.

5.4.2 Watercourses and wetlands

The project is likely to have a localised impact on the ecological value of the Calliope River and associated floodplain communities due to the scale and nature of the construction works and operational activity.

¹² At the date of approving this report, the Department of Environment and Resource Management (DERM) administers the *Vegetation Management Act 1999* and the *Nature Conservation Act 1994*, and the Department of Employment, Economic Development and Innovation (DEEDI – Mines and Energy) administers the *Mineral Resources Act 1989*,



Riparian eucalyptus communities are present along the banks of Calliope River and associated tributaries (e.g. Farmer Creek and Larcom Creek) forming a semi-continuous corridor. The riparian vegetation along Calliope River and other watercourses within the project area will be disturbed through direct removal and/or construction works. Approximately 10 hectares of riparian vegetation (remnant vegetation) will be removed.

The proposed Moura Link crosses the Calliope River and intersects a number of other drainage paths and, if not properly managed, overland flow may be redirected from dependent ecosystems to areas susceptible to flow (e.g. erodible soils). The EIS identifies that the majority of the watercourses would be spanned by bridges if the Moura Link Eastern Option is adopted.

No Ramsar wetlands or wetlands of national importance (Directory of Nationally Important Wetlands) were identified within the project area. However, the project is located in the mid reaches of the Calliope River catchment, approximately 40 kilometres upstream of where the river flows into Port Curtis to the north of Gladstone.

Port Curtis is listed in the Directory of Nationally Important Wetlands. This wetland provides important habitat for a number of threatened aquatic fauna species, including dugongs, marine turtles and cetaceans, all of which have been recorded from the region.

No components of the project are expected to impact upon wetlands or Port Curtis.

Commitments

During the detailed design and construction phases QR may investigate the opportunity to upgrade the existing infrastructure to improve the current restrictions of overland flow north of the NCL. In response to a landholder submission, QR has committed to drainage structures to maintain stream water and overland flow onto the 'Fairview' property.

5.4.3 Fauna

EIS findings

During the field surveys for the EIS, 192 native fauna species were recorded from the project area. Generally, the fauna species encountered within the area are common and widespread within the region and are associated with dry sclerophyll woodlands and forests.


The EIS identified four threatened fauna species from habitats within the project area (see EIS Table 6.1), being:

- squatter pigeon (*Geophaps scripta scripta* – vulnerable under NC Act and EPBC Act)
- tusked frog (*Adelotus brevis* – vulnerable NC Act)
- black-necked stork (formerly Jabiru – *Ephippiorhynchus asiaticus* – rare NC Act)
- little pied bat (*Chalinolobus picatus* – rare NC Act).

Habitat removal and modification as a result of vegetation clearing and associated edge effects is anticipated to be the main impact to native fauna. This will result in the displacement of some fauna species to surrounding habitats. However, the project area is heavily disturbed from past rural activities and impacts are likely to be minor following implementation of appropriate mitigation measures contained in the EIS.

Commitments

In its response to the EPA, QR has committed to investigate and adopt during detailed design measures to avoid, minimise and/or offset impacts on ecologically sensitive areas, wildlife habitats and species.



QR has committed to mitigation measures, such as fencing of the rail corridor to minimise adverse impacts on wildlife and livestock, and to liaise with the Department of Employment, Economic Development and Innovation (DEEDI) during detailed planning and design in relation to the construction of any waterway barriers and watercourse crossings.

5.4.4 Weeds and pests

EIS findings

A number of flora species observed within the project area are declared pest plants under the *Land Protection (Pest and Stock Route Management) Act 2002* and listed in the *Land Protection (Pest and Stock Route Management) Regulation 2003*. These species, along with the general locations they were observed have been listed in Table 5.3 of the EIS.

Of the species listed, giant rat's tail grass (*Sporobolus pyramidalis*) was the most abundant within the project area. This area is currently under a weed management programme carried out in collaboration with the landholders and local and state government agencies. Several submitters to the EIS noted the risk of spreading giant rat's tail grass as an issue of concern. Therefore, QR has qualified several construction activities, including mulching of cleared vegetation and re-use of topsoil, where this may result in the spread of giant rat's tail grass.

The aquatic weed hymenachne (*Hymenachne amplexicaulis*) was present in agricultural dams in the southern extent of the project area (Moura Link Western Option) but not from the riverine environment, while salvinia (*Salvinia molesta*) was recorded from pool habitats on the Calliope River and Farmer Creek.

All field work by QR is required to comply with its land access protocol (for the WICT and MLAR projects), which includes weed spread awareness and prevention, and vehicle and machinery procedures. Current QR practices for the rail corridor in the Mount Larcom district involves a yearly herbicide spray of the corridor, slashing on an as-needs basis, and washing-down of slashers and graders at the Mount Larcom depot.

Investigations in 2006/07 by Biosecurity Queensland identified red imported fire ants (*Solenopsis invicta*) within the Yarwun industrial area, adjacent to the project area. During the more recent survey in 2009 by Biosecurity Queensland no red imported fire ants were located. It is understood Biosecurity Queensland is taking steps to revoke the Yarwun Fire Ant Restricted Areas. Construction and operation activities with the project therefore raise the risk of introducing fire ants to the project area. QR will be required to monitor the status of the Yarwun Fire Ant Restricted Areas. Mitigation measures identified in section 20 of the EIS (i.e. soil handling and management sub-plan) will be implemented to minimise the risk of translocating fire ants from the Yarwun industrial area to the project area if required.

Commitments

QR is committed to the development of a site specific weed management sub-plan for implementation during construction and operational phases of the project, in consultation with state and local government agencies. This detailed sub-plan is to be prepared in consultation with relevant state and local government agencies, in accordance with statutory requirements, and is to be implemented during the construction and operational phases of the project.

Conclusion: combined section 5.4, vegetation, fauna, weeds and pests impacts

I am satisfied that the implementation of mitigation and management measures, in relation to native flora and fauna, habitats, and weeds and pests, during the design, construction and operation of the rail infrastructure, will minimise potential impacts within the project area.

By way of offsets for native vegetation clearing, I have proposed a comprehensive offsets package.

5.5 Soils

5.5.1 Soils and geology - general

EIS findings

With the MLARP EIS, QR undertook an independent preliminary geotechnical investigation. The soil sampling strategy was based on advice from NRW, the requirements of the project terms of reference and the relevant sampling strategy in State Planning Policy 1/92 *Development and the Conservation of Agricultural Land* (see section 5.5.3 Good quality agricultural land below). The geotechnical sampling and analysis methodology adopted by QR was similar to that adopted for the WICT Project.

In its submission to the EIS NRW requested that soils mapping for the rail corridors and project areas be completed at 1:25 000 scale with investigation sites required every 250–500 metres to describe and map the variation.

Commitment

QR has committed to detailed geotechnical investigation and to minimise the volume and movement of earthworks during the detailed design phase.

5.5.2 Salinity

EIS findings

Table 4.1 of the EIS describes the land systems of the Capricornia Coast Map 3 Calliope Area. The Wycheproof land system, comprising eucalypt open forest and woodland (narrow-leaved ironbark, gum-topped bloodwood and Moreton Bay ash) on undulating to rolling low hills and rises of sedimentary rocks, is prone to saline outbreaks on lower slopes and drainage flats. This occurs in the northern areas of the Moura Link Eastern and Western Options.

In its submission to the EIS, NRW requested that information be provided on the presence of saline soils within the project area and that the interaction and impacts between the rail infrastructure and the saline landscapes should be assessed.

NRW identified a salinity outbreak clearly visible on the satellite imagery of Figure 4.4 of the EIS, immediately to the west of the test pit TP06 and extending further west along the drainage line towards the Moura Link West Option.

In its supplementary information to the EIS, QR acknowledges soils salinity (likely as a result of vegetation clearing) as an issue, particularly within the floodplain of Larcom Creek, near the eastern side the proposed Aldoga Rail Yard and the Wycheproof land system.

Commitment

In its supplementary information to the EIS, QR has committed, to the satisfaction of DIP and NRW, to a set of mitigation measures to be applied during the design, construction and operation of the project to minimise the potential impacts relating to salinity.

Conclusion

Based upon the details provided in the EIS and supplementary information to the EIS, I am satisfied that the measures proposed by QR are sufficient to address the impacts of salinity caused to and by the project.

5.5.3 Good quality agricultural land

EIS findings

State Planning Policy 1/92: *Development and the Conservation of Agricultural Land* (SPP 1/92), addresses the conservation of 'good quality agricultural land' (GQAL) and provides guidance to local governments on how this issue should be addressed when carrying out a range of planning duties.

When considering development on GQAL, the assessment manager should consider whether it can be demonstrated that there is an overriding need for the development in terms of benefit to the community. The majority of the project is located within the GSDA that has been designated for industrial purposes. The industrial land use of the area has been considered by the state government as the highest and best use of the area.

The project will impact on GQAL as identified in Figure 4.7 of the EIS.

The greatest proportion of GQAL affected by the project falls within the category of 'C2 – Pasture land suitable for native pastures'. There is a small pocket of C1 in and around the Moura Link Western and Eastern Options in the southern part of the project area. Around the township of Yarwun there are very small areas of 'Category A land'. The NCL currently crosses these small areas and the incremental change will be minor.

For the southern portion of the Moura Link (outside GSDA), the loss of GQAL is minimal due to the narrow width of the rail corridor, the strategic location along existing property boundaries (Moura Link Eastern Option) and the location alongside existing road and rail infrastructure.

Conclusion

I am satisfied that the project will cause minimal disturbance to good quality agricultural land outside the Gladstone State Development Area and is unlikely to trigger the provisions of State Planning Policy 1/92: *Development and the Conservation of Agricultural Land* (SPP1/92).

5.5.4 Acid sulfate soils

EIS findings

Acid sulfate soils (ASS) are a characteristic feature of low lying coastal environments in Queensland, particularly where landform elevations are below five metres AHD (Australian Height Datum). ASS are comprised of iron sulphides generally in the form of pyritic material that is a product of the natural interaction between iron rich organic matter and sulphate rich seawater present in anaerobic low energy estuarine environments.

State Planning Policy 2/02: *Planning and Managing Development Involving Acid Sulfate Soils* (SPP 2/02), addresses the disturbance of acid sulfate soils (ASS) and provides guidance to local governments on how this issue should be addressed when carrying out their range of planning duties.

Field observations, the Gladstone Regional Council (Calliope Shire Council) mapping and DERM mapping indicate that there is a low risk of the soils and sediment within this area being affected by ASS, therefore minimal sampling for ASS was conducted.

Conclusion

I am satisfied that the project has a low risk of disturbing acid sulfate soils and therefore is unlikely to trigger the provisions of SPP 2/02: *Planning and Managing Development Involving Acid Sulfate Soils*. Furthermore, the measures proposed by QR are sufficient to address the potential hazards caused by acid sulfate soils.

5.6 Noise, vibration, dust, lighting and visual amenity

EIS findings

Residents from Yarwun, Mount Larcom and Targinie expressed in their public submissions concern that the construction and operation of the MLARP and associated increase in rail traffic would cause adverse impacts associated with noise, vibration, dust, lighting and visual intrusion—subsequently affecting the local amenity and quality of lifestyle.

Section 11 of the EIS details the noise modelling and assessment to determine the potential impacts during construction and operation of the MLARP.

All noise receiver locations were predicted to comply with the *Environmental Protection (Noise) Policy 1997* (EPP (Noise)) and the operational criteria within the QR Code of Practice for Railway Noise Management applicable for noise from rail traffic and rail yard activity, including shunting.

QR has undertaken an 'Environmental Evaluation into Coal Loss' (EECL) study and QR's Coal Loss Management Project (CLMP) to improve coal dust management. The Transitional Environmental Program (TEP) was approved by the EPA on 22 August 2008. The CLMP and TEP completed for QR identify whole of supply chain dust mitigation strategies to reduce the risks caused by coal dust emissions from loaded coal wagons. The implementation of these strategies will lead to a reduction in coal dust emissions across the Moura, Blackwater and Goonyella systems and will reduce any potential impact of the project.

Lighting associated with the proposed Aldoga Rail Yard has the potential to impact on the adjacent ecological systems, including the riparian zone and instream habitats of Larcom Creek and the surrounding floodplain. Therefore, lighting requirements will need to consider impacts on aquatic habitats with consideration to health and safety constraints.

Several of the public submissions queried QR's approach to 'buffers' to minimise and mitigate amenity impacts, particularly near the township of Yarwun. In part, the MLARP traverses the 'Materials Transportation and Services Corridor' within the Gladstone State Development Area and current planning for the project minimises any requirement for land from the 'corridor area buffer precinct'.

In the vicinity of Yarwun, the proposed works comprise a duplication of the current rail configuration of the NCL so will generally not alter the visual characteristics and amenity of the rail corridor. Other elements of the project will be shielded from Yarwun by natural topography, separation distance and southern rail embankment landscaping.

The project is not expected to diminish the existing and future use of recreational facilities within the nearby communities.

Commitments

QR has committed in the EIS (section 20.4.1) to noise management strategies during design, construction and operation of the MLARP, as outlined in the environmental management plan (EMP – see section 7). The noise management strategies in the EIS EMP will form the basis for the EMP planning, construction and operations that QR is obliged to prepare under its Environmental Planning Processes Manual (2007)—which is required to meet its environmental obligations to QT.

In addition, QR has committed to a public complaint management system, to be implemented during the construction phase, to deal with noise issues and other community feedback.

In section 10 of the EIS and in its response to the Gladstone Regional Council and several private submitters, QR has committed to improving coal dust management by implementing the mitigation measures identified in QR's Coal Loss Management Project (CLMP).

In its response to the GRC submission to the EIS, QR has committed to consult with GRC prior to implementing design, construction and operational phases to ensure the acceptability of measures and to ensure the amenity of the communities of Yarwun and Mount Larcom.

Conclusion

I am satisfied that the potential for the project to have significantly disruptive noise, dust, vibration, lighting or visual impacts on neighbouring communities and ecological systems (i.e. terrestrial and aquatic flora and fauna) during construction and operation can be adequately managed through the mitigation measures and commitments contained in the EIS, supplementary information to the EIS, implementation of the environmental management plan, and the conditions and project commitments contained in Schedules A, B and C of this report.

5.7 Waste, wastewater and stormwater

EIS findings

The EIS identifies that the project will generate waste including green waste, general construction waste, sewage and waste oils. It is expected that the Benaraby Landfill will have the capacity to accommodate the majority of the waste streams including recyclables.

In its submission to the EIS, NRW was concerned that section 8 of the EIS provided insufficient detail to explain specific recycled water reuse options; that it should be determined whether the *Water Supply (Safety and Reliability) Act 2008* applies to the project; and that the Department of Employment and Industrial Relations Workplace Health and Safety Unit provide advice on the use of recycled water in the workplace.

The proposed Aldoga Rail Yard has the potential to impact on the aquatic environmental values of Larcom Creek and downstream receiving environments, such as the catchment of the potential Castle Hope Dam and the Calliope River, through accidental contamination as a result of spills and leaks. Changes to water quality would have a flow on effect on the composition and abundance of floral and faunal assemblages inhabiting Larcom Creek.

A combination of culverts and bridges would be constructed within the Aldoga Rail Yard to minimise disturbance to local hydrology (see section 5.4.2 Watercourses and wetlands above). Furthermore, the EIS identifies a blue gum community and wetland of Larcom Creek in the vicinity of the proposed Aldoga Rail Yard as important habitat for the tusked frog (see section 5.4.3 Fauna above).

Commitments

QR has committed to constructing an industrial wastewater treatment plant to service the Aldoga Rail Yard during operation. The location and design of the facility will be finalised during detailed design along with the necessary licence conditions.

In its supplementary information to the EIS, QR has committed—to the satisfaction of DIP and NRW—to include further details on the treatment and reuse of wastewater and recycled water in detailed design; and to address any requirements of the *Water Supply (Safety and Reliability) Act 2008* in relevant environmental management plans.

QR has committed to developing a waste management sub-plan of the environmental management plan (see section 7) based on a hierarchical waste system which will be submitted to DERM and DTMR for review prior to construction and operation. This will include stormwater management systems including an industrial waste water treatment plant at the Aldoga Rail Yard.

QR has committed to mitigation measures to address potential impacts on downstream receiving environments including Port Curtis and the potential Castle Hope Dam inundation area.

Conclusion

I am satisfied that the measures proposed by QR are sufficient to address the impacts of waste, wastewater and stormwater caused by the project.

5.8 Groundwater

EIS findings

Section 9 of the EIS describes the existing groundwater resources in the area and identifies the potential impacts of the project on the groundwater resources.

Groundwater resources in the project area are variable in quantity and quality. Potential impacts include contamination through physical interaction by extraction, excavation and construction, and accidental spills and leaks; and reduced groundwater levels due to over-extraction, which can modify the aquifer and lead to increased salinity. Removal of vegetation and construction of infrastructure can change surface hydrology that may impact on recharge rates and groundwater levels.

QR has identified that surface water availability may be a limiting factor during construction, particularly in the vicinity of the proposal Aldoga Rail Yard (EIS section 8), and that groundwater could be used to augment supply (EIS section 9). It is considered that groundwater would be of suitable quality for construction activities if required, and that construction and operation activities would only have a relatively minor impact on the groundwater regime.

In its submission on the EIS, NRW was concerned that limited information was provided regarding the possible use of groundwater as a project water supply and that more information should be provided regarding volume and location of source and monitoring points.

Commitment

In its supplementary information to the EIS, QR has committed—to the satisfaction of DIP and NRW—to further examine groundwater use requirements for construction and operational water supply within the context of an overall water supply strategy for the project. Hydraulic testing of the aquifers is to be undertaken as part of the detailed geotechnical drilling program to target suitable locations for bores and establish a sustainable yield.



DERM will be consulted to ascertain the most suitable locations for groundwater wells, yields and ongoing monitoring and management measures.

Conclusion

I am satisfied that the measures proposed by QR are sufficient to address the impacts of groundwater use caused by the project.

6. Approvals for the project

6.1 Overview of approvals regime

The SDPWO Act establishes the framework for environmental assessment of major projects in Queensland and, along with the *Integrated Planning Act 1997* (IPA), is the controlling legislation for the project at the state level.

Table 1 below summarises the approvals that will be required for the construction and operational phases of the project.

6.2 Gladstone Regional Council Area

Gladstone Regional Council has administered the former Calliope Shire Council's IPA-compliant planning scheme (the 'planning scheme') since 15 March 2008 following amalgamation of Calliope Shire, Gladstone City and Miriam Vale Shire Councils.

Within the planning scheme, the GSDA is designated as the 'Gladstone State Development Area Locality.' The planning scheme has no force or effect in regards to a material change of use (MCU) on land within the GSDA, and only applies to 'other development' (e.g. reconfiguring a lot, operational works etc.) where on land within the GSDA.

All parts of the project south of the Bruce Highway are within the GRC local government area.

6.2.1 Rail infrastructure

The Moura Link options component of the project (see sections 2.3.4 and 5.1), south of the Bruce Highway, are contained in the 'Calliope Rural Locality' of the planning scheme.

Due to the relationship between definitions and terminology of the planning scheme and the *Transport Infrastructure Act 1994* (TIA), certain components of the project are exempt from development assessment.

Schedule 6 dictionary of the TIA defines the components of a rail infrastructure development as either:

- (a) rail transport infrastructure or
- (b) other rail infrastructure.


Those components of the project, within the GRC local government area, defined as (a) 'rail transport infrastructure' include:

- Moura Link (Eastern and Western Options)
- an additional two tracks on the existing NCL from the Aldoga Rail Yard to the WICT rail infrastructure ('Aldoga Bank Duplication Option', as presented in the EIS)
- supporting infrastructure, such as roads, bridges and services.

As discussed in sections 3.4.2, 3.4.3 and 3.7.3 of the EIS, all aspects of development for the project involving development relating to maintenance, repair, upgrading, augmentation or duplication of 'rail transport infrastructure' are exempt from assessment against the planning scheme.

Those aspects of the project considered (b) 'other rail infrastructure', include the Aldoga Rail Yard and its supporting infrastructure, such as roads, bridges and services, which are wholly within the GSDA and therefore not considered for assessment by GRC under the planning scheme.

In summary, the GRC will not be required to assess any of the rail infrastructure associated with the project.



However the CG can place ‘imposed conditions’ to ensure that the same conditions apply within both the GRC local government area and the GSDA. I have stated imposed conditions, collated in schedule B pursuant to Part 4 Division 8 of the SDPWO Act, for the completion and implementation of the EMP, the potential relocation of the Moura Link in the event that Castle Hope Dam is constructed, and vegetation offsets. The vegetation offsets imposed condition applies to the total project area.

6.2.2 Workforce accommodation

An application for MCU for an accommodation village servicing temporary workforce accommodation for the project, if required, will be made separately to GRC for assessment against the planning scheme under IPA. The development decision is therefore not part of this Coordinator-General’s report.

However, the overall impacts of the workforce and the village facility have been considered in the EIS and for this report. This issue is further discussed in section 5.3.

6.3 Gladstone State Development Area

All parts of the project north of the Bruce Highway are within the GSDA. These components of the project are predominantly contained in the ‘Aldoga precinct’ of the GSDA.

MCU development approvals under the SDPWO Act are required for the Aldoga Rail Yard and supporting infrastructure, such as roads, bridges and services.

As these facilities occur on the GSDA, the ‘development scheme’ (CG, November 2006), prepared under s.79 of the SDPWO Act for the GSDA replaces the ‘planning scheme’ for the GRC local government area for the sake of assessing development applications for MCU.

The Coordinator-General is the assessment manager for all development applications for MCU within the GSDA.

Section 5.4.1 of this report explains the provisions for any development approval for clearing native vegetation in the GSDA. In short, due to the ‘urban area’ classification of the project area within the GSDA that prevails from the former Calliope Shire Planning Scheme, development approval for clearing native vegetation under the *Vegetation Management Act 1999* only applies to endangered regional ecosystems.

In this report, I have stated conditions, collated in Schedule A, pursuant to section 9.5(5) of the Development Scheme for the GSDA, that must attach to a development approval for MCU within the GSDA if granted by the assessment manager under the SDPWO Act.

6.4 Environmentally relevant activities

On 1 January 2009, the *Environmental Protection Regulation 2008* came into effect. The regulation included a revised set of environmentally relevant activities (ERAs) that could be associated with the construction and operation of railway and associated facilities. These are summarised in Table 1 below.

DERM will be the assessment manager for development approval for undertaking ERAs pursuant to the *Environmental Protection Act 1994* (EP Act). An environmental authority required for ERAs is obtained through the Integrated Development Assessment System (IDAS) as defined by Chapter 3 of the *Integrated Planning Act 1997* (IPA).

In its advice on the EIS, the (then) EPA stated that QR has provided insufficient specific information about the location and design of project facilities to enable final advice on ERA conditions. For example, conditions relating to waste water emissions from the proposed sewage treatment plant at the Aldoga Rail Yard would depend on the scale and type of plant proposed and the proposed disposal methods.

QR is committed to complying with relevant legislative requirements as part of the detailed design of the project and will provide information of sufficient detail to accompany any

applications to the DERM for the environmental authority for construction and operational ERAs required for the project.

Conclusion

DERM can not assess, condition and approve an environmental authority for ERAs that complies with relevant legislation, until final, detailed designs have been submitted by QR.

Therefore it will be necessary for QR to consult the DERM prior to applying for the environmental authority for ERAs so that specific conditions relevant to the final location and design of the project (e.g. sewage treatment) can be formulated to the satisfaction of DERM.

I am satisfied that the activities associated with the particular ERAs for the project are such that the scale and likelihood of the possible impacts from these activities is not significant. I therefore conclude that approval of these ERAs following detailed design will not compromise my decision to accept the project on the information presented in the EIS and additional reports.

6.5 Other

Other specific licences, permits, plans and approvals required for the MLARP are described in this section. However, the responsibility for these approvals is with the agencies listed in Table 1 as 'other approvals (Non-IPA)' and implementation is outside the scope of this report.

Table 1. Summary of likely approvals required for the project

Legislation	Approval	Approval Agency
Development approval (IPA and/or SDPWO Act)		
<i>State Development and Public Works Organisation Act 1971</i> and <i>Integrated Planning Act 1997</i>	Material change of use (MCU) approval for Aldoga Rail Yard and associated railway lines and facilities under the Gladstone State Development Area Development Scheme	Department of Infrastructure and Planning (DIP) / Coordinator-General (CG)
<i>Integrated Planning Act 1997</i>	Material change of use (MCU) approval for workers' accommodation village under the Gladstone Regional Council (ex- Calliope Shire Council) Development Scheme	Gladstone Regional Council (GRC)
<i>Environmental Protection Act 1994 (Environmental Protection Regulation 2008)</i> and <i>Integrated Planning Act 1997</i>	Environmentally relevant activities (ERAs) <ul style="list-style-type: none"> • ERA 8 – chemical storage • ERA 16 – extraction and screening activities • ERA 21 – motor vehicle workshop operation • ERA 43 – concrete batching • ERA 61 – waste incineration and thermal treatment • ERA 63 – sewage treatment 	Department of Environment and Resource Management (DERM)
<i>Vegetation Management Act 1999</i> and <i>Integrated Planning Act 1997</i>	Operational Works approval for clearing native vegetation	DERM
<i>Water Act 2000</i> and <i>Integrated Planning Act 1997</i>	Operational Works approval for stream diversion	DERM
	Operational Works approval for works in a watercourse	
	Operational Works approval for taking artesian or sub-artesian water	
<i>Fisheries Act 1994</i> and <i>Integrated Planning Act 1997</i>	Operational Works approval for disturbance of marine plants	Department of Employment, Economic Development and Innovation (DEEDI)
	Operational Works approval for building or raising waterway barrier works	



Other approvals (Non-IPA)		
<i>Environmental Protection Act 1994</i>	Disposal permit required for removal of contaminated soil from sites listed on Contaminated Land Register (CLR) or Environmental Management Register (EMR).	DERM
<i>Nature Conservation Act 1992</i>	Permit for taking, using, keeping or interfering with a protected animal or plant. Clearing permit (NC Act s.89(1)(b))	DERM
	Fauna to be relocated in accordance with Fauna management plan.	
<i>Aboriginal Cultural Heritage Act 2003</i>	Duty of care to take all reasonable and practicable measures not to harm Aboriginal cultural heritage. Aboriginal cultural heritage investigation and cultural heritage management plan to be prepared.	DERM
<i>Water Act 2000</i>	Water licence for extracting of surface water and/or groundwater for use during construction and operation.	DERM
	Water licence to interfere with the course of flow.	
	Riverine Protection Permit to: destroy vegetation, excavate and/or place fill within a watercourse, lake or spring.	
<i>Dangerous Goods Safety Management Act 2001</i>	Large dangerous goods location to be established. Emergency plans and procedures to be prepared.	Department of Community Safety
<i>Explosives Act 1999</i>	Authority for possession, storage and use of explosives.	DEEDI
<i>Transport Infrastructure Act 1994</i>	Permits to be obtained for: <ul style="list-style-type: none"> • Any activity within a state controlled road (section 50) • Construction within a state controlled road (section 33) • Access onto state controlled road (section 62) 	Department of Transport and Main Roads (DTMR)

7. Environmental management plan

Potential environmental issues requiring attention have been identified during the impact assessment process. A draft environmental management plan (EMP) has been prepared by the proponent for the design, construction and operation of the project.

The purpose of the EMP is to:

- identify and describe the environmental values of the project locality and potential impacts that may be caused by project
- define critical environmental values that are to be protected and/or managed
- detail the measures, actions and procedures to be carried out during the implementation stage of the project in order to mitigate adverse and enhance beneficial environmental and social impacts.

The objectives of the EMP are to provide:

- the project management team with evidence of practical and achievable plans to ensure that the project's environmental requirements are complied with
- local and state authorities with a framework to confirm compliance with legislation, policies, conditions, standards, guidelines and other requirements
- an integrated plan for monitoring, evaluating, managing and reporting potential impacts
- the community with evidence that the project will be managed in an environmentally acceptable manner.

The environmental studies and consultation conducted as part of the EIS process have identified the potential impacts of proceeding with the project.

The EMP identifies the measures required to manage and mitigate potential adverse impacts and enhance beneficial environmental and social impacts. These measures will be implemented by QR and its contractors during the design, construction and operational stages of the project.

The EMP establishes the framework, including environmental protection objectives, standards, measurable indicators and control strategies (i.e. to demonstrate how the objectives will be achieved), to ensure that the measures are implemented during each stage of the project.

This is also achieved by specifying the monitoring, reporting and auditing requirements, with nominated responsibilities and timing, to ensure that the commitments are met.

The EMP also makes provision, as appropriate, for unforeseen events by outlining corrective actions which may be implemented in these situations.

Environmental requirements of all relevant legislation will be addressed in the detailed EMP. The requirements of local government, the community and other stakeholders will also be addressed.

In effect, the EMP becomes the key reference document in that it converts the undertakings and recommendations of the environmental studies into actions and commitments to be followed by the designers, constructors and future operators of the proposed project.

The EIS presented an EMP covering sub-plans for the management of:

- land use
- topography, geology and soils
- terrestrial flora
- terrestrial fauna

- aquatic biology
- pests and weeds
- surface water
- groundwater resources
- air environment
- noise and vibration
- waste
- transport and traffic
- cultural heritage
- visual and lighting impacts
- social environment
- health, safety and emergency response.

The EMP is structured as follows:

- relevant statutory obligations and regulatory framework within which the project will be required to progress
- management structure and general project responsibilities for staff involved in the project
- environmental management objectives for particular environmental aspects
- subsequent stages of the environmental management process during the detailed design, construction and operational stages of the project.


The project will require an environmental authority from the DERM, for both construction and operational phases, in accordance with the provisions of the EP Act and IPA. Environmental authority consent conditions will require QR to address a number of environmental issues such as water quality, air quality, noise and waste management. These matters are addressed by the EMP. (Note: the EMP will satisfy the requirements for an 'integrated environmental management system' (IEMS) under the EP Act.)

Following the issue of environmental authorities, and any other licences and/or permits under relevant environmental legislation, the EMP will be amended to incorporate the environmental conditions imposed as part of such approvals.

The appropriate time to prepare the final detailed EMP is during the detailed design stage when more accurate information is available to detail the specifics of the proposed management procedures. QR will be responsible for regular review of the IEMS to achieve continuous improvement in environmental performance.

Also, the EMP is intended to be a dynamic document, which will be periodically reviewed and revised as the project progresses through the detailed design phase to construction and then to operation, and through ongoing consultation with state and local government agencies. Revisions will include, but not be limited to:

- inclusion of final organisational structures for construction and operational staff and the allocation of responsibilities in line with the organisational structure
- inclusion of relevant approval conditions arising from the project's approval and subsequent permits, authorities and/or licences
- review of the operations EMP at the end of the construction phase.



Additional revisions to the EMP will occur on an as-needs basis, including revisions to address items identified during incident investigations, inspections or audits, or to reflect knowledge gained during the course of the project's construction and operations. Any changes to the detailed EMP will be implemented in consultation with the relevant authorities where necessary.

The effective implementation of the EMP will satisfy the commitments made by QR in the EIS, and subsequently to the public submitters and advisory agencies, and will ensure the effective management of environmental impacts of the project.

Commitments

QR has committed that the EMP for the project will be reviewed by DERM (e.g. for management of soils, vegetation, weeds and water supply etc.), and approved by DERM and DTMR, prior to finalisation (of the EMP) and the commencement of construction.

Environmental issues will also be addressed as part of the statutory approvals and legislative requirements for the project (see section 6).

In response to the (then) Department of Main Roads submission to the EIS, QR has made the following commitments:

- develop supporting documentation for necessary approvals (in a state-controlled road under the *Transport Infrastructure Act 1994* – see Table 1) including detailed design drawings and a construction traffic management plan, during the detailed design phase
- provide DTMR with detailed drawings and traffic management plans prior to construction
- prepare and negotiate agreements with DTMR and GRC on road maintenance and rehabilitation as a result of construction.

In response to the (then) Department of Emergency Services (DES) submission to the EIS, QR has made the following commitments:

- making arrangements for the detour of emergency response vehicles to a standard acceptable to Department of Community Safety (ex- DES) (i.e. that such temporary roads and lay-bys are acceptable hard stands and can support a weight of at least 12 tonnes)
- advise the Department of Community Safety of any temporary access arrangements with designated emergency access to sites and any required alternative access provisions
- ensure access to water supply by both urban and rural fire brigades
- liaise with Queensland Fire and Rescue Service regarding any necessary protection for the site, including fire hydrant coverage for any proposed buildings or structures in excess of 500 square metres, should the Aldoga Rail Yard be identified as a 'Dangerous Goods' location under the *Dangerous Goods Safety Management Act 2001*.

Within the GSDA

In order to ensure that the EMP is carried forward to the further development of the design, construction and operational programs for the project, I state that, in accordance with s.39 of the SDPWO Act, and pursuant to section 9.5(5) of the development scheme for the GSDA, the following condition is to be applied to any development approval for MCU for this project within the GSDA, if granted by the assessment manager under the SDPWO Act.

Condition 1

QR and/or its contractor(s) shall finalise the Moura Link – Aldoga Rail Project EMP and submit the EMP to the Coordinator-General for approval at least 30 business days prior to the proposed construction commencement date.



The EMP must cover planning, construction and operation sub-plans for:

- land use
- topography, geology and soils
- terrestrial flora
- terrestrial fauna
- aquatic biology
- surface water
- groundwater resources
- wastewater and stormwater
- air environment
- noise and vibration
- waste
- transport
- cultural heritage
- visual and lighting impacts
- social environment
- health and safety.

In finalising the EMP, QR must ensure that:

- 1) all relevant project commitments included in schedule C of this report are included in the EMP
- 2) the Department of Environment and Resource Management (DERM) and the Department of Transport and Main Roads (DTMR) supports the environmental management plan (EMP) for the project
- 3) the Department of Environment and Resource Management (DERM) supports the final design for the track location, railyard facilities, pollution controls and other ecological protection measures at the Aldoga Rail Yard site.

QR must submit with the EMP a report detailing any consultation activities (revision/s to the EMP, the Aldoga Rail Yard design, pollution controls and/or other ecological protection measures) and evidence of the agencies' support.

Audits must be undertaken on a six monthly basis during construction by an independent and appropriately qualified person to determine whether the project's activities are in compliance with the EMP. A report must be prepared by the independent and appropriately qualified person and provided to the Coordinator-General within 30 business days of the end of the monitoring period to which the audit relates. The report must include details of any non-compliance, corrective actions, revised practices and evidence to support the findings of the audit.

The Coordinator-General will be responsible for condition 1.

Outside the GSDA

In order to ensure that the EMP is carried forward to the further development of the design, construction and operational programs for the project, I state that, in accordance with Part 4 Division 8 of the SDPWO Act, the following imposed condition is to be applied to the project outside the GSDA.

Imposed condition 3

QR and/or its contractor(s) shall finalise the Moura Link – Aldoga Rail Project EMP and submit the EMP to the Coordinator-General for approval at least 30 business days prior to the

The EMP must cover planning, construction and operation sub-pans for:

- land use
- topography, geology and soils
- terrestrial flora
- terrestrial fauna
- aquatic biology
- surface water
- groundwater resources
- wastewater and stormwater
- air environment
- noise and vibration
- waste
- transport
- cultural heritage
- visual and lighting impacts
- social environment
- health and safety.

In finalising the EMP, QR must ensure that:

- 1) all relevant project commitments included in schedule C of this report are included in the EMP
- 2) the Department of Environment and Resource Management (DERM) and the Department of Transport and Main Roads (DTMR) supports the environmental management plan (EMP) for the project
- 3) the Department of Environment and Resource Management (DERM) supports the final design for the track location, railyard facilities, pollution controls and other ecological protection measures at the Aldoga Rail Yard site.

QR must submit with the EMP a report detailing of any consultation activities (revision/s to the EMP, the Aldoga Rail Yard design, pollution controls and/or other ecological protection measures) and evidence of the agencies' support.



Audits must be undertaken on a six monthly basis during construction by an independent and appropriately qualified person to determine whether the project's activities are in compliance with the EMP. A report must be prepared by the independent and appropriately qualified person and provided to the Coordinator-General within 30 business days of the end of the monitoring period to which the audit relates. The report must include details of any non-compliance, corrective actions, revised practices and evidence to support the findings of the audit.

The Coordinator-General will be responsible for imposed condition 3.

8. Conclusion

Having regard to the documentation provided during the EIS process for the Moura Link – Aldoga Rail Project, I am satisfied that the requirements of the Queensland Government for impact assessment in accordance with the SDPWO Act have been met. The EIS process has provided sufficient information to allow an informed evaluation of potential environmental impacts which could be attributed to the project. Careful management of the key construction and operational activities should ensure that any potential environmental impacts will be minimised or avoided.

QR has made project commitments throughout the EIS, compiled in Table 21.1 of the EIS and listed in section 1 of Schedule B of this report. Furthermore, subsequent to the public and advisory agency review of the EIS, QR has made additional project commitments to satisfy the requirements of advisory agencies, which are listed in section 2 of Schedule B of this report. These commitments include actions beyond those required to meet statutory approvals and their implementation will enhance the mitigation of potential adverse environmental impacts of the project. Furthermore, QR has developed an EMP (which will be progressed further to detailed planning and design) to address specific environmental issues identified during the EIS process associated with each element of the project.

In reaching a conclusion on the acceptability or otherwise of the management of potential impacts of the project, I have considered these project commitments and the EMP.

I require QR to provide me with evidence that the appropriate advisory agencies have been adequately engaged in consultation, to those agencies' satisfaction, during the completion of the final EMP and final designs for the proposed Aldoga Rail Yard (see condition 1).

On the basis of the information provided, including that from advisory agencies, I am satisfied that the adverse environmental impacts associated with the project are able to be addressed through:

- attachment of conditions listed in Schedule A of this report (pursuant to section 9.5(5) of the development scheme for the GSDA) as conditions for development approval under the SDPWO Act for MCU within the GSDA
- provision of imposed conditions listed in Schedule B of this report (pursuant to Part 4 Division 8 of the SDPWO Act) for aspects of the project that are not subject to a development approval for MCU within the GSDA
- obtaining an environmental authority from DERM under the EP Act for ERAs
- finalisation and implementation of the project EMP
- implementation of the project generally in accordance with the arrangements described in the EIS and the project commitments listed in Schedule C of this report
- auditing of project activities in accordance with the standards and guidelines provided to QR by the Coordinator-General.

I consider that there is a significant economic development benefit for the local, regional, state and Australian economies to be derived from the project.

Therefore, I recommend that the Moura Link – Aldoga Rail Project, as described in detail in the EIS and summarised in section 2 of this report, including the Moura Link Eastern Option and augmented with the partial deviation of the North Coast Line as described in the final Aldoga Bank Rail Options Study, can proceed, subject to the conditions contained in Schedules A and B of this report and the project commitments made by QR contained in Schedule C of this report.

In the event of any inconsistencies between the EIS documents and the recommended requirements in this report, the recommended requirements in this report prevail.

Copies of this report will be issued to:

- QR Limited, in accordance with section 35(5)(a) of the SDPWO Act and its shareholding Ministers
- the Department of Environment and Resource Management:
 - as assessment manager for applications for development approvals for environmentally relevant activities under the *Environmental Protection Act 1994*
 - as assessment manager for any development approval for operational works pursuant to the *Integrated Planning Act 1997*, *Vegetation Management Act 1999* and the *Water Act 2000*
 - to review the environmental management plan prior to implementation
 - regarding final design of the Aldoga Rail Yard site prior to construction
 - regarding configuration of vegetation offsets
- the Department of Employment, Economic Development and Innovation:
 - as assessment manager for any operational works development approval pursuant to the *Integrated Planning Act 1997* and *Fisheries Act 1994* (Queensland Primary Industries and Fisheries)
 - regarding configuration of vegetation offsets (mines and energy)
- the Gladstone Regional Council, as assessment manager for any development approval within its local government area pursuant to the *Integrated Planning Act 1997*
- the Department of Transport and Main Roads:
 - to review the environmental management plan prior to implementation
 - with regard to permits required under the *Transport Infrastructure Act 1994*
- Ecofund Queensland, regarding configuration of vegetation offsets
- the Department of Infrastructure and Planning, on behalf of the Coordinator-General:
 - as assessment manager for material change of use development approval within the Gladstone State Development Area, under the *State Development and Public Works Organisation Act 1971*, and enforcement of MCU conditions
 - for enforcement of imposed conditions
 - regarding configuration of vegetation offsets.

Other advisory agencies who participated in the EIS process will be notified about the availability of this report.

In accordance with section 35(5)(b) of the SDPWO Act, a copy of this report will also be made available to the public on the DIP significant projects web site at:

<http://www.dip.qld.gov.au/projects/transport/rail/moura-link-aldoga-rail.html>

9. Abbreviations and acronyms

The following acronyms have been used in this report:

ACH Act	<i>Aboriginal Cultural Heritage Act 2003</i>
AHD	Australian Height Datum
ALCAM	Australian Level Crossing Assessment Model
ANZECC	Australian and New Zealand Environment Conservation Council
ARI	Average Recurrence Interval (rainfall)
ARY	Aldoga Rail Yard
AS	Australian Standard
ASS	Acid sulfate soils (under SPP 2/02)
CAMBA	China Australia Migratory Bird Agreement
CCRCMP	Curtis Coast Regional Coastal Management Plan (under the CPMA)
CEMP	Construction environmental management plan
CG	The Coordinator-General of the State of Queensland
CHAG	Clean and Healthy Air for Gladstone Project
CHMP	Cultural heritage management plan (under the ACH Act)
CLMP	(QR's) Coal Loss Management Project
CPMA	<i>Coastal Protection and Management Act 1997</i>
CLR	Contaminated Land Register
COB	Close of business
CTMP	Construction traffic management plan
DEEDI	Department of Employment, Economic Development and Innovation
DERM	Department of Environment and Resource Management
DES	Department of Emergency Services
DEWHA	(Commonwealth) Department of Environment, Water, Heritage and the Arts
DPA	Dugong protection area
DIP	Department of Infrastructure and Planning
DME	Department of Mines and Energy
DMR	Department of Main Roads
DPI&F	Department of Primary Industries and Fisheries
DTMR	Department of Transport and Main Roads
EECL	(QR's) Environmental Evaluation into Coal Loss Study
EEMBL	East End Mine Branch Line
EIS	Environmental impact statement
EMP	Environmental management plan
EMP (Construction)	Construction environmental management plan
EMP (Operations)	Operations environmental management plan

EMP (Planning)	Planning environmental management plan
EMR	Environmental management register
EPA	Environmental Protection Agency
EP Act	<i>Environmental Protection Act 1994</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)</i>
EPP	Environmental protection policy
EPP (Air)	<i>Environmental Protection (Air) Policy 1997</i>
EPP (Noise)	<i>Environmental Protection (Noise) Policy 1997</i>
EPP (Water)	<i>Environmental Protection (Water) Policy 1997</i>
EPP (Waste)	<i>Environmental Protection (Waste) Policy 2000</i>
EP Reg	<i>Environmental Protection Regulation 1998</i>
ERA	Environmentally relevant activity (under the EP Act)
EVR	Endangered, vulnerable and/or rare species (under the NC Act)
FHA	Fish habitat area (under the <i>Fisheries Act 1994</i>)
FTE	Full-time equivalent
FSL	Full supply level
GAWB	Gladstone Area Water Board
GBR Coast MP	Great Barrier Reef Coast Marine Park
GBRMPA	Great Barrier Reef Marine Park Authority
GBRWHA	Great Barrier Reef World Heritage Area
GEIDB	Gladstone Economic and Industry Development Board
GIRTP	Gladstone Integrated Regional Transport Plan
GPCL	Gladstone Ports Corporation Limited
GQAL	Good quality agricultural land (under SPP 1/92)
GRC	Gladstone Regional Council
GSDA	Gladstone State Development Area
HPZ	Habitat protection zone (Marine Park)
IAS	Initial advice statement
IDAS	Integrated Development Assessment System (IPA Chapter 3)
IPA	<i>Integrated Planning Act 1997</i>
JAMBA	Japan Australia Migratory Bird Agreement
MCU	Material change of use (under IPA)
ML	Mining lease
MLARP	Moura Link – Aldoga Rail Project ('the project')
MNES	Matters of National Environmental Significance (under the EPBC Act)
MSL	Moura Short Line
Mtpa	Megatonnes per annum (i.e. million tonnes each year)
NC Act	<i>Nature Conservation Act 1994</i>



NCL	North Coast Line
NC Regulation	<i>Nature Conservation (Wildlife) Regulation 1994</i>
NRW	Department of Natural Resources and Water (Now DERM)
OEMP	Operational environmental management plan
QH	Queensland Health
QPWS	Queensland Parks and Wildlife Service
QR	QR Limited ('the proponent')
QT	Queensland Transport (now DTMR)
RE	Regional ecosystem
RL	Relative level (elevation)
ROP	Resource operation plan (<i>Water Act 2000</i>)
ROW	(Pipeline) Right of way (i.e. corridor width)
SCMP	State Coastal Management Plan (under the CPMA)
SDPWO Act	<i>State Development and Public Works Organisation Act 1971</i>
SEIS	Supplementary environmental impact statement
SEVT	Semi-evergreen vine thicket
SPP	State Planning Policy
TDS	Total dissolved solids
TEP	Transitional Environmental Program (see CLMP)
TIA	<i>Transport Infrastructure Act 1994</i>
TOR	Terms of reference
VM Act	<i>Vegetation Management Act 1999</i>
WICT	Wiggins Island Coal Terminal
WIW	Wiggins Island Wharf
WQO	Water quality objective
WRP	Water resource plan (under the <i>Water Act 2000</i>)

Notes: As a result of machinery of government changes from 26 March 2009 (see *Public Service Department Arrangements Notice (No.2) 2009*), the following changes to Queensland Government departments referred to in this report occurred (in summary):

New department (as of 26 March 2009)	Previous department/s
Department of Employment, Economic Development and Innovation – DEEDI	Department of Mines and Energy – DME Department of Primary Industries and Fisheries – DPI&F
Department of Environment and Resource Management – DERM	Environmental Protection Agency – EPA (including QPWS) Department of Natural Resources and Water – NRW
Department of Transport and Main Roads – DTMR	Department of Main Roads – DMR Queensland Transport – QT
Department of Community Safety	Department of Emergency Services – DES

Schedule A

Coordinator-General's conditions for the Moura Link – Aldoga Rail Project

Aspect of development

Material change of use (MCU) made assessable development under the Gladstone State Development Area (GSDA) development scheme.

Conditions provided by the Coordinator-General (CG), in accordance with s.39 of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) and pursuant to section 9.5(5) of the development scheme for the GSDA, to be attached to any development approval for MCU within the GSDA if granted by the assessment manager under the SDPWO Act.

As Coordinator-General, I will be the assessment manager for all development approvals for material change of use required for the Moura Link – Aldoga Rail project for components located within the Gladstone State Development Area.

Condition 1

QR and/or its contractor(s) shall finalise the Moura Link – Aldoga Rail Project EMP and submit the EMP to the Coordinator-General for approval at least 30 business days prior to the proposed construction commencement date.

The EMP must cover planning, construction and operation sub-plans for:

- land use
- topography, geology and soils
- terrestrial flora
- terrestrial fauna
- aquatic biology
- pests and weeds
- surface water
- groundwater resources
- wastewater and stormwater
- air environment
- noise and vibration
- waste
- transport and traffic
- cultural heritage
- visual and lighting impacts
- social environment
- health, safety and emergency response.



In finalising the EMP, QR must ensure that:

- 1) all relevant project commitments included in schedule C of this report are included in the EMP
- 2) the Department of Environment and Resource Management (DERM) and the Department of Transport and Main Roads (DTMR) supports the environmental management plan (EMP) for the project
- 3) the Department of Environment and Resource Management (DERM) supports the final design for the track location, railyard facilities, pollution controls and other ecological protection measures at the Aldoga Rail Yard site.

QR must submit with the EMP a report detailing any consultation activities (revision/s to the EMP, the Aldoga Rail Yard design, pollution controls and/or other ecological protection measures) and evidence of the agencies' support.

Audits must be undertaken on a six monthly basis during construction by an independent and appropriately qualified person to determine whether the project's activities are in compliance with the EMP. A report must be prepared by the independent and appropriately qualified person and provided to the Coordinator-General within 30 business days of the end of the monitoring period to which the audit relates. The report must include details of any non-compliance, corrective actions, revised practices and evidence to support the findings of the audit.

The Coordinator-General will be responsible for condition 1.

Schedule B

Coordinator-General's imposed conditions for the Moura Link – Aldoga Rail project

Aspect of the project

Imposed conditions provided by the Coordinator-General (CG) pursuant to Part 4 Division 8 of the *State Development and Public Works Organisation Act 1971* (SDPWO Act) for aspects of the project that are not subject to a development approval for material change of use within the Gladstone State Development Area.

Imposed condition 1

In the event that the Moura Link rail line, at some time in the future, needs to be relocated as a result of construction of the Castle Hope Dam, QR, or any successor, will contribute to the relocation of the rail line provided it is authorised by the Queensland Competition Authority to include relocation costs in the regulated asset base. Such contribution will equate to the deferred capital cost, being the estimated cost to design, construct and commission the relocated section of the rail line less the estimated cost to design, construct and commission the eastern link, as determined at the date the decision is made to construct the Castle Hope Dam.

I nominate the Department of Environment and Resource Management as the responsible agency for imposed condition 1.

Imposed condition 2

Whilst acknowledging the minimum requirements for vegetation offsets required by the *Vegetation Management Act 1999*, the applicable regional vegetation management codes for the project area, the *Queensland Government Environmental Offsets Policy* (July 2008), the *Policy for Vegetation Management Offsets* (NRW, September 2007), and the *Queensland Government Policy for Biodiversity Offsets* (consultation draft, 2009), QR is required to contribute a vegetation offset for any cleared, mapped regional ecosystems to a ratio of at least 3:1.

QR must come to agreement with the agencies that administer the *Vegetation Management Act 1999*, the *Nature Conservation Act 1994* and the *Mineral Resources Act 1989*, the business unit of DIP that is responsible for planning and development approval within the GSDA, and Ecofund Queensland, to offset the loss of approximately 95 hectares of mapped REs, with the final figure to be determined following detailed design..

The vegetation offsets will:

- equate to a ratio of at least 3:1 for any cleared, remnant, endangered and of-concern REs and 1:1 for and cleared, remnant not-of-concern REs
- equate to a ratio of at least 3:1 for any assessable vegetation associated with any natural significant wetland or watercourse, in accordance with the provisions of the *Policy for Vegetation Management Offsets* (NRW, September 2007)
- be based on the extent of remnant RE clearing, to be determined during the final detailed design
- where possible, consider the suitability of the QR 'land bank' in the vicinity of the Calliope to contribute to the vegetation offsets, whilst acknowledging that this land may be subject to constraints due to the minerals exploration permit over the land, and the RE classification, extent and condition of any vegetation on that land
- depending upon the applicability of the 'land bank' to provide necessary offsets, source alternative offset mechanisms, including a direct land contribution that complies with all

applicable legislation and state government policy and/or a monetary sum to Ecofund Queensland

- be determined in conjunction with any development approval to clear native vegetation for the project (if required).

Any amount of contribution to Ecofund Queensland will be determined by Ecofund Queensland based on the cost of acquiring residual land suitable for acquisition as a protected area, plus an ongoing management fee.

To ensure compliance with this imposed condition, QR shall provide a report for the Coordinator-General's approval describing the final agreed vegetation offsets at least 30 business days prior to the proposed construction commencement date.

The Coordinator-General will be responsible for imposed condition 2.

Imposed condition 3


QR and/or its contractor(s) shall finalise the Moura Link – Aldoga Rail Project EMP and submit the EMP to the Coordinator-General for approval at least 30 business days prior to the proposed construction commencement date.

The EMP must cover planning, construction and operation sub-plans for:

- land use
- topography, geology and soils
- terrestrial flora
- terrestrial fauna
- aquatic biology
- pests and weeds
- surface water
- groundwater resources
- wastewater and stormwater
- air environment
- noise and vibration
- waste
- transport and traffic
- cultural heritage
- visual and lighting impacts
- social environment
- health, safety and emergency response.

In finalising the EMP, QR must ensure that:

- 1) all relevant project commitments included in schedule C of this report are included in the EMP
- 2) the Department of Environment and Resource Management (DERM) and the Department of Transport and Main Roads (DTMR) supports the environmental management plan (EMP) for the project

- 
- 3) the Department of Environment and Resource Management (DERM) supports the final design for the track location, railyard facilities, pollution controls and other ecological protection measures at the Aldoga Rail Yard site.

QR must submit with the EMP a report detailing of any consultation activities (revision/s to the EMP, the Aldoga Rail Yard design, pollution controls and/or other ecological protection measures) and evidence of the agencies' support.

Audits must be undertaken on a six monthly basis during construction by an independent and appropriately qualified person to determine whether the project's activities are in compliance with the EMP. A report must be prepared by the independent and appropriately qualified person and provided to the Coordinator-General within 30 business days of the end of the monitoring period to which the audit relates. The report must include details of any non-compliance, corrective actions, revised practices and evidence to support the findings of the audit.

The Coordinator-General will be responsible for imposed condition 3.

Schedule C

QR Limited's project commitments

1. Commitments made in the EIS

The key commitments made by QR in the EIS for implementation during design, construction and/or operation of the Moura Link – Aldoga Rail Project.

Subject	QR's commitment
General	<ul style="list-style-type: none"> • Reasonable and practicable measures will be taken to minimise the likelihood of environmental harm being caused. • Minimise project footprint and document design response in the environmental design report. • Prepare and implement a construction EMP for this project that includes components for: <ul style="list-style-type: none"> ○ soil handling and management ○ vegetation rehabilitation and management ○ fauna management ○ pest management ○ emergency response procedures ○ weed management ○ dust management ○ noise and vibration management ○ waste management ○ other measures contained in the EIS EMP (section 20). • Implement a cultural heritage management plan during construction. • Prepare and implement an operational EMP. • Continue to provide project updates and progress to the community and stakeholders.
Land use and project approvals	<ul style="list-style-type: none"> • Continue consultation with directly affected land owners and key stakeholders. • Obtain all required planning and environmental approvals for the construction and operation, and implement the management measures and conditions.
Topography, geology and soils	<ul style="list-style-type: none"> • Develop and implement a soil handling and management sub plan during construction which addresses: <ul style="list-style-type: none"> ○ erosion and sediment control ○ the movement of actual or potentially contaminated soil (from the existing rail corridor or any properties listed on the EMR (i.e. Lots 71 and 72 on SP122249) including the application for a DERM Waste Disposal Permit (required for removal of soil from a land parcel which is listed on the EMR). ○ topsoil management ○ rid imported fire ants from nearby sites in accordance with QR's Fire Ant Risk Management Plan (if required).



Subject	QR's commitment
Terrestrial flora	<ul style="list-style-type: none"> • Clearing of remnant vegetation will be restricted to the minimum required to enable the safe construction, operation and maintenance of the railway line, Aldoga Rail Yard and supporting infrastructure. • Preparation and implementation of a vegetation rehabilitation and management sub plan based on designated revegetation/rehabilitation locations (including buffer zones) which are to be determined during the detailed design phase. This plan will be implemented during the construction and operation phases of the project. • Development of a site specific weed management sub plan for implementation during construction and operational phases of the project. This strategy is to be prepared in consultation with relevant state and local government agencies and is to be implemented during the construction and operational phases of the project.
Terrestrial fauna	<ul style="list-style-type: none"> • Measures in the CEMP and OEMP to address fauna and pest management issues and mitigate the loss of ecological value.
Water quality	<ul style="list-style-type: none"> • Adoption of water efficiency strategies (i.e. recycle and reuse of wastewater and stormwater from buildings) during construction and operation. • Stormwater management systems will be implemented and maintained during construction and operation to minimise impact on downstream receiving environments, particularly at Larcom Creek and Calliope River. • Potential mosquito breeding sites onsite by preventing ponding waters to be minimised. • No significant worsening of flooding upstream and downstream of the project.
Groundwater resources	<ul style="list-style-type: none"> • Hydraulic testing of the aquifer, to establish a sustainable yield, should groundwater be used for construction and/or operational water supply. • Develop and implement management controls for hazardous materials onsite to protect groundwater, including spill response procedures and training.
Air environment	<ul style="list-style-type: none"> • Prepare and implement a dust management plan during construction as part of the CEMP. • Implement the relevant findings of the Coal Loss Management Project during operation.
Noise and vibration	<ul style="list-style-type: none"> • Develop and implement noise and vibration mitigation measures (as part of the construction EMP) during the construction phase of the project. • Notify affected/adjoining property owners in advance about timing and details of proposed construction works.
Waste	<ul style="list-style-type: none"> • Prepare and implement construction and operational waste management sub plans addressing a hierarchy of waste avoidance, reuse, recycling, treatment and disposal. • Integrate waste management strategies into the detailed design phase of the project. • All wastes that are generated shall be stored, handled and transferred in a proper and efficient manner and will not be released into the environment or transported offsite by an appropriately licenced carrier and disposed of at an approved waste disposal facility.



Subject	QR's commitment
Transport and Traffic	<ul style="list-style-type: none"> • Develop and implement a traffic management plan during construction. • Develop agreements with DTMR and GRC on road maintenance and rehabilitation requirements as a result of the project construction phase.
Cultural heritage	<ul style="list-style-type: none"> • Finalise and implement a CHMP during construction.
Visual and lighting impacts	<ul style="list-style-type: none"> • Clearing of remnant vegetation will be restricted to the minimum required for the safe works during construction, operation and maintenance. • Vegetation will only be removed when necessary for the project works. • Construction and operational lighting design will be consider further in the detailed design subject to safety constraints. • Where vegetation is removed these areas will be progressively rehabilitated. • Vegetation rehabilitation works will be conducted in accordance with the vegetation rehabilitation and management sub plan.
Social and economic	<ul style="list-style-type: none"> • Pursue a construction workers' accommodation strategy to cater for the proposed construction workforce.
Hazard and risk	<ul style="list-style-type: none"> • Amend the existing emergency procedures to accommodate the proposed project. • Prepare and implement the following management plans: <ul style="list-style-type: none"> ○ CEMP (prior to construction) ○ CTMP (prior to construction) ○ CHMP (prior to construction) ○ OEMP (prior to operation) ○ Other relevant management plans and/or procedures designed to minimise environmental harm.
Health and safety	<ul style="list-style-type: none"> • Prepare and implement emergency management procedures during the construction and operational phases of the project.

Notes:

CEMP	Construction environmental management plan
CHMP	Cultural heritage management plan
CTMP	Construction traffic management plan
DERM	Department of Environment and Resource Management (ex- Environmental Protection Agency)
DTMR	Department of Transport and Main Roads (ex- Department of Main Roads)
EMR	Environmental management register
GRC	Gladstone Regional Council
OEMP	Operational environmental management plan

2. Further commitments

The key commitments made by QR by agreement with advisory agencies subsequent to the public review of the EIS, for implementation during design, construction and/or operation of the Moura Link – Aldoga Rail Project.

Section 5.3 Workforce and workers' accommodation

In response to the EIS submission by the Department of Communities, QR has committed to adopting policies and strategies to utilise and train local workforce and resources, including QR's traineeship and graduate programs. Its employment strategy (EIS section 16) includes recruitment and skills initiatives for local labour and to assist people with on the job training, targeting particular groups (e.g. unemployed, those with a disability, and indigenous people).

QR has committed to pursue a construction workers' accommodation strategy to cater for the proposed construction workforce.

In response to a private (commercial) submission, QR is prepared to discuss accommodation services capabilities with private providers during the detailed planning and design phases.

Section 5.4.1 Vegetation clearing and habitat connectivity

QR has made a general commitment to minimise the area of vegetation required to be cleared by the project (section 21.2 of the EIS).

QR has committed to DERM to seek relevant approvals should any protected flora species be found to be affected by the project during detailed design.

QR has committed to provide DERM with sufficiently detailed information and spatial property plans, before the detailed design phase, in order to comply with the relevant statutory and policy requirements, including the relevant regional vegetation management codes, and any requirements for vegetation offsets that apply to vegetation clearing.

QR will identify vegetation offsets once the project footprint has been confirmed.

Section 5.4.2 Watercourses and wetlands

During the detailed design and construction phases QR may investigate the opportunity to upgrade the existing infrastructure to improve the current restrictions of overland flow north of the NCL. In response to a landholder submission, QR has committed to drainage structures to maintain stream water and overland flow onto the 'Fairview' property.


Section 5.4.3 Fauna

In its response to the EPA, QR has committed to investigate and adopt during detailed design measures to avoid, minimise and/or offset impacts on ecologically sensitive areas, wildlife habitats and species.

QR has committed to mitigation measures, such as fencing of the rail corridor, to minimise adverse impacts on wildlife and livestock; and to liaise with the Department of Employment, Economic Development and Innovation (DEEDI, ex- DPI&F), during detailed planning and design, in relation to the construction of any waterway barriers and watercourse crossings.

Section 5.4.4 Weeds and pests

During the detailed design and construction phases QR may investigate the opportunity to upgrade the existing infrastructure to improve the current restrictions of overland flow north of the NCL. In response to a landholder submission, QR has committed to drainage structures to maintain stream water and overland flow onto the 'Fairview' property.



QR is committed to the development of a site specific weed management sub-plan for implementation during construction and operational phases of the project. This detailed sub-plan is to be prepared in consultation relevant state and local government agencies, in accordance with statutory requirements, and is to be implemented during the construction and operational phases of the project.

Section 5.5.1 Soils and geology – general

QR has committed to detailed geotechnical investigation and to minimise the volume and movement of earthworks during the detailed design phase.

Section 5.5.2 Salinity

In its supplementary information to the EIS, QR has committed—to the satisfaction of DIP and NRW—to a set of mitigation measures to be applied during the design, construction and operation of the project to minimise the potential impacts relating to salinity.

Section 5.6 Noise, vibration, dust, lighting and visual amenity

The noise management strategies in the EIS EMP will form the basis for the EMP (planning), EMP (construction) and EMP (operations) that QR is obliged to prepare under its Environmental Planning Processes Manual (2007), which is required to meet its environmental obligations to QT.

In addition, QR has committed to a public complaint management system, to be implemented during the construction phase, to deal with noise issues and other community feedback.

In its response to the Gladstone Regional Council and several private submitters, QR has committed to improving coal dust management by implementing the mitigation measures identified in the 'Environmental Evaluation into Coal Loss' (EECL) Study and QR's Coal Loss Management Project (CLMP).

Furthermore, in its response to the Gladstone Regional Council submission to the EIS, QR has committed to consult with GRC prior to implementing design, construction and operational phases, to ensure the acceptability of measures to ensure the amenity of the communities of Yarwun and Mount Larcom.

Section 5.7 Waste, wastewater and stormwater

QR has committed to constructing an industrial wastewater treatment plant to service the Aldoga Rail Yard during operation. The location and design of the facility will be finalised during detailed design along with the necessary licence conditions.

In its supplementary information to the EIS, QR has committed—to the satisfaction of DIP and NRW—to include further details on the treatment and reuse of wastewater and recycled water in detailed design, and to address any requirements of the *Water Supply (Safety and Reliability) Act 2008* in relevant environmental management plans.

QR has committed to a waste management sub-plan of the environmental management plan, to be based on a hierarchical waste system, and to be submitted to the DERM and DTMR for review prior to construction and operation. This will include stormwater management systems including an industrial waste water treatment plant at the Aldoga Rail Yard.

QR has also committed to mitigation measures to address potential impacts on downstream receiving environments including Port Curtis and the potential Castle Hope Dam inundation area.

Section 5.8 Groundwater

In its supplementary information to the EIS, QR has committed—to the satisfaction of DIP and NRW—to further examine groundwater use requirements for construction and operational water supply, within the context of an overall water supply strategy for the project. Hydraulic testing of the aquifers is to be undertaken, as part of the detailed geotechnical drilling program, to target suitable locations for bores and establish a sustainable yield.

DERM will be consulted to ascertain the most suitable locations for groundwater wells, yields and ongoing monitoring and management measures.

Section 6.4 Environmentally relevant activities

QR is committed to complying with relevant legislative requirements as part of the detailed design of the project and will provide information of sufficient detail to accompany any applications to the DERM for the environmental authority for construction and operational environmentally relevant activities required for the project.

Section 7. Environmental management plan

QR has committed that the EMP for the project will be reviewed by DERM (e.g. for management of soils, vegetation, weeds and water supply etc.), and approved by the DERM and DTMR, prior to finalisation (of the EMPs) and the commencement of construction. Environmental issues will also be addressed as part of the statutory approvals and legislative requirements for the project.

In response to the (then) Department of Main Roads submission to the EIS, QR has confirmed the following commitments:

- develop supporting documentation for necessary approvals (in a state-controlled road under the *Transport Infrastructure Act 1994*) including detailed design drawings and construction traffic management plan, during the detailed design phase
- provide DTMR with detailed drawings and traffic management plans prior to construction
- prepare and negotiate agreements with DTMR and Gladstone Regional Council on road maintenance and rehabilitation as a result of construction.

In response to the (then) Department of Emergency Services submission to the EIS, QR has confirmed the following commitments:

- making arrangements for the detour of emergency response vehicles to a standard acceptable to the Department of Community Safety (ex- DES) (i.e. that such temporary roads and lay-bys are acceptable hard stands and can support a weight of at least 12 tonnes)
- advise the Department of Community Safety of any temporary access arrangements with designated emergency access to sites and any required alternative access provisions
- ensure access to water supply by both urban and rural fire brigades
- liaise with Queensland Fire and Rescue Service regarding any required for protection for the site, including fire hydrant coverage for any proposed buildings or structures in excess of 500 square metres, should the Aldoga Rail Yard be identified as a 'dangerous goods' location.



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