Terms of Reference Checklist

Appendix B

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.	Yes
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.	Yes
The Executive Summary should include:	
the title of the Project	Yes
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	Yes, Section 1, The Proponent
a concise statement of the aims and objectives of the Project	Yes, Section 2: Project's Objectives
the legal framework, decision-making authorities and Advisory Agencies	Yes, Section 4, Legal Framework
an outline of the background and need for the Project, including the consequences of not proceeding with the Project	Yes, Section 5, Background and Need for the Project
an outline of the alternative options considered and reasons for the selection of the proposed development option	Yes, Section 6, Alternative Options
a brief description of the Project (pre-construction, construction and operational activities) and the existing environment, utilising visual aids where appropriate	Yes, Section 7, Project Description
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	Yes
community attitudes to the Project and community consultation undertaken	Yes (update 21 Nov 08)
detailed maps of the proposed Project location and any other critical figures should also be included.	Relevant maps included.

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.	
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.	Chapter 1, Section 1.1
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.	Chapter 1, Section 1.2 Project Description
Need for the Project	Chapter 1, Section 1.3
The EIS should describe the justification for the Project in a regional, state and national context. This section should also describe:	Chapter 1, Section 1.3.1
the rationale and justification for the Project in relation to any relevant policy or regulatory framework	Chapter 1, Section 1.3.3
expected local, regional, state or national benefits	Chapter 1, Sections 1.3.1 and 1.3.5
the Project's technical feasibility and commercial viability	Chapter 1, Section 1.3.4
the Project's compatibility with any relevant Queensland Government policy	Chapter 1, Section 1.3.3
the Project's potential to provide additional capacity to the existing rail network.	Chapter 1, Section 1.3.2 and 1.6.1
Relationship to other projects	Chapter 1, Section 1.4
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.	Chapter 1, Section 1.4
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).	Chapter 1, Section 1.4
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.	Chapter 1, Section 1.4.2

INTRODUCTION	
Socio-economic cost and benefits of the Project	Chapter 1, Section 1.5
This section should summarise:	
the economic costs and benefits to other industries and the wider community arising from the Project	Chapter 1, Section 1.5
regional social impacts including employment, skills development and any workforce accommodation issues arising from the Project.	Chapter 1, Section 1.5
Alternatives to the Project	Chapter 1, Sections 1.6 and 1.7
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.	Chapter 1, Sections 1.6 and 1.7
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.	Chapter 1, Section 1.6
Alternative engineering and project design solutions should be discussed for each major component of the Project.	Chapter 1, Sections 1.6 and 1.7
The environmental impact assessment process	Chapter 1, Section 1.8
Methodology of the EIS	Chapter 1, Section 1.8.1
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.)	Chapter 1, Section 1.8.1
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).	Chapter 1, Section 1.8.1
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.	Chapter 1, Section 1.8.1
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:	Chapter 1, Section 1.9

INTRODUCTION	
stakeholders are informed of the EIS process to be followed	Chapter 1, Sections 1.8 and 1.9
stakeholders understand the relationships between the EIS and other associated approvals	Chapter 1, Sections 1.9 and 1.10
stakeholders are aware of any opportunities for input and participation	Chapter 1, Sections 1.8.5 and 1.9
relevant legislation is addressed.	Chapter 1, Section 1.9
Objectives of the EIS	Chapter 1, Sections 1.8.3 and 1.8.4
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:	Chapter 1, Sections 1.8.3 and 1.8.4
provide public information on the need for the Project, alternatives to it and options for its implementation	Chapter 1, Sections 1.3, 1.6 and 1.7
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	Chapter 1, Section 1.8.1
Demonstrate how environmental impacts can be managed or mitigated.	Chapter 1, Section 1.8.1
The relationship of other Project environmental management planning documentation, conditions, approvals and environmental authorities should be discussed in relation to the EIS.	Chapter 1, Section 1.10
The role of the EIS in providing information for the formulation of the EMP for the Project should be discussed.	Chapter 1, Section 1.8.3
Submissions	Chapter 1, Sections 1.8.5
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.	Chapter 1, Sections 1.8.5
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.	Chapter 1, Section 1.9

INTRODUCTION	
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:	Chapter 1, Section 1.9.4
the types of activities to be undertaken	Chapter 1, Section 1.9.6
timing	Chapter 1, Section 1.9.3
target the Stakeholder/community representatives	Chapter 1, Section 1.9.2
integration with other EIS activities and the Project development process	Chapter 1, Section 1.9.3
consultation responsibilities	Chapter 1, Section 1.9.1 & 1.9.2
communication protocols	Appendix F - Community Consultation Report
reporting and feedback arrangements.	Chapter 1, Section 1.8.4
This section should outline the methodology adopted to:	
identify stakeholders and how their involvement was facilitated	Chapter 1, Section 1.9.3
identify the process conducted to date and future consultation strategies and programs, including during the operational phase of the Project	Chapter 1, Section 1.9.6
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.	Appendix F- Community Consultation Report + a section is included in each chapter that summarises the results of the community consultation and the response of the Project.
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.	Appendix F - Community Consultation Report
Project approvals	Chapter 1, Section 1.10
Relevant legislation	

INTRODUCTION	
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.	Chapter 1, Section 1.10
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.	Chapter 1, Section 1.10.1
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.	Chapter 1, Section 1.3.3
Planning process and standards	Chapter 1, Section 1.10.2
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.	Chapter 1, Section 1.10.2

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	Chapter 2, Section 2.5.3.1
a program covering activities relating to design, construction, commissioning and first operating activities	Chapter 2, Section 2.5
an outline of any major transport routes impacted on by the supply of construction materials, equipment and personnel involved in the construction process	Chapter 2, Section 2.5.3.3
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.	Chapter 2, Section 2.5.3.5
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	Chapter 2, Section 2.3 and 2.4
other infrastructure impacted by the works (including roads, power, telecommunication or other services)	Chapter 2, Section 2.4 and 2.5.3.2
the expected cost and overall duration and timing of the Project	Chapter 2, Section 2.5
a summary of any environmental design features of the Project.	Chapter 2, Sections 2.3, 2.4, 2.5.2.3 and 2.5.4.1
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	Chapter 2, Section 2.2
land tenures	Chapter 2, Section 2.2
present land uses and planning scheme zonings	Chapter 2, Section 2.2
surrounding industries and other land uses	Chapter 2, Section 2.2
any features of environmental significance	Chapter 2, Section 2.2
any proposed buffer zones	N/A
the locations and layouts of new structures.	Figure 2.3
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.	
Design	

DESCRIPTION OF THE PROJECT	
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:	Chapter 2, Section 2.3
rail infrastructure	Chapter 2, Sections2.3.1, 2.3.2, 2.3.3, 2.3.4, 2.3.5 and 2.4.1.3
other infrastructure, which may include roads.	Chapter 2, Sections 2.3.2.1, 2.3.2.2, 2.3.3.1, 2.3.4.1 and 2.5.3.2
The following should be described for the Project:	
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.	Chapter 2, Section 2.4.1
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.	Chapter 2, Section 2.4.1
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.	Chapter 2, Section 2.4.2
In relation to water supply, usage and wastewater disposal, the EIS should assess:	
anticipated flows of water to and from the Project areas	Chapter 2, Section 2.4.2
the effects of predictable climatic extremes (droughts, floods) upon the structural integrity of containment walls where dams, weirs or ponds are proposed	No dams, weirs or ponds are proposed.
quality of water contained in dams	Not applicable.
the need or otherwise for licensing any dams (including referable dams), under the Water Act 2000.	Not applicable.
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	Chapter 2, Section 2.4.2 and Chapter 22, Section 22.3.8

DESCRIPTION OF THE PROJECT	
quantity of water required including - maximum hourly and dialy demand - mean daily demand - total annual consumption	This information is not available at this early stage of the design process; however, it will become available as design progresses.
any additional water supply infrastructure	Chapter 2, Section 2.4.2
requirements for fire-fighting or other emergency services.	Chapter 2, Section 2.4.2
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	This information is not available at this early stage of the design process; however, it will become available as design progresses.
contingency plans for planned and non-planned supply failures	Chapter 2, Section 2.4.2
projected dates for increased raw and treated water supplies.	This information is not available at this early stage of the design process; however, it will become available as design progresses.
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.	Chapter 18 Waste, Section 18.4.4, 18.4.6 & 18.5.2. Estimates of waste volumes are not available at this early stage of the design process.
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.	Chapter 2, Section 2.3, 2.4.1 and 2.4.2; & Chapter 7, Section 7.6
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:	

DESCRIPTION OF THE PROJECT	
land acquisition process	Chapter 2, Section 2.5.2.2
vegetation clearing	Chapter 2, Section 2.5.3.1
provision of site access, power, telecommunications, water supply and other infrastructure	Chapter 2, Section 2.4
site establishment requirements for construction facilities.	Chapter 2, Section 2.5.3.1
an indicative construction timetable, including expected commissioning and start-up dates and hours of operation	Chapter 2, Section 2..5
major work programs for the construction phase	Chapter 2, Section 2..5
process inputs, handling and storage including an outline of procedures for loading and unloading materials and contingency plans for spillages	Chapter 22, Section 22.3.4, 22.3.8, 22.3.11 and 22.3.14
hazardous materials to be transported, stored and/or used on-site, including environmental toxicity data and biodegradability	Chapter 18, Section 18.4.7
clean up and restoration of areas used during construction, including camp site(s) and storage areas	Chapter 2, Section 2.5.3.4 and 2.5.4.1
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.	Chapter 2, Section 2.5.3.3
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.	Chapter 2, Section 2.5.5
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.	Chapter 2, Section 2.5.5
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.	Chapter 2, Section 2.5.5 and Chapter 8

DESCRIPTION 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:	N/A
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.	
Commissioning	
This section should describe the likely activities involved in commissioning of the expanded rail alignment and any related potential environmental impact.	Chapter 2, Section 2.6.1
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	Chapter 2, Section 2.6
safety plans in event of an emergency, in line with QR standards and procedures.	Chapter 2, Section 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.	Chapter 2, Section 2.6.1
The EIS should outline the development and implementation of rehabilitation success criteria for decommissioning of the railway at the end of operational life.	Chapter, Section 2.5.4.2

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	Chapter 3, Section 3.2a discusses land tenure and it is shown in Figure 3.2a, mining and petroleum exploration tenures in section 3.2.6, identification of existing and proposed gas, power lines and transport corridors (includes local roads, state-controlled roads, rail corridors, stock routes) and easements in section 3.3
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)	Chapter 3, Section 3.2.2 discusses land use and it is shown in Figure 3.2b
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	Chapter 3, Section 3.2.4 discusses the status of native title over the project area
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	Chapter 3, section 3.2.5 discussses land of environmental value or concern. Contaminated land is discussed in Chapter 3, section 3.2.7.
information on any known occurrences of economic mineralisation and extractive resources within the Project area	Extractive resources are discussed in Chapter 3, Section 3.2.6 and shown in Figure 3.2d
land listed on the contaminated land register or the environmental management register	Chapter 3, section 3.2.7
areas covered by applications for native title determination, with a description of Native Title Representative Bodies' boundaries	Chapter 3, Section 3.2.4 discusses the status of native title over the project area
location of gas and water pipelines, power lines, telecommunication cables, roads, railways, bridges, airports, airstrips, helipads and any other infrastructure	Existing infrastructure is discussed in Chapter 3, Section 3.3.
the distance of the Project from residential and recreational facilities, or other potentially non-compatible land uses.	Chapter 3, Section 3.2.2 discusses existing land use.
Potential impacts and mitigation measures	
This section should include:	
assessment of the compatibility of the proposal with surrounding land uses	Chapter 3, Section 3.5.5.1, Chapter 15, Chapter 6, Chapter 11 and Chapter 20.

Land use and infrastructure	
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	The impacts on land use are discussed in Chapter 3, Section 3.5.2 . Chapter 3, Section 3.5.3.2. discusses impacts on GQAL.
proposed measures to minimise impact on GQAL	Chapter 3, Sections 3.5.4.1 and 3.5.5.3 include measures to minimise impacts on GQAL.
strategy and progress in relation to making of any required Native Title agreements	N/A
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	Chapter 3, Section 3.5.4.3 and 3.5.5.4
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)	See Chapter 3, Section 3.2.3 and 3.5.4.2
management of fences and gates to be crossed during construction and neighbouring site access proposals.	Chapter 3, Section 3.5.4.1 and 3.5.4.2

Topography and geomorphology	
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.	
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.	Figures 4.3 shows the topography of the project area, which is described in Chapter 4, Section 4.3.
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.	Chapter 4, Section 4.5 describes impacts of the project on topography. Areas of significant earthworks are highlighted in Section 4.5.1 and 4.5.2.

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.	Chapter 5, Section 5.3 and Figures 5.3a - e
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.	Chapter 5, Section 5.3 and Figures 5.3a - e. Land contamination is discussed in more detail in Chapter 3 and shown in Figure 3.2e. GQAL is discussed in more detail in Chapter 3, Section 3.2.8 and shown in Figure 3.2f.
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.	Chapter 5, Section 5.3. Borehole investigations have not been undertaken for this study at this stage, but are planned for detailed design. GQAL is discussed in detail in Chapter 3, Section 3.2.8 and shown in Figure 3.2f.
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.	Chapter 5, Section 5.3.1.8. Land contamination is discussed in more detail in Chapter 3 and shown in Figure 3.2e.
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.	Chapter 5, Section 5.3.1.8. Land contamination is discussed in more detail in Chapter 3 and shown in Figure 3.2e.
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	Chapter 5, Section 5.4.1

Geology and soils	
the environmental consequences of the excavation and removal of soils from any borrow pits	N/A - there is no necessity for borrow pits as there is a fill surplus.
measures to ensure that construction or maintenance activities do not accelerate soil erosion in the Project area	Chapter 5, Sections 5.5.2 and 5.5.3; Chapter 22
how timing of construction, with particular consideration to seasons, may impact on soils	Chapter 5, 5.5.3 & Chapter 22, Section 22.3.3 & 22.3.8
the management of existing contaminated land and potential for contamination from construction activities and/or operations	Chapter 5, Section 5.5.8
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	Chapter 5, Section 5.5.3; Chapter 22
methods of stockpiling and disposal of trench material from excavated streambed, bank, including adjacent areas	Chapter 5, Section 5.5.2
adjustments to the Project area and/or rehabilitation measures to minimise impacts on GQAL	Chapter 5, Section 5.5.7; Chapter 3, Section 3.5.3.2
the description of topsoil management, including transport, storage and replacement of topsoil to disturbed areas, and minimisation of topsoil storage times	Chapter 5, Section 5.4.1.4 and 5.5.1 and 5.5.2
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	N/A
erosion and sediment control measures to ensure:	Chapter 5, Sections 5.5.2 and 5.5.3; Chapter 22
prevention of soil loss in order to maintain land capability/suitability	Chapter 22, Section 22.3.3
reduction of wind-generated dust concentrations	Chapter 22, Section 22.3.1
prevention of significant degradation of local waterways from suspended solids.	Chapter 22, Section 22.3.3
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.	Chapter 5, Sections 5.5.4 and 5.5.5
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.	Chapter 5, Section 5.5.4 , Chapter 22

Geology and soils	
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.	Chapter 5, Section 5.5.7.1

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.	N/A. This is not appropriate at this early stage of the Project but recommendations for a PSI have been included in the Environmental Management Plan.
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.	N/A
The results of the site investigations, remediation and validation should be certified by a Third Party Reviewer before being submitted to the EPA.	N/A
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	Figure 3.2e
identification of any potentially contaminated sites not on the registers which may need remediation.	This information is not available at this early stage of the design process; however, it will become available upon further investigations. Also see Section 5.5.8.
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	Chapter 5, Section 5.5.8 and Chapter 22, Section 22.3.4

Land contamination	
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.	This information is not available at this early stage of the design process; however, it will become available upon further investigations. Also see Section 5.5.8.
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.	Chapter 22, Section 22.3.4

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.	A description of the character of the landscape is included in Chapter 6, Section 6.3.
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:	Existing landscape features, views etc are described in Section 6.5.
major views, view sheds, outlooks, and features contributing to the amenity of the area, including assessment from private residences	Existing landscape features, views etc are described in Section 6.5.
focal points, landmarks, waterways and other features contributing to the visual quality of the area and the Project site(s)	Existing landscape features, views etc are described in Section 6.5.
character of the local and surrounding areas including vegetation and land use.	A description of the character of the landscape is included in Chapter 6, Section 6.3.
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.	A description of possible impacts is incorporated into Chapter 6, Section 6.3. Specific impacts on various view points are listed in Section 6.5.
Details should be provided of measures to be undertaken to mitigate or avoid the identified impacts.	Mitigation is discussed in Section 6.6

Transport	
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:	Section 7.6.5
the types, quantities, origin and destination of goods to be moved, including construction materials, plant, raw materials, wastes and hazardous materials	Section 7.6.5
the volume of traffic generated by workforce personnel and service vehicles	Section 7.6.5
methods of movement, including transportation type and volume of transport modes likely to be used	Section 7.6.5
the proposed transport routes	Section 7.6.5
anticipated times at which each type of transportation movements may occur	Section 7.6.5
details of vehicle traffic and transport of heavy and oversize indivisible loads (including types and composition)	
proposed road closures (temporary or permanent)	Section 7.6.1
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)	Section 7.6.1 + demand forecasting to be finalised
any requirements for new transport facilities, upgrades (e.g. new access requirements) and increased maintenance.	Section 7.6.1 and 7.6.5
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.	Section 7.1.1
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.	Section 7.6
The Proponent should fully assess all transport-related impacts of the Project including sea, rail, road and air, such as:	Section 7.6
road and rail safety issues, for example, ensuring safe access to construction sites and safety for other transport users	Section 7.6.5

Transport	
road use resulting in reduced life of roads/pavements requiring additional or accelerated rehabilitation and maintenance	Section 7.6.5
seasonal considerations, such as potential for transport impacts during wet weather	Section 7.6.5
impact of traffic numbers and flows associated with workforce transport to and from the site	Section 7.6.5
reduced efficiency of traffic flows along road sections and at intersections along key routes, especially during construction, including details on maximum traffic delays	Section 7.6.5 and 7.6.3
environmental issues relating to transport (e.g. noise abatement, weed management, vegetation clearing in road/rail reserves, dust control and erosion protection).	Section 7.6.7
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	Chapter 23, Environmental Management Plans (Traffic Management Plan)
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)	Section 7.6
steps to be taken to prevent access from public roads/rail corridors to the railway line	Section 7.6
access requirements to the public road/rail reserves to conduct rail maintenance.	Section 7.6
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).	Chapter 23, Environmental Management Plans (Traffic Management Plan)
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.	Section 7.2 and 7.2
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.	Section 7.2

Transport	
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.	Section 7.5

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	Chapter 8, Section 8.6.1
economic contribution of existing enterprises (e.g. tourist activity, local business etc.) and future economic opportunities	Chapter 8, Sections 8.6.2.2 & 8.8.3.3
the existing housing market, particularly rental accommodation that may be required for, and available to the Project workforce.	Chapter 8, Section 8.5.4
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	Chapter 8, Section 8.6.1
describe the local and regional industrial rail users in the region	N/A The rail is not used for freight by local industries
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.	Chapter 8, Section 8.5.4.1
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.	Chapter 8, Section 8.8
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	Chapter 8, Section 8.8.3.3 Chapter 9, Section 9.8
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	Chapter 8, Sections 8.3.3.3 & 8.9
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	Chapter 8, Section 8.9.1

Economic environment	
the implications of the Project for future developments in the local area including constraints on surrounding land uses	Chapter 3, Section 3.2.3
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)"	Chapter 8, Section 8.3.3.1
Indigenous employment opportunities, with regard to the "Indigenous Employment Policy for Queensland Government Building and Civil Construction projects (the 20% Policy)"	Chapter 8, Section 8.3.3.2
the use of locally sourced goods and services, with regard to the "Local Industry Policy (Department of State Development, 1999)".	Chapter 8, Section 8.3.3.3
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.	Chapter 2, Section 2.5.5 Chapter 8, Sections 8.8.21 & 8.9.1
Any potential implications of climate change, as determined in Section 3.1 and Section 3.4, should be discussed.	Chapter 17, Section 17.4.1.1
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	Chapter 8, Section 8.8.3.5
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.	Chapter 8, Sections 8.8.3.5 & 8.9

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	Chapter 8, Sections 8.5.3 & 8.6.1
population and demographics of the affected community (including size, age structure, gender composition and residency	Chapter 8, Section 8.5.2
workforce characteristics, including types of skills or occupations and availability both for construction and operation phases of the Project	Chapter 8, Section 8.5.3
identification of existing labour force and unemployment statistics	Chapter 8, Section 8.5.3
health, emergency services and educational facilities	Chapter 9, Section 9.6.3
other community services and facilities (e.g. recreational, cultural, leisure and sporting facilities)	Chapter 9, Section 9.6.3 Chapter 8, Section 8.6.2.2
accommodation, with an emphasis on:	
the size of the private rental market in the area	Chapter 8, Section 8.5.4.1
the vacancy rate and price of rental accommodation, including assessment of seasonal fluctuations	Chapter 8, Section 8.5.4.1
the availability and typical cost of housing for purchase in the area	Chapter 8, Section 8.5.4.1
the level of, and demand for, social housing in the area	Chapter 9, Sections 9.6.2 & 9.9.2 Chapter 8, Section 8.5.4.1
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	Chapter 3, Section 3.2.3 Chapter 8, Section 8.5.4.3
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	Chapter 3, Section 3.2.2
the character and basis of the local and regional economies, including:	
existing economic base and economic activity	Chapter 8, Section 8.6.1
types and numbers of businesses	Chapter 8, Section 8.6.2.2
availability and prices of goods and services	Chapter 8, Section 8.6.2.2
a description of large scale industrial developments and their effects in the region.	Chapter 8, Section 8.6.2.2
Potential impacts and mitigation measures	

Social environment	
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	Chapter 8, Section 8.8.3.3 Chapter 9, Section 9.8
current land uses and existing lifestyles and enterprises	Chapter 3, Section 3.5 Chapter 8, Section 8.8.3 Chapter 9, Section 9.8
demographic, social, cultural and economic profiles	Chapter 8, Section 8.8.4 Chapter 9, Section 9.8
labour markets, with regard to the source of the workforce	Chapter 8, Sections 8.8 & 8.9
housing demand including rental accommodation for the construction workforce and associated contractors	Chapter 8, Section 8.8.5
disruption to recreation and tourism, including changes to access patterns	Chapter 8, Sections 8.8 & 8.9 Chapter 9, Section 9.8.6
existing local resident values and aspirations	Chapter 9, Section 9.8.3
government funded projects particularly of an environmental nature, i.e. waterway re-vegetation programs, tree planting schemes, salinity reduction	Chapter 9, Section 9.8.3
places of value to the community or individuals	Chapter 9, Section 9.8.3
establishment of a complaints register and response procedure.	Chapter 22, Section 22.4
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.	Chapter 20,

Social environment	
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.	Chapter 9, Section 9.9.1
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)	Chapter 8, Section 8.3.3.1
Indigenous employment opportunities - Indigenous Employment Policy for Queensland Government Building and Civil Construction Projects (the 20% Policy)	Chapter 8, Section 8.3.3.2
the use of locally sourced goods and services – Department of State Development, Local Industry Policy.	Chapter 8, Section 8.3.3.3
The general economic benefits of the Project should be described, including:	
the relative significance of this proposal in the local and regional economic context	Chapter 8, section 8.8.2
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	Chapter 8, Section 8.8.2 Chapter 9, Section 9.8
the need for any additional infrastructure provision by government to support the Project	Chapter 7,
implications for future development in the locality (including constraints on surrounding land uses and existing industry)	Chapter 3, Sections 3.5.4.2 & 3.5.6.3
the extent to which local and other Australian goods and services will be used.	Chapter 8, Section 8.8.3

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	Chapter 10, Sections 10.4.5 and 10.4.7
EPA regarding the Queensland Heritage Register and other information regarding places of potential non-indigenous cultural heritage significance	Chapter 10, Section 10.4.2
the DNRW regarding the Indigenous Site Database	Chapter 10, Section 10.2.1.1
any local government heritage register	Chapter 10, Section 10.4.4
any existing literature or previous assessments relating to the affected areas	Chapter 10, Section 10.2.2.2
liaison with relevant community groups/organisations (e.g. local historical societies) concerningplaces and objects of non-indigenous cultural heritage significance and opinion regarding significance of any cultural heritage places located or identified.	Chapter 10, Section 10.2.1.2
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	Chapter 10, Section 10.6
recommended means of mitigating any negative impact on cultural heritage values and enhancing any positive impacts.	Chapter 10, Section 10.7

Cultural heritage	
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.	Chapter 10, Section 10.7.1

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.	Nature Conservation is discussed in Chapters 11 - 13 of the EIS. Some areas of high value have been further explored in Chapter 21: Special Management Areas.
Reference should be made to both Queensland and Australian Government legislation and policies on threatened species and ecological communities.	The relevant legislation is listed in the introductory section of each chapter.
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.	All surveys undertaken were in accordance with best practice advice from EPA and were conducted by qualified professionals who had acquired the relevant permits etc. This is discussed in the methodology section of each chapter.
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.	The impacts on the terrestrial flora, terrestrial fauna and aquatic biology is discussed within the impacts and mitigation section of each chapter.
Alternative routes for the railway line within the study area should be considered where areas of environmental significance are likely to be impacted.	The Route Identification Report released in March 2008 discusses alternative alignments for the rail. Management alternatives for areas of particularly high value are discussed in Chapter 21.
The EIS should demonstrate how the Project elements, including all access routes and campsites, would comply with the following course of action:	
avoid, or minimise and mitigate impacts on areas of remnant vegetation and other areas of conservation value	The impacts on areas of remnant vegetation are discussed in Chapter 11. Areas of particular conservation value are discussed in Chapter 21.
avoid, or minimise and mitigate impacts through rehabilitation and restoration	Rehabilitation will be a key component of the EMP, as discussed in Chapter 11 and the Vegetation Management Plan in the EMP (Chapter 22).

Nature conservation	
measures to be taken to replace or offset the loss of conservation values, where avoidance and mitigation or impacts cannot be achieved	A policy of 'no net loss' has been adopted by the proponent as discussed in Chapter 11, Section 11.5 and Chapter 12, Section 12.5.
justification of why measures 1 to 3 above would not apply in areas where loss would occur.	It is considered that impacts will be offset in accordance with legislative and policy requirements.
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.	There are no nature refuges, referrable wetlands, declared fish habitat, wilderness areas, aquatic reserves or world heritage sites within the Project area. All significant features have been selected and discussed in Chapter 21. General information about significant natural areas or species are contained in the Nature Conservation Chapters 11 - 13.
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:	Environmentally sensitive areas - Chapter 21, Bioregional Corridors - Chapter 12 (Sections 12.3.2 & 12.5.2), Chapter 11 (Section 11.3.1 and 11.3.2)
important habitats of species listed under the Nature Conservation Act 1992 and/or the EPBC Act as presumed extinct, endangered, vulnerable or rare	Habitat of threatened species - Chapter 11 (Sections 11.3.1, 11.3.2, 11.3.3, 11.5.1, 11.5.2 and 11.5.3), Chapter 12 (Sections 12.3.4 & 12.5.6) and Chapter 13 (Section 13.3.4.2)
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	Regional Ecosystems - Chapter 11 (Sections 11.3.1 & 11.5.1)
ecosystems listed as ‘presumed extinct’, ‘endangered’ or ‘vulnerable’ under the EPBC Act	There were none recorded in the Project area.

Nature conservation	
ecosystems which provide important ecological functions, such as riparian vegetation, important buffer to a protected area, refuge or important habitat corridor between areas	Areas of important ecological function - Chapter 11 (section 11.3.2), Chapter 12 (Section 12.3.1 & 12.3.2), Chapter 13 (Section 13.3.1 & 13.3.2), and Chapter 21 (Sections 21.4, 21.5, 21.6, 21.8, 21.9, 21.10, 21.12, 21.14, 21.16)
protected areas which have been proclaimed under the Nature Conservation Act 1992 or are under consideration for proclamation.	Protected areas - Chapter 21 (Sections 21.5 & 21.12)
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	Impacts on naturally significant features - Chapter 11 (Section 11.5), Chapter 12 (Section 12.5), Chapter 13 (Section 13.5)
proposals to mitigate impacts (e.g. timing of works, minimise width of disturbance, proposed rehabilitation of in-stream and floodplain disturbances)	Mitigation of impacts on naturally significant areas - Chapter 11 (Section 11.5), Chapter 12 (Section 12.5), Chapter 13 (Section 13.5) & Chapter 21 (Sections 21.4, 21.5, 21.6, 21.8, 21.9, 21.10, 21.12, 21.14, 21.16)
planned rehabilitation of wet heathland, eucalypt and melaleuca woodland, and riparian vegetation communities and any relevant previous experience/experiments rehabilitating these communities	Rehabilitation will be in areas used for construction that are not required for operation, with particular focus on creek lines, national parks, wildlife corridors (Rose Rd & The Pinch Lane) - Chapter 11 (Sections 11.5.1, 11.5.2, 11.5.6, 11.6), Chapter 12 (Sections 12.5.1, 12.5.2), Chapter 13 (Section 13.5.1), Chapter 21 (Sections 21.4, 21.5, 21.6, 21.8, 21.9, 21.10, 21.12, 21.14, 21.16)
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)”.	VMA 1999 - Chapter 11 (Section 11.5)

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	RE mapping is discussed in Chapter 11, Section 11.3.1 and maps are shown in figures 11.3.1a and 11.3.1b.
location of species listed as 'protected plants' under the Nature Conservation Act 1992 (NCA) and subsequent regulations and amendments	No significant flora species were identified during field work or site-walkover, however, a list of significant flora species potentially found in the area is shown in Chapter 11, Section 11.3.3
any plant communities of cultural, commercial or recreational significance	Plant communities of cultural, commercial or recreational significance were defined as significant orchards, nurseries or agricultural crops and old growth / landscape trees or community rehabilitation. These are discussed in Section 11.3.4 and 11.3.5. Chapter 10, Section 10.3 discusses elements of cultural heritage.
areas of re-growth or restoration and remnant vegetation, as defined under the Vegetation Management Act 1999	RE mapping is discussed in Chapter 11, Section 11.3.1 and maps are shown in figures 11.3.1a and 11.3.1b. These sections indicate that there are no significant areas of regrowth within the project area and that most vegetation mapped as remnant is correctly mapped. Areas not mapped are generally not vegetated.

Terrestrial flora	
any 'threatened species or communities' under the EPBC Act.	No significant flora species were identified during field work or site-walkover, however, a list of significant flora species potentially found in the area is shown in Chapter 11, Section 11.3.3. Similarly the vegetation communities identified by desktop analysis and field surveys are not recognised as threatened communities under the EPBC Act 1999.
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.	A discussion of vegetation communities and their regional ecosystem status is included in Chapter 11, Section 11.3.1. The conservation of rare floral assemblages is discussed in Chapter 11, Section 11.5.1 - 11.5.3. The values of these ecosystems for fauna habitat is discussed in Chapter 12, Section 12.3.1. The conservaton of rare faunal assemblages is dicsussed in Chapter 12, Section 12.5.1, 12.5.3 and 12.5.6.
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.	There is no published literature regarding the significance of vegetation to conservation, science. Chapter 10, Section 10.3 discusses areas of cultural, historical significance.The recreational values of the vegetation has been addressed through the analysis of the National Parks (Chapter 21 Section 21.5 and 21.12). An assessment of the significance of the vegetation at local, regional and state levels has been included in Chapter 12, Section 11.3.2.
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:	

Terrestrial flora	
all data requirements of the Queensland Herbarium "CORVEG" database should be collected	Detailed site sampling was employed in accordance with Queensland Herbarium methodology (EPA 2005a) and involved entering remnant vegetation in representative locations where it was necessary to confirm the accuracy of RE mapping.
a complete list of species present and observed at each site should be recorded	Detailed site analysis is shown in Appendix H.
the relative abundance of plant species present should be recorded	Detailed site analysis is shown in Appendix H.
any plant species of conservation, cultural, commercial or recreational significance should be identified	No significant flora species were identified during field work or site-walkover, however, a list of significant flora species potentially found in the area is shown in Chapter 11, Section 11.3.3. Plant communities of cultural, commercial or recreational significance were defined as significant orchards, nurseries or agricultural crops and old growth / landscape trees or community rehabilitation. These are discussed in Section 11.3.4 and 11.3.5. Chapter 10, Section 10.3 discusses elements of cultural heritage.
vegetation mapping and data should be submitted to the Queensland Herbarium to assist the updating of the CORVEG database	Datasheets have been filled out regarding the discrepancies in mapping - Appendix H.
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.	No significant flora species were identified during field work or site-walkover, however, a list of significant flora species potentially found in the area is shown in Chapter 11, Section 11.3.3

Terrestrial flora	
The location of any horticultural crops in the vicinity of the project area should be clearly defined on maps.	Plant communities of cultural, commercial or recreational significance were defined as significant orchards, nurseries or agricultural crops and old growth / landscape trees or community rehabilitation. These are discussed in Section 11.3.4 and 11.3.5 and shown in Figure 11.3e. Chapter 10, Section 10.3 discusses elements of cultural heritage.
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.	Records of significant species in the area have been derived from existing databases (Chapter 11, Section 11.3.3) as no significant flora species were observed during site inspections. Methodology is described in Chapter 11, Section 11.2.2. Chapter 11, Section 11.3.1 describes the current condition of remnant vegetation areas.
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.	The occurrence of pest plants has not been mapped because they occur all through the project area. Weeds are discussed in Chapter 11, Section 11.3.6.
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	The impacts of the project on the values of the vegetation communities is discussed in Chapter 11, Section 11.5.
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 vegetation management plan has been incorporated into the EMP (Chapter 22, Section 22.3.5), which requires rehabilitation of areas post-construction.
a description of the offset measures required to conform with relevant legislative requirements	Vegetative offsets in accordance with the Vegetation Management Act, 1999 have been discussed in Chapter 11, Section 11.5.

Terrestrial flora	
details of any post construction monitoring programs and what benchmarks will be used	A vegetation management plan has been incorporated into the EMP (Chapter 22, Section 22.3.5), which establishes monitoring programs and benchmarks.
a description of methods to minimise the potential for the introduction and/or spread of weeds or plant disease, including:	A weed management plan has been incorporated into the EMP (Chapter 22, Section 22.3.5), which discusses the origin of machinery, vehicle wash-down and staff education.
identification of the origin of construction materials, machinery and equipment	A weed management plan has been incorporated into the EMP (Chapter 22, Section 22.3.5), which discusses the origin of machinery, vehicle wash-down and staff education.
vehicle and machinery wash-down and any other hygiene protocols	A weed management plan has been incorporated into the EMP (Chapter 22, Section 22.3.5), which discusses the origin of machinery, vehicle wash-down and staff education.
staff or operator education program.	A weed management plan has been incorporated into the EMP (Chapter 22, Section 22.3.5), which discusses the origin of machinery, vehicle wash-down and staff education.
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	A weed management plan has been incorporated into the EMP (Chapter 22, Section 22.3.5)

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:	The fauna habitat characteristics and distribution of species is discussed in Chapter 12, Section 12.3.1.
species diversity (i.e. a species list) and abundance of animals, including amphibians, birds, reptiles, mammals and bats	The abundance and diversity of species is discussed in Chapter 12, Section 12.3.3. A species list is included in Appendix H and results of searches for the project area are shown in Appendix H.
habitat requirements and sensitivity to changes; including movement corridors and barriers to movement	Habitat requirements and sensitivity to change is discussed in terms of available habitat and threatened species in Chapter 12, Sections 12.3.1 and 12.3.4. Wildlife movement corridors are discussed in Chapter 12, Section 12.3.2.
the existence of feral or exotic animals	The existence of feral animals is discussed in Chapter 12, Section 12.3.6.
the existence of threatened and/or noteworthy fauna species under local, state and/or national legislation in the study areas	The habitat requirements and threats to significant species is discussed in Chapter 12, Section 12.3.4.
observed migratory birds, nomadic birds, and terrestrial fauna.	Migratory species present in the study area is discussed in Chapter 12, Section 12.3.5.
The EIS should discuss the potential for seasonal changes in fauna distribution patterns.	Limitations to the study have been discussed in Chapter 12, Section 12.2.3
The EIS should indicate how well any affected fauna assemblages are represented and protected elsewhere in the sub-region where Project activities occur.	Chapter 12, Section 12.3.1 discusses how well various habitats are represented in the project area and greater region. Chapter 12, Section 12.3.4 discusses how well threatened species are represented in the project area and surrounds.
Site data should be recorded in a format compatible with EPA Wildlife Online database.	Site data has been provided to WildNet (EPA) by the contracted company.
Potential impacts and mitigation measures	

Terrestrial fauna	
This section of the EIS should include:	
impacts the proposal may have on terrestrial fauna, relevant wildlife habitat and other fauna conservation values	Impacts of the project on terrestrial fauna and habitat are discussed in Chapter 12, Section 12.5.
impacts the proposal may have on threatened and/or significant species inhabiting the area and measures to reduce and/or mitigate impacts	Impacts on threatened species and suggested mitigation is discussed in Chapter 12, Section 12.5.6.
measures to minimise wildlife capture and mortality	Measures to minimise harm / mortality to wildlife are included in Chapter 12, Section 12.5.5
monitoring of terrestrial fauna health, productivity and biodiversity	A fauna management plan in the EMP (Chapter 22, Section 22.3.7) incorporates monitoring programs.
details of the methodology of survey work, such as trapping and bat surveys, proposed to determine significant species present in project area	The methodology of survey work is described in Chapter 12, Section 12.2.
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	Handling of injured animals is discussed in Chapter 12, Section 12.5.5. A fauna management plan in the EMP (Chapter 22) also details the relevant procedure.
methods of minimising the introduction of feral animals and other exotic fauna	Methods to manage feral animals are described in Chapter 12, Section 12.5.4
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.	Biting insects and pests are discussed in Chapter 13, Section 13.5.5. A hydrology and water management plan are included in the EMP (Chapter 22, Section 22.3.8).

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:	Chapter 13 discusses the aquatic biology in the project area as it exists and describes potential impacts arising from the project, including flow regime, water levels and water quality. Chapter 14 specifically discusses the water resources that these systems rely on.
fish species, mammals, reptiles, amphibians, and aquatic invertebrates occurring in the waterways within the Project area	Fish species and aquatic invertebrates are discussed in Chapter 13. Mammals, reptiles, amphibians are discussed in Chapter 12.
aquatic (waterway) macrophytes including native and exotic/weed species	Aquatic macrophytes and weeds are discussed in Chapter 13, Section 13.3.3.
aquatic substrate and stream type, including extent of tidal influence and common levels such as Highest Astronomical Tide and Mean High Water Spring	The aquatic habitat in the Project Area are discussed in Chapter 13, Section 13.3.1.
Wetlands listed by the EPA as areas of national, state or regional significance, and their values and importance.	Any significant wetlands in the area are described in Chapter 13, Section 13.3.2
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	A description of potential impacts and mitigation methods is included in Chapter 13, Section 13.4.
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)	Biting insects are discussed in Chapter 13, Section 13.5.5.
proposed stream diversions, causeway construction and crossing facilities, stockpiled material and other impediments that would restrict free movement of fish	Stream barriers are discussed in Chapter 13, Section 13.4.3.
measures to avoid fish spawning periods, such as seasonal construction of waterway crossings and measures to facilitate fish movements through water crossings	Chapter 13, Section 13.5.1 and 13.5.3 discuss measures to avoid spawning periods or disruption to the aquatic environment.

Aquatic biology	
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)	The type of waterway crossings are listed in Chapter 13, Section 13.5. Alternative crossings have been considered, i.e. fauna friendly underpass and span bridges.
offsets proposed for unavoidable, permanent loss of fisheries habitat within the Project footprint	There is no 'fish habitat' within the Project Area, however, offsets of riparian vegetation will be provided in accordance with the Offsets Policy under the Vegetation Management Act, 1999.
a description of methods to minimise the potential for the introduction and/or spread of weed species or plant disease	Methods for minimising potential for weed invasion / disease are included in Chapter 13, Sections 13.5.1 and 13.5.4. A weed management plan is also included in the EMP (Chapter 22, Section 22.3.6).
monitoring of aquatic biology health, productivity and biodiversity in areas subject to direct discharge	Monitoring of aquatic biology has been included as part of the hydrology and water management plan in the EMP (Chapter 22). It is also discussed Chapter 13, Section 13.5.2.
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).	Legislative requirements are discussed in Chapter 13, Section 13.1.3.

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.	Relevant guidelines and legislation discussed in Chapter 14, Section 14.1.3.
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	Chapter 14, Section 14.3.1 discusses surface water and Section 14.3.2 discusses ground water. Biological conditions discussed in Chapter 13 Aquatic Biology
existing surface drainage patterns, flows, history of flooding including extent, levels and frequency and present water uses	Chapter 14, Section 14.3.1.3
environmental values of the surface waterways of the affected area in terms of:	
values identified in the EPP (Water)	Water quality parameters were measured for all major waterways and results are shown in Chapter 14, Section 14.3.1.2. This section also compares water quality results with relevant guidelines.
physical integrity, fluvial processes and morphology of watercourses, including riparian zone vegetation and form	Information presented in Section 14, 14.3.1.1 provides information about relevant catchments and Section 14.3.1.3 provides detail about the waterways. Riparian vegetation is discussed in Chapter 13, Aquatic Biology.
hydrology of waterways and groundwater.	The hydrology of the area is the topic of this chapter, i.e. flows, flooding, condition of water sources and water quality.

Water resources	
existing and other potential surface and groundwater users and holders of Quarry Material Allocation Notices in the project area	Surface water uses have been discussed in Chapter 14, Section 14.3.1. Groundwater uses have been discussed in Chapter 14, Section 14.3.2.2 and operational bores are shown in Figure 14.3.2
any Water Resource Plans relevant to the affected catchments.	Chapter 14, Section 14.1.3.1
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	Chapter 14, Section 14.3.2.1 - sandstone or alluvium
aquifer type - such as confined, unconfined	Chapter 14, Section 14.3.2.1 - only sandstone one is confined
depth to and thickness of the aquifers	Chapter 14, Section 14.3.2.2 - deep to sandstone, shallow
depth to water level and seasonal changes in levels	Chapter 14, Section 14.3.2.2 - monitoring required for fluctuations
groundwater flow directions (defined from water level contours)	Chapter 14, Section 14.3.2.2 - monitoring required for levels
interaction with surface water	Chapter 14, Section 14.3.2.
possible sources of recharge	Chapter 14, Section 14.3.2
potential exposure to pollution.	Chapter 14, Section 14.3.2.1 - sandstone or alluvium
The environmental values of the groundwater of the affected areas should be described in terms of:	
values identified in the EPP (Water)	no groundwater sampling was undertaken
sustainability, including both quality and quantity	Chapter 14, Section 14.3.2.2 - monitoring required for levels
physical integrity, fluvial processes and morphology of groundwater resources	Chapter 14, Section 14.3.2
groundwater dependent ecosystems.	Chapter 14, Section 14.3.2
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:	

Water resources	
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	Impacts on water quality are discussed in Chapter 14, Section 14.5.2 and 14.5.3. Impacts on groundwater supply are discussed in Section 14.5.4.
the potential impacts of surface water flow on existing infrastructure, with reference to the EPP (Water) and the Water Act 2000	Chapter 14, Section 14.5.5
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	Chapter 14, Section 14.5.2
potential impacts on other downstream receiving environments, if it is proposed to discharge water to a riverine system	Chapter 14, Section 14.5.2
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	Chapter 14, Section 14.5.2
an assessment of the potential to contaminate surface and ground water resources and measures to prevent, mitigate and remediate such contamination.	Chapter 14, Section 14.5.2 and 14.5.3
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.	Chapter 14, Section 14.5. Management strategies are also incorporated into the EMP for Water Resources (Chapter 22).

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)).	Section 15.2 Relevant Legislation and Policy
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.).	Section 15.5.2 Existing Ambient Environment
Potential impacts and mitigation measures	
Information should be submitted on the expected generation of noise and vibration from proposed Project activities.	Section 15..7 Assessment of Potential Impacts and Mitigation Measures
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.	Section 15.7 Assessment of Potential Impacts and Mitigation Measures, 15.7.1 Construction Noise, 15. 8 Operational Noise
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'.	At the early stage of the project this was not considered appropriate. Recommendations have been made to carry this out at later stages of the project.
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.	Section 15.8.1.3 Planned Future Development and 15.8.3.2 Planned Futre Development
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.	Noise contours - impacts section - against QLD rail guidelines

Noise and vibration	
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.	Section 15..7 Assessment of Potential Impacts and Mitigation Measures
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.	baseline monitoring - Current , modelling section - methodoly - No Existing transport noise data

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.	Section 16.5.1 Air Pollution Sources, Table 16.5.2a Met Data, Table 16.5b - Wind Roses
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)).	Section 16.2.2 - Environmental Nuisance Laws - EPP 1997
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 (PM10)	Section 16.6.1
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	Section 16.6.1
the existing air quality of the Project and surrounding area	Section 16.6.1
records of any complaints made in the Project area regarding air quality	At the time of issuing the document no known records of any complaints made in the Project area regarding air quality were made
features of the Project design to suppress or minimise emissions, including dusts and odours	Section 16.6.4 Proposed Mitigation - Construction
an air quality monitoring program within the Project areas and at sensitive receptors.	Section 16.5.4 Potentially Sensitive Receptors , Figure 16.5.4

Air quality	
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.	At the early stage of the project this was not considered appropriate.
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.	Section 16.7 Relevant Legislation and Policy; Section 16.5.3
Greenhouse gas emissions	
Greenhouse gas emissions should be described in the context of the Project construction and operation including:	Section 16.7.5 Potential Impact - Greenhouse issues during Construction
An assessment of the type and volume of greenhouse gases emitted by the Project during construction	Section 16.8 Summary and Conclusions
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	Section 16.7 Greenhouse Gas Emissions
Any intended measures to avoid or minimise greenhouse emissions in line with national and state abatement policies and guidelines	Section 16.7.7 Proposed Mitigation - Greenhouse Issues during Construction; Section 16.7.9 Proposed Mitgation - Greenhouse Issues During Operation
Indirect and consequential greenhouse gas emissions generated by future downstream projects facilitated by the Project.	Section 16.7 Greenhouse Gas Emissions
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.	

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.	Chapter 17, Section 17.3.1 - historical weather patterns; Chapter 17, Section 17.3.2 - extreme weather; Chapter 17, Section 17.4 - impacts and management
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.	This is addressed in the Chapter 19 (Hazard & Risk)
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:	Climate change predictions are outlined in Sections 17.3.1.1 to 17.3.1.4
implications for nature conservation under Section 3.3	Section 17.4.1.1
implications for water resource management under Section 3.4	Section 17.4.1.1
implications for the Project's economic environment under Section 3.13	Section 17.4.1.1
implications for hazard and risk management under Section 3.14.	Section 17.4.1.1
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)	Chapter 17, Section 17.4
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.	Chapter 17, Section 17.4
Hazard and risk assessment and management should be provided in Section 3.14 Hazard and Risk.	Chapter 19 (Hazard & Risk), Section 17.4.1.1

Waste	
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	Chapter 18, Section 18.4. Amounts have not been estimated at this early stage of the Project.
collection, handling, transport and fate of all wastes including storage	Section 18.4
market demand for recyclable waste (where appropriate)	Section 18.4
opportunities for waste avoidance and minimisation strategies.	Section 18.4
Storm water management should also address:	
nominated stormwater discharge points and discharge criteria	Stormwater management is addressed in Chapter 14, Water Resources
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	Stormwater management is addressed in Chapter 14, Water Resources and Chapter 22, Environmental Management Plans makes recommendations in regard to stormwater devices. However, details of stormwater devices are not available at this early stage of the process.
information on the collection, treatment and disposal of contaminated stormwater runoff from the plant and associated materials handling facilities	Chapter 18, Section 18.4.10 and Chapter 14 Sections 14.5.2.2.
details of contaminants (e.g. chemical composition, particulates, metals, effluent, temperature and pH) in controlled discharges of proposed wastewater and stormwater management systems.	Chapter 14, Section 14.5.1.3
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:	Section 18.4
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	Section 18.4

Waste	
a waste management plan developed in accordance with the waste management hierarchy and principles of the Environmental Protection (Waste Management) Policy 2000	Chapter 22, Table 22.3.11
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	Chapter 18, Section 18.4
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	Chapter 18, Section 18.4
methods to prevent seepage and contamination of groundwater from waste stockpiles	Chapter 18, Section 18.4 and Chapter 22
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).	Chapter 18, Section 18.4.10 .
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.	Chapter 18, Section 18.4 and Chapter 22 Table 22.3.11

Hazard and risk	
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.	Chapter 19, Section 19.3
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.	Chapter 19, Section 19.3.1. & 19.3.1.2
This section should present historical data to provide an indication of incidents, consequences and frequency of occurrence of train accidents associated with railway operations.	Chapter 19, Section 19.2.3
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.	Chapter 19, Section 19.3.1, 19.3.1.3, 19.3.1.4 Chapter 22, Section 22.3.14
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.	Chapter 19, Section 19.3
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:	Chapter 19, Section 19.4.
compliance with relevant health and safety legislation	Chapter 19, Section 19.4.
security arrangements	Chapter 19, Section 19.4. Security arrangements will be included in the construction and operations safety plans.

Hazard and risk	
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.	Chapter 19, Section 19.5.2
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.	Chapter 19, Section 19.5.2
In regard to fires, the EIS should address:	
building fire safety measures for any construction or permanent accommodation	A Bushfire Management Plan will be prepared for the operational phase of the project to protect infrastructure and minimise damage or loss. This information is not available at this early stage of the design process; however, it will become available as design progresses.
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	Chapter 19, Section 19.2.1.1 & Chapter 22, Section 22.3.14
on-site fire fighting equipment provided and the level of training of staff who will be tasked with emergency management activities	This information is not available at this early stage of the design process; however, it will become available as design progresses.
detailed maps showing the plant outline, hazardous material store, incident control points, fire fighting equipment, etc.	This information is not available at this early stage of the design process; however, it will become available as design progresses.
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.	At this stage of the Project, emergency planning and response strategies have not been fully developed. These will be developed in the future prior to construction and operation
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.	At this stage of the Project, emergency planning and response strategies have not been fully developed. These will be developed in the future prior to construction and operation

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	Table 20.6 - Impacts of the Project
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.	Table 20.6 - Impacts of the Project
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.	Chapter 1 - Section 1.10
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.	Section 20.4 Description of Related Projects
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.	Section 20.4 Description of Related Projects
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.	Section 20.4 Description of Related Projects

Environmental Management Plans	
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, potential impacts on environmental values, potential impacts on environmental values, mitigation strategies,relevant mionitoring, appropriate indicators and performance criteria, reporting requirements, appropriate corrective actions, should an undesirable impact or unforseen level of impact occur, the recording of and response to complaints. The aims of the EMPs are to provide: commitments by the Proponents to practical and achievable strategies and design standards (performance specifications) for the management of the Project to ensure that environmental requirements are specified and compiled with an int, Intergrated plan for comprehensive monitoring and control of impact, local Queensland and Australia government authorities, Stakeholders and 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.	Chapter 22 – Environmental Management Plans
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.	

Environmental Management Plans	
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 and a decommissioning program for land proposed to be disturbed under each relevant aspect of the Project.	