LOWER FITZROY RIVER
INFRASTRUCTURE PROJECT

Appendix B

Terms of reference cross-reference

SunWater
MAKING WATER WORK

Gladstone Area Water Board

Terms of reference cross-reference

Part B – Contents of the EIS

Term of reference requirement		Cross Reference
1.	**Executive Summary**	
1.1	The executive summary should convey the most important aspects and options relating to the project to the reader in a concise and readable form. It should use plain English, avoid using jargon, be written as a stand-alone document and be structured to follow the EIS. It should be easy to reproduce and distribute on request to interested parties who may not wish to read or purchase the whole EIS.	Volume 1, Executive summary
1.2	The executive summary should include:	Volume 1, Executive summary
	• project title	Section E1.1
	• proponent's name and contact details	Section E1.1
	• a discussion of previous projects undertaken by the proponent, if applicable, and their commitment to effective environmental management	Section E1.1
	• a concise statement of the aims and objectives of the project	Section E1.5
	• the legal framework, decision-making authorities and advisory agencies	Section E1.2
	• an outline of the background and need for the project, including the consequences of not proceeding with the project	Section E1.4
	• an outline of the alternative options considered and reasons for selecting the proposed development option	Section E2
	• a brief description of the project (pre-construction, construction, operational activities and decommissioning) and the existing environment, using visual aids where appropriate	Section E3
	• an outline of the principal environmental impacts predicted and the proposed environmental management strategies and commitments to minimise the significance of these impacts	Section E3.18
	• a discussion of the cumulative impacts in relation to social, economic and environmental factors of associated infrastructure projects proposed within the region	Figure E-2
	• include detailed maps of the proposed project location and any other critical figures	
2.	**Glossary of Terms**	Volume 3, Appendix C

Term of reference requirement		Cross Reference
3.	**Introduction**	
3.1	Clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. Include an overview of the structure of the document.	Volume 1, Chapter 1, Section 1.7
Project Proponent		
3.2	Describe the proponent's experience, including the nature and extent of business activities, experience and qualifications, and environmental record, including the proponent's environmental, health, safety and community policies. Detail who will be the project proponent, the asset owner/operator/manager and handover procedures once the weirs are completed.	Volume 1, Chapter 1, Section 1.2 Appendix E
Project Description		
3.3	Briefly describe the key elements of the project with illustrations or maps. Summarise any major associated infrastructure requirements. Provide detailed descriptions of the project in Part B, Section 4 (page 10).	Volume 1, Chapter 1, Section 1.3
Project Rational		
3.4	Describe the specific objectives and justification for the project, including its strategic, economic, environmental and social implications, technical feasibility and commercial drivers. Discuss the status of the project in a regional, state and national context. Explain the project's compatibility with relevant policy, planning and regulatory frameworks	Volume 1, Chapter 1, Section 1.4
Relationship to other projects		
3.5	Describe how the project relates to other infrastructure projects (of which the proponent should reasonably be aware) that have been, are being taken or that have been approved in the area affected by the project. Colleague	Volume 1, Chapter 1, Section 1.5
3.6	As a result of this assessment, there may be opportunities to co-locate existing or proposed infrastructure, enabling efficiency gains and mitigating environmental and property impacts. Where co-location may be likely, outline opportunities to coordinate or enhance impact mitigation strategies. Discuss the opportunities in sufficient detail to enable the reader to understand the reasons for preferring certain options or courses of action and rejecting others.	Volume 1, Chapter 1, Section 1.5
Project Alternatives		
3.7	Describe feasible alternatives including conceptual, technological and locality alternatives to the proposed project and the consequences of not proceeding with the project. Detail the criteria used to determine the alternatives and provide sufficient detail to enable the reader to understand why certain options or courses of action are preferred and why others are rejected (including the 'no action' option). Discuss the interdependencies of the project components, particularly in regard to how any infrastructure	Volume 1, Chapter 1, Section 1.6

Term of reference requirement		Cross Reference
	requirements relate to the viability of the project.	
3.8	Given the likely impacts on fish and fish habitats, discussion of alternatives should specifically examine and evaluate the relative impacts on fish and fish habitat of alternative water supplies.	Volume 1, Chapter 1, Section 1.6
3.9	This information is required to assess why the scope of the project is as it is and to ensure that the environmentally sustainable design principles and sustainable development aspects have been considered and incorporated during the scoping of the project.	Volume 1, Chapter 1, Section 1.6 and Chapter 19, Section 19.5
The Environment Impact Assessment Process		
Methodology of the EIS		
3.10	Provide an outline of the environmental impact assessment process, including the role of the EIS in the Coordinator General's decision-making process. Include information on relevant stages of the EIS development, statutory and public consultation requirements and any interdependencies that exist between approvals sought. The information in this section is required to ensure: • relevant legislation is addressed • readers are informed of the process to be followed • stakeholders are aware of any opportunities for input and participation.	Volume 1, Chapter 1, Section 1.7.1 Section 1.8
Objectives of the EIS		
3.11	Provide a statement of the objectives of the environmental impact assessment process. The structure of the EIS can then be outlined and used to explain how the EIS will meet its objectives. The purpose of the EIS is to: • provide public information on the need for the project, alternatives to it and options for its implementation • present the likely effects of the project on the natural, social and economic environment • demonstrate how environmental impacts can be avoided, managed or mitigated and the offsets for any residual impacts • provide information to formulate the project's EMP.	Volume 1, Chapter 1, Section 1.7.1 and 1.7.2
Submissions		
3.12	Inform the reader how to properly make submissions and what form the submissions should take. Inform the reader how and when properly made public submissions on the EIS will be addressed and taken into account in the decision-making process. Also indicate any implications for submissions in the event of any appeal processes.	Volume 1, Chapter 1, Section 1.7.3

Term of reference requirement		Cross Reference
Public Consultation Process		
3.13	The public consultation process should provide opportunities for community involvement and education. It may include interviews with individuals, public communication activities, interest group meetings, production of regular summary information and updates (i.e. newsletters), and other consultation mechanisms to encourage and facilitate active public consultation. The public consultation processes (community engagement) for all parts of the EIS should be integrated.	Volume 1, Chapter 1, Section 1.8 Volume 3, Appendix F Section 1.8.3
3.14	Outline the methodology that was adopted to: • identify the stakeholders and how their involvement was facilitated • identify the processes conducted to date and the future consultation strategies and programs including those during the operational phase of the project • indicate how consultation involvement and outcomes were integrated into the EIS process and future site activities including opportunities for engagement and provision for feedback and action if necessary.	Volume 1, Chapter 1, Section 1.8 Volume 3, Appendix F
3.15	List the stakeholders consulted during the program and provide details of any meetings held, presentations made and any other consultation undertaken for the EIS process. Provide information about the consultation process that has taken place and the results.	Volume 1, Chapter 1, Section 1.8.2 Volume 3, Appendix F
Project Approvals		
Relevant Legislation and Approvals		
3.16	List and describe Commonwealth, state and local legislation and policies relevant to the planning, approval, construction and operation of the project. Identify all approvals, permits, licences and authorities that will need to be obtained for the proposed project. Outline the triggers for the application of each of these and identify relevant approval requirements.	Volume 1, Chapter 3
Commonwealth Legislation		
3.17	Relevant Commonwealth legislation may include, but is not limited to: • *Aboriginal and Torres Strait Islander Heritage Protection Act 1994* • *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) • *Native Title Act 1993*.	Volume 1, Chapter 3 Section 3.2.1 Section 3.2.2 Section 3.2.5
3.18	Identify and outline relevant Commonwealth obligations such as:	Volume 1, Chapter 3

Term of reference requirement		Cross Reference
	• protection of World Heritage values	Section 3.2.2 and 3.2.3
	• migratory animals (China–Australia Migratory Bird Agreement (CAMBA), Japan–Australia Migratory Bird Agreement (JAMBA), Republic of Korea–Australia Migratory Bird Agreement (ROKAMBA) and Bonn Convention)	Section 3.2.2 and 3.2.2.2
	• biodiversity	Section 3.2.2
	• climate	Section 3.2.4
	• wetlands of international importance (Ramsar).	Section 3.2.2 and 3.2.2.2
Commonwealth Approvals		
3.19	Identify and outline Commonwealth approvals required including, but not limited to the EPBC Act.	Volume 1, Chapter 3, Section 3.2
3.20	Also, identify and outline relevant Commonwealth obligations relating to the protection of World Heritage values, National Heritage values, declared Ramsar wetlands, listed threatened species and ecological communities, migratory animals, CAMBA, JAMBA, ROKAMBA and Bonn Convention and biodiversity.	Volume 1, Chapter 3, Section 3.2
Queensland Legislation		
3.21	Where relevant, refer to applicable Queensland legislation, which may include but is not limited to:	Volume 1, Chapter 3
	• *Aboriginal Cultural Heritage Act 2003* (ACH Act)	Section 3.3.1
	• *Dangerous Goods Safety Management Act 2001* (repealed)	Section 3.3.21
	• *Environmental Protection Act 1994*	Section 3.3.4
	• *Fire and Service Rescue Act 1990*	Section 3.3.5
	• *Fisheries Act 1994*	Section 3.3.6
	• *Forestry Act 1959*	Section 3.3.7
	• *Greenhouse Gas Storage Act 2009*	Not applicable
	• *Land Title Act 1994*	Section 3.3.9
	• *Land Act 1994*	Section 3.3.9
	• *Land Protection (Pest and Stock Route Management) Act 2002*	Section 3.3.8

Term of reference requirement	Cross Reference
• *Mineral Resources Act 1989*	Not applicable
• *Nature Conservation Act 1992* (NC Act)	Section 3.3.11
• *Petroleum and Gas (Production and Safety) Act 2004*	Not applicable
• *Queensland Heritage Act 1992*	Section 3.3.12
• *Sustainable Planning Act 2009* (SP Act)	Section 3.3.15
• *Transport Infrastructure Act 1994*	Section 3.3.16
• *Vegetation Management Act 1999* (VM Act)	Section 3.3.17
• *Water Act 2000* (Water Act)	Section 3.3.19
• *Water Supply (Safety and Reliability) Act 2008*.	Section 3.3.20
Queensland Approvals	
3.22 Key Queensland approvals required, and to be considered in the EIS process may include: • operational works for constructing or raising of a waterway barrier works—*Fisheries Act 1994* and SP Act • Quarry Material Allocation Notice for the removal of quarry material in a watercourse—Water Act • Development permit for the removal of quarry material (Dredging) in a watercourse—SP Act • operational works for taking and interfering with water—Water Act • Riverine Protection Permit—Water Act • material change of use (MCU) of premises for an environmentally relevant activity (ERA)—EP Act: • extractive and screening activities • chemical storage • concrete batching • taking, destroying or interfering with forest products (e.g. timber) or quarry material (including drilling to identify resources) from State lands and specified Freehold lands—*Forestry Act 1959* • development permit for operational work that is the clearing of native vegetation—VM Act • road impact assessment (including transport impact assessment) and road-use management plan for development on land not contiguous to a state-controlled road—*Transport Infrastructure Act 1994*.	Volume 1, Chapter 3, Section 3.8, Table 3-7 and Table 3-8

Term of reference requirement		Cross Reference
	• a permit to clear native plants and a Species Management Program—NC Act	
3.23	Identify the relevant approval agency for each of the approvals required.	Volume 1, Chapter 3, Section 3.7, Table 3-7
Relevant plans		
3.24	Outline the project's consistency with the existing national, state, regional and local planning framework that applies to the project location. Refer to all relevant statutory and non-statutory plans, planning policies, guidelines, strategies and agreements.	Volume 1, Chapter 3, Section 3.4, 3.5 and 3.6
4.	**Project description**	
Describe the project through its lifetime of pre-construction, construction, operation and potentially 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.		Volume 1, Chapter 2
Overview of the project		
4.1	Provide an overview of the project to put it into context. Include: • a rationale explaining the selection of the preferred operating scenario, including details such as cost, environmental impacts, and the operational efficiencies of each option supported by detailed information on each option in relevant sections of the EIS • a description of the key components of the project including the use of text and design plans where applicable • a summary of any environmental design features of the project • the expected cost, timing (of each project phase), and overall duration of the project, including details of and justification for, any staging of the development.	Volume 1, Chapter 2, Section 2.1
Location		
4.2	Describe, using maps at suitable scales, the regional and local context of the project and all associated infrastructure. Provide real property descriptions of the project. Maps should show the precise location of the project area, in particular the: • location and boundaries of current or proposed tenure for associated infrastructure, including transport infrastructure, relevant to the project • details of any proposed road changes	Volume 1, Chapter 2, Section 2.2 Section 2.2 Section 2.2

Term of reference requirement	Cross Reference
• location of any stock routes in the project area or near associated infrastructure	Section 2.2
• location and boundaries of the project footprint, including easement widths and access requirements	Section 2.2
• location of any proposed buffers surrounding the working areas (for construction and operation)	Section 2.2
• location of infrastructure relevant to the project, including but not limited to, the state-controlled road network, local roads and railways and marine infrastructure	Section 2.2
• full supply level (FSL) of weirs	Section 2.1, Table 2-1 and Table 2-2
• current and final access to weirs and flood immunity of access points and possible delays for repairing or restarting fishways subsequent to flow events	Section 2.2 Section 2.3
• location of natural features such as waterways (e.g. rivers, streams, creeks, other water bodies and wetlands) and shorelines	Section 2.2
• location of any proposed site offices	Section 2.2
• location of any accommodation site or facility to include but not limited to: – wet/dry camp (alcohol) – security arrangements – communications facilities – roster arrangements (if applicable) – travel arrangements (drive in/drive out, bus in/bus out)	Section 2.2 and Section 2.4.1.2
• location of, and an access/evacuation map of any worker accommodation villages, construction camps and storage areas	Section 2.2
• location of emergency first aid facilities	Section 2.2
• location of possible landing site for both the rescue helicopter service and fixed wing aircraft services	Section 2.2 Section 2.3
• views to and from the site.	Figure 2-1 and Figure 2-5

Term of reference requirement		Cross Reference
Design of water resources infrastructure		
Water storage infrastructure		
4.3	Describe the process and criteria used to select the preferred design and preferred construction techniques, including:	Volume 1, Chapter 2, Section 2.3.1.1
	• FSL and details of any staging or prospects for future expansion	Section 2.3.1.3 and 2.3.1.4
	• maximum (final) crest height and spillway height, including height above stream bed	Section 2.3.1.3 and 2.3.1.4
	• length and width of weir	Section 2.3.1.3 and 2.3.1.4
	• construction materials for structure e.g. earthen/sand, concrete, rock and or sheet pile	Section 2.4.3.2
	• storage capacity, maximum depth, average depth, area of inundation at FSL, dead storage level, area of any buffer required, including a description of the flood margin and means of its determination, length of river bed (and tributaries) inundated	Section 2.3.1.3 and 2.3.1.4
	• appropriate representation (modelling of other) of the weir pool at FSL for each option proposed to allow assessment of the effect on aquatic and riparian habitat of the various storage levels down to full draw down	Section 2.3 Table 2-1 and Table 2-2
	• estimated water yields (with appropriate allowances for environmental requirements)	Section 2.3.1.3 and 2.3.1.4
	• general design of outlet works including siting, capacity, off-take level and ability to regulate flows, aquatic fauna exclusion and protection systems	Section 2.3.1.3 and 2.3.1.4
	• spillway design, including gate specification and operation, if included	Section 2.3.1.3 and 2.3.1.4
	• details of any energy dissipaters at the downstream foot of the barrier	Section 2.3.1.3 and 2.3.1.4
	• detail the weir spillway and dissipater designs and how the designs will minimise injury and mortality to fish passing over the spillway during spillway flows	Section 2.3.1.3 and 2.3.1.4
	• details of any provision for incorporating a fishway or other fish transfer mechanism and stream diversions in the design, modelled headwater and tailwater levels at different flows and extraction rates and its effect on the viability of the proposed project	Section 2.3.1.5
	• design and location of automated component control housings in relation to flood levels and relevant environmental conditions	Section 2.3.1.3 and 2.3.1.4

Term of reference requirement		Cross Reference
	• details of the physical form of the stream bed within 200 metres of the downstream foot of the barrier.	Section 2.2 Volume 1, Chapter 5, Section 5.3 and Chapter 7, Section 7.2
Water distribution infrastructure		
4.4	Describe the process and criteria used to select the preferred design and preferred construction techniques, including:	Volume 1, Chapter 2, Section 2.3.2 and 2.5
	• the method of extracting and/or releasing water from the storage	Volume 1, Chapter 9, Section 9.3.2
	• any treatment methods proposed	
	• details of how water will be sourced e.g. direct pumping from impounded waters; through downstream releases and direct pumping; through downstream releases to another/series of weirs and how this changes natural flow regimes	Section 9.3.2
	• details of the allocation of water from the impoundment including allowances for environmental requirements such as operating fishways during inflows and releases	Section 9.3.2
	• details of maximum drawdown level and likely extraction regime (e.g. when water will be sourced) and the likely water level fluctuations	Section 9.3.2
	• if distribution is by pipe:	N/A
	– details on pipeline route, including the location of any stream crossings and disturbance corridor for pipeline and associated access corridors for maintenance	
	– provision for route refinement and right of way	
	– pipeline design parameters, including capacity and design life	
	– above-ground facilities—physical dimensions and construction materials for surface facilities along the pipeline route, including information on pipeline markers	
	– the location and/or frequency of (if applicable) cathodic protection points, off-take valves, pump stations, balance tanks, control valves (isolation points), pigging facilities and any other project facilities and linkages to existing water supply infrastructure along the pipeline route	
	– details on proposed pipeline testing in relation to water sourcing and disposal	
	– design measures to ensure fish are not entrained into the piped water	

Term of reference requirement		Cross Reference
	– design measures to prevent inter-basin transfer of aquatic flora and fauna.	
Other project specific infrastructure		
4.5	Describe:	
	• all other infrastructure required to be constructed, upgraded, relocated or decommissioned for the construction and/or operation of the project, such as resource extraction areas, access roads, power supply, connection to sewerage or water supply	Volume 1, Chapter 2 Section 2.3.3
	• the existing loch system and its effectiveness and impacts on aquatic life	Section 2.3.1.5
	• the design and construction standards to be met (e.g. waterway crossings should be designed to meet the requirements of the *Fisheries Act 1994* (Qld) and in consultation with the Department of Agriculture, Fisheries and Forestry)	Section 2.3.1.1 and 2.3.1.2
	• alternative approaches or the opportunity to obtain materials from alternative sources.	Section 2.3.3
Construction phase		
4.6	Provide a detailed staging plan and approximate timeframes for the project's construction activities (including seasonal rainfall or flows).	Volume 1, Chapter 2, Section 2.4.4
4.7	Provide an estimate of the number and roles of persons to be employed during the construction phase of the project.	Volume 1, Chapter 2, Section 2.4.1.2
4.8	Provide the following information on the pre-construction, construction and commissioning of the project including detailed plans where appropriate.	Volume 1, Chapter 2, Section 2.4
Pre-construction activities		
4.9	Describe all pre-construction activities, including:	
	• approvals required for this stage	Volume 1, Chapter 3
	• land acquisitions required, be it in full or as easements, leases etc.	Volume 1, Chapter 3 and Chapter 5
	• nature, scale and timing for vegetation clearing	Volume 1, Chapter 2, Section 2.4.1.1 and 2.4.2
	• site access	Section 2.4.2

Term of reference requirement		Cross Reference
	• earthworks	Section 2.4.2
	• interference or disruption with flows in the waterway, watercourses, stream crossings and floodplain areas, including wetlands	Section 2.4.4.2
	• site establishment requirements for construction facilities, including access restriction measures and expected size, source and control of the construction workforce accommodation, services (water, sewage, communication, power, recreation) and safety requirements	Section 2.4.1.2 and 2.4.2
	• temporary works	Section 2.4.2
	• upgrade, relocation, realignment, deviation of or restricted access to roads and other infrastructure	Section 2.4.2
	• equipment to be used.	Section 2.4.2
Construction		
4.10	Describe all the construction elements of the project, including:	Volume 1, Chapter 2
	• an indicative construction timetable, including expected commissioning and start up dates and hours of operation	Section 2.4.4
	• major work programs for the construction phase, including an outline of construction methodologies	Section 2.4.4
	• construction inputs, handling and storage, including an outline of potential locations for source of construction materials	Section 2.4.3.2
	• major hazardous materials to be transported, stored and/or used on site, including environmental toxicity data and biodegradability	Section 2.4.3.3
	• clean-up and restoration of areas used during construction, including camp site(s) and storage areas	Section 2.4.3.5
	• compliance with relevant building standards and regulations.	Section 2.3.1.1 and 2.3.1.2
Commissioning		
4.11	Describe the commissioning process including the associated environmental impacts.	Volume 1, Chapter 2, Section 2.4.5
Operation phase		
4.12	Provide full details of the operation for all elements of the project, including:	
	• a description of the project site, including concept and layout plans of buildings, structures, plant and equipment to be employed	Volume 1, Chapter 2,

Term of reference requirement		Cross Reference
	• nature and description of all key operational activities, including flow releases and operation of gates and outlet works	Section 2.5
	• the capacity of the project equipment and operations	
	• a description of a fish passage maintenance program	Section 2.5.6
	• remote operation, administration and staffing (e.g. number of operators, out of business hours operation).	Section 2.5.5
Associated infrastructure		
4.13	Detail, with the aid of concept and layout plans, requirements for new infrastructure or upgrading/relocating existing infrastructure to service the project including existing and proposed land tenure. Include detail of gauging stations above and below the FSL of the impoundments that will be used to enable accurate gauging of inflows/outflows as they will relate to the fishway (passage and) operation including consideration of fish passages at gauging stations. Consider infrastructure such as transportation, water supply, energy supply, telecommunications, stormwater, waste disposal and sewerage.	Volume 1, Chapter 2, Section 2.3.3
Decommissioning and rehabilitation		
4.14	Describe the options, strategies and methods for progressive and final rehabilitation of the environment disturbed by the project, including: • developing a preferred rehabilitation strategy with a view to minimising the amount of land disturbed at any one time • illustrating the final topography of any excavations, waste areas and dam sites on maps at a suitable scale • describing the means of decommissioning the project—in terms of removing equipment, structures and buildings—and the methods proposed for stabilising the affected areas • discuss what is the intended operational life of the weirs and what strategies are there to ensure that fish passage is provided at the weir sites and be resourced and maintained subsequent to the operational life of the weirs • discussing options and methods for disposing of wastes generated by demolishing project infrastructure, including sufficient detail for their feasibility and suitability to be established • discussing future land tenure arrangements post-decommissioning of the project • developing a proposed staging plan for rehabilitation.	Volume 1, Chapter 2, Section 2.6
4.15	Include the impacts of the preferred rehabilitation strategy in the appropriate subsections of Part B, Section 5 (page 15).	Refer to Part B, Section 5
4.16	Refer to infrastructure that is not intended to be decommissioned. In this situation, describe the entity to which the infrastructure is intended to be transferred, and the proposed environmental management regimes.	Volume 1, Chapter 2, Section 2.6

Term of reference requirement		Cross Reference
5.	**Environmental values and management of impacts**	
5.1	Detail the environmental protection and mitigation measures incorporated in the planning, construction, rehabilitation, commissioning, operations and decommissioning of all facets of the project. Measures should prevent, or where prevention is not possible, minimise environmental harm and maximise environmental benefits of the project. Identify and describe preferred measures in more detail than other alternatives.	Refer to individual environmental values below.
5.2	The objectives of the following subsections are to: • describe the existing environmental values of the area that may be affected by the project, using background information and/or new studies to support statements (include reference to all definitions of environmental values set out in relevant legislation, policies and plans) • describe the potential adverse and beneficial impacts of the project on the identified environmental values and the measures taken to avoid, minimise and/or mitigate those impacts • describe any cumulative impacts on environmental values caused by the project, either in isolation or in combination with other known existing or planned projects • present objectives, standards and measurable indicators that protect the identified environmental values • examine viable alternative strategies for managing impacts (present and compare these alternatives in view of the stated objectives and standards to be achieved) • discuss the available techniques to control and manage impacts in relation to the nominated objectives.	Refer to individual environmental values below.
5.3	Where negative impacts of the project cannot be avoided, or adequately minimised or mitigated, present proposals to offset impacts in accordance with the Queensland Government Environmental Offsets Policy (Environmental Protection Agency 2008). A desktop analysis providing confidence that the likely required offsets are potentially available in the landscape should be undertaken.	Refer to individual environmental values below.
5.4	The EIS should follow the format and content outlined in these TOR; however, changes to the structure can be discussed with the EIS project manager. The mitigation measures, monitoring programs etc., identified in this section of the EIS should be used to develop the EMP for the project. Refer to Part B, Section 10 (page 59).	Refer to Part B, Section 10
Climate, natural hazards and climate change		
5.5	Describe the climatic conditions that may affect management of the project. This includes a description of the vulnerability of the project area to seasonal conditions, extremes of climate and natural or induced hazards. Provide a risk assessment and management plan detailing these potential threats to the construction, and operation of the project.	Volume 1, Chapter 4, Section 4.2

Term of reference requirement		Cross Reference
5.6	Address the most recent information on potential impacts of climatic factors in the appropriate sections of the EIS.	Volume 1, Chapter 4, Section 4.3
5.7	Include an assessment of climate change risks and possible adaptation strategies, as well as the following: • a risk assessment of changing climate patterns that may affect the viability and environmental management of the project • the preferred and alternative adaptation strategies to be implemented • commitments to working cooperatively, where practicable, with government, other industry and other sectors to address adaptation to climate change.	Volume 1, Chapter 4, Section 4.4
Flood plain management		
5.8	Due to the location of the site, a comprehensive flood study should be included in the EIS that includes:	Volume 1, Chapter 9 and Appendix P
	• quantification of flood impacts on properties surrounding and external to the project site from redirection or concentration of flows	Section 9.3 and Appendix P
	• identification of likely increased flood levels, increased flow velocities or increased time of flood inundation as a result of the development	Section 9.3 and Appendix P
	• quantification of potential flood impacts on transport networks surrounding and external to the project site from redirection or concentration of flows	Section 9.3 and Appendix P
	• an investigation of the additional impact of the weirs on the frequency and duration and seasonality of floodplain wetland inundation downstream of the weirs in the lower Fitzroy.	Section 9.3 and Appendix P Volume 1, Chapter 7, Section 7.3
5.9	The flood study should address any requirements of local or regional planning schemes for flood affected areas. The study report should include details of all calculations along with descriptions of base data, any potential for loss of flood plain storage, and triangulated surface meshes produced in terrain modelling software. Reference must be made to any studies undertaken by the local council in relation to flooding.	Section 9.3 and Appendix P
Land		
5.10	Detail the existing land environment values for all areas associated with the project. 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.	Volume 1, Chapter 5

Term of reference requirement		Cross Reference
Scenic amenity and lighting		
Description of environmental values		
5.11	Describe, in general terms, the existing character of the landscape and the general impression that would be obtained while travelling through and around it. Outline existing landscape features, panoramas and views that have, or could be expected to have, value to the community. Include information such as maps and photographs, particularly where addressing the following issues: • major views, view sheds, outlooks, and features contributing to the amenity of the area, including assessment from private residences • focal points, landmarks, waterways and other features contributing to the visual quality of the area and the project site(s) • character of the local and surrounding areas including vegetation and land use.	Volume 1, Chapter 5, Section 5.2.2 Section 5.2.2.2 Figure 5-3 and Figure 5-4 Section 5.2.2.1 Section 5.2.2.1
5.12	At a level of detail appropriate to the scale of the project, describe the relevant geomorphology, supported by illustrative mapping highlighting any significant features and associated environmental values. Include any relevant World Heritage and National Heritage values of the area.	Volume 1, Chapter 5, Section 5.3.2.1 and 5.3.2.2
Potential impacts and mitigation measures		
5.13	Describe the potential beneficial and adverse impacts of the project on landscape character and visual qualities of the site and the surrounding area. Explain what measures will be undertaken to mitigate or avoid the identified impacts.	Volume 1, Chapter 5, Section 5.2.3.1 and 5.2.3.2
Lighting		
5.14	Provide an assessment of all potential impacts of the project's lighting, during all stages, with particular reference to objectives to be achieved and management methods to be implemented to mitigate or avoid, such as: • the visual impact at night • night operations/maintenance and effects of lighting on fauna and residents • the potential impact of increased vehicular traffic • changed habitat conditions for nocturnal fauna and associated impacts.	Volume 1, Chapter 5, Section 5.2.3.3
Topography, geology and soils		
Description of environmental values		
5.15	Provide maps locating the project in state, regional and local contexts. The topography should be detailed with contours at suitable	Volume 1, Chapter 5,

	Term of reference requirement	Cross Reference
	increments, shown with respect to Australian height datum. Include significant features of the landscape and topography, and accompanying comments on the maps.	Section 5.3.2.1 Figure 5-5, Figure 5-6, Figure 5-7
5.16	Provide a description, map and a series of cross-sections of the geology of the project area relevant to the project components. Describe the geological properties that may influence ground stability, occupational health and safety, or the quality of stormwater leaving any area disturbed by the project. In locations where the age and type of geology is such that significant fossil specimens may be uncovered during construction/operations, address the potential for significant finds.	Volume 1, Chapter 5, Section 5.3.2.2 Figures 5-8, Figure 5-9, Figure 5-10
5.17	A soil survey of the sites affected by the project must be conducted at a suitable scale, with particular reference to the physical and chemical properties of the materials that will influence erosion potential, stormwater run-off quality, rehabilitation and agricultural productivity of the land. Provide information on soil stability and suitability for construction of project facilities. Soils should be described and mapped at a scale of 1:10 000 in all areas to be disturbed by earthworks and construction activities around the weir sites, including access roads, borrow areas, stockpile areas and camps.	Volume 1, Chapter 5, Section 5.3.1.1 Section 5.3.2.3 Figure 5-13, Figure 5-14
5.18	Describe, map and illustrate soil types and profiles according to the *Australian Soil and Land Survey Field Handbook* (National Committee on Soil and Terrain 2009), *Guidelines for Surveying Soil and Land Resources* (McKenzie et al. 2008) and *Australian Soil Classification* (Isbell & CSIRO 2002).	Volume 1, Chapter 5, Section 5.3.2.3 Figure 5-11, Figure 5-12
5.19	Undertake an appraisal of the depth and quality of useable soil. Assess each soil's agricultural land suitability in accordance with: • Guidelines for agricultural land evaluation in Queensland (Department of Primary Industries 1990) • Planning guidelines: the identification of Good Quality Agricultural Land (Department of Primary Industries & Department of Housing, Local Government and Planning 1993) • State Planning Policy 1/92: Development and the Conservation of Agricultural Land (Department of Primary Industries & Department of Housing, Local Government and Planning 1992).	Volume 1, Chapter 5, Section 5.3.2.3
Potential impacts and mitigation measures		
5.20	Provide details of any potential impacts to the topography or geomorphology associated with the project and proposed mitigation measures, including: • 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 • the objectives to be used for the project in any re-contouring or consolidation, rehabilitation, landscaping, and fencing.	Volume 1, Chapter 9, Section 9.3.2.7 Volume 1, Chapter 5 Section 5.3.3.1 and 5.3.3.2 Volume 1, Chapter 23

Term of reference requirement		Cross Reference
5.21	Identify the possible soil erosion rate for all permanent and temporary landforms and describe the techniques used to manage the impact. Include an assessment of likely erosion effects, especially those resulting from removing vegetation, and constructing retaining walls both on-site and off-site for all disturbed areas.	Volume 1, Chapter 5, Section 5.3.2.3 and 5.3.3.3
5.22	Identify all soil types and outline the erosion potential (both wind and water) and erosion management techniques to be used. Provide details of an erosion-monitoring program (including rehabilitation measures for erosion problems identified during construction), and detail acceptable mitigation strategies.	Volume 1, Chapter 5, Section 5.3.2.3 and 5.3.3.3 Volume 1, Chapter 23, Section 23.4.1
5.23	Summarise methods proposed to prevent or control erosion with regard to: • the Soil Erosion and Sediment Control—Engineering Guidelines for Queensland Construction Sites (Institution of Engineers Australia 1996), or other similar Guidelines • Urban Stormwater Quality Planning Guidelines 2010 (Department of Environment and Resource Management 2010) • preventing soil loss in order to maintain land capability/suitability • preventing degradation of local waterways.	Volume 1, Chapter 5, Section 5.3.1.1 and 5.3.3.3 Volume 1, Chapter 23, Section 23.4.1
Land contamination		
Description of environmental values		
5.24	Include: • mapping of any areas listed on the Environmental Management Register or Contaminated Land Register under the EP Act • identification of any potentially contaminated sites not on the registers whether or not remediation is required • a description of the nature and extent of contamination at each site.	Volume 1, Chapter 5, Section 5.4.2.2 and 5.4.2.3 Figure 5-15, Figure 5-16
Potential impacts and mitigation measures		
5.25	Discuss the management of any contaminated land and potential for contamination from construction, commissioning and operation, in accordance with the Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland (Department of Environment 1998) and the National Environment Protection (Assessment of Site Contamination) Measure 1999 (Cwlth).	Volume 1, Chapter 5, Section 5.4.1.1, 5.4.1.2 and 5.4.3
5.26	Describe strategies and methods to be used to prevent and manage any land contamination resulting from the project, including the management of any acid generation or management of chemicals and fuels to prevent spills or leaks.	Volume 1, Chapter 5, Section 5.4.3.2 and 5.4.3.3

Term of reference requirement		Cross Reference
5.27	State any intentions concerning the classification of land contamination after project completion.	Volume 1, Chapter 5, Section 5.4.4
Land use and tenure		
Description of environmental situation		
5.28	Identify, with the aid of maps:	Volume 1, Chapter 5
	• land tenure, including reserves, tenure of special interest such as protected areas and forest reserves, existing and proposed gas infrastructure, mining leases, key resource areas, water pipelines, power lines and transport corridors, including local roads, state-controlled roads, rail corridors and stock routes	Section 5.5.2.1, 5.5.2.3, 5.5.2.4, 5.5.2.5 and 5.5.2.6 Figure 5-17, Figure 5-18, Figure 5-22 – Figure 5-31.
	• proposed land tenure for all components of the project, including consideration of the *Land Act 1994* requirements to change current *Land Act 1994* tenures	Section 5.5.3.1
	• existing land uses and facilities surrounding the project	Section 5.5.2.2, Figure 5-20, Figure 5-21
	• areas covered by applications for native title claims or native title determinations, providing boundary descriptions of native title representative body(ies), and whether it is necessary to notify the representative body(ies) or if there is evidence that native title does not exist	Section 5.5.2.8 Volume 1, Chapter 17
	• distance of the project from residential and recreational areas	Section 5.5.2.9
	• declared water storage catchments	Section 5.5.2.6
	• location of the project in relation to environmentally sensitive areas.	Section 5.5.2.3, Figure 5-22
Potential impacts and mitigation measures		
5.29	Describe the potential changes to existing and potential land uses due to the construction and operation of the project. In particular, describe the following:	
	• impacts on project site and adjacent land uses and human activities and strategies for mitigation, such as:	Volume 1, Chapter 5
	– State Planning Policy 1/92: Development and the Conservation of Agricultural land (Department of Housing, Local Government and Planning & Department of Primary Industries 1992) and Planning guidelines: The identification of good	Section 5.3.3.3

Term of reference requirement	Cross Reference
quality agricultural land (Department of Primary Industries & Department of Housing, Local Government and Planning 1993)	
– State Planning Policy 1/12: Protection of Queensland's Strategic Cropping Land (Department of Environment and Resource Management 2012)	Section 5.3.3.3
– impact and benefits of the availability of water for irrigation for agricultural crops along the river—refer to Land Suitability for Irrigated Agriculture along the Fitzroy River (Forster, Sugars & Department of Natural Resources 2000)	Section 5.3.3.3
– State Planning Policy 2/07: Protection of Extractive Resources (Department of Mines and Energy 2007a) and State Planning Policy 2/07 Guideline: Protection of Extractive Resources (Department of Mines and Energy 2007b), especially with respect to 'key resource areas' defined by that guideline	Section 5.5.3.4, 5.5.3.5
– local government planning schemes	Section 5.5.3.2
– mining development licences, mining leases, petroleum leases	Section 5.5.3.4
– residential and industrial uses	Section 5.5.3.9
• possible effect on town planning objectives and controls, including Local Government zoning and strategic plans	Section 5.5.3.2
• constraints to potential developments and possibilities of rezoning adjacent to the development area	Section 5.5.3.2
• management of the immediate environs of the project including construction buffer zones	Section 5.5.3.1 Volume 1, Chapter 23
• the potential native title rights and interests likely to be impacted upon by the project and the potential for managing those impacts by an Indigenous land use agreement or other native title compliance outcomes	Section 5.5.3.8
• proposed land use changes in any areas of high conservation value and information on how easement widths and vegetation clearance in sensitive environmental areas will be minimised	Section 5.5.3.3
• potential issues involved in proximity and/or co-location of other current or proposed infrastructure services	Section 5.5.3.6
• potential impacts on future road upgrades	Section 5.5.3.6
• potential impacts on existing and future rail corridors	Section 5.5.3.6
• any land units requiring specific management measures	Section 5.5.3.2

Term of reference requirement		Cross Reference
	• effect on existing stock routes in the project area and options to manage impacts (e.g. realignment).	Section 5.5.3.7
Nature conservation		
5.30	Detail the existing nature conservation values that may be affected by the proposal. Describe the environmental values in terms of: • integrity of ecological processes, including habitats of endangered, vulnerable and near threatened (EVNT) species • conservation of resources • biological diversity, including habitats of EVNT species • integrity of landscapes and places including wilderness and similar natural places • aquatic and terrestrial ecosystems • an ecological equivalence assessment in accordance with the Ecological Equivalence Methodology Guideline, Version 1, 3 October 2011 (Department of Environment and Resource Management 2011a), or alternative assessment to support an offset proposal as agreed with DEHP.	Volume 1, Chapter 6 Volume 1, Chapter 7 Volume 1, Chapter 8
5.31	Survey effort should be sufficient to identify, or adequately extrapolate, the floral and faunal values over the range of seasons, particularly during and following a wet season. The survey should account for the ephemeral nature of watercourses traversing the proposal area, and seasonal variation in fauna populations.	Volume 1 Chapter 6, Section 6.1.2.2 Chapter 7 , Section 7.1.2.2 Chapter 8, Section 8.1.2.2
5.32	Wherever possible, seek the involvement of the local Indigenous community in conducting field observations and survey activities to identify the traditional and contemporary Indigenous uses of species.	Volume 1, Chapter 6 , Section 6.2.8
5.33	Also outline the proposed strategies to avoid, or minimise and mitigate, impacts on the identified values within the project's footprint.	Volume 1 Chapter 6 , Section 6.3, Chapter 7 , Section 7.3 Chapter 8, Section 8.3
5.34	Identify key flora and fauna indicators for ongoing monitoring.	Volume 1 Chapter 6 , Section 6.3, Chapter 7 , Section 7.3 Chapter 8, Section 8.3

Term of reference requirement		Cross Reference
Sensitive environmental areas		
Description of environmental values		
5.35	Identify areas that are environmentally sensitive in proximity to the project on a map of suitable scale, based on a desktop review of relevant databases of species sightings, species habitat requirements, existing ecosystem and habitat mapping and on field surveys. This should include areas classified as having national, state, regional or local biodiversity significance, or flagged as important for their integrated biodiversity values. Refer to both Queensland and Commonwealth legislation and policies on threatened species and ecological communities.	Volume 1, Chapter 5, Section 5.5.3.3 Chapters 6, Section 6.2.1 – 6.2.8 and 6.1.3 Chapter 7 and Chapter 8
5.36	Areas regarded as sensitive with respect to flora and fauna have one or more of the following features and should be identified and mapped:	Volume 1, Chapter 6, Chapter 7 and Chapter 8
	• important habitats of species listed under the NC Act and/or EPBC Act as critically endangered, endangered, vulnerable or near threatened	Section 6.2.2, 6.2.3 and 6.2.5
	• regional ecosystems listed as 'endangered' or 'of concern' under state legislation, and/or ecosystems listed as critically endangered, endangered or vulnerable under the EPBC Act	Section 6.2.2, 6.2.3
	• good representative examples of remnant regional ecosystems or regional ecosystems that are described as having 'medium' or 'low' representation in the protected area estate as defined in the Regional Ecosystem Description Database (REDD) available at www.derm.qld.gov.au	Section 6.2.3
	• sites listed under international treaties such as Ramsar wetlands and World Heritage areas	Section 7.2.1.3
	• sites containing near-threatened or bio-regionally significant species or essential, viable habitat for near-threatened or bio-regionally significant species	Section 6.2.1 and 6.2.7
	• sites in, or adjacent to, areas containing important resting, feeding or breeding sites for migratory species of conservation concern listed under the Convention of Migratory Species of Wild Animals, and/or bilateral agreements between Australia and other countries	Section 7.2.1.3 Section 8.2.2.2
	• sites adjacent to nesting beaches, feeding, resting or calving areas of species of special interest (e.g. marine turtles, dugong and cetaceans)	Section 7.2.1.3
	• sites containing common species that represent a distributional limit and are of scientific value or that contain feeding, breeding, resting areas for populations of echidna, koala, platypus and other species of special cultural significance	Section 7.2.2.4 Section 8.2.2.3

Term of reference requirement		Cross Reference
	• sites of high biodiversity that are of a suitable size or with connectivity to corridors/protected areas to ensure survival in the longer term; such land may contain:	Section 6.2.6
	• natural vegetation in good condition or other habitat in good condition (e.g. wetlands)	Section 6.2
	• degraded vegetation or other habitats that still support high levels of biodiversity or act as an important corridor for maintaining high levels of biodiversity in the area	Section 6.2
	• a site containing other special ecological values (e.g. high habitat diversity and areas of high endemism)	Section 6.2
	• ecosystems that provide important ecological functions such as: – wetlands of national, state and regional significance – riparian vegetation – important buffer to a protected area or important habitat corridor between areas	Section 6.2
	• declared fish habitat areas and sites containing protected marine plants under the *Fisheries Act 1994* (Qld)	Section 7.2.1.3
	• sites of palaeontologic significance such as fossil sites	Chapter 5, Section 5.3.2.2
	• sites of geomorphological significance, such as lava tubes or karst	Section 5.3.2
	• protected areas that have been proclaimed under the NC Act or are under consideration for proclamation	Section 5.5.2.3
	• remnant vegetation listed under the VM Act as containing endangered and of concern regional ecosystem function and biodiversity	Section 6.2.3
	• areas of major interest, or critical habitat declared under the NC Act or high nature conservation value areas or areas vulnerable to land degradation under the VM Act.	Section 6.2
5.37	Areas of special sensitivity include the marine environment and wetlands, wildlife breeding or roosting areas, any significant habitat or relevant bird flight paths for migratory species, bat roosting and breeding caves including existing structures such as adits and shafts, and habitat of threatened plants, animals and communities.	Volume 1 Chapter 6, Section 6.2 Chapter 7, Section 7.2.1 Chapter 8, Section 8.2.2
Potential impacts and mitigation measures		
5.38	Discuss the impact of the project on species, communities and habitats of local, regional or national significance in sensitive	Volume 1

	Term of reference requirement	Cross Reference
	environmental areas as identified above. Include human impacts and the control of any domestic animals introduced to the area.	Chapter 6, Section 6.3 Chapter 7, Section 7.3 Chapter 8, Section 8.3
5.39	Demonstrate how the project would comply with the following hierarchy: • avoiding impact on areas of remnant vegetation and other areas of conservation value including listed species and their habitat • mitigating impacts through rehabilitation and restoration including, where relevant, a discussion of any relevant previous • experience or trials of the proposed rehabilitation • measures to be taken to replace or offset the loss of conservation values where avoiding and mitigating impacts cannot be achieved.	Volume 1 Chapter 6, Section 6.3 Chapter 7, Section 7.3 Chapter 8, Section 8.3 Chapter 22, Section 22.3
5.40	Explain why the measures above would not apply in areas where loss would occur.	Volume 1, Chapter 6, Section 6.3.2
5.41	Discuss the boundaries of the areas impacted by the project within or adjacent to an endangered ecological community, including details of footprint width. If the project area will impact upon a threatened community, include reasons for the preferred alignment and the viability of alternatives.	Volume 1, Chapter 6, Section 6.3.2.1
5.42	The EIS should provide details about the approvals that will be required under the NC Act and SP Act. The overall EMP for the project should address the performance requirements of the relevant policies and regional vegetation management codes (refer to www.dnrm.qld.gov.au/land/vegetation_management).	Volume 1, Chapter 3, Section 3.3.11, 3.3.15 and 3.3.17
5.43	Where relevant, this section should discuss environmental offset requirements in accordance with *Environmental Offsets Act 2014*	Volume 1, Chapter 22, Section 22.1.2
5.44	Provide detailed information about the offsets required by necessary approvals, having regard to relevant specific-issue offset policies, including but not limited to: • an offset proposal or strategy setting out: – the values which will be impacted and may require an offset under the respective specific issue offset policies, including confirmation that the project is a Significant Community Project pursuant to section 10(5) of the VM Act – the extent of each value which may require an offset under the respective specific-issue offset policies – the offset delivery mechanism for the proposed offsets e.g. direct offset, offset transfer, indirect offset or offset payment – where the offset delivery mechanism involves a land-based offset, an assessment demonstrating that an offset which	Volume 1, Chapter 22, Section 22.2 and 22.3

Term of reference requirement		Cross Reference
	meets the requirements of the Biodiversity Offset Policy or Policy for Vegetation Management Offsets (whichever is applicable), is available within the landscape. The assessment should include a GIS analysis of the requirements of the specific-issue offsets policy and a written synthesis of this information – adequate survey information, supported by detailed survey methodology, to support the stated offset requirements.	
5.45	Describe any departure from no net loss of ecological values (refer to *Environmental Offsets Act 2014*).	Volume 1, Chapter 22, Section 22.3
Terrestrial flora		
Description of environmental values		
5.46	Provide vegetation mapping for all relevant project sites. Adjacent areas should also be mapped to illustrate interconnectivity. Mapping should also illustrate any larger scale interconnections between areas of remnant or regrowth vegetation where the project site includes a corridor connecting those other areas. Discuss any variances between site mapping and mapping produced by the Queensland Herbarium.	Volume 1, Chapter 6, Section 6.2.3
5.47	Describe the terrestrial vegetation communities within the affected areas at an appropriate scale (maximum 1:10 000), with mapping produced from aerial photographs and ground-truthing, showing the following:	Volume 1, Chapter 6
	• location and extent of vegetation types using the regional ecosystem type descriptions in accordance with the REDD	Section 6.2.3
	• location of remnant and regrowth vegetation of conservation significance based on regional ecosystems listed as 'endangered' or 'of concern' under the VM Act, ecosystems listed as critically endangered, endangered or vulnerable under the EPBC Act,	Section 6.2.3 and 6.2.4
	• and important habitats of species listed under the NC Act and/or EPBC Act as presumed extinct, endangered, vulnerable or near threatened	Section 6.2.5
	• the current extent (bioregional and catchment) of protected vegetation types of conservation significance within the protected area estate (national parks, conservation parks, resource reserves, nature refuges and conservation reserves under the *Land Act 1994* (Qld))	Section 6.2.3.2
	• any plant communities of cultural, commercial or recreational significance	Section 6.2.8 and 6.2.9
	• the location of any horticultural crops in the vicinity of the project area	Section 6.2.10
	• location and abundance of any exotic or weed species.	Section 6.2.11
5.48	Highlight sensitive or important vegetation types, including riparian vegetation, and their value as habitat for fauna and conservation	Volume 1, Chapter 6,

	Term of reference requirement	Cross Reference
	of specific rare floral and faunal assemblages or community types. 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.	Section 6.2
5.49	For each significant natural vegetation community likely to be impacted by the project, vegetation surveys, consistent with the Methodology for Survey and Mapping of Regional Ecosystems and Vegetation Communities in Queensland, (Neldner, Wilson, Thompson & Dillewaard 2005) should be undertaken at an appropriate number of sites, allowing for seasonal factors, and satisfying the following: • the relevant regional vegetation management codes • site data should be recorded in a form compatible with the Queensland Herbarium CORVEG database • the minimum site size should be 10 × 50 metres • a complete list of species present at each site should be recorded • the surveys to include species structure, assemblage, diversity and abundance • the relative abundance of plant species present to be recorded • any plant species of conservation, cultural, commercial or recreational significance to be identified • specimens of species listed as protected plants under the Nature Conservation (Wildlife) Regulation 2006 (Qld), other than common species, are to be submitted to the Queensland Herbarium for identification.	Volume 1, Chapter 6, Section 6.1.2
5.50	Existing information on plant species may be used instead of new survey work, provided that the data is derived from previous surveys at the site consistent with the above methodology. The methodology used for flora surveys should be specified in the appendices to the report.	Volume 1, Chapter 6, Section 6.1.2
	Potential impacts and mitigation measures	
5.51	Describe the potential environmental harm to the ecological values of the area arising from the construction, operation and decommissioning of the project including clearing, salvaging or removing vegetation. Discuss the indirect effects on remaining vegetation. Consider short- and long-term effects and comment on whether the impacts are reversible or irreversible.	Volume 1, Chapter 6, Section 6.3
5.52	With regard to all components of the project, include: • a description of the potential impacts that clearing vegetation will have on listed species and communities in the extent of the proposed vegetation clearing	Volume 1, Chapter 6 Section 6.3.2

Term of reference requirement		Cross Reference
	• any management actions to minimise vegetation disturbance and clearance	Section 6.3.2 and 6.3.5
	• a discussion of the ability of identified vegetation to withstand any increased pressure resulting from the project and any measures proposed to mitigate potential impacts	Section 6.3.3
	• 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	Section 6.3.5 and Chapter 23
	• details of any post-construction monitoring programs	Section 6.3.5 and Chapter 23
	• a discussion of the potential environmental harm on flora due to any alterations to the local surface and groundwater environment with specific reference to impacts on riparian vegetation or other sensitive vegetation communities	Section 6.3.2
	• the location and extent of the areas proposed to be cleared directly, or indirectly through alterations to surface water and groundwater hydrology (including regional ecosystems, essential species habitat, wetland type, stream order of the areas proposed for clearing)	Section 6.3.2
	• details of how the proposed clearing meets the performance requirements of the relevant Regional Vegetation Management Code	Section 6.1.3
	• the location, extent and ecological equivalence assessment of the areas to be cleared for which an offset will be provided, having regard to relevant specific-issue offset policies (or an alternative assessment to support an offset proposal as agreed with EHP)	Chapter 22
	• a description of any foreseen impacts which increase the susceptibility of ecological communities and species to the impacts of climate change.	Chapter 8, Section 8.3.6
5.53	Outline how these measures will be implemented in the overall EMP for the project. Weed management strategies are required for containing existing weed species (e.g. parthenium and other declared plants) and ensuring no new declared plants are introduced to the area. Refer to the local government authority's pest management plan and any strategies and plans recommended for the project area by Biosecurity Queensland. Discuss the strategies in accordance with provisions of the *Land Protection (Pest and Stock Route Management) Act 2002* (Qld) in the main body of the EIS and in the pest management plan within the EMP for the project.	Volume 1, Chapter 6, Section 6.3.5 Chapter 23, Section 23.4.3 and 23.5.1

Term of reference requirement		Cross Reference
Terrestrial fauna		
Description of environmental values		
5.54	Describe the terrestrial and riparian fauna occurring in the areas affected by the proposal, noting the broad distribution patterns in relation to vegetation, topography and substrate. The description of the fauna present or likely to be present in the area should include:	Volume 1, Chapter 8
	• species diversity (i.e. a species list) including species lists for each site surveyed	Section 8.2.2.1
	• species listed as EVNT by EPBC Act or the NC Act, and the location of any siting, estimated abundance, and the extent of habitat for each of these species	Section 8.2.2
	• species listed by the DEHP 'Back on Track' species prioritisation methodology (refer to: www.derm.qld.gov.au/wildlife-ecosystems/wildlife/back_on_track_species_prioritisation_framework/index.html)	Section 8.2.2.6
	• any species that are poorly known but suspected of being EVNT	N/A
	• habitat requirements and sensitivity to changes, including movement corridors and barriers to movement	Section 8.2.1
	• the existence of feral or introduced animals including those of economic or conservation significance	Section 8.2.2.7
	• existence (actual or likely) of any species/communities of conservation significance 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)	Section 8.2.2
	• an estimate of commonness or rarity for the listed or otherwise significant species	Section 8.2.2
	• use of the area by migratory fauna.	Section 8.2.2.2
5.55	Indicate how well any affected communities are represented and protected elsewhere in the bio-region where the project occurs. Specify the methodology used for fauna surveys. Provide relevant site data to DEHP in a format compatible with the Wildlife Online database for listed threatened species (refer to www.ehp.qld.gov.au/wildlife/wildlife_online/index.html).	Volume 1, Chapter 8, Section 8.1.2 and 8.2.2
Potential impacts and mitigation measures		
5.56	The assessment of potential impact should consider impacts the project may have on terrestrial fauna, relevant wildlife habitat and other fauna conservation values, including:	Volume 1, Chapter 8

	Term of reference requirement	Cross Reference
	• impacts due to loss of range/habitat, food supply, nest sites, breeding/recruiting potential or movement corridors or as a result of hydrological change	Section 8.3.5
	• impacts on native species, particularly species of conservation significance	Section 8.3.9
	• cumulative effects of direct and indirect impacts	Section 8.3.9
	• threatening processes leading to progressive loss	Section 8.3.6 and 8.3.7
	• a description of any foreseen impacts which increase the susceptibility of ecological communities and species to the impacts of climate change.	Section 8.3.6
5.57	Describe strategies for protecting rare or threatened species, and discuss any obligations imposed by state or Commonwealth endangered species legislation or policy or international obligations (i.e. JAMBA, CAMBA and ROKAMBA).	Volume 1, Chapter 8, Section 8.3.9
5.58	Address any actions of the project or likely impacts that require an authority under the NC Act. Provide the following information on mitigation strategies:	Volume 1, Chapter 8
	• measures to avoid and mitigate the identified impacts. Any provision for buffer zones and movement corridors, nature reserves or special provisions for migratory animals should be discussed and coordinated with the outputs of the flora assessment	Section 8.3
	• 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 8.3.2
	• strategies for complying with the objectives and management practices of relevant recovery plans.	Section 8.3.9
5.59	Outline how these measures will be implemented in the overall EMP for the project. Rehabilitation of disturbed areas should incorporate, where appropriate, provision of nest hollows and ground litter.	Volume 1, Chapter 23, Section 23.5.1
5.60	Address feral animal management strategies and practices. The study should develop strategies to ensure that the project does not contribute to increased encroachment of a feral animal species. Refer to the local government authority's pest management plan and any strategies and plans recommended for the project area by Biosecurity Queensland. Discuss the strategies in accordance with the provisions of the *Land Protection (Pest and Stock Route Management) Act 2002* in the main body of the EIS and in the pest management plan within the EMP for the project.	Volume 1, Chapter 8, Section 8.3.8

Term of reference requirement		Cross Reference
Aquatic ecology		
Description of environmental values		
General habitat		
5.61	Describe, map and quantify fish and other aquatic fauna habitats at representative sites upstream of the proposed impoundments, within the impounded areas and downstream as far as the effect of the weirs will extend. This should include features such as: • distribution of pool and riffle formations • presence of snags • presence of overhanging vegetation • features of riparian vegetation (species, cover, continuity, height, width etc) • presence of aquatic macrophytes • benthic substrate • river profile (bank width and depth) • presence of sand and gravel bars • water quality.	Volume 1, Chapter 7, Section 7.2.1
5.62	Quantify the amount of habitat that will be impacted.	Volume 1, Chapter 7, Section 7.3.3
5.63	Describe habitat downstream of the project or potentially impacted in associated lacustrine and marine environments. Describe estuarine and marine environments at a level of detail commensurate with the risks (including cumulative risks) the project poses to those environments.	Volume 1, Chapter 7, Section 7.2.1.3
5.64	Discuss the sensitivity of aquatic habitats to disturbance, at the site and up and downstream of the site, including potential disturbances and changes resulting from the proposed works (e.g. in water quality, flow regimes, water levels, proposed land use).	Volume 1, Chapter 7, Section 7.2.1.5
5.65	Provide sufficient baseline data to enable a comparison of before the weirs, during construction and during operation of the weirs that detects changes that may take place in the physical make-up of the river (upstream of the proposed impoundment, within the impounded area and downstream as far as the effect of the dam/weir will be felt) and in the estuary, including: • flow patterns • silt transport and deposition	Volume 1, Chapter 7, Section 7.2.1

	Term of reference requirement	Cross Reference
	• bed and bank profiles and materials.	
5.66	Evaluate and enable management options and actions to be determined that mitigate those changes.	Volume 1, Chapter 7, Section 7.3
5.67	Provide sufficient baseline data to enable a comparison of before the weirs, during construction and during operation of the weirs that detects changes to fish habitat upstream of the proposed impoundment, within the impounded area and downstream as far as the effect of the dam/weir will be felt (including downstream floodplain fish nursery habitats, estuarine and marine) that may take place, including:	Volume 1, Chapter 7
	• water quality parameters	Chapter 11, Section 11.2
	• composition and extent of riparian vegetation	Section 7.2.1
	• composition and extent of aquatic macrophytes	Section 7.2.2.6
	• description of floodplain habitat, (such as wetlands, floodplain waterbodies) presence of snags, description of pool and riffle features	Section 7.2.1
	• connectivity of wetlands to the river.	Section 7.2.1
5.68	Evaluate and enable management options and actions to be determined that mitigate those changes.	Volume 1, Chapter 7, Section 7.3
5.69	Provide details of the aquatic habitat sampling methods, sites, dates and times of sampling and flow conditions at the time(s) of sampling.	Volume 1, Chapter 7, Section 7.1.2.3 Volume 3, Appendix J and Appendix K
General flora and fauna		
5.70	Describe the aquatic flora and fauna present, or likely to be present, in the areas affected by the proposal, noting the patterns and distribution in the waterways and any associated wetlands. Include:	Volume 1, Chapter 7
	• mammals, reptiles, amphibians, crustaceans and aquatic invertebrates occurring in the waterways within the affected	Section 7.2.2
	• area and any associated wetlands (as defined under section 5 of the *Fisheries Act 1994*)	Section 7.2.1
	• any rare or threatened marine species	Section 7.2.7

Term of reference requirement		Cross Reference
	• a description of the habitat requirements and the sensitivity of aquatic species to changes in flow regime, water levels and water quality in the project areas	Section 7.2.1
	• aquatic plants including native and exotic/weed species	Section 7.2.2.6
	• habitat downstream of the project or potentially impacted due to currents in associated lacustrine and marine environments	Section 7.2.1.3
	• aquatic substrate and stream type, including extent of tidal influence and common levels such as highest astronomical tide and mean high water springs.	Section 7.2.1.1
5.71	Describe estuarine and marine environments at a level of detail commensurate with the risks (including cumulative risks) the project poses to those environments.	Volume 1, Chapter 7, Section 7.2.1.3
5.72	Describe any wetlands listed by DEHP as areas of national, state or regional significance and detail their values and importance for aquatic flora and fauna species.	Volume 1, Chapter 7, Section 7.2.1.1 and 7.2.1.3
5.73	Determine the potential for introducing into the impoundment, or facilitating movement of, translocated or exotic or non-indigenous or noxious aquatic fauna (including fish and crustaceans) through the construction and operation of the proposed structure and associated pipeline.	Volume 1, Chapter 7, Section 7.3.10
Flora		
5.74	Define the nature and extent of existing riverine features such as littoral and sub-littoral lands, waterways within the proposed area of development and in the areas adjacent to the project.	Volume 1, Chapter 7, Section 7.2.1
5.75	Conduct field assessments for plant species, preferably in both pre- and post-wet season conditions, as follows: • record site data in a form compatible with the Queensland Herbarium CORVEG database • record a complete list of species present at each site, including those species defined and protected under the *Fisheries Act 1994* • record the relative abundance of plant species present • identify any plant species of conservation, cultural, commercial or recreational significance • submit specimens of species listed as protected plants under the Nature Conservation (Wildlife) Regulation 1994 (Qld) (other than common species) to the Queensland Herbarium for identification and entry into the HERBRECS database.	Volume 1, Chapter 7, Section 7.1.2.3 Volume 3, Appendix J and Appendix K

Term of reference requirement		Cross Reference
Fauna—turtles		
5.76	Describe the turtle species that may be using the Fitzroy River (catchment), and its tributaries in proximity to the proposed development area. Monitor turtle nesting along beaches near the proposed project area for the duration of the turtle nesting seasons, for turtle species occurring in the area.	Volume 1, Chapter 7, Section 7.2.2.3
5.77	Undertake a desktop review of information on the turtle communities of the study area, particularly the Fitzroy river, broad-shelled, eastern snake-necked, Krefft's river saw-shelled and white-throated snapping turtles, paying specific attention to any anecdotal or recorded information on turtle populations frequenting the port area and any known nesting sites.	Volume 1, Chapter 7, Section 7.2.2.3 Volume 3, Appendix J and Appendix K
5.78	Conduct ecological risk assessment modelling for turtles, paying particular attention to the impacts of the flow regime on nesting banks. A complete analysis of the species is required and should include: • likely historic range including the locations of nesting sites, the types of living/foraging habitats, and total range length • analysis of the percentage loss of these components of the historic range • measures of habitat fragmentation (length of habitats inundated, number of fragments removed) • current population structure (male/female ratios, age classes, female reproductive health), assessment of health status of individuals, nest sites remaining and measures of quality of remaining habitat.	Volume 1, Chapter 7, Section 7.2.2.3 Volume 3, Appendix J and Appendix K and Appendix L
5.79	Refer to studies of the turtle populations and consult DEHP on historical data for the area, particularly in relation to previously conducted nesting surveys.	Volume 1, Chapter 7, Section 7.2.2.3 Volume 3, Appendix J and Appendix K and Appendix L
5.80	An analysis should include measures to either provide additional suitable nesting sites or upgrade the suitability/security of existing nesting sites.	Volume 1, Chapter 22, Section 22.3.2
5.81	The proponent shall use this information to establish the basis for recommendations in relation to the most appropriate management measures to be adopted to minimise the risk of turtle injury or death.	Volume 1, Chapter 7, Section 7.3 and Chapter 22, Section 22.3.2 Volume 3, Appendix L and Appendix M

Term of reference requirement		Cross Reference
Fauna—fish		
5.82	Document the fish and crustacean species (recreational, commercial and other) at representative sites upstream of the proposed impoundment, within the impounded area and downstream as far as the effect of the dam/weir will extend. This should include distribution, diversity, some population descriptors (e.g. size classes/length frequency) and relative abundance. Historical information (e.g. former distribution, diversities) should be included where available.	Volume 1, Chapter 7, Section 7.2.2.2
5.83	Discuss fish habitat requirements and usage at the site and up and downstream of the site, including life cycle, seasonal or flow-related variations in those requirements.	Volume 1, Chapter 7, Section 7.2.2.2
5.84	Fish movement requirements through the site need to be determined (including any seasonal changes to those requirements).	Volume 1, Chapter 7, Section 7.2.2.2
5.85	Evaluate the recreational and commercial fisheries at the site and up and downstream of the site including estuarine and near coastal fisheries and fish habitat downstream of the proposed works.	Volume 1, Chapter 7, Section 7.2.2.2
5.86	Provide sufficient baseline data to enable a comparison of before the weirs, during construction and during operation of the weirs that detects changes that may take place in the aquatic faunal communities (including fish) upstream of the proposed impoundment, within the impounded area and downstream as far as the effect of the dam/weir will be felt (including estuarine and marine where appropriate). Evaluate and enable management options and actions to be determined that mitigate those changes.	Volume 1, Chapter 7, Section 7.2.2.2 Volume 3, Appendix J and Appendix K
5.87	Provide details of the aquatic fauna sampling methods, sites, dates and times of sampling and flow conditions and water quality at the time(s) of sampling.	Volume 1, Chapter 7, Section 7.1.2.2
Potential impacts and mitigation measures—general		
5.88	Discuss the potential impacts of the project on the aquatic ecosystems and describe proposed mitigation actions, including: • an ecological risk assessment for aquatic ecosystems and habitats using models created by DEHP for the Fitzroy Water Resource Plan review • methods to minimise the potential for introducing or spreading weed species, plant disease, algal bloom and pest fish species • monitoring aquatic biology health, productivity and biodiversity in areas subject to direct discharge • effects of changes to flow regime downstream, including the effect of changes in water quality, salinity, habitat structure (e.g. permanence and depth of flow in riffles) and flow regime (seasonality of releases, decreased flooding etc.).	Volume 1, Chapter 7 Section 7.1.2.4 Section 7.3.6.6 and 7.3.10.2 Section 7.3.5.2 Section 7.3.7
5.89	Identify the risks to estuarine and marine environments, and, as far as possible, estimate and quantify the impacts associated with	Volume 1, Chapter 7,

Term of reference requirement		Cross Reference
	significant risks.	Section 7.3.11
5.90	Address any actions of the project or likely impacts that require an authority under the relevant legislation including the NC Act and/or the *Fisheries Act 1994*. Outline how these measures will be implemented in the overall EMP for the project.	Volume 1, Chapter 7, Section 7.1.3, 7.3.9 and 7.3.12
Potential impacts and mitigation measures—fish and fish habitat		
5.91	Discuss the potential impacts of the project on the fish and fish habitat and describe proposed mitigation actions, including:	Volume 1, Chapter 7
	• the potential impacts of the proposal on fish habitat at the site and up and downstream of the site as far as the effect of the weirs will extend, including impacts on features such as: – riparian vegetation – aquatic flora – distribution of pool and riffle environments – water quality – instream and bank (freshwater) profiles – floodplain habitat (e.g. wetlands, downstream floodplain fish nursery habitats, other waterbodies)	Section 7.3.3.4
	• the potential and cumulative impacts of the proposal on aquatic faunal communities (including fish) at the site and up and downstream of the site as far as the effect of the weirs will extend (including downstream floodplain fish nursery habitats, estuarine and near coastal aquatic communities). These should include impacts on: – reproduction – different life stages – access to and availability of different habitats – population and community structure (including overall diversity) – conservation status	Section 7.3
	• proposed location, type and design of waterway barrier works (both temporary and permanent), with an appropriately scaled map, that would impact on aquatic resources, particularly fish movement	Section 7.3.9 Chapter 2, Section 2.3.1.5

Term of reference requirement	Cross Reference
• the extent to which fish movement opportunities downstream of the weirs (including between river and the lower Fitzroy floodplain wetland fish nursery habitats) are reduced by the proposed dam/weir in terms of: – frequency, duration and timing of drownout at downstream instream barriers – reduction in: ○ connectivity of the river during lower flows ○ operation of existing fishways ○ spilling frequency of existing weirs ○ lateral movements between floodplain and riverine fish habitat, especially between downstream floodplain fish nursery habitats ○ trigger flows and changes in seasonal flows	Section 7.3.7.1 and 7.3.9
• the potential impacts on commercial and recreational fisheries (freshwater, estuarine and near coastal)	Section 7.2.2.2
• the impact of fringing (aquatic) plant species and floating aquatic plant species to be introduced (including exotic, non-indigenous and noxious plants) at the site during the construction and operation phases	Section 7.3.10
• the potential for introducing into the impoundment, or facilitating movement of, translocated or exotic or non-indigenous or noxious aquatic fauna (including fish and crustaceans) through the construction and operation of the proposed structure and associated pipeline	Section 7.3.10.1
• cumulative impacts on fish and fish habitat from existing disturbances in the Fitzroy system and other proposed water infrastructure and water extraction in the catchment and the ability of the ecosystem to absorb the additional impact of the proposed weirs	Chapter 21, Section 21.5
• mitigation provisions to manage the identified potential impacts and effects of each activity or outcome associated with the proposed works (throughout construction and operation) on fish, fish habitat and fisheries resources. Management strategies should aim to minimise and mitigate impacts	Section 7.3.9.6
• the commitment to initiate and continue the proposed management strategies throughout the construction and operation of the proposed works should be demonstrated	Section 7.3.9.6
• the likely success of management measures to control excessive plant growth	Section 7.3.6.5
• potential mechanism and their ability to ensure adequate fish and fauna passage is provided at proposed waterway barriers	Section 7.3.9.6
• demonstrate capacity for implementing, operating and adequately maintaining the necessary fish passage measures for the life	Chapter 2, Section 2.3.1.5

Term of reference requirement		Cross Reference
	• of the waterway barriers (e.g. weirs and stream crossings)	Chapter 2, Section 2.3.1.5
	• detail alternatives to waterway crossings where possible	Chapter 2, Section 2.3.3.2
	• measures to avoid construction during fish spawning periods, such as seasonal construction of waterway crossings and measures to facilitate fish movements through water crossings	Section 7.3.9.1
	• offsets proposed for residual impacts on fisheries values including fish habitat, connectivity, fish passage and fishing	Chapter 22, Section, 22.2.3.5
	• the need and effectiveness of artificial stocking fish programs	Section 7.2.2
	• details of monitoring programs of impacts of the proposed works (throughout construction and operation) an related changes to the system both in the short-term and in the long-term over the life of the dam/weir	Section 7.3
	• details of monitoring programs and evaluating the success of proposed management and mitigation strategies that should include; level of monitoring (e.g. number of sites, samples, frequency), evaluation/performance criteria, responsibility and reporting arrangements and corrective action(s) in the event that a strategy is not working	Chapter 23, Section 23.4.3 and 23.5.1 Volume 3, Appendix M
	• commitments to monitoring programs for fish passage at the proposed weirs and processes and capacity for ensuring that fish passage provisions can be adjusted structurally or operationally, based on monitoring results, should be outlined	Section 7.3.9.6
	• demonstrate revision of management strategies, in the event that a strategy is shown from monitoring, to be unsuccessful.	Chapter 23, Section 23.4.3 and 23.5.1
Water resources		
Description of environmental values		
5.92	Describe the existing water resources that may be affected by the project in the context of environmental values, as defined in such documents as the EP Act, Environmental Protection (Water) Policy 2009 (EPP (Water)), Australian and New Zealand Guidelines for Fresh and Marine Water Quality (Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand 2000) and the Queensland Water Quality Guidelines 2009 (Department of Environment and Resource Management 2009).	Volume 1, Chapter 11, Section 11.1.2 and Section 11.2
5.93	Provide an indication of the quality and quantity of water resources in the vicinity of the project area, describing:	Volume 1, Chapter 9, Chapter 10 and Chapter 11
	• existing surface and groundwater in terms of physical, chemical and biological characteristics	Section 9.2, 10.2 and 11.2

Term of reference requirement		Cross Reference
	• existing surface drainage patterns, flows, history of flooding including extent, levels and frequency and present water uses	Section 9.2
	• any surface water modelling must be updated to include the most recent high flows and include pre-development and current development and full-entitlement scenario modelling. The impact of climate change on these scenarios must also be quantified.	Section 9.1.3 and 9.3.2.5
5.94	Describe the environmental values of the surface waterways and groundwater of the affected area in terms of:	Volume 1, Chapter 9, Chapter 10 and Chapter 11
	• values identified in the EPP (Water)	Section 11.1.2, 11.1.4 and 11.2
	• physical integrity, fluvial processes and morphology, including riparian zone vegetation and form, if relevant	Section 9.2.1, and 9.2.4
	• any impoundments (e.g. dams, levees, weirs etc.)	Section 9.2.6, 10.2.3 and 11.2.1
	• hydrology of waterways and groundwater	Section 9.2.2
	• sustainability, including both quality and quantity	Section 9.2 Section 10.2 Section 11.2
	• dependent ecosystems	Section 10.2.3
	• existing and other potential surface and groundwater users	Section 9.2.5 and 10.2.2
	• surface waters and water bodies (including existing weirs and dams) at the site and at catchment (Fitzroy, Dawson and Mackenzie) indicating locations of the proposed works, including flood contours for example, one-in-one-year, one-in-five-year, one-in-fifty-year flood events	Section 9.2
	• the historical and current flow regime including salinity levels, seasonal flow patterns, flow volumes and flow duration curves for a range of flows at the sites and downstream of the sites	Section 9.2.2
	• surface water quality, at the site and up and downstream of the site, including any seasonal variation in water quality parameters. Parameters should include temperature, dissolved oxygen, chlorophyll, water turbidity, pH, conductivities and nutrient levels	Section 11.2
	• sediment transport and deposition patterns, including seasonal/flow related variation	Section 11.2.5

Term of reference requirement		Cross Reference
	• current or proposed flow management schemes for the waterway (e.g. water resource plan, resource operations plan and interim resource operations licence) and for the proposed weirs	Section 9.1.2
	• water resource plans relevant to the affected catchments.	Section 9.1.2
5.95	The groundwater assessment should also be consistent with relevant guidelines for the assessment of acid sulfate soils, including spatial and temporal monitoring, to accurately characterise baseline groundwater characteristics.	Volume 1, Chapter 11, Section 11.3.1
Groundwater		
5.96	Review the quality, quantity and significance of groundwater in the project area, together with groundwater use in neighbouring areas. Refer to relevant legislation or water resource plans for the region. The review should also provide an assessment of the potential take of water from the aquifer and how current users, the aquifer itself and any connected aquifers will be affected by the take of water.	Volume 1, Chapter 10, Section 10.2 and Chapter 11, Section 11.2.7
5.97	The review should include a survey of existing groundwater supply facilities (bores, wells, or excavations) to the extent of any environmental harm. The information to be gathered for analysis is to include:	Volume 1, Chapter 10, Section 10.2.2
5.98	If the project is likely to use or affect local sources of groundwater, describe groundwater resources in the area in terms of: • location • geology/stratigraphy • aquifer type—such as confined, unconfined • depth to and thickness of the aquifers • depth to water level and seasonal changes in levels • groundwater flow directions (defined from water level contours) • interaction with surface water • possible sources of recharge • pumping parameters • seasonal variations (if records exist) of groundwater levels • potential exposure to pollution • current access to groundwater resources in the form of bores, springs and ponds (including quantitative yield of water and locations of access).	Section 10.2

Term of reference requirement		Cross Reference
5.99	The groundwater assessment should also be consistent with relevant guidelines for the assessment of acid sulfate soils including spatial and temporal monitoring to accurately characterise baseline groundwater characteristics.	Volume 1, Chapter 11, Section 11.3.1
5.100	Develop a network of observation points that would satisfactorily monitor groundwater resources both before and after commencement of operations.	Volume 1, Chapter 10, Section 10.1.3
5.101	The data obtained from the groundwater survey should be sufficient to enable specification of the major ionic species present in the groundwater, pH, electrical conductivity and total dissolved solids.	Volume 1, Chapter 10, Section 10.2.1.4
Potential impacts and mitigation measures		
5.102	Assess the potential impacts of the project on water resource environmental values identified in the previous section. 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 objectives will be monitored, audited and managed. Include the following:	Volume 1, Chapter 9, Chapter 10 and Chapter 11
	• potential impacts on the flow and the quality of surface and groundwater from all phases of the project, with reference to their suitability for the current and potential downstream uses and discharge licences	Section 9.3, 10.3 and 11.3
	• potential changes in flow patterns at the site and downstream of the site, including changes in salinity levels, frequency, volumes and duration and changes in flows reaching estuarine waters. These patterns should be compared with current and pre-regulation flows in the system at a meaningful scale and presented using daily and monthly flow data rather that at an annual scale	Section 9.3.2.3
	• potential changes in flood regimes, including changes to frequency and duration of floodplain/wetland inundation, including the estuarine reaches of the Lower Fitzroy	Section 9.3.2.6
	• the effects on sediment transport and deposition and potential resulting erosion/scouring and changes in deposition patterns (including deposition in and around estuaries if appropriate)	Section 9.3.2.7 and 11.3.2
	• the effects on water quality both during construction and operation at the site, in the impounded area and downstream of the site as far as the effect of the weir will extend	Section 11.3.1 and11.3.2
	• the impact of an ecologically relevant inflow-outflow release requirement and water for fishway operational requirements, on the yield of the proposed storage and its viability	Section 9.3.2.5
	• the likelihood of poor quality water being released after the first filling, how long these water quality issues will last at the site and strategies to prevent or minimise impacts of poor quality releases. An assessment that ecologically acceptable quality water is	Section 11.3.2

Term of reference requirement		Cross Reference
	released and that there are no significant (for fish) differences between the quality of the water released and receiving waters downstream	
	• an assessment of all likely impacts on groundwater depletion or recharge regimes	Section 10.3
	• potential impacts of surface water flow on existing infrastructure, with reference to the EPP (Water) and the *Water Act 2000*	Section 9.3.2.4
	• provide surface water modelling for full-entitlement scenarios incorporating the most recent high-flow years and the impact of climate change for both water supply management purposes and ecological risk assessment modelling	Section 9.1.3
	• chemical and physical properties of any wastewater (including stormwater at the point of discharge into natural surface waters), and the toxicity of effluent to flora and fauna	Section 11.3.1
	• potential impacts on other downstream receiving environments, if it is proposed to discharge water to a riverine system	Section 11.3.1
	• the results of a risk assessment for uncontrolled releases to water due to system or catastrophic failure, implications of such emissions for human health and natural ecosystems, and list strategies to prevent, minimise and contain impacts	Section 9.3.2.8
	• an assessment of the potential to contaminate surface and groundwater resources and measures to prevent, mitigate and remediate such contamination.	Section 11.3.1
5.103	Strategies should be adequately detailed to demonstrate best practice management and that environmental values of receiving waters will be maintained to nominated water quality objectives. Describe the monitoring programs that will assess the effectiveness of management strategies for protecting water resources during the construction, operation and decommissioning of the project. Outline how these strategies are incorporated into appropriate sections of the EMP.	Volume 1, Chapter 11, Section 11.3 and Chapter 23, Section 23.4.4 and Section 23.5.2
Surface water and water courses		
5.104	Assess the hydrological impacts of the proposal on surface water and water courses, particularly with regard to stream diversions, scouring and erosion, and changes to flooding levels and frequencies both upstream and downstream of the project. If flooding levels will be affected, modelling of afflux should be provided and illustrated with maps.	Volume 1, Chapter 9, Section 9.3
5.105	Describe the location, extent and nature of all works in watercourses and wetlands, and the management of impacts associated with these works, to the extent needed for allocation of state resources and assessment for necessary permits and approvals.	Volume 1, Chapter 9, Section 9.3
5.106	Assess impacts of construction and inundation on existing land-based contaminant sources and the potential impacts on surface water and groundwater quality and discuss mitigation and management options.	Volume 1, Chapter 11, Section 11.3.1
5.107	Determine the extent of changes in flow and water quality in the Fitzroy River's freshwater section, estuarine section and receiving	Volume 1, Chapter 11,

	Term of reference requirement	Cross Reference
	waters of the Great Barrier Reef World Heritage Area. Provide a comprehensive discussion of the implications of the predicted changes in each section.	Section 11.3.2.4 and Chapter 9, Section 9.3.2.3
5.108	Discuss the need or otherwise for licensing of any dams (including referable dams) or creek diversions, under the *Water Act 2000*. Water allocation and water sources, including impacts on existing water entitlements, including water harvesting, should be established in consultation with the Department of Energy and Water Supply.	Volume 1, Chapter 9, Section 9.3.2.4 and Chapter 3, Section 3.3.19 and 3.3.20
5.109	Water allocation and water sources, including impacts on existing water entitlements, including water harvesting, should be established in consultation with the Department of Energy and Water Supply and the Department of Natural Resources and Mines.	Volume 1, Chapter 9, Section 9.3.2.4
Wastewater treatment		
5.110	Reference should be made to the properties of the land disturbed and processing liquid wastes, the technology for settling suspended clays from contaminated water, and the techniques to be employed to ensure that contaminated water is contained and successfully treated on the site.	Volume 1, Chapter 11, Section 11.3.1
5.111	In relation to water supply and usage, and wastewater disposal, discuss anticipated flows of water to and from the proposal area. For proposed dams, weirs or ponds, investigate the effects of predictable climatic extremes (storm events, floods and droughts) on:	Volume 1, Chapter 2, Chapter 9 and Chapter 11
	• the capacity of the water storages (dams, weirs, ponds) and the ability of these storages to retain contaminants	Section 9.3.2.6
	• the structural integrity of the containing walls	Section 2.3
	• relevant operating regime	Section 9.1.3 and 9.3.2
	• the quality of water contained	Section 11.3.2
	• flows and quality of water discharged.	Section 11.3.2
5.112	The design of all water storage facilities should follow the technical guidelines on site water management.	Volume 1, Chapter 2, Section 2.3
5.113	Discuss the mitigation options and the effectiveness of mitigation measures, with particular reference to sediment, acidity, salinity and other emissions of a hazardous or toxic nature to human health, flora or fauna.	Volume 1, Chapter 11, Section 11.3
Groundwater		
5.114	Include an assessment of the potential environmental impact caused by the project (and its associated project components) to local groundwater resources, including the potential for groundwater-induced salinity.	Volume 1, Chapter 10, Section 10.3

Term of reference requirement		Cross Reference
5.115	Describe the response of the groundwater resource to the progression and finally cessation of the proposal.	Volume 1, Chapter 10, Section 10.3
5.116	Assess the impact of the project on the local groundwater regime caused by the altered porosity and permeability of any land disturbance.	Volume 1, Chapter 10, Section 10.3
5.117	Assess and describe any potential for the project to impact on groundwater-dependent vegetation; describe avoidance and mitigation measures.	Volume 1, Chapter 10, Section 10.3.2
Air quality		
Description of environmental values		
5.118	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 2008 (EPP (Air)).	Volume 1, Chapter 12, Section 12.2
5.119	Discuss the existing air shed environment, both local and regional, including:	Volume 1, Chapter 12
	• background levels and sources of particulates, gaseous and odorous compounds and any major constituent	Section 12.2.4 and 12.2.5
	• pollutants, including greenhouse gases, that may be generated by the project	Section 12.3.2
	• typical baseline levels	Section 12.2.6
	• data on local meteorology and ambient levels of pollutants should be gathered to provide a baseline for later studies or for the modelling of air quality environmental harms.	Section 12.2.3
5.120	Parameters should include air temperature, wind speed and direction, atmospheric stability, mixing depth and other parameters necessary for input to the models.	Volume 1, Chapter 12, Section 12.1.2
Potential impacts and mitigation measures		
5.121	Consider the following air quality issues and their mitigation:	Volume 1, Chapter 12
	• an inventory of air emissions from the project expected during construction and operational activities	Section 12.3.2 and 12.3.3
	• 'worst case' emissions that may occur during operation. If these emissions are significantly higher than those for normal operations, it will be necessary to separately evaluate the worst-case impact to determine whether the planned buffer distance between the facility and neighbouring sensitive receptors will be adequate	Section 12.3.3

Term of reference requirement		Cross Reference
	• ground-level predictions should be made at any site that includes the environmental values identified by the EPP (Air), including any sites that could be sensitive to the effects of predicted emissions	Section 12.3.2.1
	• dust generation from construction activities, especially in areas where construction activities are adjacent to existing road networks or are in close proximity to sensitive receivers	Section 12.3.2.1
	• climatic patterns that could affect dust generation and movement	Section 12.2.3
	• vehicle emissions and dust generation along major haulage routes both internal and external to the project site	Section 12.3.2.1
	• human health risk associated with emissions from the facility of all hazardous or toxic pollutants	Section 12.3.2.1
	• impacts on terrestrial flora and fauna.	Section 12.3.2.2
5.122	Detail the mitigation measures together with proactive and predictive operational and maintenance strategies that could be used to prevent and mitigate impacts.	Volume 1, Chapter 12, Section 12.3.2.1
5.123	Discuss potential air quality impacts from emissions, with reference to the National Environmental Protection (Ambient Air Quality) Measure 2003 (Cwlth) and the EPP (Air). If an emission is not addressed in these legislative instruments, the emission should be discussed with reference to its risk to human health, including appropriate health-based guidelines/standards.	Volume 1, Chapter 12, Section 12.1.3 and 12.3.2
Greenhouse gas emissions		
Description of environmental values		
5.124	Provide an inventory of projected annual emissions for each relevant greenhouse gas, with total emissions expressed in 'CO2 equivalent' terms for the following categories:	Volume 1, Chapter 13, Section 13.3.1
	• Scope 1 emissions—means direct emissions of greenhouse gases from sources within the boundary of the facility and as a result of the facility's activities	Section 13.3.1 and 13.3.2
	• Scope 2 emissions—means emissions of greenhouse gases from the production of electricity, heat or steam that the facility will consume, but that are physically produced by another facility	Section 13.3.1 and 13.3.2
5.125	Briefly describe method(s) by which estimates were made.	Volume 1, Chapter 13, Section 13.1.3.1 and 13.1.3.2

Term of reference requirement		Cross Reference
5.126	Use the *National Greenhouse Accounts (NGA) Factors (Commonwealth of Australia 2010c)* as a reference source for emission estimates, supplemented by other sources where practicable and appropriate. As a requirement of the NGA factors, estimates should include the loss of carbon sink capacity of vegetation due to clearing and impoundment.	Volume 1, Chapter 13, Section 13.1.3.1
Potential impacts and mitigation measures		
5.127	Discuss the potential for greenhouse gas abatement measures, including: • the proposed measures (alternatives and preferred) to avoid and/or minimise direct greenhouse gas emissions • how the preferred measures minimise emissions and achieve energy efficiency • any opportunities to further offset greenhouse gas emissions through indirect means including sequestration and carbon trading.	Volume 1, Chapter 13, Section 13.3.2
Noise and Vibration		
Description of environmental values		
5.128	Describe the existing noise and vibration environment that may be affected by the project in the context of the environmental values defined by the Environmental Protection (Noise) Policy 2008.	Volume 1, Chapter 14, Section 14.1.3.2 and 14.2
5.129	Identify sensitive noise receptors adjacent to all project components and estimate typical background noise and vibration levels based on surveys at representative sites. Discuss the potential sensitivity of such receptors and nominate performance indicators and standards	Volume 1, Chapter 14, Section 14.2.1, 14.2.2 and 14.1.3
Potential impacts and mitigation measures		
5.130	Describe the impacts of noise and vibration generated during the pre-construction, construction, operational and decommissioning phases of the project. Noise and vibration impact analysis should include:	Volume 1, Chapter 14, Section 14.3.1, 14.3.2
	• the levels of noise and vibration generated, including noise contours, assessed against current typical background levels, using modelling where appropriate	Section 14.2.2, 14.3.1.1, 14.3.1.6 and 14.3.1.7
	• impact of noise, including low frequency noise (noise with components below 200 Hz) and vibration at all potentially sensitive receivers compared with the performance indicators and standards nominated above	Section 14.3.1.1
	• impact on terrestrial and aquatic fauna	Section 14.3.1.3 and 14.3.1.4
	• 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	Section 14.3.1.8

Term of reference requirement		Cross Reference
	noise and vibration	
	• options for sensitive receivers that are otherwise unable to achieve a satisfactory internal noise level for the preservation of health and wellbeing as identified within the EPP (Noise).	Section 14.3.1.8
5.131	Refer to the following documents:	Volume 1, Chapter 14
	• Noise Measurement Manual (Environment Protection Agency 2000)	Section 14.1.3
	• Guideline: Noise and vibration from blasting (Environmental Protection Agency 2006)	Section 14.1.3
	• Guideline: Planning for Noise Control (Environmental Protection Agency 2004)	Section 14.1.3
	• Australian Standard AS 2187.2-2006 Explosives – Storage and Use, Part 2 Use of Explosives (Standards Australia 2006).	Section 14.1.2 and 14.1.3
Night-time works		
5.132	Provide details of any night-time work that may be undertaken. Specifically include:	Volume 1, Chapter 14, Section 14.3.1.5
	• the reasons why night-time work may be undertaken (e.g. to avoid peak traffic periods, or to undertake work in a rail corridor)	
	• the likely duration of work (if known)	
	• the proposed hours of the work	
	• the nature of the work to be undertaken	
	• the likely impact on residents and the associated mitigation measures to be undertaken by the proponent	
	• the methods that will be used to communicate with affected residents.	
Waste		
Waste generation		
5.133	Identify and describe all sources, likely volumes and quality (where applicable) of waste associated with pre-construction, construction, operation and decommissioning of all aspects of the project. Refer to regulated waste listed in Schedule 7 of the Environmental Protection Regulation 2008 (Qld). Describe:	Volume 1, Chapter 15, Section 15.2
	• waste generated by delivery of material to site(s)	

Term of reference requirement		Cross Reference
	• all chemical and mechanical processes conducted on the construction sites that produce waste	
	• the amount and characteristics of solid and liquid waste produced on site by the project	
	• hazardous materials to be stored and/or used on site, including environmental toxicity data and biodegradability.	
Waste management		
5.134	Assess the potential impact of all wastes generated during construction and operation, with regard for best practice waste management strategies, the Environmental Protection (Waste) Policy 2000 and the Environmental Protection (Waste) Regulation 2000. Provide details of each waste in terms of:	Volume 1, Chapter 15, Section 15.2.2 and 15.2.3
	• the options available for avoidance/minimisation	Section 15.3.2
	• operational handling and fate of all wastes including storage	Section 15.3.2 and 15.3.3
	• on-site treatment methods proposed for any wastes	Section 15.3.2 and 15.3.3
	• 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	Section 15.3.2 and 15.3.3
	• the potential level of impact on environmental values	Section 15.2.2 and 15.2.3
	• measures to ensure stability of the waste storage areas and impoundments	Section15.3.2
	• methods to prevent seepage and contamination of groundwater from stockpiles and/or storage areas and impoundments	Section15.3.2
	• measures to minimise attraction of vermin, insects and pests	Section15.3.2
	• options available for using recycled materials	Section15.3.2
	• market demand for recyclable waste (where appropriate)	Section 15.3.2
	• decommissioning of the construction site.	Section 15.2.4
Transport		
5.135	Present the transport assessment in separate reports for each project-affected mode (road, rail, air and sea) as appropriate. These assessment reports should provide sufficient information to allow an independent assessment of how existing transport infrastructure will be affected by project transport at the local and regional level.	Volume 1, Chapter 16 (separate sections address each transport mode)

Term of reference requirement		Cross Reference
Existing infrastructure		
5.136	Describe the extent, condition and capacity of the existing transport infrastructure on which the project will depend.	Volume 1, Chapter 16, Section 16.2
5.137	Describe the project's impact on local and state-controlled road networks. Include an overview map(s) that shows the project's relationship with current and future local and state-controlled road networks. Include in the map(s) the location of construction activities and access locations (existing and proposed).	Volume 1, Chapter 16, Section 16.3.3 Figure 16-3 and Figure 16-4
Transport tasks and routes		
5.138	Describe: • expected volumes of project inputs and outputs of transported raw materials, wastes, hazardous goods, finished products for all phases of the project • how identified project inputs and outputs will be moved through the transport network (volume, composition, trip timing and routes) • traffic generated by workforce personnel including visitors (volume, composition, timing and routes) • likely heavy and oversize/indivisible loads (volume, composition, timing and routes), highlighting any vulnerable bridges and structures along proposed routes.	Volume 1, Chapter 16, Section 16.3.4 Volume 3, Appendix Q
Potential impacts and mitigation measures		
5.139	Impact assessment reports should include: • details of the adopted assessment methodology (for impacts on roads: the road impact assessment report in general accordance with the Guidelines for Assessment of Road Impacts of Development (Department of Main Roads 2006) • details of the adopted assessment methodology (for Assessment of Road Impacts of Development – Notes for Contribution Calculations – Main Roads Fitzroy Region (Rockhampton and Emerald Districts) for pavements impacts • present indicative schedules for quantities and vehicle type (as determined by the Regulation) for the construction phase of the project (refer to the *Transport Operations (Road Use Management) Act 1995* (Qld) and the Transport Operations (Road Use Management—Mass, Dimensions and Loading) Regulation 2005 (Qld).	Volume 1, Chapter 16 Section 16.1.3 and Volume 3, Appendix Q Section 16.1.3 and Volume 3, Appendix Q Section 16.3.4 and Volume 3, Appendix Q
5.140	Assess project impacts on: • local and state road networks including impacts on rail level crossings on these networks	Volume 1, Chapter 16 Section 16.3.4 and 16.3.5

Term of reference requirement		Cross Reference
	• capacity, safety, local amenity, efficiency and condition of transport operations, services and assets (from either transport or project operations)	Section 16.3.3 and 16.3.7
	• possible interruptions to transport operations	Section 16.3.3
	• the natural environment within the jurisdiction of an affected transport authority (e.g. road and rail corridors)	Section 16.3
	• the nature and likelihood of product-spill during transport, if relevant	Volume 1, Chapter 20
	• driver fatigue for workers (including contractors and sub-contractors) travelling to and from regional centres and key destinations (refer to Transport Operations (Road Use Management—Fatigue Management) Regulation 2008 (Qld)	Volume 1, Chapter 20 and Chapter 23
	• any existing or proposed strategies for public passenger transport and active transport and address, where relevant, requirements of Part 2A of the *Transport Planning and Coordination Act 1994* (Qld)	Section 16.2.6 and 16.3.6
	• access to transport for people with a disability.	Section 16.2.5 and 16.3.6
Infrastructure alterations		
5.141	Detail:	Volume 1, Chapter 16
	• any proposed alterations or new transport-related infrastructure and services required by the project (as distinct from impact mitigation works)	Section 16.3.4 and 16.3.5
	• construction of any project-related plant and utilities, within or impacting on the jurisdiction of any transport authority.	Section 16.3.4
Transport management strategies		
5.142	Discuss and recommend how identified impacts will be mitigated so as to maintain safety, efficiency and condition of each mode. These mitigation strategies are to be prepared in close consultation with relevant transport authorities and consider those authorities' works programs and forward planning.	Volume 1, Chapter 16, Section 16.3.4; 16.3.5; 16.3.6 and 16.3.7
5.143	Findings of studies and transport infrastructure impact assessments should be an input into preparing a transport management plan.	Volume 1, Chapter 16, Section 16.1.3 and 16.3.4 and Chapter 23 Volume 3, Appendix Q

Term of reference requirement		Cross Reference
Road/rail management planning		
5.144	Outline: • procedures for assessing and agreeing on the scope of required mitigation works with road/rail corridor managers, including any associated works, such as sourcing water and gravel • strategies to minimise the effects of project transport on existing and future public road or rail corridors • steps to be taken to prevent access from public roads/rail corridors to the project sites • strategies to maintain safe access to public road/rail reserves to allow road/rail/pipeline maintenance activities • process for decommissioning any temporary access to road/rail reserves, e.g. stockpile sites	Volume 1, Chapter 16, Section 16.3.4; 16.3.5 and 16.3.6 and Chapter 23
5.145	Findings of studies and transport infrastructure impact assessments should be an input into preparing a draft road-use management plan. Conditions of approval for transport management impacts should also be detailed in the EMP.	Volume 1, Chapter 16, Section 16.3.4 and 16.3.5
Indigenous cultural heritage		
5.146	Identify areas covered by applications for native title claims or native title determinations, providing boundary descriptions of native title representative body(ies), and whether it is necessary to notify the representative body(ies) or if there is evidence that native title does not exist.	Volume 1, Chapter 17, Section 17.2.1.3 and Figure 17-1
Description of existing Indigenous cultural heritage values		
5.147	Describe the existing Indigenous cultural heritage values that may be affected by the project and the environmental values of the cultural landscapes of the affected area in terms of the physical and cultural integrity of the landforms.	Volume 1, Chapter 17, Section 17.2.2
5.148	Also describe how, in conjunction with the appropriate Indigenous people, the cultural heritage values were ascertained. This could include: • the results of any Aboriginal cultural heritage survey undertaken • the DEHP Aboriginal Cultural Heritage Register and Database • any existing literature relating to Indigenous cultural heritage in the project area.	Volume 1, Chapter 17, Section 17.2.1.1 and 17.2.2
Potential impacts and mitigation measures		
5.149	Define and describe the objectives and practical measures for protecting or enhancing Indigenous cultural heritage environmental	Volume 1, Chapter 17,

	Term of reference requirement	Cross Reference
	values. Describe how nominated quantitative standards and indicators may be achieved for cultural heritage management, and describe how the achievement of the objectives will be monitored, assessed and managed.	Section 17.2.3
5.150	To the greatest extent practicable, significant cultural heritage areas should be avoided by the project. The EIS should provide an assessment of likely effects on sites of Indigenous cultural heritage value, including but not limited to the following:	Volume 1, Chapter 17, Section 17.2.3
	• description of the significance of artefacts, items or places of conservation or cultural heritage values likely to be affected by the project and their values at a local, regional and national level	Section 17.2.3
	• recommended means of mitigating any negative impact on cultural heritage values and enhancing any positive impacts.	Section 17.2.3
	i. Section 136(1)(b) of the EPBC Act requires the Minister to consider economic and social matters when deciding whether to grant approval to the proposed action under Part 9 of the EPBC Act. The requirements under s136(1)(b) encompass a broad range of matters that may be considered than those addressed during the assessment of the potential impacts of a controlled action. Accordingly, information should be provided in the EIS on the broad social and economic impacts (positive or negative) of the proposal for the purposes of the Part 9 decision on approval.	
	ii. As the matters protected by the controlling provisions for this action include "the environment", there is the potential for an overlap between the information provided in response to this, and the information requested in the main body of the guidelines in relation to social, economic and cultural aspects within the definition of the environment. The latter set of information need not be repeated if it will be contained in the body of the EIS.	
5.151	As a minimum, impact assessment, management and protection strategies should satisfy statutory responsibilities and duties of care.	Volume 1, Chapter 17, Section 17.2.3
5.152	During the EIS process, the proponent should initiate a native title agreement (NT agreement), as defined under the ACH Act that includes management and protection strategies for Indigenous cultural heritage or a cultural heritage management plan (CHMP) under the ACH Act. An NT agreement or an approved CHMP, in a form which complies with Part 7 of the ACH Act, will ensure that the project meets the Aboriginal cultural heritage duty of care imposed by the ACH Act.	Volume 1, Chapter 17, Section 17.2.1.2 and Chapter 5 Land
5.153	An NT agreement or CHMP should be negotiated between the proponent and the appropriate native title/Indigenous parties and should address and include the following:	Volume 1, Chapter 17, Section 17.2.1.3, 17.2.3 and CHMPs
	• a process for including Indigenous people associated with the development areas in protection and management of Indigenous cultural heritage	
	• processes for mitigating, managing and protecting identified cultural heritage sites and objects in the project areas, including associated infrastructure developments, during both the construction and operational phases of the project	

Term of reference requirement		Cross Reference
	• provisions for managing the accidental discovery of cultural material, including burials • a clear recording process to assist initial management and recording of accidental discoveries • a cultural heritage induction for project staff • developing a cultural heritage awareness program to be incorporated into the contractor/employee manual and induction • manual. This is to be in the form of a plain language, short document that is easy for contractors and staff 'on the ground' to understand • a conflict resolution process.	
5.154	If an NT agreement is not finalised or a CHMP has not been approved when the EIS is submitted to the Coordinator General, the following must be provided:	Not applicable
5.155	an outline of the draft CHMP or draft plan within the NT agreement that addresses management and protection strategies for cultural heritage, subject to any confidentiality provisions, outlining the position of the relevant parties	Volume 1, Chapter 17, Section 17.2.1.3
5.156	details of the proposed steps and timeframes for finalising the CHMP or NT agreement.	Volume 1, Chapter 17, Section 17.2.1.3
Native title		
5.157	Identify areas covered by applications for native title claims or native title determinations, providing boundary descriptions of native title representative body(ies), and whether it is necessary to notify the representative body(ies) or if there is evidence that native title does not exist.	Volume 1, Chapter 17, Section 17.2.1.3 and Figure 17-1
5.158	Identify the potential for native title rights and interests likely to be impacted upon by the project and the potential for managing those impacts by an Indigenous land use agreement or other native title compliance outcomes.	Volume 1, Chapter 17, Section 17.2.1.2 and Chapter 5 Land
Non-indigenous cultural heritage		
Description of existing no-indigenous cultural heritage values		
5.159	Include a cultural heritage study that describes non-Indigenous cultural heritage sites and places, and their values. Any such study should be conducted by an appropriately qualified cultural heritage practitioner and should include the following:	Volume 1, Chapter 17, Section 17.3.1.1

Term of reference requirement		Cross Reference
	• review of: – the Australian Heritage Places Inventory – the Queensland Heritage Register and other information regarding places of potential non-Indigenous cultural heritage significance – any local government heritage register – any existing literature relating to the heritage of the affected areas	Section 17.3.1.1
	• liaison with relevant community groups/organisations (e.g. local historical societies) concerning:	Section 17.3.1.1
	– places of non-Indigenous cultural heritage significance	Section 17.3.2
	– opinion regarding significance of any cultural heritage places located or identified	Section 17.3.2
	• locations of culturally and historically significant sites, shown on maps, that are likely to be impacted by the project	Section 17.3.2, Figure 17-6
	• a constraints analysis of the proposed development area to identify and record non-Indigenous cultural heritage places.	Section 17.3.2
Potential impacts and mitigation measures		
5.160	Provide an assessment of any likely effects on sites of non-Indigenous cultural heritage values, including but not limited to the following: • 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, state and national level • recommended means of mitigating any negative impacts on non-Indigenous cultural heritage values and enhancing any positive impacts • strategies to manage places of historic heritage significance, taking account also of community interests and concerns.	Volume 1, Chapter 17, Section 17.3.3
5.161	As a minimum, investigation, consultation, 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*.	
6.	**Social values and management of impacts**	
Description of existing social values		
6.1	Conduct a social impact assessment (SIA) in consultation with the Department of State Development, Infrastructure and Planning (DSDIP) Significant Projects Coordination Branch. Matters to be considered are detailed in the following subsections.	Volume 1, Chapter 18, Section 18.1.2

Term of reference requirement		Cross Reference
		Volume 3, Appendix R
Social and cultural area		
6.2	Define the project's social and cultural area of influence, including the local, district, regional and state level as relevant, taking into account the: • potential for social and cultural impacts to occur • location of other relevant proposals or projects • location and types of physical and social infrastructure, settlement and land use patterns • social values that might be affected by the project (e.g. integrity of social conditions, visual amenity and liveability, social harmony and wellbeing, and sense of community) • Indigenous social and cultural characteristics, such as native title rights and interests, and cultural heritage.	Volume 1, Chapter 18, Section 18.1.3 Volume 1, Chapter 5, Section 5.5.2.8 and Chapter 17, Section 17.2.2
Community engagement		
6.3	Consistent with national and international good practice, and with regard to local and regional strategies for community engagement, the proponent should engage at the earliest practical stage with likely affected parties to discuss and explain the project, and to identify and respond to issues and concerns regarding social impacts.	Volume 1, Chapter 18, Section 18.1.2
6.4	Describe the community engagement processes used to conduct open and transparent dialogue with stakeholders. Include the project's planning and design stages and future operations including affected local and state authorities. Engagement processes will involve consideration of social and cultural factors, customs and values, and relevant consideration of linkages between environmental, economic, and social impact issues.	Volume 1, Chapter 18, Section 18.3 Volume 3, Appendix F and Appendix R
6.5	Discuss engagement strategies and processes, including how complaint resolution will be addressed, for all stages of the project.	Volume 1, Chapter 18, Section 18.3
Social baseline study		
6.6	Include a targeted baseline study of the people residing in the project's social and cultural area is required to identify the project's critical social issues, potential adverse and positive social impacts, and strategies and measures developed to address the impacts. The social baseline study should be based on qualitative, quantitative, and participatory methods. It should be supplemented by	Volume 1, Chapter 18, Section 18.2

	Term of reference requirement	Cross Reference
	community engagement processes, and reference relevant data contained in Local and State Government publications, reports, plans, guidelines and documentation, including regional plans and where available, community plans.	
6.7	The study should describe and analyse a range of demographic and social statistics determined relevant to the project's social and cultural area including: • demographic characteristics (including the Indigenous population), including age and gender • major population trends/changes that may be occurring irrespective of the project • total population (the total enumerated population for the social and cultural area and the full-time equivalent transient population), 18 years and older • estimates of population growth and population forecasts • any other indicators determined through the community engagement process as relevant.	Volume 1, Chapter 18, Section 18.2
6.8	**Describe:**	Volume 1, Chapter 18 and Chapter 5
	• the social infrastructure including community and civic facilities, services and networks—for definition see South East Queensland Regional Plan 2009–2031 (Department of Infrastructure and Planning 2009)	Section 18.2.3
	• settlement patterns including the names, locations, size, history and cultural aspects of settlement in the social and cultural area	Volume 3, Appendix R
	• the identity, values, lifestyles, vitality, characteristics and aspirations of communities in the social and cultural area, including Indigenous communities	Volume 3, Appendix R
	• land use and land ownership patterns including:	Section 5.5.2.1 and 5.5.2.2
	• rural properties, farms, croplands and grazing areas including on-farm activities near the proposed activities	Section 5.5.2.2
	• the number of properties directly affected by the project	Section 5.5.3.1
	• the number of families directly and indirectly affected by the project including Indigenous traditional owners and their families, property owners, and families of workers either living on the property or workers where the property is their primary employment.	Section 18.3.3
	• use of the social and cultural area for forestry, fishing, recreation, business and industry, tourism, aquaculture, and Indigenous cultural use of flora and fauna.	Section 5.5.2

Term of reference requirement		Cross Reference
Workforce profile		
6.9	Include a profile of the workforce that describes the: • number of personnel to be employed, the skills base of the required workforce and the likely sources (i.e. local, regional or overseas) for the workforce during the construction and operational phases for each component of the project • estimated number of people to be employed during construction and operation, and arrangements for their transport to and from the project areas, including proposed use of regional or charter air services (if applicable).	Volume 1, Chapter 18, Section 18.3.3
6.10	Estimates should be provided according to occupational groupings and variations in the workforce numbers for the duration of the project and show anticipated peaks in worker numbers during the construction period.	Volume 1, Chapter 18, Section 18.3.3
6.11	Provide an outline of recruitment schedules and policies for recruiting workers, addressing recruitment of local and non-local workers including Indigenous workers, people from culturally and linguistically diverse backgrounds and people with a disability	Volume 1, Chapter 18, Section 18.3.3
6.12	Provide information on the location of other major projects or proposals under study within the social and cultural area, together with workforce numbers.	Volume 1, Chapter 21
Workforce demand		
6.13	The estimated composition of workforce by occupation, project stage and duration (including any planned construction prior to final investment decision) using the template provided at www.skills.qld.gov.au	Volume 1, Chapter 18, Section 18.3.3
Supply issues and strategies		
	• Analysis of relevant local, state and national workforce profiles and labour supply • strategies and proposed programs for: – recruitment and attraction – population groups (including Indigenous people, women, secondary school students and unemployed and underemployed) – unskilled and semi-skilled labour requirements – structured training (apprenticeships, traineeships, graduates) – analysis of impact on local community workforce.	Volume 1, Chapter 18, Section 18.2 and Section 18.3.3 Volume 3, Appendix R
6.14	Content on the Training Queensland website (www.training.qld.gov.au) provides essential information, contact and relevant program details to develop the workforce management plan.	Section 18.3

Term of reference requirement	Cross Reference
Potential impacts	
6.15 Assess and describe the type, level and significance of the project's social impacts (both beneficial and adverse) on the local and cultural area, based on outcomes of community engagement processes and the social baseline study. Furthermore: • describe and summarise outcomes of community engagement processes including the likely response of the affected communities, including Indigenous people • include sufficient data to enable affected local and state authorities to make informed decisions about the project's effect on their business and plan for the provision of social infrastructure in the project's social and cultural area. If the project is likely to result in a significant increase in the population of the area, then the proponent should consult the relevant management units of the state authorities and summarise the results of the consultations • address direct, indirect and secondary impacts from any existing projects and the proposed project including an assessment of the size, significance, and likelihood of these impacts at the local and regional level. Consider the following: – key population/demographic shifts; disruptions to existing lifestyles, the health and social wellbeing of families and communities; social dysfunction including alcohol and drugs, crime, violence, and social or cultural disruption due to – population influx – the needs of vulnerable groups including women, children and young people, the aged and people with a disability – the needs of the lower socio-economic groups – Indigenous peoples including cultural property issues – local, regional and state labour markets, with regard to the source of the workforce. Present this information according to occupational groupings of the workforce. Detail whether the proponent, and/or contractors, is likely to employ locally or through other means and whether there are initiatives for local employment business opportunities – proposed new skills and training related to the project including the occupational skill groups required and potential skill shortages anticipated – how much service revenue and work from the project would be likely to flow to the project's social and cultural area – impacts of construction and operational workforces, their families, and associated contractors on housing and accommodation availability and affordability, land use and land availability. Discuss the capability of the existing housing and rental accommodation, to meet any additional demands created by the project, including direct impacts on Indigenous	Volume 1, Chapter 18, Section 18.3

Term of reference requirement		Cross Reference
	people.	
Cumulative impacts		
6.16	Evaluate and discuss the potential cumulative social impacts resulting from the project including an estimation of the overall size, significance and likelihood of those impacts. In this context, 'cumulative impacts' is defined as the additional impacts on population, workforce, accommodation, housing, and use of community infrastructure and services, from the project, and other proposals for development projects in the area, which are publicly known or communicated by DSIP, if they overlap the proposed project in the same timeframe as its construction period.	Volume 1, Chapter 21
6.17	Discuss the concept of longitudinal cumulative impacts, or 'project fatigue', where the community in the study area has been subjected to a number of large-scale construction projects in recent years.	Volume 1, Chapter 18, Section 18.3 and Chapter 21
Mitigation measures and management strategies		
6.18	For identified social impacts, social impact mitigation strategies and measures should be presented to address the:	Volume 1, Chapter 18
	• recruitment and training of the construction and operational workforces and the social and cultural implications this may have for the host community, including if any part of the workforce is sourced from outside the social and cultural area	Section 18.3.3.2
	• housing and accommodation issues, in consultation with relevant local authorities and State Government agencies, with proposals for accommodating the project workforce and their families that avoid, mitigate or offset any short- and medium-term adverse effects on housing affordability and availability, including the rental market, in the social and cultural area	Section 18.3.3.1
	• demographic changes in the profile of the region and the associated sufficiency of current social infrastructure, particularly health and welfare, education, policing and emergency services	Section 18.3.3.1
	• adequate provision of education, training and employment for women, people with a disability, and Indigenous peoples.	Section 18.3.3.2
6.19	Describe any consultation about acceptance of proposed mitigation strategies and how practical management and monitoring regimes are proposed to be implemented.	Volume 1, Chapter 18, Section 18.3
6.20	Discuss special strategies that might be deployed by the proponent during all stages of the project to mitigate 'project fatigue' impacts.	Volume 1, Chapter 18, Section 18.3

Term of reference requirement		Cross Reference
7.	**Economics and management of impacts**	
Description of affected local and regional economies		
7.1	Describe the existing economy in which the project is located and the economies materially impacted by the project. Include:	Volume 1, Chapter 19
	• a map illustrating the local and regional economies (local government areas—LGAs) that could be potentially affected by the project	Figure 19-1
	• gross regional product or other appropriate measure of annual economic production	Section 19.2.1
	• demographic and employment profile of the study area as a whole and disaggregated by LGA. Include:	Section 19.2
	– existing population (size, age, distribution)	Section 19.2.2
	– existing community profiles of the LGAs directly affected by the project (household type, size, average income)	Section 19.2.3
	– existing employment statistics (part-time/full-time, by occupation)	Section 19.2.3
	– the regional economy's key industries and their contribution to regional economic income	Section 19.2.4
	• sufficient baseline economic data to underpin a comprehensive assessment of the direct, indirect, cumulative, costs and impacts of the project	Section 19.2
	• the key regional markets relevant to the project: – labour market – housing and land markets – construction services and building inputs market – regional competitive advantage and expected future growth.	Section 19.2.5
7.2	With regard to the region's key industries and factor prices, provide information on: • current input costs (wage rates, building costs, housing rent etc.) • land values in the region by type of use.	Volume 1, Chapter 19, Section 19.2.5
Potential impacts and mitigation measures		
7.3	The potential impacts should consider local, regional, state and national perspectives as appropriate to the scale of the project.	Volume 1, Chapter 19, Section 19.3 and 19.4

Term of reference requirement	Cross Reference
7.4 The analysis should describe both the potential and direct economic impacts including estimated costs, if material, on industry and the community, assessing the following: • property value • industry output • employment • the indirect impacts likely to flow to other industries and economies from the development of the project such as potential higher water charges for rural use and urban supply, potential impact on recreational and professional fishery (e.g. downstream, Keppel Bay), loss of strategic riparian grazing, National Resource Management and producer-funded infrastructure. This should also consider the implications of the project for future development • the distributional effects of the proposal including proposals to mitigate any negative impact on disadvantaged groups.	Volume 1, Chapter 19, Section 19.3 and 19.4
Strategies for local participation	
The assessment of economic impacts should outline strategies for local participation, including: • strategies for assessing the cost effectiveness of sourcing local inputs from the regional economy during the construction, • operation and rehabilitation phases of the project • employment strategies for local residents including members of Indigenous communities and people with a disability, the unemployed, including a skills assessment and recruitment and training programs to be offered	Volume 1, Chapter 18 Section 18.3.3 and Chapter 19, Section 19.3
• strategies responding to relevant 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 per cent training policy (Skills Queensland 2008) – Indigenous employment opportunities, with regard to the Indigenous Employment Policy for Queensland Government: Building and Civil Construction Projects—the 20 per cent policy (Department of Employment, Economic Development and Innovation 2008a) – development of a Local Industry Participation Plan in accordance with the Local Industry Policy (Department of Employment, Economic Development and Innovation 2010) and the Local Industry Policy Guidelines (Department of Employment, Economic Development and Innovation 2011) in consultation with the Office of Advanced Manufacturing, to	Section 18.3 Volume 3, Appendix R

Term of reference requirement		Cross Reference
	embrace the use of locally sourced goods and services.	
Sustainable development		
7.5	Provide a comparative analysis of how the project conforms to the objectives for 'sustainable development'—see the National *Strategy for Ecologically Sustainable Development* (Commonwealth of Australia 1992).	Volume 1 Chapter 1. Chapter 19 Section 19.5 and Chapter 23
7.6	Consider the cumulative impacts (both beneficial and adverse) of the project from a life-of-project perspective, taking into consideration the scale, intensity, duration and frequency of the impacts to demonstrate a balance between environmental integrity, social development and economic development.	Volume 1, Chapter 19 Section 19.5
7.7	This information is required to demonstrate that sustainable development aspects have been considered and incorporated during the scoping and planning of the project.	Volume 1, Chapter 19 Section 19.5
8. Hazard and risk		
Hazard and risk assessment		
8.1	Describe the potential hazards and risks to people and property that may be associated with the project, which may include but are not restricted to:	Volume 1, Chapter 20
	• identifying potential hazards, accidents, spillages and abnormal events that may occur during all stages of the project, including possible frequency of occurrence	Section 20.3 and 20.4
	• identifying all dangerous goods, explosives and hazardous substances to be used, stored, handled, processed or produced and the rate of usage	Section 20.3.4
	• the protection and enhancement of human health during construction and operation of the project	Section 20.3.2 and 20.4.2
	• potential wildlife hazards, natural events and implications related to climate change	Section 2.3.5, 20.3.6 and 20.4.5
	• terrorist attack (refer to Subsection 8.5).	Section 20.1.1
8.2	Undertake a preliminary risk assessment for all components of the project, as part of the EIS process in accordance with Australia/New Zealand AS/NZS ISO 31000:2009 *Risk management—Principles and guidelines* (Standards Australia & Standards New Zealand 2009). With respect to risk assessment, the EIS should:	Volume 1, Chapter 20, Section, 20.1.2, 20.3.1 and 20.4.1

Term of reference requirement		Cross Reference
	• deal comprehensively with external and on-site risks including transport risks	Section 20.3 and 20.4
	• assess risks during the construction, operational and decommissioning phases of the project	Section 20.3, 20.4 and 20.5
	• include an analysis of the consequences of each hazard on safety in the project area, examining the likelihood of both individual and collective consequences, involving injuries and fatalities to workers and to the public	Section 20.3.1 and 20.4.1
	• present quantitative levels of risks from the above analysis.	Section 20.3.1 and 20.4.1
8.3	Provide details on the safeguards that would reduce the likelihood and severity of hazards, consequences and risks to persons, within and adjacent to the project area(s). Provide notification of planned exercises, either practical or desktop, for attendance and participation by Queensland Ambulance Service.	Volume 1, Chapter 20, Section 20.3 and 20.4
8.4	Present a comparison of assessed and mitigated risks with acceptable risk criteria for land uses in and adjacent to the project area(s).	Volume 1, Chapter 20, Section 20.3.1 and 20.4.1
8.5	Provide a risk management plan.	Volume 1, Chapter 20, Section 20.7
8.6	Conduct a hazard identification study to identify the nature and scale of hazards that might occur during the construction and operation of the project. This would be expected to include hazards involving:	Volume 1, Chapter 20, Section 20.1.2
	• construction accidents	Section 20.3.1
	• pipeline, processing unit or storage vessel rupture or loss of containment, and explosions and fires associated with such incidents	Section 20.3.4
	• release to the environment of liquid gaseous or particulate pollutants or any other hazardous material used, produced or stored on the site	Section 20.3.4
	• natural events such as cyclones, earthquakes, bushfires or local flooding.	Section 20.2.5, 20.3.5, 20.4.4
Cumulative risk		
8.7	The risk analysis is to address the potential impacts that may occur on the normal on-site, day-to-day activities during the construction and/or operation of the facilities. Furthermore, determine the level of change that may result on the risk contours of other relevant existing or proposed industrial facilities in the area, as a result of the proposed project (where details of such proposed facilities are provided by DSDIP or otherwise published). Individual risk criteria should be used to limit risks to individual	Volume 1, Chapter 20, Section 20.6

	Term of reference requirement	Cross Reference
	workers and members of the public. Societal risk criteria should be used to limit risk to the affected population as a whole.	
8.8	Identify and adopt, where appropriate, any changes to operating or storage procedures that would reduce the possibility of these events occurring, or reduce the severity of the events should they occur. Present draft risk management plans for the construction and operational phases of the project.	Volume 1, Chapter 20, Section 20.6
Health and safety		
Description of public health and safety community values		
8.9	Describe the existing health and safety values of the community, workforce, suppliers and other stakeholders in terms of the environmental factors that can affect human health, public safety and quality of life, such as air pollutants, odour, lighting and amenity, dust, noise and water.	Volume 1, Chapter 20, Section 20.2.1
Potential impact and mitigation measures		
8.10	Define and describe the objectives and practical measures for protecting or enhancing health and safety community values. Describe how nominated quantitative standards and indicators may be achieved for social impacts management, and how the achievement of the objectives will be monitored, audited and managed.	Volume 1, Chapter 20, Section 20.3.2, 20.3.3 and 20.4.2
8.11	Assess the cumulative effects on public health values and occupational health and safety impacts on the community and workforce from project operations and emissions. Recommend any practical monitoring regimes in this section.	Volume 1, Chapter 20, Section 20.4.2
8.12	Include relevant consultation with the appropriate regional health service providers.	Volume 1, Chapter 20, Section 20.7.5
Emergency management plan		
8.13	Present preliminary information on the design and operation of proposed safety/contingency systems to address significant emergency issues delineated in the risk assessment, together with at least the following areas of emergency:	Volume 1, Chapter 20, Section 20.7
	• terrorist attack (refer to Subsection 8.5)	Section 20.1.1
	• fire prevention/protection	Section 20.7.3
	• leak detection/minimisation	Section 20.7.2 and 20.7.3
	• release of contaminants	Section 20.7.3
	• emergency shutdown systems and procedures	Section 20.7

Term of reference requirement		Cross Reference
	• emergency response plans detailing mitigation strategies to achieve specific outcomes outlined in SPP 1/03 – Guideline for Mitigating the Adverse Impacts of Flood, Bushfire and Landslide.	Section 20.7
8.14	In addition, undertake an assessment of businesses that may be affected in the event of an emergency, including strategies to mitigate the impact on these businesses.	Volume 1, Chapter 20, Section 20.7
8.15	Present outlines of emergency planning and response strategies to deal with relevant incidents above, which have been determined in consultation with state and regional emergency service providers (including the Queensland Police Service – Central Region), and which show integration of emergency services into the plans. Any plans should also address extreme weather events and the actions that will be undertaken to reduce the risk to communities or individuals downstream of the project during these events. Formulate and provide a copy of a major emergency incident plan, which should include contact details for key stakeholders in case of an emergency.	Volume 1, Chapter 20, Section 20.7
8.16	Present plans for emergency medical response and transport and first aid matters with involvement of the relevant state agencies (such as the Queensland Ambulance Service, Queensland Fire and Rescue Service and Emergency Management Queensland).	Volume 1, Chapter 20, Section 20.7
Counter-terrorism and critical infrastructure protection		
8.17	Provide an assessment of the proposed development and its operation to determine whether these aspects are critical infrastructure as defined by the Queensland Plan for the Protection of Critical Infrastructure from Terrorism (State of Queensland 2005), that is:	Separate confidential document
	Those physical facilities, supply chains, information technologies and communication networks which, if destroyed, degraded or rendered unavailable for an extended period, would significantly impact on the social or economic well-being of Queensland.	Separate confidential document
8.18	If determined to be critical infrastructure, provide information on the design and operation of proposed safety and contingency systems to address the National and Queensland counter-terrorism and critical infrastructure protection legislation, policies and arrangements, including: • National Counter-Terrorism Plan (National Counter-Terrorism Committee 2005) • Critical Infrastructure Resilience Strategy (Commonwealth of Australia 2010a) • Critical Infrastructure Resilience Strategy Supplement: An overview of activities to deliver the Strategy (Commonwealth of Australia 2010b) • Queensland Counter-Terrorism Strategy 2008–2010 (Department of the Premier and Cabinet 2007) • Queensland Infrastructure Protection and Resilience Framework (Department of the Premier and Cabinet 2005) • Queensland Government Information Security Classification Framework (Department of Public Works 2010)	Separate confidential document

Term of reference requirement		Cross Reference
	• *Transport Security (Counter Terrorism) Act 2008* and Regulations • Australia/New Zealand AS/NZS ISO 31000:2009 Risk management—Principles and guidelines (Standards Australia & Standards New Zealand 2009) • Handbook: Security Risk Management (HB 167:2006) (Standards Australia & Standards New Zealand 2006) • Business Continuity Management (HB 221:2004) (Standards Australia & Standards New Zealand 2004) • Executive Guide to Business Continuity Management (HB 293-2006) (Standards Australia 2006b).	
8.19	Such information should be provided as a separate confidential document to the Coordinator-General at the time of submission of the EIS. The Queensland Police Service (Counter-Terrorism Strategic Policy Branch and District Counter-Terrorism Liaison Officers) are to be engaged for consultation in preparation of this document.	Separate confidential document
9.	**Cumulative impacts**	
9.1	Summarise the project's cumulative impacts and describe these impacts in combination with those of existing or proposed project(s) publicly known or advised by DSDIP to be in the region, to the greatest extent practicable. Assess cumulative impacts with respect to both geographic location and environmental values. Explain the methodology used to determine the cumulative impacts of the project, detailing the range of variables considered (including relevant baseline or other criteria upon which the cumulative aspects of the project have been assessed, where applicable).	Volume 1, Chapter 21
10.	**Environmental management plan**	
10.1	Detail the EMPs for both the construction and operation phases of the project. The EMP should be developed from, and be consistent with, the information in the EIS. The EMP must address discrete project elements and provide life-of-proposal control strategies. It must be capable of being read as a stand-alone document without reference to other parts of the EIS.	Volume 1, Chapter 23
10.2	The EMP must comprise the following components for performance criteria and implementation strategies:	Volume 1, Chapter 23
	• the proponent's commitments to acceptable levels of environmental performance, including environmental objectives, performance standards and associated measurable indicators, performance monitoring and reporting	Section 23.2
	• impact prevention or mitigation actions to implement the commitments	Section 23.4 and 23.5
	• corrective actions to rectify any deviation from performance standards	Section 23.4 and 23.5
	• an action program to ensure the environmental protection commitments are achieved and implemented. This will include strategies in relation to:	Section 23.2, 23.4 and 23.5

Term of reference requirement			Cross Reference
	– continuous improvement – environmental auditing – monitoring – reporting – staff training – where relevant, a rehabilitation program for land proposed to be disturbed under each relevant aspect of the proposal.		
10.3	The recommended structure of each element of the EMP is shown below:		Volume 1, Chapter 23, Section 23.4 and 23.5
	Element/issue:	Aspect of construction or operation to be managed (as it affects environmental values).	
	Operational policy:	The operational policy or management objective that applies to the element.	
	Performance criteria:	Measurable performance criteria (outcomes) for each element of the operation.	
	Implementation strategy:	The strategies, tasks or action program (to nominated operational design standards) that would be implemented to achieve the performance criteria.	
	Monitoring:	The monitoring requirements to measure actual performance (e.g. specified limits to pre-selected indicators of change).	
	Auditing:	The auditing requirements to demonstrate implementation of agreed construction and operation environmental management strategies and compliance with agreed performance criteria.	Section 23.2.12
	Reporting:	Format, timing and responsibility for reporting and auditing of monitoring results.	Section 23.2.11
	Corrective action	The action (options) to be implemented in case a performance requirement is not reached and the person(s) responsible for action (including staff authority and responsibility management structure).	Section 23.2.11
10.4	The proponent's commitments to environmental performance, as described in the EMP, may be included as Coordinator-General's conditions to ensure the commitments are met. Therefore, the EMP is a relevant document for project approvals, environmental authorities and permits, and may be referenced by them.		Volume 1, Chapter 23
11.	**Conclusions and recommendations**		
11.1	Make conclusions and recommendations with respect to the project, based on the studies presented, the EMP and conformity of the project with legislative and policy requirements.		Volume 1, Chapter 25

Term of reference requirement		Cross Reference
12.	**References**	
12.1	All references consulted should be presented in the EIS in a recognised format.	Volume 1, Chapter 26
13.	**Appendices**	
13.1	Provide the following as appendices to the EIS:	Volume 3
	• final TOR for this EIS	Appendix A
	• TOR cross-reference table, which links the requirements of each section/subsection of the TOR with the corresponding section/subsection of the EIS, where those requirements have been addressed	Appendix B
	• a list of the project approvals required by the project.	Volume 1, Chapter 3
	• the consultation report, as described in Part B subsection 3.7, (page 7).	Appendix F
	• a list of the relevant qualifications and experience of the key study team members and specialist sub-consultants	Appendix D
	• a glossary of technical terms	Appendix C
	• a list of abbreviations.	Appendix C
	• all reports generated on specialist studies undertaken as part of the EIS, including, but not limited to:	Appendix H
	– air quality, noise and vibration	Appendix J
	– groundwater and surface water hydrology	Appendix K
	– geology and geomorphology	Appendix L
	– economic studies and/or cost-benefit analyses	Appendix M
	– transport studies	Appendix N
	– cultural heritage	Appendix O
	– hazard and risk studies	Appendix Q
	– land use studies.	Appendix R
		Appendix S
	• a copy of the proponent's corporate environmental policy and planning framework document.	Appendix E
	• a list of all commitments made by the proponent in the EIS, with cross-references to the relevant section in the EIS.	Appendix W

Part C – Matters of national environmental significance

Term of reference requirement / section numbers		Cross Reference
Specific content requirements		
1.28	Schedule 4 of the EPBC Act Regulations 2000, which sets out the matters that must be addressed in an EIS, is provided at Attachment 1. The following content requirements are based on these matters with the addition of directions specific to the proposed action and the receiving environment, and additional advice on presentation and consultation that have proven valuable in communicating with members of the public and specific interest groups.	
Executive summary		
1.29	An executive summary that outlines the key findings of the MNES chapter should be provided. The executive summary should briefly:	Volume 2, Executive summary
	(1) state the background and the need for the proposal	Section E.1.2
	(2) discuss alternative infrastructure configurations to capture the additional unallocated water and the reasons for selecting the preferred option and rejecting the alternatives	Section E.1.4
	(3) summarise the pre-operational (construction), operational and post-operational activities associated with putting the proposal into practice	Section E.2
	(4) state the proposed schedule for key activities and the expected duration of the proposal	Section E.2
	(5) provide an overview of the existing regional and local environments, summarising the features of the physical, biological, social and economic environment relating to the proposal and associated activities	Section E.3
	(6) describe the expected, likely and potential impacts of the proposal on the environment during pre-operational, operational and post-operational phases	Section E.4
	(7) summarise the environmental protection measures and safeguards, offsets and monitoring to be implemented for the proposal	Section E.4.6
	(8) provide an outline of the environmental record of each of the proponents.	Section E.1.1
Description of the action		
1.30	The MNES chapter is to provide a description of the background of the proposal (or action). This is to include:	Volume 2, Chapter 1
	(1) The title of the action	
	(2) The full name and postal address of the designated proponent	
	(3) A clear outline of the objectives of the action	

Term of reference requirement / section numbers		Cross Reference
(4)	The location of the action	
(5)	The background to the development of the action	
(6)	How the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action	
(7)	The current status of the action	
(8)	The consequences of not proceeding with the action	
(9)	A brief explanation of the scope, structure and legislative basis of the MNES chapter of the EIS	
(10)	The specific EPBC matters affected by the action, and any additional approvals needed under the EPBC Act	
(11)	A description of government planning policies and statutory controls which will influence the Project. All applicable jurisdictions and areas of responsible authorities within the area should be listed and shown on maps at appropriate scales.	Volume 2, Chapter 3 Volume 2, Chapter 7 (Figure 7-15 Local Government areas)
1.31	In relation to the requirement to describe all components of the action, all construction and operational components of the action should be described in detail. This includes date or time period over which construction will take place, exact dimensions of structures to be built and materials, equipment and machinery to be used as well as construction access requirements, laydown areas and workforce accommodation arrangements. Details of proposed maintenance, monitoring and enforcement programs to help limit the impacts of the ongoing road operations on MNES, along with the resources available to support these programs, should also be addressed.	Volume 2, Chapter 2
1.32	A discussion of the assumptions underlying the predicted operation of the proposal and associated changes in the activities undertaken in the surrounding environment, including use of supporting facilities such as maintenance and storage yards, must be provided.	Volume 2, Chapter 2, Section 2.5
Matters of national environmental significance		
1.33	In relation to MNES addressed in the description of the action, an inventory of surveys, whether office-based or field-based, must be provided. These may be provided as appendices, but must at least be fully referenced and must be made publicly available unless the department is furnished with compelling reasons not to do so. Any anticipated future surveys to be conducted in relation to matters of national environmental significance, whether office-based or field-based, must also be discussed.	Volume 2, Chapter 6 Volume 3, Appendix J, Appendix K, Appendix L, Appendix N and Appendix 0
1.34	Output from the protected matters search tool (accessible from the department's website) must be also included as an appendix. The results, indicating the presence of matters of national environmental significance, must also be provided. Any species or	Volume 3, Appendix U

Term of reference requirement / section numbers	Cross Reference
values considered likely or known to occur in areas impacted by the controlled action must be addressed. The description of matters of national environmental significance should focus on, but not be limited to the following controlling provisions: – Listed threatened species and ecological communities (sections 18 &18A) – Listed migratory species (sections 20 &20A) – World Heritage Properties (sections 12 &15A) – National Heritage Places (sections 15B &15C).	Volume 2, Chapter 9, Chapter 10 and Chapter 11
1.35 The discussion of impacts on matters of national significance should be structured by controlling provisions.	Volume 2, Chapter 9, Chapter 10 and Chapter 11
Consultation	
1.36 Details of any consultation about the action must be provided. This is to include: (1) consultation that has already taken place (2) if there has been consultation about the proposed action — any documented response to, or result of, the consultation (3) any further proposed consultation about potential impacts of the action.	Volume 2, Chapter 4 Volume 3, Appendix F
Alternatives to the proposal	
1.37 This section should describe, to the extent reasonably practicable, any prudent and feasible alternatives to the action, including: (1) if relevant, the alternative of taking no action (2) a comparative description of the adverse and beneficial impacts of each alternative infrastructure and location on the matters protected by the controlling provisions for the action (3) sufficient detail should be provided to make clear why any alternative is preferred to another (4) the reasons for choosing the preferred location and option should be explained, including a comparison of the adverse and beneficial effects used as a basis for selection, and compliance with the objectives of the EPBC Act (including the principles of ecologically sustainable development) (5) the advantages and disadvantages of alternatives when considered against relevant matters protected under the EPBC Act must be specifically addressed; and (6) short, medium and long-term advantages and disadvantages of the options should be considered.	Volume 2, Chapter 5

Term of reference requirement / section numbers		Cross Reference
The proposal description		
1.38	This section should describe the proposal in sufficient detail to allow an understanding of all stages and components, and assist in determining potential environmental impacts associated with the proposal. Those elements with potential implications for matters protected under Part 3 of the EPBC Act must be highlighted.	Volume 2, Chapter 2
1.39	The description should include the use of aerial photographs, maps, figures and diagrams, where appropriate. A general location map should be provided that illustrates the distances of the notional development areas and the locations of any which are consequential to the action. The map should include the location of known potential future expansions or new developments such as the proposed Nathan Dam, Connors River Dam and Gladstone-Fitzroy Pipeline which also occur within the Fitzroy River Catchment. The map should also include the details of any proposed agricultural, residential and or infrastructure which will be facilitated by the project. Reference should be made to detailed technical information in appendices where relevant.	Volume 2, Chapter 2, Figure 2-1 Volume 2, Chapter 12, Figure 12-3
Project details		
1.40	The description of the action should cover:	
	(1) the environmental principles on which the action will be managed;	Volume 2, Chapter 1
	(2) all the components of the action including:	Volume 2, Chapter 2
	(a) site selection	Section 2.3
	(b) site preparation	Section 2.4.2
	(c) development options	Section 2.3.3
	(d) associated infrastructure	Section 2.4.3
	(e) construction	Section 2.4.5
	(f) commissioning	Section 2.5
	(g) operation	Section 2.5.6
	(h) related maintenance activities	Section 2.6
	(i) decommissioning time frames and approach.	Section 2.2
	(3) The location of works to be undertaken, structures to be built or other elements of the action that may have relevant impacts. This should include but not be limited to:	
	(a) Eden Bann Weir	
	(b) Rookwood Weir	

Term of reference requirement / section numbers		Cross Reference
	(c) any associated water supply infrastructure and pipelines.	
(4)	How the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts. This should include:	Section 2.3.1.1
	(a) an explanation of the anticipated timetable for the construction, commissioning, operation and decommissioning	Section 2.4.4
	(b) details of the construction, commissioning, operational and decommissioning equipment to be used	Section 2.4.3
	(c) a description of the proposed operational regime of the Eden Bann Weir and Rookwood Weir.	Section 2.5
(5)	Number and source of staff, and training in relation to environmental management matters for staff involved in all phases of the project.	Section 2.4.1.2
The existing environment		
1.41	This section should provide a description of the project area including its existing freshwater physiography, flora and fauna, and all relevant socio-economic considerations. This section should also contain a detailed description of the existing river conditions including seasonal flow regimes. The section should link the existing environment to the proposal's requirements, potential impacts, as well as any proposed mitigation measures throughout construction and operation.	Volume 2, Chapter 7
Physical environment		
1.42	This section must describe the following elements of the environment related to the proposed development:	Volume 2, Chapter 7
(1)	Climate and atmospheric characteristics (air quality, seasonal temperatures, humidity, wind, evaporation and annual and monthly rainfall)	Section 7.2
(2)	Include details of the historic and current flow regimes (from the past 10 years) of the Fitzroy River at the following gauging stations:	Section 7.5.2
	– The Gap (Station Number: 033285)	
	– Riverslea (Station Number: 039044)	
	– Laurel Bank (Station Number: 039347)	
	Include the historic and current flow regimes of the Mackenzie River at the following gauging station:	
	– Coolmaringa gauging station (Station Number: 535024)	
	Include the historic and current flow regimes of the Dawson River at the following gauging station:	
	– Beckers gauging station monitoring site (site ID 130322A)	

Term of reference requirement / section numbers		Cross Reference
	Information from gauging stations should be displayed in the form of a flow duration curve, hydrograph and total average megalitres per month.	
(3)	Provide information and a detailed map displaying all current land use (industrial, residential, agricultural and vegetated) within the Fitzroy River catchment.	Section 7.6
(4)	Provide up-to-date information on the current sediment loads, herbicides, pesticides and water quality parameters (TN, TP, TSS, DO) entering the Great Barrier Reef from the Fitzroy Catchment. This information must be measured over a range of hydrological events including baseflows and high flow events,	Section 7.5.3
(5)	Determine extent of changes in flow and water quality in the Fitzroy River estuary and adjacent waters of the GBRMP:	Volume 2, Chapter 8, Section 8.2
	(a) If changes to flows and water quality in the Fitzroy River Estuary are considered to be significant, provide baseline information on the current state of the Fitzroy River estuary, information should include but not be limited to:	
	(b) Mapping of the location and extent of seagrass beds at the mouth of the Fitzroy River Estuary	
	(c) Mapping of the location and extent of mangrove communities	
	(d) A description of the current hydrology of the Fitzroy River estuary including information on the limit of saltwater intrusion	
	(e) Provide detailed information on the frequency and limit of floodwaters into the Fitzroy River estuary and Great Barrier Reef from a range of hydrological events.	
(6)	Provide a description of the biodiversity and biogeography of the receiving environment. Sensitive environments should be identified along with key ecological relationships and interdependencies (e.g. fish spawning aggregations, flora and fauna relationships etc) with particular attention to the environment within the Fitzroy River, the estuary and the receiving environment in the Great Barrier Reef World and National Heritage Area.	Volume 2, Chapter 7, Section 7.7 to 7.10
(7)	Include a summary of the location, size and breeding status of threatened species listed under the EPBC Act which are likely to occur in the area surrounding the proposal:	Volume 2, Chapter 10
	Information on listed threatened species should include but not be limited to:	
	(a) the importance of habitat in a local, regional and national context	
	(b) local and regional representation	
	(c) conservation and biodiversity values	
	(d) economic and cultural values of species	
	(e) the extent (in hectares) of any areas of important or unique habitat.	
(8)	Identification of any existing or proposed reserves in or neighbouring the project and their status. Include the reserve	Volume 2, Chapter 7, Section

Term of reference requirement / section numbers		Cross Reference
	characteristics, status, IUCN category, and values and relevant management strategies.	7.7
Socio-economic and cultural environment		
1.43	Discussion of the socio-economic and cultural environment should provide:	Volume 2, Chapter 7, Section 7.11
(1)	A description of all existing uses and users of the notional development areas and zones of the Fitzroy catchment. Include a discussion of scientific research, tourism, commercial, traditional and recreational fishing (where relevant).	
(2)	A description of government planning policies and statutory controls which will influence the project, surrounding areas of future, planned and current use. All applicable jurisdictions and areas of responsible authorities within the area should be listed and shown on maps at appropriate scales.	Section 7.6
(3)	Any places with known or anticipated heritage, social or cultural values, such that they have been recognised with listing or recording under relevant Commonwealth legislation or are anticipated to be listed under such legislation.	Section 7.12
Impacts of the action		
1.44	This section must include:	Volume 2, Chapter 8, Chapter 9, Chapter 10 and Chapter 11
(1)	a description of all relevant potential impacts of the action	
(2)	a statement whether any relevant potential impacts are likely to be unknown, unpredictable or irreversible	
(3)	analysis of the significance of the relevant potential impacts	
(4)	any technical data, any sources of authority, and other information used or needed to make a detailed assessment of the relevant potential impacts. Reliability of forecasts and predictions, confidence limits and margins of error should be indicated as appropriate	
(5)	a detailed assessment of the nature and extent of the potential short term and long term relevant impacts including on listed threatened species and ecological communities and listed migratory species and on listed marine species (under part 4 of the EPBC Act).	
General impacts		
1.45	This section must include:	Volume 2, Chapter 8
(1)	Discussion of potential impacts to habitat for listed threatened species which are likely to be impacted during construction, inundation and operation.	Section 8.4 and 8.5

Term of reference requirement / section numbers		Cross Reference
(2)	Discussion of potential impacts which may arise through the transportation, storage and use of dangerous goods (if any), fuels and chemicals, such as accidental spills.	Section 8.8
(3)	In discussing potential impacts, consider how the interaction of extreme environmental events and any related safety response may impact on the environment.	Section 8.7
(4)	Consideration of potential impacts throughout the life of the proposal – from construction, commissioning and operation through to decommissioning.	Volume 2, Chapter 8
Impacts to threatened species and ecological communities		
1.46	This section must include:	Volume 2, Chapter 10
(1)	Discussion of the potential impacts of the proposal, with particular emphasis to be given to providing details on the potential impacts to the receiving environment's unique flora and fauna as identified and to any protected areas in the vicinity. In particular the stand-alone chapter must include, but not be limited to:	
(a)	details of the extent of threatened ecological communities listed under the EPBC Act which are likely to be inundated during filling and operation of the proposal and	Section 10.3
(b)	details of the location and number of listed flora and fauna species which are likely to be inundated during filling and operation of the proposal.	Section 10.4 and 10.5
(2)	Provide an assessment of the likely impacts to the Fitzroy River Turtle (*Rheodytes leukops*), the EIS must address all requirements set out in Attachment 3 of the Guidelines.	Section 10.5.3.3 Volume 3, Appendix L
(3)	An assessment of all potential and likely impacts to the Yellow Chat (Dawson), during operation of the proposal. In particular the EIS must include, but not be limited to:	Section 10.6.2.2
(a)	An assessment of the location of all habitat for the Yellow Chat (Dawson) in the lower Fitzroy River.	
(b)	An assessment of the likely and potential impacts of the LFIP to populations of Yellow Chat (Dawson) in the lower Fitzroy River.	
(4)	Provide an assessment of the potential and likely impacts to the vulnerable Black Iron Box (Eucalyptus raveretiana) during construction and operation of the LFIP. Information must include, but not be limited to:	Section 10.5.3.2
(a)	The location of suitable habitat for the Black Iron Box in the lower Fitzroy River.	
(b)	Information on the size of Black Iron Box populations and likely impacts from construction and operation of the LFIP.	
(5)	Provide an assessment of the potential and likely impacts of construction and operation on ecological communities which are listed as threatened under the EPBC Act. Information must include, but not be limited to:	Section 10.3.3, 10.4.3, 10.5.3 and 10.6.2

Term of reference requirement / section numbers		Cross Reference
	(a) The location of suitable habitat for ecological communities in the lower Fitzroy River.	
	(b) Information on the extent and likely impact of construction and operation of the LFIP to listed ecological communities.	Section 10.5.3
(6)	Discuss how the project would be consistent with approved conservation advice for the species or community.	
Impacts to listed migratory species		
1.47	This section must include:	Volume 2, Chapter 11
(1)	The MNES chapter must also consider potential impacts to species listed as migratory such as marine turtles, dugong, snub-fin and Indo-Pacific humpback dolphins which occur or potentially occur in estuarine and marine areas related to the proposal. An evaluation of the significance, occurrence (including conservation status, distribution, population viability and habitat requirements) should also be included in this section.	
Impacts to world heritage places		
1.48	This section must include:	Volume 2, Chapter 9
(1)	Provide an assessment of all potential and likely impacts to the World Heritage values of the Great Barrier Reef World Heritage Area during both construction and operation of the proposal.	
Impacts to national heritage places		
1.49	This section must include:	Volume 2, Chapter 9
(1)	Provide an assessment of all potential and likely impacts to the National Heritage values of the Great Barrier Reef during both construction and operation of the proposal.	
Conclusion		
1.50	Include an overall conclusion as to the environmental acceptability of the proposal on each MNES, including:	Volume 2, Chapter 15
(a)	a discussion on the consideration with the requirements of the EPBC Act, including the objects of the EPBC Act, the principles of ecologically sustainable development and the precautionary principle	Volume 2, Chapter 1
(b)	reasons justifying undertaking the proposal in the manner proposed, including the acceptability of the avoidance and mitigation measures	Volume 2, Chapter 15
(c)	if relevant, a discussion of residual impacts and any offsets and compensatory measures proposed or required for	Volume 2, Chapter 14

Term of reference requirement / section numbers		Cross Reference
	significant residual impacts on MNES, and the relative degree of compensation and acceptability.	
Physical and biodiversity impacts due to proposed hydrological changes		
(1)	Provide an assessment and discussion of how construction, inundation and operation will impact on the morphology of the Fitzroy River. This should also provide an assessment and discussion of the impact that changes to flow regimes will have on the morphology of the Fitzroy River including: (a) Riffles and pools downstream of the proposed Rookwood and Eden Bann Weirs (b) The stream bed including the potential for armouring and clear water impacts. (c) Rates of erosion, sedimentation and deposition between the proposed Rookwood Weir and Eden Bann Weir. (d) A discussion of how the proposed action will affect rates of erosion, sedimentation and deposition below the Eden Bann Weir.	Volume 2, Chapter 8, Section 8.2
(2)	Consider potential impacts to fauna and flora species (composition and population densities), considering changes to overall communities, community types, propagation of species and potential barriers to movement;	Volume 2, Chapter 8, Section 8.4 and 8.5
(3)	Consider potential impacts to macrobenthic species, fish and larger marine fauna species (composition and population densities), including changes to communities, breeding success, habitat, potential barriers or disturbances to migration or migratory patterns and other wildlife movements.	Volume2, Chapter 8, Section 8.6
(4)	Consider potential impacts, if any, on rare, threatened, or otherwise valuable flora and fauna, communities (particularly listed threatened species and communities, listed marine species including cetaceans and listed migratory species) and habitat, conservation areas and protected areas, in particular the Great Barrier Reef World Heritage Area.	Volume 2, Chapter 9, Chapter 10 and Chapter 11
(5)	Consider potential impacts arising from the introduction and/or spread of exotic pest species.	Volume 2, Chapter 8, Section 8.9
Cumulative impacts of the action		
1.51	The MNES chapter should identify and address cumulative impacts, where potential project impacts are in addition to existing impacts of other activities, (including known potential future expansions or developments by SunWater and other proponents in the vicinity). Where relevant to the potential impact, risk assessment should be conducted and documented. The risk evaluation should include known potential future expansions or developments by GAWB, SunWater and other proponents. Information on cumulative impacts must include, but not be limited to:	Volume 2, Chapter 12 Section 12.3
	(a) Discussion of the range of developments which will be facilitated by the proposed action.	Section 12.4
	(b) Discussion of the developments which are likely to be facilitated by the proposal and how these will influence	Section 12.4

Term of reference requirement / section numbers		Cross Reference
	sediment, nutrients, herbicides, pesticides loads in the Fitzroy River and the Great Barrier Reef.	Section 12.4.3
(c)	Discussion of any potential future changes to flow regimes which are likely to result from any increases to water demand.	Section 12.4.3
(d)	Discussion of the impacts of other water infrastructure projects both directly and indirectly related to the proposal and the LFRIP in a regional context.	Section 12.3
Consequential impacts		
1.52	The purpose of the proposal is to provide increased water security and facilitate additional agricultural, residential and industrial development in the lower Mackenzie-Fitzroy sub-catchment and the Gladstone State Development Area. Given this the EIS is to address the following:	Volume 2, Chapter 12, Section 12.4
(1)	Provide a detailed assessment of the likely impacts that facilitating these developments will have on the following:	
(a)	The World Heritage values of the Great Barrier Reef World Heritage Area	
(b)	The National Heritage Values of the Great Barrier Reef World Heritage Area	
(c)	Habitat for listed threatened species and ecological communities	
(d)	Habitat for listed migratory species.	
(2)	Provide information on any likely changes to water quality which are from developments (residential, agricultural and/or industrial) facilitated by increased water security, information should include (but not limited to):	
(a)	Sediment loads and turbidity	
(b)	Nutrient loads	
(c)	Agricultural fertilisers, herbicides, pesticides, fertilisers	
(d)	Acidic run-off and leaching from excavated acid sulfate soils	
(e)	Stormwater management in residential areas.	
(3)	Provide an assessment and discussion of the likely impacts that any changes to water quality will have on the ecological health of the Fitzroy River estuary and Great Barrier Reef World Heritage Area.	
Safeguards, mitigation measures and monitoring, offsets		
1.53	The EIS is to outline the proposed safeguards and mitigation measures to be put in place for every phase of the proposed action to deal with relevant (potential and anticipated) impacts of the action. This must include:	
(1)	A consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or treat the relevant	

Term of reference requirement / section numbers	Cross Reference
potential impacts of the action (impacts upon matters protected under Part 3 of the EPBC Act and as discussed in Section 6, including any mitigation measures proposed to be taken by State governments, local governments or the proponent.	Volume 2, Chapter 13
(2) A description and an assessment of the expected or predicted effectiveness of, the mitigation measures.	Volume 2, Chapter 13
(3) Any statutory or policy basis for the mitigation measures.	Volume 2, Chapter 10, Section 10.5.3
(4) The cost of the mitigation measures.	Volume 2, Chapter 13, Section 13.3
(5) The name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.	Volume 3, Appendix Y
1.54 Particular focus should be given to:	
(1) Determining factors in the planning of the proposal so as to avoid damage to the environment.	
(2) Measures to avoid or minimise damage to the Great Barrier Reef World Heritage Area and estuary environment.	Volume 2, Chapter 2
(3) Measures to avoid or minimise damage to the National Heritage Values of the Great Barrier Reef.	Volume 2, Chapter 9
(4) Measures to avoid or minimise disturbance to fauna and flora found around and within the proposal area (particularly listed threatened species and listed migratory species).	Volume 2, Chapter 9
(5) Staff training, including training in relation to environmental issues.	Volume 2, Chapter 10 and Chapter 11
1.55 Environmental offsets are broadly understood to mean actions taken outside a development site that compensate for the impacts of that development - including direct, indirect or consequential impacts. Environmental offsets provide an opportunity to achieve long-term conservation outcomes whilst providing flexibility for proponents seeking to undertake development which will have environmental impacts. Offsets are not intended to replace avoidance and mitigation which are expected to be the primary strategies for managing the potential impacts of development proposals.	Volume 2, Chapter 13 Volume 2, Chapter 14
1.56 This section should outline plans to offset the potential impacts of the action. Environmental offsets may be appropriate when they:	Volume 2, Chapter 14
– are necessary or convenient to protect or repair impacts to a protected matter – i.e. a matter of national environmental significance or the environment more broadly	
– relate specifically to the matter (for example, species) being impacted	
– seek to ensure that the health, diversity and productivity of the environment is maintained or enhanced.	

Term of reference requirement / section numbers		Cross Reference
Monitoring and reporting		
1.57	Appropriate baseline data requirements are to be identified as part of the EIS to form the basis for baseline measurement and ongoing monitoring of environmental parameters. It must be demonstrated that the proposed methods for baseline measurements and subsequent monitoring are scientifically and statistically sound. This section should identify parameters to be monitored and their response trigger values and response activities.	Volume 3, Appendix J, Appendix K, Appendix L
1.58	This section is to also identify and describe monitoring programs, procedural and compliance audit programs and reporting requirements and arrangements which will demonstrate the effectiveness of management and monitoring (linked to environmental management systems (EMS) / environmental management plan (EMP) procedures – see below).	Volume 2, Chapter 13, Section 13.1 and 13.2
1.59	The proponent must, in addition to outlining proposed programs, clearly identify what is to be monitored and why. Monitoring programs should be designed to provide objective evidence regarding activities associated with the proposal and if these activities are adversely impacting on the environment in the short, medium and long term.	Volume 2, Chapter 13 Volume 3, Appendix M
1.60	Monitoring programs should demonstrate consideration of:	Volume 2, Chapter 13 Volume 3, Appendix M
	(1) Ecosystems and habitats, flora and fauna (particularly listed threatened species/ecological communities and listed migratory species), and water quality issues.	
	(2) Measuring the effectiveness of mitigation and/or rehabilitation measures.	
	(3) Documenting the difference between predicted and actual impacts.	
	(4) Methods for identification of non-predicted impacts and appropriate reporting and remedial measures.	
	(5) Application and effectiveness of emergency and contingency plans.	
	(6) Review of consultation and management arrangements with regulatory authorities and the community.	
Environmental management system		
1.61	The overall environmental management philosophy to be applied to the areas affected by the proposal is to be enunciated. An outline of the proposed EMS is to be contained in the EIS document. It should include summary details of audit protocols and reporting procedures.	Volume 2, Chapter 13
1.62	Reference should be made within the outline of the EMS to consultation, relevant legislation, standards adopted, safeguards planned, management practices, monitoring programs and emergency contingency plans. Reference should also be made to EMPs to manage impacts on the World and National Heritage values of the Great Barrier Reef, listed threatened species and	Section 13.2 and 13.3

Term of reference requirement / section numbers		Cross Reference
	communities and listed migratory species.	
1.63	An outline of the EMP should be presented in this section of EIS. It should, as a minimum, detail:	Section 13.3
	(1) monitoring arrangements	
	(2) reporting arrangements	
	(3) feedback of monitoring results into project management.	
1.64	Details of requirements for the preparation of EMPs under other relevant legislation should also be provided. In an effort to minimise duplication, areas of consistency between separate requirements should also be highlighted.	Section 13.2.2
Other approvals and conditions		
1.65	The EIS is to include information on other approvals to be obtained and their associated conditions. This must include the following:	Volume 2, Chapter 3
	(1) A description of any approval that has been obtained from a State, or Commonwealth agency or authority (other than an approval under the EPBC Act), including any conditions that apply to the action.	Section 3.2
	(2) A statement identifying any additional approval that is required.	Section 3.2
	(3) A description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.	
	(4) Details of any local or State government planning scheme, or plan or policy under any local or State government planning system (including licensing and permitting requirements) that deals with the proposed action, including:	Section 3.11 and 3.12
	(a) What environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan or policy.	
	(b) How the scheme provides for the prevention, minimisation and management of any relevant potential impacts.	
Environmental record		
1.66	The EIS must include the environmental record of the proponent. This should include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against the person proposing to take the action. If the person proposing to take the action is a corporation, details of the corporation's environmental policy and planning framework must be provided.	Volume 2, Chapter 1 Volume 3, Appendix E
1.67	Information relating to the persons' environmental record should also include any accreditations (for example ISO 14001),	

Term of reference requirement / section numbers		Cross Reference
	environmental awards, and other recognition for environmental performance.	
Conclusion		
1.68	An overall conclusion as to the environmental acceptability of the proposal should be provided, including discussion on compliance with the objectives and requirements of the EPBC Act including the principles of ESD (see Attachment 2). Reasons justifying undertaking the proposal in the manner proposed should also be outlined. The conclusion should highlight measures proposed or required by way of mitigating any unavoidable impacts on the environment.	Volume 2, Chapter 15
Information sources		
1.69	Information sources used in the formulation of the EIS are to be provided. This section will describe consultations and studies undertaken in the course of proposal formulation and preparation of the draft EIS, and sources of information and technical data. The following must be provided for information given: (1) the source of the information (2) how recent the information is (3) how the reliability of the information was tested (4) what uncertainties (if any) are in the information.	Volume 2, Chapter 6 Volume 2, Chapter 16
1.70	Any further or ongoing consultations or studies should be outlined here.	Volume 2, Chapter 4, Section 4.5 Volume 2, Chapter 6, Section 6.2.4
Reference list and bibliography		
1.71	The reference list and bibliography provided in the EIS is to be accurate and concise and include the address of any internet pages used as data sources.	Volume 3, Chapter 16
Appendices and glossary		
1.72	Detailed technical information studies or investigations necessary to support the main text of the EIS, but not suitable for inclusion in the main text should be included as appendices; for example, detailed technical or statistical information, maps, risk assessment, baseline data, supplementary reports etc. A copy of the TOR should also be included. A glossary defining technical terms and abbreviations used in the text should be included to assist the general reader.	Volume 3, Appendix C

Term of reference requirement / section numbers		Cross Reference
Additional social and economic matters		
1.73	Section 136(1)(b) of the EPBC Act requires the Minister to consider economic and social matters when deciding whether to grant approval to the proposed action under Part 9 of the EPBC Act. The requirements under s136(1)(b) encompass a broad range of matters that may be considered than those addressed during the assessment of the potential impacts of a controlled action. Accordingly, information should be provided in the EIS on the broad social and economic impacts (positive or negative) of the proposal for the purposes of the Part 9 decision on approval.	Volume 2, Chapter 7, Section 7.11 and 7.12 Volume 2, Chapter 8, Section 8.10 Volume 3 Appendix R Volume 3 Appendix S
1.74	As the matters protected by the controlling provisions for this action include "the environment", there is the potential for an overlap between the information provided in response to this, and the information requested in the main body of the guidelines in relation to social, economic and cultural aspects within the definition of the environment. The latter set of information need not be repeated if it will be contained in the body of the EIS.	