Terms of reference for an environmental impact statement

Julia Creek Vanadium and Energy project

June 2025

COORDINATOR-GENERAL

Queensland Government

The Department of State Development, Infrastructure and Planning, connects industries, businesses, communities and government (at all levels) to leverage regions' strengths to generate sustainable and enduring economic growth that supports well-planned, inclusive and resilient communities.

Acknowledgement of Country

The department acknowledges the First Nations peoples in Queensland: Aboriginal peoples and Torres Strait Islander peoples and their connections to the lands, winds and waters we now all share. We pay our respect to Elders, past, present and emerging.

We also acknowledge the continuous living culture of First Nations Queenslanders – their diverse languages, customs and traditions, knowledges and systems. We acknowledge the deep relationship, connection and responsibility to land, sea, sky and Country as an integral element of First Nations identity and culture.

The Country is sacred. Everything on the land has meaning and all people are one with it. We acknowledge First Nations peoples' sacred connection as central to culture and being. We acknowledge the stories, traditions and living cultures of First Nations peoples and commit to shaping our state's future together.

The department recognises the contribution of First Nations peoples and communities to the State of Queensland and how this continues to enrich our society more broadly.

Translating and interpreting service

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Copies of this publication are available on our website at www.statedevelopment.qld.gov.au/cg and further copies are available upon request.

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Part A About these terms of reference

Introduction

This terms of reference (TOR) sets out the matters to be addressed in an environmental impact statement (EIS) for the proposed Julia Creek Vanadium and Energy project (the project) under the *State Development and Public Works Organisation Act 1971* (SDPWO Act).

The purpose of an EIS is to:

- assess the potential adverse and beneficial environmental, economic and social impacts of the project
- assess management, monitoring, planning and other measures proposed to minimise any adverse environmental impacts of the project and for the proponent to prepare environmental management plan(s)
- consider feasible alternative ways to carry out the project
- contain enough information for the proponent to prepare well-informed environmental management plan(s)
- contain sufficient information for Commonwealth and State authorities to assess the project and develop relevant recommended, stated and/or imposed conditions of approval.

The project

The project is a greenfield vanadium and oil shale mine, including processing facilities and supporting infrastructure, located approximately 16 kilometres southeast of Julia Creek, in the McKinlay Shire local government area. The project is located in Queensland's North-West Minerals Province and the Julia Creek and Richmond Critical Minerals Zone on Exploration Permit Mineral (EPM) leases EPM 25662, EPM 25681, EPM 26429 and EPM 27057.

The project proposes to extract up to 5.3 million tonnes per annum of run-of-mine (ROM) ore with an on-site processing plant producing up to 10,571 tonnes per annum of vanadium pentoxide and up to 313 million litres per annum of transport fuel (such as diesel and/or aviation fuel) over a 30-year mine life.

The proposed project comprises:

- conventional open-cut mine
- mine infrastructure area, supporting infrastructure, product stockpile, ROM stockpile, waste rock stockpile, tailings storage facility, waste management facility and water treatment plant
- processing facilities, including a feed preparation facility, vanadium refining facility and oil recovery facility
- hydrogen production and storage
- substation and transmission line
- access road and internal tracks
- accommodation camp
- water storage facility and pipelines
- rail infrastructure (if required).

The project proposes both conventional and novel approaches to process the ore body with some of the technology routinely used internationally but not yet within Australia. Conventional oil recovery and distillation processes will be combined with a hydrogenation process, using green hydrogen, while standard processes are proposed to produce vanadium pentoxide. An on-lease hydrogen plant is proposed to produce up to 10,759 tonnes per annum of green hydrogen using electricity sourced from an adjacent proposed wind and solar project, proposed by a third-party renewable developer.

The project proposes to transport vanadium pentoxide via road to Townsville for downstream domestic processing into vanadium electrolyte, which is an input into the manufacture of vanadium redox flow batteries. Approximately 7% of the transport fuel will be used on site and the remainder sold at the mine gate to a distributor for use within Queensland.

The EIS should give priority to the critical matters associated with the project, including:

- flora and fauna, in particular matters of national environmental significance (MNES) (section 33) and matters of state environmental significance (MSES) (section 16)
- water resources (section 17)
- water quality (section 18)
- hazards, health and safety (section 22)
- air quality (in particular odour) (section 23)
- waste (section 26).

A critical matter is an aspect of the proposal that has one or more of the following characteristics:

- a high or medium probability of causing serious or material environmental harm[1] or a high probability of causing an environmental nuisance
- it is considered important by the Coordinator-General, and/or there is a public perception that an activity has the potential to cause serious or material environmental harm or an environmental nuisance, or the activity has been the subject of extensive media coverage
- it is relevant to a controlling provision under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act)
- it raises obligations under any other legislation applicable for the project (e.g. *Water Act 2000*).

The final scope of critical matters has been determined by the Coordinator-General when finalising the TOR. In the course of preparing the EIS, information may become available that warrants a change of scope.

Statutory basis

The Coordinator-General has declared the project to be a 'coordinated project for which an 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 the proponent to prepare an EIS for the project.

[1] Serious and material environmental harm are defined in sections 16 and 17 of the *Environment Protection Act 1994*.

Accredited assessment process under Australian legislation

On 23 December 2024, a delegate of the Australian Government Minister for the Environment and Water determined the project to be a 'controlled action' under the EPBC Act (EPBC reference 2024/10012). Therefore, the project requires approval under the EPBC Act.

The controlling provision for the project is listed threatened species and communities (sections 18 and 18A of the EPBC Act). Refer to Appendix 3 for further information on the controlling provisions.

On 23 December 2024, a delegate of the Australian Government Minister for the Environment and Water decided under section 87 of the EPBC Act that the project will be assessed by accredited assessment under the SDPWO Act.

The EIS must include, as a stand-alone report, an assessment of impacts to MNES that fully addresses matters relevant to the controlling provision under the EPBC Act. Section 33 of the TOR, developed in consultation with the Australian Government, sets out the information which must be included in the EIS relating to MNES.

Indigenous recognition and native title

This TOR acknowledges and respects the rights, culture, and interests of Queensland's Aboriginal peoples and Torres Strait Islander peoples.

Accepting statutory processes and regulated decision-making requirements, as far as practicable, the proponent is to demonstrate engagement and consideration of the views of Aboriginal peoples and Torres Strait Islander peoples irrespective of native title status.

More information

Information about the project, or the coordinated project declaration and EIS process under the SDPWO Act, can be found at **www.statedevelopment.qld.gov.au/coordinator-general**.

Part B Developing the EIS

1. Structure and general approach

General approach

1.1 The EIS is to address all matters as specified in the TOR for the project.

1.2 Each technical chapter of the EIS must identify and describe the relevant environmental values to be protected.

1.3 Proponents should use cross-referencing within the EIS to avoid repetition of information. It is suggested that proponents follow the heading structure as set out in Part C of this TOR.

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

1.5 The detail required in the EIS to address each relevant project matter is to be proportionate to the potential significance of the impact on environmental values. When determining the significance of an impact, the following matters must be considered:

(a) the sensitivity of the environmental value

(b) the extent, intensity, duration, cumulative effect, uncertainty and/or irreversibility of the impact

(c) the risk of environmental harm, and

(d) the effectiveness of any proposed mitigation measures.

1.6 The EIS must address other matters not covered in the TOR in the following circumstances:

(a) studies reveal a matter that had not been foreseen when the TOR was finalised

(b) an issue not previously identified is considered contentious by the public, and addressing this issue is in the public interest

(c) the Coordinator-General directs the proponent in writing to address a matter as an information request under section 34B of the SDPWO Act

(d) new or amended legislation or policies come into effect after the TOR has been finalised[3]

(e) the proponent makes amendments to the proposed project that would result in a change in the nature, timing or location of any impacts.[4]

1.7 The EIS should address matters relevant to the environmental objectives and performance outcomes specified in schedule 8 of the Environmental Protection Regulation 2019 (EP Regulation) to allow appropriate conditions to be developed.

Requirements of an EIS

1.8 The EIS must:

(a) be prepared in accordance with, and meet the minimum requirements of, Schedule 1 of the State Development and Public Works Organisation Regulation 2020

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[2] Consider also the definition of 'environment' provided in section 8 of the *Environmental Protection Act 1994*.
[3] Transitional arrangements or exemptions may apply for individual projects.
[4] The proponent is to notify the Coordinator-General of any amendments to the proposed project as described in the project's initial advice statement.

(b) be prepared in accordance with relevant policies, standards and guidelines, including those identified in this TOR, and any others identified during development of the EIS in consultation between the Coordinator-General, the proponent and advisory agencies

(c) address the requirements of sections 125, 126A, 126B, 126C and 126D of the *Environmental Protection Act 1994* (EP Act) to enable the issuing of an environmental authority (EA) and progressive rehabilitation and closure plan (PRCP) schedule for the project

(d) be prepared by suitably qualified and experienced professional(s), relevant to the field of expertise required for each subject matter

(e) characterise the existing environment and clearly define environmental values that may be impacted by the project. This should be supported by site-specific and relevant baseline information sufficient to identify seasonal and long-term variations at a scale relevant to the project

(f) identify the project's relevant impacts and analyse their significance. When determining the significance of an impact, consider the sensitivity of the relevant environmental value, the extent, intensity, duration, cumulative effect and irreversibility of the impact, the risk of environmental harm, and the effectiveness of proposed mitigation measures. Where impacts are not quantifiable, proponents should describe the impacts qualitatively, in as much detail as reasonably practicable

(g) be supported by appropriate scientific and/or specialist studies that include details of their methodology, reliability, and any relevant assumptions or scientific judgements

(h) provide detailed mitigation measures and strategies for the protection or enhancement of relevant environmental values. Mitigation measures should include a scientifically robust and evidence-based assessment of the known, expected and/or predicted effectiveness of the mitigation measures for dealing with the project's relevant impacts. Mitigation measures should be specific to the identified impacts, have a clear action or process, be linked to measurable outcomes and align with the preferred hierarchy to:

    (i) avoid

    (ii) minimise or otherwise mitigate

    (iii) remedy and

    (iv) if necessary, offset

(i) provide detail about the quality of the information, in particular:

    (i) the source of the information

    (ii) how recent the information is

    (iii) how the reliability of the information was tested, and any assumptions, exclusions and limitations. Justify the use of information that is incomplete, time-limited or has low levels of reliability, and explain how these limitations have been overcome

(j) present a clear narrative that connects the existing environment and environmental values, project activities, their impacts, how mitigation measures will manage those impacts, and the acceptability of any residual impacts. Conclusions should be supported by objective analysis and relevant evidence

(k) provide plans and drawings of sufficient detail to support the approvals being sought and to enable the Coordinator-General and relevant agencies to evaluate and condition the project

(l) use consistent and clearly defined nomenclature and terminology.

Format and copy requirements

1.9 The proponent must submit a draft EIS for the Coordinator-General's consideration. To ensure the draft EIS is evaluated in a timely manner, documents must be easy to navigate and meet the below criteria:

- an electronic copy in Portable Document Format (PDF)
- an electronic table of contents (PDF or HTML) with hyperlinks to each chapter
- each chapter should include a table of contents, which is hyperlinked to subsections within the chapter (to 3 heading levels)
- hyperlink any external websites referred to in the draft EIS.

1.10 The proponent must provide all supporting data, modelling and input/output information used in the EIS in an appropriate electronic format (e.g. shapefiles or Microsoft Excel files) in accordance with the requirements of Table A1.2 of Appendix 1.

1.11 The proponent must provide spatial data for all project components in accordance with the requirements of Table A1.3 of Appendix 1.

1.12 Once the Coordinator-General and the Australian Government are satisfied the draft EIS addresses the TOR and is suitable for public notification, the proponent must meet the requirements of Table A1.1 of Appendix 1. A PDF version of the draft EIS will be published on the Coordinator-General's website at the commencement of the public notification period, and all advertising material will direct the public to that website. The proponent must not make the draft EIS publicly available until the Coordinator-General provides written advice that the draft EIS may be released. The Coordinator-General recommends visual aids or presentations are provided by the proponent during public notification to enhance stakeholder engagement.

1.13 Documents that do not meet the format and copy requirements will be returned to the proponent.

Part C Content requirements of the EIS

2. Executive summary

2.1 Provide an executive summary that describes and conveys the most important aspects of the project, its potential impacts and how they will be managed, in a concise and readable form. It is to use plain English, avoid jargon, be written as a stand-alone document and broadly follow the structure of the EIS.

3. Introduction

3.1 Provide an introduction that clearly explains the function of the EIS, why it has been prepared and what it sets out to achieve. The introduction should set the context for the detailed assessment of the project and describe the structure of the document.

About the project

3.2 Provide a brief description of the project including:

(a) project title

(b) project location, including street address, locality, lot on plan, and local government area

(c) maximum life of the project

(d) key components of the project

(e) rationale for the project, including a clear outline of the project's objectives and background to the project's development

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

(g) the project's most current status

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

Project proponent

3.3 Provide the following proponent information:

(a) the proponent's full name, postal address, Australian Business Number or Australian Company Number as applicable, and details of any joint venture partners

(b) the nature of the proponent's business activities and experience in resource projects

(c) the proponent's (including directors) experience in relevant technologies and developing and implementing comparable major projects

(d) the proponent's (including directors) environmental record in Australia, including a list of any breach of, or proceedings against the proponent under an Australian or state law for the protection of the environment or the conservation and sustainable use of natural resources (an environmental law), for at least the previous ten years

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

(f) experience, qualifications and certification of all suitably qualified consultants and subconsultants engaged by the proponent to complete the EIS

(g) all potential or actual conflicts of interest for the proponent and all consultants and subconsultants engaged by the proponent.

Environmental impact assessment process

3.4 Briefly describe the environmental impact assessment process under the SDPWO Act.

3.5 Describe:

(a) the opportunities for public submission on the EIS, including details on the process for a properly made submission, and

(b) how and when public submissions are addressed and considered in the assessment and decision-making process under the SDPWO Act and any other relevant legislation.

3.6 State whether the project is a controlled action under the EPBC Act, and if so:

(a) whether the project is being assessed under the SDPWO Act through the Bilateral Agreement between the State of Queensland and the Australian Government, or by accredited assessment under the SDPWO Act

(b) the controlling provisions for the project.

3.7 Describe the environmental management framework to be applied to the project, including the approach to developing environmental management plans.

3.8 As the project involves new and/or emerging technologies that may impact critical matters, the proponent must ensure the EIS is subject to an independent peer review that evaluates impact assessments related to the new and/or emerging technology, including potential contaminant releases to air, surface water, groundwater and land. The peer review must be undertaken by independent, suitably qualified experts, and the peer review report appended to the EIS. It should outline the scope, process, key findings, how the review informed the EIS, and a statement of confidence on the adequacy of the relevant impact assessments.

4. Project description

Proposed development

4.1 Clearly define the project footprint and total disturbance area in hectares (including buffer zones). Define the broader project site, if applicable.

4.2 Provide a description of the project's phases (e.g. pre-construction, construction, operations, decommissioning and rehabilitation), including likely timing and sequencing of phases and the physical layout of the project during each project phase. If the delivery of the project is to be staged, describe the nature and timing of proposed stages, including triggers and hold points.

4.3 Describe project activities across each project phase and identify whether any of the activities are located off lease.

4.4 Describe the proposed mine life, the annual and total quantity of ROM ore, waste rock material to be mined, and ore to be processed onsite.

4.5 Describe the resource base, including total ore body thickness and ore body depths.

4.6 Describe the proposed methods, equipment and techniques for extraction and resource separation, beneficiation and processing, including chemicals to be used and expected by-products.

4.7 Describe the project costs, including across each of its phases.

4.8 Describe the proposed delivery model for the project and commercial arrangements for delivery of the project.

4.9 With regards to external/enabling infrastructure, identify and describe:

(a) existing infrastructure that will be impacted by the project across each of its phases (e.g. roads, ports, water, wastewater, stormwater, electricity transmission and supply, telecommunications, waste disposal, housing, etc.)

(b) any external/enabling infrastructure upgrades proposed as part of the project (to be assessed as part of the EIS)

(c) any external/enabling infrastructure upgrades not proposed as part of the project, and how project-related impacts on this infrastructure would be managed.

4.10 Describe any project components subject to change or refinement through detailed design. Discuss alternative options that remain under consideration.

4.11 Describe any project components or activities that are proposed to be assessed separately to the EIS process, including details of the assessment and approvals process.

4.12 Identify whether any project infrastructure or facilities will be shared with other developments.

Site description

4.13 Describe and illustrate with suitably scaled maps the existing environment and features within the project footprint and surrounding area, including:

(a) property descriptions, easements, underlying tenure (including existing, historic and under application resource authorities), land use and ownership information for all land impacted by the project footprint and adjacent properties, including detail of any special attributes of land and/or waters

(b) all existing infrastructure and services relevant to the project, including transport corridors, private roads, local and state-controlled roads, pipelines, energy and gas infrastructure, sewerage, stormwater, communications, rail, air services, maritime, etc[5]

(c) waterways as defined by the *Fisheries Act 1994*; and lakes, springs, aquifers, floodplain areas (including wetlands), unmapped features, watercourses, and drainage features as defined by the *Water Act 2000* (Water Act).

4.14 Describe and map, in both plan and cross-section view, the geology, topography and landforms of the project area and any relevant areas within the project surrounds (including the boundaries of water catchment areas). Show geological structures (such as aquifers and faults), economic resources (such as agricultural, timber, quarries, mining and gas (including historic)), and any other relevant projects and known development proposals that could have an influence on, or be influenced by, the project and its construction and operational activities.

4.15 Describe, map and illustrate soil types and profiles of the project area including added fill and/or exposed ground surface at a scale relevant to the proposed project and in accordance with relevant guidelines. Identify soils that would require specific management due to wetness, erosivity, sodicity, depth, acidity, salinity or other features.

[5] 'Air services' is defined in the Queensland Government, *State Development Assessment Provisions*, 2024.

Project footprint

4.16 Within the context of the existing environment[6], define and map the location and boundaries of the project footprint, including all infrastructure elements, extent of disturbance (including clearing of vegetation) and development necessary for the project. Show all key aspects including excavations, spoil and waste dumps, stockpiles, areas of fill, subsidence areas, services infrastructure, plant locations, levees, water storages and dams, existing and proposed groundwater bores, stormwater infrastructure and drainage systems, spill containment bunds, buildings, waterway crossings (including type), watercourse and surface water diversions, haul and access roads (identifying sealed and non-sealed), causeways, stockpile areas and loading and unloading facilities. Include a discussion of any environmental design features of these facilities (for example, bunding of plant and storage facilities)

4.17 Describe with concept and layout plans, in both plan and cross-section views, requirements for constructing, upgrading or relocating all infrastructure to service the project. Show the locations and dimensions (including clearing) of any necessary infrastructure easements on the plans, including infrastructure such as roads, rail (and the rail corridor), tracks and pathways, environmental no-go areas, fencing, dam and weirs, bore, energy transmission infrastructure, power lines and other cables, wireless technology (such as microwave telecommunications) and pipelines for any services, whether underground or above.

Project phases

4.18 Describe for each project phase (pre-construction, construction, operation, decommissioning and rehabilitation) and stage (if relevant) with appropriately scales maps:

(a) timing and sequencing of activities, and any implications where project staging is proposed

(b) disturbance areas for each project component, including buffer zones

(c) workforce numbers expressed as annual average full time equivalent positions and proposed shifts, as applicable

(d) anticipated workforce recruitment and rostering arrangements, including proposed travel to and from work, such as fly-in, fly-out[7] and drive-in, drive-out

(e) where and how personnel are to be accommodated

(f) the type, quantity, origin, routes, delivery modes, storage and laydown requirements/locations for materials

(g) the precise location (within and outside the project footprint) of works to be undertaken, structures to be built or components of the project that may have relevant impacts

(h) how the works are to be undertaken and design parameters for aspects of the structures, or components, of the project that may have relevant impacts

(i) requirements for new infrastructure, or the upgrading, retention, relocation and/or decommissioning of existing infrastructure on and off site to service the project.

4.19 For the pre-construction phase, include a description of:

[6] As described in Chapters 8 to 29.
[7] Fly-in, fly-out worker for a large resource project means a worker who travels to the project by aeroplane, or another means, from a place that is not a nearby regional community for the project – Schedule 1 of the *Strong and Sustainable Resource Communities Act 2017*.

(a) results of pre-disturbance surveys and how this information is or will be used in the final design and construction of the project

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

4.20 For the construction phase, include a description of:

(a) proposed hours of construction (including night-time works)

(b) the construction program/stages and key work streams

(c) the proposed construction methodology

(d) any temporary construction areas, and how and when temporary construction areas will be rehabilitated

(e) any resource requirement (e.g. water supply, quarry material, construction materials and components, electricity supply, etc.) and the quantity, source and proposed timing of requirement of each resource

(f) any supporting developments that are required, within and outside the project area such as quarries, borrow pits, water storage, site offices, laydown areas, roads, etc.

(g) any project construction components proposed to be shared with other projects.

4.21 For the operation phase, include a description of:

(a) proposed hours of operation

(b) proposed operational workforce, including proposed shifts and transport demand

(c) with appropriately scaled maps, mining sequence of each seam/ore body/structural unit and cross sections showing profiles and geological strata and faults

(d) type, quality and quantity of resources mined or extracted at each major stage of the project

(e) water supply requirements and sources

(f) energy demand and sources

(g) other operational service requirements including sewer, waste and stormwater.

4.22 For the decommissioning and rehabilitation phase, include a description of:

(a) the strategy for decommissioning and rehabilitation of all components of the project consistent with the progressive rehabilitation and closure plan

(b) if any infrastructure is proposed to remain on site, identify the owner of this infrastructure and describe long-term use and relevant approvals required (e.g. landholder agreements, council approvals, etc.)

(c) proposed timing and extent of rehabilitation works (including progressive rehabilitation) and where relevant, restoration works[8] with maps at suitable scales showing the location of disturbance areas

[8] See Queensland Government, *RPI Act Statutory Guideline 09/14 – How to determine if an activity has a permanent impact on strategic cropping land*, which provides the definition of restoring land. Restoring land means that the land is returned not only to its pre-activity use but also that it is returned to its pre-activity productive capacity or potential productive capacity.

(d) the site after final rehabilitation, including mapped final landforms, post-mining land uses and any non-use management areas.

5. Project rationale and alternatives

5.1 Describe the objectives and rationale for the project, including strategic, economic, environmental, and social implications, technical feasibility and commercial drivers. Describe the markets the project is proposed to service and specify if the product will be for export, local markets, or both.

5.2 Demonstrate the need and scale of the project including in a regional, state and national context. Consider this in the context of other major relevant infrastructure projects proposed and/or under development in the region.

5.3 Provide a summary of the current status of similar technologies in Australia and globally, known environmental impacts associated with similar operations, and how these impacts are managed/mitigated.

5.4 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 each phase of the project.

5.5 Describe the expected benefits and opportunities associated with the project and the relevant recipients of these benefits and opportunities (supported by relative evidence).

5.6 Describe the process and criteria used in selecting the site and defining the project footprint and alignment options for new or existing infrastructure. The multi-criteria analysis is to assess the shared used of common user infrastructure with nearby mines/projects, in accordance with Queensland Government common user infrastructure assess principles.[9]

5.7 Describe the feasible alternatives to the project and project infrastructure configuration, including conceptual, technological, scale, locality and alignment alternatives that may improve environmental and coexistence outcomes. Detail the criteria used to determine the alternatives. Provide sufficient detail to support selection of the preferred option(s).

5.8 Describe the options assessed for transport of materials and workers to site, and why the preferred option was selected with reference to managing health and safety considerations.

5.9 Where project options or alternatives are still under consideration, provide a description and assessment of each option and a timeframe of when the option will be confirmed. Briefly describe how the potential impacts of these options have been assessed, for example, consideration of worst case or greatest disturbance scenarios.

5.10 Demonstrate why the preferred option(s) has been selected by summarising the comparative environmental, social and economic impacts of each project option (supported by a cost-benefit analysis), with particular regard to the principles of ecologically sustainable development.

5.11 Describe the consequences of not proceeding with the project or any component of the project.

[9] Queensland Government, Queensland Treasury, *Common user infrastructure principles*, available at www.treasury.qld.gov.au/programs-and-policies/common-user-infrastructure-assessment-principles/.

6. Legislative requirements and project approvals

6.1 Identify the statutory approvals (local, State and Commonwealth) that are likely to be required for the project. The list of statutory approvals should be in the format provided at Appendix 2 and describe the approval, relevant statutory provision, trigger, administering authority, when the approval is required (relative to the completion of the EIS process) and any exemptions that apply. Clearly define approvals for which conditions are being sought through the EIS process and approvals for which conditions will be sought separate to the EIS.[10]

6.2 Describe any legislative requirements that would need to be met in relation to the project's potential impacts on protected areas, reserves, declared fish habitat areas and State forests. If the project's potential impacts are considered to be inconsistent with the values of these areas, describe how the inconsistencies will be addressed.

6.3 Provide an overview of the land use planning instruments relevant to the project, such as applicable local government planning schemes, State regional plans or other land use planning document that regulates development and land use of the site.

6.4 Provide information required under section 125(1) of the EP Act in support of the project's application for an EA for any proposed environmentally relevant activities (ERAs). List each ERA separately, identify the appropriate ERA number and activity name, and identify and justify the relevant threshold (see Schedule 2, EP Regulation for a list of ERAs). The assessment and supporting information, where relevant, is to be sufficient for the administering authority to decide whether an approval should be granted. Environmental values, information and approval requirements are specified in the EP Act, the EP Regulation, environmental protection policies (EPP) and relevant guidelines.

6.5 Assess the extent to which the project is consistent with the relevant statutory approvals, and that the intended outcomes are consistent with current legislation, policies, plans, guidelines and government priorities for the region. If there is a conflict, explain how the project can be approved.

6.6 Describe any approvals, authorisations or entitlements required under the Water Act, Water Regulation 2016, or applicable Water Plans. Detail any legislative requirements and processes for gaining access to water for the project (including any relevant exemptions), including discussion of the applicable provisions of any applicable protocols.

7. Stakeholder consultation and engagement

7.1 In preparing the EIS, consult with potentially impacted people, communities and key stakeholders including but not limited to directly and indirectly affected land and tenure holders, Native Title holders, Aboriginal peoples, local, State and Australian government agencies, local and regional commerce, community and conservation groups, and social and public service providers. Utilise the community and stakeholder engagement methodologies outlined in the *Social Impact Assessment Guideline* (SIA Guideline)[11] and *Social Impact Assessment Supplementary material for assessing and managing the social impacts of projects under the Coordinator-General's Social Impact Assessment Guideline* (March 2018) (SIA Supplementary Material).[12]

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[10] Approvals for which conditions are being sought should consider the provisions of Part 4 of the SDPWO Act.
[11] Queensland Government, *Social impact assessment guideline*, March 2018.
[12] Queensland Government, Supplementary material for assessing and managing the social impacts of projects under the *Coordinator-General's Social Impact Assessment Guideline (March 2018)*, November 2023. Consideration should also be given to the Australian Government,

7.2 Describe in a stakeholder consultation and engagement report, the consultation and engagement activities undertaken during the preparation of the EIS. Include the dates of consultation and describe the information that was provided to stakeholders. Demonstrate that engagement methods and processes have clearly described the project and its potential impacts, and are effective, transparent, accessible, timely, well-recorded, provide appropriate content and context, and encourage and facilitate participation.

7.3 Identify issues raised during stakeholder engagement and explain how feedback from stakeholders has been considered and/or resolved during the EIS process and been incorporated into project design and outcomes.

8. Tenure including Native Title

Existing environment

8.1 For the project footprint and surrounding area:

(a) identify the tenure of the land

(b) identify the registered owner of the land

(c) identify any registered interests in the land

(d) identify and describe any proposed use of State land and Commonwealth land

(e) identify any tenure arrangements or commercial arrangements that the proponent has in place to access the land in association with the project

(f) identify any stock route under the *Stock Route Management Act 2002*

(g) identify any underlying resource authorities or applications.

8.2 Confirm whether any quarry materials or forest products in the project footprint are the property of the State and whether such quarry materials or forest products will be interfered with, used, or potentially sterilised.

8.3 Identify any native title rights and interests that apply to the project footprint, including:

(a) a native title assessment that determines the presence, or otherwise, of Native Title over all land or waters

(b) land or waters where Native Title has been determined to exist by the Federal Court

(c) land or waters that are covered by a Native Title determination application

(d) land or waters that are covered by a registered Indigenous Land Use Agreement

(e) land or waters where Native Title has been determined not to exist.

Impact assessment

8.4 Identify any tenure proposed to be applied for as part of the project, including anticipated timeframes, approvals or owner's consent requirements.

8.5 Describe potential temporary and permanent impacts on the tenure of the land.

Department of Climate Change, Energy the Environment and Water, *The Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environmental Protection and Biodiversity Conservation Act 1999 (interim guidance),* 2023 (or subsequent revision).

8.6 For impacts on overlapping tenures, describe the outcomes of consultation with the landholders and occupiers with respect to access to land, impact assessment and mitigation measures.

8.7 Identify whether the project involves any proposed impact on Native Title.

Mitigation measures

8.8 Identify any existing or proposed arrangements to manage impacts on Native Title.

8.9 Detail proposed mitigation measures for potential impacts on the tenure of the land, including measures to maintain ongoing functionality of the land.

9. Land use planning

Existing environment

9.1 For the project footprint and surrounding area identify and describe all current and historic land use, including the following detail:

(a) lot on plan descriptions

(b) key infrastructure

(c) recreational sites and tourist destinations

(d) residential, commercial, and industrial areas

(e) key resource areas

(f) findings of the Agricultural Land Audit (including land of agricultural state interest under the State Planning Policy)[13]

(g) areas of regional interest under the *Regional Planning Interests Act 2014*

(h) any land that is listed on the environmental management register or the contaminated land register, or that has been subject to a notifiable activity under the EP Act

(i) any non-statutory and statutory soil conservation plans under the *Soil Conservation Act 1986*

(j) any restricted areas (RAs) and any unavailable land under section 97 of the Mineral Resources Regulation 2013.

9.2 Identify any land use planning instruments that apply to the project footprint, including:

(a) relevant provisions of the State Planning Policy

(b) the applicable regional plan under the *Planning Act 2016* that applies to the land, including the relevant provisions of the regional plan

(c) relevant provisions of the *Regional Planning Interests Act 2014*

(d) the applicable local government planning scheme, including the relevant provisions of the local government planning scheme

(e) relevant State codes under the State Development Assessment Provisions (SDAP).[14]

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[13] The Queensland Agricultural Land Audit identifies land important to current and future production and the constraints to development, highlighting the diversity and importance of Queensland's agricultural industries. For more information visit: www.business.qld.gov.au/industries/farms-fishing-forestry/agriculture/business/expand/land-audit.

[14] Further information regarding SDAP requirements can be accessed from www.planning.qld.gov.au/planning-framework/state-assessment-and-referral-agency/state-development-assessment-provisions-sdap.

Impact assessment

9.3 Assess the project against the land use planning instruments that apply to the project.

9.4 If the project is exempt from compliance with a land use planning instrument, identify the exemption and extent, along with any limitations on the exemption.

9.5 Where non-compliance with a land use planning instrument is identified, provide commentary setting out whether the non-compliance is appropriate and provide reasons for the non-compliance.

9.6 Describe potential temporary and permanent changes to land uses within the project footprint and adjacent to the project footprint, including identifying any incompatible land uses.

9.7 For any impacts on mining or resource exploration activities, liaise with relevant authorised tenement holders. Describe consultation outcomes and potential impacts on tenement holders.

Mitigation measures

9.8 Detail proposed mitigation measures for potential impacts on land uses.

9.9 Demonstrate how the project will meet the environmental objectives and performance outcomes relevant to land use in Schedule 8 of the EP Regulation.

10. Visual amenity

10.1 The following guidance is relevant for the assessment of visual amenity:

(a) Australian Institute of Landscape Architects, *Guidance Note for Landscape and Visual Assessment*, 2018

(b) Landscape Institute, *Visualisation of Development (website) at:* ***https://www.landscapeinstitute.org/visualisation/***

(c) Landscape Institute and Institute of Environmental Management and Assessment, *Guidelines for Landscape and Visual Impact Assessment*, 2013.

Existing environment

10.2 Characterise the existing visual landscape by describing, mapping and illustrating landscape aspects that influence visual amenity, including:

(a) topography and natural landscape features (inclusive of species habitat)

(b) land use and character

(c) settlements, built features and infrastructure.

10.3 Identify visually sensitive locations, including residential properties, public viewpoints, recreation areas, tourist destinations, culturally relevant features (in consultation with Traditional Custodians), etc.

10.4 Evaluate the sensitivity of the existing visual landscape and its ability to absorb change.

Impact assessment

10.5 Identify key project features during all stages of project development that will be visually obtrusive, including project lighting,[15] and undertake a viewshed analysis to identify locations from which project features will be visible.

10.6 Assess the significance of project impacts on landscape character and visual amenity, supported by photomontage analysis from visually sensitive locations.

Mitigation measures

10.7 Describe proposed mitigation measures to avoid or minimise predicted impacts on landscape character and visual amenity, including:

(a) how the project has been designed to integrate with the existing landscape

(b) strategies to protect visual amenity at visually sensitive locations

(c) how the obtrusive effects of diffuse and direct lighting have been minimised.

11. Land – geology, geomorphology, topography and soils

11.1 The following guidance is relevant for the assessment of land, including geology, geomorphology, topography and soils:

(a) Queensland Government, *Land – EIS information guideline*, ESR/2020/5303

(b) Queensland Government, *Rehabilitation – EIS information guideline*, ESR/2020/5308

(c) Queensland Government, *Contaminated land – EIS information guideline*, ESR/2020/5300

(d) Queensland Government, *Quarry material – EIS information guideline*, ESR/2020/5306

(e) Queensland Government, *Application requirements for activities with impacts to land*, ESR/2015/1839

(f) Queensland Government, *Queensland Land Resource Assessment Guidelines* – Volume 1: Soil and land resource assessment, 2021

(g) Queensland Government, *Queensland Land Resource Assessment Guidelines* – Volume 1: Field tests, 2020

(h) Queensland Government, *Queensland Soil and Land Resource Survey Information Guideline*, VEG/2018/4460

(i) Soil Science Australia, *Guideline for soil survey along linear features*, 2015

(j) International Erosion Control Association, *Best Practice Erosion and Sediment Control*, 2008.

Existing environment

11.2 Describe, map and illustrate the topography and geomorphology of the project footprint and surrounding area.

11.3 Describe and map the geology and mineralogy of the project footprint and surrounding area, with reference to the physical and chemical properties of surface and sub-surface materials

[15] In accordance with Standards Australia, *Control of Obtrusive Effects of Outdoor Lighting* (Australian Standard 4282). Consider also, Australian Government, *National Light Pollution Guidelines for Wildlife*, 2023.

within the proposed areas of disturbance. This should include information regarding the presence of any naturally occurring hazardous materials (e.g. radioactive material or asbestos).

11.4 Describe and map geological structures and properties that could affect ground stability and influence the nature and location of project activities.

11.5 Describe and map soil types, soil profiles and unique map areas within the project footprint at a detailed property level scale[16] relevant to project disturbance.

11.6 Describe physical and chemical soil properties relevant to erosion, stability, salinity, acidity, rehabilitation and agricultural suitability and productivity supported by site-specific soil data.

11.7 Where excavated rock or spoil is to be used or placed within the project footprint, analyse the potential for acid generation, or generation of other potential pollutants of air, land or waters, supported by site-specific geochemical data.

11.8 Discuss how geology, geomorphology, topography, soils and relevant environmental values have informed the project design (e.g. constraints).

Impact assessment

11.9 Identify and assess the impacts of project activities and disturbance on geology and geomorphology. Analyse and describe the significance of these impacts on the structural stability of affected strata and landforms and their ability to support environmental values.

11.10 Identify and assess the impacts of project activities and disturbance on soils during each project phase and identify soil types requiring particular management. Analyse and describe the significance of these impacts on environmental values, current and future land use and management requirements, including consideration of erosion, stability, salinity, acidity, rehabilitation and agricultural productivity.

11.11 Assess the risks of project activities resulting in land contamination.

11.12 Where irrigation water or effluent is proposed to be applied to land:[17]

(a) identify the irrigation area

(b) describe irrigation water or effluent quality (including pH, salinity, biological oxygen demand, total solids, nutrients, and microbiology)

(c) provide design irrigation rates

(d) identify contingency storage

(e) demonstrate the avoidance of soil and land degradation (e.g. soil structure decline, secondary salinisation, erosion), and protection of soil composition and condition and associated environmental values, supported by irrigation modelling (e.g. MEDLI (model for effluent disposal using land irrigation)).

Mitigation measures

11.13 Describe proposed measures to avoid and minimise predicted impacts to land or soils, and the environmental values they support. Demonstrate how proposed measures are consistent with best practice environmental management.

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[16] The scale of mapping must be in accordance with Section 5 of the *Queensland Soil and Land Resource Survey Information Guideline*, VEG2018/4460.

[17] Relevant guidelines for projects which trigger ERA63: Queensland Government, *Model operating conditions ERA 63—Sewage Treatment*, ESR/2015/1668 and Queensland Government, *Disposal of effluent using irrigation – Technical Guideline*, (2020).

11.14 Demonstrate how the project will meet the environmental objectives and performance outcomes for land in Schedule 8 of the EP Regulation.

11.15 Demonstrate that the disposal to land of any liquid wastes from onsite sewage treatment would meet the environmental objectives and performance outcomes in Table 1 (Operational assessment), Part 3, Schedule 8 of the EP Regulation.

11.16 Describe how unplanned impacts to land will be managed, including measures to avoid, identify, remediate and manage land that is contaminated or may become contaminated.

11.17 Describe how the achievement of environmental objectives and associated performance outcomes would be monitored, audited and reported, and how corrective/preventative actions and continual improvement would be managed.

11.18 Where actual or potential acid sulfate soils will be disturbed by the project, prepare an acid sulfate soil management plan in accordance with accepted industry guidelines to avoid or minimise adverse effects on environmental values.[18]

11.19 Where excavated material is potentially acid-forming or otherwise potentially polluting, prepare an excavated material management plan in accordance with accepted industry guidelines[19] to avoid or minimise adverse effects on environmental values.

12. Rehabilitation

12.1 The following guidance is relevant for the rehabilitation and closure plans for mining projects:

(a) Queensland Government, *Rehabilitation – EIS information guidelines*, ESR/2020/5308

(b) Queensland Government, *Progressive rehabilitation and closure plan* (PRCP plans) – Statutory guideline, ESR/2019/4964

(c) Queensland Government, *Common issues with Progressive Rehabilitation and closure plan applications – Information Sheet*, ESR/2021/5775

(d) Queensland Government, *Incorporating greenfield sites and exploration disturbance into progressive rehabilitation and closure plans – Information sheet*, ESR/2024/6766.

Rehabilitation and closure

12.2 Describe the rehabilitation strategy which demonstrates how the project infrastructure will be decommissioned and removed and area rehabilitated, including timing and agreed final landforms and use.

12.3 Demonstrate that the rehabilitation of the environment disturbed by construction, operation and decommissioning of the project can meet the environmental objectives and performance outcomes in Schedule 8A of the EP Regulation.

12.4 Where relevant, describe restoration works proposed for areas of regional interest under the *Regional Planning Interests Act 2014*.[20]

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[18] Queensland Government, *Queensland Acid Sulfate Soil Technical Manual - Soil Management Guidelines,* Version 5.1 (or subsequent revision); Queensland Government, *State Planning Policy – state interest guidance material, Emissions and hazardous activities*, 2018 (or subsequent revision).

[19] Australian Government, *Managing Acid and Metalliferous Drainage Leading Practice Sustainable Development Program for the Mining Industry*, 2016; International Network on Acid Prevention, *Global Acid Rock Drainage Guide*, 2024.

[20] See: State Government, *Areas of Regional Interest* (website) available at: https://www.planning.qld.gov.au/planning-issues-and-interests/areas-of-regional-interest.

Progressive rehabilitation and closure plan

12.5 Provide a proposed PRCP for the project in accordance with *Submission of a progressive rehabilitation and closure plan* and best practice approaches about the strategies and methods for progressive and final rehabilitation.[21] The PRCP must show how and where activities will be carried out on land in a way that maximises the progressive rehabilitation of the land and waterways to a stable condition and provides for the condition to which the holder must rehabilitate the land before the EA may be surrendered.[22] The PRCP must consist of two components:

(a) rehabilitation planning part

(b) PRCP schedule.

Rehabilitation planning part

12.6 Provide rehabilitation planning part of the proposed PRCP, by addressing the following:

(a) describe each resource tenure, including the area of each tenure

(b) describe the relevant activities and the likely duration of the relevant activities

(c) describe all water needs and the proposed authority under which the water would be taken to do this work by defining the location, source of water take and volumes required

(d) include a detailed description, including maps, of how and where the relevant activities are to be carried out

(e) if infrastructure is proposed to be retained, identify the owner of this infrastructure, describe its long-term use and relevant approvals required (e.g. landholder agreements, council approvals etc.) and identify the required actions to ensure it is safe, stable and does not cause environmental harm

(f) include details of the consultation undertaken in developing the proposed PRCP, including infrastructure proposed to be retained onsite

(g) include details of how ongoing consultation will be undertaken to discuss rehabilitation to be carried out under the plan

(h) include details of how waterway barriers will be removed, or if not removed, how fish passage will be reinstated

(i) state the extent to which each proposed post-mining land use or non-use management area is consistent with the outcome of consultation with the community in developing the plan and any strategies or plans for the land of a local government, the State government or the Australian government

(j) for each proposed post-mining land use, state the proposed methods or techniques for rehabilitating the land to a stable condition in a way that supports the rehabilitation milestones under the proposed PRCP schedule

(k) identify the risks of a stable condition for land identified as a proposed post-mining land use not being achieved, and detail measures to manage or minimise the risks

[21] Queensland Government, *Submission of a progressive rehabilitation and closure plan*, ESR/2019/4957; Queensland Government, *Statutory Guideline - Progressive rehabilitation and closure plans*, ESR/2019/4964.
[22] Stable condition is defined in section 111A of the EP Act.

(l) demonstrate how the post-mining land use aligns with the surrounding regional ecosystems and promotes connectivity of habitats, where relevant

(m) demonstrate how the post-mining land use aligns with surrounding land uses (e.g. grazing, cropping) and how the values and productivity of these land uses will be achieved and maintained on rehabilitated areas, where relevant

(n) for each proposed non-use management area, state the reasons why the area cannot be rehabilitated to a stable condition because of either of the below:

(i) carrying out rehabilitation of the land would cause a greater risk of environmental harm than not carrying out the rehabilitation or

(ii) the risk of environmental harm as a result of not carrying out rehabilitation of the land is confined to the area of the relevant resource tenure and the proponent considers, having regard to each public interest consideration, that it is in the public interest for the land not to be rehabilitated to a stable condition

(o) include copies of reports or other evidence relied on for each proposed non-use management area

(p) for each proposed non-use management area, state the proposed methodology for achieving best practice management of the area to support the management milestones under the proposed PRCP schedule for the area

(q) include other information requirements outlined in the *Statutory Guideline – Progressive rehabilitation and closure plans*.[23]

12.7 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.

12.8 Describe how the costs of rehabilitation have been considered in the proposed rehabilitation outcomes for the project. Provide an estimation of rehabilitation costs for the project in its year of maximum rehabilitation liability, demonstrated to be in accordance with the approved calculation methodology in *Estimated rehabilitation cost under the Environmental Protection Act 1994, Estimated rehabilitation cost calculator – mining,* and *User guide for estimated rehabilitation cost calculator user guide – mining.*[24]

PRCP schedule

12.9 Provide a proposed PRCP schedule which describes time-based milestones for achieving each post-mining land use or non-use management areas for the project. Present the proposed PRCP schedule in the table template included in *Submission of a progressive rehabilitation and closure plan.*[25]

12.10 The proposed PRCP schedule, must identify:

(a) all land within the resource tenure as either a post-mining land use or non-use management area

(b) when land becomes available for rehabilitation or improvement

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[23] Queensland Government, *Statutory Guideline – Progressive rehabilitation and closure plans*, ESR/2019/4964.
[24] Queensland Government, *Guideline – Estimated rehabilitation cost under the Environmental Protection Act 1994*, ESR/2018/4425; Queensland Government, *Estimated rehabilitation cost calculator – mining*, ESR/2015/1824; Queensland Government, *User Guide for Estimated Rehabilitation Cost Calculator for Mining*, ESR/2019/4626.
[25] Queensland Government, *Submission of a progressive rehabilitation and closure plan*, ESR/2019/4957.

(c) rehabilitation milestones to achieve a post-mining land use

(d) management milestone to achieve a non-use management area

(e) milestone criteria that demonstrate when each milestone has been completed

(f) completion dates for each milestone to be achieved

(g) a final site design

(h) all milestone criteria must be consistent with the SMART principles.[26]

12.11 Demonstrate that effective, long-term planning for rehabilitation over the life of the mine has been included in the mine planning in line with matters raised in *Guideline – Progressive rehabilitation and closure plans.*[27]

13. First Nations cultural heritage

Existing environment

13.1 Identify the Aboriginal peoples who are the Traditional Custodians of the land and waters within the project footprint, surrounding area and potential impact area.

13.2 Identify the existing and potential Aboriginal peoples' cultural heritage values potentially affected by the project. This is to be undertaken in consultation with relevant Aboriginal peoples consistent with consultation and engagement requirements identified in Section 7 of this document.

13.3 Any desktop assessment must be verified and supported by a field survey of the project footprint. The survey must be sufficient to support the preparation of a cultural heritage management plan (CHMP) in accordance with the *Aboriginal Cultural Heritage Act 2003*.

Impact assessment

13.4 Detail potential impacts on Aboriginal peoples' cultural heritage in accordance with the *Aboriginal and Torres Strait Islander cultural heritage – EIS information guideline*.[28] Consider every aspect of the environment that has a cultural dimension.

Mitigation measures

13.5 Develop a CHMP for the project in accordance with the requirements of Part 7 of the *Aboriginal Cultural Heritage Act 2003* and identify any associated agreements that have been reached.[29] The area covered by the CHMP must include, at a minimum, the project footprint that is the subject of the EIS.

14. Non-Indigenous cultural heritage

Existing environment

14.1 Describe the known and potential historic heritage values that are protected under the *Queensland Heritage Act 1992*, which may be impacted by the project.

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[26] SMART milestones are: Specific – it is clear what must be done; Measurable – it must be possible to know when it has been achieved; Achievable – it is capable of being achieved; Reasonable/relevant – there is a clear connection between the milestone and the desired outcomes. The requirement is reasonable; Time Specific – it is clear when the milestone will be completed.
[27] Queensland Government, *Guideline – Progressive rehabilitation and closure plans* (PRC Plans), ESR/2019/4964.
[28] Queensland Government, *Aboriginal and Torres Strait Islander cultural heritages – EIS information guideline*, ESR/2020/5296.
[29] Unless section 86 of the *Aboriginal Cultural Heritage Act 2003* or the *Torres Strait Islander Cultural Heritage Act 2003* applies.

14.2 Undertake a study of, and describe, the known and potential historic heritage values that may be affected by the project in accordance with the *Non-Indigenous cultural heritage – EIS information guideline*.[30] After identifying local and State values, assess the values against the respective thresholds using recognised criteria.

14.3 In consultation with the Queensland Museum, review and assess the extent and stratigraphic context of fossil deposits (if any) within the project footprint to determine their value to the community, such as age, species, rarity and representation.

Impact assessment

14.4 Detail potential impacts on non-Indigenous cultural heritage values.

Mitigation measures

14.5 Propose mitigation measures to avoid and minimise harm to non-Indigenous cultural heritage values in accordance with the *Non-Indigenous cultural heritage – EIS information guideline*. Management and mitigation strategies should include provisions for discoveries of potentially significant archaeological artefacts in accordance with section 89 of the *Queensland Heritage Act 1992* and include reference to the *Guideline - Archaeological Investigations* and *Assessing cultural heritage significance: Using the cultural heritage criteria*.[31]

14.6 In consultation with the Queensland Museum, identify strategies to mitigate and/or manage impacts on fossils should they be found within the project footprint.

15. Flora and fauna

15.1 Guidance material relevant for the flora and fauna assessment includes:

(a) Queensland Government, *Aquatic ecology – EIS information guidelines*, ESR/2020/5295

(b) Queensland Government, *Terrestrial ecology – EIS information guideline*, ESR/2020/5309

(c) Queensland Government, *Groundwater dependent ecosystems – EIS information guideline*, ESR/2020/5301

(d) Queensland Government, *Water – EIS information guideline*, ESR/2020/5312

(e) Queensland Government, *Matters of national environmental significance – EIS information guideline*, ESR/2020/5304

(f) Queensland Government, Business Queensland, *Fish salvage* (website), available at: **www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/development/waterways/salvage**

(g) Queensland Government, *Policy for Vegetation Management*, VEG/2014/1084.

Existing environment

15.2 Describe the legislative context for flora and fauna in the project footprint and surrounding area, including the protection and conservation status of each identified ecological value under the *Nature Conservation Act 1992* (NC Act), *Vegetation Management Act 1999* (VM Act), *Fisheries*

[30] Queensland Government, *Non-Indigenous cultural heritage – EIS information guideline*, ESR/2020/5302.
[31] Queensland Government, *Guideline – Archaeological Investigations* (Department of Environment and Science, 2019); Queensland Government, *Assessing cultural heritage significance – using the cultural heritage criteria* (Department of Environment and Heritage Protection, 2017).

Act 1994, EP Act, EPBC Act, local government planning scheme and any other relevant statutory instrument.

15.3 Identify and describe MNES, MSES, matters of local environmental significance (MLES), fauna and flora of cultural significance to Aboriginal peoples, state and regionally significant biodiversity, and the environmental values of the terrestrial and aquatic ecosystems likely to be impacted by the project.[32] The description should include flora and fauna environmental values in the project area, and surrounding areas, identified in desktop analysis and field surveys, and shown on maps in relation to their habitat and connectivity in the landscape (including upstream and downstream of the project). This includes, but is not limited to the following:

(a) regulated vegetation under the VM Act

(b) regional ecosystems and biodiversity status

(c) connectivity areas

(d) wetlands and waterways

(e) threatened ecological communities and wildlife habitat

(f) migratory species

(g) protected areas and conservation areas

(h) waterways providing for fish passage

(i) biodiversity offset areas approved by the State or Australian governments (if any).

15.4 Describe, with photographs and detailed mapping (at a suitable scale), the context of the project footprint in relation to surrounding MNES/MSES/MLES (or any matter identified at TOR item 15.3) including the location of project activities, disturbance footprint, infrastructure and buffers.

15.5 Identify MSES (and MLES, where relevant) that are also MNES and provide specific cross-referencing throughout the EIS to demonstrate where the matter has been assessed in the MNES chapter.

15.6 Provide details of the scope, methodology, timing, effort and results of the field surveys (including spatial data for the survey sites, extent and location of transects, and fauna and flora records on site) undertaken in the EIS.[33] Field surveys should appropriately cover seasonal fluctuations in conditions (i.e. wet and dry seasons). Ecological survey reports (including field proformas and data sheets) should be provided as searchable and hyperlinked appendices.

15.7 Describe, using relevant literature, habitat mapping, and the results of surveys, the natural and existing upstream and downstream movement and habitat requirements of all aquatic and terrestrial flora and fauna species in the project area and surrounding area. Identify sensitivity to change of aquatic and terrestrial flora and fauna groups, RE, and significant species.

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[32] The Queensland Government, *State Planning Policy* (2017) definition of MSES should be considered in the context of describing flora and fauna values in the project footprint. Consider also: Queensland Government, *Aquatic ecology-EIS information guidelines*, ESR2020/5295; Queensland Government, *Terrestrial Ecology- EIS information guideline*, ESR/2020/5309; Queensland Government, *Business Queensland, Fish salvage* (website), available at www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/development/waterways/salvage; Queensland Government, *Policy for Vegetation Management*, VEG/2014/1084; Queensland Government, Regional ecosystem descriptions, available at www.qld.gov.au/environment/plants-animals/plants/ecosystems/descriptions.

[33] Guidance materials relevant to survey methods include: Queensland Government, *Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland*, Version 7.0, 2023 (or subsequent revision); Queensland Government, *Flora Survey Guidelines – Protected Plants*, NCS/2016/2534; Queensland Government, *Terrestrial Vertebrate Fauna Survey Guidelines For Queensland*, Version 4.0, 2022 (or subsequent revision).
For targeted survey guidelines see: Queensland Government, Terrestrial vertebrate fauna survey guidelines (webpage) at www.qld.gov.au/environment/plants-animals/biodiversity/vertebrate-survey#download.

15.8 Describe the existing quality and suitability of habitat for all flora and fauna species that are known to occur, likely to occur, or have the potential to occur in the project footprint. Provide the area of existing habitat in hectares for each species in the project footprint based on field verification. For habitat area calculations, identify the use (if any) of high value regrowth vegetation and non-remnant areas.

15.9 Discuss how the environmental values relating to flora and fauna informed the project design (i.e. constraints, impact mitigation).

15.10 Address any obligations imposed by State or Commonwealth legislation or policy or international treaty obligations, such as the China–Australia Migratory Bird Agreement, Japan–Australia Migratory Bird Agreement, Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) (if relevant) or Republic of Korea–Australia Migratory Bird Agreement.

Impact assessment

15.11 Describe all relevant impacts (direct, indirect, cumulative and facilitated) on biodiversity and natural environmental values identified at TOR item 15.3 (including the type of habitat impacted, such as breeding, roosting, nesting and foraging habitat) from the project across all stages. The assessment should consider known and potential impacts of the project, and must include:

(a) terrestrial and aquatic ecosystems including groundwater-dependent ecosystems[34]

(b) biological diversity

(c) the integrity of ecological processes, including habitats of listed threatened, near threatened or special least-concern species

(d) connectivity of habitats and ecosystems

(e) identification of analogous (reference) sites and the collection of sufficient baseline information to inform rehabilitation criteria post mining

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

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

(h) direct and indirect impacts on terrestrial and aquatic species and ecosystems whether due to: vegetation clearing; hydrological changes; discharges of contaminants to water, air or land; noise; artificial light; and other relevant matters

(i) impacts of waterway barriers on fish passage in all waterways (consider waterways that are mapped on the Queensland Waterways for Waterway Barrier Works spatial data layer and waterways that are present on the ground that are not mapped), including details of any significant diversion or interception of water flows and the effects of subsidence.

15.12 When identifying impacts, ensure figures are appropriately scaled and provided for each activity/component and for each phase of the project.

15.13 Describe any actions of the project that require an authority under the NC Act, and/or would be assessable development for the purposes of the VM Act, *Regional Planning Interests Act 2014*, *Fisheries Act 1994* and *Planning Act 2016*. Features to consider include RE, environmentally sensitive areas, wetlands, nature refuges, protected areas and strategic environmental areas.

[34] Queensland Government, *Groundwater dependent ecosystems - EIS information guideline*, ESR/2020/5301. Consider: Australian Government, *Information Guidelines Explanatory Note – Assessing groundwater-dependent ecosystems*, 2019.

15.14 Identify where any proposed clearing is accepted or exempt development under relevant planning instruments.

15.15 Provide an assessment against SDAP State code 16: *Native vegetation clearing* addressing the relevant assessment benchmarks,[35] if relevant.

15.16 Provide an assessment against SDAP *State code 18: Constructing or raising waterway barrier works in fish habitats* for any assessable waterway barrier works required for the project, including construction activities,[36] if relevant.

Mitigation measures

15.17 Demonstrate how the proposal avoids native vegetation clearing, or where avoidance is not reasonably possible, minimises clearing to conserve vegetation, avoid land degradation and maintain ecological processes.

15.18 Describe how the project will be designed, constructed and operated to avoid direct or indirect impacts on ecological environmental values.

15.19 Where impacts to MSES cannot reasonably be avoided, describe measures to minimise and then mitigate the direct or indirect impacts on ecological values.

15.20 Assess how the nominated quantifiable indicators and standards may be achieved for nature conservation management. Address measures to protect or preserve any listed threatened, near threatened or special least concern species. Describe the practicality, effectiveness and risks for each avoidance and mitigation measure. Include the timeframes in which results would be achieved, frequency of monitoring, and how corrective actions will be managed for all phases of the project.

15.21 Justify how applying all proposed avoidance and management measures would result in acceptable outcomes for terrestrial and aquatic ecology. Describe how achieving the measures successfully will be monitored, measured and audited. Include provisions to regularly evaluate all the mitigation measures so that improvements may be made as new technologies and best practices evolve.

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

15.23 Describe, illustrate, and demonstrate how the project provides safe and adequate upstream and downstream aquatic fauna passage, including all monitoring and maintenance measures.

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[35] Including the following (or subsequent revisions): Queensland Government, *Guide to State Development Assessment Provisions State code 16: Native vegetation clearing*, Version 3.00; Queensland Government, *Guide to State Development Assessment Provisions State code 16: Native vegetation clearing (Coordinated project - agriculture)*, 2023; Queensland Government, *Guide to State Development Assessment Provisions State code 16: Native vegetation clearing (Coordinated project - all other purposes)*, 2023; Queensland Government, *Guide to State Development Assessment Provisions State code 16: Native vegetation clearing (Coordinated project - extractive industry)*, 2023.

[36] Queensland Government, *Waterway barrier works* (website) at www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/development/waterways/barriers; Queensland Government, *Waterways in Queensland* (website) at www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/development/waterways/qld; Queensland Government, *Accepted development requirements for operational work that is constructing or raising waterway barrier works, 2018 (or subsequent revision); Queensland Government, Queensland waterways for waterway barrier works mapping version 3 update*, 2023; Queensland Government, *SDAP Guideline State code 18: Constructing or raising waterway barrier works in fish habitats*, 2022 (or subsequent revision); Queensland Government, *Fisheries development approvals and accepted development* (webpage) at www.business.qld.gov.au/industries/farms-fishing-forestry/fisheries/development/approvals.
Where relevant, consider also: Queensland Government, *SDAP Guideline State code 12: Development withing a declared fish habitat area*, QPW/2019/4686; Queensland Government, *SDAP Guideline State code 11: Removal, destruction or damage of marine plants*, 2022 (or subsequent revision).

15.24 Describe and illustrate any screening incorporated to prevent the entrainment of fish into water pumping infrastructure.

15.25 Assess the need for buffer zones and the retention, rehabilitation or planting of movement corridors. The assessment must take into account the role of buffer zones in maintaining and enhancing riparian vegetation and wetlands to improve water quality, promote habitat connectivity and provide habitat.

15.26 Propose rehabilitation criteria, in relation to natural values, that would be used to measure progressive rehabilitation of disturbed areas. Describe how the achievement of the objectives will be monitored and audited, and how corrective actions will be managed. Proposals for rehabilitation of disturbed areas must, in suitable habitat, describe terrestrial and aquatic fauna habitat features to achieve rehabilitation outcomes.[37]

15.27 Demonstrate how the project will meet the environmental objectives and performance outcome of the EP Regulation.

Environmental offsets

15.28 After demonstrating that all reasonable steps have been taken to avoid and then mitigate impacts, identify whether the project will result in a significant residual impact (SRI) to MSES/MLES requiring an environmental offset with reference to the Queensland Environmental Offsets policy, Significant Residual Impact Guideline, and Queensland environmental offset framework.[38] Characterise the scale of SRI in hectares.

15.29 Propose offsets consistent with the relevant State and Commonwealth legislation or policies for any SRI:

(a) if an SRI will occur on a prescribed environmental matter as outlined in the Environmental Offsets Regulation 2014, offset(s) must be consistent with the requirements of the *Environmental Offsets Act 2014* and the latest version of the Queensland Environmental Offsets Policy[39]

(b) if the Australian Government's offset policy requires an offset for a significant impact on a MNES, offset(s) must be consistent with the requirements of the EPBC Act Environmental Offsets Policy.[40]

15.30 In addition to TOR item 15.29, propose environmental offsets, that at a minimum:

(a) identify and illustrate the extent of any SRI overlap between impacts on MSES/MLES and MNES

(b) include a detailed analysis that demonstrates how/why the MSES/MLES is the same or substantially the same prescribed matter and the same or substantially the same impact as the MNES being assessed by the Australian Government

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[37] Consider: Queensland Government, *Rehabilitation – EIS information guideline*, ESR/2020/5308.
[38] State Government, *Environmental Offsets – Legislation – Environmental offset framework* (webpage) at www.qld.gov.au/environment/management/environmental/offsets/legislation. See also: Queensland Government, *General guide for the Queensland Environmental Offsets Framework*, EPP/2021/5541; Queensland Government, *Queensland Environmental Offsets Policy*, EPP/2015/1658; Queensland Government, *Queensland Environmental Offsets Policy: Significant Residual Impact Guideline*, 2014 (or subsequent revision); Queensland Government, *Significant Residual Impact Guideline: For matters of state environmental significance and prescribed activities assessable under the Sustainable Planning Act 2009 – Queensland Environmental Offsets Policy*, 2014 (or subsequent revision). Note: Environmental Offsets Regulation 2014 (Qld) defines prescribed environmental matters including MSES and MLES.
[39] Queensland Government, *Queensland Environmental Offsets Policy*, EPP/2015/1658.
[40] Australian Government, *EPBC Act environmental offsets policy*, 2012.

(c) for staged offsets, consider the full extent of potential impacts on prescribed environmental matters for the entire project as part of the SRI assessment

(d) identify whether an SRI to MSES will be addressed through a financial or proponent driven offset (land-based offset)

(e) evaluate how the proposed offset will achieve a conservation outcome for the impacted matter

(f) for land-based offsets:

(i) provide results of a habitat quality assessment on both the impact area and the proposed offset area(s) to compensate for impacts[41]

(ii) assess the vulnerability and resilience of any proposed offset site(s) under climate change scenarios (e.g. reduced water availability, increased bushfire risk, increased flood risk)

(iii) describe any active restoration actions that would be undertaken to improve, enhance and manage native vegetation or threatened species habitat at the proposed offset site

(g) for financial offsets, provide a financial offset calculation.

15.31 Describe how the achievement of the offset will be monitored and audited, and how corrective actions will be managed.

15.32 Describe any proposed measures that would be used to avoid, minimise, or mitigate any impact on agricultural land of state or regional significance when meeting environmental offset requirements required for the project.

16. Biosecurity

16.1 The following guidance is relevant for the biosecurity assessment:

(a) Queensland Government, *Biosecurity – EIS information guideline*, ESR/2020/5297.

Existing environment

16.2 Survey terrestrial and aquatic pest animals and weeds and describe their current distribution and abundance in the project footprint and surrounds.[42] Field surveys should appropriately cover seasonal fluctuations in conditions (i.e. wet and dry seasons). Provide maps showing pest animal and weeds distribution in relation to the project footprint and ecologically significant areas identified as containing, or likely to contain, listed flora, fauna, and ecological communities of MSES or MNES. This survey is to include prohibited and restricted matters listed in the *Biosecurity Act 2014* and Biosecurity Regulation 2016, Weeds of National Significance, pests and weeds declared under local laws, and designated pests under the *Public Health Act 2005*.

[41] Before undertaking habitat quality assessments, consult with the Office of the Coordinator-General regarding the relevant methodology.
[42] Guidance materials relevant to survey methods include: Queensland Government, *Methodology for survey and mapping of regional ecosystems and vegetation communities in Queensland*, Version 7.0, 2023 (or subsequent revision); Queensland Government, *Flora Survey Guidelines – Protected Plants*, NCS/2016/2534; Queensland Government, *Terrestrial Vertebrate Fauna Survey Guidelines For Queensland*, Version 4.0, 2022 (or subsequent revision). For targeted survey guidelines see: Queensland Government, Terrestrial vertebrate fauna survey guidelines (webpage) at www.qld.gov.au/environment/plants-animals/biodiversity/vertebrate-survey#download

Impact assessment

16.3 Describe for each project phase, the potential spread of terrestrial and aquatic pest animals, terrestrial and aquatic weed species, and disease within the project footprint, construction and operations access routes, and into adjoining properties, where relevant.[43]

Mitigation measures

16.4 Propose detailed measures using best practice to remove, control and limit the spread of pests, weeds, diseases, pathogens and contaminants within and surrounding the project footprint and adjacent areas. Detail alignment with any relevant local government area Biosecurity Plans and pest management priorities or initiatives undertaken by Biosecurity Queensland. Include a discussion on minimising any susceptibility to biosecurity risks with the introduction and/or expansion of temporary and permanent infrastructure.

16.5 All proposed measures are to be in accordance with any relevant biosecurity surveillance or prevention measures authorised under the *Biosecurity Act 2014*, any requirements under the VM Act or *Planning Act 2016* and aligned with local government pest management priorities.

16.6 Detail a monitoring program that would audit the success of biosecurity measures, identify whether objectives have been met, and describe corrective actions to be used if monitoring indicates objectives are not being met. Performance outcomes should correspond to the relevant policies, legislation and guidelines, and sufficient evidence should be supplied (through studies and proposed management measures) to show these outcomes can be achieved.

17. Water resources

17.1 The following guidance is relevant for the assessment of water resources:

(a) Queensland Government, *Water – EIS information guideline*, ESR/2020/5312

(b) Queensland Government, *Groundwater dependent ecosystems – EIS information guideline*, ESR/2020/5301

(c) Queensland Government, *Application requirements for activities with impacts to water*, ESR/2015/1837

(d) Queensland Government, *Stormwater and environmentally relevant activities*, ESR/2015/1653

(e) Queensland Government, Our policies (website), available at: **www.dlgwv.qld.gov.au/about-us/our-policies**

(f) Queensland Government, *Requirement for site-specific and amendment applications-underground water rights – Guideline*, ESR/2016/3275.

Existing environments

17.2 Describe the legislative context for water resources in the project footprint and surrounding area, including provisions (e.g. outcomes, strategies and objectives) of the relevant water plan(s), water management protocols and other water planning instruments relevant to the project.

17.3 Describe, map and illustrate water features within the existing surface water environment in the project footprint, surrounding area and potential impact area including:

[43] Queensland Government, *Biosecurity – EIS information guideline*, ESR/2020/5297.

(a) natural, modified, ephemeral and perennial waterways, watercourses,[44] drainage features, lakes (including waterholes, lagoons, wetlands and swamps) and springs

(b) drainage patterns, catchments, stream order, sediment processes and geomorphology

(c) hydrology and streamflow characteristics, including the frequency, duration and magnitude of flow events, and seasonal variations (supported by site-specific hydrological modelling)

(d) flooding and overland flow patterns, including flood-prone or low-lying land within the project footprint

(e) waterways providing for fish passage, and natural or artificial waterway barriers

(f) alterations or interferences with the flow regime, including impoundments (dams, weirs, etc.) diversions and stormwater management systems

(g) groundwater-surface water interactions, including identification of waterways as gaining or losing streams, and potential for groundwater baseflow to other water features (e.g. wetlands)

(h) current and potential surface water uses and users, including supported environmental values (e.g. aquatic ecosystem health), licenced and unlicenced abstraction (including location, purpose and volumes where relevant) their existing condition and the streamflow required to support uses and users

(i) the significance of water features within the local and regional surface water environment

(j) the sensitivity of the surface water environment to change, particularly within the context of project-related changes.

17.4 Describe, map and illustrate the existing groundwater environment within the project footprint, surrounding area and potential impact area, including for each relevant groundwater formation:

(a) its nature, type, geology/lithology, stratigraphy, thickness and depth

(b) its hydraulic properties, vertical and horizontal connectivity (including inter-aquifer connectivity, groundwater-surface water interaction and barriers to flow) and the effects of geological structures (e.g. faults and dykes)

(c) hydrostratigraphical characteristics including groundwater flow, recharge and discharge, current and historical groundwater levels (supported by hydrographs), seasonal variations and other trends, contours and flow directions

(d) current and potential groundwater uses and users, including supported environmental values (e.g. GDEs, water supply bores, etc.), authorised (licenced and unlicenced) abstraction (including purpose and volumes where relevant), location and source of existing groundwater supply facilities (e.g. bores or wells) and the groundwater levels required to support uses and users

(e) its significance within the local and regional environment

(f) its sensitivity to change, particularly within the context of project-related impacts.

17.5 Develop an ecohydrological conceptual model using illustrations, maps and cross-sections that represents the groundwater and surface water components and how they interact with

[44] Note that the terms 'watercourse' and 'waterway' are defined in the EP Act and the *Fisheries Act 1994*. The terms 'watercourse' and 'drainage feature' are defined in the *Water Act 2000*. Watercourses can be identified at https://www.business.qld.gov.au/industries/mining-energy-water/water/maps-data/watercourse-map.

ecological and human uses and users within the project footprint, surrounding area and potential impact area in consideration of the *Information Guidelines Explanatory Note – Using impact pathway diagrams based on ecohydrological conceptualisation in environmental impact assessment*.[45]

17.6 Describe investigation and monitoring programs to support characterisation of the existing environment, and demonstrate that it is supported by sufficiently robust site-specific data, and is in accordance with relevant guidelines and best practice by:[46]

(a) justifying the number and spatial extent of monitoring locations (including reference locations), relevant to the existing environment and proposed project activities or infrastructure

(b) justifying the frequency and duration of monitoring periods

(c) providing monitoring bore stratigraphy and drilling logs

(d) describing monitoring and sampling methods and equipment

(e) describing any limitations of the monitoring network or dataset (e.g. reliance on third party access) and how and when these limitations will be addressed

(f) justifying the representativeness and suitability of the monitoring network to characterise the existing environment, establish baseline conditions (including natural variations) and monitor project-related impacts.

Impact assessment

17.7 Identify the location of all project activities, disturbance footprint and infrastructure in relation to the existing water environment.

17.8 Describe and map project water management infrastructure including water storages, regulated structures, inundation areas, drains, diversions, water treatment plant, water pipelines, irrigation areas, discharge points and monitoring points.

17.9 Describe the project's water supply requirements for each stage of the project. Identify and evaluate all water supply options for the project, including any options available under the relevant water plan. Detail the source(s)/location(s), type(s) (e.g. potable, raw), volumes required, storage locations, security, availability and quality of supply, expected rates of usage and water treatment requirements.

17.10 Describe the project's direct and indirect water take/interference, including groundwater dewatering, and alteration of drainage characteristics (e.g. diversion or interception of waterways or overland flow) to facilitate project water management.

17.11 Provide a detailed water balance for the project across all project stages. Include groundwater collected during dewatering, and management of incident rainfall on disturbed areas such as spoil piles. Quantify the water balance analysis including evaporative and seepage losses from relevant infrastructure. Identify quantities of water the project will require to release and any proposed measures to reduce the volume of water to be release (suitability and quantities used for dust suppression, irrigation, evaporation, etc.).

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[45] Australian Government, *Information Guidelines Explanatory Note – Using impact pathway diagrams based on ecohydrological conceptualisation in environmental impact assessment,* 2024. Note, these guidelines are best practice and are to be considered independent of any controlling provisions under the EPBC Act.

[46] Queensland Government, *Monitoring and sampling manual – Environmental Protection (Water) Policy 2009*, 2nd edition, 2018; National Uniform Drillers Licensing Committee, *Minimum Construction Requirements for Water Bores in Australia*, 4th edition, 2020; Australian and New Zealand Governments, *Australian and New Zealand guidelines for fresh and marine water quality*, 2018.

17.12 Describe and map any waterway barrier works that may interfere with fish passage. Include any upstream inundation areas caused by dams or weirs and impacts to downstream flow regimes that may impact on fisheries resources that are reliant on environmental flows. Measure and document the main channel and bankfull widths of each impacted waterway at representative points throughout the impacted area.

17.13 Describe and map any activities or disturbance in, or within 40 metres of, the bed and banks of a watercourse, lake or spring as defined by the Water Act. If proposing to extract materials obtained from the bed and banks of the watercourse, lake or spring, describe the purpose or intent of this material. Describe any exemptions or approvals that may be required for these activities and provide the relevant information.[47][48]

17.14 Describe the legislative context under the Water Act, all relevant water plans, water management protocols and resource operations plans for proposed water supply and direct and indirect water usage/interference, including the details and timing of relevant authorisations and approvals, (e.g. allocations, licences, agreements, exemptions, unallocated water etc.). Identify the water that is regulated under the relevant legislative instruments, and how it applies/does not apply to the project. Describe how proposed authorisations and approvals would address and satisfy the relevant criteria in the Water Act and the relevant water plan(s).

17.15 If seeking surface water as a water supply for the project, describe how the project meets the requirements for releasing strategic reserve unallocated water under the Water Plan (Gulf) 2007 and the Gulf Resource Operations Plan, including:

(a) eligibility requirements for accessing strategic reserve unallocated water

(b) the availability of water in the plan area for the proposed purpose

(c) the efficiency of existing and proposed water use practices

(d) the impact of the proposed taking of water may have on existing authorisations in the plan area, as well as other known potential projects in the immediate and surrounding area

(e) the availability of an alternative water supply for the purpose of which the water is required, including why alternatives are not suitable for the project

(f) the impact the proposed taking and use of water may have on natural ecosystems and the environmental outcomes of the water plan

(g) the impact the proposed taking and use of water may have on cultural and spiritual values under the cultural outcomes of the plan.

17.16 Supported by hydrological modelling, prepare a detailed water balance for the project, considering each project stage (pre-construction, construction, production, end of life), temporary and long-term water requirements. Identify and assess the impacts of project activities, disturbance and infrastructure on surface water resources, existing or potential water users and uses, and relevant environmental values. Analyse and describe the significance of direct, indirect and cumulative impacts on water features, hydrology and flow characteristics, drainage patterns, sediment processes, geomorphology, groundwater-surface water interactions, and the environmental values supported by these features and characteristics (e.g. dry season refugia, recreation facilities). Analyse and describe the significance of impacts in the context of local and regional water resources, and with reference to provisions of the relevant

[47] Queensland Government, *Riverine protection permit exemption requirements*, WSS/2013/726.
[48] More information available at **https://www.business.qld.gov.au/industries/mining-energy-water/resources/quarries/riverine-materials**.

water plan(s), water management protocols and other water planning instruments relevant to the project.

17.17 Develop a numerical groundwater model in accordance with the relevant guidelines that:[49]

(a) is consistent with the ecohydrological conceptual model

(b) predicts project-only and cumulative groundwater changes to:

(i) groundwater drawdown or pressure changes in affected formations

(ii) groundwater flows, inter-aquifer connectivity, recharge and discharge

(iii) groundwater-surface water connectivity

(iv) groundwater uses and users

(v) groundwater quality, including modelling of solute transport (e.g. salinity, metals and acidity)

(c) simulates groundwater impacts for the life of mine/project and post closure, with sufficient timeframe to assess long term impacts and potential plume behaviour and aquifers recovery

(d) connects model outputs to groundwater monitoring design and defines adaptive management strategies (e.g. drawdown thresholds or contaminant concentrations)

(e) is peer reviewed by an independent third-party specialist, and accompanied by a peer review report

(f) is accompanied by a numerical model report that details all relevant parameters, conditions and assumptions used.

17.18 Supported by numerical groundwater modelling, identify and assess the impacts of project activities, disturbance and infrastructure on groundwater resources and environmental values. Analyse and describe the significance of direct and indirect impacts on aquifers and other relevant groundwater units, including groundwater levels and pressure, groundwater flows, inter-aquifer connectivity, recharge and discharge, groundwater-surface water connectivity, and the environmental values supported by these features and characteristics (e.g. GDEs, water supply bores, etc.). Analyse and describe the significance of impacts in the context of local and regional water resources, and with reference to provisions of the relevant water plan(s), water management protocols and other water planning instruments relevant to the project.

Mitigation measures

17.19 Provide a project water management strategy (including site layout and conceptual plans) that details stormwater and wastewater management systems and structures including any significant diversion or interception of overland flow, capacity of onsite detention systems, details of water sensitive urban design measures, sediment basins, discharge locations, and measures to treat, reuse or dispose of water. Demonstrate that project water management systems have been designed to minimise the likelihood of uncontrolled discharges and avoid or minimise impacts to the receiving environment.

17.20 Describe proposed measures to avoid, minimise, mitigate or offset the predicted impacts to surface water and groundwater resources, existing or potential water users and uses, and

[49] Australian Government, *Australian groundwater modelling guidelines*, 2012.

relevant environmental values. Demonstrate how proposed measures are consistent with best practice environmental management.

17.21 Demonstrate how the proposed project will meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.

17.22 Describe how the achievement of water resources objectives in relevant water plan(s) would be monitored, audited, reported, and how corrective/preventative actions and continual improvement would be managed. Provide measurable criteria, standards and/or indicators that will be used to assess the condition of environmental values and the receiving water environment.

17.23 For off-lease areas, provide an assessment against SDAP *State code 10: Taking or interfering with water* for any assessable operational works that take or interfere with water required for the project, including construction activities, if relevant.

17.24 For off-lease areas, provide an assessment against SDAP *State code 15: Removal of quarry material from a watercourse or lake* for any assessable operational works required for the project, including construction activities, if relevant.

17.25 For off-lease areas, provide an assessment against SDAP *State code 20: Referable dams* for any assessable operational works requiring the development of a referable dam required for the project, if relevant.

Water-related cultural values

Existing environment

17.26 Discuss Aboriginal peoples' cultural and spiritual values and water-related cultural use as relevant to the project and protected under the *Human Rights Act 2019*.

Impact assessment and mitigation measures

17.27 Describe the project's potential impacts on water-related cultural values, uses and aspirations of water resources for Aboriginal peoples, including consideration for cultural outcomes of the relevant water plans.

17.28 Describe how water-related cultural values, uses and aspirations of water resources for Aboriginal peoples will be protected and/or promoted through water allocation and management strategies, relevant to the project.

17.29 Where country may be affected by existing or proposed projects in the area, assess the cumulative impacts of these projects on the water-related cultural values, uses and aspirations linked to water for Aboriginal peoples.

18. Water quality

18.1 The following guidance is relevant for the assessment of water quality:

(a) Queensland Government, *Water – EIS information guideline*, ESR/2020/5312

(b) Queensland Government, *Groundwater dependent ecosystems – EIS information guideline*, ESR/2020/5301

(c) Queensland Government, *Monitoring and Sampling Manual: Environmental Protection (Water) Policy*, 2018

(d) Queensland Government, *Application requirements for activities with impacts to water*, ESR/2015/1837

(e) Queensland Government, *Technical guideline - Wastewater release to Queensland waters*, ESR/2015/1654

(f) Queensland Government, *Using monitoring data to assess groundwater quality and potential environmental impacts*, 2021

(g) Queensland Government, *Stormwater and environmentally relevant activities*, ESR/2015/1653

Existing environment

18.2 With reference to the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 and section 9 of the EP Act, identify, map and describe the environmental values of surface water and groundwater in the project footprint, surrounding area and potential impact area.

18.3 Identify and describe the relevant water and sediment quality objectives and guidelines applicable to the environmental values. Where there are no scheduled EPP water or sediment quality objectives for the project site, these are required to be locally derived in accordance with relevant guidelines,[50] supported by complying water quality monitoring data submitted as part of the EIS.

18.4 Describe current and historical surface water, groundwater and sediment quality in terms of physical, chemical and biological characteristics in the project footprint, surrounding area and potential impact area. Characterise the nature and extent of any existing surface and groundwater contamination sources, including licenced releases from other developments, that may interact with project activities.

18.5 Analyse water quality variability to identify and describe trends, including those associated with seasonal or climatic factors, variability of freshwater flows and responses to natural and anthropogenic events/changes. This analysis should be supported by clearly presented statistical summaries, time-series graphs and comparisons against relevant water quality objectives and/or water quality guideline values. Use suitable reference locations and statistically robust site-specific data to adequately establish baseline condition and define natural variation, including seasonal variation.

18.6 Within the project footprint, surrounding area and potential impact area, describe:

(a) the relationship of water quality to location, rainfall, stream flow and groundwater movement supported by site-specific and local catchment data

(b) existing water quality issues (such as stratification, eutrophication and deoxygenation) and/or exceedance of existing water quality objectives and/or water quality guideline values

(c) the confirmed or likely causes of existing water quality issues, including how they are managed (if known)

(d) correlations between groundwater quality data and surface water quality data to inform groundwater-surface water interactions.

18.7 Surface water samples must as a minimum be analysed for electrical conductivity, temperature, pH, sulfate, fluoride, dissolved oxygen, turbidity, total suspended solids, nutrients, dissolved and total metals and metalloids (including vanadium and uranium), total recoverable hydrocarbons and major anions and cations, plus any other potential contaminants relevant to the project

[50] Queensland Government, *Queensland Water Quality Guidelines*, 2013; Queensland Government, *Deciding aquatic ecosystem indicators and local water quality guideline values*, 2022.

(including radionuclides and potential contaminants of concern related to resource extraction and processing). Groundwater samples must be analysed for the same parameters (except turbidity and total suspended solids) as a minimum. Both surface water and groundwater samples should allow for relevant water quality objectives and/or water quality guideline values to be assessed.

18.8 Discuss how the environmental values relating to water quality informed the project design (i.e. constraints, impact mitigation).

Impact assessment

18.9 Describe and map all potential and/or proposed controlled and uncontrolled discharges of water and contaminants[51] by the project, including the predicted quantity, quality, location, source (point or diffuse) timing and duration. Discharges may include controlled water releases to surface waters, uncontrolled discharges when the design capacity of storages is exceeded, management of spills of products during loading or transportation, stormwater discharge, and contaminated run-off or seepage from operational areas of the site. Address the following matters for each potential discharge:

(a) describe the circumstances in which controlled and uncontrolled discharges might occur

(b) describe chemical and physical discharge properties, including predicted concentrations of contaminants, at the point of entering natural surface waters along with toxicity of discharge contaminants to relevant environmental values (e.g. aquatic ecosystems, irrigation water etc.)

(c) provide receiving environment stream flow data, discharge rates and other relevant information to estimate the potential for in-stream dilution, mixing and resultant water quality

(d) provide an assessment of the available assimilative capacity of the receiving waters given existing water quality and other potential point source discharges in the catchment. Investigate options for controlled discharge at times of natural stream flow to ensure that adequate flushing of wastewater is achieved

(e) provide draft contaminant release limits and receiving water conditions, with detailed scientific justification to ensure the protection of aquatic ecosystem health, other relevant environmental values and to protect other water uses.

18.10 Identify and assess the impacts of project activities (including point source and diffuse discharges), disturbance and infrastructure on groundwater and surface water and sediment quality and relevant environmental values. Analyse and describe the significance of direct, indirect and cumulative impacts on physical, chemical and biological characteristics in the receiving environment in the context of the assimilative capacity, supported environmental values and relevant water and sediment quality objectives and/or guideline values. This should include potential impacts from air deposition of contaminants from stack point source emissions.

Mitigation measures

18.11 Describe proposed measures to avoid, minimise, mitigate or offset predicted impacts to surface water, groundwater and sediment quality, and relevant environmental values.

18.12 Describe and justify the management framework for controlled discharges, including:

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[51] Defined under sections 440ZD and 440ZF of the EP Act and Schedule 10 of the EP Regulation.

(a) treatment options and requirements prior to discharge

(b) receiving environment flows

(c) discharge water quality limits and receiving environment conditions designed to comply with water quality objectives and/or water quality guideline values and protect environmental values within the receiving environment.

18.13 Describe how unplanned or indirect impacts (including uncontrolled discharges) to water quality will be managed, including measures to:

(a) avoid, identify, remediate and manage water that is contaminated or may become contaminated

(b) limit the impacts of flooding and extreme weather events.

18.14 Demonstrate how the project will meet the environmental objectives for water and performance outcomes in Schedule 8 of the EP Regulation.

18.15 Describe how water quality will be monitored, audited, reported, and how corrective/preventative actions and continual improvement would be managed. Provide and justify measurable criteria, standards and/or indicators that will be used to assess the condition of environmental values and the receiving water environment.

18.16 Develop proposed conditions for any proposed release to waters and receiving environment monitoring that meet the requirements of relevant guidelines and are designed to protect environmental values, prevent environmental harm and allow for responsive management and reporting actions.

19. Flooding and regulated structures

19.1 The following guidance is relevant for the assessment of flooding and regulated structures:

(a) Queensland Government, *Water – EIS information guideline*, ESR/2020/5312

(b) Australian Government, Australian Rainfall and Runoff: *A Guide to Flood Estimation*, 2019

(c) Queensland Government, *Regulated structures – EIS information guideline*, ESR/2020/5307

(d) Queensland Government, *Structures which are dams or levees constructed as part of environmentally relevant activities*, ESR/2016/1934.

Existing environment

19.2 Provide a hydraulic and hydrological flood model demonstrating the design flood peak discharges for the project footprint and surrounding area which exist in the pre- and post-development scenarios for all flood and stormwater events. This should include at least the following flood and stormwater events: 86.5%, 63.2%, 50%, 20%, 10%, 5%, 2%, 1% and 0.1% AEP, and Probable Maximum Flood.

19.3 Describe the likelihood and history of flooding (from all sources) within the project footprint and surrounding areas that may be modified by the project or have the potential to impact on the project. Evaluate flood-related constraints and considerations in the existing environment relevant for the impact assessment.

Impact assessment

19.4 Describe and map where project infrastructure and landforms during operation and post-closure would lie in relation to the existing and predicted flood risk from all sources for the following flood and stormwater events: 86.5%, 63.2%, 50%, 20%, 10%, 5%, 2%, 1% and 0.1% AEP, and Probable Maximum Flood.

19.5 Use flood modelling (and any additional data) to assess how the project may potentially change flooding and run-off characteristics within the project footprint, and both upstream and downstream of the project footprint. The assessment must consider all project infrastructure and all design measures to avoid or minimise impacts. Mapping (afflux, water level/depth and velocity) should be provided to clearly illustrate the pre-development scenario, and the post-development impacts for all relevant design events. The flood modelling assessment should consider impacts and risks to people, property (including damage to other properties), community and environmental values during flooding events.

19.6 Assess the project's vulnerabilities to climate change (e.g. changing patterns of rainfall, hydrology, temperature and extreme weather events), and demonstrate that flood storage capacity is maintained.

19.7 Identify, map and describe (including their purpose) existing or proposed dams, levees and regulated structures in the project footprint.

19.8 Undertake a consequence category assessment to determine the consequence category (low, significant or high) for each dam, levee, or potential regulated structure according to criteria outlined in the relevant guidelines.[52] The assessment must be undertaken for the 3 different failure event scenarios, i.e. seepage, overtopping and dam break. Provide certified copies of the consequence category determination for each structure assessed.

19.9 Develop environmental objectives and performance outcomes for dams, levees and regulated structures with reference to guidelines published by the Australian National Committee on Large Dams as well as other relevant guidelines.

19.10 Assess the potential impact on regulated structures in accordance with relevant guidelines.

Mitigation measures

19.11 Describe how the project has been designed to avoid or minimise flood risks.

19.12 Describe actions to manage mine pit water following inundation.

19.13 Describe how risks associated with dam failure, seepage, and overtopping will be avoided or minimised to protect people, property and environmental values.

19.14 Describe how dams, levees and regulated structures would be monitored and managed during periods of high rainfall and/or flooding, including measures to assess and minimise the risk of contaminant seepage and other potential impacts.

19.15 Demonstrate how the project will meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.

20. Social

20.1 Describe the project within the legislative context of the *Strong and Sustainable Resource Communities Act 2017* (SSRC Act), including provisions for large resource projects.

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[52] Queensland Government, *Manual for assessing consequences categories and hydraulic performance of structures*, ESR/2016/1933.

20.2 Prepare a social impact assessment (SIA) for the project consistent with the relevant requirements in the SIA Guideline[53] and SIA Supplementary Material.[54]

20.3 The SIA is to be developed in consultation with the Office of the Coordinator-General. The SIA is to describe the potential social impacts (both positive and negative) of the project and must identify relevant and effective impact mitigation and benefit enhancement measures.

21. Economics

Existing environment

21.1 Describe the existing economic environment consistent with the *Economic Impact Assessment Guideline*.[55] The analysis is to describe the local and regional economies likely to be impacted by the project, identify the relevant stakeholders, and include:

(a) the regional economy's key industries and their contribution to regional output

(b) relevant economic indicators

(c) existing, approved and proposed projects in the region.

21.2 Describe the existing and future demand for the project's products in both domestic and international markets over the life of operations, including alternative demand scenarios and detail any assumptions underpinning the demand scenarios.

21.3 Describe the preferred project delivery model (including funding sources) and expected timeframes, outlining assumptions on economic externalities that have the potential to impact on the delivery model and/or expected timeframes.

Impact assessment and mitigation measures

21.4 Identify the net economic impacts of the project on the local and regional area and the State, ensuring the analysis is consistent with the *Economic Impact Assessment Guideline*.

21.5 The economic impact assessment is to address matters including, but not limited to:

(a) labour demand, including the ability for labour (including specialists) to be drawn from the existing local, regional and state workforce, and the potential effects this may have on local and regional businesses

(b) raw input demand, including the ability of existing local, regional and state suppliers to provide relevant raw and manufactured inputs

(c) the anticipated value of offsets required for all components of the project.

21.6 Provide a demand analysis as justification for the scale and scope of the project, relative to the demand scenarios examined in TOR item 21.2, with sensitivity analysis for potential changes in product prices.

21.7 Undertake a regional impact assessment (RIA) in accordance with the *Economic Impact Assessment Guideline* that quantifies the employment by industry (including an estimate of supply chain employment) and value-added contribution of the project to the local, regional and state economies. The RIA is to estimate the changes in key indicators including:

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[53] Queensland Government, *Social impact assessment guideline*, March 2018.
[54] Queensland Government, *Supplementary material for assessing and managing the social impacts of projects under the Coordinator-General's Social Impact Assessment Guideline* (March 2018), 2023.
[55] Queensland Government, *Economic impact assessment guideline*, 2017.

(a) gross regional product

(b) gross state product

(c) employment by industry

(d) gross value added by industry.

21.8 Undertake a cost-benefit analysis (CBA) in accordance with the *Economic Impact Assessment Guideline* that identifies the structure of the project and the relevant direct costs and benefits from the project. The CBA is to consider:

(a) key construction inputs and milestones in the form of a project timeline

(b) relevant renewal costs related to the project (including projected repair/replacement of infrastructure)

(c) operational costs, including all input costs of production

(d) costs associated with environmental management, monitoring, mitigation, rehabilitation and offsets associated with the project, including abatement of greenhouse gas (GHG) emissions

(e) benefits, including revenue projections (and stipulating unit/price assumptions)

(f) expected project life and any residual value over the assessment period.

21.9 The CBA should also consider all direct, indirect, and external social costs and benefits. These would include:

(a) external net benefits to third parties who are providing inputs to the project

(b) external net costs (to third parties, community, local and state government) as a direct result of the project

(c) comparisons of all direct, indirect and external costs and benefits and valuing those direct, indirect and external costs and benefits in monetary terms

(d) assumptions for benefits and costs, including risk assessments

(e) all beneficiaries (e.g. individuals, the community, local and state government) of the project.

21.10 The CBA should consider any alternative sites, alignments and/or designs for project components and infrastructure, including shared use of common user infrastructure with other projects, which provide for lower impact.

21.11 Subject to any confidentiality requirements, discuss any economic aspirations identified through engagement with Aboriginal peoples that are enabled via the project, especially for areas where native title exists. Where agreements have been entered into with Aboriginal peoples, describe the net benefit provided by these agreements and how they align with any identified economic aspirations.

22. Hazards, health and safety

22.1 The following guidance is relevant for the assessment of hazards, health and safety:

(a) Queensland Government, *Queensland Emergency Risk Management Framework Risk Assessment Process Handbook*, 2018

(b) Queensland Government, *Health considerations – Environmental Impact Statement – Guidelines for Proponents*, 2016

(c) Queensland Government, *Guideline: Dam Safety Management*, 2024

(d) Queensland Government, *Regulated structures – EIS information guideline*, ESR/2020/5307

(e) Queensland Government, *Structures which are dams or levees constructed as part of environmentally relevant activities*, ESR/2016/1934

(f) Queensland Government, *Guideline for failure impact assessment of water dams*, 2018

(g) Standards Australia, *Risk Management – Guidelines* (Australian Standard ISO 31000:2018)

(h) Standards Australia, *Managing environmental-related risk* (Australian Standard HB203:2006)

(i) Queensland Government, QGL 1: *Guideline for management of Naturally Occurring Radioactive Material (NORM) in metalliferous mines*, 2014

(j) *Queensland Government, Land contaminated by radioactive material - A guide to assessment, management and remediation*, 2020

(k) Queensland Government, Business Queensland, *Recognised standards, guidelines and guidance notes relating to mining and quarrying activities in Queensland* (website), available at: **https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/mining/legislation-standards/recognised-standards**

(l) Queensland Government, Business Queensland, *Guidance information relating to petroleum and gas activities in Queensland* (website) available at: **https://www.business.qld.gov.au/industries/mining-energy-water/resources/safety-health/petroleum-gas/operating-plant/guidance**

(m) Queensland Government, WorkSafe Queensland, *Guides for major hazard facilities* (website), available at: **https://www.worksafe.qld.gov.au/safety-and-prevention/hazards/workplace-hazards/major-hazard-facilities-mhf/guides-for-major-hazard-facilities**.

Existing environment

22.2 Describe the likelihood and severity of hazards, health, and safety risks in the project footprint and surrounding area, including but not limited to, storms, floods, bushfires, drought, earthquakes, landslides, and heatwaves. Evaluate hazard-related vulnerabilities, constraints and considerations in the area, which are relevant for the impact assessment.

22.3 Describe the likelihood and severity of hazards, health, and safety risks due to the mineralogy of the project footprint and surrounding area.

Impact assessment

22.4 Prepare a risk assessment and describe the potential risks to people, property, and environmental values that may be impacted by the project taking into account climate projections for the region, for all components and stages of the project. The assessment is to include:

(a) identification of potential hazards and estimated probabilities of occurrence, including:

(i) consideration of project activities and disturbance

(ii) consideration of natural events (e.g. storms, cyclones, flooding, bushfires, earthquakes,[56] heatwaves,[57] landslides) that may affect the site with at least a one per cent annual exceedance probability or 100-year average reoccurrence interval level

(iii) consideration of the mineralogy of the project footprint and surround area

(iv) consideration of all hazardous substances (including fuels, chemicals, hazardous waste and explosives) to be used, transported, stored, processed or produced[58]

(v) consideration of whether the site or operation will meet the threshold of a major hazard facility either temporarily or permanently

(vi) consideration of potential hazards associated with dam failure, petroleum and gas pipelines, abandoned mines, explosive magazines etc.

(vii) consideration of hazards posed by wildlife interactions (including mosquitos)

(viii) consideration of hazards away from the project footprint where hazard characteristics may be changed by the project

(ix) consideration of the cumulative impact of several natural hazards occurring at the one time

(x) mapping of potential hazard areas within the project footprint

(b) hazard analysis and risk assessment in accordance with relevant guidelines and standards.[59]

22.5 Provide an assessment against SDAP *State code 21: Hazardous chemical facilities* addressing the relevant assessment benchmarks.[60]

22.6 Detail any consultation undertaken with the relevant state, district and local emergency response authorities and organisations (including local disaster management groups, where relevant) to support the risk assessment and proposed mitigation measures.

22.7 Demonstrate compliance with the provisions of the *Explosives Act 1999*, *Mining and Quarrying Safety and Health Act 1999*, and/or *Petroleum and Gas (Production and Safety) Act 2004.* Discuss the contents and implementation of the relevant safety and health management system(s), including any engagement with Resources Safety and Health Queensland.

Mitigation measures

22.8 Describe how the project has been designed to avoid or mitigate project-related risks to people, property, and environmental values, including the need for fire breaks, overland flow and flood zones, no-go areas etc.

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[56] The State Earthquake Risk Assessment includes probabilities of major seismic events for all local government areas and is to be used to inform risk consideration and management – Queensland Government, *State Earthquake Risk Assessment*, 2019.
[57] In accordance with Queensland Government, *State Heatwave Risk Assessment*, 2019.
[58] In accordance with Standards Australia, *Explosives - Storage, transport and use – storage* (Australian Standard AS2187.1).
[59] Standards Australia, *Risk management – Guidelines* (Australian Standard ISO 31000:2018); Standards Australian, *Managing environment-related risk* (Australian Standard ISO HB 203:2012). Consider also: *Explosives Act 1999*, *Mining and Quarrying Safety and Health Act 1999*; *Petroleum and Gas (Production and Safety) Act 2004*; Queensland Government, *Queensland Emergency Risk Management Framework Risk Assessment Process Handbook*, 2018. Consider also the risk assessments provided in the relevant Local Disaster Management Group Plans and the Queensland State Risk Assessment available at: https://www.disaster.qld.gov.au/plans (State heatwave assessment, State Earthquake Risk assessment, Sever Wind Hazard Assessment); Queensland Government, *Climate action resources*, available at: https://www.qld.gov.au/environment/climate/climate-change/resources;Queensland**;** Queensland Government, *Queensland Future Climate Dashboard,* available at: https://longpaddock.qld.gov.au/qld-future-climate/dashboard/; Queensland Government, *Queensland Emergency Risk Management Framework,* available at: https://www.disaster.qld.gov.au/queensland-emergency-risk-management-framework.
[60] Queensland Government, *Guide to State Development Assessment Provisions State code 21: Hazardous chemical facilities.*

22.9 Detail safeguards and mitigation measures that will reduce the likelihood and severity of hazards, consequences and project-related risks to people, property, and environmental values. Identify the residual risk following the application of mitigation measures. Present an assessment of the overall acceptability of residual project risks with consideration of uncertainties and risk profiles.

22.10 Where emergency response or hazard management plans are proposed to address scenarios and hazards identified in the risk assessment, provide a plan outline, including key measures and procedures, and consultation with relevant groups. As part of the emergency response plan, include the following:

(a) a bushfire management plan, certified by a suitably qualified person, in consultation with the Queensland Fire Department and Rural Fire Service Queensland addressing construction and operations, and including the following information at a minimum:

(i) a bushfire hazard analysis

(ii) mitigation strategies to achieve the relevant development outcomes in Part E of the State Planning Policy–Natural Hazards, Risk and Resilience[61]

(iii) provides details of the proposed ongoing management of fuel loads across the subject site through grazing or mechanical means including the asset protection zone proposed

(b) a safety and emergency management plan addressing construction and operations, and including the following information at a minimum:

(i) evacuation plans for the construction and operation phases of the development

(ii) safety management plans and emergency response procedures in consultation with the state and regional emergency service providers (including Queensland Fire Department and Rural Fire Service Queensland) and provide an adequate level of training to staff who will be tasked with emergency management activities.

22.11 Demonstrate how the project will meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.

22.12 Describe how risk management would be monitored, audited, and reported. Detail how corrective/preventative actions and continual improvement would be managed.

23. Air quality

23.1 The following guidance is relevant for the assessment of air quality:

(a) Queensland Government, *Air – EIS information guideline*, ESR/2020/5294

(b) Queensland Government, *Guideline – Application requirements for activities with impacts to air*, ESR/2015/1840.

Existing environment

23.2 Identify and map the location of any sensitive receptors and environmental values of the project footprint and surrounding areas that may be impacted by air emissions from the project.[62]

[61] Queensland Government, *State Planning Policy*, 2017.
[62] Queensland Government, *Air – EIS information guideline*, ESR/2020/5294.

23.3 Provide baseline data on local and regional meteorology up to the airshed scale. Parameters should include air temperature, wind speed and directions, atmospheric stability, mixing depth and other parameters necessary for input to the model.

23.4 Discuss the existing local and regional airshed and air quality, referencing available data from any site-specific air monitoring, the National Pollutant Inventory reporting, and/or ambient air quality monitoring undertaken by the Queensland Government, including background/ambient levels and sources of particulates, gaseous and odorous compounds, and any major constituent and contaminants. Identify/illustrate any existing significant sources of contaminants.

Impact assessment

23.5 Identify, quantify and describe the air emissions from the project (point, diffuse and fugitive emission sources) in an emissions inventory.

23.6 Tabulate the air quality criteria and objectives applicable to the air emissions from the project.

23.7 Detail the potential impacts of air emissions from the project on environmental values and sensitive receptors, including identifying any exceedances of the air quality criteria in accordance with the Environmental Protection (Air) Policy 2019 (EPP (Air)), *Air – EIS information guideline*, and *Application requirements for activities with impacts to air*.[63] The potential impacts must include the quantification of 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).

23.8 Where there is potential for nuisance odours to impact on sensitive receptors, an odour impact assessment should be undertaken in accordance with *Guideline – Odour Impact Assessment from Developments*.[64]

23.9 Detail the compatibility of air quality impacts from the project on existing and approved land uses in the project footprint and surrounding area.

23.10 Demonstrate how the project will meet the environmental objectives and performance outcomes relevant to air in Schedule 8 of the EP Regulation.

Mitigation measures

23.11 Describe the mitigation measures that will be applied to the project to:

(a) achieve the air quality criteria that has been developed for the project

(b) avoid, minimise and/or mitigate adverse air quality impacts to sensitive receptors

(c) protect the environmental values of the air environment.

23.12 Describe the monitoring and auditing processes to achieve the air quality criteria that has been developed for the project.

23.13 Describe the process for corrective actions to address any exceedance of the air quality criteria.

24. Noise and vibration

24.1 The following guidance is relevant for the assessment of noise and vibration:

[63] Queensland Government, *Air – EIS information guideline*, ESR/2020/5294; Queensland Government, *Application requirements for activities with impacts to air*, ESR/2015/1840.
[64] Queensland Government, *Guideline – Odour Impact Assessment from Developments*, ESR/2024/6828.

(a) Queensland Government, *Noise and vibration – EIS information guideline*, ESR/2020/5305

(b) Queensland Government, *Guideline – Application requirements for activities with noise impacts*, ESR/2015/1838.

Existing environment

24.2 Identify and map the location of any sensitive places and environmental values of the project footprint and surrounding areas that may be impacted by noise emissions or vibrations from the project.

24.3 Describe the existing background noise within the project footprint, including noise and vibration sources. The data must be collected in accordance with quality-assured, best practice methodologies and as per the *Noise Measurement Manual.*[65]

Impact assessment

24.4 Identify and quantify the noise and vibration sources emitted from the project (point and general emission sources). Describe whether the sources will be continuous, intermittent, fluctuating, vibrating or impulsive.

24.5 Tabulate the noise and vibration objectives applicable to the noise and vibration emissions from the project.

24.6 Detail the potential impacts of noise and vibration emissions from the project on environmental values and sensitive places, including identifying any exceedances of the acoustic quality criteria. The assessment must address low-frequency (<200 Hz) noise emissions.

24.7 If the project involves blasting, describe the locations, frequency and expected size of blasts, and predict the noise levels, air blast overpressure, and ground vibration that would result from the blasts.

24.8 Detail the compatibility of noise and vibration impacts from the project on existing and approved land uses in the project footprint and surrounding area.

24.9 Demonstrate how the project will meet the environmental objectives and performance outcomes relevant to noise in Schedule 8 of the EP Regulation.

Mitigation measures

24.10 Describe the mitigation measures that will be applied to the project to:

(a) achieve the noise and vibration criteria that have been developed for the project

(b) avoid, minimise and/or mitigate adverse noise and vibration impacts to sensitive receptors

(c) protect the environmental values of the acoustic environment

(d) control background creep in noise as outlined in the Environmental Protection (Noise) Policy 2019.

24.11 Describe the monitoring and auditing processes to achieve the noise and vibration criteria developed for the project.

24.12 Describe the process for corrective actions to address any exceedance of the noise and vibration criteria.

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[65] Queensland Government, *Noise Measurement Manual*, ERS/2016/2195.

25. Traffic and transport

25.1 The following guidance is relevant for the assessment of traffic and transport:

(a) Queensland Government, *Transport – EIS information guideline*, ESR/2020/5310

(b) Queensland Government, *Guide to Traffic Impact Assessment*, 2018

(c) Queensland Government, *Assessable development under the Planning Act*, available at **https://www.tmr.qld.gov.au/Community-and-environment/Planning-and-development/Planning-and-development-assessment-under-the-Planning-Act/Assessable-development**

(d) Queensland Government, Technical publications (website), available at **https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications**.

Existing environment

25.2 Describe the existing and future (as planned by state or local government) transport network and corridors including detailed maps to appropriate scales showing relevant:

(a) construction laydown areas and workers accommodation areas

(b) locations where project components cross or are located in proximity to or located within existing and planned:

(i) State or local government road corridors and road infrastructure

(ii) railway corridors and rail infrastructure

(iii) airports and airstrips

(iv) sea ports

(v) other relevant approved or known projects.

Impact assessment

25.3 Describe the total transport activities associated with each project phase. The information should include, but not be limited to:

(a) background traffic growth and existing traffic data that is expected via the state-controlled road network and via local government roads

(b) expected annual volumes, weights and origins/destinations of materials, products, hazardous goods, and wastes

(c) details concerning road transportation for each major transport task (e.g. fuel, plant and equipment, consumables, wastes) including heavy vehicle classification, load size (highlighting over-mass and over-sized loads) (swept paths to be provided), number of trips, service frequency, likely timing and duration, and maps of routes highlighting any vulnerable bridges or other structures along the proposed routes

(d) potential impacts to time sensitive agricultural freight (e.g. exports, horticulture, livestock)

(e) traffic generated by workforce personnel and service providers during each phase of the project

(f) a multi-criteria analysis and/or a cost benefit analysis of the economic, social, and environmental impacts for logistics management alternatives being considered, including shared use of common user infrastructure

(g) detail appropriate choices for modes of transport to ensure efficiency and minimise impacts on the community.

25.4 Identify and map the main access to the project (include latitude and longitude coordinates). Include an assessment of the suitability for the proposed use and any required upgrades in accordance with relevant local and/or state policies, standards, and manuals.

25.5 Prepare a transport impact assessment in accordance with *Transport – EIS information guideline.*[66] Present the transport assessment in separate sections for each project-affected mode (road, rail, air services and port) as appropriate for each phase of the project, including the proposed transportation and delivery of pre-assembled modules or components to site. The assessment must be completed by a Registered Professional Engineer of Queensland and include:

(a) how the existing and future safety, condition, and performance of transport infrastructure (local and state) will be impacted by each phase of the project

(b) details of the adopted assessment methodology for impacts on roads within the road impact assessment report in accordance with *Guide to Traffic Impact Assessment* (GTIA) for state-controlled roads and the local government impact assessment methodologies for local government roads[67]

(c) for state-controlled roads, all impact types, such as road safety, access and frontage, intersection delay, road link capacity, pavement, and transport infrastructure (including bridges, culverts, and grids), as detailed in the GTIA are considered and mitigated. Particular emphasis is to also be placed on the following sections of the GTIA:

(i) section 8.4.2 Heavy Vehicle Routes

(ii) section 9 Road Safety

(iii) section 13 Pavement

(d) for impacts on level crossings, the Australian Level Crossing Assessment Model (ALCAM).

25.6 Provide a detailed assessment for the project's impacts on local government roads in accordance with the relevant local government's impact assessment methodology.

Mitigation measures

25.7 Demonstrate that any necessary transport impact mitigation works will not compromise existing and future transport infrastructure corridors planning and works, with reference to the latest version of the Department of Transport and Main Roads (DTMR's) *Queensland Transport and Roads Investment Program* and the Development Assessment Mapping System.[68]

25.8 Demonstrate how project impacts for each transportation mode will be mitigated to maintain the safety, efficiency and operational integrity of all affected transport modes for the project workforce and other transport systems. Mitigation measures are to be prepared in consultation with relevant transport authorities (e.g. local governments, DTMR, Civil Aviation Safety Authority, relevant port authorities, Maritime Safety Queensland, Queensland Rail and

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[66] Queensland Government, *Transport – EIS information guideline*, ESR/2020/5310.
[67] Queensland Government, *Guide to Traffic Impact Assessment*, 2018, available at: www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Guide-to-Traffic-Impact-Assessment.
[68] Queensland Government, *Queensland Transport and Roads Investment Program*, published annually, available at: **www.tmr.qld.gov.au/QTRIPonline**; Queensland Government, *Development Assessment Mapping System*, available at: **sppims-dams.dsdilgp.qld.gov.au/dams/?tab=layers&accordions=SARA+DA+MAPPING**.

Queensland Police Service) and must consider the transport authorities' works programs and forward planning, and be in accordance with the relevant methodologies, guidelines, and design manuals.

26. Waste

26.1 The following guidance is relevant for the assessment of waste:

(a) Queensland Government, *Waste – EIS information guideline*, ESR/2020/5311

(b) Queensland Government, *Application requirements for activities with waste impacts*, ESR/2015/1836.

Existing environment

26.2 Describe any current waste management infrastructure/facilities relevant to the project, including location, capacity, and accepted waste streams. Evaluate waste-related constraints and considerations relevant for the impact assessment.

26.3 Describe and map any actual or potential contaminated material, including any emerging contaminants of concern within the project footprint, including details of relevant site investigations and details of management or disposal obligations/requirements.

Impact assessment

26.4 Provide a waste inventory for all expected project waste streams generated by project activities during the construction, operational, rehabilitation and decommissioning phases. Describe the source, quantity/volume, and waste type (solid, liquid, regulated (category 1, category 2) etc.). Discuss whether waste would be reused, recycled, disposed or managed under an end of waste approval.

26.5 Describe the quantity, and physical, chemical and toxicological characteristics of each waste stream, any contaminants of concern, any attributes that may affect its management (dispersal, chemical reactivity and persistence in the environment), and the associated risk of causing environmental harm. Describe how waste would be stored, handled, transported, treated, disposed or managed in another way at each stage of the project to minimise risks to environmental values.

26.6 Detail the geochemistry of all waste rock, including spoil, tailings and rejects. Assess potential risks associated with this waste stream and describe the management of progressive placement and any disposal strategy to minimise any potential impacts on environmental values.

26.7 Describe waste treatment, reuse, recycling and recovery processes to be carried out within the project footprint, including end uses.

26.8 Identify the likely destination for waste streams to be disposed of or recycled off-site, and determine the capacity of waste disposal facilities to accept project waste.

26.9 Provide relevant information on proposed on-site disposal of general and/or regulated waste relevant to ERA 60, by referring to relevant policies and guidelines.[69]

26.10 Provide relevant information on existing and proposed sewage infrastructure relevant to ERA 63, by referring to relevant policies and guidelines,[70] depending on the proposed sewage collection and treatment infrastructure the reuse and/or disposal of treated wastewater and

[69] Queensland Government, *Model operating conditions ERA 60 – Waste disposal*, ESR/2015/1667.
[70] Queensland Government, *Assessment guideline – Assessing applications for sewage treatment works*, ESR/2015/1652.

sewage wastes generated. Provide details of the sewage treatment process and related infrastructure, including daily peak design capacity and the amounts and compositions of waste solids, liquids and gases.

26.11 Undertake water balance modelling applying appropriate techniques (MEDLI) to ascertain suitable wet weather storage volume(s), sufficient irrigation area(s), suitable effluent irrigation rates and suitable vegetation to be irrigated to ensure sustainable effluent irrigation for the predicted volume of sewage that will be generated and treated, then land irrigated.

26.12 Identify end of waste codes under the *Waste Reduction and Recycling Act 2011* which may be relevant for the project.[71]

26.13 Discuss any obligations under the *National Environment Protection (National Pollutant Inventory) Measure 1998* (NPI NEPM) and ensure data provided meets the requirements of the NPI NEPM and its subordinate legislation. Identify the types and amounts of certain substances being emitted to air, land, and water and both on-site or off-site waste transfers that may need to be reported.

Mitigation measures

26.14 Describe proposed measures to avoid or minimise environmental impacts as a result of waste storage, handling, transport, disposal, or other management at each stage of the project. Demonstrate that proposed measures are consistent with best practice environmental management, including the waste management hierarchy.

26.15 Demonstrate how the project will meet the environmental objectives and performance outcomes in Schedule 8 of the EP Regulation.

26.16 Describe how the achievement of environmental objectives and associated performance outcomes would be monitored, audited and reported, and how corrective/preventative actions and continual improvement would be managed.

27. Climate

27.1 The following guidance is relevant for the assessment of climate:

(a) Queensland Government, *Climate – EIS information guideline*, ESR/2024/5298.

Existing environment

27.2 Describe the existing climate in accordance with the *Climate – EIS information guideline.* The description should include, but not be limited to:

(a) the local and regional climate relevant to the project, with regard to its seasons and its susceptibility to extreme events such as droughts, cyclones, flooding and bushfires

(b) rainfall patterns (including magnitude and seasonal variability of rainfall)

(c) overland flow paths

(d) air temperature, evaporation, humidity, wind (direction and speed), atmospheric pressure and any other special factors (e.g. temperature inversions) that may affect the management of the project.

[71] A list of current end of waste codes are available at: **https://www.business.qld.gov.au/running-business/environment/waste-management/regulated-waste/eow-codes**.

Impact assessment

27.3 Conduct an assessment in accordance with the *Climate – EIS information guideline.* Describe the project area's climate patterns that are relevant to the environmental impact assessment, particularly the project's discharges to water and air, and propagation of noise. Climate information is to be presented in a statistical form including long-term averages and extreme values reflecting extreme weather events (e.g. droughts, floods and bushfires), as necessary. It should also be illustrated by bar charts, wind rose diagrams, or other relevant graphic means as necessary.

27.4 Assess the project's vulnerabilities to projected climate change (e.g. changing patterns of temperature, rainfall, hydrology and extreme weather events). In the assessment of climate hazards and risks, reference relevant climate projection data (e.g. Queensland Future Climate high-resolution climate projection data) and employ appropriate risk assessment methodology.[72]

Mitigation measures

27.5 Describe the adaptation strategies and/or activities designed to minimise climate change impacts to the project, subsequent land uses on that site (e.g. rehabilitation projects) and surrounding land uses. Adaptation activities must be designed to avoid perverse outcomes, such as increased emissions of GHGs, temperature rise, an increase in frequency and intensity of severe weather events, or maladaptive outcomes for surrounding land uses.

28. Greenhouse gas

28.1 The following guidance is relevant for the assessment of greenhouse gas (GHG) emissions:

(a) Queensland Government, *Guideline – Greenhouse gas emissions*, ESR/2024/6819 (GHG Guideline).

Existing environment

28.2 Describe nearby activities or sources that may emit GHG emissions (point source or diffuse) including naturally occurring (potential or actual) sources.

Impact assessment

28.3 Provide an emissions inventory identifying the GHGs to be emitted by source from all components of the project and the phase of the project at which the emissions will occur.

28.4 Provide information regarding GHG emissions and energy production and consumption consistent with requirements of *National Greenhouse and Energy Reporting Act 2007* (Cth) and its subordinate legislation, including methodology, assumptions, emissions factors, activity data and calculations used to estimate the project's GHG emissions.

28.5 Demonstrate how the project will contribute to Queensland's GHG emission reduction targets as legislated in the *Clean Economy Jobs Act 2024* and the *Energy (Renewable Transformation and Jobs) Act 2024* over the life of the project.

28.6 Undertake an assessment of GHG emissions, including:

[72] Consider all climate resources to assess the potential climate change provided in Queensland Government, *Climate – EIS information guideline,* ESR/2020/5298.

(a) an estimate of the annual and cumulative Scope 1 and Scope 2 CO_2 equivalent emissions[73] over the life of the project. Include both unabated emissions and emissions after all avoidance and abatement measures have been accounted

(b) for medium to high emitting projects,[74] provide an estimate of annual and cumulative Scope 3 emissions[75] and total Scope 3 emissions over the life of the project.

28.7 Identify risks and likely magnitude of impacts to environmental values from abated Scope 1, 2 and 3 emissions (noting that only medium to high emitters are required to consider the impact of Scope 3 emissions).[76]

Mitigation measures

28.8 For medium to high emitting projects,[77] provide a GHG abatement plan that meets the requirements of the GHG Guideline, Appendix A. The GHG abatement plan must also address the following:

(a) as part of the assessment of project alternatives, detail, compare and quantify conceptual, technological, locality, configuration, scale and individual elements or components of feasible alternatives that were considered to avoid or reduce the project's emissions

(b) identify any voluntary initiatives, or research into reducing the lifecycle and embodied energy carbon intensity of the project's processes or products

(c) provide a comparison of estimated annual and cumulative abated project GHG emissions with the global, national and state estimated annual emissions and remining emission budgets up to 2050. Include all Scope 3 emissions in the global comparison and relevant Scope 3 emissions for national and Queensland comparisons

(d) where offsets have been identified as the primary option for compliance, develop a comprehensive carbon offsets management plan. This plan must estimate the volume of carbon offsets required for compliance of the life of the project, detail expected market availability limitations of offset credits and show how the project will secure the required supply of offsets

(e) for projects proposing to offset more than 30% of their emissions limits or offset outside of Queensland, provide as part of the EIS an independent review by an appropriately qualified person. This review will assess and confirm findings of the EIS that on-site GHG emission avoidance, reduction and substitution measures have been expended and why suitable and/or sufficient offsets are not available within Queensland

(f) when multi-year emissions reduction targets are proposed to take into account emerging technologies over that period, ensure the same emissions result will be delivered at the end of the multi-year period such that the trajectory of the Queensland emissions targets are met. A multi-year monitoring period should not be more than 5 years

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[73] In accordance with the GHG Guideline (chapter 5) Scope 1 emissions mean 'GHG emissions released to the atmosphere as a direct result of an activity. This includes direct emissions and fugitive emissions.' For the purposes of a Coordinated Project, vegetation clearing is taken to be a Scope 1 emission. The GHG Guideline (chapter 5) defines Scope 2 emissions as 'GHG emissions released to the atmosphere from the indirect consumption of an energy commodity that was produced elsewhere.

[74] Section 3.2, GHG Guideline.

[75] The GHG Guideline (chapter 5) defines Scope 3 emissions as 'indirect GHG emissions, other than Scope 2 emissions, that are generated in the wider economy, either in Australia or overseas. They occur as a consequence of the activities of a relevant activity, but from sources not owned or controlled by that activity.'

[76] Section 3.4, GHG Guideline.

[77] Section 3.2, GHG Guideline.

(g) describe the assumptions and data inputs applied to develop the project emissions reduction targets.

28.9 For low emitting projects,[78] detail proposed GHG management practices to demonstrate that all reasonable and practical measures have been applied to manage GHG emissions through best practice design, process, technology, and management following the GHG abatement hierarchy: avoid, reduce, substitute and offset.[79]

29. Cumulative impacts

29.1 Provide a cumulative impact assessment that considers the combined effect of potential impacts of different components/aspects of the project on the same environmental value (i.e. intra-project cumulative impacts) and the impacts of other relevant projects acting in combination on the same environmental value (i.e. inter-project cumulative impacts). The cumulative impact assessment must identify potential cumulative environmental, social, economic and cultural impacts for each phase of the project on identified environmental values, including consideration of the likelihood, intensity, duration, magnitude and extent of impacts.

29.2 Describe how identified cumulative impacts may be affected by climate change, including the frequency and intensity of extreme weather events.

29.3 Describe how the cumulative impact assessment and management measures could be progressed further on a inter-project basis.

29.4 Describe measures that would be used to avoid, minimise, or mitigate any identified cumulative impacts.

30. Environmental management plans

30.1 Provide a project environmental management strategy (EMS) that includes sufficiently detailed environmental management plans (EMPs) to demonstrate that project impacts from the construction, operation, decommissioning and rehabilitation phases of the project will be appropriately managed. The EMS should:

(a) provide a strategic framework for project environmental management and compliance with relevant legislation

(b) include a document hierarchy for the implementation of EMPs, sub-plans, programs, processes and procedures

(c) detail the project's environmental management system, which should include key objectives, principles and commitments

(d) describe the environmental risk assessment process to identify and manage ongoing risks

(e) outline high-level roles and responsibilities for environmental management.

30.2 EMPs should be developed from, and be consistent with, the impact avoidance and mitigation strategies proposed in the EIS. Mitigation measures and commitments should be SMART and should align with best practice environmental management to protect identified environmental values.[80] The EMPs are to be presented as stand-alone documents (appendices to the EIS).

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[78] Sections 3.2 and 3.3, GHG Guideline.
[79] Figure 1, GHG Guideline.
[80] SMART commitments are: Specific – it is clear what must be done; Measurable – it must be possible to know when it has been achieved; Achievable – it is capable of being achieved; Reasonable/relevant – there is a clear connection between the commitment and the desired outcome. The requirement is reasonable; Time Specific – it is clear when the milestone will be completed.

30.3 EMPs must:

(a) summarise relevant project activities and potential impacts on environmental values

(b) set out the environmental objectives and performance outcomes the proponent has committed to achieving for the project (i.e. expected levels of environmental harm, performance standards and associated measurable indicators, including progressive and final rehabilitation)[81]

(c) clearly describe impact avoidance and mitigation strategies, including measures to avoid, minimise and rehabilitate all impacts identified in the EIS

(d) identify management measures that have been developed in consultation with, or based on feedback from relevant stakeholders, and provide for ongoing stakeholder engagement as the project proceeds

(e) outline monitoring and compliance programs to detect potential impacts and confirm the effectiveness of management measures in achieving environmental objectives and performance outcomes

(f) include a process for implementation of preventative and corrective actions (including use of trigger action response plans where suitable) as well as documentation, notification and response obligations following identified non-compliance

(g) include a program for regular reporting and auditing on EMP compliance and implementation, as well as EMP reviews and updates to ensure continual improvement.

31. Conclusions and commitments

31.1 The EIS must include an overall conclusion that sets out:

(a) a summary of predicted project impacts

(b) a description of the impact avoidance and mitigation strategies the proponent will implement to avoid, then minimise and mitigate the predicted project impacts

(c) an overall evaluation of the project that considers the balance of predicted environmental, economic and social impacts and benefits.

31.2 The EIS must include a consolidated list of commitments and conditions that are proposed to apply to the project to protect environmental values and achieve predicted outcomes.

32. Appendices to the EIS

32.1 Appendices are to provide the complete technical evidence used to develop assumptions, statements and findings in the main text of the EIS. No significant issue or matter is to be mentioned for the first time in an appendix; such matters are to be addressed in the main text of the EIS.

32.2 The EIS must also include the following appendices:

(a) a table listing the section of the EIS (to the lowest possible subsection) where each requirement of the TOR is addressed

(b) a list citing all reference material used or relied on in the EIS

[81] Consider: Queensland Government, *Rehabilitation – EIS information guideline*, ESR/2020/5308; Australian Government, *Environmental management plan guidelines*, 2024.

(c) a glossary of terms and a list of acronyms and abbreviations

(d) a consolidated commitment register that lists all mitigation measures (including monitoring programs and management plans) proposed in the EIS to protect or enhance environmental values.

33. Matters of national environmental significance

On 23 December 2024, a delegate of the Australian Government Minister for the Environment and Water determined the proposed action (EPBC reference 2024/10012) is a 'controlled action' due to likely significant impacts to the MNES protected under Part 3 the EPBC Act.

The controlling provision for the project is listed threatened species and communities (sections 18 and 18A).

The MNES chapter must address the matters outlined in Schedule 4 of the EPBC Regulations and the matters outlined below.

Ensure habitat definitions for listed threatened species are in accordance with definitions available in the EPBC Act guidelines or other relevant, most recent, statutory documents (e.g. referral guidelines, approved listing advice(s), approved conservation advice(s), recovery plan(s), threat abatement plan(s) or comparable policy guidelines, and information contained in relevant Australian databases such as the Species Profile and Threats (SPRAT) database). Ensure that the habitat definitions also take into account all relevant Queensland regional ecosystem and other available information. The most up-to-date documentation and/or scientific expert advice must be used.

Note: Where 'action' is used below, it is to mean the project (all components) in the MNES chapter.

General content

33.1 The MNES chapter of the EIS should be a stand-alone document that primarily focuses on the project's controlling provisions. The MNES chapter is to contain sufficient information to be read alone with reference to technical data or supplementary reports (where appropriate). Any detailed technical information that supports the MNES chapter is to be summarised in the main text and included as appendices to the EIS.

33.2 The MNES chapter is to take into consideration the EPBC Act Significant Impact Guidelines,[82] other relevant statutory documentation (such as relevant recovery plans and conservation advice accessible via the SPRAT database) and Commonwealth policy guidelines.[83]

33.3 The MNES chapter should contain sufficient information to allow the Australian Government Minister for the Environment and Water (or delegate) to make an informed decision on whether or not to approve the taking of the action, and if approved, what conditions to attach under Part 9 of the EPBC Act for the controlling provision.

33.4 The MNES chapter should contain sufficient information to enable interested stakeholders to understand the environmental consequences of the proposed action on MNES and how these impacts will be avoided, mitigated and/or offset.

33.5 The level of analysis and detail in the MNES chapter should reflect the level of significance of the expected impacts on the environment. Any and all unknown variables or assumptions made

[82] Australian Government, Department of the Environment, Water, Heritage and Arts, *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance*, 2013.
[83] See: Australian Government, Department of Climate Change, Energy, the Environment and Water, *EPBC Act publications and resources* (webpage) available at www.dcceew.gov.au/environment/epbc/publications#policy.

in the assessment must be clearly stated and discussed. The extent to which the limitations, if any, of available information may influence the conclusions of the environmental assessment should be discussed. Management measures must be clear, genuine and specific.

33.6 The proponent is to ensure that the MNES chapter assesses the action's compliance with the principles of ecologically sustainable development and the objects of the EPBC Act.[84]

Format and style

33.7 The MNES chapter should comprise 3 elements:

(a) the executive summary

(b) the main text of the document

(c) appendices containing detailed technical information and other information, including management plans, that can be made publicly available.

33.8 The MNES chapter should be written so that any conclusions reached can be independently assessed. To this end, all sources must be appropriately referenced using the Harvard standard. The reference list should include the address and date of access of any internet webpages used as data sources.

33.9 The main text of the MNES chapter should include a list of abbreviations, a glossary of terms and appendices containing:

(a) a list of persons and agencies consulted during the EIS

(b) contact details for the proponent

(c) the names of the persons involved in preparing the EIS and work done by each of these persons.

33.10 The MNES chapter should be produced in A4 size paper capable of being photocopied, with maps and diagrams in A4 or A3 size and in colour (where possible) in line with the *Guide to providing maps and boundary data for EPBC Act projects*.[85]

33.11 The MNES chapter must be in an appropriate format and style to allow publication on the internet.

Specific content

General information

33.12 Provide the background and context of the action including:

(a) the title of the action

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

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

(d) the location of the action, including the regional context

(e) the background to the development of the action

[84] See EPBC Act chapter 1, part 1.
[85] Australian Government, Department of Agriculture, Water and the Environment, *Guide to providing maps and boundary data for EPBC Act projects*, 2021 (or subsequent revision).

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

(g) the current status of the action

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

Description of the action

33.13 Describe in detail all components (phases) of the action, including pre-construction, construction, operation, maintenance, decommissioning and rehabilitation. This is to include the precise location (including coordinates) of all works to be undertaken, structures to be built or elements of the action that may have impacts on MNES.

33.14 Detail the anticipated start and completion dates of all actions such as the extent, staging and timing of clearing undertaken over the construction period.

33.15 Detail how the works are to be undertaken (including stages of development and their timing) and design parameters for those aspects of the structures or elements of the action that may have relevant impacts. The various elements of the action must be described in the text and illustrated with maps, diagrams, plans (at a suitable scale) and other information as required to provide sufficient context and basis for the identification and assessment of impacts. This section must also include but not be limited to:

(a) all infrastructure to be constructed and proposed construction methods

(b) ancillary or supporting infrastructure, associated works or safety works including new construction and upgrades

(c) location of mine infrastructure area, hydrolyser plant, hydrogen storage area, waste rock dump, tailings dams, water supply dams, truck load-out facilities and ROM pad/stockpiles

(d) location of power sub-station, distribution network and on-site diesel generators

(e) all new and existing roads, as well as details on which roads are sealed and unsealed, traffic volume and ownership and responsibility for maintenance of any shared infrastructure

(f) treatment of contaminated land, including method of treatment, disposal of waste and contaminated material, standards and minimum thresholds required for removal/disposal

(g) realignment or replacement of services, structures, access, etc required as a result of the action

(h) maximum life of the action, including construction, operation, decommissioning, and rehabilitation

(i) number of jobs for the life of the action, including number of jobs for Indigenous employees

(j) other such actions, including but not limited to, earthworks, use of explosives, changes to hydrological flow and groundwater, accommodation facilities, material storage, construction facilities, fines and dust control management, waste management generally and management of spills/contaminants/pollutants

(k) the proposed source of construction and operation water and the respective approval process.

33.16 Provide the total size of the project footprint, the disturbance footprint, and any adjoining areas (beyond the impact area) that may be subject to indirect or facilitated impacts (in hectares). If the project footprint is the same as the proposed disturbance footprint, the MNES chapter is to include a statement to this effect. Detail any area subject to indirect or facilitated impacts (outside of the project footprint), including (but not limited to) edge effects, noise, light spill, dust, vehicle access, changes to surface and groundwater quality, changes to water quality from erosion and/or sedimentation, altered fire regimes, and hazardous substance spills. The MNES chapter must include maps, which clearly identify all components of the action and boundaries of the proposed project footprint including all infrastructure elements and development necessary for the project. All maps must follow the *Guide to providing maps and boundary data for EPBC Act projects*.[86]

33.17 Describe any changes to the project description or action footprint that may have occurred since the original referral.

Feasible alternatives

33.18 Any feasible alternatives to the action to the extent reasonably practicable, including:

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

(b) a comparative description of the impacts of each alternative on MNES

(c) sufficient detail with evidence to make clear why an alternative is preferred to another or why alternatives to the above projects are not possible

(d) short, medium and long-term advantages and disadvantages of the feasible alternatives.

Description of the environment

General description of the environment

33.19 Describe the environment of the project footprint and surrounding areas (i.e. adjacent, upstream and/or downstream) that may be affected by the action. At a minimum, this section is to include:

(a) current and historical land uses of the project area

(b) historical anthropogenic uses of the project area and existing condition of the overall area within and adjacent to, downstream and upstream of the project area

(c) hydrology (surface and ground), including flood extents, relevant hydrogeology, and local water quality (include a map that documents stream order across the site)

(d) description of any listed threatened species or ecological community that occurs in the project footprint and adjacent areas

(e) terrestrial and aquatic ecosystems, including key vegetation communities and relevant watercourses. Include the area (in hectares) of each vegetation community and the percentage (%) cover for each vegetation type

(f) GDEs of potentially affected rivers, creeks and wetlands, including but not limited to Julia Creek, Horse Creek, and Spellary Creek and relevant wetlands in the region

[86] Australian Government, Department of Agriculture, Water and the Environment, *Guide to providing maps and boundary data for EPBC Act projects*, 2021 (or subsequent revision).

(g) soil and geological characteristics, and physical, chemical and biological characterisation of any soils that will be disturbed as a result of the action. Include site investigations conducted to date and a map with labelled contour intervals and soil types

(h) occurrence of potential acid sulfate soils

(i) assessment of vegetation (not limited to MNES), including raw data sheets and species lists

(j) total size (in hectares) of REs present on site, as well as a map(s) showing RE patches and native vegetation regrowth

(k) distribution and abundance of pest species and weeds

(l) topography and elevation across the project footprint (include a map with contour intervals)

(m) identification of conservation and special use areas and any outstanding natural features

(n) cultural heritage values, people and communities and other socially relevant considerations

(o) ancillary transport roads and the surrounding areas that may be affected by the action.

Matters of National Environmental Significance

The MNES chapter must provide the quantification of the extent of the MNES present both within and surrounding the proposed action site, details of the resources used to identify and assess the below MNES, and whether consultation was undertaken and/or advice sought from local community groups or experts.

It is the proponent's responsibility to be aware of any changes to the distribution of threatened species and ecological communities that are listed at the time of the controlled action decision, including information available in the SPRAT Database. The proponent must ensure that a recent Protected Matters Search Tool report has been generated and considered before finalising the draft EIS. This Protected Matters Search Tool report must be provided as an attachment to the EIS.

If the listing or up-listing of a species occurs after the controlled action decision, the species will continue to be assessed under the level of threatened status it was before this event. However, all relevant conservation advice and recovery plans remain at least partially relevant and are a mandatory consideration for the Minister in deciding whether or not to approve a proposed action (section 139 of the EPBC Act). The proponent should ensure that the most recent documents are consulted and referenced.

33.20 The MNES chapter must include a detailed assessment of the presence of individuals and suitable habitat for the listed threatened species and communities that are known to occur, may occur, or are likely to occur below, within and adjacent to the project footprint.

33.21 The MNES chapter must also include a detailed presence and habitat assessment for any other listed threatened species and communities, that will, or is likely to, be directly or indirectly impacted by the proposed action.

33.22 The MNES chapter must provide information about the habitat for and presence of any MNES identified as potentially being significantly impacted by the proposed action, including (but not limited to) the MNES identified in Appendix 3.

Matters of national environmental significance information required

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

For each of the listed threatened species and communities identified in Appendix 3, the following structure and detail must be provided in the MNES chapter:

- description
- desktop analysis
- survey effort and outcomes
- habitat assessment
- impact assessment
- avoidance, mitigation and management
- rehabilitation requirements
- significant impact assessment
- statutory requirements.

Note: The threatened species and communities identified in Appendix 3 may not be a complete list of listed threatened species and ecological communities that will, or are likely to, be impacted by the action. It is the proponent's responsibility to ensure that any threatened species and ecological communities listed at the time of the EPBC Act controlled action decision, that will or are likely to be impacted by the project, are assessed for the Minister's consideration.

Description

33.23 Describe each listed threatened species and ecological community that will or is likely to be impacted by the project. For each species and ecological community, include the following details: EPBC Act listing status, abundance, condition, distribution, ecology and habitat preferences of the species or communities.

Desktop assessment

33.24 Describe the desktop assessment methodology used to inform the field surveys in and within the vicinity of the project footprint.

33.25 Identify and describe known historical records of the listed threatened species and ecological communities within the proposed action area and adjacent area. Where relevant, also identify and describe known and historical records of listed threatened species in the broader region (e.g. highly mobile, transient, or cryptic species). All known records must be supported by an appropriate source (i.e. Australian Government and State databases, published research, publicly available survey reports, etc.) and include the year of the record and a brief description of the habitat in which the record was identified.

Survey effort and outcomes

33.26 Provide details of the scope, methodology, timing and effort of field surveys (to be undertaken by qualified species experts with demonstrated experience in detecting the relevant listed threatened species and ecological communities) within, adjacent to, downstream and upstream of the project. Provide details of:

(a) how surveys were undertaken in accordance with relevant Australian Government and State guidelines or best practice survey guidelines at the time of the surveys

(b) an assessment of the adequacy of any surveys undertaken (including survey effort, timing and any limitations which may impact the results), the extent to which the surveys were appropriate for the species and in accordance with Australian Government's relevant survey and policy guidelines[87]

(c) if relevant, the justification for divergence from relevant State and Commonwealth guidelines or best practice survey guidelines at the time of the surveys

(d) state the total number of records (individuals and evidence of presence) of each listed threatened species and ecological communities in and within the vicinity of the proposed action site, and show in applicable area maps. Provide maps identifying verified sightings of MNES during studies or surveys.

33.27 Surveys are to be of a suitable standard, including the scope, timing and spatial and temporal replication, to be able to detect cryptic or difficult to detect terrestrial and aquatic species. Surveys are to also target areas upstream, downstream and adjacent to the project area, particularly for species that regularly disperse through the landscape or aquatic environments (particularly seasonally) and/or have large home ranges.

33.28 Wherever practicable, surveys should be undertaken over an ecologically relevant scale and period to adequately determine the likely presence or absence of the target species or environmental value. A precautionary approach should be taken where this is not possible or where the target species is cryptic by nature. Where a protected matter is considered absent, robust evidence must be provided.

33.29 Attach all relevant ecological surveys referenced in the referral and MNES chapter as supporting documents to the EIS.

Habitat assessment

33.30 Provide a robust habitat assessment for the listed threatened species and communities. The assessment should consider the presence of species outside, within and adjacent to the proposed action area where they have the potential to be impacted. The habitat assessment should assess specific habitat requirement(s) relevant to each listed threatened species and ecological community (e.g. breeding, foraging, dispersal, known important habitat, suitable habitats, roosting, etc.), identify the total area of habitat (in hectares) within the project area and provide detailed mapping of specific habitat that may be impacted (including an overlay of the project disturbance footprint, habitat type and known records). The habitat assessment should be informed by:

(a) field surveys and vegetation assessments

(b) the SPRAT Database[88]

(c) relevant Australian Government documents (e.g. approved conservation advices, recovery plans, listing advices, referral guidelines, etc)

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[87] See Australian Government, Department of Climate Change, Energy, the Environment and Water, On-ground surveys and data for referred actions under the EPBC Act - DCCEEW; For listed migratory species, consider also: Australian Government, *EPBC Act Policy Statement 3.21 – Industry guidelines for avoiding, assessing and mitigating impacts on EPBC Act listed migratory shorebird species*, 2015 (or subsequent reiteration).

[88] Australian Government, Department of Climate Change, energy, the Environment and Water, *Species Profiles and Threats Database*, available at www.environment.gov.au/cgi-bin/sprat/public/sprat.pl.

(d) published research and other relevant sources (if relevant).

33.31 Where potential habitat for listed threatened species and ecological communities is identified in the project area, an assessment must be undertaken regardless of whether the species was recorded (i.e. the potential for occurrence of these species and communities must also be considered and assessed).

33.32 Describe the habitat mapping and the results of surveys, the natural and existing upstream and downstream movement and habitat requirements for relevant terrestrial and aquatic flora and fauna, both native and introduced species (e.g. including weeds and feral animals). Similar species can be grouped and discussed together where practicable.

33.33 Habitat assessments for listed species and communities must provide habitat quality estimates for each protected matter. Habitat quality should be assessed using the same approach/scoring mechanism used for any offset site. The method applied must be suitable and targeted for each protected matter.

33.34 Identify potential climate change refugia within the proposed action area and adjacent area for listed threatened species which may be impacted by the proposed action. See *Characteristics of climate change refugia for Australian biodiversity* for information on climate change refugia as well as other more recent and species-specific research where relevant.[89]

Impact assessment

The MNES chapter must include a description of all the relevant impacts of the action. Relevant impacts are impacts that the action will have or is likely to have on a matter protected by a controlling provision.

For each listed threatened species and community, provide the habitat assessment and impact assessment together under a heading of the species' name so potential impacts can be easily understood.

33.35 Relevant impacts are the impacts that the action will have, or is likely to have, on MNES. 'Likely' is taken to mean a 'real, or not remote, chance or possibility'. Impacts during the pre-construction, construction, operation, decommissioning and rehabilitation phases of the project should be addressed, and the following information provided:

(a) a detailed assessment of the nature and extent of the likely short-term and long-term relevant impacts, taking into consideration any indirect impacts (e.g. light and dust pollution, noise from operations, construction and explosives, increased risk of predation)

(b) a statement, with supporting evidence, of whether any relevant impacts are likely to be unknown, unpredictable or irreversible

(c) an analysis of the significance of the relevant impacts

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

(e) consideration must be given to specific habitat features relevant to the species within and surrounding the development footprint.

[89] Reside, AE, Welbergen, JA, Phillips, BL, Wardell-Johnson, GW, Keppel, G, Ferrier, S, Williams, SE, Vanderwal, J, Characteristics of climate change refugia for Australian biodiversity, *Austral Ecology*, 39: 887-897, DOI:10.1111/aec.12146, 2014.

33.36 Provide an assessment of the likelihood, intensity, duration, magnitude and extent of impacts resulting from the pre-construction, construction, operation, maintenance, decommissioning and rehabilitation components of the project on listed threatened species and communities and species' habitat.

33.37 With consideration of all project phases, identify and describe which component(s) and stage(s) of the action and/or consequential actions are of relevance to each listed threatened species and/or ecological community. All relevant impacts of the action must be assessed in accordance with the latest relevant Commonwealth policies and guidelines, and information provided in the SPRAT database, including but not limited to:

(a) habitat clearance

(b) habitat inundation

(c) habitat fragmentation and degradation

(d) injury or death (such as vehicle strike)

(e) disturbance from dust, light, vibration and noise

(f) introduction/spread of, and/or increase in, pests, weeds and disease

(g) changes to hydrological regimes (including flow changes and flooding)

(h) impacts to groundwater levels in root zones of relevant vegetation

(i) impacts to water quality, including from waste/chemical pollution and/or land contamination

(j) sedimentation and erosion

(k) barriers to fauna dispersal and edge effects.

33.38 For threatened ecological communities (if relevant), the total direct and indirect impact (in hectares) to each identified patch within and adjacent to the project site must be provided. Further, the impact assessment for ecological communities must include a discussion on the post-impact viability of each individual patch within and adjacent to the project site to be directly or indirectly impacted from fragmentation as a result of vegetation clearance. Assessment of the impact to threatened ecological communities must include any relevant buffers directly surrounding the patch. Justification must be provided as to the size and form of any buffer applied, or in cases where a buffer is not applied.

33.39 Assess how changes to hydrology associated with the proposed action may impact on listed threatened species and threatened ecological communities taking into consideration both surface and groundwater dependence.

33.40 Include the potential direct, indirect, facilitated, and cumulative (where possible) loss and/or disturbance on listed threatened species and their habitat and threatened ecological communities as a result of the proposed action. This must include:

(a) the quality of the habitat impacted

(b) quantification of the individuals, where relevant

(c) duration of impact

(d) the total amount of each type of habitat (in hectares) to be impacted for each listed threatened species and ecological communities.

33.41 The MNES chapter is to address the potential impact of the action on ecosystem resilience where relevant for MNES. This should include consideration of the likely/predicted changes to climate regimes.

33.42 Where relevant, the MNES chapter should consider the anticipated/predicted future climatic conditions at the site in the assessment of impacts on MNES, and how changes in climate and the frequency and severity of weather events may interact with, exacerbate or reduce the impacts of the proposed action on MNES over time. This should include, but not be limited to the:

(a) loss, fragmentation, and/or drying of potential climate refugia and/or refuges for threatened species or communities as a result of the proposed action – consider the potential impacts of removing or otherwise impacting these habitats

(b) increased risk of fire as a result of the proposed action under drier conditions and periods of extreme heat

(c) inclusion of different climate scenarios in water modelling.

33.43 A risk assessment for all identified risks to threatened species and ecological communities should be conducted and documented.

Avoidance, mitigation and management

Avoidance, minimisation, and mitigation measures are the primary methods of eliminating and reducing significant impacts on MNES. Where possible and practicable, it is best to avoid impacts. If impacts cannot be avoided, then they should be minimised or mitigated as much as possible. Residual impacts should then be managed. Avoidance, minimisation, and mitigation measures must be investigated thoroughly as a part of the assessment and be supported by evidence to demonstrate likely success.

The MNES chapter must provide information on proposed avoidance, minimisation, mitigation, and management measures to deal with the impacts of the action. committal language (i.e. 'will') rather than non-committal language (i.e. 'may', 'where possible', 'if required', etc.) must be used, and any commitments by the proponent must be clearly distinguished from recommendations or statements of best practice made by the document author or other technical expert. The proposed measures and outcomes to be achieved must be provided and substantiated with the best available evidence and practices.

The SPRAT Database, conservation advice, recovery plans, and associated statutory and policy documents, may provide a starting point for relevant mitigation measures for listed threatened species, ecological communities.

Any management plans required for the mitigation and management of impacts on MNES should be provided either as separate documents attached to the EIS or included as subsections in the MNES chapter. The Australian Government is likely to recommend to the Australian Government Minister (or delegate) that any conditions of approval require that final versions of any relevant plans be approved and in place prior to the commencement of the proposed action.

The Australian Government encourages the proponent to establish, test, and monitor novel methods for avoiding, minimising, and mitigating the impacts of the proposed project on MNES. The Australian Government also encourages the development of scientifically rigorous monitoring programs to measure impacts and assess the effectiveness of mitigation.

33.44 Provide a consolidated list of mitigation measures, including environmental design features, proposed to be undertaken to prevent, minimise, or compensate for all relevant impacts of the action, including:

(a) a description of the environmental outcomes the measures are expected to achieve, including details of any baseline data or proposed monitoring to demonstrate progress towards achieving these outcomes

(b) a description of proposed safeguards and mitigation measures to deal with relevant impacts of the action, including mitigation measures proposed to be taken by the proponent

(c) assessment of the expected or predicted effectiveness of the mitigation measures, with consideration of climate change predictions where relevant

(d) details of ongoing management, including scientifically robust monitoring programs to support an adaptive management approach and determine the effectiveness of the proposed measures or assess against proposed outcomes

(e) any statutory or policy basis for the mitigation measures, including reference to the SPRAT Database and relevant approved conservation advice, recovery plan or threat abatement plan

(f) the cost of the mitigation measures

(g) the name of the agency responsible for endorsing or approving each mitigation measure or monitoring program.

33.45 Proposed measures must be based on best available practices, appropriate standards, evidence of success for other similar actions and supported by published scientific evidence. All commitments must be drafted using committal language (e.g. 'will' and 'must') when describing the proposed measures. All proposed measures must also be drafted to meet 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)

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

33.46 Describe how habitat fragmentation and patch isolation will be avoided, with consideration of whether avoidance areas will enable species mobility across the project area and still be connected to habitat in the broader landscape.

33.47 Provide a detailed outline of an EMP that sets out the framework for management, mitigation, and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing.[90] The EMP must:

(a) address the project phases (construction, operation, decommission and rehabilitation) separately

[90] Australian Government, Department of Climate Change, Energy, the Environment and Water, *Environmental Management Plan Guidelines*, 2024 (or subsequent version).

(b) state the environmental objectives, performance criteria, monitoring, reporting, corrective action, responsibility and timing for each environmental issue

(c) describe contingencies for events such as heavy or prolonged rainfall, unexpected finds protocol for encountering unexpected contamination, the importation of inappropriate fill material, chemical spills, off-target impacts of chemical usage

(d) in the construction phase of the EMP, include management measures such as dust suppression and enforcement of reduced construction zone vehicle speeds

(e) incorporate weed and pest management actions, including monitoring

(f) consider the Environmental Management Plan Guidelines.[91]

Rehabilitation requirements

Where rehabilitation is proposed and relevant to listed threatened species and communities, the information below must be included in a rehabilitation management plan or a subsection of the MNES chapter.

33.48 Detail any rehabilitation activities proposed to be undertaken and how they meet best practice standards, including for the restoration of habitat for relevant listed threatened species listed threatened ecological communities, and avoidance of sedimentation/erosion.

33.49 Provide a summary of the vegetation communities including dominant species that are being rehabilitated.

33.50 Provide the details of any rehabilitation activities proposed to be undertaken as required by Commonwealth, State or Territory, and local government legislation.

33.51 Provide information on the timing, frequency and duration of proposed rehabilitation activities to be implemented, including anticipated time to completion (refer to 'S.M.A.R.T' principle above). All commitments must be drafted using committal language (e.g. 'will' and 'must') when describing the proposed activities.

33.52 Detail the rehabilitation acceptance criteria relevant to MNES and the procedures, including contingency measures that will be undertaken to achieve them.

33.53 Provide details of ongoing management and monitoring programs, including timing, to validate the effectiveness of proposed rehabilitation activities, including any contingency measures and when they would be triggered.

33.54 Provide details of tangible, on-ground corrective actions that will be implemented, including timing, in the event that monitoring programs indicate that the completion criteria have not been, or will not be, achieved.

33.55 Provide information on the management of the rehabilitation sites including, but not limited to, weed and pest management.

33.56 Provide maps showing the areas that will be rehabilitated within the project area and the size in hectares of these areas.

[91] Australian Government, Department of Climate Change, Energy, the Environment and Water, *Environmental Management Plan Guidelines*, 2024 (or subsequent revision).

Significant impact assessment

33.57 After consideration of proposed avoidance, mitigation, and management measures, provide an assessment of the likelihood of residual significant impacts on relevant listed threatened species and ecological communities. The significant impact assessment must consider the Australian Government's *Significant impact guidelines 1.1*.[92]

33.58 Provide the total amount of residual significant impacts, if any, for each type of habitat (in hectares) in the disturbance footprint for each listed threatened species and ecological community.

Statutory requirements

33.59 Describe, with supporting evidence, how the proposed action will not be inconsistent with:

(a) Australia's obligations under the Biodiversity Convention, the Convention on Conservation of Nature in the South Pacific (Apia Convention), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

(b) a recovery plan or threat abatement plan.

33.60 Describe, with supporting evidence, how the proposed action has taken into account any relevant approved conservation advice for the relevant listed threatened species and threatened ecological communities.

Cumulative impacts

33.61 The MNES chapter is to identify and assess the cumulative impacts on MNES (terrestrial and aquatic) created by the project and the activities of other existing and proposed adjacent, upstream and downstream relevant developments, water users and land users. This must include at a minimum, cumulative impacts of other projects impacting on the relevant MNES, being threatened species and communities.

[92] Australian Government, Department of the Environment, Water, Heritage and the Arts, *Significant Impact Guidelines 1.1 – Matters of National Environmental Significance*, 2013 (or subsequent revision).

Offsets

The MNES chapter must include an assessment of the likelihood of residual significant impacts occurring on listed threatened species and communities avoidance, after all mitigation and management measures relating to the proposed action have been applied. If it is considered that residual significant impacts are likely, then environmental offsets are required to be provided.

Environmental offsets are measures that compensate for the residual significant impacts of an action on the environment. Offsets provide environmental benefits to counterbalance the impacts that remain after consideration of avoidance and mitigation measures. Offsets do not reduce the impacts of an action and are not intended to make proposals with unacceptable impacts acceptable.

It is important to consider environmental offsets early in the assessment process. Any proposed offsets must meet the key principles of the *EPBC Act Environmental Offsets Policy*.

If it is considered that a residual significant impact is likely, the EIS must include a draft Offset Area Management Plan (OAMP) consistent with the Offsets Policy. Note that if there is a residual significant impact, the relevant Australian Government department is likely to recommend to the Australian Government Minister (or delegate) that any conditions of approval require the environmental offset and associated OAMP be approved and implemented prior to the commencement of the proposed action.

33.62 Following TOR items 33.57 and 33.58, if a residual significant impact is likely, in the MNES chapter include a summary of the proposed environmental offset(s) and key commitments to achieve a conservation gain for each protected matter in accordance with the *EPBC Act Environmental Offsets Policy* (Offsets Policy).[93]

33.63 An EPBC Act protected matter must be present in the proposed offset site(s) if it is present in the project site to align with the Offsets Policy.

33.64 Where the proposed offset area(s) supports an environmental offset for multiple MNES, proposed management action(s) for one protected matter must not be detrimental (i.e. have an impact) to other protected matters.

33.65 Where an offset is proposed, with a completed Offsets Assessment Guide calculation, all inputs must be supported by robust scientific evidence and/or supporting evidence (e.g. historical grazing regimes, satellite imagery, statements from landholders).[94]

33.66 The draft OAMP must be prepared by a suitably qualified ecologist and in accordance with the Australian Government's *Environmental Management Plan Guidelines*.[95]

[93] Australian Government, Department of Sustainability, Environment, Water, Population and Communities, *EPBC Act environmental offsets policy*, 2012 (or subsequent revision).
[94] Australian Government, Department of Sustainability, Environment, Water, Populations and Communities, *Offsets assessment guide*, 2012. Available at www.dcceew.gov.au/environment/epbc/publications/epbc-act-environmental-offsets-policy. See also: Australian Government, Department of Sustainability, Environment, Water, Populations and Communities, *How to use the Offsets assessment guide*, 2012; Australian Government, Department of Climate Change, Energy, the Environment and Water, *Offsets assessment guide* (webpage), available at www.dcceew.gov.au/environment/epbc/approvals/offsets/guidance/offsets-assessment-guide.
[95] Australian Government, Department of Climate Change, Energy the Environment and Water, *Environmental Management Plan Guidelines*, 2024 (or subsequent revision).

Minimum requirements for a draft Offsets Area Management Plan

The draft OAMP should be provided as an appendix to the EIS, which demonstrates how the environmental offset(s) compensate for the residual significant impacts of the action on listed threatened species and ecological communities, and their habitat in accordance with the principles of the Offsets Policy. The minimum information requirements include (but may not be limited to), the below.

33.67 Describe the offset area(s), including location, size, condition, environmental values present and surrounding land uses.

33.68 Provide baseline data and other supporting evidence that documents the presence of the relevant MNES, and the quality of their habitat within the offset area(s).

33.69 Detail how the offset area(s) will provide connectivity with other habitats and biodiversity corridors and/or will contribute to a larger strategic offset for the relevant MNES.

33.70 Provide specific, committal and measurable environmental outcomes that detail the nature of the conservation gain to be achieved for listed threatened species and communities, including the creation, restoration, and revegetation of habitat in the proposed offset area(s).

33.71 Provide an assessment of the site habitat quality for the offset area(s). Before undertaking habitat quality assessments, consult with the Office of the Coordinator-General and the relevant Australian Government department regarding the proposed methodology for deriving Habitat Quality scores for the *Offsets Assessment Guide (calculator)*.[96] An important factor is that both impact and offset sites are assessed using the same approach/scoring mechanism, that the method is suitable and targeted for each species/community, and that the resulting offset proposed is in line with the core principles of the Offsets Policy.

33.72 Demonstrate (with supporting evidence) how the environmental offset(s) compensate for residual significant impacts of the proposed action on relevant MNES, and/or their habitat, in accordance with the principles of the Offsets Policy and all requirements of the Offsets Assessment Guide including:

(a) time over which loss is averted (max. 20 years)

(b) time until ecological benefit

(c) risk of loss (%) without offset

(d) risk of loss (%) with offset

(e) confidence in result (%).

33.73 Provide specific offset completion criteria (derived from the site habitat quality) to demonstrate the improvement in the quality of habitat in the offset area(s) over a 20-year period.

33.74 Detail the management actions, and timeframes for implementation, to be carried out to meet the offset completion criteria.

33.75 Include interim milestones that set targets at 5-year intervals for progress towards achieving the offset completion criteria.

[96] Australian Government, Department of Climate Change, Energy, the Environment and Water, Offsets assessment guide (webpage), available at: https://www.dcceew.gov.au/environment/epbc/approvals/offsets/guidance/offsets-assessment-guide.

33.76 Detail the nature, timing, and frequency of monitoring to inform progress against achieving the 5 yearly interim milestones (the frequency of monitoring must be sufficient to track progress towards each set of milestones, and sufficient to determine whether the offset area(s) are likely to achieve those milestones in adequate time to implement all necessary corrective actions).

33.77 Propose timing for the submission of monitoring reports that provide evidence demonstrating whether the interim milestones have been achieved.

33.78 Provide timing for the implementation of tangible, on-ground corrective actions to be implemented if monitoring activities indicate the interim milestones have not been achieved.

33.79 Provide a risk analysis and a risk management and mitigation strategy for all risks to the successful implementation of the OAMP and timely achievement of the offset completion criteria, including a rating of all initial and post-mitigation residual risks in accordance with a risk assessment matrix

33.80 Provide evidence of how the management actions and corrective actions take into account relevant approved conservation advices and are consistent with relevant recovery plans and threat abatement plans.

33.81 Provide supporting evidence to justify how proposed management action(s) are additional to the existing requirements of the landholder in managing their land (e.g. weed and pest management requirements under the *Biosecurity Act 1994* (Qld), existing grazing regimes, etc.) as required by the Offsets Policy.

33.82 Include robust scientific evidence (e.g. published research, pilot studies, previously successful projects/programs) to demonstrate the success of proposed measures to create, revegetate, regenerate and/or improve habitat (e.g. tree planting, nest boxes, artificial hollows) in the proposed offset area(s) for the specific listed threatened species and ecological communities.

33.83 Provide maps and shapefiles to clearly define the location and boundaries of the 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 relevant MNES that the environmental offset(s) compensates for, and the size of the environmental offset(s) in hectares).

33.84 Provide details and execution timing of a mechanism to legally secure the proposed offset area(s), such that legal security remains in force over the offset area(s) for at least 20 years to provide enduring protection for the offset area(s) against development incompatible with conservation.

33.85 All proposed management actions, monitoring approach and corrective actions must be written using committed language (e.g. 'will' and 'must').

Other approvals and conditions

33.86 Provide details of any local or State Government planning scheme, or plan or policy under any local or State Government planning system that deals with the proposed action, including:

(a) what environmental assessment of the proposed action has been, or is being, carried out under the scheme, plan, or policy

(b) how the scheme provides for the prevention, minimisation, and management of any relevant impacts

(c) a description of any approval that will or 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 the action

(d) a statement identifying any additional approval that is required

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

Economic and social matters

33.87 Provide an analysis of the economic and social impacts of the action, both positive and negative. The analysis must include:

(a) detail projected economic costs and benefits of the project, including the basis for their estimation through cost/benefit analysis or similar studies

(b) economic and employment opportunities expected to be generated by the project (including construction and operational phases)

(c) economic and social impacts at the local, regional and national level.

33.88 Details of the relevant costs and benefits of identified alternative options to the proposed action (including not proceeding with the action) should also be included with reference to impacts on and benefits to nearby communities and other social and economic considerations.

Consultation

33.89 Provide details of any consultation that has occurred concerning the action, including:

(a) any consultation that has already taken place

(b) proposed consultation about relevant impacts of the action and plans for future consultation throughout the life of the proposed action

(c) if there has been consultation about the proposed action, any documented response to, or result of, the consultation and management measures to address community concerns

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

(e) signed documents or statements of consent from land holders or managers (including Registered Native Title Body Corporates).

Indigenous engagement

33.90 Identify existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action and how the potential impacts will be managed.

33.91 Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. This should include:

(a) details regarding the specific Indigenous groups and Traditional Owners consulted and an indication of the areas, both tangible and intangible, of cultural significance across the proposed action footprint

(b) a discussion about how impacts to areas and/or objects of Indigenous cultural significance (tangible and intangible) are avoided, mitigated or minimised.

33.92 Best practice consultation, in accordance with the Interim engaging with First Nations People and Communities on assessments and approvals under the EPBC Act includes:[97]

(a) identifying and acknowledging all relevant affected Indigenous peoples and communities

(b) committing to early engagement

(c) building trust through early and ongoing communication for the duration of the project, including approvals, implementation and future management

(d) setting appropriate timeframes for consultation

(e) demonstrating cultural awareness.

33.93 Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.

33.94 Describe employment opportunities (including Indigenous employment targets) expected to be generated by the project (including construction, operation, decommissioning and rehabilitation phases).

Environmental record of person proposing to take the action

33.95 Include details of any past or present 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

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

33.96 If the person proposing to take the action is a corporation—details of the corporation's environmental policy and planning framework, and the history of the corporation's executive officers (and those of the parent body if the corporation is a subsidiary of another company) in relation to environmental matters.

Principles of ecologically sustainable development

33.97 Describe how the proposed action meets the principles of ecologically sustainable development, as defined in section 3A of the EPBC Act, which are as follows:

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

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

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

[97] Australian Government, Department of Climate Change, Energy the Environment and Water, *The Interim Engaging with First Nations People and Communities on Assessments and Approvals under the Environmental Protection and Biodiversity Conservation Act 1999* (interim guidance), 2023 (or subsequent revision).

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

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

Information sources

33.98 For information given in the EIS, the EIS must state:

(a) the source of the information

(b) how recent the information is

(c) how the reliability of the information was tested

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

Ecological data

33.99 The MNES chapter must include an appendix of occurrence records (both sightings and evidence of presence) for all listed threatened and migratory species identified during field surveys for the proposed action. This data may be used by the Commonwealth to update the relevant species distribution models that underpin the publicly available Protected Matters Search Tool (PMST).

33.100 The species occurrence records must be provided in accordance with the Guidelines for biological survey and mapped data[98] and presented using the Commonwealth's species observation data template.[99] Sensitive ecological data must be identified and treated in accordance with the Commonwealth's Sensitive Ecological Data – Access and Management Policy.[100]

Conclusion

33.101 An overall conclusion as to the environmental acceptability of the proposal should be provided, including discussion on compliance with principles of ecologically sustainable development and the objects and requirements of the EPBC Act. Reasons justifying undertaking the proposal in the manner proposed should also be outlined.

33.102 Key mitigation proposed, as well as any offsets proposed for any unavoidable residual significant impacts on MNES, should be summarised here.

[98] Australian Government, Department of the Environment and Energy, *Guidelines for biological survey and mapped data*, 2018 (or subsequent revision).
[99] The species observation data template can be found at www.dcceew.gov.au/sites/default/files/documents/species-observation-data-template.xlsx.
[100] Australian Government, Department of the Environment, *Sensitive Ecological Data – Access and Management Policy V1.0*, 2016 (or subsequent revision).

Glossary and acronyms

The definitions of terms frequently used in this TOR includes but is not limited to the below.

Table 1 Glossary

Term	Definition
approvals	Means approvals, authorisations, permits, designations, licences or other instruments that approve development or works under State law.
environmental value	Consistent with section 9 of the EP Act, means: • a quality or physical characteristic of the environment that is conducive to ecological health or • a quality or physical characteristic of the environment that is conducive to public health, safety or amenity or • a quality or physical characteristic of the environment that contributes to its biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community or • another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.
land use planning instruments	Means any applicable local government planning scheme, development scheme for a State development area, land use plan for strategic port land, development schemes or interim land use plans for a priority development area or other land use planning document that regulates development and land use of the site.
matters of national environmental significance or MNES	The nine matters protected by the EPBC Act - world heritage properties, national heritage places, wetlands of international importance ('Ramsar Wetlands'), nationally threatened species and ecological communities, migratory species, Commonwealth marine areas, the Great Barrier Reef Marine Park, nuclear actions (including uranium mining), and a water resource in relation to coal seam gas development and large coal mining development.[101]
matters of state environmental significance or MSES	Means MSES as defined in Queensland Government, *State Planning Policy*, 2017. For the purpose of environmental offsets, prescribed environmental matters – matters of state environmental significance are defined in Schedule 2 of the Environmental Offsets Regulation 2014.
project	Means the project as described in the EIS.
project footprint	Means the physical area (above and below ground) occupied by the project and includes all buffers, accesses and temporary areas that support the project.
residual impact	An impact that remains following the implementation of mitigation measures.
resource authority	Means any of the listed authorities as listed in Section 10 of the *Mineral and Energy Resources (Common Provisions) Act 2014*.
sensitive place	As described in the *Noise and vibration – EIS information guideline*[102]; includes a sensitive receptor as defined in the Environmental Protection (Noise) Policy 2019.

[101] Australian Government, Department of the Environment, Water, Heritage and Arts, *Significant Impact Guidelines 1.1 - Matters of National Environmental Significance,* 2013, page 2.
[102] Queensland Government, *Noise and vibration – EIS information guideline*, ESR/2020/5305.

Table 2 Acronyms and abbreviations

Acronym/abbreviation	Definition
AEP	Annual Exceedance Probability
CBA	cost-benefit analysis
CHMP	cultural heritage management plan
CO^2	carbon dioxide
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DETSI	Department of Environment, Tourism, Science and Innovation
DIDO	drive-in, drive-out
DIN	dissolved inorganic nitrogen
DTMR	Department of Transport and Main Roads
EA	environmental authority
EIS	environmental impact statement
EMP	environmental management plan
EMR	environmental management register
EMS	environmental management strategy
EP Act	*Environmental Protection Act 1994*
EP Regulation	Environmental Protection Regulation 2019
EPBC Act	*Environmental Protection and Biodiversity Conservation Act 1999* (Cth)
EPP	environmental protection policies
EPP (Air)	Environmental Protection (Air) Policy 2019
EPP (Noise)	Environmental Protection (Noise) Policy 2019
EPP (Water and Wetland Biodiversity)	Environmental Protection (Water and Wetland Biodiversity) Policy 2019
ERA	environmentally relevant activity
ESD	ecologically sustainable development
FIFO	fly-in, fly-out
GBR	Great Barrier Reef
GDA2020	Geocentric Datum of Australia 2020
GDE	groundwater dependent ecosystem
GHG	greenhouse gases including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulphur (or sulfur) hexafluoride (SF_6), hydro fluorocarbons (HFCs) and perfluorocarbons (PFCs)
GHG Guideline	Queensland Government, *Guideline – Greenhouse gas emissions*, ESR/2024/6819
GTIA	Queensland Government, *Guide to Traffic Impact Assessment*, 2018
Ha	hectares
HAT	highest astronomical tide
km	kilometre
MEDLI	model for effluent disposal using land irrigation

Acronym/abbreviation	Definition
MLES	matters of local environmental significance
MNES	matters of national environmental significance
MSES	matters of state environmental significance
NC Act	*Nature Conservation Act 1992*
NGER Act	*National Greenhouse Energy Reporting Act 2007*
NPI NEPM	*National Environment Protection (National Pollutant Inventory) Measure 1998* (Cth)
OAMP	Offset Area Management Plan
OCG	Office of the Coordinator-General
Offsets Policy	EPBC Act Environmental Offset Policy
PDF	Portable Document Format
PMST	Protected Matters Search Tool
PRCP	progressive rehabilitation and closure plan
Queensland Heritage Act	*Queensland Heritage Act 1992*
RE	regional ecosystem
RIA	regional impact assessment
ROM	run of mine
SDAP	State Development Assessment Provisions
SDPWO Act	*State Development and Public Works Organisation Act 1971*
SIA	social impact assessment
SIA Guideline	Queensland Government, *Social impact assessment guideline*, March 2018
SIA Supplementary Material	Queensland Government, *Supplementary material for assessing and managing the social impacts of projects under the Coordinator-General's Social Impact Assessment Guideline (March 2018)*, November 2023
SIMP	social impact management plan
SPRAT	Species Profile and Threats
SRI	significant residual impact
SSRC Act	*Strong and Sustainable Resource Communities Act 2019*
TOR	terms of reference
VM Act	*Vegetation Management Act 1999*
Water Act	*Water Act 2000*

Appendix 1. Formatting

Table A1.1 Requirements for public notification of the draft EIS

Document requirements	
☐	An unsecured version of the draft EIS in PDF format. The PDFs must allow for text to be copied and pasted. The unsecured version is for internal working purposes only and will not be made publicly available.
☐	A secured version of the full draft EIS in PDF, that meets the format and spatial requirements in Table A1.2 and Table A1.3.
☐	High resolution versions of all maps/diagrams/figures used in the draft EIS (excluding technical reports) in JPEG format (minimum resolution 300 dpi). These images are for internal use only, for possible reproduction in the Coordinator-General's evaluation report.
Electronic and printed copies available on request	
☐	Produce a small number of copies of the draft EIS on A4-size paper, with maps and diagrams of A4 or A3 size (discuss the copy and distribution requirements with the Office of the Coordinator-General in the early stages of the EIS process). These hard copies may be required for public viewing locations, such as libraries.
☐	Produce a small number of electronic copies of the draft EIS for public distribution by the proponent on request. Discuss this requirement with the Office of the Coordinator-General, as the requirements may vary depending on the location of the audience.

Table A1.2 EIS format requirements

Document size	Each PDF file should not be larger than 20 MB and must meet the accessibility requirements described in the 'creating accessible PDFs' guidance information, available at www.helpx.adobe.com/au/acrobat/using/creating-accessible-pdfs.html.
Format and style	The format and style of the document is to be appropriate for publication on the Internet.
Plans, maps, diagrams and other illustrative material	All plans, maps, diagrams, and other illustrative material is to be provided at a suitable scale and must be included in a PDF format so they are legible and easily understood.
	Plans, maps and diagrams are to be located within the appropriate draft EIS chapter(s), as close as possible to where referenced in the text.
	Plans, maps and diagrams are to be to scale on A4 or A3 size with the scale clearly displayed on each. The plan, map or diagram is also to state the original size (e.g. A1). Each should be in colour, where possible, and have a resolution between 300 and 900 dpi.
	Maps must contain the following information: • relevant features of interest • feature names • a legend containing map symbology • north point • scale shown as a multiple of either 1K, 2.5K, 5K or 10K, • title, version and date inset reference map showing regional location.
Locations	Coordinates are to be in Geocentric Datum of Australia 2020 latitude/longitude (decimal degrees) in preference to eastings/northings, and should be to 6 decimal places (e.g. -27.47522,153.02578).
Elevations	Elevations detailed in the draft EIS are to be provided to the Australian Height Datum. Plans, maps and diagrams included in the draft EIS should have contours at suitable

	increments relevant to the scale, location, potential impacts and components of the project.
Supporting data	Supporting data (e.g. sampling and monitoring data) should be provided in PDF format as an appendix to the EIS, as well as an accompanying Excel spreadsheet. To provide clarity of information, all data must contain descriptive attributes.
References	All sources must be appropriately referenced using the Harvard standard. The reference list should include the address of any Internet webpages used as data sources.

Table A1.3 Spatial data file format requirements

Required information	The draft EIS must be accompanied by relevant supporting spatial information to facilitate project review and evaluation. This should include project information (e.g. project layout) and relevant information on the existing environment (e.g. ecological survey maps, water monitoring locations).
File types	Spatial data must be compatible with Queensland Globe, which supports the following file types: GPX, KML, KMZ, SHP (zipped), JSON and CSV. Shapefiles must be < 2MB, other file types <10MB and cannot include more than 1,000 features. Shapefiles should be provided in the geographic coordinate system and in the Australian geodetic datum reference system - GDA2020, in unprojected geographic coordinate format (Lat/Long).
EA and PRCP requirements	Where an environmental authority (EA) and/or progressive rehabilitation and closure plan (PRCP) is an approval sought through the coordinated project process, the draft EIS must also be accompanied by a separate package of spatial data which complies with the relevant guidelines on Spatial Information Submission (ESR/2018/4337), Progressive Rehabilitation and Closure Plans (ESR/2019/4964) and any other relevant guidelines. This spatial package should be emailed to OCG separately to other spatial data.

Appendix 2. Project approvals

The EIS must include a comprehensive list of approvals required for the project, including the detail of any environmentally relevant activities and development approvals. The EIS must nominate whether conditions of an approval are being sought through the EIS process, and if so, whether these would be imposed, stated or recommended conditions. Where an exemption from obtaining an approval applies, this must be clearly described. The table below provides a template and examples of approvals that may be required for the project. This is not an exhaustive list.

Table A2.4 Project approvals

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
Commonwealth				
Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)	EPBC Act referral and approval (if a controlled action)	Australian Government Minister for the Environment and Water (Australian Government Environment Minister) / Department of Climate Change, Energy, the Environment and Water (DCCEEW)	An action that has, will have or is likely to have a significant impact on a matter of national environmental significance, and that the Minister has determined is a controlled action. The proponent should provide confirmation that a referral for the project has or will be made, or that a referral is not required. If a controlled action decision has been made, the proponent must detail: • the controlling provisions • the assessment approach • who the designated proponent is for the EPBC Act.	E.g. Yes, recommended conditions for the controlled action. No, approval to be sought separate to the EIS. Approval to be obtained from DCCEEW following release of the Coordinator-General's evaluation report.
EPBC Act Environmental Offsets Policy (2012)	Controlled action offset strategy and offset area management plan (OAMP)	Australian Government Minister for the Environment and Water (Australian Government Environment Minister) / Department of Climate Change, Energy, the Environment and Water (DCCEEW)	The proponent must identify if significant impacts on matters of national environmental significance (MNES), which will be determined in the EPBC referral, cannot be mitigated or avoided. The proponent must outline the approach to offset the project's impacts and submit an OAMP.	E.g. Yes, recommended conditions for the controlled action offsets. No, approval to be sought separately.
Native Title Act 1993	Indigenous Land Use	National Native Title Tribunal /	The proponent must set out details of the relevant native	No. Agreement required prior to

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
	Agreement or other future act validation process	Queensland Department of [insert]	title parties for the project footprint and the compliance pathway under the *Native Title Act 1993*.	commencement of construction
Further Commonwealth project approvals may be required				
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (ATSIHP Act)	Compliance with the ATSIHP Act and Cultural Heritage Management Plan (CHMP)	Department of [insert]	The proponent must identify if the project may impact on protected areas or objects of significance under the ATSIHP Act. The proponent must briefly describe the CHMP under the Queensland *Aboriginal Cultural Heritage Act 2003* and the *Torres Strait Islander Cultural Heritage Act 2003* which will meet the requirements of the ATSIHP Act.	
Airports Act 1996	Approval for 'controlled activity'	Department of [insert]	Proponent to specify	
Airspace Act 2007	Airspace change proposal	Civil Aviation Safety Authority (CASA)	Proponent to specify	
Great Barrier Reef Marine Park Act 1975 (GBRMP Act) Great Barrier Reef Marine Park Regulations 2019 (GBRMP Regulations)	EPBC Act referral for controlled provisions relating to the Great Barrier Reef Marine Park. Permit for [insert]	Great Barrier Reef Marine Park Authority	Proponent to specify	
Maritime Transport and Offshore Facilities Security Act 2003	Maritime security plan	Department of Home Affairs	Proponent to specify	
National Greenhouse Energy Reporting Act 2007 (NGER Act)	Apply to register on National Greenhouse and Energy Register	Clean Energy Regulator	Proponent to specify	
Underwater Cultural Heritage Act 2018	Permit for activities which may impact specified protected underwater	DCCEEW	Proponent to specify	

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
	cultural heritage, a specified protected zone and/or specified foreign underwater cultural heritage.			
State				
Aboriginal Cultural Heritage Act 2003 and the *Torres Strait Islander Cultural Heritage Act 2003*	Cultural Heritage Management Plan	Department of [insert]	The proponent must engage in an approved CHMP and demonstrate compliance with the cultural heritage duty of care. Traditional Owners are to be engaged early in project development and CHMP approved prior to project construction	No
Environmental Protection Act 1994	Environmental authority for an environmentally relevant activity (ERA) for: [Include detail of each environmentally relevant activity that is triggered by the project]	Department of [insert]	The proponent must identify ERA thresholds triggered under the Environmental Protection Regulation 2019, including concurrence and prescribed ERAs.	E.g. Yes, stated conditions for the environmental authority
Planning Act 2016 Planning Regulation 2017	Development permit for [insert]	Department of [insert] and relevant local government	The proponent must identify each relevant assessment trigger under the Planning Regulation 2017 or the relevant local government planning scheme. The proponent must identify any referral agency trigger under the Planning Regulation 2017. The proponent must ensure that the EIS contains the information required to support the application.	
Strong and Sustainable Resource	Coordinator-General's evaluation report	Coordinator-General	The proponent must outline obligations under the SSRC Act and trigger for undertaking a SIA.	Stated conditions

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
Communities Act 2017 (SSRC Act)				
Further State project approvals may be required				
Acquisition of Land Act 1967	Acquisition of land	Department of [insert]	Proponent to specify	
Biosecurity Act 2014	General biosecurity obligation	Department of [insert]	Proponent to specify	
Building Act 1975	Permit for accepted development	Local government or private certifier	Proponent to specify	
Coastal Protection and Management Act 1995	Approval for assessable development within coastal management districts	Department of [insert]	Proponent to specify	
Electricity Act 1994	Transmission authority, distribution authority, generation authority and/or special approval	Department of [insert]	Proponent to specify	
Environmental Offsets Act 2014 (EO Act) Environmental Offsets Regulation 2014 (EO Regulation)	Offset delivery plan	Department of [insert]	Proponent to specify	
Environmental Protection Act 1994 (EP Act) Mineral and Energy Resources (Financial Provisioning) Regulation 2019 (MERFP Regulation)	Progressive Rehabilitation and Closure Plan and Schedule and Estimated Rehabilitation Calculation	Department of [insert]	Proponent to specify	
Explosives Act 1999 Explosives Regulation 2017	Explosives authority	Department of [insert]	Proponent to specify	

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
Fisheries Act 1994	Development permit for operational works for [insert]	Department of [insert]	Proponent to specify	
Forestry Act 1959	Permit for interfering with or using State owned quarry material	Department of [insert]	Proponent to specify if State owned quarry material will be interfered with, used or sterilised during the project. Includes where quarry material is dredged within a *Land Act 1994* lease issued over tidal waters.	
Geothermal Energy Act 2010	Geothermal tenure [specify]	Department of [insert]	Proponent to specify	
Greenhouse Gas Storage Act 2009	GHG authority [specify]	Department of [insert]	Proponent to specify	
Land Act 1994	Permit to occupy and/or creation of easement	Department of [insert]	Proponent to specify	
Marine Parks Act 2004	Approval for works under a Zoning Plan or State Marine Park	Department of [insert]	Proponent to specify	
Mineral and Energy Resources (Financial Provisioning) Regulation 2019 (MERFP Regulation)	Rehabilitation calculation (ERC)			
Mineral Resources Act 1989	Mining lease	Department of [insert]	The proponent must specify the area proposed for the mining lease and specify the minerals to be mined.	
Nature Conservation Act 1992 Nature Conservation (Animals) Regulation 2020 Nature Conservation	Permit for [insert]	Department of [insert]	Proponent to specify.	

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
(Plants) Regulation 2020				
Petroleum and Gas (Production and Safety) Act 2004	Petroleum authority [specify]	Department of [insert]	Proponent to specify	
Plumbing and Drainage Act 2002	Compliance certificate for regulated plumbing works	Department of [insert]	Proponent to specify	
Public Health Act 2005	Compliance with the *Public Health Act 2005*	Department of [insert]	Proponent to specify	
Queensland Heritage Act 1992	Approval for disturbance to heritage site	Department of [insert]	Proponent to specify	
Regional Planning Interests Act 2014	Regional Interests Development Approval	Department of [insert]	Proponent to specify	
Stock Route Management Act 2002	Approval for impacts on stock routes	Department of [insert]	Proponent to specify	
Transport Infrastructure Act 1994	Approval or permit for [insert]	Department of [insert]	Proponent to specify	
Transport Operations (Marine Safety) Act 1994 *Transport Operations (Marine Pollution) Act 1995* *Transport Operations (Road Use Management) Act 1995*	Compliance with the Acts	Department of [insert]	Proponent to specify	
Vegetation Management Act 1999	Operational work to clear native vegetation	Department of [insert]	Proponent to specify	
Waste Reduction and Recycling Act 2011	Compliance to waste management hierarchy and/or operation under an End of	Department of [insert]	Proponent to specify	

Relevant legislation	Approval	Decision-maker / regulatory authority	Approval trigger and project relevance	Conditions being sought through the EIS process (imposed, recommended or stated)
	Waste (EOW) code			
Water Act 2000	[insert relevant licence, permit and/or water allocation]	Department of [insert]	Proponent to specify	
Work Health and Safety Act 2011 Work Health and Safety Regulation 2011	Major Hazard Facility Licence and/or [insert]	Workplace Health and Safety Queensland	Proponent to specify	
Local				
Insert relevant local approvals				

Appendix 3. MNES listed threatened species and communities (section 18 and 18A)

Table A3.5 lists the threatened species and communities relevant to the controlled action under the EPBC Act, which at a minimum, is to be included in the impact assessment in the MNES chapter.

Note: The lists at Table A3.5 may not be a complete list of threatened species and communities that will or are likely to be impacted by the action. It is the proponent's responsibility to ensure that any listed threatened species and communities and listed migratory species at the time of the controlled action decision, which will or are likely to be impacted by the action are assessed for the Australian Government Minister for the Environment's consideration. Any listing events that occur after the controlled action decision of the 23 December 2024 are not required to be considered in the assessment.

Table A3.5 Listed threatened species and communities (section 18 and section 18A)

Ecological community/species name	Status under the EPBC Act
Birds	
Common Greenshank (*Tringa nebularia*)	Endangered
Gouldian Finch (*Erythrura gouldiae*)	Endangered
Grey falcon (*Falco hypoleucos*)	Vulnerable
Painted honeyeater (*Grantiella picta*)	Vulnerable
Red Goshawk (*Erythrotriorchis radiatus*)	Endangered
Sharp-tailed sandpiper (*Calidris acuminata*)	Vulnerable
Star Finch (eastern) (*Neochmia ruficauda ruficauda*)	Endangered
Mammals	
Julia Creek Dunnart (*Sminthopsis douglasi*)	Vulnerable
Threatened Ecological Communities	
The community of native species dependent on natural discharge of water from the Great Artesian Basin	Endangered

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