R TERMS OF REFERENCE—CROSS REFERENCE LIST

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

Executive summary	
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.	Executive summary
The structure of the Executive Summary should generally follow that of the EIS, but focus on key issues to enable the reader to obtain a clear understanding of the Project and 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.	Executive summary
The Executive Summary should include: • The title of the Project;	Executive summary
• 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;	Executive summary
• A concise statement of the aims and objectives of the Project;	Executive summary
• The legal framework, decision-making authorities and Advisory Agencies	Executive summary
• An outline of the background to and need for the Project, including the consequences of not proceeding with the Project;	Executive summary
• An outline of the alternative options considered and reasons for the selection of the proposed development option;	Executive summary
• A brief description of the Project (pre-construction, construction and operational activities) and the existing environment, utilising visual aids where appropriate; and	Executive summary
• An outline of the principal environmental impacts predicted and the proposed environmental management strategies (including waste minimisation and management) and commitments to minimise the significance of these impacts.	Executive summary
Glossary of terms	
A glossary of technical terms, acronyms and references should be provided.	
1. INTRODUCTION	
An 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.	Section 1
1.1 Project Proponent	
This section should describe the experience of the Project Proponent, including the nature and extent of business activities, experience and qualifications, and environmental record, including the Proponent's environmental policy.	Section 1.1

1.2 Project Description	
A brief description of the key elements of the Project should be provided and illustrated. Any major associated infrastructure requirements should also be summarised. Detailed descriptions of the Project should follow in Section 2.	Section 1.2
1.3 Project rationale	
This section should set out what the Project aims to achieve. It should describe the current status of the Project and outline the relationship of the Project to other developments or actions to which it may relate.	Section 1.3
Need for the Project The EIS should address the specific objectives and justification for the Project, including: • The context of the Project within the overall draft South East Queensland (SEQ) Regional Water Supply Strategy. In particular, the strategic, economic and environmental implications of the Project including future water consumption and production and supply security and flexibility of distribution.	Section 1.3.1
• Longer term strategic implications of the Project in terms of a water distribution network in SEQ, upgrade of existing infrastructure, integration with other supply systems (e.g. recycled water) and inter-connection with future water supply sources.	Section 1.3.1
Costs and benefits of the Project	
This section should summarise: • The economic costs and benefits of the Project to businesses and the wider community, including employment and spin-off business development;	Section 1.3.2
• Increased demand for natural resources.	Section 1.3.2
1.4 Alternatives to the Project	
This section should describe feasible alternatives for the Project, including the option of taking no action i.e. of not building the pipeline. Alternatives should be discussed 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 natural environment aspects. Demand reduction techniques should be discussed along with alternative supply sources, such as: • other water supply methods including; • recycling; • dam construction; • desalination; and • groundwater.	Section 1.4
In relation to the corridor the following should be provided. • Corridors considered, aided by maps and diagrams.	Section 2.3.1
• ecologically sustainable development principles;	Section 1.7.2
• broad costs of each corridor option;	Section 2.3.1
• pipeline lengths; and	Section 2.3.1
• the number of impacted properties, including tenure and ownership.	Section 2.3.1

In relation to the corridor the following should be provided.	
Co-location opportunities.	
Considerations given to alternative engineering and project design solutions.	Section 2.3.1
1.5 The Environmental Impact Assessment process	Section 1.5
1.5.1 Methodology of the EIS	Section 1.5.1
This section should provide an outline of the Queensland and Australian Government approvals process, including the environmental impact assessment process and any associated licence or permit application processes. It should include information on the relevant stages of the approvals process, statutory and public consultation requirements and any interdependencies that exist between the approvals sought. The information in this section is required to ensure:	Section 1.5
• Relevant legislation is addressed;	Section 1.7.1
• Readers are informed of the process to be followed; and	Sections 1.5.1 and 1.7.1
1.5.2 Objectives of the EIS	
This section should provide a statement of the objectives of the environmental impact assessment process. The structure of the EIS can then be outlined as an explanation of how the EIS will meet its objectives. The objectives of the EIS should:	Section 1.5.2
• Provide public information on the need for and likely effects of the Project on the natural, social and economic environment;	Sections 1.3.2 and 1.5.2
• Set out acceptable standards and levels of impact (both beneficial and adverse) on environmental values; and	Sections 1.3.2 and 1.5.2 and Section 3
• Demonstrate how these impacts can be managed.	Sections 1.3.2 and 1.5.2 and Section 3
The role of the EIS in providing information for the formulation of the EMP for the Project should be discussed. Discussion of options and alternatives is key aspect of the EIS.	Section 1.5.2
1.5.3 Submissions	
The reader should be informed as to how and when public submissions on the EIS will be addressed and taken into account in the decision-making process. The EIS should inform the reader on how to make submissions and what form the submission should take.	Section 1.5.3
1.6 Public consultation process	
An appropriate public consultation program is an important component of the EIS process. This section should outline the methodology that will be adopted to: • Identify the Stakeholders and how their involvement will be facilitated;	Section 1.6 and Appendix F
• This section should outline the methodology that will be adopted to:	Section 1.6 and Appendix F
• Identify the Stakeholders and how their involvement will be facilitated;	Section 1.6 and Appendix F

Identify the process conducted to date and future consultation strategies and programs, including during the operational phase of the Project; and	Section 1.6 and Appendix F
Indicate how consultation involvement and outcomes will be integrated into the EIS process and future site activities, including opportunities for engagement and provision for feedback and action if necessary.	Section 1.6 and Appendix F
• Any consultation about the action, including:	Section 1.6 and Appendix F
any consultation that has taken place;	Section 1.6 and Appendix F
consultation about the action; and	Section 1.6 and Appendix F
any consultation that has taken place;	Section 1.6 and Appendix F
• Identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.	Section 1.6 and Appendix F
The public consultation process should identify broad issues of concern to local and regional community 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:	Section 1.6 and Appendix F
• The types of activities to be undertaken;	Section 1.6 and Appendix F
• Timing;	Section 1.6 and Appendix F
• Target the Stakeholder/ community representatives;	Section 1.6 and Appendix F
• Integration with other EIS activities and the Project development process;	Section 1.6 and Appendix F
• Consultation responsibilities;	Section 1.6 and Appendix F
• Communication protocols; and	Section 1.6 and Appendix F
• Reporting and feedback arrangements.	Section 1.6 and Appendix F
Information about the consultation that has taken place and the results should be provided. The public consultation program should provide opportunities for community involvement and education. It may include interviews with individuals, public meetings, interest group meetings, production of regular summary information and updates, and other consultation mechanisms to encourage and facilitate active public consultation.	Section 1.6 and Appendix F

1.7 Project approvals	
1.7.1 Relevant legislation	
This section should identify and explain the legislation and policies controlling the approvals process. Reference should be made to the SDPWO Act and its relationship with the *Integrated Planning Act 1997*, and other relevant Queensland laws. A description of the Environmentally Relevant Activities, as defined under the EP Act and subordinate legislation, necessary for each aspect of the Project should be given.	Section 1.7.1 and Appendix G
The EIS should refer to the relationship to approvals under the SDPWO Act and those required under the Water Act 2000 (Water Act).	Section 1.7.1
The EIS should include the Project's relationship with the relevant Water Resource Plans e.g. Water Resource (Mary Basin) Plan 2006 and Water Resource (Moreton) Plan 2007 and subsequent Resource Operations Plans, any other specific management plans and methods for compliance with the environmental objectives.	Sections 1.7.1 and 2.4.3
1.7.2 Planning processes and standards	
This section should outline the Project's consistency with existing land uses or long-term policy framework for the pipeline route, and in particularly in relation to the 'SEQ Regional Infrastructure Plan' developed by the Office of Urban Management; the 'Regional Water Supply Strategy Stage 2'; 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. This information is required to demonstrate how the Project conforms to national, state, regional and local policies for the area.	Section 1.7.2
1.7.3 Accredited process under Australian Government legislation	
The Project is a controlled action under the EPBC Act and a significant project under the SDPWO Act. The EIS will be developed pursuant to the Bilateral Agreement between the Australian and Queensland governments for the purposes of the Australian Government's assessment under Part 8 of the EPBC Act. The EIS should address potential impacts on the MNES that were identified when the Project was determined to be a controlled action. As a minimum requirement, the EIS should provide separate discussions under sub-headings in the relevant sections that describe the values and address the potential impacts on MNES (see Section 3.3) that exclusively address those issues relevant to the controlling provisions.	Sections 1.5.1, 1.7.3 and 3.3
Alternatively, a stand-alone report could be provided as an appendix to the EIS that exclusively and fully addresses the issues relevant to the controlling provisions. As an appendix, the report should follow the following template outline:	Appendix D
1. Introduction;	Appendix D
2. Description of proposed action (as it would impact on MNES);	Appendix D
3. Description of the affected environment relevant to the controlling provisions (i.e. describe the features of the environment that are MNES protected under the EPBC Act);	Appendix D
4. Assessment of impacts on MNES and mitigation measures;	Appendix D
5. Conclusions; and	Appendix D
6. References.	Appendix D

2. DESCRIPTION OF THE PROJECT	
The objective of this section is to describe the Project through its lifetime of construction, operation and decommissioning. The Project description also allows further assessment of which approvals may be required and how they may be managed through the life of the Project.	Section 2
2.1 Overview of project	
The EIS should provide an overview of the Project to put it into context. This section should include: a description of the key components of the Project through the use of text and design plans where applicable and the expected cost and overall duration and timing of the Project. A summary of any environmental design features of the Project should be presented.	Section 2.1
2.2 Location	
This section should describe the regional and local context of the Project and associated infrastructure and illustrated on maps at suitable scales. Real property descriptions of the Project should be provided. Maps should show the precise location of the Project area, and in particular:	Sections 2.2 and 3.2.3
• The location and boundaries of land tenures, in place or proposed, to which the Project area is or will be subject;	Sections 2.2 and 3.2.3
• The location and boundaries of the Project footprint, including easement widths and access requirements;	Sections 2.2 and 3.2.3
• The location of proposed site office(s).	Sections 2.3.1 and 2.4.1
The process and criteria used for the selection of the specific Project site and infrastructure construction and relocation design should be described. The full extent of land that is required for infrastructure associated with the pipeline should be documented. The process of acquisition and/or resumption (if required) of land should be outlined. The method, by which ownership, control or owners' consent is to be acquired, should also be presented.	Sections 2.2 and 2.3
2.3 Construction and operation	
The following information should be provided on the construction and operation of the pipeline (including pump stations and balance tank) and be supported by detailed plans where appropriate.	Sections 2.3 and 2.4
2.3.1 Pre-construction activities	
This section should set out a description of the pre-construction activities, including: • Upgrade, relocation, realignment or deviation of roads and other infrastructure; and	Sections 2.2, 2.3.2, and 2.4
• Vegetation clearing;	Sections 2.3.1 and 2.3.2
2.3.2 Construction	
The following general construction details should be provided:	
• Options considered in determining the design of the pipeline and associated infrastructure such as pumping stations, balance tanks, water treatment facilities and reasons for the preferred option;	Sections 2.2 and 2.4.3
• The design, construction standards, construction methods and site management, including the containment/disposal of construction spoil;	Section 2.3.2
• Works needed within the site (e.g. tree clearing) and off-site (e.g. erosion protection);	Section 2.3.2

• General construction requirements including types, sources, quantity and method of transport of construction materials;	Section 2.3
• The number and type of vehicles, machinery and equipment used for excavation and other construction activities;	Section 2.4.2
• Chemicals and hazardous goods to be utilized (if any);	Section 3.12
• Any land acquisitions required, be it in full or as easements, leases, etc;	Section 3.2.3 and Table 2.6
• Timetable for the construction phase, including hours of construction;	Section 2.3
• Any staging of construction activities;	Section 2.3
• Licensing/permit requirements for the construction works;	Section 1.7 and Appendix G
• Public safety and emergency aid/medical facilities to be provided on site;	Section 2.3.2
• Allowance for provision of power back-up in emergency and potential impact on local supplies in the area; and	Sections 2.4.5 and 3.12
• Security.	
The following information should be provided in relation to the construction of the pipeline:	
• Provision for route refinement and right of way;	Sections 3.6 and 3.8
• Pipeline design parameters, including pipe grade, diameter(s), wall thickness, length, capacity (including transmission flow and reverse flow design), test and operating pressures, cathodic protection, coating and design life;	Section 2.3, Figures 2.4, 2.5, 2.6 and 2.7.
• Above ground facilities – physical dimensions and construction materials for surface facilities along the pipeline route, including information on pipeline markers;	Sections 2.3.2 and 2.4.3
• The location and/or frequency of cathodic protection points, off-take valves, pump stations, balance tanks, control valves (isolation points), pigging facilities (if applicable) and any other Project facilities and linkages to existing water supply infrastructure along the pipeline route;	Section 2.3, Figures 2.4, 2.5, 2.6 and 2.7.
• Detailed criteria for pipeline burial depth and above ground construction, along with pipeline orientation/location within any local government and/or state-controlled road reserves and/or rail corridors;	Section 2.3.2
• Detailed criteria for pipeline burial depth or above ground construction across rivers, creeks and ephemeral water ways, in particular the crossings proposed for the South Maroochy and North Maroochy Rivers, taking into account Q100 flood events;	Section 2.3.2
• Disposal/reuse of surplus excavated material and if this material can be coordinated with concurrent construction activities in the vicinity.	Section 2.3.2
2.3.3 Commissioning	
The following general commissioning details should be provided. • Description of the commissioning process.	Section 2.3.3
• Key testing/disinfection elements.	Section 2.3.3
• Water management.	Section 2.3.3 and Appendix I

2.3.4 Operation	
This section should provide full details on the proposed ongoing management of the pipeline, including: • Operational and management arrangements, including the administration and control of the pipeline, pump stations and balance tanks;	Section 2.3.4
• Operational and management arrangements, including the administration and control of the pipeline, pump stations and balance tanks;	Section 2.3.4
• The arrangements for providing water into the SEQ urban water supply. This should include a description of treatment facilities, associated infrastructure and treatment methods; and	Sections 2.4.3 and 2.4.4
• Licensing/permit requirements;	Section 1.7 and Appendix G
2.3.5 Rehabilitation	
This section should describe the options, strategies and methods for progressive and final rehabilitation of the environment disturbed by the Project. The strategic approach to progressive and final rehabilitation of the construction site should be described. A preferred rehabilitation strategy should be developed with a view to minimising the amount of land disturbed at any one time.	Section 2.3.5
2.4 Associated infrastructure requirements	
This section should describe, with concept and layout plans, of potential requirements for constructing, upgrading or relocating affected infrastructure in the vicinity of the Project. Matters to be considered include associated water supply infrastructure, treatment plants, roads, tracks and pathways, and power lines. Private, local government and community owned infrastructure, including buildings and significant structures, should be identified.	Section 2.4
2.4.1 Workforce and accommodation	
This section should provide details on the employment requirements and skills base of the required workforce for both the construction and operations phases of the Project, including:	Section 2.4.1 and Section 3.11
• Size and source of construction and operations workforce;	Section 2.4.1 and Section 3.11
• Deployment strategies proposed for the workforce over the construction period;	Section 2.4.1 and Section 3.11
• Employment opportunities relating to the pipeline construction, including details of the required professional, skilled and semi-skilled labour requirements of the Project;	Section 2.4.1 and Section 3.11
• Information regarding the occupational groupings required for the workforce; and	Section 2.4.1 and Section 3.11
• New skills and training to be introduced in relation to the Project.	

This section should also discuss an accommodation strategy for the construction workforce that 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.	Section 2.4.1 and Section 3.11
This section should outline the need for, and location of, a site office during the construction phase that will act as a logistics base, materials/vehicle storage depot and workshop area, and highlight the need for power, water and sewerage at the site office. Information in relation to the site office and any construction camp should include:	Section 2.4.1 and Section 3.11
• Food preparation and storage;	n/a
• Ablution facilities;	n/a
• Vector and vermin control; and	n/a
• Fire safety.	n/a
Local government approvals required for establishment and operation of such camps or site office should be outlined.	n/a
2.4.2 Transport	
This section should provide a brief overview of transport requirements during the construction and operational phases of the Project. The description should address the use of existing transport infrastructure (road, rail and port) and all requirements for the construction, upgrading or relocation of any transport related infrastructure, including new roads, road alignments, or proposed road closures. Full details of transport volumes, modes and routes should be provided in accordance with Section 3.8 Transport.	Section 2.4.2 and Section 3.8
2.4.3 Water distribution and treatment systems	
The section should describe in general terms the scope of the proposed water distribution and treatment systems to be used to distribute water from the proposed Project, to provide a general understanding of how water from the proposed Project will be distributed into the SEQ network. If it is intended that assessment and approval for these systems will be sought under separate processes, this should be clearly explained in the EIS.	Section 2.4.3
The requirements for any upgrade to the Noosa WTPs should be discussed in relation to whether it constitutes a material change of use (i.e. material change in the intensity or scale of an environmentally relevant activity) under s1.3.5 of the Integrated Planning Act 1997.	Section 1.7 and Appendix G
2.4.4 Water supply and storage	
This section should provide information on water usage by the Project. In relation to the water to be transported, the EIS should address the quality and quantity; the supply source(s); security of supply; and resource availability.	Section 2.4.4
Options for the source of water for hydrostatic testing, and any other construction and/or operational water use, should be discussed. Detailed plans for any storage, reuse and disposal of water used for hydrostatic testing should be outlined. Where recycled water is proposed to be used the 'Queensland Recycled Water Guidelines, December 2005' should be considered.	Section 2.4.4 and Appendix Q

Determination of potable water demand for the Project during the construction period should be made. Details should be provided of any existing town water supply to be used to meet such requirements. If water storage and/or treatment are proposed on site, for use by the site workforce, then this should be described. This description should include the management practices to maintain the quality of the water, including the source of the water, transportation, water treatment processes, microbiological and chemical testing program.	Section 2.4.4
2.4.5 Electricity and telecommunications	
This section should identify the extent of electricity supply requirements and energy conservation measures proposed, including for water treatment and pumping. Telecommunications requirements should also be discussed.	Sections 2.4.5 and 3.12
3. ENVIRONMENTAL VALUES AND MANAGEMENT OF IMPACTS	
This section should detail the environmental protection measures incorporated in the planning, construction, commissioning, operations, decommissioning, rehabilitation and associated works for the Project. Measures should prevent, or where prevention is not possible, minimise environmental harm and maximise socio-economic and environmental benefits of the Project. Preferred measures should be identified and described in more detail than other alternatives.	Section 3 to Section 4
This section should address all elements of the environment, such as land, water, coast, air, noise, nature conservation, cultural heritage, social and community, economy, waste, health and safety, hazards and risk, in a way that is comprehensive and clear.	Section 3 to Section 4
The EIS should assess the impacts of pre-construction, commissioning, construction and operation, potential decommissioning, and rehabilitation of disturbed lands. The impacts associated with potential ongoing maintenance, access and servicing resulting from the development and any other facilities required for the Project should also be assessed.	Section 3 to Section 4
In addition to issues raised in the following sections (mainly Section 3.3), the following issues relating to the controlling provisions under the EPBC Act should be addressed when assessing potential impacts on MNES.	Section 3.3, Appendix D
Impact on a listed threatened species or ecological community	
Potential impacts vary depending on whether the species or ecological community is extinct in the wild, critically endangered, endangered or vulnerable but are generally as follows:	
• lead to long-term decrease in the size of a population or a long term adverse affect on an ecological community;	Section 3.3, Appendix D
• reduce the species range or extent of occurrence of the ecological community;	Section 3.3, Appendix D
• fragment an existing population or ecological community;	Section 3.3, Appendix D
• adversely affect habitat critical to the survival of the species or ecological community;	Section 3.3, Appendix D
• disrupt the breeding cycle of a population;	Section 3.3, Appendix D
• modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline;	Section 3.3, Appendix D
• modify or destroy abiotic (non-living) factors (such as water, nutrients, or soil) necessary for the ecological community's survival;	Section 3.3, Appendix D
• result in invasive species that are harmful to the species or ecological community becoming established;	Section 3.3, Appendix D

• interfere with the recovery of the species or ecological community; and	Section 3.3, Appendix D
• consistency with any recovery plan.	Section 3.3, Appendix D
Impact on a listed migratory species	Section 3.3, Appendix D
• loss or modification of habitat important for migratory species (including fragmentation, altered land use, fire regimes, altered nutrient cycle, altered hydrological cycles etc);	Section 3.3, Appendix D
• introduction or establishment of invasive species; and	Section 3.3, Appendix D
• disruption to lifecycle (breeding, feeding, migration, roosting etc).	Section 3.3, Appendix D
The mitigation measures, monitoring programs, etc., identified in this section of the EIS should be addressed in the development of EMPs for the Project (see Section 4).	Section 3.3, Appendix D
3.1 Climate and natural disasters	
This section should describe the rainfall patterns (including magnitude and seasonal variability of rainfall), air temperatures, humidity, wind (direction and speed) and any other special factors (e.g. temperature inversions) that may affect management of the Project. Historic weather patterns in the Project area and seasonal conditions (e.g. cyclones, thunderstorms, floods and storms) that may influence timing and/or construction methods should be discussed, including how this would be managed. Extremes of climate (e.g. droughts, floods, etc) should be discussed with particular reference to water management at the Project site.	Section 3.1
The implications of climate change on the Project's environmental and commercial feasibility should be discussed.	
The vulnerability of the area to natural or induced hazards, such as bushfires and earthquakes should be addressed. 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 3.14.	Section 3.1 and Section 3.12
3.2 Land	
This section should detail the existing land environment for all areas associated with the Project, including areas affected by the pipeline route, and any new permanent or temporary facilities constructed for the pipeline.	Sections 2.3 and 3.2
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 sites and adjacent areas.	Sections 3.2 and 3.2.1
3.2.1 Topography and geomorphology	
3.2.1.1 Description of environmental values Maps should be provided locating the Project and its environs in state, regional and local contexts. The topography of the pipeline corridor should be detailed with contours at suitable increments, shown with respect to Australian Height Datum (AHD). Significant features of the landscape should be included on the maps. Commentary on the maps should be provided highlighting the significant topographical features.	Section 3.2.1
Maps should be displayed by the Project, showing surrounding topography and should be detailed at 1 m increments, in respect to AHD.	Section 3.2.1

Potential impacts and mitigation measures	
This section should provide details of any potential impacts to the topography, geomorphology or landscape character associated with the Project and proposed mitigation measures, including:	Section 3.2.1
• A discussion of the Project in the context of major topographic features and any measures taken to avoid or minimise impact to such, if required.	Section 3.2.1
• The objectives to be used for the Project in any re-contouring or consolidation, rehabilitation, fencing, monitoring and landscaping.	Section 3.2.1
• Proposals for any diversion of watercourses during construction or operations, and the reinstatement of these watercourses.	Section 3.2.1
3.2.2 Geology and soils	
3.2.2.1 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); rehabilitation programs; or the quality of wastewater leaving any area disturbed by the Project should be described.	Section 3.2.2
Soils within the Project disturbance area should be described and mapped at a suitable scale, with particular reference to the physical and chemical properties of the soils that would influence erosion potential, storm water run-off quality, and rehabilitation of the land. Information should also be provided on soil stability and suitability for construction of all Project facilities.	Section 3.2.2
Soils should be mapped at a suitable scale and described according to the 'Australian Soil and Land Survey Field Handbook (Gunn et al 1988 and McDonald et al, 1990)' using the 'Australian Soil Classification (Isbell, 1996)'.	Section 3.2.2
Soil descriptions must include horizon differentiation and depths, field texture, colour, mottles, drainage, permeability and water holding capacity characteristics, soil structure and erosion hazard rating. The investigation area should include all areas potentially affected by the Project including associated infrastructure corridors.	Section 3.2.2
Details should be provided on any disturbance of soil or sediment likely to occur at or below plus 5 metres AHD, and which would trigger a detailed acid sulfate soil investigation to assess the potential impact of disturbing acid sulfate soils by excavation, filling, or extracting groundwater. These investigations should be undertaken in accordance with the relevant sections of the 'State Planning Policy 2/02 Guideline: Acid Sulfate Soils' in order to comply with the stated outcomes in 'State Planning Policy 2/02: Planning and Managing Development Involving Acid Sulfate Soils'. Site observation density and sampling procedures for the purposes of assessing any acid sulfate soils is to accord with the 'Guidelines for Sampling and Analysis of Lowland Acid Sulfate Soils in Queensland, 1998 (Ahern et al.)'. Possible strategies (including staged testing) should be discussed with acid sulfate soil specialists from the Department of Natural Resources and Water (DNRW).	Section 3.2.2

3.2.2.2 Potential impacts and mitigation measures	
This section should provide details of any potential impacts to the land resources and proposed mitigation measures, including:	
• The environmental consequences to the geology/soils of the water extraction and any earth-moving works required; • Measures to ensure that soil erosion does not accelerate within the Project area, particularly along the pipeline route due to construction or maintenance activities. This may be addressed in accordance with measures detailed in 'Soil Erosion and Sediment Control – Engineering Guidelines for Queensland Construction Sites, 1996';	Section 3.2.2
• Influence of time of year of construction and the potential that localised rain events may have on soils;	Section 3.2.2
• Assessment of likely erosion effects of all Project's aspects, both on and off the Project site;	Section 3.2.2
• Management measures for ASS and potential ASS that may be encountered in association with the Project, consistent with the 'State Planning Policy 2/02 – Planning and Managing Development Involving Acid Sulfate Soils';	Section 3.2.2
• Details of erosion control measures and criteria used to assess methods that would minimise or alleviate erosion and sedimentation over the site. For each soil type identified, erosion potential and erosion management techniques should be outlined. Erosion monitoring should be discussed along with the development of rehabilitation/mitigation measures to achieve acceptable soil loss rates;	Section 3.2.2
• Description of topsoil management, including transport, storage and replacement of topsoil to disturbed areas. The minimisation of topsoil storage times (to reduce fertility degradation) should also be addressed. Erosion and sediment control should be described with a Soils Erosion and Sediment Control Plan included in the EMP; and	Section 3.2.2 and Appendix Q
• The potential for the Project to adversely impact on the stability of landforms within the construction areas and adjacent lands should be addressed in detail. The stability and potential for erosion of any watercourses in the Project area should be addressed.	Section 3.2.2
3.2.3 Land use and infrastructure	
3.2.3.1 Description of environmental values	
The EIS should identify, with the aid of maps:	
• Land tenure, including reserves, tenure of special interest such as protected areas and forest reserves, identification of existing and proposed transport corridors; this includes local roads, state-controlled roads and rail corridors;	Section 3.2.3
• Land use (urban, residential, industrial, agricultural, forestry, recreational, mining including mining and petroleum exploration tenures, mining leases, mining claims, mineral development licences and extractive industry permits);	Section 3.2.3

• Areas covered by applications for Native Title determination 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;	Section 3.2.3
• When examining tenure, the location of historical, current and proposed future mining areas should be shown on maps;	Section 3.2.3
• Information on any known occurrences of economic mineralisation and extractive resources within the Project area;	Section 3.2.3
• Distance of facilities and pipelines from residential and recreational areas; and	Section 3.2.3
• The locations of gas and water pipelines, power lines, roads, rail and any other easements.	Section 3.2.3
3.2.3.2 Potential impacts and mitigation measures	
The potential for the construction and operation of the Project to change existing and potential land uses of the Project site and adjacent areas should be detailed. Post operations land use options should be detailed including suitability of the area within the right of way to be used for agriculture or nature conservation. The factors favouring or limiting the establishment of those options should be given in the context of land use suitability prior to the Project and minimising potential liabilities for long-term management.	Section 3.2.3
A description of the following should be included:	
• Management of the immediate environs of the Project including construction buffer zones, and information on how easement widths and vegetation clearance in sensitive environmental areas will be minimised;	Section 3.2.3
• Individual properties affected by the Project – access changes to and within the property;	Section 3.2.3
• The land acquisition strategy and the proposed tenure (easements, leases, etc);	Section 3.2.3
• The identification of the potential native title rights and interests likely to be impacted upon by the Project and the potential for management of those impacts by an Indigenous Land Use Agreement or other native title compliance outcomes;	Section 3.2.3
• Direct impacts on any areas of high conservation value, including National Parks, Ramsar sites, or other areas designated to be of high conservation value (including impacts on accessibility);	Section 3.2.3 and Appendix D
• Impacts on surrounding land uses and human activities and strategies for minimisation, including:	
– Good Quality Agricultural Land;	Section 3.2.3
– forestry land (addressing loss of access to land, fragmentation of sites, increase of fire risk and loss of productive land for those purposes);	Section 3.2.3
– mining activities; and	Section 3.2.3
– residential and industrial uses.	Section 3.2.3

• Possible effect on town planning objectives and controls, including Local Government zoning and strategic plans;	Section 3.2.3
• Constraints to potential developments and possibilities of rezoning adjacent to the development area;	Section 3.2.3
• Possible impacts on, or sterilisation of, identified mineral or energy resources and extractive industry deposits resulting from the construction and/or operation of the Project;	Section 3.2.3
• Identification of any millable timber or quarry resources within the Project area and an assessment of the commercial value of these resources to satisfy the requirements of the DNRW – Forest Products;	Section 3.2.3
• Potential issues involved in proximity and/or co-location of other current or proposed infrastructure services along the pipeline route;	Section 3.2.3
• Potential impacts of construction work on essential services, in particular the pipeline construction on the existing electricity transmission infrastructure;	Section 3.2.3
• Potential impacts on future road upgrades; and	Section 3.2.3
• Identification of any land units requiring specific management measures.	Section 3.2.3
In addition, the following information should be presented:	Section 3.2.3
• Identification and discussion of land use impacts associated with the construction of the Project;	Section 3.2.3
• Construction impacts on land adjacent to the construction site, including weed control; and	Section 3.2.3
• Incompatible land uses, whether existing or potential, adjacent to all aspects of the Project, including essential and proposed ancillary developments or activities and areas directly or indirectly affected by the construction and operation of these activities should be identified and measures to avoid unacceptable impacts defined.	Section 3.2.3
3.2.4 Land contamination	
3.2.4.1 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)' (EPA Draft Guidelines) and 'The National Environmental Protection (Assessment of Site Contamination) Measures 1999' should be prepared for contaminated and potentially contaminating properties that could be affected by the Project. The results of the PSI should be summarised in the EIS and provided in detail in an appendix.	Section 3.2.4
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. This schedule is to be undertaken if the Project is approved and advanced to the construction phase.	Section 3.2.4

The results of the site investigations, remediation and validation should be certified by a Third Party Reviewer before being submitted to the EPA.	Section 3.2.4
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;	Section 3.2.4
Identification of any potentially contaminated sites not on the registers which may need remediation; and	Section 3.2.4
• A schedule of further investigations and remediation activities recommended for those land parcels where soil contamination may have an impact on construction activities	Section 3.2.4
3.2.4.2 Potential impacts and mitigation measures This section should provide details of any potential impacts from land contamination and proposed mitigation measures, including:	
• A description of the nature and extent of existing or potential contamination at each site and remediation and validation sampling; and	Section 3.2.4
• 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 area for groundwater extraction, particularly potential impacts on water quality and implications for domestic use.	Section 3.2.4
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.	Section 3.2.4
3.3 Nature conservation	
This section should detail the existing nature conservation values of the Project area, and how these have changed over time. The environmental values of nature conservation for the affected area should be described in terms of:	Section 3.3
• Integrity of ecological processes, including habitats of rare and threatened species;	Section 3.3
• Conservation of resources;	Section 3.3
• Biological diversity, including habitats of rare and threatened species;	Section 3.3
• Integrity of landscapes and places including wilderness and similar natural places; and	Section 3.3
• Aquatic and terrestrial ecosystems.	Section 3.3
A discussion should be presented on the nature conservation values of the areas likely to be affected by the Project. The flora and fauna communities that are rare or threatened, environmentally sensitive localities including the Ramsar sites, National Parks, lakes, waterways and adjacent marine environment should be described. The description should include a plant species list, a vegetation map at appropriate scale and an assessment of the significance of native vegetation, from a local and regional and state perspective. The description should indicate any areas of state or regional significance identified in an approved biodiversity planning assessment produced by the EPA (e.g. see the draft 'Regional Nature Conservation Strategy for SEQ 2001-2006'). The description should also take into consideration Maroochy Shire Council's Biodiversity Strategy.	Section 3.3

Reference should be made to both Australian and Queensland government legislation and policies on threatened species and ecological communities.	Section 3.3 and Appendix D
All surveys undertaken should be in accordance with recognised best practice, including consideration of advice from the EPA, and should include consideration of seasonality, potential for occurrence of significant species, rarity of species and the sensitivity of the species to disturbance. This section should also discuss all likely direct and indirect environmental impacts on flora and fauna in both terrestrial and aquatic environments in sensitive areas.	Section 3.3
The EIS should demonstrate how the Project (including all associated infrastructure requirements such as access tracks) would comply with the following hierarchy:	
• Avoiding impact on areas of remnant vegetation and other areas of conservation value;	Section 3.3
• Mitigation of impacts through rehabilitation and restoration;	Section 3.3
• Measures to be taken to replace or offset the loss of conservation values where avoidance and mitigation of impacts cannot be achieved; and	Section 3.3
• Explanation of why measures 1 to 3 above would not apply in areas where loss would occur.	Section 3.3
The boundaries of the areas impacted by the Project within or adjacent to an endangered ecological community, including firm details of footprint width should be discussed. Where the Project area would impact upon a threatened community, the discussion should include reasons for the preferred alignment and the viability of alternatives.	Section 3.3
Pest and disease considerations and strategies should take into account Maroochy Shire Council's Pest Management Plan 2006-10.	Section 3.3
3.3.1 Sensitive environmental areas	
3.3.1.1 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, declared fish habitat areas, wilderness areas, aquatic reserves, heritage/historic areas or items, national estates, 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 3.10) and scientific reserves.	Section 3.3.1
The proximity of the Project to any 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:	Section 3.3.1 and Appendix D
• Important habitats of species listed under the Nature Conservation Act 1992 and/or the EPBC Act as presumed extinct, endangered, vulnerable or rare;	Section 3.3.1
• Regional ecosystems recognised by the EPA as 'endangered' or 'of concern' or 'not of concern' but where permits are no longer granted due to being at threshold levels, and/or ecosystems listed as 'presumed extinct', 'endangered' or 'vulnerable' under the EPBC Act;	Section 3.3.1

• Ecosystems which provide important ecological functions, such as riparian vegetation, important buffer to a protected area, refugia or important habitat corridor between areas; and	Section 3.3.1
• Protected areas which have been proclaimed under the Nature Conservation Act 1992 or are under consideration for proclamation.	Section 3.3.1
Matters of national environmental significance	**Appendix D**
The MNES should be specifically addressed under the requirements of the EPBC Act and should include, but not be limited to:	
• Listed threatened species and ecological communities	Appendix D
Endangered	
– Coxen's Fig Parrot - *Cyclopsitta diophthalma coxeni*	Section 3.3, Appendix D and Appendix K
– Southern Barred Frog, Giant Barred Frog - *Mixophyes iteratus*	Section 3.3, Appendix D and Appendix K
– *Phyllodes imperialis* (*southern subsp.*)	Section 3.3,, Appendix D and Appendix K
– Mary River Cod - *Maccullochella peelii mariensis*	Section 3.3,, Appendix D and Appendix K
– Oxleyan Pygmy Perch - *Nannoperca oxleyana*	Section 3.3,, Appendix D and Appendix K
– Mary River Turtle, Mary River Tortoise - *Elusor macrurus*	Section 3.3,, Appendix D and Appendix K
– Emu Mountain Sheoak - *Allocasuarina emuina*	Section 3.3,, Appendix D and Appendix K
– *Allocasuarina thalassoscopica*	Section 3.3,, Appendix D and Appendix K
– Swamp Stringybark - *Eucalyptus conglomerata*	Section 3.3,, Appendix D and Appendix K
– Veiny Graptophyllum- *Graptophyllum reticulatum*	Section 3.3,, Appendix D and Appendix K
– Lesser Swamp-orchid - *Phaius australis*	Section 3.3,, Appendix D and Appendix K
– *Plectranthus torrenticola*	Section 3.3,, Appendix D and Appendix K
– Shiny-leaved Condoo, Black Plum, Wild Apple - *Pouteria eerwah*	Section 3.3,, Appendix D and Appendix K
– *Triunia robusta*	Section 3.3,, Appendix D and Appendix K
– *Zieria sp.* Brolga Park.	Section 3.3,, Appendix D and Appendix K
Vulnerable	
– Red Goshawk - *Erythrotriorchis radiatus*	Section 3.3,, Appendix D and Appendix K

– Black-breasted Button-quail – *Turnix melanogaster*	Section 3.3, Appendix D and Appendix K
– Wallum Sedge Frog - *Litoria olongburensis*	Section 3.3, Appendix D and Appendix K
– Australian Lungfish, Queensland Lungfish - *Neoceratodus forsteri*	Section 3.3, Appendix D and Appendix K
– Grey-headed Flying-fox - *Pteropus poliocephalus*	Section 3.3, Appendix D and Appendix K
– Water Mouse, False Water Rat - Xeromys myoides	Section 3.3, Appendix D and Appendix K
– Honey Blue-eye - *Pseudomugil mellis*	Section 3.3, Appendix D and Appendix K
– *Acacia attenuata*	Section 3.3,, Appendix D and Appendix K
– Marbled Baloghia, Jointed Baloghia - *Baloghia marmorata*	Section 3.3, Appendix D and Appendix K
– Heart-leaved Bosistoa - *Bosistoa selwynii*	Section 3.3, Appendix D and Appendix K
– Three-leaved Bosistoa - *Bosistoa transversa*	Section 3.3, Appendix D and Appendix K
– Miniature Moss-orchid - *Bulbophyllum globuliforme*	Section 3.3,, Appendix D and Appendix K
– Stinking Cryptocarya, Stinking Laurel - *Cryptocarya foetida*	Section 3.3, Appendix D and Appendix K
– Ball Nut, Possum Nut, Big Nut, Beefwood - *Floydia praealta*	Section 3.3, Appendix D and Appendix K
– Small-fruited Queensland Nut - *Macadamia ternifolia*	Section 3.3, Appendix D and Appendix K
– Rough-shelled Bush Nut, Macadamia Nut, Rough-shelled Macadamia, Rough-leaved Queensland Nut - *Macadamia tetraphylla*	Section 3.3, Appendix D and Appendix K
– *Prasophyllum wallum*	Section 3.3, Appendix D and Appendix K
– *Prostanthera sp.* Bundjalong Nat. Pk.	Section 3.3, Appendix D and Appendix K
– *Prostanthera sp.* Mt Tinbeerwah	Section 3.3, Appendix D and Appendix K
– *Romnalda strobilacea*	Section 3.3, Appendix D and Appendix K
– Smooth-bark Rose Apple, Red Lilly Pilly - *Syzygium hodgkinsoniae*	Section 3.3, Appendix D and Appendix K
– Penda, Southern Penda, Luya's Hardwood - *Xanthostemon oppositifolius*.	Section 3.3, Appendix D and Appendix K
• Listed migratory species	
– Coxen's Fig-Parrot - *Cyclopsitta diophthalma coxeni*	Section 3.3, Appendix D and Appendix K

– White-bellied Sea-Eagle - *Haliaeetus leucogaster*	Section 3.3, Appendix D and Appendix K
– Spectacled Monarch - *Monarcha trivirgatus*	Section 3.3, Appendix D and Appendix K
– Satin Flycatcher - *Myiagra cyanoleuca*	Section 3.3, Appendix D and Appendix K
– Cattle Egret - *Ardea ibis*	Section 3.3, Appendix D and Appendix K
– Latham's Snipe, Japanese Snipe - *Gallinago hardwickii*	Section 3.3, Appendix D and Appendix K
– Painted Snipe - *Rostratula benghalensis s. lat.*	Section 3.3, Appendix D and Appendix K
3.3.1.2 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;	Section 3.3.3
• Proposals to mitigate impacts (e.g. timing of works, minimise width of disturbance, proposed rehabilitation of in-stream and floodplain disturbances);	Section 3.3.3
• Planned rehabilitation of wet heathland, eucalypt and melaleuca woodland, and riparian vegetation communities and any relevant previous experience/experiments rehabilitating these communities; and	Section 3.3.3
• Appropriate mitigation measures for remnant ecosystems that may be affected by the Project should refer to the 'Regional Vegetation Management Code: SEQ Bioregion (DNRW 2006)', and address the 'Policy for Vegetation Management Offsets (DNRW 2007)'.	Section 3.3.3
Potential impacts and associated mitigation measures should be discussed further under Section 3.3.4 Aquatic Flora and Fauna, and Section 3.4 Water Resources.	Section 3.3.3
3.3.2 Terrestrial flora	
3.3.2.1 Description of environmental values	
The terrestrial vegetation communities within the affected areas should be described at an appropriate scale with mapping produced from aerial photographs and ground truthing, showing the following:	Section 3.3.2
• Location and extent of vegetation types including recognised regional ecosystem type descriptions and any areas of national, state or regional significance;	Section 3.3.2
• Location of vegetation types of conservation significance;	Section 3.3.2
• Vegetation map unit descriptions, including their relationship to regional ecosystems. Sensitive or important vegetation types should be highlighted and their value as habitat for fauna and conservation of specific rare floral and faunal assemblages or community types discussed;	Section 3.3.2

• The current extent (bioregional and catchment) of protected vegetation types of conservation significance within the protected areas (e.g. national parks, conservation parks, resource reserves, nature refuges etc); • Any plant communities of cultural, commercial or recreational significance; and	Section 3.3.2
• The distribution and abundance of exotic and weed species.	Section 3.3.2
The description should contain a review of published information regarding the assessment of the significance of the vegetation to conservation, recreation, scientific, educational and historical interests. 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.	Section 3.3.2
For each significant natural vegetation community likely to be impacted by the Project, vegetation surveys should be undertaken at an appropriate number of sites, allowing for seasonal factors, as follows:	Section 3.3.2
• All data requirements of the Queensland Herbarium CORVEG database should be collected;	Section 3.3.2
• Appropriate minimum site sizes should be selected, observing recognised sampling approaches and to provide an adequate sample of surveyed communities;	Section 3.3.2
• A list of species present at each site should be recorded;	Section 3.3.2
• The relative abundance and community structure of plant species present should be recorded;	Section 3.3.2
• Any plant species of conservation, cultural, commercial or recreational significance should be identified;	Section 3.3.2
• Vegetation mapping and data should be submitted to the Queensland Herbarium to assist the updating of the CORVEG database; and	Section 3.3.2
• Specimens of species listed as Protected Plants under the Nature Conservation (Wildlife) Regulation 1994, other than common species, are to be submitted to the Queensland Herbarium for identification and entry into the HERBRECS database.	Section 3.3.2
The existence of rare or threatened species should be specifically addressed under sensitive areas. Any special landscape values of natural vegetation communities should be described.	Section 3.3.2
Existing information on plant species may be used instead of new survey work provided that the data are derived from surveys consistent with the above methodology and describe existing conditions. Methodology used for flora surveys should be specified in the appendices to the report. 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.	Section 3.3.2
The occurrence of pest plants (weeds), particularly declared plants under the *Land Protection (Pest and Stock Route Management) Act 2002* should be shown on a map at an appropriate scale. A weed management strategy will be required.	Section 3.3.2
The location of any horticultural crops in the vicinity of the Project area should be shown.	Section 3.3.2

3.3.2.2 Potential impacts and mitigation measures	
This section should discuss all foreseen direct and indirect effects on terrestrial flora and the potential level of environmental impact identified. Action plans for protecting rare or threatened species and vegetation types identified as having high conservation value should be described, and any obligations imposed by Queensland or Australian Government biodiversity protection legislation or policy should be discussed.	Section 3.3.2
Construction and operation of the Project involving clearing, salvaging or removal of vegetation should be described, and indirect impacts on vegetation not cleared should be discussed.	Section 3.3.2
Impacts during construction and operation of the Project should be assessed. Short-term and long-term durations should be considered.	Section 3.3.2
Measures to mitigate the impacts of the Project on vegetation types identified as having high conservation values, listed species and sensitive habitat or the inhibition of propagation should be described. This should also include the identification of potential offset areas, in an 'Offset Strategy' to compensate for any loss of vegetation.	Section 3.3.2
With regard to the Project area, this section should include:	Section 3.3.2
• The significance of impacts at a local, catchment, bioregional, state or national levels;	Section 3.3.2
• Impact on any plants of potential or recognised environmental or economic significance;	Section 3.3.2
• A discussion of the ability of identified stands of vegetation to withstand any increased pressure resulting from the Project and identify measures proposed to mitigate impacts;	Section 3.3.2
• A description of the methods to ensure rapid rehabilitation of disturbed areas following construction, including the species chosen for revegetation which should be consistent with the surrounding associations. Details of any post construction monitoring programs and what benchmarks would be used for review of monitoring should be included;	Section 3.3.2
• A description of methods of minimising the potential for the introduction and/or spread of weeds or plant disease, including:	Section 3.3.2 and Appendix Q
– identification of the origin of construction materials, machinery and equipment;	Section 3.3.2 and Appendix Q
– the need for vehicle and machinery wash-down and any other hygiene protocols;	Section 3.3.2.2 and Appendix Q
– staff/operator education programs; and	Section 3.3.2 and Appendix Q
– determination of the potential for the introduction of or facilitation of exotic, non-indigenous and noxious plants.	Section 3.3.2 and Appendix Q
• A weed management plan should be included in an EMP, to be developed in consultation with local government environmental officers, to cover construction, rehabilitation and operation periods.	Section 3.3.2 and Appendix Q

3.3.3 Terrestrial fauna	
3.3.3.1 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. Wildlife corridors and refugia along the proposed pipeline route should be identified and mapped.	Section 3.3.3
The description of the fauna present or likely to be present in the area should include:	Section 3.3.3
• Species diversity (i.e. a species list) and abundance of animals, including amphibians, birds, reptiles, mammals and bats;	Section 3.3.3
• Any species that are poorly known but suspected of being rare or threatened;	Section 3.3.3
• Habitat requirements and sensitivity to changes, including movement corridors and barriers to movement;	Section 3.3.3
• The existence of feral or exotic animals, including maps of major pest infestations;	Section 3.3.3
• Existence of any rare, threatened or otherwise noteworthy species/communities in the study area, including discussion of range, habitat, breeding, recruitment feeding and movement requirements, and current level of protection (e.g. any requirements of Protected Area Management Plans or Threatened Species Recovery Plans); and	Section 3.3.3, Appendix D and Appendix K
• Use of the area by migratory birds, nomadic birds, fish and terrestrial fauna.	Section 3.3.3
The EIS should contain results from surveys for species listed as threatened or migratory under the EPBC Act. Surveys are to be conducted at the appropriate time of the year when the species is known to be present on the site, so that identification and location of these species is optimal.	Section 3.3.3, Appendix D and Appendix K
Methodology used for fauna surveys should be specified in the appendices to the report. The EIS should indicate how well any affected communities are represented and protected elsewhere in the sub-region where the Project occurs. Relevant site data should be provided to the EPA in a format compatible with EPA WildNet database.	Section 3.3.3
3.3.3.2 Potential impacts and mitigation measures	
This section should discuss all foreseen direct and indirect effects on terrestrial fauna. Strategies for protecting rare or threatened species should be described, and any obligations imposed by Queensland or Australian Government endangered species legislation or policy should be discussed. Impacts during construction and operation of the Project should be assessed. Short and long-term durations should be considered. Measures to mitigate the impact on habitat or the inhibition of normal movement, propagation or feeding patterns, and change to food chains should be described. Any provision for buffer zones and movement corridors, or special provisions for migratory, nomadic and aquatic animals should be discussed.	Section 3.3.3, Appendix D and Appendix K

With regard to terrestrial and riparian fauna, the assessment of potential impact should consider:	
• Impacts the Project may have on terrestrial fauna, relevant wildlife habitat and other fauna conservation values, including:	Section 3.3.3, Appendix D, Appendix K
– direct (or short term) and indirect (or long-term) impacts due to loss of range/habitat, food supply, nest sites, breeding/recruiting potential or movement corridors;	Section 3.3.3, Appendix D, Appendix K
– cumulative effects of direct and indirect impacts;	Section 3.3.3
– impacts on rare and threatened or otherwise noteworthy animal species;	Section 3.3.3, Appendix D, Appendix K
– threatening processes leading to progressive loss; and	Section 3.3.3, Appendix D, Appendix K
– identification of the conservation importance of identified populations at the regional, state and national levels.	Section 3.3.3, Appendix D, Appendix K
• Measures to minimise wildlife capture and mortality during construction and operation;	Section 3.3.3, Appendix D, Appendix K
• Details of the methodologies that would be used to avoid injuries to livestock and native fauna as a result of the Project's construction and operational works, and if accidental injuries should occur the methodologies to assess and handle injuries;	Section 3.3.3 and Appendix Q
• Methods for minimising the introduction of feral animals, and other exotic fauna such as declared pest ant species (fire ants and yellow crazy ants); and	Section 3.3.3 and Appendix Q
• Review of control measures to prevent increases in local populations and spread of biting insect species of pest and health significance associated with construction activities and disposal of construction wastes. Management of spoil must be specifically addressed, especially if these works occur within or have a connection to the South Western Fire Ant Declared Area (e.g. movement of vehicles and personnel into the Project area).	Section 3.3.3 and Appendix Q
3.3.4 Aquatic flora and fauna	
3.3.4.1 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 waterways intersected by the Project.	Section 3.3.4
A description of the habitat requirements and the sensitivity of aquatic flora and fauna species to changes in flow regime, water levels and water quality in the Project areas should be described.	Section 3.3.4, Appendix D and Appendix K
The discussion of the fauna and flora present or likely to be present at any time during the year, (including the presence of any rare, threatened or otherwise noteworthy aquatic species or communities) should include information on:	Section 3.3.4
• Fish species, mammals, reptiles, amphibians, and aquatic invertebrates occurring in the waterways within the Project area, including feral and exotic fauna species;	Section 3.3.4
• Aquatic (waterway) plants, including any declared pest plant species; and	Section 3.3.4
• Aquatic substrate and stream type.	Section 3.3.4

3.3.4.2 Potential impacts and measures	
This section should discuss all foreseen direct and indirect effects on aquatic flora and fauna, including strategies for protecting rare or threatened species and any obligations imposed by Queensland or Australian Government endangered species legislation or policy. The discussion should include:	Section 3.3.4 Appendix D and Appendix K
• An assessment of any impacts on aquatic flora and fauna, habitat or the inhibition of propagation that the proposed Project may have during its construction and operation, both in the short-term and long-term, including downstream of any proposed water extraction;	Section 3.3.4 and Appendix D
• An examination of any proposed stream diversions, causeway construction and crossing facilities, stockpiled material and other impediments that will restrict free movement of fish, including seasonal construction of waterway crossings as a means of avoiding fish spawning periods;	Section 3.3.4
• Identification of necessary permits/authorities required by the Project (e.g. permits under the Fisheries Act 1994 to construct temporary or permanent waterway barriers);	Section 3.3.4 and Appendix G
• Description of mitigation measures to prevent the creation of new mosquito and biting midge breeding sites during construction (e.g. in quarries and borrow pits); and	Section 3.3.4
• Description of the potential for and mitigation measures to prevent the introduction, transfer or facilitation of exotic, non-indigenous and noxious plants (including blue green algae) and water borne insect pests.	Section 3.3.4
3.4 Water resources	
3.4.1 Description of environmental values	
This section should describe the existing environment for water resources that may be affected by the Project in the context of the environmental values as defined in such documents referred to in the EP Act, the *Environmental Protection (Water) Policy 1997*, the 'National Water Quality Management Strategy (Australian and New Zealand Environment and Conservation Council, 2000' and Caloundra City Council's Healthy Water Strategy Final Draft 2007.	Section 3.4.1
The EIS should clarify the approximate extent of the Coastal Management District impacted by the route as depicted in a map.	Section 3.4.1 Figure 3.22
If a licence or permit will be required under the Water Act or EP Act (e.g. dredging) to take or interfere with the flow of water, this section of the EIS should provide sufficient information for a decision to be made on acceptance or non-acceptance of this application and if required, appropriate conditions to be met to gain approval.	Section 3.4.1
The EIS should discuss the following:	
• Watercourses to be crossed by the pipeline showing planned crossing locations on a map, and include descriptions of the selection process that considered alternative crossing locations if the preferred crossing point is in environmentally sensitive areas;	Section 3.4.1
• Physical, chemical and biological characteristics of existing surface and ground water;	Section 3.4.1 and Appendix L
• Environmental values of surface waterways of affected area in the context of:	Section 3.4.1
– values identified in the Environmental Protection (Water) Policy;	Section 3.4.1

– sustainability, including both quality and quantity; and	Section 3.4.1
– physical integrity, fluvial processes and morphology of water courses, including riparian zone vegetation and form.	Section 3.4.1 and Appendix L
• Existing surface drainage patterns, flows, history of flooding (including extent, levels and frequency), and present water uses.	Section 3.4.1
3.4.2 Potential impacts and mitigation measures	
This section should assess potential impacts on environmental values of water resources 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.	Section 3.4.2
Matters to be addressed should include clear descriptions of the following.	
• Likely impacts associated with the construction, commissioning and operation of the Project on water courses, particularly with respect to bank erosion and bed destabilisation,	Section 3.4.2
and the selection criteria used that determined the final crossing point and crossing method for various streams encountered along the route so as to protect watercourse integrity.	Section 3.4.2
This would include amelioration or mitigation measures to address each identified impact that may affect local and/or regional water quality thereby safeguard downstream water quality.	Section 3.4.2
Potential impacts on flooding levels upstream and downstream of any new crossing of water courses.	Section 3.4.2
• Possible sources of water pollution or other changes in water quality, including soil erosion, accidental spills, other wastes including sewage disposal and likely chemical composition of any leachate from introduced fill present on a work site.	Section 3.4.2
• The quality of water leaving construction sites (including physical, chemical, and biological characteristics), potential impacts for any likely discharged water (e.g. hydro-test water) and how the impacts will be assessed and monitored.	Section 3.4.2 and Appendix I
• The effects of drainage works, placement of fill, clearing or any other alterations to existing topography and landform on the hydrology of the site. This would include any alteration to drainage patterns, water tables and secondary influences on flooding. If levee banks or downstream diversionary constructions are proposed, the effects on neighbouring landholders should be considered, and identification of any works that will require permits or licensing in accordance with the Water Act.	Section 3.4.2 and Appendix I
• Proposed drainage control structures for all aspects of the Project, including facilities such as access roads.	Section 3.4.2
• The timing of construction works in the context of likely periods of flooding and proposals to minimise the risk of adversely impacting downstream water quality.	Section 3.4.2
• Measures to ensure viable weed seeds and pathogens are not released into the water environment including from machinery traversing creek systems or riparian areas.	Section 3.4.2

• Measures to minimise the likelihood for the transfer of toxins and pathogens between catchments.	Appendix Q
3.5 Air quality	
3.5.1 Description of environmental values	
This section of the EIS should describe the existing air quality that may be affected by the Project in the context of environmental values as defined by the EP Act and *Environmental Protection (Air) Policy 1997*.	Section 3.5.1
Ambient air quality conditions in terms of particulate matter should be described for any sensitive localities such as residences near the pipeline route and associated construction areas. These descriptions should include any baseline monitoring results.	Section 3.5.1
3.5.2 Potential impacts and mitigation measures The following air quality issues and their mitigation should be considered:	
• The quality and quantity of air emissions within the Project area expected during construction and operational activities;	Section 3.5.2
• Impacts of dust generation from construction activities, especially in areas where the pipeline follows existing road networks or passes in close proximity to residences or other dust sensitive receptors;	Section 3.5.2
• Identification of probable climatic conditions (seasonal wind patterns, extended dry periods) that could affect dust generation and dust dispersion; and	Section 3.5.2 and Appendix M
• Impacts on air quality from gaseous emissions including carbon monoxide and oxides of nitrogen from pump stations (if any), greenhouse gas emissions and emission of ozone depleting substances.	Section 3.5.2
For each identified situation, amelioration and/or mitigation measures to be undertaken during construction that relate to vehicle emissions and control of dust generation should be proposed. Similarly, proposals to manage air emissions associated with the Project's operations, such as vehicle emissions any gaseous emissions from pump stations should be discussed.	Section 3.5.2
3.6 Noise and vibration	
3.6.1 Description of environmental values	
This section should describe the existing noise and vibration environment that may be affected by the Project in the context of environmental values as defined by the EP Act and *Environmental Protection (Noise) Policy 1997*. The Environmental Protection Agencies Noise Measurement Manual should be considered.	Section 3.6.1 and Appendix M
Sensitive noise receptors adjacent to the pipeline route and associated permanent infrastructure should be identified and typical background noise levels determined. The potential sensitivity of such receptors should be discussed and performance indicators and standards nominated for each affected receptor. Current background levels for noise should be surveyed or reported.	Section 3.6.1
Comment should be provided on any current activities near the Project area that may cause a background level of ground vibration.	Section 3.6.1

3.6.2 Potential impacts and mitigation measures The EIS should describe the modelled impacts of noise and vibration generated during the construction and operational phases of the Project. An analysis of noise and vibration impacts should include:	
• The levels of noise and vibration generated during construction of the Project and ancillary activities (e.g. access roads) and operations, assessed against current typical background levels;	Section 3.6.2
• The potential environmental impact of noise and vibration at all potentially sensitive places, in particular, any places of work, residence, recreation, or worship should be quantified and compared with objectives, standards to be achieved and measurable indicators, including environmental impact on terrestrial and aquatic animals and avifauna; and	Section 3.6.2
• Proposals to minimise or eliminate these effects, 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 and vibration.	Section 3.6.2
Reference should also be made to the 'EPA Guideline: Noise and Vibration from Blasting'.	Section 3.6.2
3.7 Waste	
3.7.1 Waste generation	
The EIS should identify and describe all sources of waste associated with construction, operation and decommissioning of all aspects of the Project, using schematic diagrams for each distinct phase. This section should describe all activities including:	Section 3.7.1 and Appendix Q
• Chemical and mechanical processes conducted on the construction sites (e.g. chemical storage, sewage treatment, power generation, fuel burning, mechanical workshop, diesel storage);	Section 3.7.1
• The amount and characteristics of solid and liquid waste (including run-off from roads, plant areas, chemical storage areas and workshops) produced on-site by the Project;	Section 3.7.1
• Any waste treatment process involved, including site drainage and erosion controls;	Section 3.7.1
• Hazardous materials to be stored and/or used on-site, including environmental toxicity data and biodegradability;	Section 3.7.1
• Descriptions should also include (using maps and plans as appropriate):	
– generation points;	Section 3.7.1
– storage methods and facilities;	Section 3.7.1
– quantities;	Section 3.7.1
– disposal arrangements; and	Section 3.7.1
– recycling/reuse arrangements.	Section 3.7.1
The EIS should provide details of any waste water output, including hydro-test waste water, as follows:	
• Volume estimates of effluent that would be produced at the Project site;	Section 3.7.1 and Appendix I

• Quality of effluent produced;	Section 3.7.1
• Any mobile sewerage facilities to be used; and	Section 3.7.1
• The proposed method of disposal and extent of use of local government facilities (i.e. Council sewerage works).	Appendix Q
3.7.2 Waste management	
Having regard for best practice waste management strategies, the *Environmental Protection (Waste Management) Policy 2000* and the *Environmental Protection (Waste Management) Regulation 2000*, the proposals for waste avoidance, reuse, recycling, treatment and disposal should be described.	Section 3.7.2 and Appendix Q
This section should discuss waste management strategies, including reduction, reuse, recycling, storage, transport and disposal of waste, including measures to minimize attraction of vermin, insects and pests.	Section 3.7.2
This section should assess the potential impact of all wastes to be generated during construction and operation and provide details of each waste in terms of:	
• Operational handling and fate of all wastes including storage;	Section 3.7.2
• On-site treatment methods proposed for any wastes;	Section 3.7.2
• Methods of disposal (including the need to transport wastes off-site for disposal) proposed to be used for any trade wastes, liquid wastes and solid wastes; • The potential level of impact on environmental values;	Section 3.7.2
• Measures to ensure stability of the waste storage areas and impoundments;	Section 3.7.2 and Appendix Q
• Methods to prevent, seepage and contamination of groundwater from stockpiles and/or storage areas and impoundments;	Section 3.7.2 and Appendix Q
• Market demand for recyclable waste (where appropriate); and	
• Decommissioning of the construction site.	Section 3.7.2
The EIS should address waste minimisation techniques and processes proposed and the market demand for recyclable waste (where appropriate).	Section 3.7.2
3.8 Transport	
3.8.1 Transport methods and routes	
The EIS should describe transport methods and routes for all aspects of the transport task associated with the construction and operation of the Project Information should include:	
• Existing traffic volumes on the proposed transport routes and associated access points;	Section 3.8.1
• Volumes, tonnage, and composition of construction inputs;	Section 3.8.1
• Hazardous or dangerous material that may be transported;	Section 3.8.1
• Modes of transport (e.g. sea, rail, road) and the type of vehicles most likely to be used for transport;	Section 3.8.1
• Number and type of workforce traffic and service vehicles;	Section 3.8.1
• Number of trips generated (both light and heavy vehicles);	Section 3.8.1
• Origin and destination of inputs and any wastes, together with transport routes proposed (with the use of maps);	Section 3.8.1

• Details of over-dimension, excess mass loads or any hazardous goods; and	Section 3.8.1
• Timing and duration of transport.	Section 3.8.1
The EIS should clearly and fully describe transport information for all stages of the Project including:	
• All requirements for the construction, upgrading or re-location of any transport-related infrastructure, including any need for increased road maintenance;	Section 3.8.1
• Any new access requirements to state-controlled or local government roads; and	Section 3.8.1
• Sufficient details to allow the Department of Main Roads (DMR), Queensland Transport and local government authorities to ascertain compliance with legislative and design requirements.	Section 3.8.1
3.8.2 Potential impacts and mitigation measures	
An assessment of impacts to existing transport infrastructure associated with Project activities should be provided and include the following:	
• The likely impacts and mitigation strategies of any new roads or road realignments that are required as a result of the Project;	Section 3.8.2
• The likely impacts and mitigation strategies of increased traffic on local and regional road networks (with appropriate directional distributions), with reference to:	
– traffic volume;	Section 3.8.2
– vehicle size and types, including heavy vehicle access;	Section 3.8.2
– usage rates;	Section 3.8.2
– road safety issues, including safe access to construction sites and school bus routes within the Project area (e.g. consideration of the need for turning lanes, improved sight lines, waiting areas, off-road parking locations);	Section 3.8.2
– reduced efficiency of traffic flows or intersections along key routes, especially during construction;	Section 3.8.2
– additional wear or reduced life of pavements requiring additional or accelerated rehabilitation and maintenance, if any;	Section 3.8.2
– social, amenity, environmental or cultural heritage impacts associated with construction related transport activities not covered in other sections of the EIS;	Section 3.8.2
– proposed traffic control plans and traffic management plans; and	Section 3.8.2
– steps to prevent public access to construction access ways that are not public roads.	Section 3.8.2
• Specific issues related to construction phase activities, including:	
– site depot location and access;	Section 3.8.2
– construction traffic on local road networks, daily movement patterns, possible road closures and emergency access, especially in rural and urban residential areas; and	Appendix Q
– methods to be adopted to avoid obstruction to other road uses during construction.	Section 3.8.2

Road infrastructure impacts should be described and assessed according to DMR's 'Guidelines for Assessment of Road Impacts of Development Projects (April 2006)'. Reference should be made to other relevant DMR planning documents.	Section 3.8.2
3.9 Indigenous cultural heritage	
3.9.1 Description of environmental values	
The EIS should describe the indigenous cultural heritage values that may be affected by the Project. An indigenous cultural heritage survey (as part of the Cultural Heritage Management Plan (CHMP) process or otherwise) should be undertaken for Significant Aboriginal Objects and Significant Aboriginal Areas. The indigenous cultural heritage survey should:	Section 3.9.1
• Refer to:	
– the DNRW Indigenous Site Database; and	Section 3.9.1
– any existing literature relating to the affected areas.	Section 3.9.1
• Refer to the consultation and negotiation with traditional owners and the outcomes about:	Section 3.9.1
– significant Aboriginal Objects and Significant Aboriginal Areas and their involvement in field surveys; and	Section 3.9.1
– requirements relating to the selection of consultants and confidentiality of culturally sensitive information.	Section 3.9.1
• Include locations of Significant Aboriginal Objects and Significant Aboriginal Areas likely to be impacted by the Project;	Section 3.9.1
• Provide a constraints analysis of the proposed development area to identify and record indigenous cultural heritage places; and	Section 3.9.1
• Provide a report of work done which includes background research, relevant environmental data and methodology, as well as results of field surveys, significance assessment and conclusions and management recommendations (having due regard for any confidentiality requirements specified by community representatives).	Section 3.9.1
3.9.2 Potential impacts and mitigation measures	
The Proponent should provide an assessment of any likely effects on sites of indigenous cultural heritage values, including but not limited to the following:	
• Description of the significance of artefacts or places of indigenous cultural heritage value likely to be affected by the Project and their values at a local, regional and national level; and	Section 3.9.2
• Recommended means of mitigating any negative impacts on indigenous cultural heritage values and enhancing any positive impacts.	Section 3.9.2
The management of indigenous cultural heritage impacts should be detailed in either a native title agreement with traditional owners or in a CHMP, with the native title agreement or plan to be developed in a form that complies with the provisions of Part 7 of the *Aboriginal Cultural Heritage Act 2003,* thereby meeting the cultural heritage duty of care. The agreement or plan must provide a process for the conduct of comprehensive cultural heritage investigations and the identification of Significant Aboriginal Objects and Significant Aboriginal Areas in the proposed Project area. It is also to provide a process for the management of those objects, areas and values identified in the proposed Project area.	Section 3.9.2

The agreement or plan should include the following:	
• A process for including Aboriginal communities or Aboriginal Parties in the identification, management and protection of Aboriginal cultural heritage in the Project area;	Section 3.9.2
• A process for undertaking a comprehensive and systematic cultural heritage assessment;	Section 3.9.2
• Processes for the mitigation, management and protection of identified cultural heritage objects and areas in the Project area, and in any areas to be affected by development of any associated infrastructure, both during construction and operational phases of the Project;	Section 3.9.2 and Appendix Q
• Provision for the management of the accidental discovery of cultural material, including burials, in the Project area;	Section 3.9.2
• Processes for determining any requirements for monitoring of the Project during construction, and measures by which any monitoring program is to be implemented;	Section 3.9.2
• Indigenous cultural heritage induction and awareness programs for Project staff, subcontractors and staff, consultants and agents of the Project; and	Section 3.9.2
• A conflict resolution process.	
The development of the agreement or plan should be negotiated with all relevant stakeholder representatives, subject to any confidentiality specified by the Aboriginal community, registered native title applicants, and/or Aboriginal Parties as appropriate.	Section 3.9.2 and Appendix O
As a minimum, impact assessment, management and protection strategies should satisfy statutory responsibilities and duties of care under the *Aboriginal Cultural Heritage Act 2003* and the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cwlth).	Section 3.9.2
If a CHMP has not been approved by the submission of the EIS to the CG then the following should be provided:	Section 3.9.2
• An outline of the draft CHMP, subject to any confidentiality provisions, with the position of the endorsed cultural heritage parties; and	Section 3.9.2
• Details of the proposed steps and timeframes for seeking the ratification of the CHMP.	Section 3.9.2
3.10 Non-indigenous cultural heritage	
3.10.1 Description of environmental values	
The EIS should describe the existing environmental values for non-indigenous cultural heritage that may be affected by the Project activities. The non-indigenous cultural heritage survey should:	
• Refer to:	
– the Australian Heritage Places Inventory; – the EPA Queensland Heritage Register and other information regarding places of potential non-indigenous cultural heritage significance;	Section 3.10.1
– local government heritage register; and	Section 3.10.1
– any existing literature relating to the affected areas.	Section 3.10.1
• Refer to consultations and negotiations with historical societies about:	

– places of non-indigenous cultural heritage significance; and	Section 3.10.1 and Appendix F
– the significance of any non-indigenous cultural heritage places located or identified.	Section 3.10.1 and Appendix F
• Include locations of culturally significant sites likely to be impacted by the Project;	Section 3.10.1
• Provide a constraints' analysis of the proposed development area to identify and record non-indigenous cultural heritage places;	Appendix H
• Provide the location of mining areas with historical significance should be shown on maps; and	Section 3.10.1
• Provide a report of work done which includes background research, relevant environmental data and methodology, as well as results of field surveys, significance assessment and conclusions and management recommendations (having due regard for any confidentiality requirements specified by community representatives).	Section 3.10.1 and Appendix H
As a minimum, investigations and consultation should be undertaken in such manner and detail to satisfy statutory responsibilities and duties of care, under the EPBC Act and *Queensland Heritage Act 1992*.	Section 3.10.1 and Appendix G
3.10.2 Potential impacts and mitigation measures	
The Proponent should provide an assessment of any likely effects on sites of non-indigenous cultural heritage values, including but not limited to the following:	Section 3.10.2 and Appendix Q
• Description of the significance of artefacts, items or places of conservation or non-indigenous cultural heritage value likely to be affected by the Project and their values at a local, regional and national level;	Section 3.10.2
• Recommended means of mitigating any negative impacts on non-indigenous cultural heritage values and enhancing any positive impacts; • Negotiations with Queensland Heritage Council and the EPA regarding management of places of historic heritage significance, taking account also of community interests and concerns; and	Section 3.10.2
• Documented management strategies in accordance with the outcomes of negotiations with Queensland Heritage Commission, EPA and the community.	Section 3.10.2
As a minimum, impact assessment, management and protection strategies should satisfy statutory responsibilities and duties of care, including those under the EPBC Act and *Queensland Heritage Act 1992*.	Section 1.7 and Appendix G
3.11 Social environment	
3.11.1 Description of environmental values	
This section should describe the existing social values that may be affected by the Project. The social amenity and use of the Project area and adjacent areas for forestry, mining, fishing, recreation, industrial, educational or residential purposes should be described. In the development of this community profile, consideration should be given to:	Section 3.11.1 and Appendix P
• Community infrastructure and services, access and mobility;	Section 3.11.1
• Population, demographics and family structure of the affected community;	Section 3.11.1
• Local community values, vitality and lifestyles;	Section 3.11.1

• Recreational, cultural, leisure and sporting facilities and activities in relation to the affected area;	Section 3.11.1
• Health and educational facilities;	Section 3.11.1
• Local government and public facilities;	Section 3.11.1
• Number of properties directly affected by the Project;	Section 3.11.1
• Number of families directly affected by the Project, this should include not only property owners but also families of workers either living on the property or workers where the property is their primary employment; and	Section 3.11.1
• Aboriginal people's traditional and contemporary uses of the land affected by the Project.	Section 3.11.1
The character and basis of the local and regional economies should be addressed, including: • A description of the local economy;	Section 3.11.1
• Economic contribution of existing enterprises (e.g. tourist activity, local business, etc) and future economic opportunities; and	Section 3.11.1
• The existing housing market, particularly rental accommodation that may be required for, and available to the Project workforce.	Section 3.11.1
3.11.2 Potential impacts and measures	
This section should define and describe the objectives and practical measures for protecting or enhancing social values, describe how nominated quantitative standards and indicators may be achieved for social impacts management, and how the achievement of the objectives should be monitored, audited and managed.	Section 3.11.2, 3.11.3 and Appendix P
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, 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.	Section 3.11.2, Appendix F and Appendix P
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.	Appendix F and Appendix P
The EIS, through various assessments, should address potential impacts and proposed mitigation measures for the following:	
• Affected landholders and communities;	Section 3.11
• Current land uses and existing lifestyles and enterprises;	Section 3.11
• Demographic, social, cultural and economic profiles;	Section 3.11
• Labour markets, with regard to the source of the workforce;	Section 3.11
• Housing demand including rental accommodation for the construction workforce and associated contractors;	Section 3.11
• Disruption to recreation and tourism, including changes to access patterns;	Section 3.11
• Existing local resident values and aspirations;	Section 3.11

• Places of value to the community or individuals; and	Section 3.11
• Establishment of a complaints register and response procedure.	Section 3.11
3.12 Economic environment	
3.12.1 Description of environmental values	
This section should describe the existing economic environment that might be affected by the Project.	Section 3.11.1
The character and basis of the local and regional economies should be described including:	Section 3.11.1
• The extent and economic importance of any industries, including mining operations, which occur within the area directly affected by the Project; and	Section 3.11.1
• The local and regional industrial water users and current average volume requirements for water in the catchment.	Section 3.11.1
3.12.2 Potential impacts and measures	
An economic analysis should be presented from national, state, regional and local perspectives as appropriate to the scale of 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.	Section 3.11.3
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;	Section 3.11.3
• 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;	Section 3.11.3
• Strategies for local residents including members of Indigenous communities interested in employment opportunities, which would identify skills required for the Project and initiate appropriate recruitment and training programs; • The implications of the Project for future developments in the local area including constraints on surrounding land uses;	Section 3.11.3 and Appendix P
• 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)';	Section 3.11.3
– Indigenous employment opportunities, with regard to the 'Indigenous Employment Policy for Queensland Government Building and Civil Construction projects (the 20% Policy)'; and	Section 3.11.3
– the use of locally sourced goods and services, with regard to the 'Local Industry Policy (Department of State Development 1999)'.	Section 3.11.3
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.	Section 3.11.3

3.13 Hazard and risk	
3.13.1 Hazard and risk assessment	
This section of the EIS should describe the potential hazards and risks that may be associated with the Project and should incorporate all known hazards, which may include:	
• Identification of potential hazards, accidents, spillages and abnormal events occurring during all stages of the Project, including possible frequency of occurrence;	Section 3.12.1
• Indication of cumulative risk levels to surrounding land uses;	Section 3.12.1
• Identification of all hazardous substance to be used, stored, processed or produced and the rate of usage; and	Section 3.12.1
• Potential wildlife hazards such as snakes and disease vectors.	Section 3.12.1
The EIS should deal with on-site risks. External risks to the Project should also be considered. External risks from natural hazards could be determined on the basis of Australia/New Zealand AS/NZS 4360:2004 Risk Management. The study should assess risks during the construction, operational and decommissioning phases associated with the Project. These risks should be assessed in quantitative terms where possible. Possible hazards, accidents, and abnormal events that may arise for the Project, both during construction and in operation should be described, including:	Section 3.12.1
• Accidental release of hazardous goods or other materials;	Section 3.12.1
• Fires associated with incidents arising from the Project activities; and	Appendix Q
• Vulnerability of the Project area to bushfire and landslip and other natural disasters.	Section 3.1
Analysis of the consequences of each of these events on safety and environmental damage in the Project area should be conducted, including direct harm to the environment as a result of Project hazards. The analysis should examine the likelihood of these consequences being experienced, both individually and collectively.	Section 3.12.1
Details should be provided on the safeguards that would be employed or installed to reduce the likelihood and severity of hazards, consequences and risks to persons, fauna and environmentally sensitive sites within and adjacent to the Project area.	Appendix Q
3.13.2 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 where there are measurable risks. This should include an overview of the objectives and management principles to be adopted for the preparation of a detailed emergency plan (including emergency response and recovery/cleanup procedures) in consultation with the relevant emergency services. Planning should include reference to 'State Planning Policy 1/03, Mitigating the Adverse Impacts of Flood, Bushfire and Landslide'.	Section 3.12.2 and Appendix Q
In particular, the following should be presented:	
• Contingency plans to deal with hydrocarbon (e.g. diesel, lubricating oils) oil spills during construction, operation and maintenance of the Project;	Section 3.12.2 and Appendix Q

• Contingency plans to account for natural disasters such as storms and fires during the construction, operation and maintenance phases;	Section 3.12.2 and Appendix Q
• Emergency planning and response procedures that have been determined in consultation with state and regional emergency service providers; and	Section 3.12.2 and Appendix Q
• Plans for involvement of the relevant state agencies (such as the Department of Emergency Services, which includes the Queensland Ambulance Service, Queensland Fire and Rescue Service and Emergency Management Queensland) in relation to emergency medical response and transport and first aid matters.	Section 3.12.2 and Appendix Q
3.15 Cumulative impacts	
The purpose of this section is to provide clear and concise information on the overall impacts of the Project, and to discuss the interrelationship of these impacts. This is in addition to the discussion of cumulative impacts which feature in the relevant sections. The cumulative impacts as they relate to particular issues (e.g. water management, cultural heritage, social etc.) may also be discussed in this section. These impacts should be considered over time or in combination with other impacts because of the scale, intensity, duration or frequency of the impacts.	Section 3.13
Cumulative impacts should also take into consideration other infrastructure projects. In particular, the requirements of any relevant State Planning Policies, Environmental Protection Policies, National Environmental Protection Measures, water resource planning and any other relevant plans should be addressed.	Section 3.13
The methodology to be used to determine the cumulative impacts of the Project should be discussed. The methodology should detail the range of variables to be considered including, where applicable, relevant baseline or other criteria upon which the incremental aspects of the Project should be assessed.	Section 3.13
4 ENVIRONMENTAL MANAGEMENT PLANS	
This section of the EIS should detail the EMPs developed for the Project. Separate EMPs should individually address the discrete Project elements. The EMPs should be developed from, and be consistent with, the preceding information in the EIS.	Section 4 and Appendix Q
An EMP should provide control actions in accordance with agreed performance criteria for specified acceptable levels of environmental harm.	Section 4 and Appendix Q
In addition, the EMPs should identify:	
• Potential impacts on environmental values;	Section 4, Appendix Q
• Mitigation strategies;	Section 4, Appendix Q
• Relevant monitoring; • Appropriate indicators and performance criteria;	Section 4 and Appendix Q
• Reporting requirements;	Section 4, Appendix Q
• Appropriate corrective actions, should an undesirable impact or unforeseen level of impact occur; and	Section 4 and Appendix Q
• The recording of and response to complaints.	Section 4, Appendix Q

The aims of the EMPs are to provide:	
• Commitments by the Proponent to practical and achievable strategies and design standards (performance specifications) for the management of the Project to ensure that environmental requirements are specified and complied with;	Section 4 and Appendix Q
• An integrated plan for comprehensive monitoring and control of impacts;	Section 4 and Appendix Q
• Local, Queensland and Australian government authorities, Stakeholders and the Proponent with a common focus for approvals conditions and compliance with policies and conditions; and	Section 4 and Appendix Q
• The community with evidence that the environmental management of the Project is acceptable.	Section 4 and Appendix Q
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:	Section 4 and Appendix Q
• Environmental protection objectives for enhancing or protecting each relevant value;	Section 4 and Appendix Q
• Indicators to be measured to demonstrate the extent to which the environmental protection objective is achieved;	Section 4 and Appendix Q
• Environmental protection standards (a numerical target or value for the indicator), which defines the achievement of the objective;	Section 4 and Appendix Q
• An action program to ensure the environmental protection commitments are achieved and implemented. This will include strategies in relation to:	Section 4 and Appendix Q
– communication;	Section 4, Appendix Q
– continuous improvement;	Section 4, Appendix Q
– environmental auditing;	Section 4, Appendix Q
– monitoring;	Section 4, Appendix Q
– reporting;	Section 4, Appendix Q
– staff training; and	Section 4, Appendix Q
– a decommissioning program for land proposed to be disturbed under each relevant aspect of the Project.	Section 4 and Appendix Q
5. CONCLUSION AND RECOMMENDATION	
The EIS should make conclusions and recommendations with respect to the Project based on the studies presented, the EMPs and conformity of the Project with legislative and policy requirements.	Section 5
6. REFERENCES	
All references used in the preparation of the EIS should be presented in a recognised format.	Section 6
7. APPENDICES	Appendices
7.1 Final Terms of Reference	Appendix A
The ToR should be included as an Appendix to the EIS.	Appendix A
7.2 Development approvals	
A list of the development approvals required by the Project should be provided.	Appendix G

7.3 EPBC Report	
A stand alone report addressing matters potential impacts of the Project on MNES is recommended.	Appendix D
7.4 Consultation Report	
A list of advisory agencies should be provided in a summary Consultation Report, which should also list the Australian, Queensland and local government agencies consulted, and the individuals and groups of stakeholders consulted. A summary of the issues raised by these groups, and the means by which the issues have been addressed, should be provided in the text of the EIS.	Appendix F
The EIS should summarise the results of the community consultation program, providing a summary of the groups and individuals consulted, the issues raised, and the means by which the issues were addressed. The discussion should include the methodology used in the community consultation program, including criteria for identifying the Stakeholders and the communication methods used.	Appendix F
Information about identifying affected parties (as defined by the EPBC Act) and interested and/or affected persons (as defined by the EP Act) should be included.	Appendix F
7.5 Study Team	
The qualifications and experience of the study team and specialist sub-consultants should be provided.	Appendix E
7.6 Glossary of terms	
A glossary of technical terms and acronyms should be provided.	Appendix B
7.7 Technical data and baseline studies	
Relevant supporting data and information generated from specialist studies undertaken as part of the EIS are to be included as appendices. These may include:	Appendix H
• Geological surveys.	
• Soil surveys.	
• Flora and fauna studies.	Appendix H
• Waterways.	Appendix L
• Air quality modelling.	Appendix M
• Noise and vibration modelling.	Appendix M
• Road impact assessment.	Appendix N
• Cultural heritage studies.	Appendix H
• Social impact assessment.	Appendix P
7.8 List of Proponent commitments	
A list of all commitments made by the Proponent in the EIS should be provided, together with a reference to the relevant section in the EIS.	Appendix C