Terms of reference for an environmental impact statement

Winchester South project

September 2019

COORDINATOR-GENERAL

Queensland Government

The Department of State Development, Manufacturing, Infrastructure and Planning

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Part A. About these terms of reference

1. Introduction

1.1. This document outlines the draft terms of reference (TOR) for the Winchester South project (the project), proposed by Whitehaven WS Pty Ltd and being assessed under the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

1.2. The project is located within the Bowen Basin, approximately 200 kilometres (km) south-east of Mackay and 30 km south-east of Moranbah. The project proposes to extract up to 8 million tonnes per annum (mtpa) of product coal for approximately 30 years, with the majority of this being metallurgical (coking) coal for steel making.

2. Statutory basis

2.1 The Coordinator-General has declared the project to be a 'coordinated project for which an environmental impact statement (EIS) is required' under section 26(1)(a) of the SDPWO Act. This declaration initiates the statutory environmental impact assessment procedure of Part 4 of the SDPWO Act, which requires a proponent to prepare an EIS for the project.

2.2 These TOR set out the matters the proponent is to address in an EIS for the project and are approved by the Coordinator-General under section 30 of the SDPWO Act.

3. Accredited process for controlled actions under Commonwealth legislation

3.1 On 17 and 18 July 2019, the Commonwealth Minister for the Environment declared that the project (lodged as three separate referrals) is a 'controlled action' requiring approval under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (EPBC Act) due to the likely potential impacts on matters of national environmental significance (MNES) (reference numbers EPBC 2019/8458, EPBC 2019/8459, EPBC 2019/8460).

3.2 The EIS process has been accredited under the Bilateral Agreement for the assessment of the project under the EPBC Act, hence the EIS must state the controlling provisions for the project and describe the particular aspects of the environment that led to the controlled action decision.

3.3 The assessment of the controlling provisions, mitigation measures and any offsets for residual impacts are to be described and illustrated in a stand-alone report in the EIS that fully addresses the matters relevant to the controlling provisions. Requirements for MNES are set out on pages 30-38 of this TOR.

4. EIS guidelines

4.1 This TOR must be read in conjunction with *Preparing an environmental impact statement: Guideline for proponents* (see Appendix 1), which explains the following:

i. participants in the EIS process
ii. consultation requirements
iii. EIS format and copy requirements.

4.2 In addition, subject-specific policies and guidelines are referenced throughout this TOR and are listed in Appendix 1.

5. More information

5.1 For information about the project or the EIS process conducted under the SDPWO Act, visit **www.dsdmip.qld.gov.au/cg**

Part B. General approach and requirements

6. General approach

6.1 The objectives of the EIS are to provide a detailed description of the proposed project and to ensure that all relevant environmental, social and economic impacts of the project are identified and assessed, and to outline the management, monitoring, and other mitigation measures proposed to avoid and minimise and/or mitigate any adverse impacts. The EIS should demonstrate that the project is based on sound environmental principles and practices.

6.2 For the purposes of the EIS process, 'environment' is defined in Schedule 2 of the SDPWO Act and includes social and economic matters.

6.3 The detail at which the EIS deals with matters relevant to the project should be proportional to the scale of the potential impacts on environmental values. When determining the scale of an impact, consider its intensity, duration, direct, indirect, permanent, temporary, unpredictable and consequential impacts, cumulative effect, irreversibility, the risk of environmental harm, management strategies and ability to offset the impact.

6.4 The EIS is to be prepared in accordance with relevant policies, standards and guidelines. Application of such guidelines, standards and policies will be confirmed throughout the development of the EIS in consultation between the Coordinator-General, the proponent and advisory agencies.

7. Mandatory requirements of an EIS

7.1 For all the relevant matters, the EIS is to identify and describe the environmental values that must be protected. Environmental values are specified in the *Environmental Protection Act 1994* (EP Act),[1] the Environmental Protection Regulation 2019 (EP Regulation), environmental protection policies (EPPs) and relevant guidelines.[2]

7.2 The assessment should cover the short to long term impacts of the project and state whether any relevant impacts are likely to be irreversible. The assessment should also discuss scenarios of unknown and unpredictable impacts.

7.3 Provide all available baseline information relevant to the environmental risks of the project including seasonal and long-term variations. Provide details about the quality of the information provided, in particular: the source of the information; how recent the information is; how the reliability of the information was tested; and any assumptions and uncertainties in the information. All data, modelling and input/output information used in the EIS to determine the existing environment and/or assess impacts must be made available upon request in an appropriate electronic format (e.g. shape files).

7.4 Provide detailed strategies regarding all matters for the protection, or enhancement (as desirable), of all relevant environmental values in terms of outcomes and possible conditions

[1] Part 3, Division 2, Subdivision 1, section 9.
[2] For example, the *Queensland Water Quality Guidelines* and the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (see Appendix 1).

that can be measured and audited. In general, the preferred hierarchy for managing likely impacts is: (a) to avoid; (b) to minimise/mitigate; and once (a) and (b) have been applied then (c) if necessary, and possible, to offset.

7.5 Impact minimisation measures should include ongoing monitoring and proposals for an adaptive management approach, as relevant, based on monitoring. The proposed measures should give confidence that, based on current technologies, the impacts can be effectively minimised and/ or reversed over the long-term.

7.6 Each matter assessed in the EIS (as described in Section 11 of this TOR) should include a concise description of the existing environment, potential impacts of the project and the measures proposed by the proponent to avoid, minimise, mitigate, manage and/or offset those impacts.

7.7 Present feasible alternatives of the project's configuration (including individual elements), including conceptual, technological and locality. Provide sufficient detail to provide understanding for preferred option/s and discuss the consequences of not proceeding with the project.

7.8 Describe the comparative environmental, social and economic impacts of each alternative, with particular regard to the principles of ecologically sustainable development. Describe how the selected preferred option(s) results in best-case outcomes for each impact of project alternatives.

7.9 For unproven elements of a resource extraction or processing process, technology or activity, identify and describe any global leading practice environmental management that relate to the elements, where available. Demonstrate that the design of the project and its predicted outcomes are consistent with best practice environmental management during construction, operation, and decommissioning of the proposed project.

7.10 Describe the extent to which the construction, operation and decommissioning (predicted and known) of the project meets all statutory and regulatory requirements of the State and Commonwealth or not, and that the intended outcomes are consistent with current state policies (including uncommenced legislation) and guidelines. If there is a conflict, provide comment on the planning merit of the project.

7.11 The proponent is to identify in the EIS all government approvals required for the proposed project to proceed, and all approvals sought through the EIS process. The assessment and supporting information should be sufficient for the administering authority to decide whether an approval should be granted. Sufficient information should be included to enable approval conditions to be decided.

7.12 Describe the assessment undertaken to predict the cumulative impact[3] of the project on social, economic and environmental values (of land, air and water, public health and the health of terrestrial and aquatic ecosystems) over time and in combination with impacts (in the dimensions of scale, intensity, duration or frequency of the impacts) created by the activities of other existing and planned adjacent, upstream and downstream developments and landholders—as detected by baseline monitoring. This will inform the decision on the EIS and the setting of conditions. The EIS should also outline ways in which the cumulative impact assessment and management could subsequently be progressed further on a collective basis.

[3] Cumulative impact is defined as 'combined impacts from all relevant sources (developments and other activities in the area)'.

7.13 Include a consolidated description of all the proponent's commitments to implement management measures (including monitoring, auditing, reporting, response (such as corrective/ preventative) programs). Sufficient evidence and detail is to be provided in the EIS to demonstrate that the predicted outcomes for the proposed project can be achieved. Should the project proceed, these measures should be able to be carried over into the approval conditions as relevant.

7.14 Provide all geographical coordinates throughout the EIS in latitude and longitude against the Geocentric Datum of Australia 1994 (GDA94) (or updated datum sets).

7.15 An EIS is to describe (supported by relative evidence) the expected benefits and opportunities associated with the project.

7.16 An appropriate public consultation program is essential to the impact assessment process. The proponent should consult with Local, State and Commonwealth government agencies, and potentially affected local communities.

7.17 The EIS is to describe the consultation that has taken place and how the responses from the community and agencies have been incorporated into the design and outcomes of the project.

7.18 Include, as an appendix, a consultation report detailing how the community and stakeholder engagement program was implemented, and the results.

Part C. EIS content and suggested structure

8. Executive summary

8.1 The executive summary is to describe the project and convey the most important environmental management options relating to the project in a concise and readable form. It should use plain English, avoid jargon, be written as a stand-alone document and be structured to follow the EIS. It should be easy to reproduce and distribute on request to those who may not wish to read or purchase the whole EIS.

9. Introduction

9.1 Clearly explain the function of the EIS, why it has been prepared and what it sets out to achieve. Include an overview of the structure of the document.

Project proponent

9.2 Describe the following:

(a) the proponent's full name, postal address and Australian Business Number, if relevant (including details of any joint venture partners)

(b) the nature and extent of business activities

(c) proponent's experience

(d) proponent's (including directors) environmental record in Australia, including a list of any breach of relevant environmental laws during the previous ten years

(e) proponent's environmental, health, safety and community policies

(f) experience and qualifications of consultants and sub-consultants engaged by the proponent to complete the EIS.

The environmental impact assessment process

9.3 Provide an outline of the environmental impact assessment process, including the role of the EIS in the Coordinator-General's decision-making process. The information in this section is required to ensure readers are informed of the process to be followed and are aware of any opportunities for input and participation.

9.4 Inform the reader how and when properly made public submissions on the EIS will be addressed and considered in the decision-making process.

Project approvals process

9.5 Describe all the approvals, and the entities responsible for granting each approval, required to enable the project to be constructed and operated and the level of approval (recommendation, preliminary, final) sought through the EIS assessment process. Explain how the environmental impact assessment process (and the EIS itself) informs the issue of the leases/ licences/ permits/ consents required by the proponent before construction can commence. Clearly identify the approvals to which the EIS process will relate and any approvals, where relevant, that are separate to the EIS process. Provide a flow chart indicating the key approvals, stages, timing and opportunities for public comment.

9.6 The State Development Assessment Provisions (SDAP) prescribed in the Planning Regulation 2017 (Planning Regulation) sets out the matters of interest to the state for development assessment where the chief executive of the *Planning Act 2016* (Planning Act) is the assessment manager for development applications. If the proponent intends to satisfy the information requirements of future development assessment decisions under SDAP for any component of the project during this coordinated project EIS process, the material provided in accordance with sections 6-11 of this TOR should be sufficient to permit those assessments to be completed for that project component. Further information on SDAP requirements can be assessed from: **https://planning.dsdmip.qld.gov.au/planning/better-development/the-development-assessment-process/the-states-role/state-development-assessment-provisions**

9.7 Identify any approval that would be needed to undertake waterway barrier works under the *Fisheries Act 1994*.

9.8 Identify any approval or allocation that would be needed under the *Water Act 2000*.

9.9 Describe the assessment process under the Bilateral Agreement between the Commonwealth and the State of Queensland under section 45 of the EPBC Act relating to Environmental Assessment (Bilateral Agreement).

9.10 The EIS is to provide, where relevant, the information required under section 125 of the EP Act in support of the project's environmentally relevant activities (ERA). Any ERA to be conducted as part of the project should be listed separately with the appropriate ERA number, activity name and required threshold (see EP Regulation, Schedule 2 for a list of ERAs). The assessment and supporting information should be sufficient for the administering authority to decide whether an approval should be granted. Environmental values and approval requirements are specified in the EP Act, the EP Regulation, EPP and relevant guidelines.

10. Project description

Proposed development

10.1 The EIS is to describe and illustrate at least the following specific information about the proposed project:

(a) project title
(b) project description
(c) project objectives
(d) expected capital expenditure
(e) rationale for the project
(f) regional and local context of the project's footprint (with maps at suitable scales)
(g) relationship to other major projects and/or development (of which the proponent should reasonably be aware)
(h) workforce numbers to be employed by the project during all project phases and source of local workforce (including peak, direct workforce numbers and estimated proportion of fly-in, fly-out (FIFO) workforce)
(i) where construction and operational personnel would be accommodated
(j) where relevant, the likely recruitment of workers from local and regional communities and workers who will live in regional communities; and rostering arrangements for local, regional and FIFO workers to be adopted
(k) proposed duration of the project, including proposed construction, operation, decommissioning and closure staging and likely schedule of works including details of early works.

Site description

10.2 Provide real property descriptions of the project land and adjacent properties; any easements; any underlying resource tenures (including exploration permits and identification number of any resource activity lease for the project land that is subject to application); applications for mining leases and approved mining leases; restricted and reserve land; conservation tenures; overlying resource tenure such as forests; native title interests; native title claims; Indigenous land use agreements; land and infrastructure held by government owned corporations; and agricultural land uses identified in the Queensland Agricultural Land Audit.

10.3 Describe and map key transport, all local government and state-controlled roads, private and government owned corporation in energy, rail, air, port/sea and other infrastructure or services in the region and impacted by the project.

10.4 Describe and map proximate rural premises, business precincts, and public facilities (e.g. childcare and education facilities, health facilities).

10.5 Describe and map the topography of the project site and surrounding area, highlighting any significant features shown on the maps. Maps should include a scale and 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 GDA94 (or updated datum sets).

10.6 Describe and map in plan and cross-sections the geology and landforms, including catchments, of the project area. Show geological structures, such as aquifers, faults and economic

resources that could have an influence on, or be influenced by, the project's activities. Describe exploration history at the site, the targeted seams and Joint Ore Reserves Committee (JORC) resources and reserves (as appropriate).

10.7 Describe and map the waterways[4] including matters of state environmental significance (MSES) of waterways providing for fish passage and watercourses[5].

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

10.9 Describe the site in the context of planning schemes, regional plans, state policies and government priorities for the project area.

10.10 Describe the findings of the agricultural land audit and any land identified as strategic cropping land, priority agricultural area, priority living area or strategic environmental area for the project area.

10.11 Describe tourist destinations and sites used for recreation in and adjoining to the product delivery routes.

10.12 Provide plans and drawings with sufficient detail to enable the Coordinator-General and relevant agencies to adequately assess the project in the context of the approvals being sought.

Climate

10.13 Describe the site's climate patterns that are relevant to the environmental assessment, with particular regard to discharges to water and air, and the propagation of noise. Climate information should be presented in a statistical form including long-term averages and extreme values.

Proposed construction and operations

10.14 Describe the following information about the proposed project:

Pre-construction

(a) all pre-construction activities including the staging and sequencing (e.g. vegetation clearing, site access, interference with watercourses, waterways, and floodplain areas including wetlands)

(b) proposed infrastructure on and off the mining lease

(c) proposed vegetation clearing, top- and sub-soil removal and stockpiling

(d) project site access arrangements where access to the site is on tenure not held by the proponent

(e) proposed upgrades, realignments, relocation, deviation or restricted access to roads and other infrastructure including water, power and telecommunications

(f) all environmentally relevant activities on and off the mining lease, and all notifiable activities

[4] Waterways is defined in Schedule 1 under the *Fisheries Act 1994* which includes a river, creek, stream, watercourse, drainage feature or inlet of the sea.

[5] Watercourse is defined in Part 2 under the *Water Act 2000* as a river, creek or other stream, including a stream in the form of an anabranch or a tributary, in which water flows permanently or intermittently, regardless of the frequency of flow events. Watercourse does not include a drainage feature.

(g) environmental management measures included as part of the project design

(h) existing infrastructure and easements on the potentially affected land.

Construction

(a) the construction timetable, sequencing and staging plans (provide detailed plans, drawings and maps to illustrate these matters, where relevant)

(b) hours of operation for proposed construction works

(c) water storage requirements and volumes required during construction

(d) site drainage, erosion and stormwater management, flood protection and waste water management

(e) dimensions of earth and rock works and excavations

(f) the known locations of new or altered works and structures and infrastructure necessary for the project at all stages of its development, whether on or off the project sites or right of way, and intersections required with existing infrastructure (e.g. pipeline, rail, road, power, etc)

(g) disturbance areas

(h) the type, amount and source of construction materials required for the project.

Operation

(a) the proposed mining and processing methods, associated equipment and techniques in areas of different topographic or geo-technical character

(b) the proposed sequence and timing of mining each seam/ore body/structural unit within the mining lease, including any proposed ramping of production or staging of development

(c) the quality and proportion of coal/mineral mined at each major stage of the project

(d) the type and capacity of high-impact plant and equipment utilised to construct and operate the project, their chemical and physical processes

(e) type, volume and rate of chemicals and hazardous materials to be used

(f) waste material management (for example waste rock, coal fines and tailings)

(g) predicted inventory of the location and quantity of soil stockpiles, and ongoing management

(h) the proposed extractive and processing methods, associated equipment and techniques

(i) any new or expanded quarry and screening operations (for example, from off-site locations) required to service the project.

Rehabilitation and mine closure

(a) the proposed scheduling and extent of rehabilitation works including maps at suitable scales showing the location of disturbance areas, relevant ERA infrastructure and associated disturbance areas and the sequence of mining and progressive rehabilitation (i.e. the method and timing of restoration of areas disturbed during construction/ operation)

(b) the proposed methods or techniques for rehabilitating the land to achieve the rehabilitation goals for each proposed final land use proposed in the rehabilitation program

(c) for each final land use area, provide a description and map (at a scale which allows for easy interpretation) of the area (name, size in hectares, disturbance type (hardstand, stockpile, pit etc.), final proposed tenure

(d) closure and decommissioning stage, works to be undertaken for removal of plant, equipment, concrete footings, hardstand and storage tanks and actions take to clean up, manage and dispose of contaminated soils.

10.15 Identify the type, quantity, origin, routes, delivery modes, storage and laydown requirements for materials required during the pre-construction, construction and operation of the project for works:

(a) at the mine site

(b) at the project component sites, to the degree it is required for subsequent approval processes

(c) for the product delivery route.

Infrastructure requirements

10.16 This section should detail, with concept and layout plans, requirements for new infrastructure, or the upgrading, retention, relocating and/or decommissioning of existing infrastructure on and offsite to service the project. Infrastructure to be considered should include, but is not limited to, resource extraction areas, access roads including connections to public roads and proposed road/rail interfaces, bridges, conveyors, water supply, energy supply, telecommunications, stormwater, waste storage, treatment and/or disposal, sewerage (including location and size of the sewage treatment plant, the sewage collection system, wet weather storage and any pipelines and waste disposal areas associated with the plant such as proposed effluent irrigation), and locations of any existing and proposed infrastructure easements and/or service corridors.

10.17 Describe the timing of requirements for this infrastructure (starting with construction of the project) and detail the decommissioning schedule for all project related infrastructure.

10.18 Provide details of the alignment options assessed for the raw water supply pipeline, rail spur, access road and electricity transmission line, including justification for the preferred and final alignments chosen.

10.19 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.

11. Assessment of project specific matters

Land

Objectives

The environmental objectives to be met under the EP Act are contained in Schedule 8, of the EP Regulation and include, for example:

(a) activity is operated in a way that protects the environmental values of land including soils, subsoils, landforms and associated flora and fauna

(b) choice of the site, at which the activity is to be carried out, minimises environmental harm on areas of high conservation value and special significance and sensitive land uses at adjacent places

(c) location for the activity on a site protects all environmental values relevant to adjacent sensitive use

(d) 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 performance outcomes corresponding to these objectives are in Schedule 8, Part 3 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed avoidance/ management measures) that show these outcomes can be achieved.

Land use and tenure

Existing environment

11.1 Detail the existing land use values for all areas associated with the proposed project.

11.2 Discuss the compatibility of the project with the surrounding area and the Isaac region, taking into consideration the proposed measures that would be used to avoid or minimise impacts. The discussion should include:

(a) existing and proposed land uses, in and around the project area, referring to the Mackay, Isaac and Whitsunday Regional Plan and the Isaac Region Planning Scheme

(b) any tenures overlying and adjacent to the project site including Key Resource Areas (KRAs), and any to be applied for as part of this project

(c) consideration of state interests identified in the State Planning Policy (SPP)

(d) locational factors influencing the choice of site.

Impact assessment

11.3 The assessment of impacts on land is to be in accordance with DES application requirements for activities with impacts to land (ESR/2015/1839) and DES *EIS information guideline - land* (see Appendix 1 and updates as they become available).

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

(a) landscape (including visual amenity), designated sites, soils, contamination, land suitability and land uses in and around the project area, referring to regional plans and local government planning schemes

(b) the topography, geology, geomorphology of the project sites and adjoining areas

(c) the geological properties that could impact upon ground stability and influence the nature and location of project activities

(d) agricultural land considered as a priority agricultural area and/or strategic cropping land, and any other matters identified in the *Regional Planning Interests Act 2014* (RPI Act) and Regional Planning Interests Regulation 2014

(e) any existing mining, petroleum, geothermal, greenhouse gas storage tenures and KRAs overlying or adjacent to the project site, and any to be applied for as part of this project and the potential for resource sterilisation

(f) any infrastructure proposed to be located within, or which may have impacts on the Stock Route Network.

11.5 For surface mines and projects with activities that disturb the land surface, show how the landform during and post mining will be stable and non-eroding over time (describe how current and/ or expected technologies will be applied).

11.6 Address the cumulative impacts of the proposed land uses in conjunction with existing and potential future impacts to the land. This includes impacts from contaminants, materials or wastes associated with existing development and possible future development (as described by approved plans and existing project approvals).

Mitigation measures

11.7 Identify the measures that would be used to avoid, minimise or mitigate any impact on land values, including the management of existing infrastructure remaining on reconfigured land parcels.

11.8 Identify the measures to avoid, minimise or mitigate potential impacts of the project on soil values.

11.9 Describe all proposed measures to avoid, minimise or mitigate potential impacts on landscape character and visual amenity.

Rehabilitation and mine closure

11.10 The EIS is to provide information based on, and consistent with relevant guidelines, policies, current best practice approaches and legislative requirements about the strategies and methods for progressive and final rehabilitation of the environment disturbed by the project and decommissioning (see Appendix 1).

11.11 Develop a plan of a proposed scheduling and extent of rehabilitation works that would minimise the amount of land disturbed at any one time and minimise the residual loss of land and water bodies with ecological or productive value. Show a comparison of pre-activity site topography and the expected final topography of the site with any excavations, waste areas and dam sites on suitably scaled maps. Illustrate the proposed final land uses. Provide tabulated details containing milestones with completion dates for achieving progressive rehabilitation of the mine site. Ensure monitoring of response action including corrective/ preventative actions and adaptive management of mitigation measures are incorporated into the rehabilitation plan to ensure continual improvement.

11.12 Describe and illustrate and provide modelling results relating to where final voids, mined areas, subsidence, and uncompacted overburden and workings during operations and at the end of operations would lie in relation to the Isaac River floodplain and 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.

11.13 Describe rehabilitation completion criteria that would be used to measure progress and outline a program to undertake monitoring, auditing, reporting and maintenance of rehabilitated areas until project completion, and how corrective/ preventative actions would be managed.

11.14 Notwithstanding that management techniques may improve over the life of the project, and legislative requirements may change, the EIS needs to give confidence that all potential high-impact elements of the project (e.g. spoil dumps, voids, tailings and water management dams, creek diversions, subsidence areas, waste disposal areas, groundwater interactions with backfilled areas etc.) are capable of being managed and rehabilitated to achieve acceptable land use capabilities/suitability, to be stable and self-sustaining and to prevent upstream and downstream surface and groundwater contamination.

Native Title

11.15 Identify the current tenure of all land within the project area, including freehold tenure, resource tenures, conservation tenures, State and Commonwealth tenures, and traditional owner access to land determinations. Identify land on which Native Title has been extinguished, land subject of Native Title claims and approved Indigenous Land Use Agreements.

Flora and fauna

Objective

Biodiversity including matters of state environmental significance are identified and appropriately safeguarded to support healthy and resilient ecosystems and ensure the sustainable, long-term conservation of biodiversity and the social, economic, cultural and environmental benefits it provides.

Existing environment

11.16 Identify and describe MSES, state and regionally significant biodiversity and natural environmental values of the terrestrial and aquatic ecology likely to be impacted by the project, including watercourses impacted by groundwater drawdown or diversion; Isaac River floodplain ecology (especially as it relates to changes from levees and groundwater drawdown impacts); groundwater-dependent ecosystems and high ecological significance wetlands. Where MSES have been addressed in the section on MNES, cross referencing may be appropriate.

Impact assessment

11.17 Describe the potential direct and indirect impacts on the biodiversity and natural environmental values of affected areas such as breeding, roosting, nesting and foraging habitat, arising from the construction, operation and eventual decommissioning of the project (including potential/likely and known impacts) in accordance with DES EIS information guidelines (see Appendix 1).

11.18 Assess the need for buffer zones and the retention, rehabilitation or planting of movement corridors. Detail measures that would avoid the need for waterway barriers or measures to mitigate the impacts of their construction and operation where unavoidable.

11.19 Describe how the achievement of the rehabilitation objectives would be monitored and audited, and how corrective actions would be managed.

11.20 Taking into account all proposed avoidance and/or mitigation measures, The assessment should include, but not be limited to, the following key elements:

(a) MSES

(b) terrestrial and aquatic ecosystems (including groundwater-dependent ecosystems) and their interaction

(c) biological diversity including listed flora and fauna species and regional ecosystems

(d) the existing integrity and connectivity of ecological processes and ecosystems, including habitats of threatened, near-threatened or special least-concern species

(e) the integrity of landscapes and places, including wilderness and similar natural places

(f) actions of the 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*[6]

(g) chronic, low-level exposure to contaminants or the bio-accumulation of contaminants

(h) impacts on native fauna due to wastes on the site, particularly those related to any form of toxicants in supernatant water of any tailings storage facility.

11.21 Include maps at suitable scales showing the location of disturbance areas, estimates of disturbance for MSES likely to be impacted as a result of the project, and quantify the extent of habitat for listed threatened species and communities adjacent to the project site to provide clarity on the regional context of these habitats on the project site. Where MSES have been addressed in the section on MNES, cross referencing may be appropriate.

11.22 Describe the cumulative impacts of the proposed project, in conjunction with existing development and possible future development (as described by approved plans and existing project approvals), to ecosystem resilience, flora and fauna and impacts to the Isaac River floodplain ecology.

Mitigation measures

11.23 Describe how the achievement of the flora and fauna objectives would be monitored, audited and reported, and how corrective/ preventative actions would be managed for all phases of the project.

11.24 Propose practical measures for protecting or enhancing natural values and assess how the nominated quantitative indicators and standards are to be achieved for nature conservation management. In particular, address measures to protect or preserve any threatened or near-threatened species.

11.25 The measures proposed for the progressive rehabilitation of disturbed areas should include rehabilitation success criteria in relation to natural values that would be used to measure the progress and adjust practices if necessary to ensure success over time.

11.26 Proposals for the rehabilitation of disturbed areas should incorporate, where appropriate, provision of nest hollows, watering points and ground litter.

[6] This is notwithstanding that the *Vegetation Management Act 1999* does not apply to mining projects on resource tenements. Refer also to **https://www.qld.gov.au/environment/land/management/vegetation/exemptions**

Offsets

11.27 The EIS should identify whether the project will result in a significant residual impact on MSES with reference to the Queensland Environmental Offsets Policy, Significant Residual Impact Guideline 2014. The EIS should reference relevant parts of the Guide to determining terrestrial habitat quality (see Appendix 1) and must demonstrate that offsetting is the preferred option after all avoidance and mitigation measures have been considered, in accordance with the *Environmental Offsets Act 2014*.

11.28 Identify and illustrate the extent of any overlap between MNES and MSES.

11.29 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:

(a) 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 (Version 1.6) 2018 (see Appendix 1)

(b) where Commonwealth offset policy requires an offset for significant 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.

11.30 For staged offsets, the full extent of potential impacts on prescribed environmental matters from the entire proposal needs to be taken into account as part of the significant residual impact test.

Biosecurity

Objectives

The construction and operation of the project should aim to ensure:

(a) the spread of weeds, pest animals and vector agents are minimised

(b) existing weeds and pests are controlled.

Existing environment

11.31 Detail any known issues with weeds, pest and vector agents within the project area.

Impact assessment

11.32 Detail the potential impacts of project operations on the spread of weeds, pest and vector agents within and adjacent to the project area.

Mitigation measures

11.33 Propose detailed measures to control and limit the spread of restricted matters including noxious fish, invasive plants and invasive animals on the project site and adjacent areas as per Schedule 2 of the Biosecurity Regulation 2016, and any relevant local government area Biosecurity Plans.

11.34 Provide information relating to the distribution and abundance of invasive plants which are considered to be weeds of national significance (WoNS) on the project sites.

11.35 Provide details of any proposed vertebrate pest and weed control programs to be implemented by the project.

Water quality

Objective

Development is planned, designed, constructed and operated to protect environmental values of Queensland waters and supports the achievement of water quality objectives.

The environmental objectives to be met under the EP Act are that the activity (project) be operated in a way that:

(a) protects the environmental values of waters

(b) protects the environmental values of wetlands

(c) protects the environmental values of groundwater and any associated surface ecological systems.

The performance outcomes corresponding to these objective are in Schedule 8, Part 3 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed avoidance/management measures) that show these outcomes can be achieved.

Existing environment

11.36 Describe the water related environmental values and describe the existing surface water and groundwater quality regime within the study area in terms of water body interaction and high/ low freshwater flows. Describe the baseline condition of the existing waters in, upstream and downstream of the site and describe the water quality requirements of existing and potential water users in areas potentially affected by the proposed project.

11.37 With reference to the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (EPP (Water and Wetland Biodiversity)), section 9 of the EP Act, Schedule 8 of the EP Regulation and SPP *State Interest Guideline – Water Quality* and other guidelines (see Appendix 1), identify the environmental values of surface water (including wetlands) and groundwater within the project site and surrounding area, including immediately downstream that may be affected by the project, including any human uses of the water and any cultural values.

11.38 At an appropriate scale, detail the chemical, physical and biological characteristics of surface waters and groundwater within the area that may be affected by the project, including within and adjacent to the site. Water quality parameters should be appropriate to the downstream, and upstream uses and environmental values that may be affected. Include a description of water quality variability within the study area associated with climatic and seasonal factors, variability of freshwater flows and extreme events using suitable reference locations and sufficient data to adequately establish baseline condition.

Impact assessment

11.39 The assessment of impacts on water is to be in accordance with DES guideline Application requirements for activities with impacts to water (ESR/2015/1837) and DES EIS information guideline for an environmental statement - water (or updates as they become available).

11.40 State how any proposed exercise of underground water rights for the life of the project would be carried out on site and describe the aquifers affected or likely to be affected; movement of underground water to and from the aquifer; area where the water level is expected to decline; the predicted quantities of water to be taken or interfered with; the environmental values that will be affected; and assessment of cumulative impacts to the quality of the groundwater.

11.41 Identify the predicted quantity and quality (including location, timing and duration) of all potential discharges of water and wastewater sewage by the project, whether as point sources (such as controlled and uncontrolled discharges from regulated dams) or diffuse sources (such as seepage from waste rock dumps/waste management areas or irrigation to land of treated sewage effluent). Assess the potential impacts of any discharges on the quality and quantity of receiving waters (including groundwater) taking into consideration the assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts. Refer to DES Receiving environment monitoring program guideline for use with environmentally relevant activities under the EP Act.

11.42 Describe the cumulative impacts of the proposed project, in conjunction with existing development and possible future development (as described by approved plans and existing project approvals), to water quality.

Mitigation measures

11.43 Describe all methods and irrigated waste management that ensures no waste water or impacts occur to groundwater. Demonstrate how and discuss the extent strategies would mitigate, impacts of water discharges on the receiving environment. Information is to be supported with references to relevant legislation, policies, guidelines and modelling.

11.44 Describe how the achievement of the water quality objectives would be monitored, audited, reported, and how corrective/ preventative actions would be managed in accordance with EPP (Water and Wetland Biodiversity).

11.45 Describe the proposed management of existing, altered and/or constructed waterbodies including any watercourse, waterway, lake or spring on the project site to maintain water quality. Describe all methods and management to avoid and minimise impacts occurring to groundwater.

11.46 Describe measurable criteria, standards and/or indicators that will be used to assess the condition of the ecological values and health of surface water environments, mitigation strategies and contingency plans for:

(a) potential accidental discharges of contaminants and sediments during construction and operation

(b) stormwater run-off from the project facilities and associated infrastructure

(c) flooding of relevant river systems, and other extreme events

(d) management of acid sulfate soils.

11.47 Describe erosion and sedimentation characteristics at the project areas and what erosion and sedimentation controls are proposed for all parts of the proposed project to avoid and/or mitigate impacts on water quality during construction, operation and decommissioning. Demonstrate that impacts are avoided, mitigated or appropriately managed, including the use of development free buffers.

Water resources

Objectives

The construction, operation and decommissioning of the project should aim to meet the following objectives:

(a) equitable, sustainable and efficient use of water resources

(b) environmental flows, water quality, in-stream habitat diversity, and naturally occurring inputs from riparian zones to support the long-term maintenance of the ecology of aquatic biotic communities

(c) the condition and natural functions of waterbodies, lakes, springs, watercourses and waterways are maintained—including the stability of beds and banks of watercourses

(d) volumes and quality of groundwater are maintained, or alternate water supply is provided and current lawful users of water (such as entitlement holders and stock and domestic users) and other beneficial uses of water (such as surface water users, spring flows and groundwater-dependent ecosystems) are not adversely impacted by the development.

Existing environment

11.48 Describe the water related environmental values and describe the existing surface water and groundwater resources regime within the study area and the adjoining waterways in terms of water levels, discharges and flows. Describe existing and potential users of water in areas potentially affected by the proposed project, including municipal, agricultural, industrial, mining, recreational and environmental uses of water.

11.49 Describe any existing and/or constructed waterbodies including any watercourse, waterway lake or spring within and adjacent to the project.

11.50 Identify the location and source aquifer of all authorised groundwater extraction bores in areas potentially impacted by the project.

Impact assessment

11.51 The assessment of impacts on water is to be in accordance with DES guideline Application requirements for activities with impacts to water (ESR/2015/1837) (or updates as they become available) (see Appendix 1).

11.52 Provide details of proposed monitoring, impoundment, extraction, discharge, injection, use or loss of surface water or groundwater (including volumes and rates).

11.53 Provide details of existing and proposed changes to stormwater regimes, including changes to flow paths/patterns such as significant diversion or interception of overland flow and locations of interference/ disturbance of watercourses and floodplain areas. Include maps of suitable scale showing the location of diversions, changes to flow and other water-related infrastructure in relation to mining infrastructure including water storages, sediment dams, water treatment plants, levees, drains, diversions, bunds, monitoring points and release points.

11.54 Describe watercourse diversion design, operation and monitoring consistent with relevant parts of Department of Natural Resources, Mines and Energy's guideline: *Works that interfere with water in a watercourse – watercourse diversions* (see Appendix 1).

11.55 Provide an assessment of the impact on the receiving environment and aquatic and ecological communities from any interference with waters such as redirection of flood waters through the installation of levees or construction of other facilities and infrastructure.

11.56 Describe any quantitative standards and indicators which will be used to describe the ecological values and health of surface water environments.

11.57 Develop hydrological models as necessary to describe the inputs, movements, exchanges and outputs of all significant quantities and resources of surface water and groundwater that may be affected by the project. The models should address the range of climatic conditions that may be experienced at the site throughout all phases of the project, and adequately assess the potential cumulative impacts of the project on water resources including to the post-decommissioning phase. The models should include a site water balance (including any voids) to determine the upper and lower bounds of future water levels after mine closure, and the calculated trends of water quality in the voids over time. This should enable a description of the project's impacts at the local scale and in a regional context including proposed:

(a) surface waters:
    i. changes in flow regimes from diversions, water take and discharges
    ii. alterations to riparian vegetation and bank and channel morphology
    iii. direct and indirect impacts arising from the project
    iv. management of mine affected water.

(b) groundwaters:
    i. nature, type of geology and stratigraphy and depth to and thickness of the aquifers; their transmissivity; and value as water supply sources
    ii. aquifer types (confined, unconfined, karst)
    iii. flow directions
    iv. draw-down, recharge and discharge processes
    v. yields and aquifer/hydraulic parameters through field tests
    vi. groundwater-surface water interactions, and potential impacts to local streams, the Isaac River, the Great Barrier Reef and any other aquifers and surface water.
    vii. quality, quantity and significance of groundwater in the proposed project area and any surrounding area including seasonal variations of groundwater levels.

11.58 Provide information on the proposed water usage by the project, including details about:

(a) the ultimate supply required to meet the demand for full occupancy of the development, including timing of demands

(b) the quality and quantity of all water supplied to the site during the construction and operational phases based on minimum yield scenarios for water reuse, rainwater reuse and any bore water volumes

(c) a water balance analysis

(d) a site plan outlining actions to be taken in the event of failure of the main water supply.

11.59 Determination of potable water demand must be made for the project, including the temporary demands during the construction period. Include details of any existing town water supply to meet such requirements. Detail should also be provided to describe any proposed on-site water storage and treatment for use by the site office during construction and operational phases.

11.60 Describe the options for supplying water to the project and assess any potential consequential impacts in relation to the objectives of the *Water Plan (Fitzroy Basin) 2011* and any water management protocol that may apply (see Appendix 1).

11.61 Describe the cumulative impacts of the proposed project, in conjunction with existing development and possible future development (as described by approved plans and existing project approvals), to water resources, including management of impacts on underground water rights under the *Water Act 2000*.

Mitigation measures

11.62 Provide detailed designs for all infrastructure utilised in the treatment of on-site water including how any onsite water supplies are to be treated, contaminated water is to be disposed of and any decommissioning requirements and timing of temporary water supply/treatment infrastructure is to occur.

11.63 Describe measures that would be used to avoid, minimise or mitigate any impacts on surface water and groundwater resources.

11.64 Describe how the achievement of the water resources objectives would be monitored, audited, reported, and how corrective/ preventative actions would be managed.

11.65 Provide a policy outline of compensation, mitigation and management measures where impacts are identified.

Air

Objective

The environmental objective to be met under the EP Act is that the activity will be operated in a way that protects the environmental values of air.

The performance outcomes corresponding to this objective are in Schedule 8, Part 3 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Existing environment

11.66 Describe the existing air quality that may be affected by the project in the context of environmental values.

11.67 Discuss the existing local and regional air shed environment, including:

(a) background levels and sources of particulates, gaseous and odorous compounds and any major constituent

(b) pollutants (including greenhouse gases)

(c) baseline monitoring results, sensitive receptors.

11.68 Provide baseline data on local meteorology and ambient levels of pollutants for later modelling of air quality. Parameters should include air temperate, wind speed and directions, atmospheric stability, mixing depth and other parameters necessary for input to the model.

11.69 The assessment of environmental values is to describe and map at a suitable scale the location of all sensitive air receptors adjacent to all project components. An estimate of typical

background air quality levels should be based on surveys at representative sites where data from existing DES monitoring stations cannot be reliably extrapolated.

Impact assessment

11.70 The assessment of impacts on air from all components of the project (i.e. on-mine site and off-mine site) is to be in accordance with DES Application requirements for activities with impacts to air (ESR/2015/1840) (or updates as they become available).

11.71 Describe the characteristics of the contaminants or materials released, and the release rates as a result of the construction and operation of the project, including point source and fugitive emissions (e.g. dust emissions from the transport of coal, equipment and pipe leaks, storage tanks and wastewater collection, treatment and disposal systems), treatment and discharge systems. An emissions inventory (point source and fugitive) during construction, commissioning, operations, maintenance, closure and a range of possible/likely upset conditions is to be included.

11.72 Predict the impacts of the releases from the relevant activity on environmental values of the receiving environment using recognised quality assured methods.

11.73 The description of impacts should take into consideration the assimilative capacity of the receiving environment and the practices and procedures that would be used to avoid or minimise impacts. The impact prediction is to:

(a) address residual impacts on the environmental values (including appropriate indicators and air quality objectives) of the air receiving environment, with reference to sensitive receptors,[7] using recognised quality assured methods. This should include all relevant values potentially impacted by the activity, under the EP Act, EP Regulation and Environmental Protection (Air) Policy 2019 (EPP (Air)).

(b) address the cumulative impact of the 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).

(c) quantify the human health risk and amenity impacts associated with emissions from the project for all contaminants whether or not they are covered by the National Environmental Protection (Ambient Air Quality) Measure or the EPP (Air).

Mitigation measures

11.74 Describe the proposed avoidance and mitigation measures and how the proposed activity will be consistent with best practice environmental management and relevant government plans.

11.75 Describe how the achievement of the air objectives would be monitored, audited and reported, and how corrective/preventative actions would be managed.

11.76 Describe the proposed mitigation measures to manage dust emissions arising from the transport of coal product from the project site to the point of export in accordance with Aurizon's QR Network guideline Coal Dust Management Plan (2010) (see Appendix 1).

Greenhouse gas emissions

11.77 Provide a Greenhouse Gas Management Plan and Carbon Dioxide abatement plan and an inventory of projected annual emissions for the life of the project for each relevant greenhouse

[7] For example, the locations of existing residences, places of work, schools, etc., agricultural or ecologically significant areas/species that could be impacted.

gas, with total emissions expressed in 'CO_2 equivalent' terms for the following categories as per the National Greenhouse and Energy Reporting scheme:

(a) scope 1 emissions – direct emissions of greenhouse gases from sources within the boundary of the facility and as a result of the facility's activities (including emissions from vegetation clearing)

(b) scope 2 emissions – emissions of greenhouse gases from the production of electricity, heat or steam that the facility will consume, but that are physically produced by another facility.

11.78 Discuss the potential for greenhouse gas abatement measures, including:

(a) the proposed measures (alternatives and preferred) to avoid and/or minimise direct greenhouse gas emissions

(b) how the preferred measures minimise emissions and achieve energy efficiency

(c) any opportunities to further offset greenhouse gas emissions including carbon capture, sequestration, sales, offsets and trading.

Noise and vibration

Objective and performance outcomes

The environmental objective to be met under the EP Act is that the activity will be operated in a way that protects the environmental values of the acoustic environment.

The performance outcomes corresponding to the objectives are in Schedule 8, Part 3 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Existing environment

11.79 Describe the existing noise and vibration environment that may be affected by the project in the context of the environmental values.

11.80 Describe and illustrate on maps at a suitable scale, the location of all sensitive receptors adjacent to all project components and estimate typical background noise and vibration levels based on surveys at representative sites.

11.81 If the proposed project could adversely impact on the noise and vibration environment, undertake baseline monitoring at a selection of sensitive receptors potentially affected by the project. Describe the results of any baseline monitoring.

Impact assessment

11.82 The assessment of impacts on noise and vibration is to be in accordance with DES Application requirements for activities with noise impacts (ESR/2015/1838) (or updates as they become available).

11.83 Fully describe the characteristics of the noise and vibration sources that would be emitted when carrying out the activity (point source and general emissions). Noise and vibration emissions (including fugitive sources) that may occur during construction, commissioning, upset conditions, operation and closure should be described.

11.84 Predict the impacts of the noise emissions from the activity on the environmental values of the receiving environment, with reference to sensitive receptors, using recognised quality assured methods. Taking into account the practices and procedures that would be used to avoid or minimise impacts, the impact prediction is to address the:

(a) activity's consistency with the objectives

(b) cumulative impact of the noise with other known emissions of noise associated with existing development and possible future development (as described by approved plans)

(c) potential impacts of any low-frequency (<200 Hz) noise emissions.

11.85 Describe the cumulative impacts of the proposed project, in conjunction with existing development and possible future development (as described by approved plans and existing project approvals), to the existing noise and vibration environment.

Mitigation measures

11.86 Describe how the proposed activity would be managed to be consistent with best practice environmental management for the activity. Where a government plan is relevant to the activity, or the site where the activity is proposed, describe the activity's consistency with that plan.

11.87 Describe any expected exceedances of noise and vibration goals or criteria following the provision and/or application of avoidance and mitigation measures, and how any residual impacts would be addressed.

11.88 Describe how the achievement of the noise and vibration objectives would be monitored, audited and reported, and how corrective/preventative actions would be managed.

Waste management

Objective and performance outcomes

The environmental objective to be met under the EP Act is that any waste transported, generated, or received as part of carrying out the activity is managed in a way that protects all environmental values.

The performance outcomes corresponding to the objectives are in Schedule 8, Part 3 of the EP Regulation. The proponent should supply sufficient evidence (including through studies and proposed management measures) that show these outcomes can be achieved.

Information requirements

11.89 Detail waste management planning for the proposed project especially how these concepts have been applied to prevent or minimise environmental impacts due to waste at each stage of the project. Waste management planning will include detail of all identified waste types, waste volumes and proposed location for waste disposal.

Impact assessment

11.90 The assessment of impacts on waste is to be in accordance with DES Application requirements for activities with waste impacts (ESR/2015/1836) (or updates as they become available).

11.91 Define and describe the objectives and practical measures for avoidance, protecting or enhancing environmental values from impacts by wastes taking into account best practice

waste management strategies and the *Waste Reduction and Recycling Act 2011*, and Environmental Protection Regulation 2000.

11.92 Describe all the expected significant waste streams[8] from the proposed project activities (typically these would include waste rock, tailings and coarse rejects from mining and refining projects including assessing the properties that affect erosion and leasing potential) during the construction, operational and decommissioning phases of the project.

11.93 Describe the expected quantity, physical and chemical characteristics, including form (liquid, solid, gas), environmental hazard rating, and toxicity of each significant waste, as well as any attributes that may affect its likelihood of dispersal in the environment, as well the associated risk of causing environmental harm.

11.94 As it relates to the impact and disposal of waste, describe the cumulative impacts of the proposed project, in conjunction with existing development and possible future development (as described by approved plans and existing project approvals) waste matters.

Mitigation measures

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

11.96 Identify end of waste options using the relevant parts of the DES End of Waste framework under the *Waste Reduction and Recycling Act 2011* and comply with relevant parts of the DES *Guideline Waste Reduction and Recycling Act 2011 End of Waste* (see Appendix 1).

11.97 Describe how nominated quantitative standards and indicators may be achieved for waste management, and how the achievement of the waste management objectives would be monitored, audited and reported and how corrective/ preventative actions would be managed.

11.98 Provide details on natural resource use efficiency (such as energy and water), integrated processing design, and any co-generation of power and by-product reuse as shown in a material/energy flow analysis.

Transport

Objectives

The construction and operation of the project should aim to:

(a) maintain the safety and efficiency of all affected transport modes for the project workforce and other transport system users

(b) avoid and mitigate impacts including those on the condition of transport infrastructure

(c) ensure any required works are compatible with existing infrastructure and future transport corridors.

Existing environment

11.99 Describe and map the existing transport infrastructure and corridors. The map should show the project in relation to other major infrastructure along the road network and be of a scale that will

[8] Waste includes overburden, tailings and any materials (liquid, solid or gaseous) generated by the project that is not product.

enable the potential traffic impacts of the site to be understood in context. Other near-by mines in the area should also be identified on the map.

11.100 Provide an assessment of existing air, road, active transport and rail traffic in the project area.

11.101 Describe how the project complies with the *Queensland Level Crossing Safety Strategy 2012-2021* on new road/rail interfaces and the impacts on existing road/rail interfaces.

Impact assessment

11.102 The EIS should include a clear summary of the total transport task for the project, including workforce, inputs and outputs, during the construction, operational and closure phases. Proponents should make appropriate modal choices to ensure transport efficiency and minimise impacts on the community. Refer to the *EIS Information Guideline - Transport* (see Appendix 1).

11.103 Conduct transport assessments and present the transport assessment in separate sections for each project-affected mode (road, rail, port and sea) as appropriate for each phase of the project. Provide sufficient information to allow an independent assessment of how existing transport infrastructure will be affected by project transport at the local and regional level (e.g. local roads and state-controlled roads). The assessment should include identification of any existing and future road safety risks, impacts of project traffic on infrastructure condition or transport network performance that may be of significance to the project or from project traffic.

11.104 Include details of the adopted assessment methodology:

(a) for impacts on roads: the road impact assessment report in accordance with the *Guide to Traffic Impact Assessment,* (GTIA) (see Appendix 1)

(b) for impacts on rail level crossings: the Australian Level Crossing Assessment Model.

Mitigation measures

11.105 Detail and discuss how identified impacts will be mitigated in accordance with the GTIA. Mitigation strategies may include works, contributions or management plans and are to be prepared in close consultation with relevant transport authorities (including entering into infrastructure agreements with relevant transport authorities), should consider those authorities' works program and forward planning, and be in accordance with the relevant transport authorities' methodologies, guidelines and design manuals.

Social

Objectives

The construction and operation of the project should aim to:

(a) avoid or mitigate adverse social impacts arising from the project

(b) enhance benefits for local and regional communities.

Information requirements

11.106 Prepare a social impact assessment (SIA) for the project that is consistent with the requirements of the *Strong and Sustainable Resource Communities Act 2017* (SSRC Act) and the Coordinator-General's SIA Guideline (March 2018) (see Appendix 1).

11.107 The SIA is to 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.[9]

11.108 The SIA is to describe the potential social impacts (both positive and negative) of the proposed project.

11.109 The SIA is required to include detailed assessment of the following key matters in accordance with the SIA guideline.

(a) community and stakeholder engagement
(b) workforce management
(c) housing and accommodation
(d) local business and industry procurement
(e) health and community well-being.

11.110 The information provided in the EIS (including the SIA) will inform the Coordinator-General's decision under Section 12 of the SSRC Act on whether personnel employed during the construction phase of the project will be workers for the purposes of the SSRC Act.

11.111 The SIA is to include an analysis of the capacity of towns within 125 km radius of the main access to provide workers for the construction and operational phases of the project and the impacts of a resident workforce on housing and social infrastructure.

Community and stakeholder engagement

11.112 The SIA is to be informed by an inclusive and collaborative community and stakeholder engagement process. Community and stakeholder engagement is to be iterative throughout the SIA process and engagement with local government should commence at an early stage.

11.113 The SIA is to demonstrate evidence of engagement outcomes from local government, state agencies, local and regional employment and training providers, public and private housing providers, local and regional commerce and community development groups, social and public services providers, emergency services, public health providers and local communities. The SIA must be informed by the results from community and stakeholder engagement.

Key social impact assessment outcomes

11.114 The SIA must include a social impact management plan (SIMP) with solutions to mitigate the impacts identified in the detailed assessment of the five key matters listed above and enhance social benefits in accordance with the SIA guideline. In particular the SIMP must:

(a) provide solutions for barriers that may impact choice for people in local and regional communities to engage in project employment opportunities, and for workers to permanently reside in local and regional communities during the construction and operational phases of the project
(b) provide solutions to accommodate workers to ensure availability and affordability of local and regional housing is not adversely impacted.

11.115 The SIMP will describe solutions, a practical basis for the implementation of management measures identified through the SIA process. The SIMP is to include timeframes for implementation of solutions, key performance indicators, roles and responsibilities, stakeholders

[9] Contact the Coordinated Project Delivery Division on **SIA@coordinatorgeneral.qld.gov.au**

and potential partnerships. The SIMP must include a process of review throughout the project lifecycle to ensure solutions continue to be effective and ineffective solutions are amended to appropriately mitigate impacts.

11.116 The SIA must describe how the recruitment hierarchy for workers in section 9(3A) of the SSRC Act will be implemented.

11.117 The SIA will need to include a target for obtaining a local workforce and set the maximum proportion of FIFO workers for construction and operational stages of the project. This is to be supported by a rationale to ensure local benefit.

11.118 The SIA must clearly identify solutions for managing any FIFO workforce in accordance with the SIA guideline and with reference to sections 6 and 8 of the SSRC Act and relevant provisions in the *Anti-Discrimination Act 1991*.

Cultural heritage

Objective

The construction and operation of the project should aim to ensure that the nature and scale of the project does not compromise the cultural heritage significance of a heritage place or heritage area.

Existing environment

11.119 With reference to the *Aboriginal Cultural Heritage Act 2003* (ACH Act) and the *Queensland Heritage Act 1992* describe and identify the cultural heritage values within the project area and the adjoining waterways/ water bodies that may be affected by the project.

Indigenous cultural heritage

Impact assessment and mitigation measures

11.120 Describe the extent section 86 of the ACH Act applies to the project. The EIS should provide details of the proponent Cultural Heritage Management Plan or plans in accordance with the requirements of Part 7 of the ACH Act and any associated agreements that have been reached.

Non-Indigenous cultural heritage

Impact assessment

11.121 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 project.

11.122 Any such study is to be conducted by an appropriately qualified cultural heritage practitioner.

Mitigation measures

11.123 If the *Queensland Heritage Act 1992* requirements are triggered, provide strategies to mitigate and manage any negative impacts on non-Indigenous cultural heritage values and enhance any positive impacts.

11.124 The non-Indigenous historical heritage impact assessment should also separately confirm if any known family grave sites would be impacted by the project works and provide strategies to

mitigate and manage any negative impacts on the historical family grave sites and enhance any positive impacts.

Economic

Objectives

The construction and operation of the project should aim to:

(a) avoid or mitigate adverse social and economic impacts arising from the project

(b) capitalise on opportunities potentially available for capable local industries and communities where this does not have a significant negative impact on the project or reduce net economic benefits to the State

(c) create a net economic benefit to the region and state.

Information requirements

11.125 Identify the potential adverse and beneficial economic impacts of the 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. The analysis is to be consistent with the Coordinator-General's Economic impact assessment guideline (April 2017). Separately address each major stage of the proposed project (e.g. construction, operation and decommissioning and rehabilitation).

11.126 Compare the estimated costs and benefits of the site's proposed final land uses to demonstrate that a variety of configurations have been investigated to optimise the final landform design against the estimated costs and benefits of the following alternative final land uses:

(a) full rehabilitation of the site with no final void(s) and non-use management areas

(b) rehabilitation with partial backfilling of void(s)

(c) usual practice such as overburden waste dumps and stockpiles

(d) alternative location and configuration of infrastructure and structures.

11.127 Identify any existing or proposed incompatible land uses within and adjacent to the 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.

Hazards, health and safety

Objectives

The construction and operation of the project should aim to ensure:

(a) the risk of, and the adverse impacts from, natural and human-made hazards are avoided, minimised or managed and mitigated to protect people and property

(b) the community's resilience to natural hazards is enhanced

(c) developments 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.

Impact assessment

11.128 Describe the potential risks to public safety, employees and property that may be associated with the project in the form of a preliminary risk assessment for all components of the project and in accordance with relevant standards. The assessment should include:

(a) potential hazards, accidents, spillages, fire and planned and unplanned abnormal events that may occur during all stages of the project including but not limited to those associated with petroleum and gas pipelines, abandoned mines, explosive magazines and the storage and use of explosives as part of the construction, and including estimated probabilities of occurrence

(b) identifying all hazardous substances to be used, stored, processed or produced and the rate of usage

(c) potential hazards posed by wildlife interactions, natural events (for example, cyclone, storm inundation, flooding, bushfire) and implications related to climate change

(d) how the project may potentially affect hazards away from the project site (e.g. changing flooding characteristics)

Flooding

11.129 Describe flood risk from rainfall events for a range of annual exceedance probabilities (including Probable Maximum Flood) for the site and assess how the project may change flooding characteristics.

11.130 The assessment should consider all infrastructure associated with the project including culverts or levees, roads and linear infrastructure and all proposed measures to avoid or minimise risks to life, property, community (including damage to other properties) and the environment during flood events.

Chemical Leaks and Spills

11.131 Describe the proposed procedures and safeguards built into the design and management/ operational practices to:

(a) reduce the potential for chemical leaks and spills

(b) enable the detection of spills and leaks and management measures to be implemented to rectify

(c) provide procedures for managing water in containment areas

(d) outline an inventory and describe the characteristics and management involved in the handling, storage, spill management, transport and disposal of all chemicals, products/by-products and potential contaminants as a result of construction, operation, maintenance, commissioning and decommissioning.

11.132 Include identification of buffer zones and all means that will be incorporated to ensure human health and the environment are not impacted.

Mitigation measures

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

11.134 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.

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

11.136 Describe how the achievement of the hazards, health and safety objectives would be monitored, audited and reported, and how corrective/ preventative actions would be managed.

Flooding and regulated dams

Objectives

The construction and operation of the project should aim to ensure the risk of, and the adverse impacts from flooding hazards or dam failure are avoided, minimised or mitigated to protect people, property and the environment.

The performance outcomes corresponding to the objectives are outlined in DES EIS *Guideline – Structures which are dams of levees constructed as part of the environmentally relevant activities* (see Appendix 1).

Existing environment

11.137 Describe likelihood and history of flooding onsite and in proximity to the site, including the extent, levels and frequency and current flood risk for a range of annual exceedance probabilities up to the probable maximum flood for potentially affected waterways and assess (through flood modelling and any additional data) how the project may potentially change flooding characteristics and be affected by floods. The flood modelling assessment should consider local and regional flooding and all infrastructure associated with the project including levees, roads and linear infrastructure and all proposed measures to avoid or minimise impacts.

Impact assessment

11.138 List and describe all dams and levees proposed on the project site and undertake a category assessment of each dam or levee according to the criteria outlined in the *DES Manual for assessing consequence categories and hydraulic performance of structures* (ESR/2016/1933).

Mitigation measures

11.139 Illustrate how any regulated structure on site would be managed during periods of high incidental rainfall and/or flooding on site so that any potential impacts to land or water are minimised.

11.140 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.

Matters of national environmental significance (MNES)

Background and context

11.141 On 13 May 2019, the proponent referred the project as three separate proposed actions for a 'controlled action' decision under the EPBC Act (EPBC 2019/8460 Mine Site and Access Road;

EPBC 2019/8459 Water Pipeline; EPBC 2019/8458 Electricity Transmission Line). It is expected that the EIS will relate to all three proposed actions.

11.142 The Commonwealth Minister for the Environment may determine that the project will have or is likely to have a significant impact upon the following matters of national environmental significance under the EPBC Act:

(a) For the Winchester South Mine Site and Access Road (EPBC 2019/8460):
- listed threatened species and communities (sections 18 and 18A)
- a water resource, in relation to coal seam gas and large coal mining (sections 24D and 24E).

(b) For the Winchester South Water Pipeline (EPBC 2019/8459):
- listed threatened species and communities (sections 18 and 18A).

(c) For the Winchester South Electricity Transmission Line (EPBC 2019/8458):
- listed threatened species and communities (sections 18 and 18A).

11.143 The EIS is to be prepared pursuant to the Bilateral Agreement. It must meet the impact assessment requirements under both Commonwealth and Queensland legislation. The projects will require approval from the responsible Commonwealth minister under Part 9 of the EPBC Act before they can proceed.

11.144 Therefore, the EIS should include a stand-alone MNES chapter providing description and detailed assessment of the impacts for the proposed mine and access road (EPBC 2019/8460), the proposed water pipeline (EPBC 2019/8459) and the proposed electricity and transmission line (EPBC 2019/8458) separately, inclusive of any avoidance, mitigation and offset measures. All information relevant to the assessment of the above controlling provisions must be included in the MNES chapter and reference to other chapters in the EIS or appendices must be kept to a minimum.

11.145 Once the EIS has been prepared to the satisfaction of the Coordinator-General and MNES addressed to the satisfaction of the Commonwealth Department of the Environment and Energy, the EIS will be made available for public comment.

11.146 The proponent may be required by the Coordinator-General or the Department of the Environment and Energy to provide additional material to address matters raised in submissions on the EIS.

11.147 At the conclusion of the environmental assessment process, the Coordinator-General will provide a copy of the report to the Commonwealth Minister for the Environment, in accordance with Part 13, section 36(2) of the State Development and Public Works Organisation Regulation 2010 (Qld).

11.148 After receiving the evaluation report and sufficient information about the relevant impacts of the actions, the Commonwealth Minister for the Environment has 30 business days to consider whether the impacts of the proposals are acceptable, or not, and to decide whether or not to approve each controlling provision.

11.149 The Commonwealth Minister's decision is separate to the approval decisions made by Queensland state agencies and other entities with jurisdiction on state or local matters.

11.150 In accordance with the Bilateral Agreement, the EIS must:

(a) assess all relevant impacts that each proposed action has, will have or is likely to have;

(b) provide enough information on each proposed action and its relevant impacts to allow the Commonwealth Minister for the Environment to make an informed decision whether or not to approve the action under Part 9 of the EPBC Act; and

(c) address the matters mentioned in Division 5.2 of the Environment Protection and Biodiversity Conservation Regulations 2000 (Cth) (EPBC Regulations).

11.151 A cross-reference to the relevant sections in the MNES chapter that addresses each of the matters mentioned in Division 5.2 of the EPBC Regulations should be provided.

11.152 Consideration is to be given to any relevant information, advice, policy statements and guidelines (available at **www.environment.gov.au**) including but not limited to:

(a) Significant impact guidelines 1.1 - Matters of National Environmental Significance (see Appendix 1)

(b) Significant impact guidelines 1.3 - coal seam gas and large coal mining developments – impacts on water resources (see Appendix 1)

(c) *Environment Protection and Biodiversity Conservation Act 1999*

(d) EPBC Act Environmental Offsets Policy (see Appendix 1)

(e) Species Profile and Threats (SPRAT) Database; and

(f) any approved conservation advices, recovery plans and threat abatement plans (as relevant) for listed threatened species and ecological communities.

11.153 The proposed mine and access road (EPBC 2019/8460), the proposed water pipeline (EPBC 2019/8459) and the proposed electricity and transmission line (EPBC 2019/8458) should each initially be assessed in their own right. How each proposed action relates to the other proposed actions should also be addressed.

11.154 Predictions of the extent of threat (risk), impact and the benefits of any avoidance, mitigation and management measures proposed, must be scientifically robust, supported by relevant suitably qualified experts and/or supported by technical data. Reference all sources of information relied upon and provide an estimate of the reliability of predictions.

11.155 Any positive impacts on relevant MNES may be identified and evaluated.

11.156 The MNES chapter should describe any additional new field work, modelling or testing that, when used in conjunction with existing information, provides sufficient confidence in predictions so that well-informed decisions can be made. The extent of any new field work, modelling or testing should be commensurate with risk.

Assessment requirements

11.157 The MNES chapter is to provide background to each proposed action and describe in detail all aspects of each proposed action, including but not limited to, the construction, operational and (if relevant) decommissioning aspects, including:

(a) the precise location of all works to be undertaken (including associated offsite works and infrastructure), structures to be built or elements of each aspect that may have impacts on any matter protected under each relevant controlling provision; and

(b) details on how the works are to be undertaken (including stages of development and their timing) and design parameters for those parts of the structures or elements that may have relevant impacts.

11.158 The MNES chapter must also provide details on the current state of each proposed action as well as the consequences of not proceeding with each proposed action and the project as a whole.

11.159 Project alternatives must be discussed in accordance with Schedule 4, section 2.01(g) of the EPBC Regulations, including:

(a) if relevant, the alternative of taking no action;

(b) a comparative description of the impacts of each alternative on the triggered MNES protected by controlling provisions of Part 3 of the EPBC Act for the action; and

(c) sufficient detail to make clear why any alternative or option is preferred to another.

11.160 The short, medium and long-term advantages and disadvantages of the alternatives must be discussed.

Listed threatened species and communities (sections 18 and 18A)

Existing environment

11.161 The MNES chapter must describe the listed threatened species and ecological communities identified below (including EPBC Act listing status, distribution, life history and habitat).

11.162 Provide details of the scope, methodology, timing and effort of surveys for each proposed action (including areas outside of each proposed action area which may be impacted by each proposed action), and include details of:

(a) the application of best practice survey guidelines;

(b) how studies or surveys are consistent with (or a justification for divergence from) published Australian Government guidelines and policy statements.

11.163 The MNES chapter must include records identified from field surveys of the below listed threatened species and ecological communities within and/or adjacent to the project site for each proposed action. The records must include a description of the habitat in which the record was identified.

11.164 The MNES chapter must include known historical records of the below listed threatened species and ecological communities in the broader region. All known records must include the source (i.e. Commonwealth and State databases, published research, publicly available survey reports, etc.), the year of the record and a description of the habitat in which the record was identified.

11.165 The MNES chapter must include a detailed habitat assessment for each of the below listed threatened species and ecological communities within the project site of each proposed action. The habitat assessments must:

(a) consider habitat use requirements (e.g. denning, foraging, breeding, nesting, dispersal, etc.);

(b) be informed by desktop analysis and field surveys;

(c) be in accordance with a departmental, state or local government habitat quality assessment methodology, and be included in an appendix to the EIS, along with the justification for using the chosen methodology;

(d) consider relevant departmental documents (e.g. approved conservation advices, recovery plans, draft referral guidelines and listing advices), the SPRAT Database; and

(e) be supported by relevant published research (if required).

11.166 The MNES chapter must include the area (in hectares) and quality of all suitable habitats within each proposed action.

11.167 The MNES chapter must include detailed mapping of suitable habitat for the below listed threatened species and ecological communities within each proposed action, which must:

(a) be specific to the habitat assessment undertaken for each listed threatened species and ecological community (Note: provision of Queensland Regional Ecosystems alone is not adequate);

(b) include an overlay of the disturbance footprint;

(c) include known records of individuals from desktop analysis and/or field surveys; and

(d) be provided separately as attachments in a JPEG format.

Impact assessment

11.168 For each proposed action, describe and assess the impacts (direct, indirect and consequently) to each listed threatened species and ecological community identified below, and any others that are found to be or may potentially be present in areas that may be impacted by any stages of each proposed action in accordance with the Significant impact guidelines 1.1 - Matters of National Environmental Significance (see Appendix 1).

11.169 Identify which aspect of each proposed action is of relevance to each listed threatened species or ecological community or if the threat of impact relates to consequential actions.

11.170 The MNES chapter must identify and address cumulative impacts, where potential project impacts are in addition to existing impacts of other activities (including known potential future projects by the proponent and/or other proponents in the region and vicinity).

11.171 The impacts must be assessed in accordance with relevant departmental policies and guidelines, and information provided in the SPRAT Database. Any technical data and other information used or needed to make a detailed assessment of the relevant impacts must be included as appendices to the EIS.

11.172 Where relevant, the MNES chapter is to demonstrate that each proposed action will have regard to any approved conservation advice.

11.173 Where relevant, the EIS is to demonstrate that each proposed action will not be inconsistent with:

(a) Australia's obligations under:

iv. the Biodiversity Convention;

v. the Convention on the Conservation of Nature in the South Pacific (Apia Convention);

(b) any relevant recovery plans or threat abatement plans.

Mitigation measures

11.174 The MNES chapter must include detailed descriptions of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of all stages of each proposed action on listed threatened species and communities. The proposed measures should be based on best available practices, appropriate standards and supported by scientific evidence. The MNES chapter must include:

(a) proposed measures to be undertaken to avoid and mitigate the relevant impacts of each proposed action on listed threatened species and communities, including those required by other Commonwealth, State and local government approvals;

(b) an assessment of the predicted effectiveness of the proposed measures;

(c) any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advices, and a discussion on whether the proposed measures are not inconsistent with relevant recovery plans and threat abatement plans;

(d) details of ongoing management, including monitoring programs to support an adaptive management approach and determine the effectiveness of the proposed measures;

(e) details on measures, if any, proposed to be undertaken by State and local government, including the name of the agency responsible for approving each measure; and

(f) information on the timing, frequency and duration of the measures to be implemented.

11.175 All proposed measures should consider the 'S.M.A.R.T' principle:

(a) S – Specific (what and how);

(b) M – Measurable (baseline information, number/value, auditable);

(c) A – Achievable (timeframe, money, personnel);

(d) R – Relevant (conservation advices, recovery plans, threat abatement plans, scientific evidence); and

(e) T – Time-bound (specific timeframe to complete.

11.176 An outline of an Environmental Management Plan (EMP) that sets out the framework for management, mitigation and monitoring of relevant impacts of the proposed actions, including any provisions for independent environmental auditing, may be included as an appendix to the EIS.

List of potential listed threatened species

11.177 The MNES chapter is to address impacts on, but not limited to, the following listed threatened species for each proposed action:

Bird

(a) Red Goshawk (*Erythrotriorchis radiatus*) – vulnerable;

(b) Squatter Pigeon (southern) (*Geophaps scripta scripta*) – vulnerable;

(c) Painted Honeyeater (*Grantiella picta*) – vulnerable;

(d) Star Finch (eastern) (*Neochmia ruficauda ruficauda*) – endangered;

(e) Australian Painted Snipe (*Rostratula australis*) – endangered;

(f) Curlew Sandpiper (*Calidris ferruginea*) – migratory, critically endangered;

Fish

(a) Murray Cod (*Maccullochella peelii*) – vulnerable;

Mammal

(a) Northern Quoll (*Dasyurus hallucatus*) – endangered;

(b) Ghost Bat (*Macroderma gigas*) – vulnerable;

(c) Corbens Long-eared Bat (*Nyctophilus corbeni*) – vulnerable;

(d) Greater Glider (*Petauroides volans*) – vulnerable;

(e) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) (*Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)*) – vulnerable;

Reptile

(a) Southern Snapping Turtle (*Elseya albagula*) – critically endangered;

(b) Fitzroy River Turtle (*Rheodytes leukops*) – vulnerable;

(c) Yakka Skink (*Egernia rugosa*) – vulnerable;

(d) Dunmall's Snake (*Furina dunmalli*) – vulnerable;

(e) Allan's Lerista (*Lerista allanae*) – endangered;

(f) Ornamental Snake (*Denisonia maculata*) – vulnerable;

Flora

(a) Marlborough Blue (*Cycas ophiolitica*) – endangered;

(b) King Blue-grass (*Dichanthium queenslandicum*) – endangered;

(c) Quassia (*Samadera bidwillii*) – vulnerable;

List of potential listed threatened ecological communities

11.178 The EIS is to address impacts on, but not limited to, the following listed threatened ecological communities for each proposed action:

(a) Brigalow (*Acacia harpophylla* dominant and co-dominant) – endangered; and

(b) Natural Grasslands of the Queensland Central Highlands and the northern Fitzroy Basin – endangered.

(c) Semi-evergreen vine thickets of the Brigalow Belt (North and South) and Nandewar Bioregions - endangered.

A water resource, in relation to coal seam gas development and large coal mining development

11.179 The National Partnership Agreement on Coal Seam Gas and Large Coal Mining, to which Queensland is a signatory, specifies that all coal seam gas and large coal mining proposals that are likely to have a significant impact on water resources are to be referred to the Independent Expert Scientific Committee (IESC) for advice.

11.180 In relation to the proposed mine and access road (EPBC 2019/8460), the MNES chapter must provide details on the use and interference with the current state of groundwater and surface water in the region as well as any use of these resources.

11.181 The MNES chapter is to describe and assess the impacts to water resources giving consideration to the Significant Impact Guidelines 1.3: Coal seam gas and large coal mining developments – impacts on water resources (see Appendix 1).

11.182 The MNES chapter is to address the information requirements contained in the Information guidelines for proponents preparing coal seam gas and large coal mining development proposals and provide a cross-reference table to identify where each component of the guidelines has been addressed (see Appendix 1). Explanatory notes on the IESC information guidelines may assist in addressing the information requirements:

(a) Information Guidelines explanatory note - Uncertainty analysis–Guidance for groundwater modelling within a risk management framework;

(b) Information Guidelines explanatory note - Assessing groundwater-dependent ecosystems; and

(c) Information Guidelines explanatory note - Deriving site-specific guideline values for physico-chemical parameters and toxicants.

Offsets

11.183 For each of the proposed actions the MNES chapter must include an assessment of the likelihood of residual significant impacts occurring on listed threatened species and communities after avoidance, mitigation and management measures relating to the projects have been applied. If it is determined that a residual significant impact is likely, include a draft Offset Management Strategy (as an appendix to the EIS) that provides, at a minimum:

(a) details of the environmental offset/s (in hectares) for residual significant impacts of the proposed action on relevant MNES, and/or their habitat;

(b) details of how the environmental offset/s meets the requirements of the Department's EPBC Act Environmental Offsets Policy (2012) (EPBC Act Offset Policy), including the Offsets Assessments Guide, available at: **www.environment.gov.au/epbc/publications/epbc-act-environmental-offsets-policy**;

(c) details of a strategy for the staging of environmental offset/s for each project stage (if proposed);

(d) details of appropriate offset area/s (including a map) to compensate for the residual significant impact on relevant MNES, and/or their habitat;

(e) information about how the proposed offset/s area provides connectivity with other relevant habitats and biodiversity corridors; and

(f) details of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide protection for the offset area/s against development incompatible with conservation.

11.184 If available, include a draft Offsets Management Plan which also provides (where possible):

(a) a field validation survey and baseline description of the current condition (prior to any management activities) of the offset area/s, including existing vegetation, for relevant MNES, and/or their habitat;

(b) a description and map (including shapefiles) to clearly define the location and boundaries of the proposed offset area/s, accompanied by the offset attributes (e.g. physical address of the offset area/s, coordinates of the boundary points in decimal degrees, the MNES that the environmental offset/s compensates for, and the size of the environmental offset/s in hectares);

(c) a description of the management measures (including timing, frequency and duration) that will be implemented in the offset area/s;

(d) a discussion of how proposed management measures take into account relevant approved conservation advices and are consistent with the measures contained in relevant recovery plans and threat abatement plans;

(e) completion criteria and performance targets for evaluating the effectiveness of the Offset Management Plan implementation, and criteria for triggering corrective actions;

(f) a program to monitor, report on and review the effectiveness of the Offset Management Plan;

(g) a description of potential risks to the successful implementation of the environmental offset/s, and contingency measures that would be implemented to mitigate against these risks; and

(h) details of the mechanism to legally secure the environmental offset/s (under Queensland legislation or equivalent) to provide enduring protection for the offset area/s against development incompatible with conservation.

11.185 The draft Offset Management Plan must be prepared by a suitably qualified person and in accordance with the Department's *Environmental Management Plan Guidelines* (2014), available at: **www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines**.

Project proponent

11.186 The MNES chapter is to 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:

(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.

11.187 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.

Social and economic

11.188 The social and economic impacts of each proposed action, both positive and negative are to be analysed. Matters of interest may include:

(a) details of any public consultation activities undertaken, and their outcomes;

(b) details of any consultation with Indigenous stakeholders;

(c) projected economic costs and benefits of each proposed action, including the basis for their estimation through cost/benefit analysis or similar studies; and

(d) employment and other opportunities expected to be generated by each proposed action (including construction and operational phases) and the project as a whole;

11.189 Social and economic impacts should be considered at the local, regional and national levels. Details of the relevant cost and benefits of alternative options to each proposed action must also be included.

Project approvals process

11.190 The MNES chapter must include information on any other requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to each proposed action. This 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 each proposed action, including:

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

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

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

iv. a statement identifying any additional approval that is required; and

v. a description of the monitoring, enforcement and review procedures that apply, or are proposed to apply, to each action.

Conclusion

11.191 The MNES chapter is to include an overall conclusion for each proposed action as to the environmental acceptability of the proposed action on each relevant matter protected by the EPBC Act, including:

(a) a discussion on the consideration with the requirements of the EPBC Act, including the objects of the EPBC Act, the principles of ecologically sustainable development and the precautionary principle;

(b) reasons justifying undertaking each proposed action in the manner proposed, including the acceptability of the avoidance and mitigation measures; and

(c) if relevant, a discussion of residual significant impacts and any offsets and compensatory measures proposed or required for residual significant impacts on relevant matters protected by the EPBC Act, and the relative degree of compensation and acceptability.

12. Appendices to the EIS

12.1 Appendices should provide the complete technical data collected, and evidence used to develop assertions and findings in the main text of the EIS.

12.2 No significant issue or matter should be mentioned for the first time in an appendix—it must be addressed in the main text of the EIS.

12.3 Include a table listing the section and sub-sections of the EIS where each requirement of the TOR is addressed.

12.4 Include a glossary of terms and a list of acronyms and abbreviations.

Acronyms and abbreviations

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

Acronym/abbreviation	Definition
AHD	Australian Height Datum
EIS	environmental impact statement
EP Act	*Environmental Protection Act 1994*
EP Regulation	Environmental Protection Regulation 2019
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cwlth)
EPP	Environmental Protection Policy (under the EP Act)
GDA94	Geocentric Datum of Australia 1994
KRAs	Key Resource Areas
MNES	matters of national environmental significance (under the EPBC Act)
MSES	Matters of state environmental significance
SDPWO Act	*State Development and Public Works Organisation Act 1971*
TOR	terms of reference
VMA	*Vegetation Management Act 1999*

Appendix 1. Policies and guidelines

General

Queensland Government, *Preparing an environmental impact statement: Guideline for proponents*, The Coordinator-General, Department of State Development, Infrastructure and Planning, Brisbane, 2015, **www.statedevelopment.qld.gov.au/fact-sheets-and-guidelines/coordinated-projects.html**

Queensland Government, *Information guideline for an environmental impact statement* – Policies and guidelines, 2016, Department of Environment and Science, viewed 3 June 2019, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html**

Queensland Government, *DAFF Environmental Impact Assessment Companion Guide*, Department of Agriculture, Fisheries and Forestry, Brisbane, 2014, viewed 3 June 2019, **https://publications.qld.gov.au/dataset/daff-environmental-impact-assessment-companion-guide**

Queensland Government, *State Development Assessment Provisions,* Department of State Development, Manufacturing, Infrastructure and Planning, Brisbane, 2018*,* viewed 3 June 2019, **https://dsdmipprd.blob.core.windows.net/general/sdap-version-2.5.pdf**

Queensland Government, *Guideline: Model mining conditions*—ESR/2016/1936, Version 6.02, effective: 7 March 2017, Department of Environment and Heritage Protection, 2017, **http://www.ehp.qld.gov.au/assets/documents/regulation/rs-gl-model-mining-conditions**

Queensland Government, *Technical and information requirements for an environmental authority application,* Department of Environment and Heritage Protection, **https://www.business.qld.gov.au/running-business/environment/licences-permits/applying/technical**

Queensland Resources Council, *Queensland Resources and Energy Sector Code of Practice for Local Content 2013*, Queensland Resources Council, Brisbane, 2013, **https://www.qrc.org.au/policies/local-content/**

Land

Queensland Government, *Application requirements for activities with impacts to land*, Department of Environment and Science, 2017, **https://environment.des.qld.gov.au/assets/documents/regulation/era-gl-land-impacts.pdf**

Queensland Government, *Mined Land Rehabilitation Policy*, Department of Environment and Heritage Protection, Department of Natural Resources and Mines, Queensland Treasury, Brisbane. **https://environment.des.qld.gov.au/management/env-policy-legislation/mining-rehabilitation-reforms.html**

Queensland Government, State Planning Policy, July 2017, Department of Infrastructure, Local Government and Planning, Brisbane, 2017, **https://dsdmipprd.blob.core.windows.net/general/spp-july-2017.pdf**

Queensland Government, *Information guideline for an environmental impact statement – Land; Contaminated land; Rehabilitation; Quarry Material*, 2016, Department of Environment and Science, **https://environment.des.qld.gov.au/management/impact-assessment/eis-processes/eis-tor-support-guidelines.html**

Flora and fauna

Queensland Government, *Queensland Environmental Offsets Policy (Version 1.6)*, Department of Environment and Science, June 2018, **https://environment.des.qld.gov.au/assets/documents/pollution/management/offsets/offsets-policyv1-6.pdf**

Queensland Government, *Queensland Environmental Offsets Policy Significant Residual Impact Guideline*, Department of Environment and Heritage Protection, December 2014, **https://environment.des.qld.gov.au/assets/documents/pollution/management/offsets/offsets-policyv1-6.pdf**

Queensland Government, *Terrestrial Vertebrate Fauna Survey Guidelines for Queensland Ecological Sciences*, Queensland Herbarium, Brisbane, June 2018 (V 3.0), **https://www.qld.gov.au/__data/assets/pdf_file/0022/68224/fauna-survey-guidelines.pdf**

Queensland Government, *Terrestrial Vertebrate Fauna Survey Field Data Sheets Ecological Sciences*, Queensland Herbarium, Brisbane, June 2018, **https://www.qld.gov.au/__data/assets/pdf_file/0030/68259/fauna-survey-datasheets.pdf**

Queensland Government, *Targeted species survey guidelines are available for selected threatened species*, Department of Environment and Science, **https://www.qld.gov.au/environment/plants-animals/biodiversity/vertebrate-survey**

Queensland Government, *Flora Survey Guidelines - Protected Plants Nature Conservation Act 1992*, Department of Environment and Heritage Protection, Brisbane, NCS/2016/2534, Version 2.00, December 2016, **https://environment.des.qld.gov.au/licences-permits/plants-animals/documents/gl-wl-pp-flora-survey.pdf**

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Queensland Government*, Guide to determining terrestrial habitat quality A toolkit for assessing land based offsets under the Queensland Environmental Offsets Policy*, Department of Environment and Heritage Protection, Brisbane, Version 1.2 April 2017, **https://environment.des.qld.gov.au/assets/documents/pollution/management/offsets/habitat-quality-assessment-guide.pdf**

Water

Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, *The Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian Water Association (Artarmon) and NZ Water and Wastes Association (Auckland), 2000, **www.environment.gov.au/system/files/resources/53cda9ea-7ec2-49d4-af29-d1dde09e96ef/files/nwqms-guidelines-4-vol1.pdf**

Queensland Government, *Application requirements for activities with impacts to water*, Department of Environment and Heritage Protection, 2016, **http://www.ehp.qld.gov.au/assets/documents/regulation/era-gl-water-impacts.pdf**

Queensland Government, Model water conditions for coal mines in the Fitzroy basin, Department of Environment and Science – ESR/2015/1561, Version 3.01, effective: 31 March 2013, 2013, **https://environment.des.qld.gov.au/assets/documents/regulation/rs-gl-water-conditions-mines-fitzroy.pdf**

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