CrossRiver*Rail*

Appendix K
ToR Cross Reference Table

Cross River Rail

APPENDIX K

Terms of Reference Cross-Reference Table

JULY 2011

Appendix K TOR cross reference table

TOR Requirement	Section of EIS
EXECUTIVE SUMMARY 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 and avoid the use of jargon. It should be written as a stand-alone document and be structured to follow the EIS. It should be able to be reproduced on request and distributed to interested parties who may not wish to read or purchase the EIS as a whole. The executive summary should include:	Executive Summary
• the title of the project	Section 1.1
• name and contact details of the proponent and a discussion of previous projects undertaken by the proponent, if applicable, and its commitment to effective environmental management	Section 1.2 Section 1.3
• the statutory planning scheme(s) and approvals framework within which the project sits	Section 3.1
• a concise statement of the aims and objectives of the project	Section 2.2
• an outline of the background and need for the project, including the consequences of not proceeding with the project	Section 2.1 Section 3.2 to Section 3.4
• an outline of the alternatives to the project and the proposed alignment options considered and reasons for the selection of the proposed development option	Section 2.5 Section 3.6
• a brief description of the project (project development, construction and operational activities and decommissioning) and the existing environment, utilising visual aids where appropriate	Section 2.3 Section 2.4
• an outline of the principal environmental impacts predicted and the proposed environmental management strategies and measures recommended to minimise the significance of these impacts	Section 5 Section 6
• a discussion of the cumulative impacts in relation to social, economic and environmental factors of associated infrastructure projects proposed within the region.	Section 5.18
Detailed maps of the project location and any other critical figures should also be included.	Figure 2-1 to Figure 2-3
GLOSSARY OF TERMS A glossary of technical terms, acronyms, abbreviations and references should be provided in the EIS or as an appendix.	Appendix L
1. INTRODUCTION The introduction should clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. It should contain an overview of the structure of the document.	Section 1.1 Section 1.6.2 Section 1.6.3

TOR Requirement	Section of EIS
1.1 Project proponent This section should describe the experience of the project proponent, including the nature and extent of business activities, experience and qualifications, and the environmental record, including the proponent's environmental, health, safety and community policies.	Section 1.2
1.2 Project description A brief description of the key elements of the project should be provided with illustrations or maps. Any major associated infrastructure requirements should also be summarised. Detailed descriptions of the project should follow in section 2.	Section 1.5 Figure 1-3
1.3 Project rationale The specific objectives and justification for the project should be described including its strategic, economic, environmental and social implications, technical feasibility and commercial drivers. The status of the project should be discussed in a regional, state and national context. The project's compatibility with relevant policy, planning and regulatory frameworks should also be mentioned.	Section 1.3 to Section 1.5 Section 2.5
1.4 Relationship to other projects This section should describe how the project relates to any other infrastructure projects of which the proponent should reasonably be aware, that has been or is being taken or that have been approved in the area potentially affected by the project. As a result of this assessment, opportunities may exist for co-location of existing or proposed infrastructure enabling efficiency gains and the mitigation of environmental and property impacts. Where co-location may be likely, the EIS should outline opportunities to coordinate or enhance impact mitigation strategies. Opportunities should be discussed in sufficient detail to enable an understanding of the reasons for preferring certain options or courses of action and rejecting others	Section 2.8 Section 23.4.1 to Section 23.4.3
1.5 Alternatives to the project This section should describe feasible alternatives, including conceptual, technological and locality alternatives to the proposed project, as well as discussion of the consequences of not proceeding with the project.	Section 2.4 Section 2.7
Alternatives should be discussed in sufficient detail to enable an understanding of the reasons for preferring certain options or courses of action and rejecting others. This should include a discussion of a surface rail corridor alternative and the 'no action' option. A discussion of the methodology adopted to discern between the feasible options should be included.	Section 2.7 Section 3.2
The interdependencies of the project components should be explained, particularly in regard to how each of any infrastructure requirements relate to the viability of the project.	Section 2.3 Section 2.4
The alternatives considered must include: • an evaluation of a surface rail option instead of the rail tunnel and/or an option with a substantially lower rail tunnel component	Section 3.2
• an evaluation of rail tunnel alignment options – at a broad level for alignment options considered outside of the nominated study corridor during the scoping of the project – at a more detailed level for alignment options considered within the nominated study corridor	Section 3.2 Section 3.3.3 Section 2.5 Section 2.7

TOR Requirement	Section of EIS
• an analysis of alternative portal locations at each end of the tunnel, with particular attention to the relative construction impacts of each alternative on surrounding property owners, residents and businesses	Section 3.3.4 Section 3.3.5 Figure 3-10 Tables 3-4 and 3-5
• for each new rail station location, an analysis of alternative station locations and entrance options, with particular attention to the relative construction impacts of each alternative on surrounding property owners, residents and businesses	Section 3.3.2 Section 3.3.6
• consideration of impacts to cyclists, bus users, pedestrians and general road traffic	Section 3.3.2 Section 3.3.6 Section 5.7
• an analysis of the removal of tunnel spoil and the delivery of tunnel materials by rail rather than road including the cumulative effects of spoil haulage due to other large projects	Section 3.4.3 Section 4.4.7 Section 23.4
• where road transport of tunnel spoil or materials is required, an analysis of the impacts of different road haulage routes.	Section 3.4.3 Table 3-6 Section 4.4.7 Section 5.10.1 Section 5.10.2 Section 5.10.5 Section 5.10.7 Figure 5-56 to Figure 5-67 Section 9.4.10
• an analysis of the comparative impacts of different spoil placement options	Section 3.4.3
Reference may be made to project alternatives previously examined in the 2008 Department of Transport Inner City Rail Capacity Study (ICRCS) and other recent studies, to the extent that these studies may addresses the requirements of this TOR.	Section 2.7 Section 3.2
1.6 The environmental impact assessment process **1.6.1 Methodology of the EIS** This section should provide an outline of the environmental impact assessment process including the role of the EIS in the Coordinator-General's decision making process. It should include information on relevant stages of the EIS development, statutory and public consultation requirements and any interdependencies that exist between approvals sought	Section 1.6.1

TOR Requirement	Section of EIS
The information in this section is required to ensure: • relevant legislation is addressed	Section 1.6.1
• readers are informed of the process to be followed	Section 1.6.1
• stakeholders are aware of any opportunities for input and participation.	Section 1.7
1.6.2 Objectives of the EIS This section should provide a statement of the objectives of the environmental impact assessment process. The structure of the EIS can then be outlined as an explanation of how the EIS will meet its objectives.	Section 1.6.2
The purpose of the EIS is to: • provide public information on the need for the project, alternatives to it and options for its implementation	Section 1.6.2 Section 1.6.3
• 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 offsets if any, for residual impacts • the role of the EIS in providing information for the formulation of the environmental management plan (EMP) for the project should be discussed.	
1.6.3 Submissions The EIS should inform the reader how to provide a properly made submission on the EIS. The reader should be informed as to how and when submissions on the EIS will be addressed and considered in the decision-making process. Where subsequent approvals will be required for elements of the project-for example, development approvals under SPA, the EIS should also describe how submitters on this EIS may be afforded subsequent rights under those later approvals processes-for example, appeals against development approvals under SPA. Staff of DIP administering the EIS process can provide some guidance on these matters.	Section 1.8
1.7 Public consultation process 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 (such as newsletters), and other consultation mechanisms including suitable information for persons with special needs to encourage and facilitate active public consultation. Public consultation processes (community engagement) for all parts of the EIS should be integrated.	Section 1.7 Appendix C
This section should outline the methodology that will be adopted to: • identify the stakeholders and how their involvement was facilitated	Section 1.7 Appendix C
• identify the processes conducted to date and the future consultation strategies and programs including those during the operational phase of the project	Section 1.7 Appendix C
• 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	Section 24.5 Appendix C
A list of the stakeholders consulted during the program should be provided as well as any meetings held, presentations made and any other consultation undertaken for the EIS process should be included. Information about the consultation process that has taken place and the results should be provided.	Section 1.7.3 Appendix C

TOR Requirement	Section of EIS
All property owners directly impacted by the construction and operation of the CRR project, especially those over or immediately bordering all underground project structures, must be notified by the proponent. All reasonable efforts must be made to directly consult with those landholders and body corporate entities over all underground project structures. The outcomes of this consultation must be reported to the Coordinator-General prior to the finalisation of the Coordinator-General's EIS evaluation report.	Section 1.7.2 Appendix C
This direct consultation must involve the provision of both cadastral mapping, volumetric and/or engineering information (where relevant) explaining how the CRR project would potentially impact in terms of: • property take, if any	Noted and addressed through consultation process
• constraints, if any, caused by the project on the property with respect to: – structures that can be built – access to the property during both the construction and operation of the project – any significant disruption to the provision of water, waste, telecommunications, electricity or other energy services to the property.	Noted and addressed through consultation process
While the outcomes of each of land owner and body corporate entity consultation should not be reported individually in the EIS, this information should be available in confidence to the Coordinator-General upon request. A summary of the progress of these consultations to date, which protects the confidentiality of individuals, should be presented in an appendix to the EIS.	Appendix C Process noted
All reasonable efforts should also be made by the proponent to consult with residential and business tenants and strata title owners potentially impacted directly by the construction and operation of the project and any measures proposed to avoid, minimise, mitigate and/or offset those impacts.	Section 1.7 Appendix C Noted and addressed through consultation process
Aspects of the community engagement and consultation processes that provide information about the social impacts of the project should be presented in more detail in line with the requirements of section 4.2 of these TOR.	Appendix C
1.8 Project approvals **1.8.1 Relevant legislation and approvals** This section must describe and list Commonwealth, state and local legislation and policies relevant to the planning, approval, construction and operation of the project. The EIS should identify approvals, permits, licences and authorities that will need to be obtained for the proposed project. Triggers for the application of each of these should be outlined and relevant approval requirements identified.	Section 4.5 Section 11.1.1 Appendix D Section 4.5 Section 24.7.5
Relevant Commonwealth Government legislation may include, but not limited to: • *Aboriginal and Torres Strait Islander Heritage Protection Act 1994* • EPBC Act 1999 • *Native Title Act 1993* Relevant Commonwealth obligations such as memberships of relevant international conventions (e.g. RAMSAR wetlands) should also be outlined and identified.	Section 4.5.2 Appendix D

TOR Requirement	Section of EIS
Reference must also be made, where relevant, to applicable Queensland legislation including but not limited to: • *Aboriginal Cultural Heritage Act 2003* • *Coastal Protection and Management Act 1995* • *Dangerous Goods Safety Management Act 2001* • *Environmental Protection Act 1994* • *Fisheries Act 1994* • *Forestry Act 1995* • *Land Act 1994* • *Nature Conservation Act 1992* • *Queensland Heritage Act 1992* • *Sustainable Planning Act 2009* • *Transport Infrastructure Act 1994* • *Vegetation Management Act 1999* • *Water Act 2000*	Section 4.5.1 Section 4.5.3 Section 4.5.4 Appendix D
1.8.2 Planning instruments and frameworks This section should outline the project's consistency with the existing national, state, regional and local planning frameworks that applies to the project location. This should include reference to all relevant statutory and non-statutory plans, planning policies, guidelines, strategies and agreements.	Section 2.2 Section 9.2
1.8.3 Environmentally relevant activities A brief description is required for each environmentally relevant activity (ERA) which are to be carried out in connection with the project. More detailed descriptions of each ERA should be presented in section 3—environmental values and management of impacts—in which potential impacts on land, water, air, noise and any other relevant environmental values must be identified. The above information will allow for informed decisions to be made with respect to the project, consistent with the provisions of the EP Act.	Section 4.5.3 Section 4.5.4
2. DESCRIPTION OF THE PROJECT The objective of this section is to describe the project through its lifetime of 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.	Chapter 4
2.1 Overview of the project The EIS should provide an overview of the project. This section should include: • leasing arrangements, role and responsibilities of the project proponent and railway manager	Section 4.1 Section 4.3.2 Section 4.5.4 Section 9.4.2

TOR Requirement	Section of EIS
• a rationale explaining the selection of the preferred operating scenario for the project, including details such as cost, environmental impacts, and the operational efficiencies	Section 4.1.1 Section 2.4.1 to Section 2.4.4 Section 3.2 Section 3.4
• a description of the key components of the project, including the use of text and design plans where applicable	Section 4.1.6
• a summary of any environmental design features of the project	Section 4.2.2
• the expected cost, timing, and overall duration of construction and operation of the project, including any staging of the development and delivery of the project	Section 4.1 Section 4.4.2 Section 4.4.5 Section 4.3 Figure 4-30
2.2 Location This section should describe, through maps at suitable scales, the regional and local context of the project and associated infrastructure. Maps should show the precise location of the study corridor and areas affected by the project, in particular the location:	Section 4.1.3 Figure 4-1
• and boundaries of current or proposed land tenures that will be affected by the project, including details of land ownership, easement widths and access requirements	Section 4.1.3 to Section 4.1.6 Section 9.3.6 Section 9.4.2 Section 20.3.4 Section 21.3.4
• of any proposed buffers surrounding the working areas (for construction and operation)	Section 4.4.3
• of infrastructure relevant to or provided for the project-for example, electricity substations or transformers, access roads or paths, ventilation structures, water and waste management structures	Section 4.1.6 Table 4-1
• of natural features such as waterways-for example, rivers, streams, creeks, other water bodies	Section 4.1.4
• of any proposed construction compounds, materials storage areas, site offices, worker parking and operational control rooms or buildings.	Section 4.1.7 Section 4.4.3

TOR Requirement	Section of EIS
2.3 Project development The development of the project should be described including key steps in the design process. The key steps should be discussed in sufficient detail to enable an understanding of the criteria for the selection of the preferred option in terms of technical, commercial, social and/or environmental aspects.	Chapter 3
Relevant illustrations, maps, diagrams and drawings that show the location and context of the assessed options should be provided.	Chapter 3
The proposed land acquisition process or processes for surface and subsurface components of the project should be described.	Section 4.4.9
2.4 Design The description of the project should include written and schematic identification of: • the design criteria applied to the route including tunnels, portals and railway infrastructure	Section 4.2 Section 4.2.1 Section 4.2.10
• the design criteria for new underground stations and improvements to existing at-surface stations including platforms, vertical access to underground platforms, access for pedestrians and cyclists and interchanges with private vehicles and other public transport modes	Section 4.2.1 Section 4.2.3 to Section 4.2.9
• the extent to which design criteria have incorporated: – sub tropical design principles as outlined in the South East Queensland Regional Plan 2009-2031	Section 4.2.2 Table 4-3
– interface with the urban fabric	Section 4.2.2 Table 4-3
– transit orientated development principles associated with new stations	Section 4.2.2 Table 4-3
• the range of potential rolling stock that were considered in the design process	Section 4.2.1 Section 5.5.1
• for the corridor within which the tunnels and surface railway elements will be located, with the aid of maps and diagrams describing:	Section 4.2.10 Section 4.2.11 Section 4.2.12 Table 4-1
– indicative sections within tunnel, on typical embankments and bridged sections	Section 4.2.10 Table 4-1
– tunnel lighting	Section 4.2.12
– in-tunnel operational management	Section 4.2.14 Table 4-1

TOR Requirement	Section of EIS
– ventilation and drainage works and outlets	Section 4.2.11 Section 4.2.14 Table 4-1
– interaction with other key transport assets other than rail assets	Section 4.2.3 to Section 4.2.9
– works within and outside of the existing rail corridor, including ancillary works such as for pedestrian, cycle movements and general road traffic	Section 4.2.13 Section 4.4.2
– measures required for emergency access, and retrieval of immobile and derailed trains	Section 4.2.11 Section 4.2.14 Table 4-1
– locations and areas of other activities, works and temporary or permanent infrastructure	Section 4.2.12 Section 4.2.13
– design parameters including horizontal and vertical alignment (including relationships to existing and proposed structures adjacent to or in close proximity to the project) , representative rail and tunnel cross-sections	Section 4.2.10 Section 4.2.12
• assumed train volumes and train capacity of the project	Section 4.1.6 Section 4.2.7 Section 5.5.2 (train capacity) Section 5.5.4 (train volumes)
• anticipated design life of project structures	Section 4.2.1
• rail corridor configuration including indicative widths and access requirements along the alignment including the use of existing areas of disturbance for machinery access and future maintenance	Section 4.2.10 Section 4.2.12 Table 4-1

TOR Requirement	Section of EIS
• proposed tunnel management and control apparatus, including signalling, monitoring of trains and air quality, monitoring of groundwater seepage into tunnels, and monitoring and control of surface water flow (quantity and quality) into tunnels and around project structures	Section 4.2.14 Section 13.3.9 Section 14.4.5 Section 15.5.8 Table 4-1
• proposals for redevelopment of construction worksites	Section 4.4.9 Section 9.4.2
• proposed tenure arrangements for all land parcels occupied by the project, including those land parcels required for construction but not operation of the project	Section 4.1.5 Section 9.4.1 Section 9.4.2
• any structures associated with longer term retention and management of spoil from all excavations.	Section 4.4.7
This section should detail, where relevant, how the project addresses Brisbane City Council's planning scheme policy Crime Prevention through Environmental Design Principles in its design features.	Section 4.2.2 Table 4-3
2.5 Construction The following information should be provided on the pre-construction, construction and commissioning of the project including detailed plans where appropriate.	Section 4.4
2.5.1 Pre-construction activities This section should set out a description of all the pre-construction activities to be undertaken in order to prepare the project for construction, including:	Section 4.4.1
• any approvals required for this stage	Section 4.4.1 Section 4.5
• any land acquisitions required, be it in full or as easements, leases etc and the acquisition processes to be followed	Section 4.4.9
• nature, scale and timing for vegetation clearing	Section 4.4.1
• site access	Section 4.4.3
• earthworks	Section 4.4.3 Section 4.4.7
• interference with watercourses and floodplain areas	Section 4.5.3 Section 13.3

TOR Requirement	Section of EIS
• site establishment requirements for construction facilities, including workforce access, restriction and control measures, services (water, sewage, communication, power, recreation), safety requirements and project related public utility works	Section 4.4.3
• temporary works	Section 4.1.6 Section 4.4.1 Section 4.4.2
• upgrade, relocation, realignment, closure or deviation of or restricted access to roads and other infrastructure.	Section 4.2.13 Section 4.4.2
While the broad measures proposed to mitigate the negative impacts of pre-construction activities may be summarised here, details of these mitigation measures must be described within the relevant part of section 3 of the EIS.	Mitigation measures addressed in technical chapters of the EIS.
2.5.2 Construction For all major worksite alternatives considered for the construction of the project, this section should set out a description of all the construction elements of the project, including:	Section 4.4
• any expected individual property impacts	Section 4.4.9 Section 9.4.2 Section 9.4.5 Section 21.3.4
• any expected property access impacts and how access is to be managed	Section 9.4.2 Section 9.4.5 Section 21.3.4
• a preliminary predictive program of activities including the anticipated construction timetable, expected commissioning and start-up dates and the proposed construction hours of operation	Section 4.4.5
• options for potential construction and equipment storage areas and transport management (including parking arrangements for the construction workforce)	Section 5.10.5 Section 5.10.6
• rail and road traffic management plans (including passenger transport infrastructure) for construction-related activities and the approval process for these plans	Section 5.10.3
• active transport management plans for construction-related activities including documentation of consultation undertaken with relevant stakeholders	Section 5.10.3

TOR Requirement	Section of EIS
• spoil management arrangements including: – anticipated quantities	Section 3.4.3 Section 4.4.7 Section 9.4.10
– re-use options	Section 3.4.3
– spoil placement site options	Section 3.4.3
– transport (number, types of vehicles, composition, trip timing and routes)	Section 3.3.3 Section 4.4.5 Table 4-11 Section 5.10.7
– storage and placement location options, including any additional infrastructure required	Section 4.4.5 Section 9.4.8
– potential haulage routes (including rail options) for transport of spoil to possible placement locations	Section 4.4.5 Section 5.10.5 Section 9.4.8 Figure 5-67
– the influence of other large spoil-producing infrastructure projects likely to be under construction at the same time in the southeast Queensland region	Section 23.4
– management of spoil placement activities and spoil placement sites to avoid unacceptable environmental impacts	Section 9.4.10 Section 23.4
– consideration of the minimisation of environmental and transport impacts, and maximisation of opportunities for beneficial reuse of the material	Section 3.4.3 Section 9.4.10
• the likely types of vehicles or alternative arrangements to be used for spoil transportation, including numbers of vehicle trips and frequency of trips for each haulage option and route	Section 3.4.3
• likely scenarios for origin and destination of inputs/supply source and likely transport routes in the vicinity of construction sites	Section 5.10.6 Figures 5-56 to 5-67
• diversion of watercourses, watercourse crossings and arrangements for draining or directing or capturing overland flow during construction.	Section 13.3.8 Section 14.3.1

TOR Requirement	Section of EIS
In relation to the above parameters, the EIS should demonstrate that the likely total negative impacts of the preferred major worksites and spoil placement locations for the reference design are less than for the alternative major worksite and spoil placement locations considered for the project. Where comparison of the different major worksite and spoil placement locations reasonably requires analysis of specific impacts on the particular environmental values listed in Section 3 of this TOR document-for example land use and tenure, water resources, air quality, noise and vibration, then the relevant detail identified in section 3 of the these TOR may be cross-referenced. Where engineering or other practical constraints dictate that worksite alternatives are not reasonably available, then a more detailed analysis is not required, as long as the alternatives considered and the key practical constraints are listed.	Overview for major worksites and spoil placement location is provided in Chapter 4. Detailed impact assessment is provided within the technical chapters.
Unless already dealt with under road and rail traffic management plans, the EIS should also describe the impact, if any, that construction of the project would have on other transport modes, especially on the urban rail network and passenger rail and freight services, and how such impacts would be managed.	Section 5.10.4 (rail) Section 5.10.5 (other modes) Section 5.10.9 (mitigation)
Instructions for the description of matters related to the decommissioning and rehabilitation of construction and spoil placement sites are provided in section 2.8 of this TOR document.	
2.5.3 Commissioning A description of the commissioning process including the associated environmental impacts should be provided.	Section 4.4.10
2.6 Operation This section should provide details of the operation for all elements of the project, including: • the operational scenario selected for the purpose of determining potential impacts	Section 4.3
• nature and description of all key operational activities	Section 4.3 Table 4-1
• description of the buildings, structures, plant and equipment to be employed	Section 4.2.2 to Section 4.2.9
• the capacity of the project equipment and operations, including the frequency of train movements through the corridor	Section 4.3 Section 4.3.1 to Section 4.3.4
• operation of new and upgraded train stations	Section 4.2.2 to Section 4.2.9

TOR Requirement	Section of EIS
• interaction with surrounding road network and infrastructure, such as 'kiss and ride' facilities, if required	Section 4.2.2 to Section 4.2.9
• pedestrian and cycle facilities and connectivity at stations	Section 4.2.2 to Section 4.2.9
• interchanges with other public transport modes at or near stations including any changes to the operation of such infrastructure and services	Section 4.2.2 to Section 4.2.9
• changes to local road networks, if required, around surface infrastructure and surface stations	Section 4.2.13
2.7 Associated infrastructure The section should detail, with concept and layout plans, the existing and any planned utility services that may be affected by the project, and requirements for the upgrading/relocating of existing infrastructure to service the construction and/or operation of the project.	Section 4.13
Infrastructure to be considered include transportation, water supply, energy supply, telecommunications, stormwater, waste disposal and sewerage.	
Owners of existing or proposed utilities should be identified, together with significant or critical users of the utilities - for example health care facilities.	Noted and addressed through the consultation process
2.8 Construction decommissioning and rehabilitation This section must present the strategies for progressive staging and consequent rehabilitation of the environment disturbed during construction. Final rehabilitation of the construction sites and management of the spoil placement sites must be discussed in terms of future land use suitability, potential redevelopment, urban design outcomes, management of any residual contaminated land and any other land management issues. A description of how the spoil placement sites and rehabilitation of construction sites will be monitored and maintained must also be provided.	Section 4.4.11 Section 4.4.11 Section 8.3 Section 9.4.2 Section 9.4.10 Section 13.3.8 Chapter 7 Land Contamination
The description of decommissioning and rehabilitation must include: • a strategy to minimise the amount of land disturbed at any one time	Section 4.4.11
• the final land form of any disturbed surface work site areas and waste areas shown on maps at a suitable scale	Chapter 17
• potential options for surplus land use for community and recreational purposes at key locations.	Section 4.4.11 Section 9.4.2

TOR Requirement	Section of EIS
Detail of the impacts of the preferred rehabilitation strategy should be discussed in the appropriate subsections of section 3.	
Reference should also be made to the project construction infrastructure that is not intended to be decommissioned. In this situation the entity, to which the infrastructure is intended to be transferred, should be described with the proposed environmental management regimes.	Section 9.4.2
3. ENVIRONMENTAL VALUES AND MANAGEMENT OF IMPACTS This section should detail the environmental protection and mitigation measures incorporated in the planning, construction, rehabilitation, commissioning, operation 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. Preferred measures should be identified and described in more detail than other alternatives.	Chapters 6 to 20
The objectives of subsequent sections are to: • describe the existing environmental values of the study area that may be affected by the project, using background information and/or new studies to support this description, including reference to all definitions of environmental values set out in relevant legislation, policies and plans	Chapters 6 to 20
• 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 adverse impacts and maximise beneficial impacts	Chapters 6 to 20
• describe any cumulative impacts on environmental values caused by the project, either caused by this project or by combination with other known existing or planned projects, where cumulative impacts may occur over one or several locations over one or several periods of time	Chapters 6 to 20 Chapter 23
• present objectives, standards and measurable indicators that can be used to help protect the identified environmental values	Chapters 6 to 20 Chapter 24
• examine viable alternative strategies for managing impacts, with these alternatives presented and compared in view of the stated objectives and standards to be achieved	Chapters 6 to 20
• discuss the available techniques to control and manage impacts in relation to the nominated objectives.	Chapters 6 to 20
Where negative impacts of the project cannot be avoided or adequately minimised or mitigated , proposals to offset impacts should be presented that are not inconsistent with the *Queensland Government Environmental Offset Policy* (2008)	Chapters 6 to 20
The mitigation measures, monitoring programs etc., identified in this section of the EIS should be used to develop the EMP for the project (see section 8 – Environmental Management Plan).	Chapter 24
3.1 Transport The transport assessment is to be presented for each mode affected by the project as appropriate. These assessments should provide sufficient information to allow an independent assessment of how existing and planned transport infrastructure will be affected by project transport at the local and regional level.	Chapter 5

TOR Requirement	Section of EIS
3.1.1 Description of existing transport network The existing transport network and operations relevant to the project should be described (at a level of detail appropriate for the impact of the project), in terms of: • the regional rail network (passenger and freight) and rail infrastructure including: – rail operations – patronage (peak and daily) – rail capacity and levels of service – stations and facilities associated with the project in the study corridor.	Section 5.2 Section 5.2.1 Section 5.2.2 Section 5.3.2 Section 5.3.3 Table 5-5 to 5-7 Figures 5-2 to 5-5 and 5-17
• the regional, arterial and local road network, to the extent relevant to the project, including: – road traffic composition and movement patterns – road capacity, degree of saturation and levels of service – freight traffic volumes, composition and existing designated freight routes	Section 5.2.5 Section 5.3.6 Figures 5-9 to 5-12 and 5-18
• other public transport services (bus and ferry) and their interactions with the rail network, and relevant information on passenger numbers and infrastructure	Section 5.2.3 (Bus) Figure 5-6 Section 5.2.4 (Ferry) Figure 5-8 Table 5-5 (patronage)
• bicycle and pedestrian movements and their interactions with the rail network, and relevant information on movement numbers and infrastructure.	Section 5.2.6 Figure 5-14 to 5-16 Section 5.3.7
3.1.2 Transport network performance The performance of the relevant existing regional bus, ferry and rail network (passenger and freight) should be described in terms of: • capacity and constraints to capacity	Section 5.3 Section 5.3.1 Section 5.3.2 (passenger rail) Section 5.3.3 (freight rail) Section 5.3.4 (bus) Section 5.3.5 (ferry)

TOR Requirement	Section of EIS
• current operations—service plans, travel speeds (peak, daily and composition), levels of service	Section 5.2.1 Section 5.3.2
• connectivity with other public transport and active transport	Section 5.3.1 Section 5.2.3 (Bus) Section 5.2.4 (Ferry) Section 5.2.6 (Ped/ Cycle)
The performance of other public transport modes (bus and ferry) should be addressed similar to the rail network.	Section 5.3.4 (bus) Section 5.3.5 (ferry)
The performance of the existing road network, relevant to the project, should be described in terms of: • traffic demands (through, local and regional context)	Section 5.3.6
• traffic flows, speeds and travel times—peak, daily, composition	Section 5.3.6 Figure 5-18
• cycle and pedestrian network	Section 5.3.7
• interaction with public transport	Section 5.3.4
• vehicle access, parking and loading in the study corridor and adjacent areas	Section 5.2.5 Volume 2
3.1.3 Patronage forecasting methodology The methodology used for rail patronage and wider road traffic network , pedestrian and cycle forecasting should be described in regard to: • broad land use patterns—a description of the population, employment and demographic forecasts used and assumed generation rates and an explanation of the rationale for the assumptions applied	Section 5.4.1
• the scope and validity of the transport models used	Section 5.4.1
• the provision of forecasts for relevant opening year and design years	Section 5.4.1
• an analysis of trends in household travel behaviour	Section 5.4.1
• network improvements—which planned or proposed rail, other public transport, pedestrian, cyclist and road upgrades have been included in the modelling for each time period	Section 5.4.2
• an explanation of how and what alternative future scenarios were considered	Section 5.9
• effects of the project on other public transport services (locally and regionally).	Section 5.6 Section 5.7

TOR Requirement	Section of EIS
3.1.4 Future base rail transport conditions (no project) Future conditions on the rail network of relevance to the project should be outlined from appropriate models for relevant design years such as the anticipated opening year, and relevant design years, without the project in place, in terms of: • description of the rail network	Section 5.4 Section 5.4.2 Section 5.4.3
• future demand for all transport modes , including forecast rail movement volumes and speeds	Section 5.4.4 (transport demands) Section 5.4.6 (rail performance) Section 5.4.8 (bus and ferry) Section 5.4.9 (road) Table 5-10 to 5-16 Figure 5-22 to 5-23
• operational and access requirements	Section 5.4.3 Section 5.4.7 (freight)
• network performance for all transport modes within the local and regional network	Section 5.4.6 (passenger rail) Section 5.4.7 (rail freight) Section 5.4.8 (bus and ferry) Section 5.4.9 (road) Section 5.4.10 (summary)
• other public passenger transport service options (including levels of service and utilisation of bus passenger transport capacity)	Section 5.4.8 (bus and ferry) Section 5.4.9 (road) Section 5.4.10 (summary)

TOR Requirement	Section of EIS
• alternative rail operational configurations or network upgrades (e.g. longer trains, upgraded signalling, improved rolling stock) and the extent to which these alternatives may support or delay the need for CRR.	Section 2.7
3.1.5 Effects of the operating project The effects of the proposed works on the rail network should be investigated for future model years, including rail passenger sensitivity demands and comparison with the future base rail transport conditions (no project), as follows:	Section 5.5 to 5.10 Section 5.5
• changes to rail passenger capacity, operations and levels of service in the anticipated opening year and other relevant design years	Section 5.5 Section 5.6.4 to 5.6.6
• impacts on rail freight operations	Section 5.6.8
• changes to patronage of existing rail stations and interchanging with other public transport modes	Section 5.7.1
• impacts to rail maintenance operations.	Section 5.8
The effects of the project on other transport modes and precinct plans should also be identified including: • impacts to traffic (including vehicle access and parking) on the road network. This includes the local road network that interact with the project as well as the regional road network	Section 5.6.10 Section 5.7.2
• impacts to patronage of other public transport modes (bus and ferries)	Section 5.6.3 Section 5.6.9
• changes to pedestrian and cycle movements that interact with the project (particularly around rail stations).	Section 5.7.1 Section 5.7.3.
A Road Impact Assessment (RIA) report should be undertaken for the operation of the project in general accordance with TMR's Guidelines for Assessment of Road Impacts of Development (2006). Traffic assessments must include details of the number, composition, trip timing and routes used. All assertions made should be supported by calculations, maps at appropriate scale and/or consultation undertaken with relevant stakeholders.	Section 5.6.10 (strategic) Section 5.7.2 (local) Figure 5-40
3.1.6 Construction transport impacts The transport implications for both impacts and mitigation measures of construction activities should be described with respect to: • existing rail services (passenger and freight), use of rail stations and railway maintenance regime	Section 5.10 Section 5.10.4
• any pre-construction demolitions	Section 5.10.2
• construction site traffic generation, operational service requirements and access	Section 5.10.5

TOR Requirement	Section of EIS
• local and regional traffic flows from temporary and permanent road traffic changes, including road and lane closures at construction sites and the specific measures proposed to mitigate these impacts	Section 5.10.7 Section 5.10.8 Section 5.10.9
• an assessment of the likely impacts of construction on other public transport modes, road network, cycle and pedestrian networks potentially affected by the project, including travel time delays	Section 5.10.5
• arrangements to ensure safety and operational integrity of the rail and adjacent road network, pedestrian and cycle accessibility and mobility, and access to public transport infrastructure during construction including for individuals with a disability	Section 5.10.3 (safety general) Section 5.10.4 (rail) Section 5.10.5 (road and ped/cycle/bus)
• access for police and other emergency services	Section 5.10.5
• the provision of adequate access to businesses, public facilities, schools, major community facilities, churches, parks and private residences by private vehicle, public transport, bicycle and foot impacted by the project	Section 5.10.5 Section 5.10.9
• construction workforce parking and other existing public parking	Section 5.10.5 (detail) Section 5.10.6 (summary)
• effects of construction traffic (including the transport of spoil from the project and materials to the project–number, types of vehicles, composition, trip timing and routes) on the road network or public transport systems if appropriate.	Section 5.10.7 (traffic) Section 5.10.8 (pavement)
An RIA should be undertaken for the construction of the project in general accordance with TMR's *Guidelines for Assessment of Road Impacts of Development* (2006).	Section 5.10 overall Section 5.10.5 (specific impacts) Section 5.10.9 (mitigation)

TOR Requirement	Section of EIS
3.2 Climate, natural hazards and climate change This section should 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. A risk assessment and management plan detailing these potential threats to the construction, and operation of the project should be provided.	Chapter 6 Section 6.2 Section 6.3
The most recent information on potential impacts of climatic factors should be addressed in the appropriate sections of the EIS.	Section 6.3
An assessment of climate change risks and possible adaptation strategies should be included, as well as the following:	Section 6.4
• a risk assessment of changing climate patterns that may affect the viability and environmental management of the project	Section 6.4.2 Section 6.4.3 Appendix E1
• the preferred and alternative adaptation strategies to be implemented	Section 6.4.3 Appendix E1
• commitments to undertaking, where practicable, a cooperative approach with government, other industry and other sectors to address adaptation to climate change.	Section 6.4.3 Section 6.10 Appendix E1
3.3 Land This section should detail the existing land environment values for all areas associated with the project. This section should also describe the potential for the construction and operation of the project to change existing and potential land uses of the project sites and adjacent areas.	Chapter 7 Chapter 8 Chapter 9
3.3.1 Topography, geomorphology, geology and soils **3.3.1.1 Description of environmental values** This section should provide details, including maps, of: • the location of the project, including all major worksites, in local contexts	Chapter 7 Section 7.3
• the topography of the study corridor, with contours shown at suitable increments, shown relative to the Australian Height Datum (AHD)	Section 7.2 Table 7-1 Figure 7-1 to 7-6
• significant geological and geomorphological features	Section 7.2 Figure 7-7
• the geological properties of the project area and sites affected by the project that may influence ground stability, occupational health and safety, or the quality of stormwater leaving any area disturbed by the project must be described	Section 7.2 Table 7-2
• in locations where the age and type of geology is such that significant fossil specimens may be uncovered during construction/operations, the EIS must address the potential for significant finds	Section 7.2

TOR Requirement	Section of EIS
• the geology and soils of the sites affected by the project, with particular reference to the physical and chemical properties of surface and sub-surface materials and geological structures likely to be intercepted during construction, including the geotechnical analysis and survey information which supports the proposed tunnelling methodology	Section 7.2 Tables 7-2 to 7-4
• hazards such as geological faults, unstable areas, erosive soils and potential and actual acid sulfate soils.	Section 7.2 Tables 7-4 to 7-9
Soil types in areas likely to be affected by surface works should be described, with reference to the *Australian Soil and Land Survey Field Handbook* (McDonald et al 1990) and *Australian Soil Classification* (Isbell 1996); including the influence on erosion potential, storm water run-off quality and rehabilitation of the land. Information must also be provided on soil stability and suitability for construction of associated project facilities.	Section 7.2 Table 7-3 Table 7-5 Table 7-7 Table 7-9 Figures 7-8 to 7-11
An assessment of the potential for acid sulfate soils should be conducted in accordance with Queensland Acid Sulfate Soils Management Advisory Committee (QASSMAC) guidelines and the *State Planning Policy* 2/02: *Planning and Managing Development Involving Acid Sulfate Soils* and its accompanying *Guideline* 2/02.	Section 7.2 Section 7.4.4
All sources of geological and geotechnical information must be documented including a map of all geological surveys and core sampling undertaken specifically for the CRR project feasibility investigations. The adequacy of geological and geotechnical information must be clearly described and the rationale for the location and number of new field geotechnical surveys undertaken must be explained.	Section 7.2.1 to Section 7.2.4 Table 7-3 Table 7-4 Figure 7-8 to 7-10
An estimate must be provided of the probability of encountering ground conditions significantly different to those forecast for each section of proposed tunnel construction. In this context, 'significantly different' is defined as different to the extent that ground conditions would cause the route of the tunnels, the construction methodology or the impact on surrounding properties of the construction or operation of the tunnels to be substantially altered.	Section 7.2.1 to Section 7.2.4 Section 7.3.2 to Section 7.3.5
3.3.1.2 Potential impacts and mitigation measures This section should provide details of any potential impacts on the topography or geomorphology associated with the project and proposed mitigation measures, including:	Section 7.3
• a discussion of the project in the context of major geological and geomorphological features and any measures taken to avoid or minimise impacts on or arising from such features-for example, major fault lines or intrusion of rock with weak structure	Section 7.3.1 to Section 7.3.5
• the objectives to be used for the project in any re-contouring or consolidation, rehabilitation, landscaping, and fencing.	Section 7.3 Chapter 24
Assessment of the potential impacts from soils including erosion risk, settlement risk, rehabilitation potential, acid sulfate soils and contaminated land is required along with avoidance strategies or mitigation measures where necessary or as defined below.	Section 7.3 Section 8.3 Section 13.3

TOR Requirement	Section of EIS
Erosion risk Identify, for all permanent and temporary landforms affected by project works, the possible soil erosion rate and provide a description of the techniques used to manage any likely impact. Identify all soil types and outline the erosion potential (both wind and water) and erosion management techniques to be used. An erosion-monitoring program, including rehabilitation measures for erosion problems identified during construction, must also be outlined and acceptable mitigation strategies provided.	Section 7.3 Table 7-5 Table 7-7 Table 7-9 Figures 7-12 to 7-14 Section 13.3.2 Section 13.3.9 Chapter 24
The report must include an assessment of likely erosion effects, especially those resulting from the removal of vegetation, and construction of retaining walls both on-site and off-site for all disturbed areas.	Section 7.3
Summarise methods proposed to prevent or control erosion with regard to: • the *Best Practice Erosion and Sediment Control*–(International Erosion Control Association) ICA Australasia, Nov 2008	Section 7.3.6
• the *Soil Erosion and Sediment Control-Engineering Guidelines for Queensland Construction Sites* (Institute of Engineers Australia (Qld Division) 1996)	Section 7.3.6
• the EPA Guideline—*EPA Best Practice Urban Stormwater Management: Erosion and Sediment Control*	Section 7.3.2 to Section 7.3.6
• preventing soil loss in order to maintain land capability/suitability	Section 7.3.2 to Section 7.3.6
• preventing degradation of local waterways.	Section 7.3.2 to Section 7.3.6
Settlement risk Assessment of the potential risk of settlement impacts of land above or adjacent to the tunnel, due to tunnel construction and for collapse or slope failure of cuts on approaches should be undertaken. The mitigation measures and contingency plans for settlement risks must also be described.	Section 7.3.2 to Section 7.3.6
Acid sulfate soils The potential for acid generation by disturbance of acid sulfate soils during earthworks and construction, including excavation, filling, or extracting groundwater, should be discussed and measures for management of soils and mitigation of impacts should be proposed for all site earthworks and construction activities.	Section 7.3.2 to Section 7.3.6 Section 7.3.6 Section 13.3.3

TOR Requirement	Section of EIS
Should action criteria be triggered by acid generating potential as a result of testing, management measures are to be outlined in an acid sulfate soils management plan prepared in accordance with Queensland acid sulfate soils Investigation Team (QASSIT) guidelines and the requirements of State Planning Policy 2/02*: Planning and Managing Development Involving Acid Sulfate Soils* and its accompanying *Guideline 2/02*.	Section 7.3.2 to Section 7.3.6
Given the limited areas of acid sulfate soils likely to be disturbed by this project and the intrusive nature of the full QASSIT field sampling program, it is acceptable to address acid sulfate soils for the 'reference design' by desktop review, as long as the EIS accurately describes both the locations where potential acid sulfate soils may occur and ASS field procedures that would be adopted for such locations (with reference to the EMP) prior to the completion of detailed design of the project.	Section 7.1.2 Section 7.3 Figure 7-15 Chapter 24
3.3.2 Land contamination **3.3.2.1 Description of environmental values** The following information for the study corridor and areas affected by the project must be presented in the EIS: • mapping of any areas listed on the Environmental Management Register or Contaminated Land Register under the EP Act	Chapter 8 Section 8.3.1 Figure 8-2 to 8-4
• identification of any potentially contaminated sites not on the registers which may be impacted by the project	Section 8.2.2 to Section 8.2.6 Figure 8-5 to 8-10 Table 8-2 to 8-3
• a description of the nature and extent of contamination at each site.	Section 8.2
3.3.2.2 Potential impacts and mitigation measures The EIS should discuss the management of any contaminated land and potential for contamination from construction, commissioning and operation, in accordance with the EPA *Draft Guidelines for the Assessment and Management of Contaminated Land in Queensland* (1998) and the *National Environment Protection (Assessment of Site Contamination) Measure* (1999).	Section 8.3 Section 8.3.1 Figure 8-11 to 8-13
This section should 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.	Section 8.3 Chapter 24
Proposals for the future management of any contaminated lands impacted by the project after completion of construction must be described.	Section 8.3
3.3.3 Land use and tenure **3.3.3.1 Description of environmental situation** This section should describe and identify, with the aid of maps: • land tenure, including reserves	Chapter 9 Section 9.3 Section 9.3.6 Figure 9-11 to 9-14
• places of special interest such as protected areas-for example 'heritage precincts' and places of historic heritage significance	Section 9.3 Section 19.2.5

TOR Requirement	Section of EIS
• tenures or easements for existing, preserved or proposed infrastructure (including those identified in a planning scheme or local area plans) for gas, water, electricity, telecommunications, road, rail, bus, cycle or pedestrian transport corridors or facilities	Section 9.3.6 Section 9.3.7
• land uses and facilities within the areas surrounding the project	Section 9.3.1 to Section 9.3.4 Figure 9-6 to 9-10
• the study corridor in the context of the regional pattern of development identified in the *South-East Queensland Regional Plan (2009-2031)*	Section 9.2.1
• likely future land use by reference to the *South East Queensland Regional Plan 2009–2031* and other relevant local and regional planning documents	Section 9.2.1
• proximity of the project to residences, businesses and recreational areas	Section 9.3.1 to Section 9.3.4
• the presence of any environmentally sensitive areas in the vicinity of the project	Section 9.3.1 to Section 9.3.4
• requirements of any State Planning Polices (SPPs) of relevance to the project	Section 9.2.1
• land use designations within and adjacent to the study corridor as per Brisbane City Council's City Plan including local plans, Urban Development Areas and/or Master Plan Areas	Section 9.2 Section 9.3 Figure 9-2 to 9-4
• areas within the study corridor covered by applications for native title claims or determinations for each relevant native title representative body, including the identification of areas where tenure history would indicate that native title either exists or has been extinguished.	Section 9.3.8
3.3.3.2 Potential impacts and mitigation measures This section should identify and discuss potential positive and negative impacts of the project on existing and likely future land use including:	Section 9.4
• the potential to change future land uses, including the development of Roma Street precinct, Boggo Road Urban Village , the Woolloongabba and Bowen Hills Urban Development Areas (UDAs), CBD, Fortitude Valley and Spring Hill, particularly around proposed new and upgraded rail stations	Section 9.4.2 to Section 9.4.4 Section 23.3.4 Section 23.4.2
• achieving the desired intent of the SEQ Regional Plan, Brisbane City Council's City Plan, special area designations, transit oriented development, urban renewal or future land use changes identified in other current neighbourhood planning processes.	Section 9.2 Section 9.4.4
The EIS should address direct project impacts including rail tunnel portals on all existing residential, commercial and industrial properties and uses, open space and sensitive places in the study corridor. This assessment should include:	Section 9.4

TOR Requirement	Section of EIS
• consideration of necessary land requirements (surface and volumetric), proposed tenure (such as rail corridors, easements and leases) and land use implications	Section 9.4.1 to Section 9.4.9
• identification of any specific post-construction land use restoration proposals for lands occupied by construction activities	Section 9.4.4 Section 9.4.5
• arrangements for property access and associated street closures or widening, particularly around proposed new and upgraded rail stations and other key project construction sites	Section 9.4.5 to Section 9.4.7
• potential indirect land use, property or amenity impacts arising from project mitigation measures- for example, the construction of noise barriers creating shading, reducing air circulation or restricting the outlook from certain properties or sensitive places	Section 9.4.2 to Section 9.4.5 Section 10.3.2 Section 23.3.4 Section 23.3.5 Section 23.3.9 Section 23.3.10
• impacts on surrounding land uses and human activities and strategies for the minimisation of such impacts, including Key Resource Areas (refer to *State Planning Policy 2/07: Protection of Extractive Resources and Guideline)* if present, and residential and industrial uses	Section 9.4.2 to Section 9.4.9
• constraints to potential developments and possibilities of rezoning adjacent to the development area	Section 9.4.2 to Section 9.4.5
• opportunities for future development due to changed public transport accessibility	Section 9.4.2 to Section 9.4.9
• potential issues involved in proximity and/or co-location of other current or proposed infrastructure services	Section 9.4.2 to Section 9.4.9 Section 23.3.4 Section 23.4
• constraints caused by the project on future building heights, basement dimensions or locations and building foundation configurations or types over the tunnel and/or adjacent to project structures	Section 9.4.4 Section 9.4.5

TOR Requirement	Section of EIS
• the identification of the potential native title rights and interests likely to be impacted by the project and the potential for management of those impacts by an Indigenous Land Use Agreement or other processes	Section 9.3.8
• identification of any land parcels requiring unique management measures.	Section 9.4.2 to Section 9.4.9
The EIS should provide maps showing cadastral boundaries that enable all landholders to see how all land parcels will be directly impacted by the construction and operation of the project.	Volume 2
All property acquisition or easement proposal need to be detailed.	Section 9.4.2 Volume 2
This section (or an appendix to this section) should also describe how property impacts of the project differ from property impacts outlined in the October 2008 ICRCS Pre-Feasibility Report published on TMR's website.	Section 9.4.2 Section 9.4.3
3.3.4 Visual amenity and lighting **3.3.4.1 Description of environmental values** This section should describe in general terms the existing character of the urban landscape and visual amenity of the study corridor.	Chapter 10 Section 10.2
The EIS must: • identify the existing urban landscape and visual context of the study corridor	Section 10.2.1
• describe the urban design characteristics of the study corridor in terms of the key elements, focal points, landmarks, waterways and other features contributing to the visual quality, variety and legibility of the study area	Section 10.2.2
• describe the visual elements and values of the existing built and natural environment including major views, view sheds, outlooks, and features contributing to the amenity of the area, including assessment from outside private residences, particularly in key locations likely to be affected by permanent surface works	Section 10.2.2
• describe the urban landscape characteristics, features, panoramas and views that have, or could be expected to have, value to the local, district or regional community.	Section 10.2.2
Maps and photographs, highlighting any significant visual features and/or landscape values should be provided to support the descriptions.	Section 10.2.2 Figure 10-1 to 10-3
3.3.4.2 Potential impacts and mitigation measures Describe the potential beneficial and adverse impacts of the project on landscape character and visual qualities of the project area. Details should be provided of measures to be undertaken to mitigate or avoid the identified impacts.	Section 10.3
Mitigation measures for any potential adverse urban landscape and visual impacts must be described, including the:	Section 10.4
• development of urban landscape and visual concepts, designs and guidelines for portals and entrances to underground stations, reflecting predicted changes to land use, public amenity, public access and sustainability and place making principles	Section 10.3.2 Section 10.4
• assessment of likely visual impacts of the proposed works on the landscape and changes to the landscape including the urban form and structures of significance.	Section 10.3 Section 10.4

TOR Requirement	Section of EIS
The mitigation measures should relate to the urban landscape and visual goals, objectives and design measures for the project. This should consider a range of treatments on visual elements and urban design opportunities, including station design, surface landscaping, portal design, location and design of surface structures, including noise and air quality mitigation structures.	Section 10.3.1 Section 10.4.1
Where practicable, consideration of visual elements should also consider design enhancements to improve shade creation, accident prevention and crime prevention.	Section 10.4.1
3.3.4.3 Lighting An assessment of all potential impacts of lighting of the project, during all stages, must be provided, with particular reference to objectives to be achieved and management methods to be implemented to mitigate or avoid:	Section 10.1.2 Section 10.2.3 Section 10.3.5 Section 10.4.2
• the visual impact at night	Section 10.3.5 Section 10.4.2
• night operations/maintenance and effects of lighting on fauna and residents	Section 10.3.5 Section 10.4.2
• the potential headlight impact of increased vehicular traffic	Section 10.3.5 Section 10.4.2
• changed habitat conditions for nocturnal fauna, if any.	Section 10.3.5 Section 11.3.3 Section 11.3.4
3.4 Nature conservation This section should detail the existing nature conservation values that may be affected by the project. The environmental values should be described in terms of:	Chapter 11 Section 11.2
• sensitive environmental areas or ecological processes	Section 11.2
• aquatic and terrestrial ecosystems	Section 11.1.2 Section 11.2.1
• conservation of resources	Section 11.1.2 Section 11.3.3 Section 11.3.4
• habitats of any rare or threatened species	Section 11.2.1

TOR Requirement	Section of EIS
• integrity of any natural landscapes if present .	Section 11.1.2 Section 11.2
The section should also outline the proposed strategies to avoid, or minimise and mitigate impacts on the identified values within the project's footprint.	Section 11.3
Key flora and fauna indicators should be identified for future ongoing monitoring, where appropriate.	Section 11.3.4
3.4.1 Sensitive environmental areas	Chapter 11
3.4.1.1 Description of environmental values	Section 11.2
The EIS should identify areas that are environmentally sensitive in proximity to the project on a map of suitable scale. This should include areas classified as having national, state, regional or local biodiversity significance, or flagged as important for their integrated biodiversity values. Reference should be made to both Queensland and Australian Government legislation and policies on threatened species and ecological communities, where appropriate.	Section 11.2 Figure 11-1 to 11-5 Figure 11-14 to 11-18
Areas of special sensitivity include the marine environment and wetlands in and around Moreton Bay or waterways draining to Moreton Bay, 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.	Section 11.2.1
3.4.1.2 Potential impacts and mitigation measures	Section 11.3
This section should discuss the impact of the project on species, communities and habitats of local, regional or national significance in sensitive environmental areas as identified above.	
The EIS should demonstrate how the project would comply with the following hierarchy: • avoiding impact on areas of remnant vegetation and other areas of conservation value	Section 11.3.2 to Section 11.3.4
• mitigation of impacts through rehabilitation and restoration including, where relevant, a discussion of any relevant previous experience or trials of the proposed rehabilitation	Section 11.3.2 to Section 11.3.4
• measures to be taken to replace or offset the loss of conservation values where avoidance and mitigation of impacts cannot be achieved	Section 11.3.4
The boundaries of the areas impacted by the project within or adjacent to an ecological community, including details of footprint width should be described. Where the project alignment or location of a particular project element would impact upon a threatened community, discussion should include reasons for the preferred alignment or location and the viability of alternatives, unless nature conservation consequences of such alternatives have already been discussed under section 1.5, Part B of these TOR (alternatives to the project).	Section 11.3.1 to Section 11.3 .3
The EIS should address any actions of the project or likely impacts that require an authority under the *Nature Conservation Act 1992*, and/or would be assessable development for the purposes of the *Vegetation Management Act 1999.*	Section 11.1.1
Any measures required to mitigate project impacts on sensitive environmental areas should be outlined in the draft EMP for the project.	Chapter 24 Draft Outline EMP

TOR Requirement	Section of EIS
Where relevant, this section should discuss environmental offset requirements in accordance with the *Queensland Government Environmental Offsets Policy* and taking into account the applicable specific-issue offset policies, as follows: • *Policy for Vegetation Management Offsets* (NRW, 2007) • *Mitigation and Compensation for Works or Activities Causing Marine Fish Habitat Loss* (DPI&F, 2002) • draft *Policy for Biodiversity Offsets* (consultation draft, EPA, 2008)	Section 11.1.1 Appendix G1 Not applicable as not triggered by the Project
Any departure from no net loss of ecological values should be described.	Section 11.3.2 to Section 11.3.4
3.4.2 Flora **3.4.2.1 Description of environmental values** Relevant vegetation mapping should be provided for all relevant project sites. Areas surrounding the main study corridor 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. Sensitive area, flora and fauna maps may be combined where it is efficient do so and this does not significantly compromise map readability.	Section 11.2.1 Figure 11-1 to 11-4 Figure 11-6 to 11-9
The vegetation communities within the affected areas should be described at an appropriate scale with any mapping produced from remote sensing data supported by ground-truthing, showing the following:	Section 11.2.1
• location and extent of vegetation types using the regional ecosystem type descriptions in accordance with the DERM's regional ecosystem description database (REDD)	Section 11.2.1 Table 11-3
• location of vegetation types of conservation significance based on regional ecosystem types and occurrence of species listed as protected plants under the *Nature Conservation (Wildlife) Regulation 1994* and subsequent amendments, as well as areas subject to the *Vegetation Management Act 1999*	Section 11.2.1
• 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 1991*.)	Section 11.2.1
• any plant communities of cultural, commercial or recreational significance should be identified, including any areas containing abundant native aquatic plants species	Section 11.2.1
• location and abundance of any significant areas of exotic or weed species.	Section 11.2.1
Sensitive or important vegetation types should be highlighted, including any marine littoral and subtidal zone and riparian vegetation, and their value as habitat for fauna and conservation 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 11.2.1

TOR Requirement	Section of EIS
For each significant natural vegetation community likely to be impacted by the project, vegetation surveys should be undertaken at an appropriate number of sites, allowing for seasonal factors, and satisfying the following: • the relevant Regional Vegetation Management Codes	Section 11.1.2 Section 11.2.1 Table 11-4
• site data should be recorded in a form compatible with the Queensland Herbarium CORVEG database	Section 11.1.2
• the minimum site size should be 10 by 50 metres	Section 11.1.2
• a complete list of species present at each site should be recorded	Section 11.2.1 Appendix G4
• the surveys should include species structure, assemblage, diversity and abundance	Section 11.1.2 Section 11.2.1
• the relative abundance of plant species present should be recorded	Section 11.1.2 Section 11.2.1
• any plant species of conservation, cultural, commercial or recreational significance should be identified	Section 11.1.2 Section 11.2.1
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. Methodology used for flora surveys should be specified in the appendices to the report.	Appendix G3
3.4.2.2 Potential impacts and mitigation measures The potential for environmental harm to the ecological values of the area arising from the construction and operation of the project, and decommissioning of project construction works and infrastructure including clearing, salvaging or removal of vegetation should be described, and the indirect effects on remaining vegetation should be discussed. Short-term and long-term effects should be considered with comment on whether the impacts are reversible or irreversible.	Section 11.3
With regard to all components of the project, this section should include: • any management actions to minimise vegetation disturbance and clearance	Section 11.3.2 to Section 11.3.4
• 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 11.3.2 to Section 11.3.4
• 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 11.3.4
• details of any post construction monitoring programs	Section 11.3.4

TOR Requirement	Section of EIS
• a discussion of the potential environmental harm on flora due to any alterations to the local surface and ground water environment with specific reference to impacts on riparian vegetation or other sensitive vegetation communities.	Section 11.3.3 Chapter 12
This section should outline how these measures will be implemented in the overall EMP for the project. Weed management strategies are required for containing any significant areas of existing weed species or declared plants and ensuring no new declared plants are introduced to the area. Reference should be made to the local government authority's pest management plan (including the relevant local authorities of spoil placement sites) and any strategies and plans recommended for the project area by Biosecurity Queensland. The strategies should be discussed in accordance with provisions of the *Land Protection (Pest and Stock Route Management) Act 2002,* where relevant, in the main body of the EIS and in the pest management plan within the EMP for the project.	Section 11.1.1 Section 11.3.4
3.4.3 Fauna **3.4.3.1 Description of environmental values** The fauna occurring in the areas affected by the project should be described, noting the broad distribution patterns in relation to vegetation, topography and substrate. The description of the fauna present or likely to be present in the area should include:	Section 11.2.1
• species diversity-that is a species list-and abundance of animals of recognised significance	Section 11.2.1 Appendix G6
• any rare or threatened species	Section 11.2.1
• habitat requirements and sensitivity to changes; including movement corridors and barriers to movement	Section 11.2.1
• the existence of populations of feral or introduced animals that are of regional economic or conservation significance	Section 11.2.1
• for any species or communities of conservation significance in the study area, a contextual discussion of range, habitat, breeding, recruitment feeding and movement requirements, and current level of protection- for example, any requirements of protected area management plans or threatened species recovery plans-if any of these aspects are likely to be affected by the project	Section 11.2.1
• an estimate of commonness or rarity for the listed or otherwise significant species	Section 11.2.1
• use of the area by migratory fauna.	Section 11.2.1
The EIS should indicate how well any affected communities are represented and protected elsewhere in the bio-region where the project occurs. The methodology used for fauna surveys should be specified. Relevant site data should be provided to the DERM in a format compatible with the WildNet database for listed threatened species.	Section 11.1.2 Section 11.2.1
The description of the fauna present or likely to be present in areas potentially affected by the project should include: • fish species, mammals, reptiles, amphibians, crustaceans and aquatic invertebrates occurring in the waterways	Section 11.2.1
• description of the habitat requirements and the sensitivity of aquatic species to changes in flow regime, water levels and water quality	Section 11.2.1

TOR Requirement	Section of EIS
• habitat downstream of the project or potentially impacted (including in marine environments)	Section 11.2.1
• aquatic substrate and stream type, including extent of tidal influence and common levels such as highest astronomical tide and mean high water springs.	Not applicable Section 11.1.2
3.4.3.2 Potential impacts and mitigation measures The assessment of potential impact should consider impacts the project may have on fauna, relevant wildlife habitat and other fauna conservation values, including:	Section 11.3
• 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 11.3.3
• impacts on species of conservation significance	Section 11.3.3
• cumulative effects of direct and indirect impacts	Section 11.3.4
• threatening processes leading to progressive loss	Section 11.3.3
• details of any proposed stream diversions, causeway construction and crossing facilities, stockpiled material and other impediments that would restrict free movement of fauna	Section 11.3.3
• measures to avoid fish spawning periods, such as seasonal construction of waterway crossings and measures to facilitate fish movements through water crossings	Not applicable Section 11.1.2
• details of alternatives to waterway crossings where possible	Not applicable Section 11.1.2
• offsets proposed for unavoidable, permanent loss of fisheries habitat	Not applicable Section 11.1.2 Section 11.2.1
• a description of methods to minimise the potential for the introduction and/or spread of weed species or plant disease	Section 11.3.4
• monitoring of aquatic biology health, productivity and biodiversity in areas that may be subject to any direct discharge from project sites.	Section 11.3.4
The EIS should address any actions of the project or likely impacts that require an authority under the *Nature Conservation Act 1992*. With respect to mitigation strategies the following should be provided:	Section 11.1.1 Section 11.3.4
• 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 11.3.4

TOR Requirement	Section of EIS
• details of the methodologies that would be used to avoid injuries to 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 11.3.4
• strategies for complying with the objectives and management practices of relevant recovery plans	Section 11.2.1
This section should outline how these measures will be implemented in the overall EMP for the project.	Section 11.3.4
Feral animal management strategies and practices should be addressed, where relevant. This should include reference to any Brisbane City Council pest management plans, and any strategies and plans recommended for the project area by Biosecurity Queensland.	Section 11.1.1 Section 11.2.1 Section 11.3.4
3.5 Water resources **3.5.1 Groundwater** **3.5.1.1 Description of environmental values** The EIS should describe the quality, quantity and significance of groundwater in the study corridor and adjacent areas, together with groundwater use that may be affected by the project. The description of the existing environment for hydrogeology resources that may be affected by the project and the possible significance of the project to groundwater depletion or recharge, or potential saltwater intrusion of existing aquifers should be made in the context of environmental values as defined in such documents as the *Environmental Protection (Water) Policy 2009* (EPP (Water)).	Chapter 12
This section should provide a description of groundwater resources in the study corridor and adjacent areas in terms of:	Section 12.2
• geology/stratigraphy	Section 12.2.1
• aquifer type—such as confined or unconfined	Section 12.2.1
• depth to and thickness of the aquifer	Section 12.2.1
• seasonal changes in levels	Section 12.2.4
• groundwater flow directions (defined from water level contours)	Section 12.2.5
• interaction with surface water	Section 12.2.5
• possible sources of recharge	Section 12.2.2
• basic water quality of the aquifer	Section 12.2.6
• potential exposure to pollution	Section 12.2.6
• the location, type, number of ground water users and the quantities of water attached to existing groundwater licence holders.	Section 12.2.3

TOR Requirement	Section of EIS
The groundwater assessment should be consistent with relevant guidelines for the assessment of ASS, using existing information (supplemented by project-specific spatial and temporal monitoring where existing information is insufficient) to accurately characterise baseline groundwater characteristics within or near the study corridor.	Section 7.2 Section 12.2.6
3.5.1.2 Potential impacts and mitigation measures This section should include an assessment of the potential for environmental impact caused by the project to local groundwater resources, including the potential for groundwater induced salinity.	Section 12.3
It should define and describe the objectives and practical measures for protecting or enhancing water resource environmental values, how nominated quantitative standards and indicators may be achieved, and how the achievement of the objectives will be monitored, audited and managed. Matters to be addressed should include:	Section 12.3.3 Section 12.3.5
• groundwater resources proposed to be used by the project (if applicable), including a description of the quality, quantity, usage rate health standards and required location of those resources.	Section 12.3.1 Section 12.3.4
• potential impacts on the flow and the quality of groundwater from all phases of the project, including possible alteration of porosity and permeability of any land disturbance	Section 12.3.3
• an assessment of all likely impacts on groundwater depletion or recharge regimes	Section 12.3.2 Section 12.3.4
• the extent of the potential area within which groundwater resources are likely to be affected, including the presence of tunnels and the availability of groundwater downstream	Section 12.3.2 to Section 12.3.4
• the potential impacts of the project on groundwater dependent ecosystems and vegetation, and measures to prevent, mitigate and remediate such impacts	Section 12.3.4
• an assessment of the potential to contaminate ground water resources and measures to prevent, mitigate and/or remediate such contamination (with cross-reference to land contamination section 3.2.2 where appropriate)	Section 12.3.3 to Section 12.4.5
• the cumulative impacts of dewatering or other groundwater impacts during construction and operation , including the potential for localised ground subsidence associated with any groundwater depletion caused by the project	Section 7.3.2 Section 23.3.3
Monitoring programs, which will assess the effectiveness of management strategies for protecting groundwater resources during the construction and operation of the project and how these strategies are incorporated into appropriate sections of the EMP, must be described.	Section 12.3.5
3.5.2 Surface water **3.5.2.1 Description of environmental values** This section should describe the existing environment for water quality that may be affected by any component of the project in the context of environmental values as defined in local, state or national guidelines. The discussion should detail the watercourses and surface waters affected by the project and the significance of these waters to the catchment to which they contribute.	Chapter 13 Section 13.1.2 Section 13.2

TOR Requirement	Section of EIS
The environmental values of the waters of the affected area should be described in the context of the of environmental values defined in documents such as the EP Act, *Environmental Protection (Water) Policy 2009* (EPP (Water)), *Australia and New Zealand Guidelines for Fresh and Marine Water Quality 2000*, *Fisheries Act 1994* and the *EPA Queensland Water Quality Guidelines 2009*, Water Resource Plans, South *East Queensland Regional Water Quality Management Strategy*, land and water management plans including the Brisbane River Management Plan and other local authority stream management initiatives relevant to the catchment, to the extent any of the above are relevant.	Section 13.1.2 Section 13.2
Existing surface water quality should be described in terms of physical, chemical and biological characteristics within the watercourses and surface waters affected by the project.	Section 13.2.2
Where known or specified, the water quality objectives for local catchments and watercourses should be described.	Section 13.2
This section should: • provide a map of waterways or water features, including drainage channels, flood-prone or low lying land within or adjacent to the study corridor, with the position of the study corridor and the waterways crossed shown	Section 13.2.1 Figure 13-1 Section 14.2 Figures 14-1 to 14-5
• describe the existing surface drainage patterns, and flows in major streams in the study corridor and adjacent areas.	Section 13.2.1
3.5.2.2 Potential impacts and mitigation measures This section should assess the potential impacts of the project (including spoil placement) on surface water quality outline strategies for protecting surface water quality, describe how nominated quantitative standards and indicators may be achieved, and detail how the potential impacts may be monitored, audited and managed. Matters to be addressed should include:	Section 13.3 Chapter 24
• the potential impacts on the flow and quality of surface waters from all phases of the project, including the effects of drainage or dewatering works, excavation, placement of fill, clearing or any other alterations to existing topography and landform on the hydrology of works sites including any alteration to drainage patterns and the water table	Section 13.3.1 to Section 13.3.7
• if levee banks or stream diversion constructions are proposed, the effects on neighbouring landholders	Section 13.3.1
• potential impacts of surface water flow on existing infrastructure	Section 13.3.1 Section 14.3.1
• proposed drainage structures for all aspects of the project, including supporting facilities such as access roads	Section 13.3 Section 14.3.1
• any potential implications of climate change-for example, sea-level rises, increased frequency and/or intensity of storm events as determined in section 3.2—Climate, natural hazards and climate change, on surface water management for the project	Section 14.1.3 Section 14.3.1
• any tunnel or underground train station flood mitigation structures which could potentially interfere with overland flows	Section 14.3.2

TOR Requirement	Section of EIS
• the potential impacts on other downstream receiving environments, if it is proposed to discharge water to a riverine system	Section 13.3.3 Section 13.3.7
• the likely quality of water leaving the project areas (controlled and uncontrolled discharges) during construction and operation, and the impact of releases of water characterised in terms of their location and any likely contaminants, such as sediment, acidity, salinity and other emissions of a hazardous or toxic nature to human health, flora or fauna, taking into account the management and mitigation measures proposed	Section 7.3 Section 13.3.1 to Section 13.3.7
• an assessment of the hydrological impacts of the project on surface water and water courses, particularly with regard to stream diversions, scouring and erosion.	Section 13.3.1 to Section 13.3.5
• an assessment on any water to be reused on site (including effluent from onsite sewerage treatment plants and rain water captured within tanks), complies with the Australian Guideline for Water Recycling by NEPC .	Section 13.3.7
Where potentially significant impacts are identified, measures for their avoidance or mitigation must be identified. Water management measures to address surface water quality, quantity, drainage patterns and sediment movements should be outlined. Such measures may include:	Section 13.3.9
• measures to avoid or minimise uncontrolled releases, including but not limited to source reduction and water recycling	Section 13.3.9
• maintenance of sufficient quantity, quality and values of surface waters to protect existing beneficial downstream uses of those waters.	Section 13.3.9
3.5.3 Flood management **3.5.3.1 Description of environmental values** A comprehensive flood study of the project corridor, with particular attention given to the vicinity of tunnel portals and underground stations, should be included in the EIS. The flood study should:	Chapter 14 Section 14.2
• discuss the likelihood of flooding, history of flooding including extent, levels and frequency	Section 14.2
• include flood modelling (at a range of annual exceedance probabilities) conducted to the points at which no significant impact occurs	Section 14.1.1 Section 14.2
3.5.3.2 Potential impacts and mitigation measures This section should assess the potential impacts of the project with respect to flood management outline strategies for protecting against flood impacts (especially around entrances to underground structures such as stations and tunnel portals, and detail how the potential impacts may be monitored, avoided and mitigated. Matters to be addressed should include:	Section 14.3
• a description of the influence on flooding of the effects of drainage or dewatering works, excavation, placement of fill, clearing or any other alterations to existing topography and landform within the study corridor and works sites	Section 14.3.1
• a quantification of flood impacts on properties in and surrounding the study corridor, supported by modelling of flood afflux and illustrated with maps	Section 14.3.1 Technical Report 6

TOR Requirement	Section of EIS
• identify the likely changes in flood levels, flow velocities or time of flood events as a result of the construction (including spoil placement) and operation of the project	Section 14.3.1
• an assessment of the potential for tunnel and station flooding and a description of mitigation measures (including early warning systems for individual flood events) developed if required based on design flood events, with reference to the implementation of these systems and measures in EMPs	Section 14.3
• reference to an appendix containing details of all calculations along with descriptions of base data and assumptions in terrain modelling software and any relevant studies undertaken by BCC on flooding that includes the project area	Technical Report 6
• the requirements of the City Plan and the South East Queensland Regional Plan 2009-2031 for flood affected areas.	Section 14.1.2
3.6 Air quality **3.6.1 Description of existing environment** This section must 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).	Chapter 15 Section 15.2.1 Section 15.3
A discussion of the existing regional and local air shed should be provided, including:	Section 15.3
• background levels and sources of particulates, gaseous and odorous compounds and any major constituent pollutants including greenhouse gases influencing air quality in the study corridor and areas affected by the project	Section 15.3.3 to Section 15.3.6 Tables 15-6 to 15-11
• a summary of data on local meteorology (at least air temperature, wind speed and direction, atmospheric stability, mixing depth) and ambient levels of pollutants to provide a baseline data for later studies or for the potential modelling of air quality.	Section 15.3.2 to Section 15.3.6
3.6.2 Potential impacts and mitigation measures – construction Environmental air quality impacts, such as gases, particulates and odours, from construction activities, including those produced by any industrial processes, and mitigation measures should be described, including:	Section 15.4
• an inventory of air emissions (including 'worst case' emission events) and project construction activities likely to emit pollutants, such as excavation, site compounds, stockpiles and spoil transport and placement	Section 15.4.2 Section 15.4.3
• where 'worst case' emissions are predicted to be significantly higher than those for normal operations, an evaluation of the worst-case impact as a separate exercise to determine whether the distance between project sites and neighbouring sensitive receptors will be adequate	Section 15.4.4
• identification of any sites that could be sensitive to the effects of likely emissions, especially around proposed work sites and stations	Section 15.3.1 Section 15.4.4
• vehicle emissions and dust generation by heavy construction vehicles and along major haulage routes both internal and external to the project site	Section 15.4.2
• an assessment of human health risks, if any, associated with emissions from any of the projects sites during construction	Section 15.4.4

TOR Requirement	Section of EIS
• identification of appropriate locations to monitor air quality, with consideration of meteorological conditions and sensitive receptors, including dust emissions, from all construction sites or associated work sites with the potential to create a dust nuisance.	Section 15.4.6 Figures 15-12, 15-15, 15-18, 15-21 Table 15-19
• identification how the results of the air quality monitoring will be made publicly available (e.g. through publication on the proponent's internet site)	Section 15.4.6
• a discussion on how the legislative and regulatory requirements relating to emission of pollutants during construction, including, but not limited to, relevant construction air quality goals outlined in EPP (Air)	Section 15.2.1 Section 15.2.2 Section 15.4.4
• the identification of trigger levels for dust management response.	Section 15.4.6 Chapter 24
Potential air quality impacts from emissions must be discussed with reference to the National Environmental Protection Measures (NEPM) for ambient air quality and the EPP (Air).	Section 15.2
3.6.2 Potential impacts and mitigation measures – operation This section should identify and assess the potential changes to regional transport emissions to the regional air shed due to the operation of the project. This should include consideration of predicted changes to distance travelled by road as well as changes to road transport emission profiles.	Section 15.5 Section 15.5.2 Section 15.5.3
Likely impacts to regional air quality should be identified.	Section 15.5.3 Section 15.5.4
Mechanisms to maintain air quality within stations and tunnels should be identified, and any resulting impacts within the project infrastructure and on the surface in the surrounding environment should be assessed.	Section 15.5.5 Section 15.5.6
3.7 Greenhouse gas emissions **3.7.1 Description of potential impacts** This section should provide an inventory of the projected annual emissions for each relevant greenhouse gas for the construction and operational phases of the project, with total emissions expressed in 'CO2 equivalent' terms for the following categories: • 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 • 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 15.6 Section 15.6.3
The methods by which estimates are made must be briefly described.	Section 15.6.2

TOR Requirement	Section of EIS
Estimates should include and clearly identify an assessment of the change in projected future greenhouse gas emissions from road transport in the region due to the operation of this project.	Section 15.6.3
The Department of Climate Change *National Greenhouse Accounts (NGA) Factors* may be used as a reference source for emission estimates and supplemented by other sources where practicable and appropriate.	Section 15.6.2
3.7.2 Proposed mitigation measures This section should discuss the potential for greenhouse gas abatement measures, including:	Section 15.6.4
• a description of the proposed measures (alternatives and preferred) to avoid and/or minimise direct greenhouse gas emissions	Section 15.6.4
• an assessment of how the preferred measures minimise emissions and achieve energy efficiency	Section 15.6.4
• a description of any proposals to further offset greenhouse gas emissions through indirect means (e.g. sequestration or carbon trading).	Section 15.6.4
3.8 Noise and vibration **3.8.1 Description of environmental values** This section should describe the existing noise and vibration environment that may be affected by the project in the context of environmental values as defined by the *Environmental Protection (Noise) Policy 2008* (EPP (Noise). DERM's *Noise Measurement Manual* should be considered and references should be made to *DERM's EcoAccess Guidelines Noise and Vibration from Blasting and Planning for Noise Control*, as appropriate.	Section 16.3
Likely sensitive noise receptors adjacent to more significant project components-for example, proposed station and major worksite locations-should be identified and typical background noise and vibration levels estimated based on surveys at representative sites. The potential sensitivity of such receptors should be discussed and performance indicators and standards nominated.	Section 16.3.1 Section 16.3.2 Table 16-18 Table 16-19
3.8.2 Potential impacts and mitigation measures – construction The EIS should describe the impacts of noise and vibration generated during the construction phase of the project, especially associated with major worksites. Noise and vibration impact analysis should include:	Section 16.4
• an hierarchical impact mitigation methodology	Section 16.4
• the levels of noise and vibration generated, including noise and vibration generated by tunnelling works, equipment, surface construction sites spoil haulage management, placement and management, construction vehicle movements and ancillary activities, with noise contours, assessed against current typical background levels, using modelling where appropriate	Section 16.4
• the impact of noise, including low frequency noise (noise with components below 200Hz) and vibration at all potentially sensitive receivers within and around the study corridor, including low frequency re-radiated noise within sensitive premises due to tunnel construction compared with the performance indicators and standards nominated above	Section 16.4.12
• potential effects of ground vibration on nearby surface buildings structural	Section 16.4 Section 16.5.2

TOR Requirement	Section of EIS
• identification of properties at significant risk of noise and vibration impacts for pre-construction building conditions	Section 16.4.4 to Section 16.4.13
• vibration impacts on transport-related infrastructure	Section 16.4.2 to Section 16.4.11 Section 16.4.14
• proposals to minimise or eliminate these effects, including details of any screening, lining, enclosing or bunding of facilities, alternative construction methods or timing schedules for construction and operations that would minimise environmental harm and environmental nuisance from noise and vibration.	Section 16.4.2 to Section 16.4.14
This assessment is to be inclusive of noise and vibration impacts to or on critical or sensitive places and determine the ground vibration effects on equipment within health care facilities.	Section 16.1.1 Noted and included in the assessment methodology
3.8.3 Potential impacts and mitigation measures – operation	Section 16.5
The EIS should describe the impacts of noise and vibration generated during the operational phase of the project. Noise and vibration impact analysis should include:	Section 16.5.1 to Section 16.5.4
• the levels of noise and vibration generated, including noise and vibration generated by underground and surface rail operations (including tunnel ventilations shafts at surface locations) , with noise contours, assessed against current typical background levels, using modelling where appropriate	Section 16.5.1 to Section 16.5.4
• the impact of noise, including low frequency noise (noise with components below 200Hz) and vibration at all potentially sensitive receivers and transport related infrastructure within and around the study corridor compared with the performance indicators and standards nominated above	Section 16.5.1 to Section 16.5.4
• 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 noise and vibration	Section 16.5.1 to Section 16.5.4
• develop likely operational noise and vibration management measures for sensitive places and options if unable to achieve a satisfactory internal noise level	Section 16.5.1 to Section 16.5.4
• an analysis of acoustic noise levels from proposed rail traffic against the criteria stated in the QR Code of Practice for Rail Noise Management	Section 16.5.1 to Section 16.5.4

TOR Requirement	Section of EIS
3.9 Waste **3.9.1 Waste generation** The EIS should identify and describe all sources, likely volumes and quality (where applicable) of waste associated with construction and operation of all aspects of the project. This section should describe:	Chapter 17 Section 17.5
• waste generated by delivery of materials to construction and operational work sites	Section 17.5.2 Section 17.5.3
• all chemical and mechanical processes conducted on the construction sites that produce waste	Section 17.5.2
• the amount and characteristics of solid and liquid waste produced on-site by the project including construction spoil	Section 3.4.3 Section 4.4.7 Section 7.3.2 Section 17.5.2 Table 17-5 to Table 17-7 Section 17.8
• hazardous materials to be stored and/or used on-site, including environmental toxicity data and biodegradability.	Section 17.5.2 Section 17.5.3 Section 17.7.4
3.9.2 Waste management The EIS should provide details of waste management strategies (including reduction, reuse, recycling, storage, transport and disposal/placement of waste) which demonstrate that waste minimisation and cleaner production techniques and designs have been implemented through the selection of processes, equipment and facilities to prevent or minimise environmental impacts.	Section 17.3 Section 17.7
Information should also be provided on the variability, composition and generation rates of all waste produced at each construction work site and each operating train station or other operational facility.	Section 17.5.2 Table 17-5 to Table 17-7 Section 17.8 More information to be determined during the detailed design phase

TOR Requirement	Section of EIS
Having regard to the *Environmental Protection (Waste) Policy 2000* and the *Environmental Protection (Waste) Regulation 2000*, this section should assess the potential impact of all wastes generated during construction and operation and provide details of each waste in terms of:	Section 17.2 Section 17.5.2 Section 17.5.3 Section 17.6
• the origin, quality and quantity of solid wastes and wastewater and any immiscible liquid waste originating from the project, including the capacity of liquid wastes to generate acid, and saline or sodic wastewater	Section 17.5.2 Section 17.5.3 Table 17-5 to Table 17-7 Section 17.6 Appendix H
• the options available for avoidance/minimisation	Section 17.3.1 Section 17.7
• operational handling and fate of all wastes including storage	Appendix H
• on-site treatment methods proposed for any wastes	Section 17.3 Section 17.5.2 Section 17.5.3 Section 17.7
• assessment of extracted soil and rock materials in terms of suitability for use as construction material and a description of approvals for different land tenures required to sell spoil as quarry materials	Section 3.4.3 Table 3.6 Section 7.3 Section 17.5.2 Section 17.7
• methods of disposal (including the need to transport wastes off-site for disposal/placement) proposed to be used for any trade wastes, excavated and demolition wastes, solid wastes and liquid wastes (including waste water)	Section 17.7.4 Appendix H
• identification and description of the proposed location and characteristics (site suitability, dimensions and capacity) of off-site excavated waste (construction spoil and subsoil) disposal/placement sites. The location of the off-site excavated waste disposal/placement sites should be shown on a map relative to topography and other natural features of the area	Section 3.4.3 Figure 3-17 Section 4.4.7 Chapter 7.3
• identification and description of the proposed location and characteristics (site suitability, dimensions and capacity) of off-site trade and solid waste (other than excavated waste) disposal/placement sites	Section 17.7.6
• the potential level of impact on environmental values	Section 17.6
• measures to ensure stability of the waste storage areas and impoundments	Section 17.7.4
• methods to prevent, seepage and contamination of groundwater from stockpiles and/or storage areas	Section 17.7.4

TOR Requirement	Section of EIS
• rainfall directly onto disturbed surface areas	Section 17.5.2 to Section 17.7.4
• run-off from roads, plant and industrial areas, chemical storage areas	Section 17.5.2 Section 17.7.2 to Section 17.7.4
• drainage-that is run-off plus any seepage or leakage	Section 17.5.2 to Section 17.5.4
• measures to minimise attraction of vermin, insects and pests	Section 17.7.4
• options available for using recycled materials	Section 17.3.2 Section 17.3.3 Section 17.7.5
• market demand for recyclable waste (where appropriate)	Section 17.7.3 Section 17.7.5 to Section 17.7.7 Table 17-17
• decommissioning of construction work areas.	Section 17.7.7
3.10 Indigenous cultural heritage **3.10.1 Description of existing indigenous cultural heritage values** This section should describe the existing Indigenous cultural heritage objects and areas that may be affected by the project.	Chapter 18 Section 18.2
The section should also describe how, in conjunction with the appropriate Indigenous people and their confidentiality requirements, the cultural heritage objects and areas were ascertained, including for example the results of any Aboriginal cultural heritage surveys undertaken; the DERM Aboriginal Cultural Heritage Register and Database; any approved Native Title or Indigenous Land Use Agreements (ILUAs) if they include cultural heritage components) and existing literature relating to Indigenous cultural heritage in the study corridor.	Section 18.1 Section 18.2
3.10.2 Potential impacts and mitigation measures This section should describe the objectives and practical measures for protecting or enhancing Indigenous cultural heritage objects and areas, and describe how the achievement of the objectives will be monitored, assessed and managed.	Section 18.3 Section 18.3.1

TOR Requirement	Section of EIS
To the greatest extent practicable, significant Aboriginal objects should be avoided by the project. The EIS should provide an assessment of likely effects on Aboriginal cultural heritage, including but not limited to the following: • description of the significance of objects and areas likely to be affected by the project and their significance at a local, regional and national level	Section 18.3.1 to Section 18.3.3
• recommended means of mitigating any negative impact on Aboriginal cultural heritage and enhancing any positive impacts.	Section 18.3.1 to Section 18.3.5
A Native Title Agreement, as that term is defined under the *Aboriginal Cultural Heritage Act 2003* (ACH Act), that includes management and protection strategies for Indigenous cultural heritage (NT Agreement) or a Cultural Heritage Management Plan (CHMP) under the ACH Act should be developed for the project in the form required by Part 7 of the ACH Act. If a NT Agreement or CHMP for the project is negotiated between the proponent and the appropriate Native Title/Indigenous parties, then notification must be provided to the Coordinator-General in the EIS. If a NT Agreement is not finalised or a CHMP has not been approved, when the EIS is submitted to the Coordinator-General the following should be provided: • subject to any confidentiality restrictions, an outline of the proposed management and protection strategies for Aboriginal cultural heritage outlining the position of the relevant parties and the status of negotiations • details of the proposed steps and timeframes for finalising the CHMP or NT Agreement.	Section 18.3.4
3.11 Non-Indigenous cultural heritage **3.11.1 Description of existing non-indigenous cultural heritage values** The EIS should 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 must include:	Chapter 19 Section 19.2
• 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 19.1.2 Section 19.1.4 Section 19.1.5 Section 19.1.6 Section 19.2
• liaison with relevant community groups/organisations-for example, local historical societies-concerning places of non-Indigenous cultural heritage significance	Section 19.1.6
• locations of culturally and historically significant sites, shown on maps, that occur within the vicinity of the project	Section 19.2 Figure 19-1 Figure 19-4 Figure 19-11 Figure 19-12
• a constraints analysis of the proposed study corridor and areas affected by the project to identify and record non-Indigenous cultural heritage places.	Section 19.2

TOR Requirement	Section of EIS
3.11.2 Potential impacts and mitigation measures The proponent must provide an assessment of any likely effects on sites of non-Indigenous cultural heritage values, including but not limited to: • a 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	Section 19.3 Section 19.4
• recommended means of mitigating any negative impacts on non-Indigenous cultural heritage values and enhancing any positive impacts	Section 19.4
• strategies to manage places of historic heritage significance, taking account also of community interests and concerns.	Section 19.4 Section 19.5 Table 19-3
As a minimum, investigation, consultation, impact assessment, management and protection strategies should satisfy statutory responsibilities and duties of care, including those under the *Queensland Heritage Act 1992* and the EPBC Act, where applicable.	Section 19.1.4 to Section 19.1.6 Section 19.4 Section 19.5
4. SOCIAL VALUES AND MANAGEMENT OF IMPACTS **4.1. Description of existing social environment** This section should provide an assessment of the existing social values and characteristics of the communities potentially affected by the project.	Chapter 20
The description of the social environment should define the area of influence of the project, which must include at least the suburbs intersected by and adjacent to the study corridor, and in these contexts where relevant, identify the:	Section 20.1.1
• level of sensitivity of communities in this area to social and cultural impacts that might be caused by a large transport infrastructure project	Section 20.2.2 Section 20.2.5
• the location and nature of other relevant large proposals or projects	Section 2.8 Section 23.4.3
• location and types of social infrastructure	Section 20.2.3
• social values that might be affected by the project-for example, including integrity of social conditions and liveability, social harmony and wellbeing, and sense of community.	Section 20.2.4
4.1.1 Social baseline study A targeted baseline study of the people residing in the study area is required to identify the social issues which provide an essential contextual understanding of the project. The social baseline study should be based on qualitative, quantitative, and participatory methods. It should be supplemented by 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.	Section 20.2.2
The social baseline study should describe and analyse a range of demographic and social statistics determined relevant to the project's study corridor and suburbs intersected by and adjacent to the study corridor, or otherwise likely to be effected by the project, including:	

TOR Requirement	Section of EIS
• demographic characteristics	Section 20.2.2
• major population trends or changes that are occurring	Section 20.2.2
• estimates of population growth and population forecasts	Section 20.2.2
• any other indicators determined through the community engagement process as relevant.	Section 20.2.2 Section 20.2.4
The social baseline study should describe: • current social infrastructure and civic facilities, services and networks servicing the community and any perceived deficiencies in this infrastructure amongst the community (for definition see *South East Queensland Plan 2005-2026 Implementation Guideline No.5:* www.dip.qld.gov.au/resources/guideline/Implementationguideline5.pdf)	Section 20.2.3
• the availability of affordable housing	Section 20.2.2 Appendix I4
• programs and plans announced by government that might be expected to alter the existing social character of the project study area-for example, transport oriented development planned for Woolloongabba and Yeerongpilly	Section 20.2.1 Section 20.2.2
• the profile of the available local workforce in Brisbane to service to the project workforce needs and the likely competition from other major projects in Brisbane for project workers	Section 20.3.2
• the identity, values, lifestyles, vitality, characteristics and aspirations of the communities including Indigenous communities, special needs and health services	Section 20.2.4
• the extent to which land use patterns influence the social character of each part of the study area, including: – the relative proportions of open space or recreational land uses, residential, commercial and/or industrial properties	Section 9.3
– the relative density of land uses-for example, detached housing versus medium to high density apartments	Section 20.2.2
– for predominantly residential areas, the patterns of home ownership-for example, proportion owned versus rented	Section 20.2.2
– local pedestrian connectivity.	Section 20.2.3
The EIS should present this information separately for any distinctly different parts of the study area-for example, the southern urban area, the CBD–inner urban area, and the northern area. Parts of the study area likely to be more heavily impacted by project surface works-for example, around major project worksites-may warrant more attention than those parts of the study area predominantly impacted only by underground works.	Appendix I3

TOR Requirement	Section of EIS
4.2 Potential impacts This Social Impact Assessment (SIA) should assess and describe the type, level and significance of the project's social impacts (both beneficial and adverse) on the local area. This section should:	
• include sufficient data to assist local and state authorities to make informed decisions about the impact of the project on their agency's program of delivery of social services and provision of social infrastructure in the project's study corridor and suburbs intersected by and adjacent to the study corridor	Section 20.3.6
• address direct and indirect impacts from any existing projects and the proposed project including an assessment of the size, significance and likelihood of these impacts at the local level, including:	
– key population/demographic shifts and effects to existing lifestyles, the health and social wellbeing of families and communities	Section 20.3.3 Section 20.3.4
– the needs of vulnerable groups including those that are socially disadvantaged, the aged and people with a disability	Section 20.3.3 to Section 20.3.5
– local and regional labour markets, with regard to the source of the workforce, and any proposed employment strategies targeted at disadvantaged groups in the study area	Section 20.3.2 Section 21.2.3 Section 21.3.1
– proposed new skills and training related to the project including the occupational skill groups required and potential skill shortages anticipated	Section 20.3.2 Section 21.3.3
– the extent to which labour, services and supplies for the project are likely to be sourced from the Brisbane City local government area, the surrounding local government areas of South East Queensland (SEQ), or outside of South East Queensland.	Section 20.3.2 Section 21.2.3 Section 21.3.1
The SIA should include an evaluation of the potential cumulative social impacts resulting from the project and surrounding projects, including an estimation of the overall size, significance and likelihood of those impacts. Cumulative impacts in this context are defined as the additional impacts on population, workforce, 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 DIP, if they overlap the proposed project in the same time frame as its construction period.	Section 20.5
Where particular locations or communities in the study area have been subject to a number of large scale construction projects in recent years-for example, Dutton Park and Bowen Hills-then the concept of longitudinal cumulative impacts or 'project fatigue' is also relevant. This section of the EIS should identify the locations where there is a likelihood of this kind of cumulative impact and any special strategies that might be deployed by the proponent during the construction and operation of the project to mitigate this impact.	Section 20.4 Section 20.5

TOR Requirement	Section of EIS
4.2.1. Community engagement This section of the SIA should detail the community engagement processes used to conduct open and transparent dialogue with stakeholders. This dialogue should include the project's planning and design stages and future operations. 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.	Section 20.1.3
The outcomes of the community engagement with respect to the interpretation of the social impacts of the project and the community's suggestions on those matters must be reported.	Section 20.1.3 Section 20.2.4 Section 20.3.3 Section 20.4
Description of the community engagement process need not unnecessarily duplicate the full reporting of the public consultation process required under section 1.7 of this TOR.	Section 20.1.3
4.2.2 Workforce profile The SIA should include a profile of the workforce which describes the: • number of personnel to be employed including, the skills base of the required workforce and the likely sources-for example, local, regional or overseas for the workforce during the construction and operational phases of the project	Section 20.3.2 and 4.3.8
• estimated number of people to be employed during construction and operation, and arrangements for their transport to and from the project sites and facilities	Section 20.3.2 and 4.3 and 4.4
The workforce profile should provide estimates 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.	Section 20.3.2 and 4.3 and 4.4
The SIA should provide an outline of recruitment schedules and policies for recruitment of workers, addressing recruitment of local and non-local workers and any proposed strategies to recruit from socially disadvantaged groups.	Section 20.3.2
4.2.3 Mitigation measures and management strategies For identified social impacts, social impact mitigation strategies and measures should be presented to address the: • recruitment and training of the construction and operational workforces	Section 20.3.2
• demographic changes in the profile of the study corridor and suburbs intersected by and adjacent to the study corridor, and the associated sufficiency of current social infrastructure, particularly health and welfare, education, policing and emergency services.	Section 20.6
This section should also describe: • any consultation about acceptance of proposed mitigation measures that address project impacts	Section 20.6
• the extent to which mitigation measures suggested by the community would be adopted	Section 20.6
• how practical management and monitoring regimes are proposed to be implemented.	Section 20.6

TOR Requirement	Section of EIS
5. ECONOMIC VALUES AND IMPACTS	Chapter 21
5.1 Description of the affected local and regional economies This section should briefly describe the existing economy of the area in which the project is located and those aspects of the local or regional economy that may be materially impacted by the project. It should include:	Section 21.2
• a map illustrating the local and regional economies that could be potentially affected by the project	Section 21.2.2 Figure 21-9 to Figure 21-13
• gross regional product or other appropriate measure of annual economic production	Section 21.2.2
• population	Section 21.2.2 Table 21-2
• labour force statistics	Section 21.2.2 Figure 21-1 to Figure 21-3
• economic indicators	Section 21.2.2 Figure 21-4 Figure 21-5
• the regional economy's key industries and their contribution to regional economic income	Section 21.2.2 Section 21.2.3
• the key regional markets relevant to the project:	Section 21.2.3
– labour market	Section 21.2.3 Figure 21-6 Table 21-4 to 21-6
– housing and land markets	Section 21.2.3 Table 21-7 to 21-18
– construction services and building products markets	Section 21.2.4
With regard to the region's key industries and factor prices, provide information on: • current input costs (wage rates, building costs, housing rent etc.)	Section 21.2.4 Table 21-19
• land values by type of use along each part of the study corridor.	Section 21.2.3 Table 21-8 to 21-18

TOR Requirement	Section of EIS
5.2 Potential impacts and mitigation measures The potential impacts should consider local, regional, state and national perspectives as appropriate to the scale of the project. 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 values	Section 21.3 Section 21.3.1 Section 21.3.4
• commercial land use	Section 21.3.4
• changes in vehicle operation costs, travel times, congestion and accident rates and indirect benefits	Section 21.4.3 Section 21.4.4 Table 21-43 to Table 21-47
• industry output	Section 21.3.1 Table 21-20
• employment	Section 21.3.1 Table 21-21
• the use of extractive resources in the region during construction, and any economic consequences of that demand for the region	Section 21.3.2 Figure 21-8 Table 21-22
• wider economic consequences of the project due to any impacts on labour productivity	Section 21.4.4 Table 21-50
• macro-economic effects of the project including employment impacts (number of jobs generated) and overall contribution to the Queensland economy (uplift in Gross State Product)	Section 21.3.1 Section 21.4.4 Section 21.5.3
• any foreseeable indirect impacts likely to flow to other industries and parts of the economy from the development of the project, including opportunities created by the project for future development	Section 21.4.4
• any distributional effects of the project, including proposals to mitigate any potential negative impact on disadvantaged groups if these are identified.	Section 21.3.3 Section 21.3.4 Section 21.4.6
All assumptions underpinning the analysis are to be outlined explicitly and the sensitivities of the analyses to key parameters are to be established. Summary measures used in the analysis should include benefit-cost ratio, net present value with per dollar invested and internal rate of return. The analysis of economic impacts may also be undertaken using computable general equilibrium (GCE) analysis, and provide an estimate of contribution to the gross state product.	Section 21.4.3 to Section 21.4.5 Section 21.5 Table 21-44

TOR Requirement	Section of EIS
Care should be taken to ensure that benefits accounted for are the most appropriate and relevant to the objectives and scope of the project and that double counting does not occur. The analysis should also adhere generally to the economic assessment requirements contained in the Queensland Treasury Project Evaluation Guidelines	Section 21.4.3 Section 21.4.4 Section 21.5.1
5.2.1 Strategies for local participation The assessment of economic impacts should outline strategies for local South East Queensland regional participation, including: • strategies for assessing the cost effectiveness of sourcing inputs from regional suppliers during the construction, operation and rehabilitation of the project	Section 21.3.3
• 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 percent policy)	Section 21.3.3
– Indigenous employment opportunities, with regard to the Indigenous Employment Policy for Queensland Government Building and Civil Construction Projects (the 20 percent policy)	Section 21.3.3
– the use of locally sourced goods and services, with regard to the Local Industry Policy (Department of Employment, Economic Development and Innovation, 2008).	Section 21.3.3
5.2.2 Likely impacts on adjacent properties This section should address the likely economic impacts of the project on surrounding property and business owners arising from predictable changes to land use-for example, due to changes in vehicle or pedestrian traffic around project elements such as train stations-and/or building constraints caused by projects structures-for example, above or immediately adjacent to tunnels of other underground structures-during both construction and operation. It should mention the:	Section 21.3.4
• likely scale of impact of the project on residential, commercial and industrial land uses and property values	Section 21.3.4
• any measures proposed to mitigate real and potential disruptions to residential, commercial and industrial property uses.	Section 21.3.4
6. HAZARD AND RISK **6.1 Hazard and risk assessment** This section should 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: • identification of potential hazards, accidents, spillages and abnormal events-for example, tunnel collapse or sudden subsidence during construction or a train accident during operation-which may occur during all stages of the project, including possible frequency of occurrence	Chapter 22 Section 22.3.1 Appendix J
• identification of all hazardous substances to be used, stored, processed, transported, processed or produced and the rate of usage	Section 17.5 Section 17.5 Section 17.8 Appendix J

TOR Requirement	Section of EIS
• potential wildlife hazards, natural events and implications related to climate change	Section 6.4.2 Appendix E1 Appendix J
• identification of asbestos for government controlled buildings and the Built Environment Materials Information Register (BEMIR).	Section 17.7.4
A preliminary risk assessment for all components of the project shall be undertaken as part of the EIS process in accordance with Australia/New Zealand AS/NZS ISO 31000:2009 Risk Management. With respect to risk assessment:	Section 22.2.1 Section 22.2.2
• the EIS should deal comprehensively with external and on-site risks including transport risks	Section 22.3.1 Section 22.4.1 Section 22.4.2 Appendix J
• the study should assess risks during the construction and operational phases of the project	Section 22.3.1 Section 22.4.1 Section 22.4.2 Appendix J
• analysis of the consequences of each hazard on safety in the study corridor and areas affected by the project should be conducted, examining the likelihood of both individual and collective consequences, involving injuries and fatalities to workers and to the public	Section 22.2.1 Section 22.5 Appendix J
• quantitative levels of risks should be presented from the above analysis where possible.	Section 22.2.1
Details should be provided on the safeguards that would reduce the likelihood and severity of hazards, consequences and risks to persons, within and adjacent to the study corridor and areas affected by the project.	Appendix J
A comparison of assessed and mitigated risks with acceptable risk criteria for land uses in and adjacent to the study corridor and areas affected by the project should be presented.	Appendix J
A risk management plan should be presented. Risks associated with the construction of and operation within a tunnel and underground rail stations, should be included as part of the assessment.	Section 22.4.3
6.1.1 Protection from terrorism The CRR project would be defined as both a 'security-identified surface transport sensitive operation' (SISTO) under section 9 of the Transport Security (Counter-Terrorism) Act 2008 and 'critical infrastructure' under the Cabinet endorsed Queensland Plan for the Protection of Critical Infrastructure from Terrorism. Consequently, the EIS must provide information on the design and operation of proposed safety and contingency systems for the project to address Queensland's counter-terrorism and critical infrastructure protection policies and arrangements and an operational security plan. This information may be presented in confidence to the Coordinator-General separate to the main EIS document.	Section 22.3.1 Section 22.4.3 Section 22.6

TOR Requirement	Section of EIS
The preparation of information on safety and contingency systems and the security plan must be consistent with: – *Queensland Counter-Terrorism Strategy 2008-2010* – *Queensland Infrastructure Protection and Resilience Framework* – *National Counter-Terrorism Plan* – *Critical Infrastructure Protection National Strategy* – *Critical Infrastructure Emergency Risk Management and Assurance Handbook* – *AS/NZS 4360:2004 Risk Management* – *HB 167:2006 Security Risk Management* – *HB 221:2004 Business Continuity Management*	Section 22.2.2 Section 22.4.3 Section 22.6
6.2 Health and safety **6.2.1 Description of public health and safety community values** This section should summarise 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 vibration.	Section 22.5.1 to Section 22.5.3
6.2.2 Potential Impact and mitigation measures This section should define and describe the objectives and practical measures for protecting or enhancing health and safety values of the community, describe how nominated quantitative standards and indicators may be achieved for social impact management, and how the achievement of the objectives will be monitored, audited and managed.	Section 22.5.1 to Section 22.5.3 Section 23.3.10
The EIS should assess the cumulative effects on public health values as well as occupational health and safety impacts on the community and workforce from project operations and emissions. Practical monitoring regimes should be recommended in this section.	Section 20.5 Section 23.3.10
6.2.3 Emergency management plan The development of emergency planning and response procedures is to be determined in consultation with state and regional emergency service providers. An outline of the proposed integrated emergency management planning procedures is to be provided (including evacuation plans, if required) for the range of situations identified in the risk assessment developed in this section, including strategies to deal with natural disasters during construction and operation.	22.6
7. CUMULATIVE IMPACTS The purpose of this section is to provide a summary of the cumulative impacts from the project and to provide a description of these cumulative impacts both in isolation and in combination with those of existing or proposed project(s) publicly known or advised by DIP to be in the region, to the greatest extent practicable. Cumulative impacts should be assessed with respect to both geographic location and environmental values. The methodology used to determine the cumulative impacts of the project should be presented, detailing the range of variables considered, including where applicable, relevant baseline or other criteria upon which the incremental aspects of the project have been assessed.	Section 23.2 Section 23.3 Section 23.4

TOR Requirement	Section of EIS
8. ENVIRONMENTAL MANAGEMENT PLAN This section should detail the draft environmental management plans (EMPs) for both the construction and operation phases of the project. The EMPs should be developed from, and be consistent with, the information in the EIS. The EMPs must address discrete project elements and provide life-of-proposal control strategies. The EMPs must be capable of being read as a stand-alone document without reference to other parts of the EIS.	Section 24.9 Section 24.10
The EMPs must comprise the following components for performance criteria and implementation strategies: • the proponent's commitments to acceptable levels of environmental performance, including environmental objectives, performance standards and associated measurable indicators, performance monitoring and reporting	Section 24.2 to Section 24.4 Section 24.9 Section 24.10
• impact prevention or mitigation actions to implement the commitments	Section 24.6.3 Section 24.9 Section 24.10
• corrective actions to rectify any deviation from performance standards	Section 24.6.3 Section 24.9 Section 24.10
• an action program to ensure the environmental protection commitments are achieved and implemented. This will include strategies in relation to: – continuous improvement – environmental auditing – monitoring – reporting – staff training – a rehabilitation program for land proposed to be disturbed under each relevant aspect of the proposal.	Section 24.6.3 Section 24.9 Section 24.10
9. CONCLUSIONS AND RECOMMENDATIONS The EIS should present the proponents conclusions and recommendations with respect to the project based on the studies presented, the EMPs and conformity of the project with legislative and policy requirements. The EIS should provide an overview of how the project conforms to the objectives for 'sustainable development'—see the *National Strategy for Ecologically Sustainable Development* (1992), available from the Commonwealth Government Publishing Service.	Section 25.4 Section 25.7 Section 25.8
This analysis should consider the overall 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. This information is required to demonstrate that sustainable development aspects have been considered and incorporated during the scoping and planning of the project.	Section 25.4 Section 25.5
10. REFERENCES All references consulted should be presented in the EIS in a recognised format.	Chapter 26

TOR Requirement	Section of EIS
11. APPENDICES **11.1 Final Terms of Reference for this EIS** A copy of this final Terms of Reference document should be included as an appendix to the EIS.	Appendix A
11.2 TOR cross-reference table A cross reference table should be provided 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 K
11.3 Project approvals A list of the project approvals required by the project should be presented.	Appendix D
11.4 Consultation report The report should include the methodology used in the public consultation plan including • criteria for identifying stakeholders and the communication methods used (the consultation plan)	Appendix C Section 2 Section 3
• a list of stakeholders identified, including the Commonwealth, Queensland and local government agencies, and/or the affected parties, which must include all directly impacted property owners and owners of properties contiguous with all parts of the project	Section 3 Section 6 Section 7
• evidence of direct consultation with each directly impacted property owner and each owner of properties contiguous with all parts of the project about how the reference design for the project will impact upon those properties	Section 4 Section 6
• a summary of the issues raised by stakeholders and the means by which the issues have been addressed	Section 9
• plans for ongoing consultation to be outlined and included in the EMPs.	Section 8
11.5 Study team The relevant qualifications and experience of the key study team members and specialist sub-consultants should be provided.	Appendix M
11.6 Glossary of terms A glossary of technical terms and should be provided.	Appendix L
11.7 Specialist studies All reports generated on specialist studies undertaken as part of the EIS are to be included as appendices. These may include, but are not limited to: • air quality, noise and vibration • groundwater and surface water hydrology • geology and geomorphology • economic studies and/or cost-benefit analyses • transport studies • cultural heritage • hazard and risk studies • land use and land capability studies.	Volume 3
11.8 Corporate environmental policy The proponent should attach a copy of its corporate environmental policy and planning framework document.	Appendix B