Terms of reference for the Walton Coal Project environmental impact statement under the *Environmental Protection Act 1994*

Proposed by Walton Coal Pty Ltd

May 2018

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Contents

1 Purpose of this document

1.1 Introduction

This document outlines the terms of reference (TOR) for the Walton Coal Project proposed by Walton Coal Pty Ltd being assessed under the environmental impact statement (EIS) process in chapter 3, part 1, of the *Environmental Protection Act 1994* (EP Act). It sets out the scope and required content that the EIS must include to allow the purposes of the EIS under section 40 of the EP Act to be achieved for the proposed project.

The EIS must address key requirements outlined in the EP Act and subordinate legislation, including but not limited to:

- the requirements of section 40 of the EP Act, which specifies the purpose of an EIS and of the EIS process
- the requirements of sections 125 and 126A which set out the general information requirements for applications for an environmental authority (EA)
- the requirements of chapter 2 and schedule 1 of the Environmental Protection Regulation 2008 (EP Regulation), including matters to be addressed by assessment under the Bilateral Agreement between the Australian Government and the State of Queensland
- the environmental objectives and performance outcomes specified in schedule 5, part 3, tables 1 and 2 of the EP Regulation.

Section 139 of the EP Act states that the information stage of the EA application process does not apply if the EIS process is complete, unless there has been a subsequent change to the proposed project. It is therefore important that the EIS provides all the information needed to enable the issuing of an EA for the proposed project as set out in these TOR in conjunction with the guidance material at: https://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html or any subsequent versions.

While every attempt is made by the Department of Environment and Science (the department)[1] to ensure the TOR requires an assessment of all relevant matters, the TOR may not be exhaustive. Therefore the EIS for the proposed Walton Coal Project must address other matters not covered in the TOR in the following circumstances:

- studies reveal a matter that had not been foreseen when the TOR was finalised
- an issue not identified previously is considered contentious by the public, such as a public perception of potential environmental harm or nuisance even though the perception might be mistaken
- the department directs the proponent in writing to address a matter as an information request under section 62 of the EP Act
- new or amended legislation or policies come into effect after the TOR has been finalised, regardless of whether or not the legislation or policies have been listed in the TOR. Transitional arrangements or exemptions may apply for individual projects
- the proponent makes amendments to the proposed project that would result in a change in the nature, timing or location of any impacts.

The department must consider if an EIS addresses the final TOR in an acceptable form and may refuse the EIS under section 49(3) of the EP Act if it believes the information provided in the EIS is not adequate.

1.2 Information about the proposed project and assessment

1.2.1 Project proponent

The proposed project is 100% owned by Walton Coal Pty Ltd, Level 14, 225 St Georges Terrace, Perth WA 6000.

[1] Formerly the Department of Environment and Heritage Protection (EHP)

1.2.2 Project description

The proposed Walton Coal Project is a greenfield project involving the construction and operation of a metallurgical open cut coal mine. The proposed project is situated in the Bowen Basin coal field, Central Queensland 170 kilometres (km) west of Rockhampton, and 100 km to the east of Emerald, Figure 1. The Proponent intends to apply for Mining Leases (MLs) and an environmental authority (EA) to enable the development of the proposed project. The proposed Walton Coal Project is a conventional small scale open cut mine with a target production of 1.6 Million tonnes per annum (Mtpa) requiring the mining of between 1.9 and 2.2 Mtpa Run of Mine (ROM), nominally 2 Mtpa ROM. A mine life of approximately 8 years is anticipated and the mining operations will utilise conventional truck and shovel methods. The mined coal will be selectively beneficiated at a new Coal Handling and Preparation Plant (CHPP) or bypassed directly to product stockpiles prior to being loaded onto trains. The product coal will be railed from the mine site via the Central and North Coast Rail Lines to the export market through the RG Tanna Coal Terminal (RGTCT) or alternatively Wiggins Island Coal Export Terminal (WICET) located at Gladstone in Central Queensland. The supply of electricity for the proposed project is expected to be achieved via connection to the mains power grid which is accessible immediately adjacent to the site or by use of diesel generators. The site distribution voltage will be 11 kilovolt (kV) distributed through an overhead power line system with pole mount transformers, should this option be chosen.

The coal resource is situated in Mineral Development Lease (MDL) 505, Figure 1. The proposed project will be located over two privately owned freehold properties and site access is expected to intersect property related to the Central Railway:

- Lot 5 on Plan HT551, freehold
- Lot 100 on Plan RP882349, freehold
- Lot 661 SP260478, Lands Lease (Central Railway).

Relevant agreements with private landholders within MDL 505 to the north of the Capricorn Highway are in place which ensures access to the proposed project area is available for the studies to be undertaken as part of the EIS process. Whilst the proposed boundaries for the proposed project MLs are yet to be finalised it is expected that the northern ML boundary will align with the southern boundary of Taunton National Park (Scientific) and the southern boundary will be aligned to the north of the Central Rail Line and Capricorn Highway. Sections of Pinegrove Road and Red Rock Park Road, which are expected to be located outside ML boundaries, will be impacted by the proposed project access route and relevant permitting and agreements would be required in consultation with the Central Highlands Regional Council. The proposed site layout and potential ML areas are shown, Figure 2.

Water supply for the site is proposed via a pipeline from the existing Jellinbah Coal Mine located approximately 23km to the northwest of the MDL 505 boundary, Figure 3. The proposed pipeline route will generally follow existing roads and private property fence lines, likely properties intersected include:

- Lot 12 RP861407, freehold
- Lot 13 RP861407, freehold
- Lot 7 HT186, freehold
- Lot 1 SP227977, freehold
- Lot 2 SP227977, freehold
- Lot 20 HT486, freehold
- Lot 7 HT408, freehold
- Lot 5 HT 551, freehold
- Bluff Jellinbah Road
- Walton Road
- Unnamed branch of Walton Road.

Access to the following properties intersected by the proposed pipeline route will be required for the purposes of assessment:

- Lot 12 RP861407, freehold
- Lot 2 SP227977, freehold

- Lot 20 HT486, freehold
- Lot 7 HT408, freehold
- Lot 5 HT 551, freehold
- Bluff Jellinbah Road.

The construction workforce is estimated to peak at 100 persons and a total of 223 operational jobs are anticipated. There is a pre-existing railway construction accommodation camp located immediately to the south east of MDL 505 on Lot 100 on Plan RP882349 which is operated by the landholder. It is proposed that this camp will house the drive in drive out (DIDO) component of the workforce with buses utilised from the accommodation camp to site. There is high availability of low cost housing in Blackwater and the surrounding areas which will provide opportunity to the workforce to live locally.

The general rehabilitation strategy is expected to incorporate a mixture of land uses including nature conservation and grazing which is consistent with existing land use in the proposed project area.

Key elements of the proposed project will include:

- open cut pit commencing in the north and developed towards the south and progressively backfilled
- out of pit spoil dumps
- progressive rehabilitation of the out of pit spoil dumps and backfilled sections of pit
- haul road and ancillary access tracks
- conventional CHPP and conveyor systems
- ROM coal and product coal stockpiles
- dedicated rail spur and loop for the Train Load Out (TLO) to enable coal transport to Gladstone for export via the RGTCT or alternatively WICET
- water supply pipeline from Jellinbah Coal Mine (pipeline source point approximately 23 km northwest of the MDL 505 boundary)
- water management infrastructure including dams, drains, levees and watercourse diversions
- support infrastructure, including offices, workshops, warehousing and sewage treatment
- site access road (partially off the MLs) and intersection with Capricorn Highway
- accommodation camp (off the MLs) for the DIDO component of the workforce.

1.2.3 EIS assessment process

On 13 July 2017 the department approved an application for Walton Coal Pty Ltd to voluntarily prepare an EIS under the EP Act for the proposed Walton Coal Project. Under section 159 of the EP Act, the EIS for the proposed Walton Coal Project will form the application documents for the requirements of Chapter 3 of the EP Act. This is provided that the environmental risks of the activity or way the activity will be carried out, do not change between the time the voluntary EIS was completed under the EP Act and when the EA application was made.

The proposed project was determined to be a controlled action (EPBC 2017/8077) under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The controlling provisions are sections 18 and 18A (listed threatened species and communities) and sections 24D and 24E (a water resource, in relation to coal seam gas development and large coal mining development).

The EIS for the proposed project will be jointly assessed under the EP Act and the EPBC Act using the EIS process under the EP Act in accordance with the assessment Bilateral Agreement between the Australian Government and the State of Queensland (section 45 of the EPBC Act).

Further information on the EIS process under the EP Act is described in the department's guideline titled 'The environmental impact statement process for resource projects under the *Environmental Protection Act 1994'* which is available at www.ehp.qld.gov.au[2].

[2] http://www.ehp.qld.gov.au/management/impact-assessment/eis-processes/documents/eis-process-guideline-em1375.pdf

2 Content requirements of the EIS for the proposed Walton Coal Project

The following sections outline the information requirements of an EIS under the EP Act for the proposed Walton Coal Project. It is not necessary for the EIS to follow this specific structure outlined below, but the relevant requirements for each section must be included in the EIS.

3 Glossary

Provide a glossary of terms and a list of acronyms and abbreviations at the start of the EIS.

4 Executive summary

The EIS must include an executive summary which describes the proposed project and conveys the most important aspects and environmental management commitments relating to the proposed project in a concise and readable form.

5 Introduction

The introduction of the EIS must clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. It should include an overview of the structure of the document.

5.1 Project proponent

Provide information about the proponent and their business, including:

- the proponent's full name, street and postal address, and Australian Business Number, including details of any joint venture partners
- the nature and extent of the proponent's business activities
- proponent's environmental record, including a list of any breach of relevant environmental laws during the previous 10 years
- the proponent's environmental, health, safety and community policies.

5.2 The environmental impact statement process

Outline the steps of the EIS process, noting which milestones have been completed, and an estimated completion date for each remaining EIS stage. Highlight the steps in which the public will have the opportunity to provide input or comment. This information is required to ensure readers are informed of the EIS process and are aware of their opportunities for input and commenting.

Inform the reader how and when properly made public submissions on the EIS can be made, and outline how the submissions are taken into account in the decision-making process.

5.3 Project approvals process

Describe all approvals under federal, state or local legislation that are required to enable the proposed project to be constructed and operated, and note the legislation under which the approvals are assessed and issued. This information must explain how the EIS fits into the assessment and approval processes for the EA and other approvals required of the proposed project before construction and operations can start[3].

Describe the approvals process under the EPBC Act (as the proposed project is to be assessed under the Bilateral Agreement between the Australian Government and the State of Queensland).

[3] Guidance on typical associated approvals can be accessed from https://www.business.qld.gov.au/industry

6 Consultation process

Describe the consultation that has taken place and how responses from stakeholders, including government agencies and members of the community, have been incorporated into the design and outcomes of the proposed project.

Describe also any proposed future consultation activities, and outline how the results of that consultation will be used in the ongoing management of the proposed project.

Provide information on the development and implementation of a consultation plan for the people and organisations identified as affected or interested persons, or stakeholders for the proposed project. Describe issues of potential concern to any and all stakeholders at various stages of the proposed project from project planning to commencement, project operations and decommissioning. The description of the consultation plan should at least include the following matters:

- the objectives of the consultation process
- timing of consultation
- the number and interests of the people and organisations involved in the consultation (particularly the affected and interested persons defined in sections 38 and 41 of the EP Act)
- methods of consultation and communication
- reporting and feedback methods of the consultation process
- an assessment explaining how the consultation objectives have been met
- an analysis of the issues raised and their completed or planned resolution, including any alterations to the proposed project as a result of the received feedback.

7 Project description and alternatives

Describe all aspects of the proposed project that are covered by the EIS's assessment. If there are any aspects of the proposed project that would be assessed separately, describe what they are, and how they would be assessed and approved.

The project description should include all on and off lease activities relevant to the proposed project including construction, operation and decommissioning activities. If the delivery of the proposed project is to be staged, the nature, scale and timing of the stages should be fully described.

7.1 Proposed project

Describe and illustrate the following specific information about the proposed project, including but not limited to:

- project title
- project objectives
- expected capital expenditure
- rationale for the project
- project description, including the nature and scale of all project components and activities
- whether it is a greenfield or brownfield site
- regional and local context of the project's footprint, including maps at suitable scales
- proposed timing of the development, including construction staging, likely schedule of works and anticipated mine life
- relationship to other major projects or developments of which the proponent should reasonably be aware
- the workforce numbers for all project phases
- where personnel would be accommodated, details of services to be provided at the accommodation (e.g., food services, tobacco smoking areas) and the likely recruitment and rostering arrangements to be adopted
- proposed travel arrangements of the workforce to and from work, including use of a DIDO workforce.

7.2 Site description

Provide real property descriptions of the proposed project land and adjacent properties, any easements, any existing underlying resource tenures, and identification number of any resource activity lease for the proposed project land that is subject to application.

Describe and illustrate with scaled maps the key infrastructure in and around the site, including state-controlled and local roads, rail lines and loading yards, airfields, ports, electricity transmission infrastructure, pipelines, and any other infrastructure in the region relevant to the proposed project.

Describe and illustrate the topography of the proposed project site and surrounding area, and highlight and identify any significant features shown on the maps. Map the location and boundaries of the proposed project's footprint including all infrastructure elements and development necessary for the proposed project. Show all key aspects including excavations, stockpiles, areas of fill, services infrastructure, plant locations, water or tailings storages, buildings, bridges and culvert, haul and access roads, causeways, stockpile areas. Include discussion of any environmental design features of these facilities including bunding of storage facilities.

Describe and map in plan and cross-sections the geology and terrestrial landforms of the proposed project area. Indicate the boundaries of water catchments that are significant for the drainage of the site. Show geological structures, such as aquifers, faults and economic resources that could have an influence on, or be influenced by, the proposed project's activities.

Describe and illustrate the precise location of the proposed project in relation to any designated and protected areas including the connectivity of wildlife habitat such as, the Walton State Forest, Wallaby Lane Nature Refuge and Taunton National Park (Scientific), and waterbodies, clearly indicating where buffer zones between the proposed project and the protected areas are required. This is to include the location of any proposed buffers surrounding the working areas; and lands identified for conservation, either through retention in their current natural state or to be rehabilitated.

Describe, map and illustrate soil types and profiles of the proposed project area at a scale relevant to the site. Identify soils that would require particular management due to wetness, erosivity, dispersivity, depth, acidity, salinity or other feature.

Describe with concept and layout plans, in both plan- and cross-section views, requirements for constructing, upgrading or relocating all infrastructure associated with the proposed project. Show the locations of any necessary infrastructure easements on the plans, including infrastructure such as roads, rail (and the rail corridor), level crossings, conveyors, bridges, tracks and pathways, dams and weirs, bore fields, power lines and other cables, wireless technology (such as microwave telecommunications), and pipelines for any services, whether underground or above.

7.3 Proposed construction and operations

Describe the following information about the proposed project, provide maps and concept and layout plans for the following, if applicable to the proposed project:

- existing land uses and any previous land use that might have affected or contaminated the land
- existing buildings, infrastructure and easements on the potentially affected land
- all pre-construction activities (including vegetation clearing, site access, interference with watercourses, wetlands and floodplain areas)
- the proposed construction methods, associated equipment and techniques
- road and rail infrastructure, and stock routes, including new constructions, closures and/or realignments
- the location, design and capacity of all other required infrastructure, including water supply and storage, sewerage, electricity from the grid, generators and fuels (whether gas, liquid and/or solid), power stations, and telecommunications
- changes to watercourses, flooding and overland flow on or off the site, including watercourse diversions and flood levees
- any infrastructure alternatives, justified in terms of ecologically sustainable development (including energy and water conservation)
- days and hours of construction and operation
- the proposed extractive and processing methods, associated equipment and techniques
- the sequencing and staging of activities
- the proposed methods and facilities to be used for the storage, processing, transfer, and loading of product

- the capacity of high-impact plant and equipment, their chemical and physical processes, and chemicals or hazardous materials to be used
- any activity that would otherwise be a prescribed environmentally relevant activity if it were not undertaken on a mining or petroleum lease
- any new borrow pits, stream bed excavations, quarry and screening operations that may be required to service construction or operation of the proposed project;
- the location and description of light and noise sources associated with construction and operation of the proposed project, with consideration of their locations in relation to significant natural values within and adjacent to the proposed project area.

7.4 Feasible alternatives

Present feasible alternatives of the proposed project's configuration, including conceptual, technological and locality alternatives to the proposed project and individual elements that may improve environmental outcomes. Summarise the comparative environmental, social and economic impacts of each alternative, with particular regard to the principles of ecologically sustainable development.

Discuss alternatives in sufficient detail to enable an understanding of the reasons for preferring certain options and courses of action while rejecting others.

Discuss the environmental, social and economic consequences of not proceeding with the proposed project.

8 The environmental impact assessment process

For each proposed project specific matter outlined in section 9 below, the EIS must identify and describe the relevant environmental values, assess potential adverse and beneficial environmental, economic and social impacts of the proposed project; and outline the management, monitoring, planning and other measures proposed to minimise or mitigate any adverse environmental impacts of the proposed project. This must be addressed within the scope of the following requirements.

8.1 Environmental values

For the purposes of the EIS process, 'environment' is defined in section 8 of the EP Act.

Identify and describe the environmental values that must be protected for all the relevant matters. Environmental values are specified in the EPBC Act, the EP Act, the EP Regulation (e.g. environmental objectives and performance outcomes as defined in schedule 5, part 3, tables 1 and 2), the *Vegetation Management Act 1999,* the *Nature Conservation Act 1992,* the *Regional Planning Interests Act 2014*, *environmental protection policies* (EPPs) and other relevant guidelines.

Consider all available baseline information relevant to the environmental risks of the proposed project, including seasonal variations. Describe the quality of all information, in particular the source of the information, how recent the information is, how the reliability of the information was tested, and any uncertainties in the information.

8.2 Impact assessment

Assess the impacts of the proposed project on environmental values. Impact assessment must address:

- short, medium and long-term scenarios
- the scale of an impact, including but not limited to:
    - the impact's intensity and duration
    - cumulative effects of the proposed project in combination with other major projects or developments of which the proponent should reasonably be aware
    - irreversibility
    - the risk of environmental harm
    - management strategies and offsets provisions
    - the potential for unforeseen impacts
    - the risks associated with unlikely but potentially major impacts

- direct, indirect, secondary, permanent, and/or temporary impacts
- positive and negative effects
- impact interactions.

8.3 Cumulative impacts

Assess the cumulative impacts of the proposed project on environmental values. Every effort should be made to find information from all sources relevant to the assessment of cumulative impacts. The EIS must outline ways in which the cumulative impact assessment and management could subsequently be progressed further on a collective basis.

Impact assessment must address cumulative impacts, including but not limited to:

- environmental values of land, air and water, public health and the health of terrestrial and aquatic ecosystems
- environmental values over time or in combination with other impacts in the dimensions of scale, intensity, duration or frequency of the impacts
- impacts created by the activities of other adjacent, local, upstream and downstream developments, land uses and landholders
- impacts on land use and water sources, and how these impacts may lead to changes in existing economic benefit.

8.4 Management

Propose and describe avoidance, mitigation and management strategies for the protection or enhancement of identified environmental values. Proposed strategies must:

- adhere to the department's management hierarchy: (a) to avoid; (b) to minimise or mitigate; once (a) and (b) have been applied (c) if necessary and possible, to offset
- include an adaptive management approach to provide confidence that, based on current technologies, the impacts can be effectively managed over the long-term
- be described in context of the department's model conditions and/or site-specific, outcome-focussed conditions that can be measured and audited.

For unproven elements of a resource extraction or processing process, technology or activity, identify and describe any global leading practice environmental management that would apply.

Demonstrate that the design and management of the proposed project and its predicted outcomes:

- meet the environmental objectives and outcomes listed in section 9 for each matter and the performance outcomes stated in Schedule 5 of the EP Regulation
- are consistent with best practice environmental management during construction, operation, and decommissioning of the proposed project
- meet all statutory and regulatory requirements of the federal, state and local government, including any relevant plans, strategies, policies and guidelines.

Conditions and commitments

Sufficient evidence and detail must be provided in the EIS (through studies, proposed management measures and supporting information):

- to demonstrate that the predicted outcomes for the proposed project can be achieved
- to meet the requirements of sections 125 and 126A of the EP Act as relevant to the specific proposed project
- for the administering authority to make recommendations about the suitability of the proposed project, assess whether an approval should be granted and recommend draft conditions for inclusion on relevant approvals.

All design and management measures that would need to be applied for the proposed project to meet the predicted proposed project outcomes must be provided in the EIS as a consolidated list of detailed commitments (per section 10 below).

8.5 Critical matters

The detail in which the EIS deals with all matters relevant to the proposed project should be proportional to the scale of the impacts on environmental values. When determining the scale of an impact, consider the impact's intensity, duration, cumulative effect, irreversibility, the risk of environmental harm, management strategies and offset provisions.

Critical matters identified for this proposal have one or more of the following characteristics:

- they have a high or medium probability of causing serious or material environmental harm, or a high probability of causing an environmental nuisance
- they are considered important by the administering authority, and/or there is a public perception that an activity has the potential to cause serious or material environmental harm or an environmental nuisance, or the activity has been the subject of extensive media coverage
- they are relevant to a controlling provision under the EPBC Act
- they raise obligations under any other legislation applicable for the proposed project (e.g. *Water Act 2000*).

If a new additional critical matter becomes apparent after the TOR are issued, the EIS must address that new matter.

8.5.1 Critical environmental matters identified for this project which the EIS must give priority are:

- Land (Section 9.2)
- Water, Water Quality, Water Resources, Flooding (Section 9.3), Flora and Fauna, Offsets (Section 9.5)
- Air (Section 9.7)
- Noise and Vibration (Section 9.8)
- Matters of National Environmental Significance under the EPBC Act (Section 9.14).

Note that Wallaby Lane Nature Refuge, Taunton National Park (Scientific) and the nearby Walton State Forest are areas of high environmental value and should be addressed within each of the critical environmental matters.

9 Project specific matters

9.1 Climate

Describe the proposed project area's climate patterns that are relevant to the environmental impact assessment, with particular regard to the proposed project's discharges to water and air, and the propagation of noise. Climate data should be provided in a statistical form including long-term averages and extreme values. It must also be illustrated by bar charts and wind rose diagrams, as necessary.

Assess the vulnerability of the area to natural and induced hazards, including floods, bushfires and cyclones. Consider the relative frequency and magnitude of these events together with the risk they pose to the construction, operation and decommissioning of the proposed project, as well as the rehabilitation of the site. Measures that would be taken to minimise the risks of these events should be described.

Assess the proposed project's vulnerabilities to climate change (e.g. changing patterns of rainfall, hydrology, temperature and extreme weather events). Describe possible preferred and alternative adaptation strategies based on climate change projections for the region to minimise the risk of impacts from climate change to the proposed project.

9.2 Land

Environmental objective and outcomes
The activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.
The choice of the site, at which the activity is to be carried out, avoids or minimises serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places.
The location for the activity on a site protects all environmental values relevant to adjacent sensitive use.
The design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with best practice environmental management.

Impact assessment

Conduct the impact assessment in accordance with the department's *EIS information guideline—Land* or any subsequent versions and, if any quarry material is needed for construction, use the department's *EIS information guideline—Quarry material* or any subsequent versions.

Describe potential impacts of the proposed land uses, taking into consideration the proposed measures that would be used to avoid or minimise impacts. The impact prediction must address the following matters:

- any changes to the landscape and its associated visual amenity in and around the proposed project area
- any existing or proposed mining tenement under the *Mineral Resources Act 1989*, petroleum authority under the *Petroleum and Gas (Production and Safety) Act 2004*, petroleum tenure under the *Petroleum Act 1923*, geothermal tenure under the *Geothermal Energy Act 2010* and greenhouse gas tenure under the *Greenhouse Gas Storage Act 2009* overlying or adjacent to the proposed project site
- temporary and permanent changes to land uses of the proposed project site and adjacent areas, considering actual and potential agricultural uses, regional plans and local government planning schemes, and any Key Resources Areas that were identified as containing important extractive resources of state or regional significance which the state considers worthy of protection[4,5]
- identify any existing or proposed incompatible land uses within and adjacent to the proposed project site, and including the impacts on economic resources and the future availability and viability of the resource including extraction, processing and transport location to markets
- identify any infrastructure proposed to be located within, or which may have impacts on, the Stock Route Network[6,7] and the *Stock Route Management Act 2002*
- propose suitable measures to avoid or minimise impacts related to land use.

[4] https://www.business.qld.gov.au/industry/mining/quarries/key-resource-areas

[5] http://www.statedevelopment.qld.gov.au/resources/guideline/spp/spp-guideline-mining-extractive-resources.pdf

[6] https://www.qld.gov.au/environment/land/stock-routes/about/

[7] https://www.dnrm.qld.gov.au/_data/assets/pdf_file/0010/99622/stock-route-management-strategy.pdf

Assess the proposed project against the requirements of the *Regional Planning Interests Act 2014*[8], including any relevant Regional Plan. Further advice is provided in the '*DILGP Companion guide – A guide for state agencies and proponents on the requirements of the Regional Planning Interests Act 2014 in the planning and development process* (Department of Infrastructure, Local Government and Planning, July 2016[9]) and the *DAFF Environmental Impact Assessment Companion Guide*' (Department of Agriculture, Fisheries and Forestry, August 2014[10]).

Describe how the proposed project will avoid or minimise impacts on any land identified as Strategic Cropping Land on the Trigger Map for Strategic Cropping Land[11].

Include an analysis on the agricultural land uses undertaken in the proposed project area and compare/contrast this with the findings of the Agricultural Land Audit for the Central Queensland region. The analysis should:

- detail the likely impacts to existing agricultural land uses from within and adjacent to the proposed project area
- identify the constraints to the expansion of existing and potential agricultural land uses
- identify the geographic location(s) and production levels of each commodity produced by all agricultural enterprises, and its significance.

Show how land forms, during and after disturbance, will be stable over time and will meet any requirements of proposed project or property plans under the *Soil Conservation Act 1986*.

Detail any known or potential sources of contaminated land that could be impacted by the proposed project. Describe how any proposed land use may result in land becoming contaminated.

Identify existing or potential native title rights and interests possibly impacted by the proposed project and the potential for managing those impacts by an Indigenous Land Use Agreement or other measure in accordance with the *Native Title (Queensland) Act 1993* and consistent with the Queensland Government *Native Title Work Procedures*[13].

9.2.1 Rehabilitation

Conduct the impact assessment in accordance with the department's *EIS information guideline—Rehabilitation* or any subsequent versions, the department's *Rehabilitation requirements for mining resource activities*[14] and *Mined land rehabilitation policy*[15] or any subsequent versions.

The EIS should provide information based on relevant guidelines, current best practice approaches and legislative requirements about the strategies and methods for progressive and final rehabilitation of the environment disturbed by construction, operation, and decommissioning of the proposed project.

Develop a rehabilitation strategy, including but not limited to addressing pit backfilling, that demonstrates how the site will be rehabilitated progressively over time as operations progress for the life of the proposed project, including the timing for successfully achieving the rehabilitation goals for the agreed post-mining land use and final topography. The strategy should contain a contingency plan for rehabilitation maintenance or design and demonstrate how the amount of land disturbed at any one time, and the residual loss of land and water bodies with ecological or productive value will be minimised. The goals and timing of the progressive rehabilitation strategy are to be presented in a table listing each project disturbance domain separately, and describing in detail, for each domain, the defined success criteria with individual timeframes for achievement that will be met during the progressive rehabilitation of the proposed project site, and how completion requirements can be measured, for the life of the proposed project. The table containing the progressive rehabilitation strategy must contain an overview of mining disturbance and rehabilitation sequence for each domain. As part of the plan a description of how waste characterisation has influenced rehabilitation management practices in terms of the risks and management, must be provided. Include maps at a suitable scale showing the location of disturbance areas, relevant ERA infrastructure and associated disturbance areas and the sequence of mining and progressive rehabilitation.

Illustrate and describe the expected final topography of the site and proposed final land uses. Identify suitable and feasible post-mining land uses consistent with surrounding landscape(s), community views and the relevant

[8] https://planning.dsdmip.qld.gov.au/planning/regional-planning-interests-act

[9] http://www.dilgp.qld.gov.au/planning/regional-planning/rpi-act-forms-guidelines-and-fact-sheets.html

[10] https://publications.qld.gov.au/dataset/daff-environmental-impact-assessment-companion-guide/resource/7b1825c4-5e42-4cf8-aa2d-7fa55c2f5e4c

[11] https://www.business.qld.gov.au/running-business/support-assistance/mapping-data-imagery/maps/strategic-cropping-land

[13] https://www.dnrm.qld.gov.au/qld/atsi/native-title-work-procedures

[14] https://www.ehp.qld.gov.au/assets/documents/regulation/rs-gl-rehabilitation-requirements-mining.pdf

[15] https://www.ehp.qld.gov.au/management/pdf/mined-land-rehabilitation-policy.pdf

requirements of local and state governments. The proponent must identify enforceable milestones related to the progressive rehabilitation that would meet the identified suitable post-mining land use. Maps of the proposed final topography should have contours at suitable intervals, and show waste dumps, and any dams that would not be removed and rehabilitated. The maps should also illustrate where final landforms, mined areas and uncompacted overburden would lie in relation to flood levels up to and including the 'probable maximum flood level' based on the Bureau of Meteorology's 'probable maximum precipitation' forecast for the locality.

The rehabilitation strategy must consider indirect, off-site impacts, particularly hydrological changes and habitat connectivity. It must also consider how connectivity will be maintained between Taunton National Park (Scientific), Wallaby Lane Nature Refuge and Walton State Forest throughout the construction, operational and rehabilitation phases.

Should the Mineral and Energy Resources (Financial Provisioning) Bill 2018 be enacted, the proponent must meet all requirements of the legislation that apply to the proposed project.

Provide a detailed description of the topsoil resource on site and how topsoil storage will be quantitatively and qualitatively managed for the life of the proposed project to prevent topsoil loss from any disturbance areas and to ensure successful revegetation and rehabilitation. The description must include a progressive inventory of topsoil and detail how topsoil will be stripped, salvaged and stockpiled and used in progressive rehabilitation.

Describe rehabilitation completion criteria that would be used to measure progress and completion in relation to the final land uses and wildlife habitat areas. Describe how achievement of the rehabilitation objectives would be monitored, audited and reported, and how corrective actions would be managed.

Notwithstanding that management techniques may improve over the life of the proposed project, and legislative requirements may change, the EIS needs to give confidence that all potential high-impact elements of the proposed project (e.g. spoil dumps, tailings and water management dams, creek diversions or crossings, borrow pits) are capable of being managed and rehabilitated to achieve acceptable land suitability for the planned final land use, to be safe, stable, non-polluting and self-sustaining, and to prevent upstream and downstream surface and groundwater contamination.

9.3 Water

9.3.1 Water quality

Environmental objective and outcomes
The activity will be operated in a way that protects environmental values of waters.
The activity will be operated in a way that protects the environmental values of groundwater and any associated surface ecological systems.
The activity will be managed in a way that prevents or minimises adverse effects on wetlands

Impact assessment

Conduct the impact assessment in accordance with the department's *EIS information guideline—Water or any subsequent versions,* the department's *Water quality guidelines*[16]*,* the department's *Water monitoring and sampling manual*[17]*,* and the *Groundwater Quality Assessment guideline* (Department of Science, Information Technology and Innovation, March 2017*[18]*).

With reference to the Environmental Protection (Water) Policy 2009 and section 9 the EP Act, identify the environmental values of surface waters within the proposed project area and immediately downstream that may be affected by the proposed project, including any human uses and cultural values of water.

Define the relevant water quality objectives (WQOs) applicable to the environmental values, and demonstrate how these will be met by the proposed project during construction, operation, decommissioning and following project completion. Where WQOs are not available they should be derived from background data according to the methodologies outlined in the *Queensland Water Quality Guidelines 2009*[19].

Detail the chemical, physical and biological characteristics of surface waters and groundwater within the area that may be affected by the proposed project and at suitable reference locations using sufficient data to define natural variation, including seasonal variation.

[16] https://www.ehp.qld.gov.au/water/guidelines/

[17] https://www.ehp.qld.gov.au/water/monitoring/sampling-manual/#physical_and_chemical_assessment

[18] https://publications.qld.gov.au/dataset/58ae3b77-4953-4fb9-85e6-b8bb66c5ce70/resource/472cc88a-000a-4bb8-a60d-204cfe7e0238/download/groundwater-quality-assessment-guideline.pdf

[19] https://www.ehp.qld.gov.au/water/pdf/water-quality-guidelines.pdf

Describe the quantity, quality, location, duration and timing[20] of all potential and/or proposed releases of contaminants. Releases may include controlled water discharges to surface water streams, uncontrolled discharges when the design capacity of storages is exceeded, spills of products during loading or transportation, contaminated run-off from operational areas of the site (including seepage from waste rock dumps).

Assess the potential impact of any releases from point or diffuse sources on all relevant environmental values of the receiving environment. The assessment should consider the quality and hydrology of receiving waters and the assimilative capacity of the receiving environment. The assessment should demonstrate that any discharge to waters does not cause an unacceptable adverse effect on an environmental value.

Describe how water quality objectives would be achieved and environmental impacts would be avoided or minimised through the implementation of management strategies that comply with the management hierarchy and management intent of the Environmental Protection (Water) Policy 2009. Appropriate management strategies may include the use of erosion and sediment control practices, and the separation of clean storm water run-off from the run-off from disturbed and operational areas of the site.

Describe how monitoring would be used to demonstrate that objectives were being assessed, audited and met. For example, provide measureable criteria, standards and/or indicators that will be used to assess the condition of the ecological values and health of surface water environments. Propose corrective actions to be used if objectives are not likely to be met.

Include maps and cross sections (at an appropriate scale) of the predicted water table drawdown for all affected areas for the projected life of the proposed project (and thereafter). Assess and describe the resulting impacts on groundwater dependent ecosystems, existing and future users of the groundwater and other environmental values.

9.3.2 Water resources

Environmental objective and outcomes
With regard to water resources, the proposed project should meet the following objectives: • equitable, sustainable and efficient use of water resources • maintenance of environmental flows and water quality to support the long term condition and viability of terrestrial, riverine, wetland, lacustrine, estuarine, coastal and marine ecosystems • maintenance of the stability of beds and banks of watercourses, and the shores of waterbodies, estuaries and the coast • maintenance of supply to existing users of surface and groundwater resources.

Impact assessment

Conduct the impact assessment in accordance with the department's *EIS information guideline—Water* or any subsequent versions.

Describe present and potential users and uses of water in areas potentially affected by the proposed project, including municipal, agricultural[21], industrial, recreational and environmental uses of water.

Provide details of any proposed changes to, or use of, surface water or groundwater. Specifically address whether or not the proposed project would take water from, or affect recharge to, aquifers of the Great Artesian Basin. The impact assessment must address requirements of section 376 of the *Water Act 2000* (Content of underground water impact report). The assessment should identify any approval or allocation that would be needed under the *Water Act 2000.*

[20] Duration and timing are important aspects of the risk characteristics that affect the impacts of mine and CSG water releases; e.g. for how long will water be released in total and when will it occur with respect to existing 'natural' flows

[21] https://publications.qld.gov.au/dataset/daff-environmental-impact-assessment-companion-guide/resource/7b1825c4-5e42-4cf8-aa2d-7fa55c2f5e4c

Describe all aquifers that would be impacted by the proposed project, including the following information:

- nature of the aquifer/s
- geology/stratigraphy – such as alluvium, volcanic, metamorphic
- aquifer type – such as confined, unconfined
- depth to and thickness of the aquifers
- groundwater quality and volume
- current use of groundwater in the area
- survey of existing groundwater supply facilities (e.g. bores, wells, or excavations)
- information to be gathered for analysis to include:
    - location
    - pumping parameters
    - drawdown and recharge at normal pumping rates, and
    - seasonal variations (if records exist) of groundwater levels
- proposal to develop network of groundwater monitoring bores before and after the commencement of the proposed project that is suitable for the purposes of monitoring groundwater quality and hydrology impacts that may occur as a result of the mining activity and details on investigation timeframes and actions if exceedances are detected.

Consistent with the DNRME guideline on Quantifying the volume of associated water taken under a *mining lease* or *mineral development licence*[22], model and describe the inputs, movements, exchanges and outputs of surface water and groundwater that would or may be affected by the proposed project. The models should take into account the climatic conditions at the site, and assess the potential impacts on water resources. The models should include a site water balance.

Provide a description of the proposed project's impacts at a local scale, and in a regional context including:

- changes in flow regimes from diversions, water take and discharges
- groundwater draw-down and recharge
- management of mine affected water
- alterations to riparian vegetation and bank and channel morphology
- direct and indirect impacts arising from the proposed project.

All of the above information is to be provided in a mine water management plan, for the life of the proposed project, which details management strategies of mine-affected water, sediment-affected water and drainage from areas not disturbed by mining activities. Any water taken off site for further use must also be accounted for and must be consistent with the General Use Approval for associated water (including coal seam gas water)[23].

Include maps of suitable scale showing the location of diversions and other water-related infrastructure in relation to mining/gas infrastructure. Detail any significant diversion or interception of overland flow.

Describe the options for supplying water to the proposed project and assess any potential consequential impacts in relation to the objectives of any water plan and resource operations plan that may apply.

Describe how 'make good' provisions would apply to any water users that may be adversely affected by the proposed project.

Describe the proposed supply of potable water for the proposed project, including temporary demands during the construction period. Also describe on-site storage and treatment requirements for waste water from accommodation and/or offices and workshops.

Describe the practices and procedures that would be used to avoid or minimise impacts on water resources.

Describe watercourse diversion design, operation and monitoring based on current engineering practice and the Department of Natural Resource Mines' Guideline *Works that interfere with water in a watercourse—watercourse diversions* [24].

[22] https://www.dnrm.qld.gov.au/__data/assets/pdf_file/0004/1256458/guideline-quantifying-volume.pdf
[23] https://www.ehp.qld.gov.au/assets/documents/regulation/wr-ga-associated-water.pdf
[24] https://www.dnrm.qld.gov.au/_data/assets/pdf_file/0015/212424/guideline-watercourse-diversions.pdf

9.3.2.1 The Independent Expert Scientific Committee (IESC)

The EIS must include a specific section responding to the information requirements contained in the IESC's *Information guidelines for proposals relating to the development of coal seam gas and large coal mines where there is a significant impact on water resources* (Commonwealth of Australia, 2015[25]).

9.3.3 Flooding

Environmental objective and outcomes
The construction and operation of the proposed project should aim to ensure that the risk and potential adverse impacts from flooding are avoided, minimised or mitigated to protect people, property and the environment.

Impact assessment

Describe current flood risk for a range of annual exceedance probabilities up to the probable maximum flood for the proposed project site. Use flood modelling to assess how the proposed project may potentially change flooding and run-off characteristics on-site and both upstream and downstream of the site. The assessment should consider all infrastructure associated with the proposed project including levees, roads, and linear infrastructure, and all proposed measures to avoid or minimise impacts.

Evidence should be provided to demonstrate that the securing of storage containers of hazardous contaminants during flood events meets the requirements of schedule 5, table 2 of the EP Regulation.

Describe and illustrate where any final landforms, including waste rock dumps, would lie in relation to the extent of the probable maximum flood level.

Assess the proposed project's vulnerabilities to climate change (e.g. changing patterns of rainfall, hydrology, temperature and extreme weather events). Describe possible adaptation strategies (preferred and alternative) based on climate change projections for the proposed project site.

9.4 Regulated structures

Environmental objective and outcomes
The design of the facility permits the operation of the site, at which the activity is to be carried out, in accordance with best practice environmental management. The potential consequences of the failure of a regulated structure on human life and the environment require that the highest standards are used for their design, construction, operation, modification and decommissioning. The industry, government and the Australian National Committee on Large Dams Inc. have published several guidelines, which should be used to further develop objectives and outcomes for individual projects and the regulated structures they involve.

Impact assessment

Conduct the impact assessments on regulated structures in accordance with the department's *EIS information guideline—Regulated structures* or any subsequent versions, the department's Guideline on *Structures which are dams or levees constructed as part of environmentally relevant activities*[26], and the department's *Manual for assessing consequence categories and hydraulic performance of structures*[27].

Describe the purpose of all dams or levees proposed on the proposed project site. Show their locations on appropriately scaled maps, and provide plans and cross-sections, illustrating such features as embankment heights, spillways, discharge points, design storage allowances, and maximum volumes. Describe how storage structures and other infrastructure would be sited to avoid or minimise risks from flooding.

Where proposed project infrastructure comprises dams or other structures for storing potentially hazardous materials, undertake a consequence category assessment for each dam or levee, according to the criteria outlined in the department's *Manual for assessing consequence categories and hydraulic performance of structures*. The assessment must be undertaken for the three different failure event scenarios described in the department's manual, i.e. for seepage, overtopping and dam break. Regulated structures must comply with the *Manual for assessing consequence categories and hydraulic performance of structures* in accordance with schedule 5, table 2 of the EP Regulation.

[25] http://www.iesc.environment.gov.au/publications

[26] http://www.ehp.qld.gov.au/assets/documents/regulation/era-gl-structures-dams-levees-eras.pdf

[27] http://www.ehp.qld.gov.au/assets/documents/regulation/era-mn-assessing-consequence-hydraulic-performance.pdf

Following the consequence category assessment, determine the consequence category ('low, significant, or high') according to table 1 of the department's *Manual for assessing hazard categories and hydraulic performance of structures* and provide certified copies of the consequence category determination for each of the proposed dams or levees assessed.

Describe how risks associated with dam or storage failure, seepage through the floor, embankments of the dams, and/or with overtopping of the structures will be avoided, minimised or mitigated to protect people, property and the environment.

9.5 Flora and fauna

Environmental objective and outcomes
The activity will be operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna.
There will be no potential or actual adverse effect on a wetland as part of carrying out the activity.
The proposed project minimises serious environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places.
The location for the activity on a site protects all environmental values relevant to adjacent sensitive use.
The proposed project manages the impacts on the environment by seeking to achieve ecological sustainability, including, but not limited to, protected wildlife and habitat.
Critical habitat receives special management considerations and protection through a management plan for the proposed project.
The proposed project avoids significant residual impacts to matters of national environmental significance (MNES) and matters of state environmental significance (MSES), mitigates impacts where they cannot be avoided, and offsets any residual impacts.
The construction, operation and decommissioning of the proposed project must be consistent with all statutory and regulatory requirements of the federal, state and local government and be consistent with their relevant plans, strategies, policies and guidelines that relate to the terrestrial and aquatic ecological environment.

Impact assessment

Describe the potential direct and indirect impacts on the biodiversity and natural environmental values of affected areas impacted by the construction, operation and decommissioning of the proposed project. Take into account any proposed avoidance and/or mitigation measures. The EIS should provide information based on relevant guidelines, including but not limited to the department's *EIS information guidelines* (or any subsequent versions) that cover *flora and fauna, aquatic ecology, groundwater dependent ecosystems, water, matters of national environmental significance,* and *biosecurity*. The assessment should include, but not be limited to, the following key elements:

- identification of all significant species and ecological communities, including MSES and MNES, listed flora and fauna species, and regional ecosystems, on the proposed project's site and in its vicinity
- terrestrial and aquatic ecosystems (including groundwater dependent ecosystems and subterranean fauna e.g. stygofauna) and their interactions. Stygofauna assessment guidance is available through the former Department of Science, Information Technology, Innovation and the Arts *Guideline for the Environmental Assessment of Subterranean Aquatic Fauna*[28]
- biological diversity
- the integrity of ecological processes, including habitats of listed threatened, near threatened or special least-concern species
-
- connectivity of habitats and ecosystems of all protected and other habitat areas occurring on the proposed project site and immediate surrounds, including Walton State Forest, Wallaby Lane Nature Refuge and Taunton National Park (Scientific)
- the integrity of landscapes and places, including wilderness and similar natural places, including the Taunton National Park (Scientific), the Walton State Forest, the Wallaby Lane Nature Refuge and similar natural places

[28] https://publications.qld.gov.au/dataset/subterranean-aquatic-fauna

- chronic, low-level exposure to contaminants or the bio-accumulation of contaminants
- direct and indirect impacts on terrestrial and aquatic species and ecosystems whether due to: vegetation clearing; hydrological changes; watercourse diversions; changes in landforms and land use, discharges of contaminants to water, air or land; waste management noise; and vibration.
- impacts of waterway barriers on fish passage in all waterways mapped on the Queensland Waterways for Waterway Barrier Works spatial data layer.

The EIS must demonstrate that the proposed project will not place additional threatening pressures on identified biodiversity values, particularly the bridled nail-tailed wallaby. The EIS must demonstrate how lags or extinction debt on biodiversity values and habitat will be avoided. The EIS must describe how the populations and habitat of the bridled nail-tailed wallaby would not lose genetic diversity or ecosystem function.

Describe any actions of the proposed project 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*, the *Regional Planning Interests Act 2014,* the *Fisheries Act 1994* and the *Planning Act 2016*[29]. Features to consider include regional ecosystems, wildlife, environmentally sensitive areas, wetlands, nature refuges, protected areas and strategic environmental areas. Propose practical measures to avoid, minimise, mitigate and/or offset direct or indirect impacts on ecological environmental values.

Assess how the nominated quantitative indicators and standards may be achieved for nature conservation management. In particular, address measures to protect or preserve any listed threatened, near-threatened or special least concern species.

Propose measures that would avoid the need for waterway barriers, or propose measures to mitigate the impacts of their construction and operation.

Assess the need for buffer zones and the retention, rehabilitation or planting of movement corridors. The assessment should take account of the role of buffer zones in maintaining and enhancing riparian vegetation to enhance water quality and habitat connectivity.

Propose rehabilitation success criteria, in relation to natural values, that would be used to measure the progressive rehabilitation of disturbed areas. Describe how the achievement of the objectives would be monitored and audited, and how corrective actions would be managed. Proposals for the rehabilitation of disturbed areas should incorporate suitable habitat for listed and other species known to occur on or near the project site.

9.5.1 Offsets

For any significant residual impact, propose offsets that are consistent with the following requirements as set out in applicable State and Commonwealth legislation or policies:

- Where a significant residual impact will occur on a prescribed environmental matter as outlined in the Environmental Offsets Regulation 2014, the offset proposal(s) must be consistent with the requirements of Queensland's *Environmental Offsets Act 2014* and the latest version of the Queensland Environmental Offsets Policy[30]
- Where Commonwealth offset policy requires an offset for residual impacts on a MNES, the offset proposal(s) must be consistent with the requirements of the EPBC Act Environmental Offsets Policy (October 2012), the *Offsets Assessment Guide* and relevant guidelines[31].

[29] This is notwithstanding that the *Vegetation Management Act 1999* does not apply to mining projects. Refer also to https://www.qld.gov.au/environment/land/vegetation/clearing/

[30] https://www.qld.gov.au/environment/pollution/management/offsets/

[31] http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy

9.5.2 Biosecurity

Environmental objective and outcomes
The construction, operation and decommissioning of the proposed project should ensure: • the introduction and spread of weeds, pests and disease, pathogens and contaminants are avoided or minimised • existing weeds and pests, are controlled, including biosecurity threats and their management • the performance outcomes correspond to the relevant policies, legislation and guidelines, and that sufficient evidence is supplied (through studies and proposed management measures) to show these outcomes can be achieved.

Impact assessment

Conduct the impact assessment in accordance with the department's *EIS information guideline—Biosecurit*y or any subsequent versions.

Propose detailed measures to remove, control and limit the spread of pests, weeds disease, pathogens and contaminants on the proposed project site and any areas under the proponent's control, particularly declared plants and animals under Queensland's *Biosecurity Act 2014*, the Commonwealth *Biosecurity Act 2015* and weeds of national significance (WONS). Weed and pest animal management measures should be aligned with the Central Highlands Regional Council pest management priorities.

Detail a monitoring program that would audit the success of biosecurity measures, identify whether objectives have been met, and describe corrective actions to be used if monitoring indicates objectives are not being met.

9.6 Air

Environmental objective and outcomes
The activity will be operated in a way that protects the environmental values of air.

Impact assessment

Describe the existing air environment at the proposed project site and the surrounding region.

Provide an emissions inventory and description of the characteristics of contaminants or materials that would be released from point and diffuse sources and fugitive emissions when carrying out the activity (point source and fugitive emissions). The description should address the construction, commissioning, operation, upset conditions, and closure of the proposed project.

Predict the impacts of the releases from the activity on environmental values of the receiving environment using established and accepted methods and in accordance with the EP Regulation, *Environmental Protection (Air) Policy 2008 (EPP (Air)*), and the department's *EIS information guideline—Air* or any subsequent versions. The description of impacts should take into consideration the sensitivity and assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts. The impact prediction must address the cumulative impact of any release with other known releases of contaminants, materials or wastes associated with existing development and possible future development (as described by approved plans and existing project approvals). It should also quantify the human health risk and amenity impacts associated with emissions from the proposed project for all contaminants whether or not they are covered by the *National Environmental Protection (Ambient Air Quality) Measure* or the *EPP (Air)* or not.

Describe the proposed mitigation measures to limit impacts from air emissions and how the proposed activity will be consistent with best practice environmental management. The EIS must address the compatibility of the proposed project's air emissions with existing or potential land uses in surrounding areas. Potential land uses might be gauged from, but not limited to, the zonings of local planning schemes or State Development Areas.

Describe how the proposed project's air emission objectives would be achieved, monitored, audited and reported, and how corrective actions would be managed for the life of the proposed project.

Proponents are responsible for determining if they have obligations under the Commonwealth *National Greenhouse and Energy Reporting Act 2007* (NGER Act) and ensuring that information regarding greenhouse gas

emissions and energy production and consumption provided in the EIS is consistent with requirements of the NGER Act and its subordinate legislation[32].

Provide an inventory of projected annual emissions for each relevant greenhouse gas, with total emissions expressed in 'CO2 equivalent' terms. Estimate emissions from upstream activities associated with the proposed project, including the fossil fuel based electricity to be used during construction, operation and decommissioning and briefly describe the methods used to make the estimates. The *National Greenhouse and Energy Reporting (Measurement) Determination 2008* provides methods and criteria for calculating greenhouse gas emissions and energy data under the NGER Act which can be used in combination with NGER technical guidelines[33] as a reference source for emission estimate methods and supplemented with information from other sources where practicable and appropriate.

The proposed project must include estimates of coal seam methane to be released as well as emissions resulting from such activities as transportation of products and consumables, and energy use at the proposed project site.

Assess the potential impacts of operations within the proposed project area on the state and national greenhouse gas inventories and propose greenhouse gas abatement measures, including:

- a description of the proposed preferred and alternative measures to avoid and/or minimise greenhouse gas emissions directly resulting from activities of the proposed project, including such activities as transportation of products and consumables, and energy use by the proposed project
- an assessment of how the preferred measures minimise emissions and achieve energy efficiency
- a comparison of the preferred measures for emission controls and energy consumption with best practice environmental management in the relevant sector of industry
- a description of any opportunities for further offsetting of greenhouse gas emissions through indirect means.

9.7 Noise and vibration

Environmental objective and outcomes
The activity will be operated in a way that protects the environmental values of the acoustic environment.

Impact assessment

Describe and illustrate the locations of any sensitive receptors that are listed in Schedule 1 of the *Environmental Protection (Noise) Policy 2008*. Also describe any other environmental values that could be impacted by emissions from the proposed project.

Fully describe the sources and characteristics of noise and vibration that would be emitted during the construction, commissioning, operation, upset conditions, and closure of the proposed project. Conduct a noise and vibration impact assessment in accordance with the department's *EIS information guideline—Noise and vibration* or any subsequent versions. The assessment must address low-frequency (<200 Hz) noise emissions and potential cumulative impact of the proposed project with other emissions of noise from any existing developments and known possible future development in the area.

Describe how the proposed activity would be managed to be consistent with best practice environmental management. The EIS must address the compatibility of the proposed project's noise emissions with existing or potential land uses in surrounding areas including impacts on wildlife habitats on or adjacent to the proposed project area. Potential land uses might be gauged from, but not limited to, the zonings of local planning schemes or State Development Areas.

Describe how the environmental management objectives for noise and vibrations would be achieved, monitored, audited and reported, and how corrective actions would be managed.

[32] http://www.cleanenergyregulator.gov.au/NGER

[33] http://www.environment.gov.au/climate-change/greenhouse-gas-measurement/nger/technical-guidelines

9.8 Waste management

Environmental objective and outcomes
Any waste generated, transported, or received as part of carrying out the activity is managed in a way that protects all environmental values.

Impact assessment

Conduct the impact assessment in accordance with the department's *EIS information guidelines—Waste management* or any subsequent versions.

Describe all the expected waste streams from the proposed project activities during the construction, operational, rehabilitation and decommissioning phases of the proposed project. Waste streams for resource projects would typically include: waste rock, tailings and coarse rejects from mining and mineral processing; and brackish, saline or mine affected water from all types of resource projects.

Detail the geochemistry of all waste rock, including spoil, tailings and rejects, assess the potential risks associated with this waste stream and describe the management of progressive placement and any disposal strategy to minimise any potential impacts on environmental values of the proposed project area. Detail how high risk waste material will be managed in the rehabilitation strategy.

Describe the quantity, and physical and chemical characteristics of each significant waste, any attributes that may affect its dispersal in the environment, and its associated risk of causing environmental harm.

Define and describe objectives and practical measures for protecting or enhancing environmental values from impacts from wastes.

Assess and describe the proposed management measures against the preferred waste management hierarchy, namely: avoid and reduce waste generation; cleaner production; reduce; recycle; reuse; reprocess and reclaim; waste to energy; treatment; disposal. This includes the generation and storage of waste.

Describe how nominated quantitative standards and indicators may be achieved for waste management, and how the achievement of the objectives would be monitored, audited and managed.

Detail waste management planning for the proposed project, in particular how measures have been applied to prevent or minimise environmental impacts due to waste at each stage of the proposed project.

Use a material/energy flow analysis to provide details of natural resource use efficiency (such as energy and water), integrated processing design, and any co-generation of power and by-product reuse.

Identify the quantity, quality and location of all potential discharges of water and contaminants by the proposed project, including treated wastewater and sewage. Describe whether the discharges would be from point sources (whether uncontrolled or controlled discharges) or diffuse sources (such as irrigation to land of treated wastewater/sewage effluent) and describe the receiving environment (such as land or surface waters) including environmental values. The information provided must include details on the sewage treatment plant daily peak design capacity, effluent disposal/reuse method and wet weather storage location and size. For effluent irrigation modelling provide evidence on how these values were arrived at (such as via the use of software such as "Model for Effluent Disposal using Land Irrigation" ("MEDLI")).

Provide a risk assessment of the potential impacts on surface waters, in the near-field or far-field, resulting from controlled or uncontrolled discharges from the site. The EIS should address the following matters with regard to every potential discharge of contaminated water:

- describe the circumstances in which controlled and uncontrolled discharges might occur
- provide stream flow data and information on discharge water quality, including any potential variation in discharge water quality that will be used in combination with proposed discharge rates to estimate in-stream dilution and water quality. Chemical and physical properties of any waste water, including concentrations of constituents, at the point of entering natural surface waters should be discussed along with toxicity of effluent constituents to human health, flora and fauna
- provide an assessment of the available assimilative capacity of the receiving waters given existing water quality and other potential point source discharges in the catchment. Options for controlled discharge at times of natural stream flow should be investigated to ensure that adequate flushing of waste water is achieved
- provide water quality limits that are appropriate to maintain background water quality and protect other water uses
- describe the necessary streamflow conditions in receiving waters under which controlled discharges will be allowed.

Provide relevant information on existing and proposed sewage infrastructure relevant to environmentally relevant activity (ERA) 63, by referring to relevant departmental policies and guidelines[34], depending on the proposed sewage collection and treatment infrastructure proposed the reuse and/or disposal of treated wastewater and sewage wastes generated.

Identify beneficial use options under the *Waste Reduction and Recycling Act 2011* as per the relevant guidelines. The uses might include aquaculture, coal washing, dust suppression, construction, landscaping and revegetation, industrial and manufacturing operations, research and development and domestic stock, stock intensive and incidental land management. Additional beneficial use guidelines are available on the department's website[35].

9.9 Hazards and safety

Environmental objective and outcomes
The construction and operation of the proposed project should ensure: • the risk of, and the adverse impacts from, natural and man-made hazards are avoided, minimised or mitigated to protect people and property • the community's resilience to natural hazards is maintained or enhanced • development involving the storage and handling of hazardous materials are appropriately located, designed and constructed to minimise health and safety risks to communities and individuals and adverse effects on the environment • the proposed project prevents or minimises the production of hazardous contaminants and waste • if the production of hazardous contaminants and waste is unavoidable, the proposed project treats and/or contains hazardous contaminants until their disposal at an approved facility.

Impact assessment

Describe the potential risks to people and property that may be associated with the proposed project in the form of a risk assessment for all components of the proposed project and in accordance with relevant standards. The assessment should address, but not be limited to, the following matters:

- potential hazards, accidents, spillages, fire and abnormal events that may occur during all stages of the proposed project, including estimated probabilities of occurrence
- hazard analysis and risk assessment in accordance with *AS/NZS ISO 31000:2009 Risk management—principles and guidelines* and with *HB203:2006 Environmental risk management principles and processes*
- demonstrate that any major hazard facility involving dangerous and hazardous materials is appropriately located in accordance with *Planning Act 2016*, State Development Assessment Provisions, State code 21
- identify all hazardous substances and any explosives to be used, transported, stored, processed or produced and the rate of usage; evaluate the risks associated with the secure storage, use and transportation of explosives to ensure the risks are within an acceptable standard in accordance with *Australian Standard AS2187.1*[36]
- any poisons, particularly schedule 7 poisons, to be obtained, stored or used on the proposed project site
- potential wildlife hazards, including a development of a mosquito management plan in accordance with Queensland Health guidelines[37], natural events (e.g. cyclone, storm tide inundation, flooding, bushfire) and implications related to climate change and adaptation
- wildfire mitigation measures in place to prevent wildfire occurring and impacting on fire sensitive vegetation and causing habitat destruction on the project area or adjoining areas.

[34] E.g. https://www.ehp.qld.gov.au/licences-permits/guidelines.html

[355] https://www.ehp.qld.gov.au/waste/end-of-waste-framework.html#end_of_waste_approvals

[36] *Australian Standard AS 2187*, Explosives-storage transport and use

[37] E.g. Queensland Health – *Guidelines to minimise mosquito and biting midge problems in new developments*, available from http://www.health.qld.gov.au/ph/documents/cdb/14804.pdf

- describe natural hazards that may affect the site with at least a 1% annual exceedance probability (AEP) or 100 year average reoccurrence interval (ARI) level, including mapping of the potential hazard areas at the site
- how siting, layout and operation of the development will avoid or mitigate the risks, particularly with regard to the release of hazardous materials during natural hazard events.

Provide details on the safeguards that would reduce the likelihood and severity of hazards, consequences and risks to persons, within and adjacent to the proposed project area(s). Identify the residual risk following application of proposed mitigation measures. Present an assessment of the overall acceptability of the impacts of the proposed project in light of the residual uncertainties and risk profile.

Provide an outline of the proposed integrated emergency management planning procedures, including evacuation plans, if required, for the range of situations identified in the risk assessment developed in this section.

Outline any consultation undertaken with the relevant emergency management authorities, including the Local Disaster Management Group.

9.10 Cultural heritage

Environmental objective and outcomes
The construction and operation of the proposed project should achieve the purposes of the *Aboriginal Cultural Heritage Act 2003* with respect to the proposed project site, and ensure that the nature and scale of the proposed project does not compromise the cultural heritage significance of a heritage place or heritage area.

Impact assessment

Conduct the impact assessment in accordance with the department's *EIS information guideline—Indigenous cultural heritage* and any subsequent versions and the department's *EIS information guideline—non-Indigenous cultural heritage* or any subsequent versions.

Unless section 86 of the *Aboriginal Cultural Heritage Act 2003* applies, the proponent must develop a Cultural Heritage Management Plan in accordance with the requirements of Part 7 of the *Aboriginal Cultural Heritage Act 2003*.

For non-Indigenous historical heritage, undertake a study of, and describe, the known and potential historical cultural and landscape heritage values of the area potentially affected by the proposed project. Any such study should be conducted by an appropriately qualified cultural heritage practitioner. Provide strategies to mitigate and manage any negative impacts of the proposed project on non-Indigenous cultural heritage values and enhance any positive impacts.

9.11 Social

Environmental objective and outcomes
The construction and operation of the proposed project should aim to: • avoid or mitigate adverse social and economic impacts arising from the proposed project • capitalise on opportunities potentially available to affected communities.

Impact assessment

Prepare a social impact assessment (SIA) for the proposed project that is consistent with the *Strong and Sustainable Resource Communities Act 2017*. The SIA must be prepared in accordance with and contain the matters stated in the Coordinator- General's SIA guideline[38] (March 2018) or any subsequent versions and/or any other guidelines in place at the time of delivery of the SIA. The SIA must be developed in consultation with the Coordinated Project Delivery Division in the Office of the Coordinator-General (OCG), Department of State Development, Manufacturing, Infrastructure and Planning, and describe the likely social impacts (positive and negative) on affected communities[39].

[38] https://www.statedevelopment.qld.gov.au/resources/cg/social-impact-assessment-guideline

[39] Contact the Coordinated Project Delivery Division on cpdinfo@coordinatorgeneral.qld.gov.au

The EIS must also meet all requirements of the *Strong and Sustainable Resource Communities Act 2017* and subordinate legislation that apply to the proposed project. The objective of this Act is to ensure regional communities in the vicinity of large resource projects benefit from the operation of those proposed projects. The Act also limits the use of fly in fly out workforces, particularly during the operational phase of a proposed project and seeks to ensure that local workers from regional communities in the vicinity of large resource projects are employed in the operation of these proposed projects.

The SIA should identify opportunities to capture the social and economic benefits of the proposed project, including but not limited to:

- a profile of key stakeholders
- a social baseline study of potentially impacted communities within the SIA study area
- an overview of state government legislation and policies and priorities which complement the mitigation measures for the project's social impacts
- an explanation of sources used to gather information and analysis methods used. Discuss rationale for both primary and secondary data
- a description of how the potentially impacted communities and affected stakeholders/other interested parties were engaged and consulted with during the development of the SIA
- identification of potential social impacts and their likely significance, including duration
- the proponent's proposed enhancement and mitigation/management measures
- details of the proponent's proposed monitoring and reporting framework.

Define the proposed project's SIA study area (including the local, district, regional and state level as relevant), taking into account the:

- potential for social impacts to occur
- location of other relevant projects (existing or proposed)
- location and types of physical and social infrastructure, settlements and land-use patterns
- social values that might be affected by the proposed project including integrity of social conditions, liveability, social harmony and wellbeing and sense of community
- Indigenous social and cultural characteristics, such as native title rights and interests, and cultural heritage.

Undertake a targeted baseline study of the people residing within the proposed project's SIA study area. This will provide a benchmark against which to identify the proposed project's social issues, potential negative and positive social impacts, and the mitigation/management plans to address these impacts. The social baseline study should be based on qualitative, quantitative and participatory methods. It should be supplemented by community engagement processes and primary data collection, and should reference relevant data contained in local and state government publications, reports, plans, guidelines and documentation, including regional and community plans.

In the baseline study, assessment of potential social impacts and development of appropriate mitigation measures and management plans should be informed by an inclusive and collaborative community and stakeholder engagement process. The engagement should commence at an early stage of the EIS process, and should include consultation with a broad range of stakeholder groups including affected landholders, local residents, community groups, Traditional Owner/Aboriginal and Torres Strait Islander representatives, state and local government agencies, and non-government organisations.

The community and stakeholder engagement process should be adequately described and documented in the EIS. This should include details such as stakeholders consulted and how and when they were consulted, principles and processes adopted, overview of the consultation program and key events, stakeholder feedback and issues raised (including the means by which these have been or will be addressed), and details of any negotiations or agreements required for impact mitigation and management.

Description of potential impacts and proposed mitigation measures must include:

- the type, level and significance of the proposed project's social impacts (both negative and positive), based on the outcomes of the community engagement, social baseline study and impact analysis processes. This should include sufficient data to enable affected local and state authorities to make informed decisions about the proposed project's effects. The potential social impacts will be identified by considering the potential changes to key aspects included in the social baseline study.

- an assessment of the potential scope and significance of impacts at the local and regional level, considering factors such as population and demographic changes, workforce, lifestyles and amenity, community values, housing, local and regional planning outcomes, social infrastructure, and the health and social/cultural wellbeing of families and communities. The wellbeing of employees, including particular mental health considerations, should be addressed in the assessment for each phase of the proposed project.
- The impact assessment should describe:
    - the impacts identified by the SIA process
    - impacted stakeholders
    - impacts, mitigation and management measures timing/timeframes
    - description of the mitigation and management measures
    - defined outcomes, and the performance indicators and targets to achieve the outcomes
    - monitoring and reporting framework
    - residual impacts (after mitigation/management) and how these will be addressed.
- Forecast employment and population should be reviewed within the context of the ongoing automation in the mining sector. Such automation may restrict employment (while potentially offering opportunities elsewhere).
- An evaluation and discussion on the potential cumulative social impacts resulting from the proposed project in combination with other existing or proposed projects in advanced planning stages within the SIA study area. Key issues assessed should include:
    - population
    - workforce (construction and operation)
    - workforce accommodation
    - local and regional housing markets
    - use of and access to community infrastructure, services and facilities (including social and health servicesand facilities)
    - any existing legacy issue(s) or cumulative impact(s) which is/are not attributed to the present project proposal or advanced planned projects.
- The following management plans are to be provided as part of the SIA:
    - community and stakeholder engagement
    - workforce management
    - housing and accommodation
    - local business and industry content (considering *Regional Jobs and Investment Packages Bowen Basin Region Local Investment Plan*[40])
    - health and community wellbeing.

[40] file:///C:/Users/ptett/Downloads/Regional%20Jobs%20and%20Investment%20Packages%20Local%20Investment%20Plan%20Bowen%20Basin%20Region%20PDF.pdf

9.12 Economic

Environmental objective and outcomes
The construction and operation of the proposed project should aim to: • avoid or mitigate adverse economic impacts arising from the proposed project • capitalise on opportunities potentially available for capable local industries and communities • create a net economic benefit to the region and state.

Impact assessment

Identify the potential adverse and beneficial economic impacts of the proposed project on the local and regional area and the state. Estimate the costs and benefits and economic impacts of the proposal using both regional impact analysis and cost–benefit analysis. Undertake the analysis in accordance with the Coordinator-General's *Economic impact assessment guideline*[41]. Separately address each major stage of the proposed project (e.g. construction, operation, decommissioning). Assessment must consider cumulative impacts on land use and water sources, and how they may lead to substantial changes in economic benefit.

Consistent with Queensland Treasury's 'Project Assessment Framework' [42], details of the relevant cost and benefits of alternative options to the proposed action should consider, but not be limited to:

- appropriate self-contained quantitative and qualitative analyses of financial, economic and social risks and impacts, along with any other identified risks/impacts associated with the proposed project
- whether the analysis concentrates only on incremental costs and benefits, or assesses total costs and benefits
- mitigation strategies that seek a balance between the potential cost of the risk occurring and the cost incurred in preventing it or preparing for it
- the current and future cash flows of costs and revenues that are expected to be encountered as a direct result of the proposed project.

Forecast employment and population should be reviewed within the context of the ongoing automation in the mining sector. Such automation may restrict employment (while potentially offering opportunities elsewhere).

The environmental, social and economic costs of each alternative (i.e. to determine their feasibility) should be included as part of the cost-benefit analysis. Provide an analysis of the economic cost to agricultural activities on land identified for MNES mitigation – include any impacts to supply chains.

[41] http://www.coordinatorgeneral.qld.gov.au/resources/guideline/cg/economic-impact-assessment-guideline.pdf

[42] https://s3.treasury.qld.gov.au/files/paf-cost-benefit-analysis.pdf

9.13 Transport

Environmental objective and outcomes
The construction and operation of the proposed project should aim to: • maintain the safety and efficiency of all affected transport modes for the proposed project workforce and other transport system users • avoid and mitigate impacts including those on the condition of transport infrastructure • ensure any required works are compatible with existing infrastructure and future transport corridors.

Impact assessment

The EIS should include a clear summary of the total transport task for the proposed project, including workforce, inputs and outputs, during the construction, operational and decommissioning phases of the proposed project. Proponents should make appropriate choices for modes of transport to ensure efficiency and minimise impacts on the community.

Undertake the impact assessment in accordance with the department's *EIS information guideline—Transport* or any subsequent versions. The methods used should include the following matters:

- for impacts on roads: a traffic impact assessment report in accordance with the *Guide to Traffic Impact Assessment* (Department of Transport and Main Roads, 2017[43]), with traffic data in DTMR-suitable formats
- for impacts on rail level crossings: the *Australian Level Crossing Assessment Model* (ALCAM)[44]
- for impacts on maritime operations: the *Maritime Safety Queensland guidelines for major development proposals* (Department of Transport and Main Roads, April 2015[45]).

Present the transport assessment for each proposed project-affected mode (road, rail, air and sea) as appropriate for each phase of the proposed project. Provide sufficient information to allow an independent assessment of how existing transport infrastructure will be affected by proposed project transport at the local and regional level (e.g. local roads and state-controlled roads).

Discuss how identified impacts will be mitigated for each transport mode. Mitigation strategies may include works, contributions or other strategies that can be documented in a *Road-use Management Plan*[46]. The strategies should be prepared in close consultation with relevant transport authorities, including local government. Strategies should consider the transport authorities' works programs and forward planning, and be in accordance with the relevant methodologies, guidelines and design manuals.

[43] https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Guide-to-Traffic-Impact-Assessment

[44] http://alcam.com.au/

[45] http://www.msq.qld.gov.au/Waterways/Major-development-proposals.aspx

[46] Contact the Department of Transport and Main Road on MDP@tmr.qld.gov.au

9.14 Matters of National Environmental Significance under the EPBC Act

Content of the EIS for matters of national environmental significance

The proposed project was referred on 6 November 2017 to the Australian Government Department of the Environment and Energy (DoEE) (EPBC 2017/8077). On 24 November 2017, the DoEE determined the proposed project to be a controlled action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The controlling provisions are:

- sections 18 and 18A (listed threatened species and communities)
- sections 24D and 24E (a water resource, in relation to coal seam gas development and large coal mining development).

Based on the information available in the referral, the proposed action is likely to have a significant impact on the following matters of national environmental significance, but not limited to:

- bridled nail-tail wallaby (*Onychogalea fraenata*) - Endangered
- koala (*Phascolarctos cinereus*) (combined populations of Queensland, New South Wales and the Australian Capital Territory) – Vulnerable
- squatter pigeon (*Geophaps scripta scripta*) – Vulnerable
- ornamental snake (*Denisonia maculata*) – Vulnerable
- brigalow regional ecosystem - Endangered
- weeping myall woodlands – Endangered.

The EIS for the proposed project will be jointly assessed under the EP Act and the Commonwealth's EPBC Act using the EIS process under the EP Act in accordance with the assessment Bilateral Agreement between the Australian Government and the State of Queensland (section 45 of the EPBC Act).

The EIS must state the controlling provisions for the proposed project and describe the particular aspects of the environment leading to the controlled action declaration under the EPBC Act. The EIS must address relevant impacts on the controlling provisions and all matters relating to them and provide enough information about the proposed project and its impacts to allow the Australian Government Environment Minister to make an informed decision on whether to approve the proposed project under the EPBC Act.

The assessment of the potential impacts, mitigation measures and any offsets for residual significant impacts must be dealt with in a stand-alone section of the EIS that fully addresses the matters relevant to the controlling provisions. Requirements for MNES are set out in this section and the information provided on these matters must be consistent with the relevant aspects of other sections in the EIS, for example Section 9.5 Flora and fauna. Terminology used in the discussion of MNES must be consistent with the EPBC Act and relevant Commonwealth information sources.

As the controlling provisions include water resources for a coal seam gas development or large coal mine (sections 24D and 24E), the proposed project will be referred to the Independent Expert Scientific Committee on Coal Seam Gas and Large Coal Mining Development (IESC) for consideration. The IESC provides scientific advice to decision makers on potential impacts from coal seam gas and large coal mining developments on Australia's water resources. All advice is published on the IESC's website and will need to be addressed in the EIS to allow the Australian Government Environment Minister to make an informed decision on whether to approve the proposed project under the EPBC Act.

The EIS must also address the matters prescribed in section 6 and in Schedule 1 of the EP Regulation.

General content

The following Terms of Reference (TOR) should be addressed by the proponent in a stand-alone section that primarily focuses on the MNES listed above. This section (henceforth called the 'MNES section') should contain sufficient information to be read alone with reference to technical data or supplementary reports where appropriate. Any detailed technical information to support the text in the MNES section should be included as appendices to the EIS.

If it is necessary to make use of material that is considered by the proponent to be of a confidential nature, the proponent should consult with the DoEE on the preferred presentation of that material, before submitting it for approval for publication.

The MNES section should take into consideration the EPBC Act Significant Impact Guidelines that can be downloaded from the following web site: https://www.environment.gov.au/epbc/policy-statements.

The proponent should ensure that the MNES section assesses compliance of the action with the principles of Ecologically Sustainable Development as set out in the EPBC Act, and the objects of the Act (Attachment 1). A copy of Schedule 4 of the EPBC Regulations, which outlines the matters to be addressed by draft public environment report and environmental impact statement (Attachment 2).

Style

The MNES section should be written so that any conclusions reached can be independently assessed. To this end all sources must be appropriately referenced using the Harvard standard. The reference list should include the address of any Internet webpages used as data sources.

Maps, diagrams and other illustrative material should be included where appropriate. The MNES section should be produced on A4 size paper capable of being photocopied, with maps and diagrams on A4 or A3 size and in colour where possible.

The proponent should consider the format and style of the document appropriate for publication on the Internet. The capacity of the website to store data and display the material may have some bearing on how the document is constructed.

Background and description of the action

The MNES section must include background to the action and describe in detail all components of the action for example (but not limited to), the construction, operation and (if relevant) decommissioning components of the action. This must include the precise location of all works to be undertaken (including associated offsite works and infrastructure), structures to be built or elements of the action that may have impacts on MNES. The description of the action must also include details on how the works are to be undertaken (including stages of development and their timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts.

The MNES section must include how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action. A map showing relevant regional projects must be provided.

The MNES section must provide details on the current status of the action as well as any feasible alternatives to the action to the extent reasonably practicable, including:

- the alternative of taking no action
- a comparative description of the impacts of each alternative on the MNES protected by controlling provisions of Part 3 of the EPBC Act for the action
- sufficient detail to make clear why any alternative is preferred to another.

Short, medium and long-term advantages and disadvantages of the options should also be discussed.

Should the proponent wish to conduct development and associated offsets in stages, the EIS must include a description of stages, using maps where appropriate, and discuss any risks and or benefits of staging the action.

Description of the environment including MNES

The MNES section must provide a description of the environment of the proposal site and the surrounding areas that may be affected by the action. It is recommended that this include the following information:

- a description of the surface and groundwater resources which may be impacted by the action, and
- listed threatened and ecological communities (including suitable habitat) that are likely to be present in the vicinity of the site, including details of the scope, timing (survey season/s) and methodology for studies or surveys used to provide information on the listed species/community/habitat at the site (and in areas that may be impacted by the proposed project). Include details of:
    - how best practice survey guidelines are applied,
    - how the surveys are consistent with (or a justification of divergence from) published Australian Government guidelines and policy statements.

The EIS must include a habitat assessment for each relevant listed threatened species and ecological community. The habitat assessment must include, but not limited to, the habitat area (in hectares), quality, location and use specifications of known and potential suitable habitat in relation to the proposed project disturbance area.

The DoEE would expect that the habitat assessment be informed by, at a minimum, a desktop assessment of relevant Commonwealth and State Government databases and the outcomes of field surveys.

The EIS must consider and discuss the value of suitable habitat present inside and adjoining the proposed project site and how that habitat may be impacted by the proposed project (as per the requirements below).

Relevant impacts

The MNES section must include a description of all of the relevant impacts of the action. Relevant impacts are impacts that the action will have or is likely to have on MNES. Impacts during the construction, operational and (if relevant) the decommissioning phases of the proposed project should be addressed, and the following information provided:

- a description of the relevant impacts (direct, indirect and consequential) of the action on MNES taking account of any relevant approved Conservation Advices for listed threated species and communities as well as any agreements or plans that cover impacts on MNES including (but not limited to): recovery plans, threat abatement plans for processes that threaten species, wildlife conservation plans, strategic assessments.
- a detailed analysis of the nature, extent and significance of the likely direct, indirect and consequential impacts relevant to MNES and/or their known and potential habitat, including likely short-term and long-term impacts (refer to the Significant Impact Guidelines 1.1 - Matters of National Environmental Significance for guidance on the various types of impact that need to be considered)
- a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible
- any technical data and other information used or needed to make a detailed assessment of the relevant impacts, including a description of the methodology used to determine whole of proposed project impacts (in hectares) to habitat for listed threatened species and communities
- an explanation of how Indigenous stakeholders' views of the action's impacts to biodiversity and cultural heritage have been sought and considered in the assessment, including where relevant, how guidelines published by the Commonwealth in relation to consulting with Indigenous peoples for proposed actions that are under assessment have been considered and applied
- refer to the:
    - *Independent Expert Scientific Committee's (IESC) information guidelines for proposals relating to the development of coal seam gas and large coal mines where there is a significant impact on water resources*
    - *Significant Impact guidelines 1.3: Coal seam gas and large coal mining developments – impacts on water resources*.

The proposed project will be submitted to the IESC. The EIS must include a completed checklist (located within the IESC Guidelines) to ensure that the information requirements for the IESC review have been addressed.

The MNES section should also provide a detailed assessment of any likely impact that this proposed action may facilitate on the following (at the local, regional, state, national scale):

- sections 18 and 18A (listed threatened species and communities)
- sections 24D and 24E (a water resource, in relation to coal seam gas development and large coal mining development).

The MNES section should identify and address cumulative impacts, where potential proposed project impacts are in addition to existing impacts of other activities (including known potential future expansions or developments by the proponent and other proponents in the region and vicinity). The MNES section should also address the potential cumulative impact of the proposal on ecosystem resilience. The cumulative effects of climate change impacts on the environment must also be considered in the assessment of ecosystem resilience.

Proposed avoidance and mitigation

measuresAvoidance and mitigation measures

The MNES section must provide information on proposed avoidance and mitigation measures to manage the relevant impacts of the action on MNES.

The information provided must discuss how the proposed action is not inconsistent with:

- any relevant threat abatement plan for listed threatened species and communities
- any relevant recovery plan and conservation advice for listed threatened species and communities
- relevant conventions and agreements of which a migratory species is listed, including the Bonn Convention, CAMBA, JAMBA and agreements relevant to the conservation of the species.

The MNES section must include, and substantiate, specific and detailed descriptions of the proposed avoidance and mitigation measures, based on best available practices and must include the following elements:

- A consolidated list of measures proposed to be undertaken to avoid, mitigate and manage the relevant impacts of the action on MNES, including:
    - a description of proposed avoidance and mitigation measures to deal with relevant impacts of the action, including mitigation measures proposed to be taken by State/Territory governments, local governments or the proponent
    - assessment of the expected or predicted effectiveness of the mitigation measures, including the scale and intensity of impacts of the proposed action and the on-ground benefits to be gained through each of these measures
    - discussion of how the proposed mitigation and management measures are consistent with actions included in relevant Recovery Plans and Threat Abatement Plans for listed threated species and communities
    - including how impacts to surface water flow and quality and to groundwater quality and groundwater regimes will be managed during construction, operation and decommissioning of the proposed project
    - how the final landform will be managed to avoid ongoing impacts to MNES following the end of the operational phase of the proposed project
    - details of the rehabilitation of the site, including how this will be staged and the outcomes proposed to be achieved to ensure habitat for listed threatened species and communities is reinstated
    - any statutory or policy basis for the mitigation measures.
- A strategy for the continuing management, mitigation and monitoring of relevant MNES impacts of the action, including a description of the outcomes that will be achieved and any provisions for independent environmental auditing.

- A detailed outline of a Construction Environmental Management Plan (CEMP) for the continuing management, mitigation and monitoring of relevant impacts of the action on MNES. The CEMP outline must be consistent with the DoEE's Environmental Management Plan Guidelines[47] (2014), and must include:
    - objectives
    - risk assessment
    - environmental management activities and mitigation measures
    - the timing of actions
    - a monitoring program, which must include:
        - performance indicators (clear and concise criteria against which achievement of outcomes are to the measured), which are capable of accurate and reliable measurement
        - outcomes (time bound outcomes as measured by performance indicators), which might include milestones (interim outcomes)
        - monitoring requirements (timing and frequency of monitoring to detect changes in the performance indicators, to determine if outcomes are being achieved, and to inform adaptive management)
        - trigger values for corrective actions
- potential corrective actions to be implemented if trigger values are reached, and how environmental incidents and emergencies will be managed
- roles and responsibilities (clearly stating who is responsible for activities)
- auditing and review mechanisms.

Greenhouse gases

The MNES section is to outline the cumulative direct and indirect greenhouse gas emissions of the proposed action. An inventory of the projected greenhouse gas emissions associated with the proposed action is to be provided. This inventory should include scope 1 and 2 emissions and, for context, an outline of total global greenhouse gas emissions.

Environmental outcomes

The MNES section may include information on the outcomes that the proponent will achieve for MNES. Outcomes need to be specific, measurable and achievable, and must be based on robust baseline data. Outcomes must be developed in consideration of the DoEE's *Outcomes-based Conditions Policy 2016* and *Outcomes-based Conditions Guidance 2016,* with suitable justification for considerations identified in the policy and guidance. The MNES section may include the details of specific environmental outcomes to be achieved, and reasoning for these in reference to relevant Recovery Plans, Conservation Advices and Threat Abatement Plans.

Residual significant impacts/offsets

Environmental offsets are broadly understood to mean actions taken outside a development site that compensate for the significant residual impacts of that development. Offsets are not intended to replace avoidance and mitigation which are expected to be the primary strategies for managing the potential impacts of development proposals.

The MNES section must provide details of:

- residual significant impacts on MNES that are likely to occur after the proposed activities to avoid and mitigate all impacts are taken into account
- where residual significant impacts are likely to occur, the reasons why the avoidance or mitigation of these significant impacts is not expected to be achieved.

The MNES section must include details of an offset package proposed to be implemented to compensate for the residual significant impact of the proposed project if these are determined likely, as well as an analysis about how the offset(s) meets the requirements in the DoEE's *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy October 2012*[48] (EPBC Act Offset Policy).

[47] http://www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines
[48] http://www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy

The offset package can comprise a combination of direct offsets and other compensatory measures, so long as it meets the requirements of the EPBC Act Offset Policy. Offsets should align with conservation priorities for the impacted protected matter and be tailored specifically to the attribute of the protected matter that is impacted in order to deliver a conservation gain.

Offsets should compensate for an impact for the full duration of the impact (i.e. should impacts be in perpetuity the offsets should also be in perpetuity).

Offsets must directly contribute to the ongoing viability of the MNES impacted by the proposed project and deliver an overall conservation outcome that improves or maintains the viability of the MNES as compared to what is likely to have occurred under the status quo, that is, if neither the action not the offset had taken place.

Offsets required by the State can be applied if the offsets meet the DoEEs EPBC Act Offset Policy. The outcomes of the offset strategy need to be specific, measurable and achievable, and should be based on robust baseline data.

Note: offsets do not make an unacceptable impact acceptable and do not reduce the likely impacts of a proposed action. Instead, offsets compensate for any residual significant impact.

The MNES section must include an offset strategy to compensate for significant residual impacts on MNES. The offsets strategy must include:

- objectives
- quantity of impacts which are being offset
- the type of offsets proposed (direct/indirect)
- the location (including a geo-referenced map) and suitability of proposed direct offsets
- current land tenure of any proposed offset and the method of securing enduring protection of the offset site and managing the offset for the life of the impact
- how any proposed staging of the overall development will impact the delivery of offsets
- specific environmental outcomes to be achieved, and reasoning for these in reference to relevant statutory recovery plans, conservation advices and threat abatement plans
- a completed 'offsets guide'. All figures used to determine the suitability of offsets including habitat quality scores at the proposed project site must be derived using a suitably robust and repeatable framework. Details about each framework must also be provided
- risk assessment
- environmental management activities and mitigation measures or customize, by referring to specific measures as follows, including the timing of actions
- a monitoring program, which must include:
    - performance indicators (clear and concise criteria against which achievement of outcomes are to the measured), which are capable of accurate and reliable measurement
    - outcomes (time bound outcomes as measured by performance indicators), which might include milestones (interim outcomes)
    - monitoring requirements (timing and frequency of monitoring to detect changes in the performance indicators, to determine if outcomes are being achieved, and to inform adaptive management)
    - trigger values for corrective actions
- potential corrective actions to be implemented if trigger values are reached, and how environmental incidents and emergencies will be managed
- roles and responsibilities (clearly stating who is responsible for activities)
- auditing and review mechanisms
- an analysis of how the offset package meets the requirements of the EPBC Act Offsets Policy.

Environmental record of person(s) proposing to take the action

The information provided must include details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

- the person proposing to take the action
- for an action for which a person has applied for a permit, the person making the application
- if the person proposing to take the action is a corporation, details of the corporation's environmental policy

and planning framework must also be included.

Economic and social matters

The economic and social impacts of the action, both positive and negative, must be analysed. Matters of interest may include:

- details of any public consultation activities undertaken, and their outcomes
- details of any consultation with Indigenous stakeholders
- projected economic costs and benefits of the proposed project, including the basis for their estimation through cost/benefit analysis or similar studies
- employment opportunities expected to be generated by the proposed project (including construction and operational phases).

Economic and social impacts should be considered at the local, regional and national levels. Details of the relevant cost and benefits of alternative options to the proposed action should also be included. Identification of affected parties is required, including a statement mentioning any communities that may be affected and describing their views.

Documentation must be provided substantiating how estimated benefit/cost figures have been derived.

Information sources

For information given in the MNES section, the proponent must state:

- the source of the information
- how recent the information is
- how the reliability of the information was tested
- what uncertainties (if any) are in the information
- what guidelines, plans and/or policies were considered.

Conclusion

An overall conclusion as to the environmental acceptability of the proposal on each MNES should be provided, including:

- a discussion on compliance with the requirements of the EPBC Act, including the objects of the EPBC Act, the principles of ecologically sustainable development and the precautionary principle
- reasons justifying undertaking the proposal in the manner proposed, including the acceptability of the avoidance and mitigation measures
- if relevant, a discussion of residual impacts and any offsets and compensatory measures proposed or required for significant residual impacts on MNES, and the relative degree of compensation and acceptability.

Attachment 1 - The objects and principles of the EPBC Act; sections 3 and 3A

3 Objects of the Act

The objects of this Act are:

(a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and

(b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and

(c) to promote the conservation of biodiversity; and

(d) to promote a co-operative approach to the protection and management of the environment involving governments, the community, land-holders and indigenous peoples; and

(e) to assist in the co-operative implementation of Australia's international environmental responsibilities; and

(f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and

(g) to promote the use of indigenous peoples' knowledge of biodiversity with the involvement of, and in cooperation with, the owners of the knowledge.

3A Principles of ecologically sustainable development

The following principles are principles of ecologically sustainable development:

(a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;

(b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;

(c) the principle of inter-generational equity – that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;

(d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making;

(e) improved valuation, pricing and incentive mechanisms should be promoted.

Attachment 2 - Matters that must be addressed in a public environment report (PER) and EIS (Schedule 4 of the EPBC Regulations 2000)

1. General information

The background of the action including:

(a) the title of the action;

(b) the full name and postal address of the designated proponent;

(c) a clear outline of the objective of the action;

(d) the location of the action;

(e) the background to the development of the action

(f) how the action relates to any other actions (of which the proponent should reasonably be aware) that have been, or are being, taken or that have been approved in the region affected by the action

(g) the current status of the action;

(h) the consequences of not proceeding with the action.

2. Description

A description of the action, including:

(a) all the components of the action

(b) the precise location of any works to be undertaken, structures to be built or elements of the action that may have relevant impacts;

(c) how the works are to be undertaken and design parameters for those aspects of the structures or elements of the action that may have relevant impacts

(d) relevant impacts of the action;

(e) proposed safeguards and mitigation measures to deal with relevant impacts of the action

(f) any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action

(g) to the extent reasonably practicable, any feasible alternatives to the action, including:

  i. if relevant, the alternative of taking no action

  ii. a comparative description of the impacts of each alternative on the matters protected by the controlling provisions for the action, and

  iii. sufficient detail to make clear why any alternative is preferred to another

(h) any consultation about the action, including:

  iv. any consultation that has already taken place

  v. proposed consultation about relevant impacts of the action, and

  vi. if there has been consultation about the proposed action—any documented response to, or result of, the consultation; and

(i) identification of affected parties, including a statement mentioning any communities that may be affected and describing their views.

3. Relevant impacts

Information given under paragraph 2(d) must include:

(a) a description of the relevant impacts of the action;

(b) a detailed assessment of the nature and extent of the likely short term and long term relevant impacts;

(c) a statement whether any relevant impacts are likely to be unknown, unpredictable or irreversible;

(d) analysis of the significance of the relevant impacts; and

(e) any technical data and other information used or needed to make a detailed assessment of the relevant impacts.

4. Proposed safeguards and mitigation measures

Information given under paragraph 2(e) must include:

(a) a description, and an assessment of the expected or predicted effectiveness of, the mitigation measures;

(b) any statutory or policy basis for the mitigation measures;

(c) the cost of the mitigation measures;

(d) an outline of an environmental management plan that sets out the framework for continuing management, mitigation and monitoring programs for the relevant impacts of the action, including any provisions for independent environmental auditing

(e) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program, and a consolidated list of mitigation measures proposed to be undertaken to prevent, minimise or compensate for the relevant impacts of the action, including mitigation measures proposed to be taken by State governments, local governments or the proponent.

5. Other approvals and conditions

Information given under paragraph 2(f) must include:

(a) details of any local or State government planning scheme, or plan or policy under any local or State government planning system that deals with the proposed action, including:

vii. what environmental assessment of the proposed action has been, or is being carried out under the scheme, plan or policy, and

viii. how the scheme provides for the prevention, minimisation and management of any relevant impacts

(b) a description of any approval that has been obtained from a State, Territory or Commonwealth agency or authority (other than an approval under the Act), including any conditions that apply to the action

(c) a statement identifying any additional approval that is required;

(d) a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to the action.

6. Environmental record of person proposing to take the action

Details of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:

(a) the person proposing to take the action; and

(b) for an action for which a person has applied for a permit, the person making the application.

If the person proposing to take the action is a corporation—details of the corporation's environmental policy and planning framework.

7. Information sources

For information given the PER/EIS must state:

(a) the source of the information; and

(b) how recent the information is and

(c) how the reliability of the information was tested; and

(d) what uncertainties (if any) are in the information.

10 Commitments

The EIS must provide a consolidated description of all the proponent's commitments to implement avoidance, mitigation and management measures (including monitoring programs and management plans). Should the proposed project proceed, these commitments should be able to be carried over into the approval conditions as relevant.

11 Conditions

Propose conditions that may be placed on the EA and any other required approvals or licenses. For the EA, conditions may be taken directly from the existing model conditions and eligibility criteria[49] or to be modified or developed to suit site and proposed project specific issues.

12 Appendices to the EIS

Appendices to the EIS must include the technical data collected, and evidence used to develop assertions and findings in the main text of the EIS. All water quality data, including waste water quality, referred to in the EIS must be submitted in an appropriate electronic format, such as Excel.

No significant issue or matter including statements of uncertainty associated with assertions and findings should be mentioned for the first time in an appendix—it must be addressed in the main text of the EIS.

The EIS must include a table listing the section and sub-sections of the EIS where each requirement of the TOR is addressed.

13 Spatial data presentation

Maps included in the EIS should have contours at suitable increments relevant to the scale, location, potential impacts and type of project, shown with respect to Australian Height Datum (AHD) and drafted to Geocentric Datum of Australia 1994 (GDA94). In relatively flat locations, contours should be at one metre intervals. Geographical coordinates should be presented as latitude and longitude against the GDA94.

All spatial data presented in the EIS must be made available to the administrating authority in appropriate electronic form, such as shape files.

Approved by:

P. Rowland	9 May 2018
Signature	**Date**

Philip Rowland
Manager, Impact Assessment
Department of Environment and Heritage Protection

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Fax. (07) 3330 5875

[49] https://www.ehp.qld.gov.au/land/mining/guidelines.html; https://www.ehp.qld.gov.au/licences-permits/compliance-codes/

Appendix 1 Glossary

The following acronyms, initialisms and abbreviations have been used in this document.

Acronym/abbreviation	Definition
AEP	annual exceedance probability
AHD	Australian height datum
ALCAM	Australian Level Crossing Assessment Model
ARI	average reoccurrence interval
Bilateral Agreement	an agreement between the Australian Government and the State of Queensland under section 45 of the *Environment Protection and Biodiversity Conservation Act 1999* relating to environmental assessment
CHPP	Coal Handling and Preparation Plant
CSG	coal seam gas
DAF	Department of Agriculture and Fisheries
DES	Department of Environment and Science
DIDO	drive-in-drive-out
DILGP	Department of Infrastructure, Local Government and Planning
DoEE	Department of Environment and Energy
DTMR	Department of Transport and Main Roads
EA	environmental authority
EIS	environmental impact statement
EP Act	*Environmental Protection Act 1994*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
EPP	environmental protection policy (under the EP Act)
EP Regulation	Environmental Protection Regulation 2008
ERA	environmentally relevant activity
GDA94	Geocentric Datum of Australia 1994
IESC	Independent Expert Scientific Committee
MDL	Mineral Development Lease
MNES	matters of national environmental significance
MSES	matters of state environmental significance
Mtpa	Million tonnes per annum
NGER	national greenhouse energy reporting scheme (Commonwealth)
RGTCT	RG Tanna Coal Terminal
ROM	run of mine

TOR	terms of reference
SIA	social impact assessment
WICET	Wiggins Island Coal Export Terminal
WONS	weeds of national significance

Appendix 2 Policies, guidelines and references

The most recent version of the following documents must be considered in the development of the EIS for the proposed Walton Coal Project.

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Abbot Point Terminal
Bowen
Proserpine
Collinsville
Dalrymple Bay Terminal
Mackay
Hay Point Terminal
Moranbah
Dysart
Clermont
Emerald
Blackwater
Bluff
Dingo
Rolleston
Yeppoon
Rockhampton
Curtis Island
Wiggins Island (Future)
Gladstone
RG TannaCoal Terminal
Baralaba
Biloela
NT
QLD
SA
NSW
Galilee Basin
Bowen Basin
Surat Basin
LEGEND
Walton Coal MDL 505
QR Coal Railway Systems
Railway
Blackwater Coal
Goonyella Coal
Newlands Coal
Proposed Railway Routes
Proposed Adani Rail
Proposed Galilee Basin Rail
Main Road
Highway
Watercourses
Protected Areas
N
Map Grid MGA
Datum GDA94
Zone 55
0 12.5 25 50 km
Data sources: DNRM, DTMR, Geoscience Australia & ESRI online terrain base
Project WALTON
Tenement MDL 505
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Drawn PM
Scale 1:2,50,000
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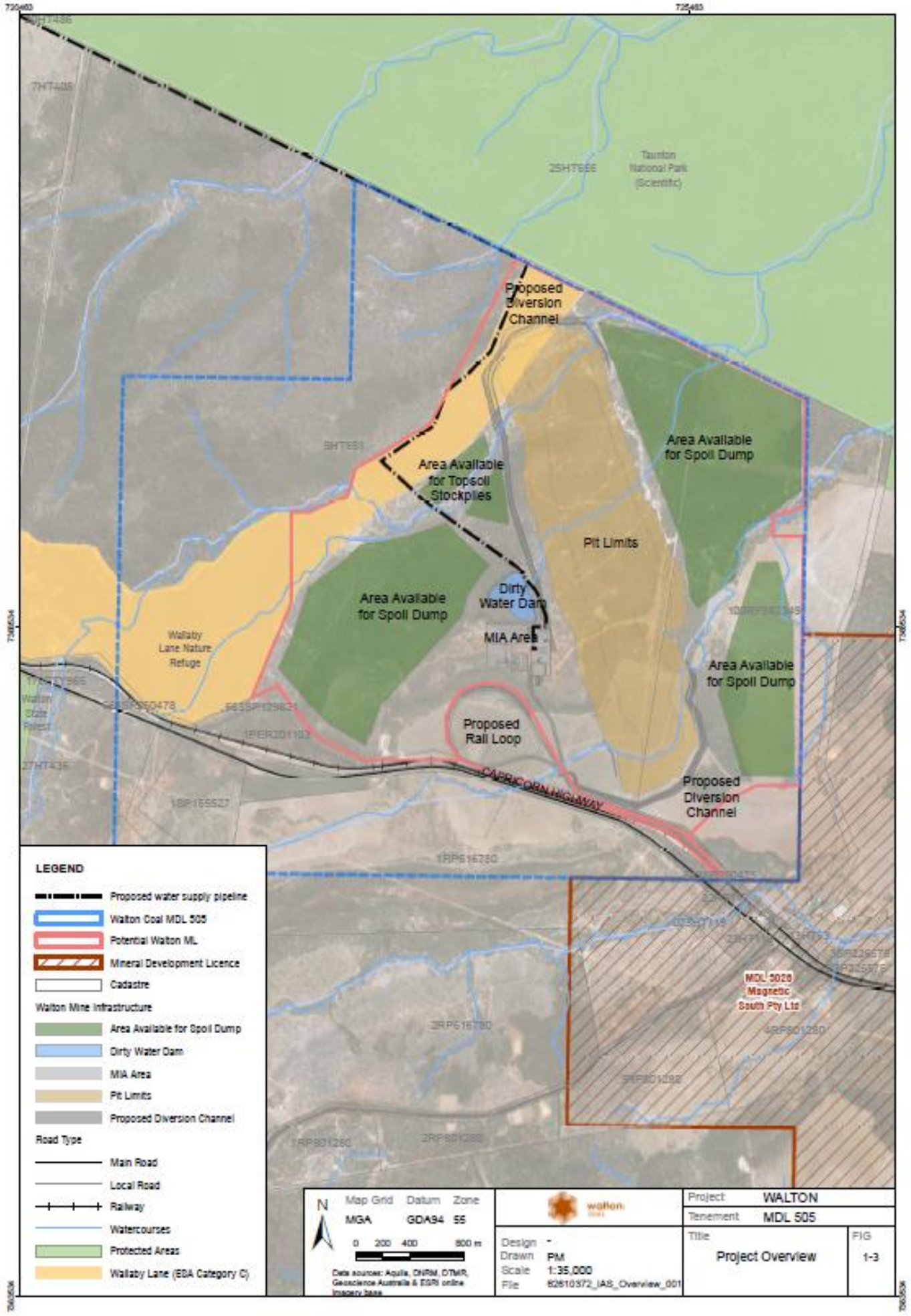
Title Regional Location
FIG 1-1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Proposed Diversion Channel
Area Available for Spoil Dump
Area Available for Topsoil Stockpiles
Pit Limits
Area Available for Spoil Dump
Dirty Water Dam
MIA Area
Wallaby Lane Nature Refuge
Area Available for Spoil Dump
Proposed Rail Loop
CAPRICORN HIGHWAY
Proposed Diversion Channel
MDL 5026 Magnetic South Pty Ltd
LEGEND
Proposed water supply pipeline
Walton Coal MDL 505
Potential Walton ML
Mineral Development Licence
Cadastre
Walton Mine Infrastructure
Area Available for Spoil Dump
Dirty Water Dam
MIA Area
Pit Limits
Proposed Diversion Channel
Road Type
Main Road
Local Road
Railway
Watercourses
Protected Areas
Wallaby Lane (EDA Category C)
N
Map Grid Datum Zone
MGA GDA94 55
0 200 400 800 m
Data sources: Aquila, DNRM, DTMR, Geoscience Australia & ESRI online Imagery base
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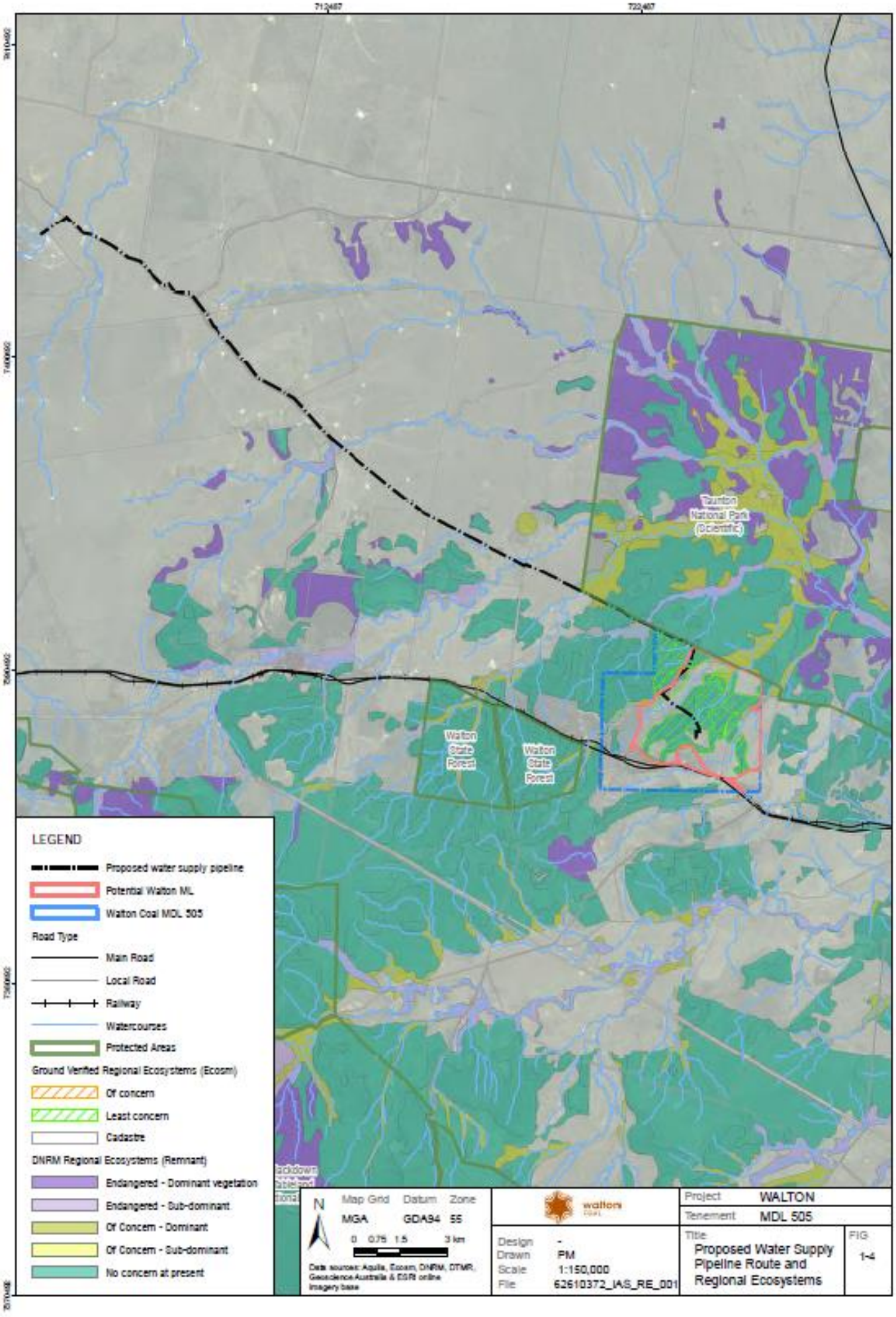
Project WALTON
Tenement MDL 505
Title Project Overview
FIG 1-3


712487
722487
Taunton National Park (Scientific)
Walton State Forest
Walton State Forest
LEGEND
Proposed water supply pipeline
Potential Walton ML
Walton Coal MDL 505
Road Type
Main Road
Local Road
Railway
Watercourses
Protected Areas
Ground Verified Regional Ecosystems (Ecosm)
Of concern
Least concern
Cadastre
DNRM Regional Ecosystems (Remnant)
Endangered - Dominant vegetation
Endangered - Sub-dominant
Of Concern - Dominant
Of Concern - Sub-dominant
No concern at present
N
Map Grid MGA
Datum GDA94
Zone 55
0 0.75 1.5 3 km
Data sources: Aquila, Ecosm, DNRM, DTMR, Geoscience Australia & ESRI online imagery base
walton coal
Design -
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File 62610372_IAS_RE_001
Project WALTON
Tenement MDL 505
Title Proposed Water Supply Pipeline Route and Regional Ecosystems
FIG 1-4