Terms of Reference for an Environmental Impact Statement

Landsborough to Nambour Rail Project

Under Part 4 of the Queensland
State Development and Public Works Organisation Act 1971

The Coordinator-General
October 2008

Queensland the Smart State

Queensland Government
Department of Infrastructure and Planning

TERMS OF REFERENCE

Preamble

Project background

The *South East Queensland (SEQ) Regional Plan 2005-2026* provides a sustainable growth management strategy for the region. It identifies the development of integrated transport systems, with rail playing a key role in achieving this strategic outcome. In light of the sustained growth in the region, and in particular on the Sunshine Coast, it is prudent and necessary to identify and preserve suitable corridors for future rail transport needs. The section of the NCL between Landsborough and Nambour has been identified in the SEQ Infrastructure Plan and Program 2008-2026 (SEQIPP08) as one part of a four part upgrade to the Sunshine Coast rail network, planned for completion by 2026.

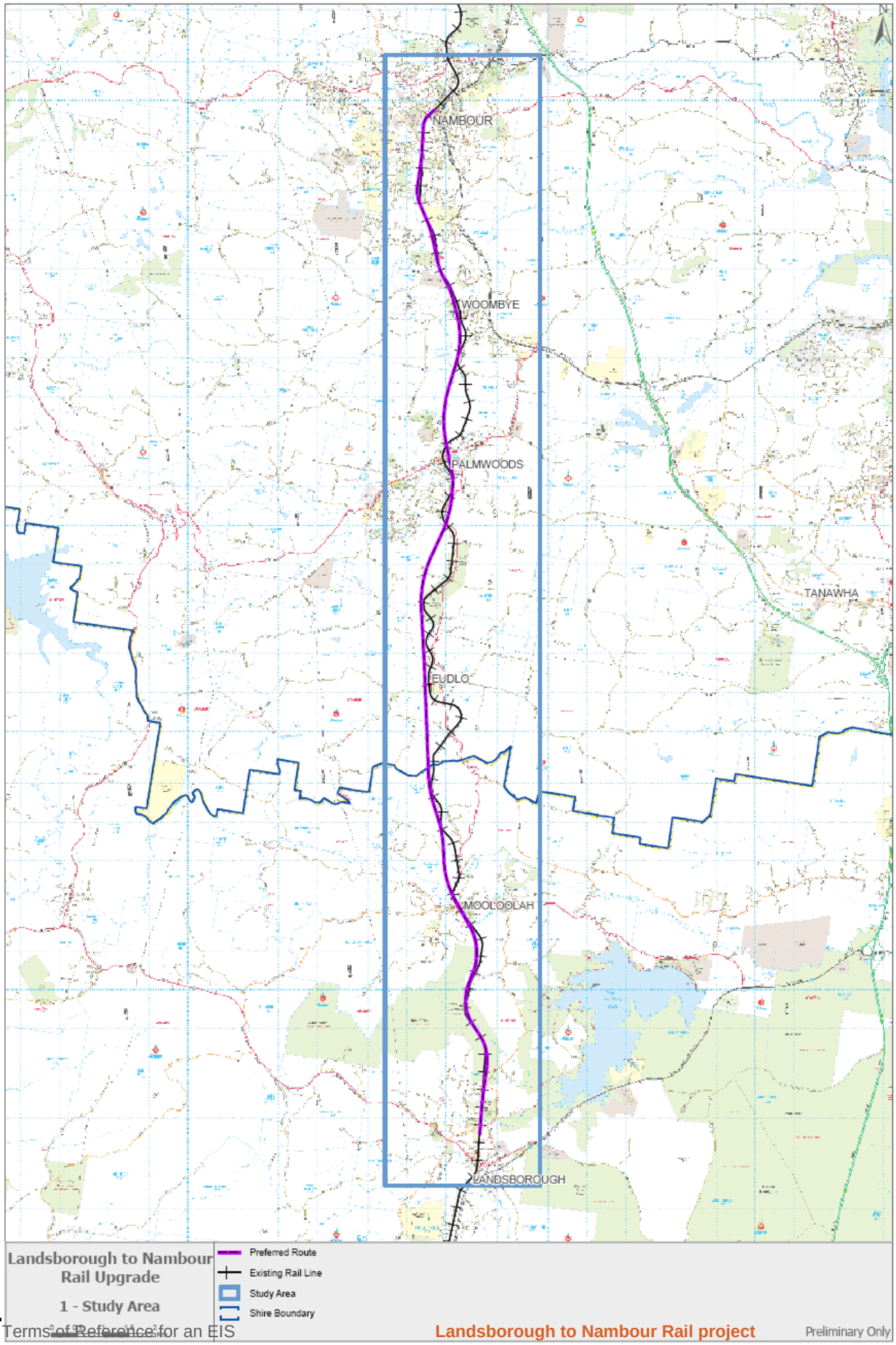
The main NCL, extending from Brisbane to Cairns, is unique in Queensland because of the particular mix of traffic it carries and the wide variation in operating characteristics of the rolling stock involved. It serves the needs of commuting trips, longer distance recreational and tourist trips, and industry.

Growth in the Sunshine Coast population is expected to increase the demand for passenger and tourism rail travel. Increases in demand for rail freight are also likely as a result of growth in container movements through the Port of Brisbane. These factors will challenge the capacity of the existing Sunshine Coast rail infrastructure to support an acceptable level of rail service in the future. Presently, the ability to provide additional services on the NCL south of Nambour is limited by long sections of winding single track, restricted speed operations and congestion due to competing passenger and freight demands. Furthermore, continuing urban growth will compromise future corridor options for rail infrastructure.

The Project

The Project proposal involves the upgrade of the existing NCL between Landsborough and Nambour, which currently supports a range of freight and passenger services, which include interurban Citytrain and long distance Traveltrain services. The upgrade would initially involve the construction of a minimum double track railway to a minimum 80 km/hr, desirable 160 km/hr alignment design standard, with provision within the corridor for an ultimate four track configuration, together with access roads for maintenance and emergency services. A map showing the existing railway and the study area of the preferred alignment of the new railway from Landsborough to Nambour is shown in Figure 1.

QT has prepared an Initial Advice Statement (IAS), which provides further detail relating to the Project, which can be viewed at http://www.dip.qld.gov.au/eis.


NAMBOUR
WOOMBYE
PALMWOODS
TANAWHA
EUDLO
MOOLOOLAH
LANDSBOROUGH
N
Landsborough to Nambour Rail Upgrade
1 - Study Area
Preferred Route
Existing Rail Line
Study Area
Shire Boundary
Landsborough to Nambour Rail project
Preliminary Only

The Proponent

The Proponent for this proposal is Queensland Transport (QT). QT is the lead agency responsible for developing and managing the land, air and sea transport environments in Queensland. QT has three primary roles: setting the future direction and development of the transport system in Queensland; planning and managing a transport system that is sustainable, safe, efficient, and equitable; and delivering and operating consistent, integrated and efficient services and infrastructure, to an agreed standard.

In addition to major initiatives for providing new facilities and services, QT is also pursuing initiatives to encourage more use of sustainable transport which is safe, secure, efficient, inclusive, and ecologically sustainable.

Queensland Rail (QR) is proposed to be the constructing authority and rail manager for the re-alignment and upgrading of the section of the North Coast Line (NCL) between Landsborough and Nambour. QR operates passenger rail services under contract to QT, and commercial freight services. QR has in place a comprehensive management system and operations covering the design, construction, operation and maintenance of railways on its network.

The contact details for the Proponent are:

Project Manager: Landsborough to Nambour Rail Project
Integrated Transport Planning
Queensland Transport
GPO Box 213
Brisbane QLD 4001
Tel 1800 221 991
Email railstudy@landsborough-nambour.com.au

Administrative procedures for these Terms of Reference

On 3 July 2007, the Project was declared to be a 'significant project' by the Queensland Coordinator-General (CG) pursuant to Section 26(1)(a) of the *State Development and Public Works Organisation Act 1971* (SDPWO Act), which requires QT to prepare an Environmental Impact Statement (EIS).

On 10 June 2008, the Delegate of the Australian Government Minister for the Environment, Water, Heritage and the Arts determined that the Project is not a 'controlled action' under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) , and as such, does not require assessment and approval by the Minister for the Environment, Heritage and the Arts before it can proceed.

This decision relates only to the potential for significant impact on the specific matters protected by the Australian Government under Chapter 4 of the EPBC Act, and that further assessment and approval to address potential impacts on state, regional and local environmental values will be required.

The Department of Infrastructure and Planning (DIP) is managing the EIS process on behalf of the CG. DIP has invited relevant Australian, Queensland and local government representatives and other relevant authorities to act as advisory agencies for the EIS process.

The first step in the impact assessment process is developing Terms of Reference (ToR) for an EIS for the Project, as required under the SDPWO Act. The draft ToR were made available for public and advisory agency comment on Saturday 5 July 2008, inviting comments by 4 August 2008. A total of 34 submissions on the draft ToR were received, including 14 from advisory agencies and 20 from members of the public and organisations.

In finalising the ToR, the CG has considered all properly made submissions and other submissions and information. The ToR has been presented to the Proponent, who will prepare an EIS to address the ToR. Once the EIS has been prepared to the satisfaction of the CG, a public notice will be advertised in relevant newspapers circulating in the district and region. The notice will state: where copies of the EIS can be viewed or purchased; the submission period; and where submissions should be sent. The Proponent may also be required to prepare a Supplementary Report to the EIS to address specific matters raised during the EIS submission period.

At the completion of the EIS phase, the CG will prepare a report evaluating the EIS and other relevant material, pursuant to s.35 of SDPWO Act.

The CG Report will include an assessment and conclusion about the environmental effects of the Project and any associated mitigation measures. Material that will be assessed includes: the EIS; properly made submissions and other submissions accepted by the CG; and any other material the CG thinks relevant to the Project such as a Supplementary Report to the EIS, comments and advice from advisory agencies and other entities, technical reports and legal advice.

The CG's evaluation report will be provided to the Proponent, the Queensland Minister for Transport, the Queensland Minister for the Environment, and the relevant Assessment Manager(s) for any approval(s) required for the Project under the Integrated Planning Act 1997 (IPA).

Development associated with the upgrade of the NCL will be undertaken consistent with the provisions of the IPA, on land owned or acquired for the Project by QT under the Transport Infrastructure Act 1994 and the Transport Planning and Coordination Act 1994. Additionally, there are also likely to be a limited number of IPA approvals required from the Sunshine Coast Regional Council and other state agencies pursuant to their roles as Assessment Managers.

The results of the consultation on the ToR have been incorporated into the final ToR for the Project. These ToR provide information in two broad categories:

- Part A: Information and advice on the preparation of the EIS
- Part B: Specific requirements – Contents of the EIS.

Further Information

Contact DIP's Project Manager for the EIS process:

Project Manager: Landsborough to Nambour Rail Project
Significant Projects Coordination
Department of **Infrastructure and Planning**
PO Box 15009 City East Queensland 4002
Tel +61 7 3234 0540
Fax +61 7 3225 8282
Email LNRail@dip.qld.gov.au

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ABBREVIATIONS

The following abbreviations have been used in this document:

ACH Act	*Aboriginal Cultural Heritage Act 2003* (Qld)
AHD	Australian Height Datum
ALCAM	Australian Level Crossing Assessment Model
ANZECC	Australian and New Zealand Environment and Conservation Council
ASS	Acid Sulphate Soils
CAMCOS	Caloundra to Maroochydore Corridor and Land Use Study
CG	The Coordinator-General of the State of Queensland
CHMP	Cultural Heritage Management Plan
CO_2	Carbon dioxide
DEWHA	Australian Government Department of the Environment, Water, Heritage and the Arts
DIP	Department of Infrastructure and Planning
DMR	Queensland Department of Main Roads
DNRW	Department of Natural Resources and Water
EIS	Environmental Impact Statement, as defined by Part 4 of the *State Development & Public Works Organisation Act 1971*
EMP	Environmental Management Plan
EP Act	*Environmental Protection Act 1994* (Qld)
EPA	Queensland Environmental Protection Agency
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (C'th)
EPP	Environmental Protection Policy
EPP (Air)	Environmental Protection (Air) Policy 1997
EPP (Noise)	Environmental Protection (Noise) Policy 1997
EPP (Water)	Environmental Protection (Water) Policy 1997
GHG	Greenhouse gas emissions
GQAL	Good Quality Agricultural Land in State Planning Policy 1/92: Development and the Conservation of Agricultural Land.
IAS	Initial Advice Statement, as defined by Part 4 of the *State Development & Public Works Organisation Act 1971*
IPA	*Integrated Planning Act 1997* (Qld)
LP Act	*Land Protection (Land and Stock Route Management) Act 2002*
MNES	Matters of National Environmental Significance
Mtpa	Million tonnes per annum

NAMCOS	Noosa and Maroochydore Corridor Options Study
NCA	*Nature Conservation Act 1992* (Qld)
NCL	North Coast Line
PM_{10}	micrometers
QT	Queensland Transport
QR	Queensland Rail
RoW	Right-of-Way
SDPWO Act	*State Development and Public Works Organisation Act 1971* (Qld)
SEQ	South East Queensland
SEQIPP08	SEQ Infrastructure Plan and Program 2008-2026
TAL	Tonnes axle loading
The Project	Landsborough to Nambour Rail Project
The Proponent	Queensland Transport
ToR	Terms of Reference as defined by Part 4 of the *State Development & Public Works Organisation Act 1971*
TIA	*Transport Infrastructure Act 1994*

PART A: INFORMATION AND ADVICE ON THE PREPARATION OF THE EIS

1. Introduction

These Terms of Reference (ToR) are for an Environmental Impact Statement (EIS) for the Landsborough to Nambour Rail Project ("the Project"). The ToR have been prepared in accordance with s.29 and s.30 of the SDPWO Act. The objective of the ToR is to identify those matters that should be addressed in the EIS for the Project that has been described in the Initial Advice Statement and which was declared to be a significant project by the Coordinator-General (CG) on 3 July 2007.

In order to clarify the nature and level of investigations that are envisaged in the ToR, the Proponent may contact relevant government agencies (known as advisory agencies), peak community interest organisations and relevant individuals and groups, as necessary. However, the CG reserves the final decision on interpretation of the requirements of the ToR.

Culturally sensitive information should not be disclosed in the EIS or any associated documents and the disclosure of any such information should only be in accordance with the arrangements negotiated with the traditional custodians. Confidential information to be taken into consideration in making a decision on the EIS should be marked as such and included as a separate attachment to the main report.

An executive summary should be provided in the EIS and be able to be provided separately for public information.

2. EIS objectives

The objective of the EIS is to ensure that all potential environmental, social and economic impacts of the Project are identified and assessed and, where possible, how adverse impacts would be avoided, mitigated or managed. Direct, indirect and cumulative impacts must be fully examined and addressed. The Project, including selection of the preferred rail alignment, should be based on sound environmental protection and management criteria.

The EIS should be a self-contained and comprehensive document containing sufficient information to make an informed decision on the potential impacts of the Project and the management measures employed to mitigate adverse impacts. The EIS document should provide information for the following persons and groups, as the Project "Stakeholders":

- affected persons: groups or persons with rights or interests in land, as defined under s.38 of the *Environmental Protection Act 1994* (Qld) (EP Act): an outline of the effects of the proposed Project on that land, including access arrangements
- interested persons: groups or persons identified by the Proponent, as defined under s.43(3)(b) of the EP Act: a basis for understanding the Project, prudent and feasible alternatives, affected environmental values, potential impacts that may occur and measures to mitigate potential adverse impacts
- advisory agencies: a framework for decision makers to assess the environmental aspects of the Project with respect to legislative and policy provisions and based on that

information to make an informed decision on whether the Project should proceed or not and if so, on what conditions, if any

- the Proponent: a mechanism by which the potential environmental impacts of the Project are identified and understood. Information to support the development of management measures including Environmental Management Plans (EMPs), to mitigate the adverse effects of residual environmental impacts of the development.

The Proponent is required to address these ToR to the satisfaction of the CG before the EIS is made publicly available. It should be noted that the CG does not evaluate the EIS until public notification is completed and the CG has obtained any other material the CG considers relevant to the Project, including additional information or comment about the EIS and the Project from the Proponent.

Completion of the EIS does not mean that the Project will necessarily be approved.

3. General EIS guidelines

The EIS is to provide stakeholders with sufficient information to understand the type and nature of the Project, the potential environmental, social and economic impacts, and the measures proposed by the Proponent to mitigate all perceived adverse impacts on the natural, built and social environment. It should be recognised that state and local governments, special interest groups and the general public will have an interest in the EIS.

All phases of the Project should be described in the EIS including design, pre-construction, construction, operation and decommissioning and final rehabilitation. Direct, indirect and cumulative impacts should be identified and assessed with respect to the environmental values of the project area and potential receiving environments.

Specifically, the EIS should provide the items listed below:

- an executive summary of the EIS
- an overview of the Proponent and its operations
- a description of the Project's objectives and rationale, as well as its relationship to strategic policies and plans
- a description of the entire Project, including associated infrastructure requirements
- a description of feasible alternatives capable of substantially meeting the Project's objectives
- an outline of the various approvals required for the Project to proceed
- descriptions of the existing environment, particularly where this is relevant to the assessment of impacts
- measures for avoiding, minimising, managing and monitoring residual impacts, including a statement of commitment to implement the measures
- rigorous assessment of the residual risks of environmental impacts arising from the Project and relevant alternatives on environmental, social and economic values, relative to the 'no project' scenario. The extent of baseline and predictive studies should be commensurate to risks. Assessments should address direct and indirect, combined, short- and long-term, beneficial and adverse impacts, as well as cumulative impacts in combination with other known relevant activities. An estimation of the reliability of predictions should also be provided
- any information derived from baseline and predictive studies, the required extent of which will be commensurate to risks

- a description of the Stakeholder consultation undertaken
- responses to issues raised during public and the Stakeholder consultation
- the main report needs to be supported by technical appendices containing relevant data, information or detailed analyses developed by the Proponent that is not included in the main report but upon which the conclusions in the main report are based. Large reports or volumes of data may alternatively be made available via electronic means. Abridged versions of such reports can be included as appendices but the original complete version must be otherwise available. Commercial-in-confidence information may be removed from such reports or the main report if approved by the CG. The CG may request a separate report on such information. The EIS will therefore consist of the main report together with appendices.

The main EIS document needs to be supported by appendices containing relevant data, technical reports and other sources of the EIS analysis. In preparing the EIS, the approach to be adopted requires that:

- predictions of environmental impacts are based on scientifically supported studies
- the EIS is to present all technical data, sources or authority and other information used to assess impacts
- the methods used to undertake any specialist studies are outlined, together with any relevant assumptions and professional or scientific judgments
- the scientific reliability of investigations and predictions is indicated, including the estimated degree of certainty or, if possible, statistical confidence wherever appropriate
- proposed measures to mitigate and manage identified issues are described and evaluated
- residual impacts that are not quantifiable are described qualitatively, in as much detail as reasonably practicable.

The assessment of all environmental impacts needs to encompass both potential impacts on, and uncertain risks to, the environment. The level of investigation of potential impacts or particular risks needs to be proportionate to both the severity of the potential consequences of possible events and the likelihood of those events occurring. Any prudent and feasible alternative approaches to management or mitigation should be discussed and treated in sufficient detail, and reasons for selection of the preferred option should be clearly identified.

Specific types of relevant impacts requiring investigation are set out in Part B. However, the EIS will need to address other issues or aspects that may emerge during the investigations and preparation of the EIS. It is the Proponent's responsibility to ensure that adequate studies are undertaken and reported.

The EIS should state the criteria adopted in assessing the proposed Project and its impacts, such as compliance with relevant legislation, policies, standards, community acceptance and maximisation of environmental benefits and minimisation of risks.

Where possible, information provided in the EIS should be clear, logical, objective and concise, so that non-technical persons may easily understand it. Where appropriate, text should be supported by maps and diagrams. Factual information contained in the document should be referenced wherever possible. Where applicable, aerial photography and/or digital information (e.g. of Project site, pipeline corridor etc.) should be presented.

The terms "detail" and "discuss" should be taken to include quantitative and/or qualitative matters as practicable and meaningful. Similarly, adverse and beneficial effects should be presented in quantitative and/or qualitative terms as appropriate.

4. Stakeholder consultation

The Proponent should undertake a comprehensive program of consultation with the Stakeholders identified in Part A, Section 2 EIS Objective (above).

The consultation program should provide the Stakeholders with the opportunity to obtain information about the Project being examined by this EIS, to raise issues and express their concerns and to receive feedback on how the Proponent intends to address the issues and mitigate all adverse impacts of the Project. Consultation with the advisory agencies should be the principal forum for identifying legislation, policies, regulations and guidelines relevant to the Project and the EIS process.

Appropriate communication processes, possibly including information bulletins and discussion papers, should be used to disseminate information about the Project to a wider audience and to inform the Stakeholders of the Proponent's progress in the EIS process, in particular on specific issues of recognised significance.

The Proponent is required to provide opportunities for the general public to obtain information about, and comment on, the Project through such forums as public information sessions.

5. General EIS format

The EIS should explain how the EIS responds to these ToR. The EIS documentation is to include appendices containing at least the following:

- a copy of the finalised ToR
- a list of persons and advisory agencies consulted during the EIS
- a list of advisory agencies with an appropriate contact
- the names of, and work done by, all personnel involved in the preparation of the EIS.

Maps, diagrams and other illustrative material should be included in the EIS to assist in the interpretation of the information. This material should be provided in a format compatible with ArcGIS.

The EIS should be produced on A4 size paper capable of being photocopied, with legible maps and diagrams on A4 or A3 size. The EIS document should not contain watermarks across the body of the text. The EIS should also be produced on CD-ROM/DVD.

Two separate CD-ROM/DVD copies should be provided:

1. CD-ROM/DVD copies resolution equivalent to the printed document for distribution to the Stakeholders
2. CD-ROM/DVD copies for placement on the internet: Copies should be in Adobe® PDF format with text size and graphics of sufficient resolution to facilitate reading and enable legible printing, but within a maximum file size of 1 MB. The executive summary should be supplied in HTML 3.2 format with *.jpg graphics files.

Different file sizes or compressions may be presented on the Proponent's web site. The final nature and number of EIS copies required to be submitted and made available, should be discussed and agreed with the CG in the early stages of the EIS process.

PART B: SPECIFIC REQUIREMENTS – CONTENTS OF THE EIS

The EIS should include the following sections but need not be limited to these sections or inferred structure.

Executive Summary

The function of the Executive Summary is to convey the most important aspects and options relating to the Project to the reader in a concise and readable form. It should use plain English and avoid the use of jargon and esoteric terms. The Executive Summary should be written as a stand-alone document, able to be reproduced on request and distributed to interested parties who may not wish to read or purchase the EIS as a whole.

The structure of the Executive Summary should generally follow that of the EIS, and focus on the key issues to enable the reader to obtain a clear understanding of the Project, its potential adverse and beneficial environmental, social and economic impacts and the management measures to be implemented by the Proponent to mitigate all residual impacts.

The Executive Summary should include:

- the title of the Project
- name and contact details of the Proponent, and a discussion of previous projects undertaken by the Proponent, if applicable, and their commitment to effective environmental management
- a concise statement of the aims and objectives of the Project
- the legal framework, decision-making authorities and Advisory Agencies
- an outline of the background and need for the Project, including the consequences of not proceeding with the Project
- an outline of the alternative options considered and reasons for the selection of the proposed development option
- a brief description of the Project (pre-construction, construction and operational activities) and the existing environment, utilising visual aids where appropriate
- an outline of the principal environmental impacts predicted (including economic and social impacts) and the proposed environmental management strategies (including waste minimisation and management) and commitments to minimise the significance of these impacts
- community attitudes to the Project and community consultation undertaken
- detailed maps of the proposed Project location and any other critical figures should also be included.

Glossary of terms

A glossary of technical terms, acronyms and references should be provided.

1. INTRODUCTION

The introduction should clearly explain the background and purpose of the EIS, to whom it is directed and contain an overview of the structure of the document.

1.1 Project Proponent

This section should name the Project Proponent and describe their experience including the nature and extent of business activities, experience and qualifications, and environmental record.

1.2 Project description

This section should provide a brief description of the key elements of the Project including associated infrastructure requirements with specific locations illustrated on maps. Detailed descriptions of the Project should follow in Section 2 Description of the Project.

1.3 Need for the Project

The EIS should describe the justification for the Project in a regional, state and national context. This section should also describe:

- the rationale and justification for the Project in relation to any relevant policy or regulatory framework
- expected local, regional, state or national benefits
- the Project's technical feasibility and commercial viability
- the Project's compatibility with any relevant Queensland Government policy
- the Project's potential to provide additional capacity to the existing rail network.

1.4 Relationship to other projects

This section should describe how the Project relates to any other actions, of which QT should reasonably be aware, that are being, or might be taken, or that have been approved in the area affected by the Project. In particular, mention should be made of other relevant rail upgrades, the nature of the planned population growth on the Sunshine Coast and the forecast growth in passenger and freight services.

Opportunities may exist for efficiency gains and the mitigation of environmental and property impacts through the location of other proposed linear infrastructure in, near or parallel to the rail corridor (such as, water and gas pipelines and electricity transmission and distribution).

This section should also identify any proposals to develop infrastructure within the vicinity of the railway investigation corridor. Such proposals would be limited to those projects which are in the public arena during the period of preparation of this EIS and for which a proponent entity can be readily identified.

1.5 Socio-economic cost and benefits of the Project

This section should summarise:

- the economic costs and benefits to other industries and the wider community arising from the Project
- regional social impacts including employment, skills development and any workforce accommodation issues arising from the Project.

1.6 Alternatives to the Project

This section should describe feasible alternatives to the Project, including the option of taking no action. Alternatives should be discussed in relation to each identifiable major demand (industrial, agricultural, urban) and in sufficient detail to enable an understanding of reasons for preferring certain options and courses of action and rejecting others. Reasons for selecting preferred options should be delineated in terms of technical, commercial, social and/or natural environment aspects as appropriate to the decision making process.

Compliance with government policy should be included in this discussion. Reasons for selecting the preferred route should be defined in terms of technical, commercial, social and natural environment aspects.

Alternative engineering and project design solutions should be discussed for each major component of the Project.

1.7 The environmental impact assessment process

1.7.1 Methodology of the EIS

This section should outline the stages of the EIS process, including information on the relevant stages of the approvals process; Commonwealth referrals; statutory and public consultation requirements; any associated licence or permit application processes; and any interdependencies that exist between approvals. (Details of specific approvals will be presented under Section 1.9.)

This section should make clear the objectives of the EIS process under the *State Development and Public Works Organisation Act 1971* (SDPWO Act), and development under the *Transport Infrastructure Act 1994* (TIA) and approval under the *Integrated Planning Act 1997* (IPA) and *Environmental Protection Act 1994* (EP Act).

This section should include a description of the impact assessment process, in terms of timing and decision making, to be accomplished for various stages of the Project.

In particular, this section should outline mechanisms in the process for stakeholder input and feedback, as described in section 1.5.3. It should be noted that it is necessary for the Proponent to undertake wide consultation as part of the impact assessment process. The information in this section is required to ensure:

- stakeholders are informed of the EIS process to be followed

- stakeholders understand the relationships between the EIS and other associated approvals
- stakeholders are aware of any opportunities for input and participation
- relevant legislation is addressed.

1.7.2 Objectives of the EIS

This section should provide a statement of the objectives of the environmental impact assessment process. The structure of the EIS can then be outlined as an explanation of how the EIS will meet its objectives. The purpose of the EIS is to:

- provide public information on the need for the Project, alternatives to it and options for its implementation
- present the likely effects of the Project on the natural, social and economic environment
- set out acceptable standards and levels of impacts (both beneficial and adverse) on environmental values

Demonstrate how environmental impacts can be managed or mitigated.

The relationship of other Project environmental management planning documentation, conditions, approvals and environmental authorities should be discussed in relation to the EIS.

The role of the EIS in providing information for the formulation of the EMP for the Project should be discussed.

1.7.3 Submissions

The reader should be informed as to how and when public submissions on the EIS will be addressed and taken into account in the decision-making process. The EIS should inform the reader as on how to make submissions and what form the submissions should take. The EIS should also indicate any implications for submissions in the event of any appeal processes.

1.8 Public consultation process

An appropriate public consultation program is an important component of the EIS process. The public consultation program should provide opportunities for community involvement and education. It may include interviews with individuals, public communication activities, interest group meetings, production of regular summary information and updates, and other consultation mechanisms to encourage and facilitate active public consultation.

The public consultation process should identify broad issues of concern to local and regional communities and interest groups and address issues from Project planning through commissioning and Project operations.

A consultation plan should be prepared during the initial phase of the EIS process. This should identify:

- the types of activities to be undertaken
- timing
- target the Stakeholder/community representatives
- integration with other EIS activities and the Project development process

- consultation responsibilities
- communication protocols
- reporting and feedback arrangements.

This section should outline the methodology adopted to:

- identify stakeholders and how their involvement was facilitated
- identify the process conducted to date and future consultation strategies and programs, including during the operational phase of the Project
- indicate how consultation involvement and outcomes were integrated into the EIS process and future site activities, including opportunities for engagement and provision for feedback and action if necessary.

Detailed results of the consultation process should be provided as a Consultation Report and presented as an Appendix to the EIS. A summary of the key processes and outcomes should be provided in this section.

1.9 Project approvals

1.9.1 Relevant legislation

This section should identify the principal development approvals for the project, and specify the legislation and policies controlling the approvals process. Reference should be made to the EP Act, SDPWO Act, IPA, TIA and other relevant Queensland laws.

A description of the Environmentally Relevant Activities, as defined under the EP Act and subordinate legislation, necessary for each aspect of the Project should be given. The EIS should clearly identify all activities either directly or indirectly associated with the Project that will require development approval under IPA, or under other legislation. Requirements of the *Native Title Act 1993* should also be covered.

This section should identify all relevant state, regional and local planning polices and plans and discuss how the Project complies with these policies and plans.

1.9.2 Planning process and standards

This section should outline the Project's consistency with existing land uses or long-term policy framework for the rail corridor route, and in particular in relation to the "SEQ Regional Plan", and with legislation, standards, codes or guidelines available to monitor and control operations on site. It should refer to all relevant planning policies, including Nation Action Plans and Agreements relating to climate change (see section 3.1). This information is required to demonstrate how the Project conforms to national, state, regional and local policies for the area.

2. DESCRIPTION OF THE PROJECT

This section should describe the Project and its components, including how it would be constructed, operated and decommissioned (including rehabilitation). Details should include:

- design parameters for aspects of the Project that may impact upon any endangered and threatened species
- a program covering activities relating to design, construction, commissioning and first operating activities
- an outline of any major transport routes impacted on by the supply of construction materials, equipment and personnel involved in the construction process
- an outline of sources of quarry material for construction and the necessity to establish new quarries or expand the operations of existing quarries to supply this material.

2.1. Overview of Project

The EIS should provide an overview of the Project to put it into context. This section should include:

- a description of the key components of the Project through the use of text and design plans where applicable. The key components are
  - rail infrastructure, including new stations, control systems etc
  - other infrastructure impacted by the works (including roads, power, telecommunication or other services)
- the expected cost and overall duration and timing of the Project
- a summary of any environmental design features of the Project.

2.2. Location

This section should include a detailed description of the proposed sites associated with the Project, including plans of the areas in relation to the surrounding features and land uses. Mapping should include details of:

- the location of the facilities in a regional and local context
- land tenures
- present land uses and planning scheme zonings
- surrounding industries and other land uses
- any features of environmental significance
- any proposed buffer zones
- the locations and layouts of new structures.

The EIS should provide details on adjacent areas that could be affected by the Project and existing infrastructure facilities available on, and adjacent to, the various sites/locations.

2.3. Design

The process and criteria used for the selection of the preferred design and preferred construction techniques should be described separately for each component of the Project:

- rail infrastructure
- other infrastructure, which may include roads.

The following should be described for the Project:

2.3.1 Energy and telecommunications requirements

Electricity supply requirements for the construction and operation of the Project should be provided and locations of any associated easements should be shown on an infrastructure plan. Timeframes should be provided for the anticipated dates for the commencement of construction of supply facilities, testing and possible final commissioning. This section of the EIS should include details on energy demand and annual consumption.

The EIS should provide details of telecommunication requirements, sources and methods, describe any impacts on existing telecommunications infrastructure (such as optical cables, microwave towers, etc.) and identify the owners of any existing infrastructure.

2.3.2 Water supply and management

The EIS should provide information on water usage by the Project. In particular, information should be provided on the demand for raw and treated water for the various processes and the proposed and optional sources of water (e.g. bores, any surface storage such as dams and weirs, municipal water supply pipelines) for construction and operation for all aspects of the Project.

In relation to water supply, usage and wastewater disposal, the EIS should assess:

- anticipated flows of water to and from the Project areas
- the effects of predictable climatic extremes (droughts, floods) upon the structural integrity of containment walls where dams, weirs or ponds are proposed
- quality of water contained in dams
- the need or otherwise for licensing any dams (including referable dams), under the *Water Act 2000*.

Details on the estimated rates of supply from each source (average and maximum rates) should be included. Details on daily, seasonal and/or peak operational requirements should include:

- quality of water required, including strategies to prevent contamination
- quantity of water required including
- maximum hourly and daily demand
- mean daily demand
- total annual consumption
- any additional water supply infrastructure
- requirements for fire-fighting or other emergency services.

A determination of potable water demand and supply requirements for each phase of the Project should be made, including existing town water supply to meet such requirements. Any on-site water storage and treatment proposals for use by the workforce should be described. An assessment of the capability of the water network to provide the necessary demand should include:

- current and projected raw and treated water consumption and storage
- contingency plans for planned and non-planned supply failures
- projected dates for increased raw and treated water supplies.

The EIS should describe the amount and nature of sewage and stormwater generated for onsite or offsite treatment and disposal, and the facilities proposed to accommodate these streams. Site layout plans should be provided, which incorporate requirements and conceptual plans for sewage and stormwater management facilities, including descriptions of any discharge requirements for both the construction and operational stages. This should include descriptions of any discharge requirements for both the construction and operational stages.

2.3.3 Other infrastructure

All other infrastructure required for the construction and/or operation of the Project, such as access roads, power supply, connection to sewerage or water supply or roads that require relocation must be described including the design and construction standards to be met.

2.4 Construction

The following information should be provided on the extent and nature on the construction and operational elements of the Project (e.g. road infrastructure as well as rail infrastructure elements) and be supported by detailed plans where appropriate.

- a description of the pre-construction activities proposed, including:
  - land acquisition process
  - vegetation clearing
  - provision of site access, power, telecommunications, water supply and other infrastructure
  - site establishment requirements for construction facilities.
- an indicative construction timetable, including expected commissioning and start-up dates and hours of operation
- major work programs for the construction phase
- process inputs, handling and storage including an outline of procedures for loading and unloading materials and contingency plans for spillages
- hazardous materials to be transported, stored and/or used on-site, including environmental toxicity data and biodegradability
- clean up and restoration of areas used during construction, including camp site(s) and storage areas
- the arrangements and facilities for supply of permanent way ballast for the construction of the rail facilities, including the location of ballast storage and handling works, and transport logistics for this material, both during construction and operation.

2.4.1 Workforce and accommodation

The EIS should provide information on the number of personnel to be employed, the skills base of the required workforce and the likely sources (i.e. local, regional or other) for the workforce during the construction and operational phases for each aspect of the Project. The estimated number of people to be employed during construction and arrangements for their transport to and from the Project areas should be provided.

Estimates should be provided according to occupational groupings and variations in the workforce numbers over the duration of the Project (e.g. histogram). The information should show anticipated peaks in worker numbers during the construction period.

An outline of policies for recruitment of workers (addressing recruitment of local and non-local workers) should be included. An accommodation strategy for the construction workforce should be included, which addresses the estimated housing needs of both single and accompanied construction workers. This should include details of the size, location and management of any temporary worker accommodation that will be required either on-site or off-site. Maps should be included as necessary to illustrate the site and should include the location of any proposed construction workers' accommodation on-site or in the vicinity of the Project.

If camp sites are to be used to accommodate the workforce, details on the number, location (shown on a map), proximity to the construction site and typical facilities for these sites should be provided. Information should include data relating to facilities for:

- food preparation and storage
- ablution (washing) facilities
- disease vector and vermin control
- fire safety
- dust and noise control in relation to proximity of camp site to the construction area
- the service personnel required to maintain the camp and the supply of services to each construction camp.

Local government approvals required for establishment and operation of such camps should be outlined.

2.4.2 Commissioning

This section should describe the likely activities involved in commissioning of the expanded rail alignment and any related potential environmental impact.

2.5 Operation

This section should describe the operation and maintenance requirements for all elements of the Project including:

- impact on surrounding area as a result of operation and maintenance activities
- safety plans in event of an emergency, in line with QR standards and procedures.

2.6 Decommissioning

It is understood that the proposed railway is anticipated to have a very long operational life spaning many decades. Consequently, there is less expectation of detailed decommissioning strategies for the new alignment in the EIS for this Project than for other types of projects. Nonetheless, this section should present the general strategies and methods for final closure, decommissioning, and rehabilitation of all Project elements, should that ever be required.

Detailed decommissioning strategies are however required with regard to any of the existing railway alignment that is not proposed to be utilised as part of the upgraded alignment. Removal of plant, equipment, structures and buildings should be described and the methods proposed for the stabilisation of the affected areas should be given. Information should be provided on how buildings and structures would be removed or made safe.

The EIS should outline the development and implementation of rehabilitation success criteria for decommissioning of the railway at the end of operational life.

3 ENVIRONMENTAL, SOCIAL AND ECONOMIC VALUES AND MANAGEMENT OF IMPACTS

This section of the EIS should:

- describe the existing environmental values of the areas which may be affected by the Project. Environmental values should be described by reference to background information and corresponding studies
- describe the potential adverse and beneficial impacts of the Project on the identified environmental values, including analysis of any cumulative impacts
- present environmental protection objectives, standards and indicators
- examine viable alternative strategies to manage or mitigate potentially adverse impacts. These alternatives should be presented and compared in view of the stated objectives and standards to be achieved. Available techniques, including best practice, to control and manage impacts to the nominated objectives should be discussed
- describe any likely residual environmental harm on the environmental values, why they cannot be avoided and discuss potential offsets.

The EIS should detail environmental protection measures which are to be incorporated in the planning, construction, operations, decommissioning and associated works for the Project. Measures proposed in the EIS should attempt to minimise environmental harm and maximise socio-economic and environmental benefits of the proposal.

In recognition of the Australian Government decision of 10 June 2008 that the Project does not constitute a 'controlled action' under the EPBC Act, the referral by the proponent outlines a number of strategies and measures to mitigate any potential impact on MNES. Any measures identified through the EIS should not be inconsistent with those identified in the Referral 2008/4151, and in turn, any new measures proposed should not diminish those identified and committed.

The following headings presented below should be adopted as the EIS structure. The environmental mitigation measures and monitoring programs identified in this section of the EIS should ultimately form the basis of the Environmental Management Plans for the Project.

3.1 Climate and natural disasters

This section should describe the rainfall patterns (including magnitude and seasonal variability of rainfall), air temperatures, humidity, wind (direction and speed) and any other special factors (e.g. temperature inversions) that may affect management of the Project. Historic weather patterns in the Project area and seasonal conditions (e.g. cyclones, thunderstorms, floods and storms) that may influence timing and/or construction methods should be discussed, including how this would be managed. The risk they pose to the timing of construction and operation activities of the Project should be assessed and approaches to management outlined. Extremes of climate (e.g. droughts, floods etc.) should be discussed with particular reference to water management at the Project site.

The vulnerability of the area to natural or induced hazards, such as bushfires and earthquakes should be addressed in recognition of the requirements of SPP 1/03. The relative frequency and magnitude of these events should be considered together with the risk

they pose to the construction and operation of the Project. Hazard and risk assessment and management should be provided in Section 3.12.

The implications of climate change on the Project's environmental and commercial feasibility should be assessed in detail. The most recent information on potential climate change impacts as applicable to the Project should be discussed. The information presented in this section will allow more detailed assessment of:

- implications for nature conservation under Section 3.3
- implications for water resource management under Section 3.4
- implications for the Project's economic environment under Section 3.13
- implications for hazard and risk management under Section 3.14.

Impacts of climate change risks and adaptation measures should include the following:

- analyse risks to the Project from climate change impacts (e.g. increased risk and severity of flood; increased vulnerability to more intense bushfires)
- identify adaptation measures to minimise risk to the Project from climate change impacts, particularly where there may be a significant impact to human safety or property.

Hazard and risk assessment and management should be provided in Section 3.14 Hazard and Risk.

3.2 Land

This section should detail the existing land use environment for all areas associated with the Project. Any new permanent or temporary facilities (e.g. accommodation camps) constructed for the Project should be captured in the discussion. This section should also describe the potential for the construction and operation of the Project to change existing and potential land uses of the Project site and surrounding areas.

3.2.1 Topography and geomorphology

Description of environmental values

Maps should be provided locating the Project elements and its environs in state, regional and local context. The topography should be detailed, with contours at suitable increments shown with respect to Australian Height Datum (AHD). Significant features of the landscape and any environmentally sensitive areas, or areas of a high conservation value, should be included on the maps and in the discussion. Commentary on the maps should be provided highlighting the significant topographical features.

Potential impacts and mitigation measures

Any measures taken to avoid or minimise impacts on major topographic features should be described, as are the objectives to be used for the Project in re-contouring and landscaping. Areas of steep slope and/or areas prone to stability issues affected by project works should also be described. The extent to which use is made of appropriate native plant species during any landscaping and re-vegetation should also be depicted.

3.2.2 Landscape character and visual amenity

Description of environmental values

This section should describe in general terms the existing character of the landscape and the general impression that would be obtained while travelling through and around it.

This section should describe existing landscape features, panoramas and views that have, or could be expected to have, value to the community. Information in the form of maps and photographs should be used, particularly where addressing the following issues:

- major views, view sheds, outlooks, and features contributing to the amenity of the area, including assessment from private residences
- focal points, landmarks, waterways and other features contributing to the visual quality of the area and the Project site(s)
- character of the local and surrounding areas including vegetation and land use.

Potential impacts and mitigation measures

Describe the potential beneficial and adverse impacts of the Project on landscape character and visual qualities of the site and the surrounding area. This is to be placed into context of the current views of the existing rail infrastructure along the NCL. Particular mention should be made of any changes to the broad-scale clearing and the realignment of roads.

Details should be provided of measures to be undertaken to mitigate or avoid the identified impacts.

3.2.3 Geology and soils

Description of environmental values

The EIS should provide a description, including maps, of the geology of the Project area, with particular reference to the physical and chemical properties of surface and sub-surface materials and geological structures within the proposed areas of disturbance. Geological properties that may influence ground stability (including seismic activity, geological faults and associated geological hazards), occupational health and safety, rehabilitation programs, or the quality of wastewater leaving any area disturbed by the proposal, should be presented and discussed.

Soils of the Project areas should be mapped at a suitable scale, with particular reference to the physical and chemical properties of the soils which would influence land contamination, erosion potential, stormwater run-off quality, rehabilitation and agricultural productivity of the land. Information should also be provided on soil stability and suitability for construction of all Project facilities.

Soils should be mapped and described in accordance with *Australian Soil and Land Survey Field Handbook* (Gunn *et al,* 1988 and McDonald *et al*, 1990). An appraisal of the depth and quality of soil/rock appropriate for use should be undertaken. Information, including borehole locations, should be presented in accordance with the standards required in the *Planning Guidelines: The Identification of Good Quality Agricultural Land* (DPI, DHLGP, 1993)(GQAL), which supports State Planning Policy 1/92: Development and the Conservation of Agricultural Land.

This section should discuss the potential for land contamination from existing and historical use, based on land use history and the nature and quantity of any contaminants.

A preliminary site investigation should be prepared, including a risk based search of the Environmental Protection Agency (EPA) Contaminated Land Register and Environmental Management Register.

Potential impacts and mitigation measures

This section of the EIS should provide information on potential impacts to the land resources and proposed mitigation and management methods to be used for the Project proposal. This section should provide information on:

- the availability and suitability of construction materials such as rock, sand and gravel
- the environmental consequences of the excavation and removal of soils from any borrow pits
- measures to ensure that construction or maintenance activities do not accelerate soil erosion in the Project area
- how timing of construction, with particular consideration to seasons, may impact on soils
- the management of existing contaminated land and potential for contamination from construction activities and/or operations
- details of erosion control measures and criteria used to assess methods that would minimise or alleviate sedimentation over various terrain types, including waterway beds, banks and adjacent areas
- methods of stockpiling and disposal of trench material from excavated streambed, bank, including adjacent areas
- adjustments to the Project area and/or rehabilitation measures to minimise impacts on GQAL
- the description of topsoil management, including transport, storage and replacement of topsoil to disturbed areas, and minimisation of topsoil storage times
- an assessment to identify the potential for heavy metals to be released from absorbed geological materials, including potential effects and mitigation methods to reduce any impact
- erosion and sediment control measures to ensure:
  - prevention of soil loss in order to maintain land capability/suitability
  - reduction of wind-generated dust concentrations
  - prevention of significant degradation of local waterways from suspended solids.

This section should also provide information on the potential risk for intercepting acid sulphate soils (ASS) and groundwater draw-down during the construction phase of the Project. In particular, this should assess all areas subject to excavation or filling below the level of 5 metres AHD, and for wetland areas where the natural hydrology (surface or groundwater) may be affected by the proposal such that oxidation of potential ASS may occur.

The preliminary report should have regard to State Planning Policy 2/02 and any consultations with the Department of Natural Resources and Water (DNRW). If there is potential for ASS to be disturbed, an ASS sampling plan should be prepared, underlining the methodology in accordance with the State Planning Policy 2/02, to be undertaken at the time of further geotechnical investigations.

The means of preventing land contamination (within the meaning of the EP Act) should be addressed and methods proposed for preventing, recording, containing and removing any contaminated land outlined. Intentions should be stated concerning the classification (in terms of the Queensland Contaminated Land Register) of any contamination on the land and storage areas after completion of the Project.

3.2.4 Land use and infrastructure

Description of environmental values

The EIS should identify the following, demonstrated with maps:

- land tenure, including reserves, tenure of special interest such as protected areas and forest reserves, mining and petroleum exploration tenures, mining leases, identification of existing and proposed gas, power lines and transport corridors (includes local roads, state-controlled roads, rail corridors, stock routes) and easements for any purpose
- land use and zoning (urban, residential, industrial, agricultural, mining, forestry, recreational, mining claims, mineral development licences and extractive industry permits, petroleum leases and pipeline licences
- areas covered by applications for Native Title claims or Native Title determinations, providing boundary descriptions of Native Title Representative Bodies. The Proponent should also identify in the EIS whether there are any necessary notifications required to the Representative Body(ies) or evidence that Native Title does not exist
- land of environmental value and concern including, contaminated sites, essential habitat for vulnerable and rare species, endangered regional ecosystems, referrable wetlands and statutory koala habitat
- information on any known occurrences of economic mineralisation and extractive resources within the Project area
- land listed on the contaminated land register or the environmental management register
- areas covered by applications for native title determination, with a description of Native Title Representative Bodies' boundaries
- location of gas and water pipelines, power lines, telecommunication cables, roads, railways, bridges, airports, airstrips, helipads and any other infrastructure
- the distance of the Project from residential and recreational facilities, or other potentially non-compatible land uses.

Potential impacts and mitigation measures

This section should include:

- assessment of the compatibility of the proposal with surrounding land uses
- description of possible impacts on surrounding land uses and human activities, including impacts to Good Quality Agricultural Land (GQAL), addressing loss of access to land, fragmentation of sites, increase of fire risk and loss of productive land for those purposes, as well as residential and industrial uses
- proposed measures to minimise impact on GQAL
- strategy and progress in relation to making of any required Native Title agreements
- proposed management of any nearby pipelines, electric power transmission lines especially where construction and maintenance machinery are likely to be used in the vicinity of other infrastructure corridors

- potential for other non-project activities to impact on the Project area (e.g. quarrying, trenching, excavation for construction, residential, industrial, water supply, transport and road construction)
- management of fences and gates to be crossed during construction and neighbouring site access proposals.

3.2.5 Land contamination

Description of environmental values

A review should be undertaken within the Project site and adjacent areas, which has been or is being used for a "Notifiable Activity" as listed in Schedule 2 of the EP Act, is potentially contaminated, or is on the Environmental Management Register or Contaminated Land Register. A preliminary site investigation (PSI) in accordance with the Environmental Protection Agency (EPA) "*Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland* (1998)" and "*The National Environmental Protection (Assessment of Site Contamination) Measures 1999*" should be prepared where evidence of existing or past contamination is encountered and where it may be impacted by the project. The results of the PSI should be summarised in the EIS and provided in detail in an appendix.

If the results of the PSI indicate potential or actual contamination (including any areas of potential unexploded ordinance), a schedule of investigation, remediation and validation and/or specific management strategies, must be developed in accordance with the EPA "*Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland (1998)*". This schedule is to be undertaken if the Project is approved and advanced to the construction phase.

The results of the site investigations, remediation and validation should be certified by a Third Party Reviewer before being submitted to the EPA.

In short, the following information should be provided as part of the EIS:

- mapping of any areas listed on the Environmental Management Register or Contaminated Land Register under the EP Act
- identification of any potentially contaminated sites not on the registers which may need remediation.

Potential impacts and mitigation measures

This section should provide details of any potential impacts from existing land contamination and proposed mitigation measures, including:

- a schedule of further investigations and remediation activities recommended for those land parcels where contamination may have an impact on construction or operation of the Project
- details of any risks to occupational or human health, as a result of any residual contamination levels, to any of the proposed uses of the rail line or other Project areas.

The means of preventing land contamination (within the meaning of the EP Act) should be addressed. Methods proposed for preventing, recording, containing and remediating any contaminated land should be outlined. Intentions should be stated concerning the classification (in terms of the Queensland Contaminated Land Register) of land contamination on the land after completion of construction of the Project.

3.3 Nature conservation

This section should detail the existing nature conservation values of the Project area. The flora and fauna communities should be described, particularly those that are rare or threatened, in environmentally sensitive localities, including watercourses, riparian zones and habitat corridors. The description should include species lists.

Reference should be made to both Queensland and Australian Government legislation and policies on threatened species and ecological communities. All surveys undertaken should be in accordance with best practice advice from the EPA and should include consideration of seasonality, potential for occurrence of significant species, rarity of species and the sensitivity of the species to disturbance.

This section should also discuss the likelihood of direct and indirect environmental harm on flora and fauna in both terrestrial and aquatic environments in sensitive areas.

Alternative routes for the railway line within the study area should be considered where areas of environmental significance are likely to be impacted.

The EIS should demonstrate how the Project elements, including all access routes and campsites, would comply with the following course of action:

1. avoid, or minimise and mitigate impacts on areas of remnant vegetation and other areas of conservation value
2. avoid, or minimise and mitigate impacts through rehabilitation and restoration
3. measures to be taken to replace or offset the loss of conservation values, where avoidance and mitigation or impacts cannot be achieved
4. justification of why measures 1 to 3 above would not apply in areas where loss would occur.

3.3.1 Sensitive environmental areas

Description of environmental values

The EIS should identify areas that are environmentally sensitive in proximity to the Project. Environmentally sensitive areas should also include areas classified as having national, state, regional or local biodiversity significance, or flagged as important for their integrated biodiversity values. Consideration should be given to nature refuges, national parks, conservation parks, forest reserves, referrable wetlands, endangered regional ecosystems, statutory koala habitat, declared fish habitat areas, wilderness areas, aquatic reserves, heritage/historic areas or items, world heritage listings and sites covered by international treaties or agreements (e.g. Ramsar, Japan-Australia Migratory Bird Agreement, China-Australia Migratory Bird Agreement), areas of cultural significance (see section 3.9) and scientific reserves.

The proximity of the Project to any environmentally sensitive areas and subsequent bioregional corridors and links between environmentally sensitive areas should be shown on a map of suitable scale. Areas which would be regarded as sensitive with regard to flora and fauna have one or more of the following features:

- important habitats of species listed under the *Nature Conservation Act 1992* and/or the EPBC Act as presumed extinct, endangered, vulnerable or rare
- regional ecosystems recognised by the EPA as ‘endangered’ or ‘of concern’ or ‘not of concern’ but where permits are no longer granted due to being at threshold levels, and/or

ecosystems listed as 'presumed extinct', 'endangered' or 'vulnerable' under the EPBC Act

- ecosystems which provide important ecological functions, such as riparian vegetation, important buffer to a protected area, refuge or important habitat corridor between areas
- protected areas which have been proclaimed under the *Nature Conservation Act 1992* or are under consideration for proclamation.

Potential impacts and mitigation measures

This section should discuss the following:

- the impact of the Project on species, communities and habitats of local, regional or national significance as identified above, including wet heathland, eucalypt and melaleuca woodland, and riparian vegetation
- proposals to mitigate impacts (e.g. timing of works, minimise width of disturbance, proposed rehabilitation of in-stream and floodplain disturbances)
- planned rehabilitation of wet heathland, eucalypt and melaleuca woodland, and riparian vegetation communities and any relevant previous experience/experiments rehabilitating these communities
- appropriate mitigation measures for remnant ecosystems, including remnant vegetation as defined under the vegetation management Act 1999 that may be affected by the Project, including reference to the "Regional Vegetation Management Code: SEQ Bioregion (DNRW 2006)", and the "Policy for Vegetation Management Offsets (DNRW 2007)".

3.3.2 Terrestrial flora

Description of environmental values

Terrestrial vegetation maps at a suitable scale should be provided for the Project area. Mapping should show and discuss:

- location and extent of vegetation types using the EPA's regional ecosystem type, descriptions and the EPA's website, (www.epa.gov.qld.au/environment/sciemce/wildlife/) listing the biodiversity status of regional ecosystems
- location of species listed as 'protected plants' under the *Nature Conservation Act 1992* (NCA) and subsequent regulations and amendments
- any plant communities of cultural, commercial or recreational significance
- areas of re-growth or restoration and remnant vegetation, as defined under the Vegetation Management Act 1999
- any 'threatened species or communities' under the EPBC Act.

Discussion of vegetation map units should include their relationship to regional ecosystems. Sensitive or important vegetation types should be highlighted discussing their value as habitat for fauna. The conservation of specific rare floral and faunal assemblages or community types should also be appraised.

The description should contain a review of published information regarding the assessment of the significance of the vegetation to conservation, recreation, scientific, education and historical interest. The assessment should also include the significance of native vegetation (including re-growth and restored areas in addition to remnant vegetation), from a local, regional, state and national perspective.

For each significant natural vegetation community likely to be impacted by the Project, vegetation surveys should be undertaken at a sufficient number of sites. The EIS should discuss the potential for seasonal changes in these vegetation communities. Surveys should be conducted as follows:

- all data requirements of the Queensland Herbarium "CORVEG" database should be collected
- a complete list of species present and observed at each site should be recorded
- the relative abundance of plant species present should be recorded
- any plant species of conservation, cultural, commercial or recreational significance should be identified
- vegetation mapping and data should be submitted to the Queensland Herbarium to assist the updating of the CORVEG database
- specimens of species listed as 'protected plants' under the NCA, other than common species, are to be submitted to the Queensland Herbarium for identification and entry into the Queensland Herbarium Records System database.

The location of any horticultural crops in the vicinity of the project area should be clearly defined on maps.

Existing information on plant species may be used instead of new survey work provided that the data is derived from surveys consistent with the above methodology. Methodology used for flora surveys should be specified in the appendices to the EIS. Any existing information should be revised and comments provided on whether the areas are degraded, cleared or affected in ways that would affect their environmental value.

The occurrence of pest plants (weeds), particularly declared plants under the *Land Protection (Land and Stock Route Management) Act 2002* (LP Act), should be shown on a map at an appropriate scale.

Potential impacts and mitigation measures

This section should include:

- a discussion on the ability of identified vegetation to withstand any increased pressure resulting from the Project and any measures proposed to mitigate potential impacts
- a description of the methods to ensure immediate rehabilitation of disturbed areas following construction, including the species chosen for revegetation which should be consistent with the surrounding associations
- a description of the offset measures required to conform with relevant legislative requirements
- details of any post construction monitoring programs and what benchmarks will be used
- a description of methods to minimise the potential for the introduction and/or spread of weeds or plant disease, including:
  - identification of the origin of construction materials, machinery and equipment
  - vehicle and machinery wash-down and any other hygiene protocols
  - staff or operator education program.
- a weed management plan presented in the EMP, to be developed in consultation with local government environmental officers, to cover construction, commissioning, rehabilitation and operation periods.

3.3.3 Terrestrial fauna

Description of environmental values

The terrestrial and riparian fauna occurring in the areas affected by the Project should be described, noting the broad distribution patterns in relation to vegetation, topography and substrate. The description of the fauna present or likely to be present in the areas should include:

- species diversity (i.e. a species list) and abundance of animals, including amphibians, birds, reptiles, mammals and bats
- habitat requirements and sensitivity to changes; including movement corridors and barriers to movement
- the existence of feral or exotic animals
- the existence of threatened and/or noteworthy fauna species under local, state and/or national legislation in the study areas
- observed migratory birds, nomadic birds, and terrestrial fauna.

The EIS should discuss the potential for seasonal changes in fauna distribution patterns. The EIS should indicate how well any affected fauna assemblages are represented and protected elsewhere in the sub-region where Project activities occur. Site data should be recorded in a format compatible with EPA Wildlife Online database.

Potential impacts and mitigation measures

This section of the EIS should include:

- impacts the proposal may have on terrestrial fauna, relevant wildlife habitat and other fauna conservation values
- impacts the proposal may have on threatened and/or significant species inhabiting the area and measures to reduce and/or mitigate impacts
- measures to minimise wildlife capture and mortality
- monitoring of terrestrial fauna health, productivity and biodiversity
- details of the methodology of survey work, such as trapping and bat surveys, proposed to determine significant species present in project area
- details of the methodology that would be used to assess and handle injuries that may be inflicted on livestock or native fauna as a result of construction or operational works for the Project
- methods of minimising the introduction of feral animals and other exotic fauna
- effects of construction activities and disposal of construction wastes on biting insect species or pests and the associated health significance, including measures to prevent increase in these species.

3.3.4 Aquatic biology

Description of environmental values

The aquatic flora and fauna occurring in the areas affected by the Project should be described, noting the patterns and distribution in the waterways. A description of the habitat requirements and the sensitivity of aquatic flora species to changes in flow regime, water levels and water quality in the Project areas should be provided. The discussion of the aquatic fauna and flora present or likely to be present in the Project area at any time during the year should include:

- fish species, mammals, reptiles, amphibians, and aquatic invertebrates occurring in the waterways within the Project area
- aquatic (waterway) macrophytes including native and exotic/weed species
- aquatic substrate and stream type, including extent of tidal influence and common levels such as Highest Astronomical Tide and Mean High Water Spring
- Wetlands listed by the EPA as areas of national, state or regional significance, and their values and importance.

Potential impacts and mitigation measures

This section should include:

- discussion of the potential impacts of the Project on the aquatic ecosystems and a description of the methods used to mitigate and rehabilitate impacts on these ecosystems
- potential for, and mitigation measures to prevent, the creation of new mosquito and biting midge breeding sites during construction (e.g. in quarries and borrow pits)
- proposed stream diversions, causeway construction and crossing facilities, stockpiled material and other impediments that would restrict free movement of fish
- measures to avoid fish spawning periods, such as seasonal construction of waterway crossings and measures to facilitate fish movements through water crossings
- details of alternatives to waterway crossings where possible (e.g. designs to span creeks to avoid the requirement of infrastructure within the creek bed or bank)
- offsets proposed for unavoidable, permanent loss of fisheries habitat within the Project footprint
- a description of methods to minimise the potential for the introduction and/or spread of weed species or plant disease
- monitoring of aquatic biology health, productivity and biodiversity in areas subject to direct discharge
- all permits/authorities required by the Project associated with activities in waterways (e.g. permits under the *Fisheries Act 1994* to construct temporary or permanent waterway barriers).

3.4 Water resources

Description of environmental values

The section of the EIS should provide a description of the existing water resource environment that may be affected by the Project in the context of environmental values as defined in such documents as the EP Act, Environmental Protection (Water) Policy 1997 (EPP (Water)), Australian and New Zealand Environment and Conservation Council (ANZECC) National Water Quality Management Strategy documents (e.g. ANZECC 2000 Guidelines for Fresh and Marine Water Quality) and the EPA Queensland Water Quality Guidelines 2006.

An indication of the quality and quantity of water resources in the vicinity of the Project area should be given. This section should describe:

- existing surface and groundwater in terms of physical, chemical and biological characteristics
- existing surface drainage patterns, flows, history of flooding including extent, levels and frequency and present water uses
- environmental values of the surface waterways of the affected area in terms of:
  - values identified in the EPP (Water)
  - physical integrity, fluvial processes and morphology of watercourses, including riparian zone vegetation and form
  - hydrology of waterways and groundwater.
- existing and other potential surface and groundwater users and holders of Quarry Material Allocation Notices in the project area
- any Water Resource Plans relevant to the affected catchments.

If the Project is likely to use or affect local sources of groundwater, this section should provide a description of groundwater resources in the area in terms of:

- geology/stratigraphy
- aquifer type - such as confined, unconfined
- depth to and thickness of the aquifers
- depth to water level and seasonal changes in levels
- groundwater flow directions (defined from water level contours)
- interaction with surface water
- possible sources of recharge
- potential exposure to pollution.

The environmental values of the groundwater of the affected areas should be described in terms of:

- values identified in the EPP (Water)
- sustainability, including both quality and quantity
- physical integrity, fluvial processes and morphology of groundwater resources

- groundwater dependent ecosystems.

Potential impacts and mitigation measures

This section should assess potential impacts of the Project on water resource environmental values identified in the previous section. It should also define and describe the objectives and practical measures for protecting or enhancing water resource environmental values, to describe how nominated quantitative standards and indicators may be achieved, and how the achievement of the objectives will be monitored, audited and managed. Matters to be addressed should include:

- the potential impacts the proposed Project may have on the flow and the quality of surface and ground waters from all phases of the Project, with particular reference to their suitability for the current and potential downstream uses and discharge licences
- the potential impacts of surface water flow on existing infrastructure, with reference to the EPP (Water) and the *Water Act 2000*
- chemical and physical properties of any waste water including stormwater at the point of discharge into natural surface waters, including the toxicity of effluent to flora and fauna
- potential impacts on other downstream receiving environments, if it is proposed to discharge water to a riverine system
- the results of a risk assessment for uncontrolled releases to water due to system or catastrophic failure, implications of such emissions for human health and natural ecosystems, and list strategies to prevent, minimise and contain impacts
- an assessment of the potential to contaminate surface and ground water resources and measures to prevent, mitigate and remediate such contamination.

Management strategies should be adequately detailed to demonstrate best practice management and that environmental values of receiving waters will be maintained to nominated water quality objectives. Monitoring programs, which will assess the effectiveness of management strategies for protecting water quality during the construction, operation and decommissioning of the Project, should be described.

3.5 Air quality

Description of environmental values

This section should describe the existing air environment which may be affected by the proposal having particular regard for dust particulates and gaseous and odorous compounds. The background levels and sources of suspended particulates, and any other major constituent of the existing air environment that may be affected by the proposal should be discussed.

Any existing data on local meteorology and ambient levels of pollutants should be gathered.

The environmental values of the air shed for the affected areas should be described in terms of the *Environmental Protection (Air) Policy 1997* (EPP (Air)).

Potential impacts and mitigation measures

The EIS should consider potential air quality variations during construction and operations. Potential sources include dust and emissions from increased train operation; nitrogen oxides and particulate matter less than 10 micrometers (PM_{10})

The EIS should examine the effects of air emissions to air quality throughout construction and during operations and, where appropriate, predictions of ground level concentrations or ambient air quality should be made at any residential, industrial and agricultural developments believed to be sensitive to the effects of predicted emissions. These predictions should be made for both normal and expected maximum emission conditions, and worst case meteorological conditions. The techniques used to obtain the predictions should be referenced, and key assumptions and data sets explained. In particular the potential additional dust emissions from increased train operation through the facility should be outlined.

The assessment of the Project's impact on air quality should consider:

- the potential for the Project to generate dust nuisance throughout construction and during operation
- the existing air quality of the Project and surrounding area
- records of any complaints made in the Project area regarding air quality
- features of the Project design to suppress or minimise emissions, including dusts and odours
- an air quality monitoring program within the Project areas and at sensitive receptors.

The limitations and accuracy of the dispersion models used for calculating ground level concentrations and a sensitivity analysis of each model to variations in the input parameters should be explored and stated.

Air quality predictions should be compared to the relevant goals in the National Environmental Protection Council (Ambient Air Quality) Measure, the National Health and Medical Research Council and the EPP (Air) goals.

3.5.1 Greenhouse gas emissions

Greenhouse gas emissions should be described in the context of the Project construction and operation including:

- An assessment of the type and volume of greenhouse gases emitted by the Project during construction
- An assessment of projected future emissions attributable to the operation and maintenance phases of the Project and for alternative Project operating scenarios expressed as total mass CO2 equivalents per annum
- Any intended measures to avoid or minimise greenhouse emissions in line with national and state abatement policies and guidelines
- Indirect and consequential greenhouse gas emissions generated by future downstream projects facilitated by the Project.

The preferred operating scenario is not dependent on CO2 gas emissions alone and is subject to other various issues, such as cost and other environmental impacts.

3.6 Noise and vibration

Description of environmental values

The EIS should describe the potential effects from noise and vibration of Project activities to the existing environmental values. If Project activities have the potential to adversely impact on the noise environment, baseline monitoring should be undertaken at a selection of noise sensitive sites affected by the proposal. Noise sensitive places in relation to the Project should be identified on a map at a suitable scale. Project activities include activities associated with the surveying, construction and eventual operation of the re-aligned railway line, including from increased use of the railway line in the future.

Any discussion about existing (baseline) noise and vibration levels in the vicinity of the proposed Project should be provided. The daily variation of existing noise levels at nearby sensitive sites should be determined and reported in the EIS, specifically in regards to variations during different periods of the day and night. Methods used to determine this should be based on relevant EPA Guidelines and Australian Standards, and any relevant requirements of the Environmental Protection (Noise) Policy 1997 (EPP (Noise)).

Comment should be provided on any current activities near the Project areas that may cause a background level of noise and ground vibration (e.g. other industry, railway, major roads, etc.).

Potential impacts and mitigation measures

Information should be submitted on the expected generation of noise and vibration from proposed Project activities.

The levels of noise and vibration generated during construction (including any blasting) and operation of all components of the Project should be assessed against current typical background levels. Anticipated noise and vibration levels, their timing and duration, should be considered relative to the sensitivity of the area.

In addition, an assessment should be made of the potential emission of low-frequency noise (noise with significant components below 200Hz) from major items of equipment and plant. If necessary, measures should be described for reducing the intensity of these components. Reference should be made to the EPA's draft guideline, 'Assessment of Low Frequency Noise'.

An estimate should be made of the cumulative noise level at the boundaries of the sites of the Project and at the boundaries of existing and future land uses likely to be affected by noise from the Project. This estimate should include noise from construction, operation and from transport movements.

The potential environmental impacts of noise and vibration at all potentially sensitive sites (as defined in the EPP (Noise)) should be quantified and compared with standards contained with the EPP (Noise) and any relevant Australian Standards.

Proposals to minimise or eliminate these effects should be outlined, including details of any screening, lining, enclosing or bunding of facilities, or timing schedules for construction and operations that would minimise environmental harm and environmental nuisance from noise.

Off-site transport noise and vibration factors due to road and rail should be described and include a discussion on existing speed zones, scheduled transport movements and industry occurring in the project area.

3.7 Waste

3.7.1 Waste generation

This section should provide technical details of waste generation and treatment and minimisation management strategies. All sources of waste associated with the construction, operation and decommissioning of the Project should be identified and described including:

- the type and amount of wastes produced, including an inventory of all solid and liquid (including wastewater and sewage) wastes generated at each stage of the Project
- collection, handling, transport and fate of all wastes including storage
- market demand for recyclable waste (where appropriate)
- opportunities for waste avoidance and minimisation strategies.

Storm water management should also address:

- nominated stormwater discharge points and discharge criteria
- design criteria, diversions, volume and capacity of any retention ponds, process tanks or bunded areas, as well as those reasonable and practicable measures proposed to prevent the likely release of contaminated stormwater to any drain or waters
- information on the collection, treatment and disposal of contaminated stormwater runoff from the plant and associated materials handling facilities
- details of contaminants (e.g. chemical composition, particulates, metals, effluent, temperature and pH) in controlled discharges of proposed wastewater and stormwater management systems.

3.7.2 Waste management

The EIS should provide details of waste management methods which demonstrate that waste minimisation and cleaner production strategies have been implemented through the selection of processes, equipment and facilities to prevent or minimise environmental impacts. This information should include:

- a brief description of the existing environmental values that may be affected by the Project's waste, the impacts on those values and mitigation measures
- a waste management plan developed in accordance with the waste management hierarchy and principles of the Environmental Protection (Waste Management) Policy 2000
- descriptions of processes, equipment and facilities to be incorporated into the overall Project specifically for the purpose of avoiding waste generation, separation of wastewater from solid waste, reusing or recycling wastes, or on-site treatment methods for wastes to lessen their effect on the natural environment
- proposed means for management of wastes produced under circumstances other than as a result of normal Project development, including wastes generated during modification (e.g. run-off, chemical cleaning before commissioning), unusual conditions when the facilities are operating (e.g. start-up, maintenance, shut-down) and domestic sewage and refuse
- methods to prevent seepage and contamination of groundwater from waste stockpiles

- methods to avoid stormwater contamination by raw materials, wastes or products and present the means of containing, recycling, reusing, treating and disposing of stormwater, having regard for the requirements of the EPP (Water).

Where solid or liquid wastes are to be disposed of to off-site facilities, the expected disposal strategies should be described, including details of transportation, handling and storage by licensed contractors.

3.8 Transport

3.8.1 Transport methods and routes

The EIS should detail all requirements for the transport of plant, equipment, raw materials, product, wastes and personnel during the construction, operation and decommissioning phases of the Project. The description should address the use of existing facilities and all requirements for the construction, upgrading or relocation of any transport related infrastructure. This information should cover all transportation modes (i.e. road, rail and shipping) required for all aspects of the Project and include:

- the types, quantities, origin and destination of goods to be moved, including construction materials, plant, raw materials, wastes and hazardous materials
- the volume of traffic generated by workforce personnel and service vehicles
- methods of movement, including transportation type and volume of transport modes likely to be used
- the proposed transport routes
- anticipated times at which each type of transportation movements may occur
- details of vehicle traffic and transport of heavy and oversize indivisible loads (including types and composition)
- proposed road closures (temporary or permanent)
- the ability of existing transport infrastructure to support the additional demand (including assessment of all level road/rail and/or occupational crossings using QR policy and/or the nationally accepted model i.e. Australian Level Crossing Assessment Model (ALCAM)
- any requirements for new transport facilities, upgrades (e.g. new access requirements) and increased maintenance.

Potential impacts and mitigation measures

Assessment of the Project impacts on transport infrastructure and operations for all components of the Project should be discussed, with reference to the Transport Infrastructure Act 1994, the Transport Planning and Coordination Act 1994, the Transport Operations (Road Use Management) Act 1995 and related legislation.

The EIS should provide sufficient assessment of the impacts of Project traffic during construction and operations to allow QT, QR, the Department of Main Roads (DMR), and local government to ascertain its effect on transport safety and efficiency requirements.

The Proponent should fully assess all transport-related impacts of the Project including sea, rail, road and air, such as:

- road and rail safety issues, for example, ensuring safe access to construction sites and safety for other transport users

- road use resulting in reduced life of roads/pavements requiring additional or accelerated rehabilitation and maintenance
- seasonal considerations, such as potential for transport impacts during wet weather
- impact of traffic numbers and flows associated with workforce transport to and from the site
- reduced efficiency of traffic flows along road sections and at intersections along key routes, especially during construction, including details on maximum traffic delays
- environmental issues relating to transport (e.g. noise abatement, weed management, vegetation clearing in road/rail reserves, dust control and erosion protection).

This section should outline:

- procedures for assessing and agreeing on the scope of required mitigation works with road/rail corridor managers, including any associated works such as sourcing water and gravel
- strategies to minimise the effects of Project transport on existing and future public road or rail corridors, including assessment of all level road/rail and/or occupational crossings using the relevant QR policy and or the nationally accepted model (i.e. ALCAM)
- steps to be taken to prevent access from public roads/rail corridors to the railway line
- access requirements to the public road/rail reserves to conduct rail maintenance.

A road management plan should be developed to include findings of studies and transport infrastructure impact assessments. Conditions of approval for transport management impacts should also be detailed in the Environmental Management Plan (EMP) (see section 4.0).

Road infrastructure impacts should be assessed according to DMR's 'Guidelines for Assessment of Road Impacts of Development (April 2006)'. Reference should be made to other DMR planning documents, relevant legislation and to any relationship between required Project road works/maintenance and works proposed in the current Road Implementation Program of Queensland DMR.

The EIS should discuss the results of consultation with the relevant district and regional officers of DMR and local government regarding the potential impacts of the Project on the road network.

This section should address how transport elements and impacts of the Project, taking into account future demand growth, relate to QT's, the TransLink Transit Authority's and the DMR's existing transport strategies for the Sunshine Coast area and the future infrastructure needs of this area as presented in Queensland Government documents. In addition, the impacts of the Project construction transport tasks on any road infrastructure of the relevant local governments should be identified.

3.9 Cultural heritage

Description of existing indigenous cultural heritage values

The EIS should describe the existing cultural heritage values that may be affected by the Project activities. A cultural heritage assessment should be undertaken to describe Indigenous and non-indigenous cultural heritage sites and places and their values. The Indigenous component of the assessment must be conducted by the appropriate Aboriginal Party and/or an appropriately qualified cultural heritage practitioner, in accordance with the *Aboriginal Cultural Heritage Act 2003* (ACH Act). Non-indigenous cultural heritage is administered under the *Queensland Heritage Act 1992*.

The assessment should include:

- findings of consultation with:
  - DEWHA concerning the Register of the National Estate, Commonwealth Heritage list and National Heritage list
  - EPA regarding the Queensland Heritage Register and other information regarding places of potential non-indigenous cultural heritage significance
  - the DNRW regarding the Indigenous Site Database
  - any local government heritage register
  - any existing literature or previous assessments relating to the affected areas
- liaison with relevant community groups/organisations (e.g. local historical societies) concerning:
  - places and objects of non-indigenous cultural heritage significance
  - opinion regarding significance of any cultural heritage places located or identified.

Investigations and consultation should be undertaken in such manner and detail as to satisfy statutory responsibilities and duties of care, including those under the *Queensland Heritage Act 1992* and the ACH Act, and the Australian *Aboriginal and Torres Strait Islander Heritage Protection Act 1984*.

Potential impacts and mitigation measures

Every attempt should be made by the Project to avoid significant heritage areas. The Proponent should provide an assessment of any likely effects on sites of non-indigenous or Indigenous cultural heritage values, including but not limited to the following:

- description of the significance of artefacts, items or places of conservation or cultural heritage values likely to be affected by the Project and their values at a local, regional and national level
- recommended means of mitigating any negative impact on cultural heritage values and enhancing any positive impacts.

The management of cultural heritage impacts should be detailed in a Cultural Heritage Management Plan (CHMP) that is developed specifically for the Project in accordance with the ACH Act. The CHMP should provide a process for the management of identified cultural heritage items, places and values within the project area. The CHMP should be based on information contained in the cultural heritage study reports and/or information from consultation with Indigenous communities or their representatives.

3.10 Social environment

Description of existing social values

This section should detail the existing social and economic environment. Issues to be addressed include:

- key characteristics of potentially affected communities in the Project area, with community profiles, providing information on:
  - rural properties, croplands and grazing areas
  - population and demographics of the affected community (including size, age structure, gender composition and residency
  - workforce characteristics, including types of skills or occupations and availability both for construction and operation phases of the Project
  - identification of existing labour force and unemployment statistics
  - health, emergency services and educational facilities
  - other community services and facilities (e.g. recreational, cultural, leisure and sporting facilities)
- accommodation, with an emphasis on:
  - the size of the private rental market in the area
  - the vacancy rate and price of rental accommodation, including assessment of seasonal fluctuations
  - the availability and typical cost of housing for purchase in the area
  - the level of, and demand for, social housing in the area
- housing and other land uses:
  - constraints and opportunities for new housing construction or other land uses in the vicinity of the Project area, including the potential for growth of the urban area to encroach on the Project site
  - land areas in the local government area for residential purposes, including available serviced residential lots, land under development and undeveloped broad acre land that is appropriately zoned
- the character and basis of the local and regional economies, including:
  - existing economic base and economic activity
  - types and numbers of businesses
  - availability and prices of goods and services
  - a description of large scale industrial developments and their effects in the region.

Potential impacts and mitigation measures

The social impact assessment of the Project should consider the information gathered in the community consultation program and the analysis of the existing socio-economic environment, and describe the Project's impact, both beneficial and adverse and for both construction and operations phases, on the local community. The impacts of the Project on local and regional residents, community services and recreational activities are to be discussed. The nature and extent of the community consultation program are to be described and a summary of the results incorporated in the EIS.

The assessment of impacts should describe the likely response of affected communities and identify possible beneficial and adverse impacts (both immediate and cumulative). These impacts should be considered both at the regional and local level at both footprint and benefited area locations.

The EIS, through various assessments, should address potential impacts and proposed mitigation measures for the following:

- affected landholders and communities
- current land uses and existing lifestyles and enterprises
- demographic, social, cultural and economic profiles
- labour markets, with regard to the source of the workforce
- housing demand including rental accommodation for the construction workforce and associated contractors
- disruption to recreation and tourism, including changes to access patterns
- existing local resident values and aspirations
- government funded projects particularly of an environmental nature, i.e. waterway re-vegetation programs, tree planting schemes, salinity reduction
- places of value to the community or individuals
- establishment of a complaints register and response procedure.

For identified impacts on social values, proposed mitigation and enhancement strategies should be described, and approaches to facilitate initial negotiations towards community acceptance of these strategies identified. Practical monitoring regimes to be implemented should also be discussed.

Reference should be made to the expected cumulative impacts on local workforce and accommodation needs this Project will have in relation to other major projects, if any, which are occurring or planned for the region.

Any new skills and training to be introduced in relation to the Project should be identified. Adequate provision should be made for apprenticeship and employee training schemes. The EIS should indicate the occupational skill groups required and potential skill shortages anticipated.

The EIS should include strategies responding to Government Policy relating to:

- the level of training provided for construction contracts on Queensland Government building and construction contracts - The State Government Building and Construction Contracts Structured Training Policy (the 10% Policy)
- Indigenous employment opportunities - Indigenous Employment Policy for Queensland Government Building and Civil Construction Projects (the 20% Policy)
- the use of locally sourced goods and services – Department of State Development, Local Industry Policy.

The general economic benefits of the Project should be described, including:

- the relative significance of this proposal in the local and regional economic context
- the short and long-term beneficial (e.g. job creation) and adverse (e.g. community dislocation in railway towns) impacts that are likely to result from the development
- the need for any additional infrastructure provision by government to support the Project

- implications for future development in the locality (including constraints on surrounding land uses and existing industry)
- the extent to which local and other Australian goods and services will be used.

3.11 Economic environment

Description of existing economic character

This section should describe the existing economic environment that might be affected by the Project at both footprint and benefited area locations:

- a description of the local economy
- economic contribution of existing enterprises (e.g. tourist activity, local business etc.) and future economic opportunities
- the existing housing market, particularly rental accommodation that may be required for, and available to the Project workforce.

With particular regard to industry:

- describe the extent and economic importance of any industries which occur within the area directly affected by the Project and the region to be potentially serviced
- describe the local and regional industrial rail users in the region
- outline the use and purpose characteristics of rail services utilised
- With particular regard to primary industries:
- describe the extent and economic importance of primary industries undertaken within the region which may be serviced by the Project
- outline the use and purpose of the rail services used
- current property values.

Potential impacts and mitigation measures

An economic analysis should be presented from national, state, regional and local perspectives as appropriate to the scale of the Project. The general economic benefits from the project should be described, including estimated total economic costs for materials, labour and infrastructure for the construction and operational phases.

The analysis of general economic impacts of the Project should include:

- the effects of the Project on local residents, including land acquisition and property valuation and marketability, community services and recreational activities
- the potential mechanisms for local communities and businesses to meet contracts for services and supplies for the construction, rehabilitation and operation phases of the Project
- strategies for local residents including members of Indigenous communities interested in employment opportunities, which would identify skills required for the Project and initiate appropriate recruitment and training programs
- the implications of the Project for future developments in the local area including constraints on surrounding land uses
- strategies responding to Government Policy relating to:

- the level of training provided for construction contracts on Queensland Government building and construction contracts, with regard to the "*Queensland Government Building and Construction Contracts Structured Training Policy (the 10% Policy)*"
- Indigenous employment opportunities, with regard to the "*Indigenous Employment Policy for Queensland Government Building and Civil Construction projects (the 20% Policy)*"
- the use of locally sourced goods and services, with regard to the "*Local Industry Policy* (Department of State Development, 1999)".

The effect on local labour markets should be discussed with regard to the number and source of the construction workforce, including sub-contractors. This information should be presented according to occupational groupings of the workforce and show anticipated peaks in numbers during the construction period. The operational workforce requirements should also be discussed.

Any potential implications of climate change, as determined in Section 3.1 and Section 3.4, should be discussed.

3.11.1 Impact upon property management

This section should address the current and future management processes for properties which are impacted by the Project during construction and operation, by virtue of the fact that the rail line may intersect these properties, or separate adjoining properties, and there is potential for current farming or grazing practices to be affected in some material way. Mention should be made of the following:

- the impact of the Project on existing agricultural land uses and management practices, e.g. disruption to stockyards, fences, water points, sowing or harvesting of crops, movement of livestock, agricultural machinery and any loss of agricultural land
- describe the range of measures required to mitigate real and potential disruptions to rural practices and management of properties (both within properties and with adjoining landholdings), such as separation of stock areas by the Project and the types of alternative crossing points.

3.12 Hazard and risk

3.12.1 Hazard and risk assessment

The Proponent should carry out a risk assessment in accordance with appropriate parts of Australian Standard/New Zealand Standard Risk Management Standard 4360:2004. The study should assess risks during the construction, operational, decommissioning and rehabilitation phases of the rail line. The assessment is to include the risks posed to people, property, economic activity and the environment, by landslide, bushfire and flood hazards. The assessment should further outline the potential impacts on surrounding land uses. Where possible these risks are to be assessed in quantitative terms.

The EIS should indicate possible hazards, accidents, and abnormal events that may arise throughout the duration of the Project, in the construction and operational stages. This should include accidents involving train operations, explosions and fires associated with such incidents, and interfaces with other infrastructure such as surrounding roads.

This section should present historical data to provide an indication of incidents, consequences and frequency of occurrence of train accidents associated with railway operations.

Details are to be provided of the safeguards which will be employed or installed to reduce the likelihood and severity of hazards, consequences and risks to persons, property, and fauna along the railway. Where possible, the reduced level of risk which would be experienced with these safeguards in place should be indicated.

A comparison of assessed and mitigated risks should be undertaken with acceptable risk criteria used for land uses adjacent to the corridor, including public roads which border or cross the corridor.

3.12.2 Health and safety

Details should be provided of any impacts of the Project during construction and operation on the health, safety and quality of life of the community, workforce, suppliers and other stakeholders from factors such as air emissions, odour, dust, pests, traffic noise and vibration, waste and water. This includes health and safety matters associated with on-site and off-site workforce accommodation. It should include details of:

- compliance with relevant health and safety legislation
- security arrangements
- details of on-site emergency response capabilities (e.g. on-site paramedic or first-aid officer), for both the construction and operational phases of the Project, which should include personnel trained for fire suppression and containment, rescue and first aid.

3.12.3 Emergency management plan

An outline of the proposed emergency management procedures should be provided for the range of situations identified in the above risk assessment as providing measurable risks, including strategies to deal with contingencies such as hydrocarbon spills, natural disasters, and train accidents during operations.

In regard to fires, the EIS should address:

- building fire safety measures for any construction or permanent accommodation
- details of any emergency response plans and bushfire mitigation plans under the State Planning Policy 1/03 Mitigating the Adverse Impacts of Flood, Bushfire and Landslide
- on-site fire fighting equipment provided and the level of training of staff who will be tasked with emergency management activities
- detailed maps showing the plant outline, hazardous material store, incident control points, fire fighting equipment, etc.

The EIS should present emergency planning and response strategies to deal with relevant incidents above, which have been determined in consultation with state and regional emergency service providers.

The EIS should present plans for the involvement of the relevant state agencies (such as the Queensland Ambulance Service) in relation to emergency medical response and transport and first aid matters.

3.13 Cumulative impacts

The purpose of this section is to provide clear and concise information on the overall impacts of the Project. In addition, the cumulative impacts that could occur as a consequence of the Project in conjunction with the development of other proposals that are currently under study

should be considered, including the interrelationship of these impacts as they relate to particular issues (e.g. water, air, noise, cultural heritage, social, economic etc.). These impacts should be considered over time or in combination with other impacts because of the scale, intensity, duration or frequency of the impacts.

In particular, the requirements of any relevant State Planning Policies, Environmental Protection Policies, National Environmental Protection Measures and other strategies and regulations should be addressed in assessing the cumulative impacts of the Project on the existing environment.

Additionally, this section should also outline any opportunities that exist for efficiency gains and the mitigation of environmental and property impacts through the co-location of the rail line within or near existing or proposed linear infrastructure (such as water pipelines, roads, gas pipelines and electricity transmission and distribution). This may also include the co-location of other proposed linear infrastructure in, near or parallel to the rail line.

The Project Proponent should identify any proposals to develop infrastructure within the vicinity of the rail line investigation corridors. Such proposals would be limited to those projects which are in the public arena during the period of preparation of this EIS and for which a proponent can be readily identified.

It would be inappropriate for this EIS to evaluate the environmental impacts of other infrastructure not directly required for this Project. However, the EIS should describe the implications of locating other forms of linear infrastructure within or near the rail line. Where co-location may be likely, the EIS should consider opportunities to coordinate or enhance any of the impact mitigation strategies proposed for the rail line through cooperation with other proponents in the locality. In particular, the potential implications of any infrastructure co-location on the rail line corridor width and alignment should be described.

4 ENVIRONMENTAL MANAGEMENT PLAN

This section of the EIS should present EMPs developed for the Project. It is expected that all EMPs will, where relevant, be prepared in accordance with the EPA Guideline Preparing Environmental Management Plans. The EMPs should be developed from the preceding information in the EIS.

An EMP should provide life-of-proposal control strategies in accordance with agreed performance criteria for specified acceptable levels of environmental harm. In addition, EMPs should identify:

- potential impacts on environmental values
- mitigation strategies
- relevant monitoring
- appropriate indicators and performance criteria
- reporting requirements
- appropriate corrective actions, should an undesirable impact or unforeseen level of impact occur
- the recording of and response to complaints.

The aims of the EMPs are to provide:

- commitments by the Proponent to practical and achievable strategies and design standards (performance specifications) for the management of the Project to ensure that environmental requirements are specified and complied with
- an integrated plan for comprehensive monitoring and control of impacts
- local, Queensland and Australian government authorities, Stakeholders and the Proponent with a common focus for approvals conditions and compliance with policies and conditions
- the community with evidence that the environmental management of the Project is acceptable.

The recommended structure of each element of the EMP is:

Element/Issue:	Aspect of construction or operation to be managed (as it affects environmental values).
Operational Policy:	The operational policy or management objective that applies to the element.
Performance criteria:	Measurable performance criteria (outcomes) for each element of the operation.
Implementation strategy:	The strategies, tasks or action program (to nominated operational design standards) that would be implemented to achieve the performance criteria.
Monitoring:	The monitoring requirements to measure actual performance (i.e. specified limits to pre- selected indicators of change).
Auditing:	The auditing requirements to demonstrate implementation of agreed construction and operation environmental management strategies and compliance with agreed performance criteria.
Reporting:	Format, timing and responsibility for reporting and auditing of monitoring results.

Corrective action:	The action (options) to be implemented in case a performance requirement is not reached and the person(s) responsible for action (including staff authority and responsibility management structure).

An EMP should commit to manage, enhance or protect identified environmental values. The commitments should contain the following components for performance criteria and implementation strategies:

- environmental protection objectives for enhancing or protecting each relevant value
- indicators to be measured to demonstrate the extent to which the environmental protection objective is achieved
- environmental protection standards (a numerical target or value for the indicator), which defines the achievement of the objective
- an action program to ensure the environmental protection commitments are achieved and implemented. This will include strategies in relation to:
  - communication
  - continuous improvement
  - environmental auditing
  - monitoring
  - reporting
  - staff training
  - a decommissioning program for land proposed to be disturbed under each relevant aspect of the Project.

5 CONCLUSIONS AND RECOMMENDATIONS

The EIS should form conclusions and state recommendations with respect to the project proposal, based on the studies presented, the EMPs and conformity of the proposal with legislative and policy requirements.

6 REFERENCES

All references consulted should be presented in the EIS in a recognised format.

7 APPENDICES

7.1 ToR for this EIS

A copy of these ToR should be included in the EIS. A summary cross-referencing specific items of these ToR to the relevant section of the EIS should also be provided.

7.2 Development approvals

A list of the development approvals required by the Project should be presented.

7.3 Consultation report

A list of advisory agencies should be provided in a summary Consultation Report, which should also list the Australian, Queensland and local government agencies consulted, and the individuals and groups of stakeholders consulted. A summary of the issues raised by these groups, and the means by which the issues have been addressed, should be provided in the text of the EIS.

The EIS should summarise the results of the community consultation program, providing a summary of the groups and individuals consulted, the issues raised, and the means by which the issues were addressed. The discussion should include the methodology used in the community consultation program including criteria for identifying stakeholders and the communication methods used.

Information about identifying affected parties (as defined by the EPBC Act) and interested and/or affected persons (as defined by the EP Act) should be included.

7.4 Study team

The qualifications and experience of the study team and specialist sub-consultants should be provided.

7.5 Glossary of terms

A glossary of technical terms and acronyms should be provided.

7.6 Technical data and baseline studies

Relevant supporting data and information generated from specialist studies undertaken as part of the EIS are to be included as appendices. These may include:

- geological surveys
- soil surveys
- flora and fauna studies
- waterway hydrology and groundwater
- air quality modelling
- noise and vibration modelling
- road impact assessment
- cultural heritage studies
- social impact assessment.

7.7 List of Proponent commitments

A list of all commitments made by the Proponent in the EIS should be provided together with a reference to the relevant section in the report.