

Guidelines for preparing an Environmental Impact Statement

MMG Australia Ltd

*Bobadil Tailings Storage Facility
Stage 11 and 12 Raises,
Rosebery*

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ENVIRONMENT PROTECTION AUTHORITY

Table of Contents

Glossary and abbreviations	3
Part A. Introduction	5
The role of the EIS.....	5
How the Board uses the EIS.....	5
Planning information.....	6
Australian Government environmental assessment.....	6
Part B. Instructions	7
General requirements.....	7
Spatial and visual information requirements.....	7
Independent Review.....	8
Submitting an EIS.....	8
Part C. EIS structure and content	9
Title page.....	9
Executive summary.....	9
Table of contents.....	9
Glossary and abbreviations.....	9
Proponent information.....	9
1. Introduction.....	10
2. Proposal description.....	10
2.1 Summary table.....	10
2.2 Definition of the Land.....	11
2.3 Detailed description of proposal.....	11
2.4 Maps, plans and figures.....	12
2.5 Planning aspects.....	13
2.6 Socio-economic context.....	13
2.7 Offsite infrastructure.....	13
3. Project Alternatives.....	14
4. Public Consultation.....	14
5. Potential Impacts and Management.....	15
Key issues.....	16
5.1 Biodiversity and Natural Values.....	16
5.2 Water quality.....	18
5.3 Groundwater.....	18
5.4 Air quality.....	19
5.5 Noise emissions.....	20
5.6 Acid and Metalliferous Drainage.....	21
5.7 Waste management.....	22
5.7 Dangerous goods and environmentally hazardous materials.....	23
5.8 Greenhouse gas emissions, ozone depleting substances and climate change.....	23
5.9 Socio-economic issues.....	24
5.10 Fire risk.....	25
5.11 Infrastructure and off-site ancillary facilities.....	25
6. Monitoring and Review.....	26
7. Decommissioning and Rehabilitation.....	26
8. Management Measures Table.....	26
9. Conclusion.....	26
10. References.....	26
11. Appendices.....	26
Appendix A: General principles for assessing environmental impacts	27
Appendix B: Other issues and agency contacts	29
Appendix C: Example of project description summary table	32

Glossary and abbreviations

Term	Definition
ABA	Acid based accounting
AMD	Means acid and metalliferous drainage arising from the oxidation of sulphide minerals.
ANC	Means acid neutralising capacity being a measure of the potential acidity buffering capacity of a sample, typically due to the presence of calcium and magnesium bearing carbonate minerals. The test assumes all of the carbonate material is available for acid neutralisation and is expressed as kg H ₂ SO ₄ /tonne.
Board	Board of the Environment Protection Authority
Case for Assessment	Information required for environmental impact assessment, prepared according to the Board's requirements.
Director	Means the Director, Environment Protection Authority holding office under Section 18 of <i>Environmental Management and Pollution Control Act 1994</i> and includes a delegate or person authorised in writing by the Director to exercise a power or function on the Director's behalf.
Environmentally Hazardous Material	Means any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment and includes fuels, oils, waste and chemicals but excludes sewage.
EIS	Environmental Impact Statement
EMPCA	<i>Environmental Management and Pollution Control Act 1994</i>
EMPCS	Environmental Management and Pollution Control System. Objectives found in Schedule 1 of EMPCA.
EPA	Environment Protection Authority. Tasmania's independent principal environmental regulator which administers EMPCA and consists of a Board and a Director.
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
LUPAA	<i>Land Use Planning and Approvals Act 1993</i>
MNES	Matters of National Environmental Significance
MPA	Maximum potential acidity assuming oxidation of all sulphide of a material
NAF	Means non-acid forming, being material with a NAG pH of greater than or equal to 4.5 and a net acid producing potential (NAPP) of less than 0kg H ₂ SO ₄ /tonne.
NAG	Net acid generating (test): means a standard geochemical test undertaken to provide a direct estimate of the acid producing potential of a sample.
NAPP	Means net acid producing potential, being the estimated maximum potential acidity (assuming oxidation of all Sulphide) of a material less its acid neutralising

Term	Definition
	capacity (ANC) as determined via a geochemical static test procedure and expressed in kg H ₂ SO ₄ /tonne.
NCA	<i>Nature Conservation Act 2002</i>
Noise Sensitive Premises	Residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.
NVA	Natural values assessment
PAF	Means potentially acid forming, defined as material with a NAG pH of less than 4.5 and a net acid producing potential (NAPP) of greater than or equal to 0kg of H ₂ SO ₄ /tonne and also includes UC material.
Planning Authority	Council for relevant local government area.
RMPS	Resource Management and Planning System, Tasmania. Objectives found in Schedule 1 of EMPCA.
SD	Saline drainage.
Suitably Qualified Person	Means suitably qualified person approved by the Director.
TSF	Tailings storage facility
TSPA	<i>Threatened Species Protection Act 1995</i>
UC	Means uncertain, defined as material with a NAPP of less than 0kg H ₂ SO ₄ /tonne AND a NAG pH of less than 4.5 OR material with NAPP of greater than or equal to 0kg H ₂ SO ₄ /tonne AND a NAG pH of greater than or equal to 4.5.

Part A. Introduction

These guidelines provide instructions for proponents on how to prepare an Environmental Impact Statement (EIS) for an activity being assessed in Tasmania by the Board of the Environment Protection Authority (the Board). The Board uses an EIS as a ‘case for assessment’, to assess the environmental impact of an activity, as required under the *Environmental Management and Pollution Control Act 1994* (EMPCA).

The role of the EIS

An EIS is generally required for larger scale developments described in EMPCA, classed as 2B or 2C. It is a document that provides information about a proposal, its potential impacts and proposed mitigation measures. As a publicly available document, an EIS should facilitate public consultation and informed comment and should contain sufficient information to establish the conditions of approval by authorities, if approved.

The EIS should demonstrate that the proposal is consistent with the objectives of relevant laws and policies, including the Tasmanian Resource Management and Planning System (RMPS) and the Environmental Management and Pollution Control System (EMPCS), which are focussed on the concept of sustainable development.

Note: Further information on the [EPA Assessment Process](#) is available on the website.

Refer to Appendix A *General principles for assessing environmental impacts*, for further information on EIS principles.

How the Board uses the EIS

The Board uses the EIS to inform decision making as part of the environmental impact assessment process. It must be prepared in accordance with guidance provided by the Board under section 74(4) of EMPCA. The staff of the EPA support the Board during the assessment process.

The EIS will be advertised publicly to allow for public consultation. The proponent may then be required to supply additional information in response to public and government agency submissions. This generally takes the form of a supplement to the EIS.

The Board considers the EIS as well as other relevant information against the objectives of the RMPS and EMPCS. These objectives aim to sustain the environment and avoid or mitigate adverse effects, while considering the economic and social needs of people now and in the future. The Board will endeavour to make the decision which best furthers the objectives of the RMPS and EMPCS, and may approve the proposal with conditions, or in some cases, may decide to reject the proposal if the objectives cannot be upheld.

The Guidelines for Preparing an EIS are adapted for each specific proposal. More detailed studies and information will be required in the EIS for issues considered by the Board to have a higher risk of environmental impact.

Other significant matters may emerge while preparing the EIS from environmental studies, public comments, or other sources. These must be factored into the EIS in addition to these guideline requirements. The assessment process may also change the understanding of the level of risk associated with some of the issues, and this must also be reflected in the EIS.

Planning information

The relevant Planning Authority (Council) will assess planning information if the *Land Use Planning and Approvals Act 1993* (LUPAA) applies. Information solely for the purpose of assessment under the relevant Planning Scheme should be supplied to the Planning Authority either:

- as required under section 54 of LUPAA where the planning application has started the environmental assessment process; or
- a combined planning and environmental report can be prepared where it is intended to submit an EIS (draft or final) with the planning application. However, the information required for the Board's assessment must be distinguished from that supplied for the purposes of LUPAA.

Australian Government environmental assessment

The Australian Government (Commonwealth) may also have a role in the environmental assessment and approval of the proposal in addition to Tasmanian requirements. Approval under the Australian *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is required for an action which has, will have, or is likely to have, a significant impact on a Matter of National Environmental Significance (MNES) or on Australian land.

The nine MNES are:

- world heritage properties
- national heritage places
- wetlands of international importance (often called 'Ramsar' wetlands after the international treaty under which such wetlands are listed)
- nationally threatened species and ecological communities
- migratory species
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mining)
- a water resource, in relation to coal seam gas development and large coal mining development.

Information on the EPBC Act can be obtained from the Australian Government, Department of Climate Change, Energy, the Environment and Water (DCEEW) website [Environment Protection and Biodiversity Conservation Act 1999 \(EPBC Act\) - DCEEW](#), or by calling 1800 803 772.

The Australian and Tasmanian Governments have signed a bilateral agreement for environmental impact assessment under section 45 of the EPBC Act, which accredits the Tasmanian assessment process. This allows a proposal that has been determined to be a controlled action under the EPBC Act to be assessed by the Board on behalf of the Australian Government.

If a proponent elects to have their proposal assessed under the bilateral agreement, the EIS should specifically describe the implications of the proposal for the relevant EPBC Act controlling provisions. It must also contain a summary table showing that it addresses the matters specified in Schedule 4 of the [Commonwealth Environment Protection and Biodiversity Conservation Regulations 2000](#).

Part B. Instructions

The EIS must present information in a way that can be easily understood. It should provide summaries in non-technical language to give readers a general understanding of the proposal. It must also provide technical detail to allow analysis and understanding of impacts and mitigation measures by technical specialists, regulatory bodies, and people with an interest in specific matters arising from the proposal.

Section C of these guidelines sets out the structure and **minimum** content requirements of the EIS.

General requirements

- Avoid technical terminology where possible in the main body of the EIS. It should be able to be read as an independent document which provides a general understanding of the proposal.
- Include any detailed technical data or supplementary reports as appendices.
- Consider document accessibility. The Australian Government Style Manual provides information about inclusion and accessibility.
- Use cross referencing to prevent unnecessary duplication between sections.
- Reference all sources of information using a consistent style.
- Define all key terms and words used.
- Information in the EIS must be relevant.
 - Show reasoning for arguments. Support conclusions with referenced evidence.
 - Indicate how current information is, how reliability has been tested, and the degree of confidence attached to any predictions.
 - Sufficient technical detail must be provided to allow for environmental impact assessment, even when details are not final at the time of preparation.
 - If information is currently unavailable, estimates and alternative options should be provided, however the limitations of available information must be evaluated.
- Provide any sensitive commercial or corporate information in a confidential appendix. Provide a comment in the EIS if this has been done.

Note: the EIS must not include information that is known to be false or misleading and nothing should be omitted if it is known that without it the EIS would be false or misleading (section 43A of EMPCA).

Spatial and visual information requirements

- Present information in maps, plans, diagrams, and photographs where necessary, to enhance understanding.
- Images must be high quality and reproducible in monochrome, with all text and relevant features clearly visible.
- Maps and plans should include a north arrow and scale.
- Use a consistent base plan throughout the EIS where appropriate, to allow elements to be overlaid and compared. Ensure that detailed information is clear and visible, particularly when using satellite images as background layers. This is best achieved using a geographical information system (GIS).

- Specify the coordinate reference system when providing or referring to spatial information, including maps, plans, grid coordinates and heights. Further information on coordinate reference systems used in Tasmania can be found on the [Land Tasmania](#) website.

Recommended systems are:

- Horizontal – Geocentric Datum of Australia 1994¹ Map Grid of Australia Zone 55 (GDA94 MGA55)
- Vertical – Australian Height Datum (Tasmania) (AHD83).

Independent Review

For large proposals, such as Class 2C activities, prior to submission to the EPA, the draft EIS should be independently reviewed against these Guidelines by a suitably qualified person. The independent review should be provided with the draft EIS, including any feedback addressed and incorporated into the draft EIS.

Submitting an EIS

It is strongly recommended that proponents submit a draft EIS to the EPA for review prior to formal lodgement of the EIS with the Board.

The EIS (and any drafts submitted for review) may be submitted via email to assessments@epa.tas.gov.au and your nominated contact officer. Proponents should contact the EPA if alternative submission methods are deemed necessary.

¹ Geocentric Datum of Australia 2020 (GDA2020) is the new official datum for recording the horizontal location of spatial information in Australia, but is not yet fully implemented in Tasmania.

Part C. EIS structure and content

The EIS must follow the structure set out below and address all requirements. For clarity, organise content with further headings and subheadings as appropriate.

Title page

The title page must include:

- Name of proponent (legal entity)
- Name of activity (include “expansion” or “upgrade” where appropriate)
- Proposal address or location
- EIS version number
- Month and year of submission

Executive summary

The executive summary must provide a clear and concise overview of the proposal, its environmental implications, and the function of the EIS in the context of the assessment process. For a larger EIS, the executive summary must be written as a stand-alone document for people who may not wish to read or acquire the full EIS.

Table of contents

The EIS must include a table of contents and a list of figures and tables to allow the reader to easily locate information. Ensure that the table of contents is hyperlinked, particularly for large documents.

Glossary and abbreviations

Provide a list of abbreviations and acronyms and a glossary which clearly defines any technical terms used in the EIS.

Proponent information

Proponent details:

- Name of proponent (legal entity)
- Name of proponent (trading name)
- Registered address of proponent
- Postal address of proponent
- ABN
- ACN (where relevant)

Contact person’s details:

- Name
- Telephone
- Email address

Activity Operator details must be provided if the operator will be a different entity to the proponent.

1. Introduction

The introduction should provide:

- General background information on the proponent, such as relevant development and operational experience.
- General background information on the proposal:
 - current status of the proposal
 - an overview of the principal components of the proposal
 - the proposal location
 - likely markets for the product
 - possibilities for future expansion.
- Any information on current regulatory approvals or licences if the proposal is associated with an existing activity.
- A discussion about how the proposal relates to any other proposals that have been or are being developed in the same region as the proposal.
- Environmental legislation, standards and guidelines that will be applicable, such as policies, regulations, and industry codes of practice.
- Other relevant Commonwealth, State and Local Government policies, strategies, and management plans with which the proposal would be expected to comply.

2. Proposal description

The scope of the proposal must be clearly described, and include the following information:

- Summary table
- Detailed description of proposal
- Definition of the Land
- Maps, plans and visual information
- Planning aspects
- Socio-economic context
- Off-site infrastructure.

Where a proposal will require a permit application under LUPAA, the proposal description and specification of the site must be consistent with the intended or current permit application.

2.1 Summary table

The summary table provides an overview of the proposal and identifies the key characteristics, including:

- Location and planning context
- Existing site information, including topography, local climate, geology, geomorphology, soils (e.g., erodibility and acid sulphate soils), vegetation, fauna, groundwater, and surface drainage (e.g., waterways, lakes, wetlands, coastal areas)
- Proposed infrastructure
- Proposed timeline
- Inputs (i.e., water, materials, energy) and outputs (i.e., wastes and emissions).

Refer to *Appendix B* for an example of a project description summary table.

2.2 Definition of the Land

Provide a definition of the Land on which the activity will take place. The boundary must be consistent with any intended or current permit application under LUPAA. Information requirements will vary depending on how the Land is defined. Refer to Part B for spatial and visual information requirements for detailed mapping instructions.

2.2.1 Existing defined boundary

If the Land is delineated by an existing defined boundary, the definition of the Land may be indicated by:

- Cadastral boundaries (Title Reference, Property ID), e.g., Title Reference I36529/I
- Lease boundaries (Mining Lease, Crown Lease, Marine Farming Lease), e.g., Mining Lease 901 IP/M.

2.2.2 Other boundary

If the Land is not delineated by an existing defined boundary, or the defined boundary is not of an appropriate spatial area, it may be necessary to define a new boundary by reference to specific topographic features and/or surveyed grid coordinates. A boundary survey may be requested during the assessment process if it is required to adequately identify the Land. In this case:

- Provide a plan which clearly shows the boundary of the Land in relation to topographic features or surveyed grid coordinates.
- Provide the boundary of the Land in a geospatial vector format (shapefile or DXF).

2.3 Detailed description of proposal

This section should include information that has not been included in the summary table, or that requires further explanation. Provide detail on the proposed construction, commissioning and operation of the activity, including any ancillary works that are for the purpose of the proposal (e.g., access works).

2.3.1 Project Components

- Describe the physical components required for the proposal to function up to closure, referring to maps and plans.
- Describe the major items of equipment (including pollution control equipment) and onsite facilities. Include detailed technical information on major items of equipment as appendices.
- Detail the total footprint of the proposal.

2.3.2 Construction

- Provide a step-by-step description of significant activities during the construction phase of the proposal.
- Provide details of the total construction footprint.
- Provide an indicative timetable for completing major stages of construction.
- Define the hours of construction for the proposal (hours per day and specific days per week).
- Describe the volume, composition, origin, destination, and route for vehicle movements (road, rail, shipping, and air) during construction, including details of the current usage of these roads. Include a break down for over dimension and heavy road vehicles.

2.3.3 Commissioning

- Provide a step-by-step description of significant commissioning activities (if any) following installation of equipment.
- Provide an indicative timetable for completing major stages of commissioning and describe the point at which commissioning will be considered complete.

2.3.4 Operation

- Describe the process(es) of operation in a step-by-step manner, using explanatory diagrams and flow charts where appropriate.

- Outline all raw materials (including water) required for operation, detailing source, quantities, and characteristics.
- Identify and quantify all emissions / wastes produced.
- Outline all energy requirements for operation, including a description of the measures to meet demand.
- Define the production capacity and rate for relevant processes, including peak rates, daily average rates and annual production rates.
- Define the hours of operation for the proposal (hours per day and specific days per week) specifying any seasonal variations.
- Describe the volume, composition, origin, destination, and route for vehicle movements (road, rail, shipping, and air) likely to occur, including timing of traffic flows. Include a break down for over dimension and heavy road vehicles. Include details on the current usage of these roads.
- Describe any current approvals or regulatory conditions if the proposal is associated with an existing activity.

2.4 Maps, plans and figures

Maps and plans must be provided which detail the location of the proposal as part of the local and wider region. Refer to Part B for spatial and visual information requirements.

2.4.1 General location map

Provide a general location map(s) of the existing environment and surrounding area (1:25,000 scale or better, as appropriate) which identifies:

- The location of the proposal site
- Boundaries of the property on which the proposal is located
- Road access to and from the site
- The distance(s) to any nearby sensitive uses (such as residences)
- Topographical features, aspect, and direction of drainage
- Location of waterways and drains (including ephemeral waterbodies and water courses)
- Electricity transmission lines
- Surrounding land tenure
- Surrounding land use (identify areas of conservation or recreational significance)
- Surrounding land zoning in the local government planning scheme.

2.4.2 Site Plan

Provide a site plan which includes existing and proposed conditions and features of the site. This may include:

- Elevation contours and levels
- The position of topographic features including roads, tracks, waterways, and drains
- The position of facilities, buildings, structures, major items of equipment, storage areas and loading or unloading areas
- A construction layout plan

Geospatial data included on the plan(s) should also be provided to the Board in a geospatial vector format (shapefile or DXF). If the site plan is not based on a feature and level survey and the Board determines that this information is needed to adequately assess the proposal, one may be requested during the assessment process.

2.4.3 Figures and flowcharts

Present figures such as process flowcharts and images which will enhance understanding of the site and proposal. Any images and photos used must be high quality, with an accurate description and date.

2.5 Planning aspects

The planning aspects description should include any additional information and data not included in the summary table.

- If a permit is required under LUPAA provide Use Class and Permissibility of the proposed activity under the applicable Planning Scheme.
- Detail land tenure and property boundaries of the proposed site, with certificate of title details.
- Detail land zonings for the proposed site and surrounding areas.
- Describe any rights of way, easements and covenants affecting the site.
- Discuss land use and planning history of the site, including the potential for site contamination², present use and any existing buildings and significant structures.
- Describe land use and ownership in the vicinity of the site and those areas which may be affected by the proposal.
- Provide the location and nature of industrial facilities.
- Detail sensitive uses³ or residential zones within distances including the location of individual residences, schools, hospitals, caravan parks and similar sensitive uses, and the location of any tourist or recreation facilities or routes (such as camping areas, picnic areas, walking tracks, historic routes).
- Any proposed or potentially sensitive uses within applicable attenuation distances from the proposal site, which have been or are likely to be granted approval under the local planning scheme, should also be considered.

2.6 Socio-economic context

Briefly describe the existing social and economic environment that may be affected by the proposal. This may include:

- A summary of the social or demographic characteristics of the population living in the vicinity of the proposal site, identifying any special characteristics which may make people more sensitive to impacts from the proposal than might otherwise be expected.
- A summary of the characteristics of the local and regional economy.

2.7 Offsite infrastructure

Describe any new infrastructure or offsite ancillary facilities required to allow the proposal to proceed, such as water supply, electricity supply, roads or other transport infrastructure.

² Information on potentially contaminating activities and contaminated site assessment can be found online at <https://epa.tas.gov.au/Pages/Land.aspx>

³ Defined in the State Planning Provisions as 'a residential use or a use involving the presence of people for extended periods except in the course of their employment such as a caravan park, childcare centre, dwelling, hospital or school.'

3. Project Alternatives

Proponents should provide the rationale for the project proposed. Alternatives should consider best practice environmental management, including measures listed under [section 4\(2\) of EMPCA](#). The rationale should:

- Describe the site selection process and criteria.
- Evaluate any alternative sites considered and justify the choice of the proposed site using clearly defined environmental, social, economic, and technical considerations.
- Describe the effect of any community consultation on the selection process.
- Provide an assessment of other available technologies, where relevant. Include reasons for selecting the preferred technology, including from an environmental perspective.
- Identify any alternative technologies, materials, design options or management practices relevant for any part of the proposal.
- Evaluate the environmental performance of any identified alternatives and provide justification for the preferred choice.

4. Public Consultation

This section should describe any public consultation that has taken place during project planning and preparation of the EIS, and the results of this consultation. Proponents should also describe any proposed future public consultation which will take place during project implementation and operation. The Board encourages early community engagement, which often leads to better outcomes for all parties. [Guidance on Community Engagement](#) is available on the EPA website, detailing approaches for effective public consultation.

5. Potential Impacts and Management

The EIS should evaluate all potential impacts of the proposal, however the level of detail provided on each issue should reflect its level of significance. While key issues are identified for the proposal, this section must identify all potential environmental impacts and describe the proposed measures to avoid, mitigate or offset adverse consequences. Other issues that emerge as significant while preparing the EIS, through environmental studies, public comments or otherwise, must be considered and addressed.

Each discrete issue must be addressed separately. It may be beneficial to further organise content using headings and subheadings. Integrate the following details when addressing each potential impact in addition to specific requirements:

Existing Environment

- Describe the existing environment in relation to the impact, including the vulnerability of the potentially affected environment.
- Analyse the issue in relation to the existing environment.

Methodology

- Describe how the impact assessment has been performed. For example, surveys or desktop studies.
- Identify any relevant guidelines and standards used.
- Discuss any choice of methodology over alternatives where relevant.

Assessment

- Clearly articulate the potential impacts, using tables and figures to aid communication where possible.
- Support assertions and assumptions with adequate argument and/or evidence.
- Identify plausible worst-case scenarios and the reversibility of the impact.
- Detail any specialist recommendations which have/will be implemented or justify otherwise.
- Summarise the proposal's contribution to any cumulative impacts, where appropriate.

Avoidance and Mitigation Measures

- Describe the measures proposed to avoid, mitigate or offset potential adverse impacts.
- Analyse how and to what degree the impacts will have been avoided, minimised or offset.
- Discuss any residual impacts, referring to relevant guidelines or standards.
- Discuss any contingency measures related to pollution control equipment.

Use scientific, referenced data to support predictions and evaluate impacts. Where specialist reports have been required for key issues, summarise them within the body of the EIS and attach the reports as appendices. Detail the suitability/qualification of the authors of any specialist reports.

Refer to *Appendix A: General principles for assessing environmental impacts*.

Key issues

The key issues identified for this proposal, which should be the focus of the EIS, are:

1. Potential impacts on flora and fauna from habitat clearing for the proposal.
2. Potential impacts on water quality associated with construction and operation of the proposal.
3. Potential impacts on air quality associated with construction and operation of the proposal.

5.1 Biodiversity and Natural Values

Discuss impacts of the proposal during construction and operation, on biodiversity and nature conservation values (terrestrial and aquatic), including methodology, where applicable.

5.1.1 Existing Environment

- Specify and map known records of flora, vegetation communities and habitat, with particular reference to threatened species, communities and habitats, including those listed under the relevant Schedules of the Australian Government EPBC Act and the Tasmanian *Threatened Species Protection Act 1995* (TSPA) and Tasmanian *Nature Conservation Act 2002* (NCA).
- Where there is the potential for threatened species or vegetation communities to be present, provide the results of a natural values assessment, undertaken by a suitably qualified person.
- Identify any known occurrences of aquatic species of conservation significance, threatened aquatic fauna or flora species or potential habitat in the vicinity (Pieman River and its tributaries) of the proposed development footprint. If relevant aquatic species are identified, a detailed survey may be required, and the results should be presented in the EIS.
- Identified areas or habitats of conservation significance.
- Identify any freshwater ecosystems of high conservation management priority using the Conservation of Freshwater Ecosystem Values (CFEV) database⁴, including values in the vicinity of the proposal. The specific CFEV information should be Conservation Management Priority Potential.
- Specify and map known sites of geoconservation significance or natural processes including sites of geoconservation significance listed on the Tasmanian Geoconservation Database.
- Demonstrate that any surveys comply with requirements in *Guidelines for Natural Values Surveys*⁵.
- Describe any natural processes of particular importance for the maintenance of the existing environment (e.g. fire, flooding, etc).

5.1.2 Assessment

- Describe potential impacts on flora, vegetation communities and habitat, with particular reference to threatened species, communities and habitats, including those listed under the relevant Schedules of the EPBC Act, TSPA and NCA.
- Describe potential impacts (impacts may also include noise and light) on fauna, including impacts on species, communities and habitats. Provide details of impacts to threatened species, migratory species, communities and habitats, including those listed under the relevant Schedules of the EPBC Act, TSPA and NCA.
- Discuss environmental impacts associated with vehicle movements during construction and operation on fauna. An increase in night-time (dusk to dawn) traffic on internal and nearby roads of more than 10% is considered significant regarding likely impacts on the Tasmanian devil.

⁴ Available at <https://nre.tas.gov.au/water/water-monitoring-and-assessment/cfev-program>

⁵ Available on the internet at: <https://nre.tas.gov.au/conservation/development-planning-conservation-assessment/survey-guidelines-for-development-assessments>.

- Discuss impacts on other species, sites or areas of special conservation significance, including areas of wilderness or scientific value.
- Discuss the potential introduction or spread of pests, weeds and plant and animal diseases as a result of construction and operation of the proposal.

5.1.3 Avoidance and Mitigation Measures

- Describe management measures to mitigate adverse impacts to threatened fauna, flora and vegetation communities and other natural values where they cannot be avoided, including management of weeds, pests and diseases.
- Include any roadkill management measures as required in the Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian Devil (*Sarcophilus harrisii*).
- Where impacts cannot be avoided, present proposed measures to mitigate and/or compensate adverse impacts on biodiversity and nature conservation values.
- Discuss rehabilitation of disturbed areas following the completion of construction activities and cessation of the activity, including any progressive rehabilitation program.

Avifauna – specific requirements

Masked Owl.

It is understood the forest at Bobadil is within the core range of the masked owl (*Tyto novaehollandiae castanops*) and may support a breeding pair of masked owls (Natural Values Assessment, NorthBarker, 19/5/2023). It is unclear from the Natural Values Assessment (NVA) whether the entire development footprint (1.3 ha) was surveyed for potentially hollow bearing trees with a DBH > 1m.

Five trees with a DBH greater than 1m were examined for hollows using ground-based and aerial inspection methods and all five trees were deemed unsuitable for nesting due to a lack of appropriate hollows. If the remaining area has not been surveyed (ground-truthed), a threatened fauna survey of the unsurveyed footprint must be undertaken by a suitably qualified and experienced person in accordance with the Guidelines for Natural Values Surveys - Terrestrial Development Proposals: Survey Guidelines for Development Assessments | Department of Natural Resources and Environment Tasmania (nre.tas.gov.au).

Please note that masked owls can be very discreet, and a combination of techniques is required to minimise the risk that a nest is being overlooked, including call play back. If call play back successfully results in a response from a masked owl, their presence in the area can be confirmed. However, a lack of vocalisation in response to call play back cannot be taken as proof of absence (as masked owls can be notoriously silent even when known to be present). In such cases, it is recommended the following actions are undertaken in order to further examine potential nesting trees (in preferred sequence):

1. Trees should be checked for any signs of nesting or roosting (regurgitated pellets, whitewash, feathers at the base of the tree within the tree's dripline). Lack of these signs does not indicate an absence of nest but the presence of any of these signs can strongly indicate a nest hollow.
2. Hollows should be observed from sunset to several hours after sunset to detect owls exiting from hollows. A video camera should also be recording and focused on the hollow during the sunset observations to remove likelihood of any observer error. Ideally the camera will have night vision or heat detection capabilities.
3. An action camera on a pole should be used to observe inside the hollow to attempt to determine if the hollow is being used as either a nest or roosting hollow.
5. Physical inspection of hollows.

It should be noted that a negative result for any of the above survey methods, apart from physical inspection, is not considered conclusive proof of lack of presence (but may indicate likely absence).

5.2 Water quality

Discuss potential impacts of the proposal on surface water,(including from seepage and AMD, see also Section 5.6), during construction and operation phases, describing the methodology where appropriate.

5.2.1 Existing Environment

- Provide a description of the activity site with respect to topography and preferential surface water flow, existing surface water, stormwater drainage and identify nearby watercourses likely to be impacted by the proposal.
- Provide an overview of the receiving environment identifying all relevant Protected Environmental Values (PEVs)^[1], including:
 - sensitive uses and associated water quality considerations.

5.2.2 Assessment

- Identify and characterise all liquid emissions which could arise from the proposal including from AMD, seepage, waste treatment processes, and stormwater.
- Describe any existing wastewater and stormwater treatment on the site and, where available, provide an analysis of wastewater or stormwater quality discharged from the existing activity.
- Describe any proposed new or improved wastewater and/or stormwater treatment for the development, including a description of the selected technology, the likely effluent/water quality and volumes which will be produced and fate.
- Describe the stormwater management (including during reasonably foreseeable flood events) including an assessment of the potential for pollutants to become entrained in stormwater and details of drainage control measures such as cut-off drains and sediment settling ponds.
- Provide details and a map(s) depicting:
 - preferential flow of stormwater arising from rainfall on the site
 - location of stormwater collection system.

5.2.3 Avoidance and mitigation measures

- Justification for any proposed emission of contaminants to surface water in accordance with the principles under the *State Policy on Water Quality Management 1997*.

5.3 Groundwater

Discuss potential impacts of the proposal on groundwater (quality and quantity) during construction and operation, including methodology where appropriate.

5.3.1 Existing Environment

- Provide a conceptual groundwater model (including a piezometric surface) indicating groundwater table slope angles and direction of flow.
- Identify any surface water and groundwater dependant ecosystems that may receive groundwater (including AMD and seepage) from the facility.
- Provide details of any baseline groundwater quality monitoring undertaken.
- A groundwater management plan for the TSF including: a summary report of groundwater data for the last five years and identification of exceedances to appropriate water quality guidelines; all known groundwater bore installation engineering logs; which bores are to monitoring for what parameters including frequency of monitoring; any existing groundwater modelling outputs and recommendations.

^[1] Information available at <https://epa.tas.gov.au/Pages/PEVs-for-Tasmanian-Surface-Waters.aspx>

5.3.2 Assessment

- Discuss the potential impact of the raise on groundwater (quality and quantity) with reference to groundwater assessments undertaken where appropriate, including:
 - a map showing the location of any groundwater bores;
 - a conceptual groundwater model for regional and local aquifer flows;
 - a report detailing the existing groundwater monitoring and modelling which includes all known bore logs for the monitoring bores; and
 - details of any proposed groundwater monitoring activities (including the location of new bores) and a summary table of all bores with respect to the targeted aquifer (e.g. shallow [unconsolidated] or deep [consolidated] geological unit).
 - details of whether the proposed raise will impact seepage rates and volumes.

5.3.3 Avoidance and mitigation measures

- Describe the measures proposed to avoid or mitigate potential adverse impacts to groundwater.
- Provide justification for any potential impact to groundwater in accordance with the principles under the *State Policy on Water Quality Management 1997* and with reference to likely groundwater community values, associated guideline values and guideline values for receiving surface waters.

For information about water quality management framework and evaluation criteria in Tasmania refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).

5.4 Air quality

Discuss potential impacts of the proposal on the local and regional air environment during construction and operation stages, including methodology where appropriate. The air quality assessment should detail potential impacts of the proposal on air quality and provide evidence that the activity will not cause environmental nuisance or harm.

5.4.1 Existing Environment

- Identify and show on a site map all sensitive receptors that could potentially be affected by fugitive dust and particulate matter emissions from activities associated with the Bobadil Tailings Storage Facility (TSF) stage I 1 and stage I 2 embankment raises and subsequent operation, especially during unfavourable meteorological conditions. Receptors located in Rosebery should be included as they are known to have been impacted by dust potentially from Bobadil sub-aerial TSF in the recent past.
- Describe the existing environment including climatic/meteorological conditions, terrain, land use and air quality in the vicinity of the proposal.

5.4.2 Assessment

- Identify and show on a site map the locations and names of all potential sources of atmospheric emissions from the activities relating to construction of both stages and continued operation of the site.
- Describe and characterise all possible sources of dust emissions from the site, including the Southern and Northern borrow pits. This includes but is not limited to dust generated from the disturbed topsoil/vegetation clearing, levelling/compacting, stockpiles, blasting, excavating, loading/unloading, wind erosion, and traffic movements on and off site.
- Provide details and location of the materials handled and equipment used on the site.
- Discuss the potential impact of fugitive dust and particulate matter emissions from the proposed activity on the environment. Consider local terrain and meteorological conditions including annual rainfall, the direction and strength of prevailing winds, and land use in the vicinity of the activities.
- Qualitatively assess the impacts of fugitive dust and particulate matter emissions from construction activities. Provide the duration of the construction activities and information on staging.
- Use air dispersion modelling results to demonstrate that the potential impact of fugitive dust and particulate emissions from the surface of the Bobadil TSF augmented by stages I 1 and I 2 of the

embankment raises would not cause environmental nuisance or harm during continued operation of the site. Modelling should be conducted by a suitably experienced and qualified specialist in accordance with the EPA's Atmospheric Dispersion Modelling Guidelines (epa.tas.gov.au).

It is strongly recommended that the scope and method of the meteorological and atmospheric dispersion modelling is discussed with the EPA's Air Modelling Officer prior to commencement of modelling. Model scenarios should reflect normal and reasonable worst-case scenarios for operating activities and meteorological conditions. Given that the Environment Protection Policy (Air Quality) 2004 does not include criteria for dust deposition and TSP, the predicted impacts of these pollutants should be assessed against the criteria provided in "Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales", EPA (NSW), revision 2022, Table 7.1, page 27.

- Qualitatively, describe the potential upset or emergency conditions that may arise during construction or operation of the augmented TSF and demonstrate that the air emissions from the site are not likely to cause environmental nuisance or harm.
- Qualitatively, discuss how the future climate of the region may impact the local meteorology and affect the emissions of fugitive dust and particulate matter from the site. Outline how mitigation measures would be adapted.
- Provide the details of the monitoring equipment and their locations for the Bobadil TSF monitoring network and the Rosebery monitoring network. Provide analysis of the monitoring data collected at the current monitoring stations at Bobadil TSF and the Rosebery network. Outline how the existing monitoring network will be used to help manage and mitigate particulate matter and dust emissions during construction and during the continued operation of the Bobadil TSF.
- Provide information about any dust complaints related to the operation of the existing facility for the last 5 years.
- Demonstrate that the assessment is consistent with the requirements of the Tasmanian [Environment Protection Policy \(Air Quality\) 2004](#) and any supplementary documents (including the [Board Statement Jan 2022](#)).

5.4.3 Avoidance and Mitigation Measures

- Describe measures to be implemented to mitigate all atmospheric emissions from the site that may cause environmental nuisance or harm at or beyond the site boundary, including during unfavourable meteorological conditions. This may include but not be limited to watering or sealing roads, covering of truck loads, reduced vehicle speed, road surfacing/maintenance details, enclosures, water sprays, windbreaks, and revegetation/stabilisation/rehabilitation. Discussion of the ongoing requirement to provide an adequate water supply should be included.

5.5 Noise emissions

Discuss impacts of the proposal on existing (surrounding) noise levels during construction and operation, including methodology where appropriate.

5.5.1 Existing Environment

- Provide a map of the location of all major sources of noise and the closest noise sensitive, including residential, premises in the vicinity of the boundary of the activity.

5.5.2 Assessment

- Describe all major sources of noise.
- Provide details of the need for blasting, the expected number of blasts and the notional blast plan, including;
 - Results of ground vibration modelling to predict peak particle velocity contours out to 1mm/s;
 - Results of airblast overpressure modelling to predict dB (lin) level contours out to 100 dB (lin).

- Analyse the potential for noise emissions (during both the construction and operational phases) to cause nuisance for nearby land users, particularly at noise sensitive premises (NSP)
 - ‘noise sensitive premise’ is defined as residences and residential zones (whether occupied or not), schools, hospitals, caravan parks and similar land uses involving the presence of individual people for extended periods, except in the course of their employment or for recreation.
 - When assessing nuisance at the NSPs, discuss the Environment Protection Policy (Noise) 2009 and the existing acoustic environment.
- Discuss the potential for noise emissions to affect terrestrial and freshwater wildlife.

5.5.3 Avoidance and mitigation measures

- Discuss the proposed noise and vibration management plan to minimise impact and to address noise/vibration related complaints.
- Demonstrate that the proposal is consistent with environmental performance requirements, including any identified in the Environment Protection Policy (Noise) 2009.

5.6 Acid and Metalliferous Drainage

Discuss the potential impacts of AMD from the proposal on the local and regional environment during the construction and operational stages, including methodology where appropriate.

5.6.1 Existing Environment

- Historical & Existing Leachate and Materials Characterisation:
 - Describe geochemical and physicochemical characteristics of historical and existing acid mine drainage (AMD) and/or neutral mine drainage and/or saline drainage (SD) formation on site, including: all sources, locations, volumes, mass loads and solute concentrations.
 - Detail geochemical characteristics of historical and existing tailings in accordance with leading industry best practice, including: acid generating, metal(loid) leaching, and acid buffering potential & metal(loid) enrichment (data requirements detailed below);
 - Provide a conceptual model that describes what is known about historical and existing release, transport and fate of contaminants and includes all sources, volumes, mass loads, pathways (e.g. seepage, pumping discharge, overflow discharge etc), and receptors for each facility.

5.6.2 Assessment

- Construction Methods & Materials:
 - Detail the methods proposed (including geochemical sampling, acid base accounting (ABA)/net acid generation (NAG) testing and non-acid forming (NAF)/potentially acid forming (PAF) classification) to ensure that dam construction materials are geochemically benign and fit for their intended purpose;
 - Detail and show the source location(s) of construction materials on a suitable diagram and provide an indication of the quantities of materials required for the construction of each stage.
 - Detail the proposed construction methods for each stage, including justification for any variation from an engineered clay liner.
- Future Leachate and Materials Characterisation:
 - Describe predicted geochemical and physicochemical characteristics of effluent derived from disposal of proposed waste materials based on leading industry best practice and accounting for site-specific geological and climate conditions; this assessment should consider implications of co-disposal of proposed waste materials with legacy and existing waste materials;
 - Detail geochemical characteristics of proposed waste materials in accordance with leading industry best practice and site-specific geological and climate conditions, including: acid generating, metal(loid) leaching, and acid buffering potential & metal(loid) enrichment (data requirements detailed below);

- Provide a conceptual model that describes potential release, transport and fate of contaminants and includes all sources, volumes, mass loads, pathways (e.g. seepage, pumping discharge, overflow discharge etc), and receptors from proposed facility;
 - The discussion must provide modelled predictions of expected effluent volumes and quality of all emitted water.
 - Variations in water balance (i.e., precipitation, groundwater flow, evaporation), accounting for site-specific climate conditions such as, extended dry periods (i.e., extended summer seasons or high wind events) and periods of excessive rainfall (i.e., 1 in 100-year flood event) in the model.

5.6.3 Avoidance and mitigation measures

- Identify the best practice mitigation measures and management strategies that will be/are implemented:
 - to minimise interactions between the tailings and the local environment to prevent acid generation, metal(loid) and solute leaching and potential impacts to surface water and groundwater;
 - for the collection and treatment of AMD and SD which cannot be prevented from occurring, to ensure the protection of Lake Pieman and its tributaries. This must include a description of the existing AMD treatment facilities and any proposed changes to the treatment facilities as the TSF is raised and waste characteristics change.
- Provide a detailed description of existing and proposed changes to surface water and groundwater monitoring programs to monitor performance of proposed structures and AMD management strategies.

Data requirements

- A sufficient number of samples representing the different lithologies and the lateral distribution of properties within those lithologies must be used for materials characterisation and effluent predictions;
- Data to quantify the acid generating and metal(loid) leaching potential of tailings (i.e. potentially acid forming (PAF), non-acid forming (NAF) including any variability over time, in accordance with leading industry best practice and site-specific geological and climate conditions;
 - Preliminary static tests should include (at a minimum): total inorganic carbon, total sulfur, paste pH;
 - Acid base accounting parameters should include (as a minimum): Acid Neutralising Capacity (ANC), Maximum Potential Acidity (MPA), ANC/MPA ratio, available ANC, and Net Acid Producing Potential (NAPP) in addition to Net Acid Generation (NAG);
 - Where appropriate, based on site-specific geological conditions, industry standard geochemical tests should be supplemented with mineralogical evaluation of waste materials;
 - Specialised test work (i.e., kinetic tests) representative of key lithology/alteration types identified to have an actual or potential (e.g. uncertain category) AMD risk should consider: metal and metalloid concentrations; alkalinity; acidity; mineralogy of potential neutralising minerals; mineralogy of sulphides; sulfur speciation.

5.7 Waste management

Discuss the impacts of waste generated by the proposal during construction and operation.

5.6.4 Existing Environment

- Describe the existing environment in relation to the impact of waste generated by the activity.
- Describe the source, nature and quantities of all wastes, (liquid, atmospheric or solid) including general refuse and by-products from the various stages of the process likely to be generated.

5.6.5 Assessment

- Describe the methods and facilities proposed to collect, store, reuse, treat or dispose of each waste stream, including maintenance requirements.
- Describe the source, nature, quantity, and method of treatment, storage and disposal for each controlled waste. Controlled waste is defined in EMPCA and associated regulations. A non-exhaustive listing of categories of controlled waste can be found under [Controlled Waste](#) on the EPA Website.

5.6.6 Avoidance and mitigation measures

- Demonstrate that any waste management measures follow the following hierarchy of waste management, arranged in decreasing order of desirability:
 - Avoidance
 - Reuse
 - Recycling
 - Energy recovery
 - Repository storage (for future treatment/recovery)
 - Treatment
 - Disposal/permanent containment.

5.7 Dangerous goods and environmentally hazardous materials

Dangerous goods and environmentally hazardous materials are any substance or mixture of substances of a nature or held in quantities which present a reasonably foreseeable risk of causing serious or material environmental harm if released to the environment. This includes fuels, oils, waste and chemicals. Discuss the impacts of these materials generated by the proposal. The discussion should:

- Describe the nature, quantity and storage location of all environmentally hazardous materials including Dangerous Goods (as defined in the Australian Code for the Transport of Dangerous Goods by Road and Rail) that will be used during the construction and operation of the proposal.
- Provide a map showing the location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals.
- Detail measures (such as bunded areas or spill trays) to be adopted to prevent or control any accidental releases of dangerous goods and environmentally hazardous materials.
- Provide contingency plans for when control measures, equipment breakdowns or accidental releases to the environment occur, including proposed emergency and clean-up measures and notification procedures. Identify any safety management requirements for the protection of human health and safety affecting the community.

5.8 Greenhouse gas emissions, ozone depleting substances and climate change

Discuss impacts of the proposal in relation to greenhouse gases, noting that the level of detail should be proportional to the potential negative impacts. As a minimum, if applicable, this section of the EIS should:

- Describe the direct and indirect effects of the proposal on greenhouse gas production and ozone depleting substances and any greenhouse benefits of the proposal.
- Provide an inventory of projected scope 1, scope 2 and total greenhouse gas emissions, energy production, and energy consumption for a year of operation. Describe the methods used to develop the inventory. Note that calculators are available on the Australian Government Clean Energy Regulator website⁶. Discuss potential annual variation that may occur.

⁶ Available at <http://www.cleanenergyregulator.gov.au/NGER/Forms-and-resources/Calculators#Emissions-and-Energy-Threshold-Calculator-202021-and-user-guide>

- Demonstrate that the development will use cost-effective best practice measures to minimise future greenhouse gas emissions.
- Include details of proposed measures to minimise emissions and the anticipated effectiveness of these measures. Where less emissions-intensive options are not adopted, provide sufficient justification and/or mechanisms to offset greenhouse gas emissions.
- Provide a competent estimate for ‘whole of life’ greenhouse gas emissions for the proposed development.
- Describe the potential impacts of climate change upon the proposal. For example, it may be appropriate to plan for more intense storm events, more severe fire weather, and/or long-term sea level rise.
- Discuss impacts of the proposal in terms of the evolving national response to climate change and greenhouse gas emissions and the targets set in the *Climate Change (State Action) Act 2008 (Tas)*⁷, *Tasmania’s Climate Change Action Plan 2023-25*⁸ and the *Climate Change Act 2022 (Commonwealth)*.⁹

Note: Proponents must determine whether they are required to report to the Commonwealth under the *National Greenhouse and Energy Reporting Act 2007*¹⁰.

5.9 Socio-economic issues

Discuss the social and economic impacts of the proposal. This discussion may:

- Provide an estimate of total capital investment for the proposal and where that capital will be expended (particularly in relation to the source of large capital items of processing equipment).
- Describe operational expenditures and revenues.
- Describe impacts on local and state labour markets for both the construction and operational phases of the proposal. The number and nature of direct and indirect jobs arising from the proposal must be detailed. Skills and training opportunities should also be discussed.
- Describe impacts on upstream/downstream industries, both locally and for the State.
- Detail the extent to which raw materials, equipment, goods and services will be sourced locally.
- Provide a qualitative assessment of impacts on local social amenity and community infrastructure, including recreational, cultural, health and sporting facilities and services. Any proposals to enhance or provide additional community services or facilities should be described.
- Describe community demographic impacts (changes to cultural background, occupation and incomes).
- Describe impacts on land values, and demand for land and housing.
- Describe impacts on the local, regional, state and national economies.
- Detail any publicly funded subsidies or services to be relied upon for the construction or operation of the proposal.
- Detail any impacts on local, state and federal government rate, taxation and royalty revenues.

The extent to which socio-economic considerations need to be described depends on the nature and extent of any negative impacts or risks to the environment from the proposal.

Modest proposals with relatively low level and localised environmental impacts or risks may only need details of intended capital expenditure, operational expenditures, revenues and employment (distinguishing

⁷ Available at <https://www.legislation.tas.gov.au/view/html/inforce/current/act-2008-036>

⁸ Available at https://recfit.tas.gov.au/climate/climate_change_action_plan

⁹ Available at <https://www.legislation.gov.au/Details/C2022A00037>

¹⁰ Available at <https://www.legislation.gov.au/Details/C2007A00175>

between direct and indirect employment) and a qualitative discussion of other socio-economic aspects of particular relevance.

Proposals with higher level or broader scale environmental impacts will need a more comprehensive analysis of economic and social benefits to allow the Board to assess the benefits and adverse impacts of the proposal. This may include an explanation of the methods used to model impacts and describe the manner and results of engagement with the local community to determine their needs and aspirations in relation to the proposal. A social impact assessment and/or economic impact assessment may be required.

5.10 Fire risk

Discuss the potential fire risk associated with the proposal, including:

- Consideration of fire within the site, fire escaping from the site and the impact of wildfire originating outside the development and the environmental impacts that could result from such an event.
- The objectives and management principles to be adopted to prevent and respond to potential fire events.
- Where a fire response plan is appropriate, it should be fully integrated with other relevant documents, such as a Tasmania Fire Service Local Area Fire Management Plan, a Sustainable Timber Tasmania Fire Management Plan and a Parks and Wildlife Service Fire Action Plan for relevant districts.

5.11 Infrastructure and off-site ancillary facilities

Discuss potential environmental impacts of the proposal on any significant off-site or infrastructure facilities (including increased use of existing infrastructure, such as roads, ports and quarries), identify measures to avoid and mitigate any possible adverse impacts and assess the overall impacts following implementation of the proposed avoidance and mitigation measures.

Identify roads and other infrastructure to be used by vehicles for the proposal (during both construction and operation). Potential environmental impacts associated with construction and use of such infrastructure should be assessed.

6. Monitoring and Review

This section outlines any proposed monitoring, review and reporting programs for the proposal. Include a table of proposed monitoring locations, parameters and frequencies, and a map showing the location of all monitoring sites. Monitoring, review and reporting programs should be designed to:

- Assess compliance with the proposed management measures.
- Assess compliance with emission standards and other identified performance requirements.
- Assess the effectiveness of the performance requirements and environmental safeguards in achieving environmental quality objectives.
- Assess the extent to which the predictions of environmental impacts in the EIS have eventuated.

7. Decommissioning and Rehabilitation

Discuss any proposed rehabilitation of disturbed areas following construction activities and upon cessation of the activity. Outline a preliminary Decommissioning and Rehabilitation Plan or Closure Plan for the proposal. If applicable, describe the stages of site decommissioning and rehabilitation, including any proposed seed collection and progressive rehabilitation.

8. Management Measures Table

This section must include a summary table listing all management measures previously detailed throughout the EIS, sequentially numbered. Each measure must be an unambiguous statement of intent and specify when it is to be implemented.

9. Conclusion

This section should present a balanced overview of the proposal's net impacts. Summarise the proposal and draw together the critical environmental, social and economic impacts. Evaluate the extent to which negative impacts can be avoided, mitigated, remediated or compensated and positive impacts promoted and sustained.

The conclusion should also describe how the proposal meets and furthers the objectives of relevant legislation, policies, plans and strategies. This should be done by itemising the RMPS and EMPCS objectives and providing a commentary about how the proposal addresses each of the objectives.

10. References

This section should provide details of authorities consulted, reference documents and other information sources, using a consistent referencing style.

11. Appendices

Detailed technical information which supports the EIS should be included as appendices. The salient features of the appendices should be included in the main body of the EIS. Care should be taken to avoid inconsistencies between technical content of appendices and the EIS itself, unless carefully explained.

Appendix A: General principles for assessing environmental impacts

This Appendix provides a summary of principles for assessing environmental impacts in EIS documents prepared under EMPCA.

General Approach

When assessing environmental impacts in an EIS the proponent should:

- Present information in a clear, well-structured manner that avoids duplication and presents technical information appropriate to its audience.
- Base assessments and evaluations on scientifically supportable, referenced data.
- Describe methodologies used and provide supporting research and investigations.
- State any scientific assumptions, simplifications, or judgements, and define uncertainties.
- Describe impacts and mitigation to a level of detail appropriate to their consequences and their ability to be controlled.

Impact assessment

Impact assessment is the identification and characterization of the effects of a proposal. When undertaking impact assessment, the proponent should:

- Explain methodologies used to identify and characterise impacts.
- State clearly the impacts that are predicted to result from the development in terms of the aspect of the proposal involved and the environmental receptor affected.
- Characterise those impacts in terms of:
 - The magnitude of impacts, quantified where possible, including spatial extent and timeframe.
 - The vulnerability of the affected environmental receptors.
 - Sources and pathways for the impact to occur.
 - Probability of occurrence (if not 100%).
 - Scenarios for the impacts' occurrence including plausible worst-case consequences.
 - Reversibility of impacts.
 - Any predicted indirect effects.
 - Any aspects of other proposals examined cumulatively.
- With reference to the project description and alternatives descriptions of the EIS, state what measures to avoid or reduce impacts are considered as part of this assessment.

Impact evaluation

Impact evaluation is the determination of the 'significance' of impacts. When undertaking impact evaluation proponents should support conclusions about the significance of the impact as characterized using a structured argument which focuses on the magnitude of the impact and the sensitivity of the affected receptors.

Mitigation and Monitoring

Mitigation (planning and design considerations, pollution control technology and management practices) and monitoring are measures on top of those considered during the impact assessment above to reduce the impact of the proposal. In presenting mitigation and monitoring the proponent should:

- Describe the measures proposed.
- Describe how mitigation measures function to avoid or reduce the impacts.

- Explain how measures accord with existing guidance, accepted practice or best practice environmental management defined in EMPCA.
- Discuss contingencies for the breakdown/malfunction of equipment or processes.
- Describe any anticipated impacts resulting the mitigation actions and how these will be addressed.
- Identify if proponent proposes control measures to be performed by a third party, and how this will be achieved.

Residual impacts

Residual impacts are those that remain after mitigation has been taken into account. When assessing residual impacts the proponent should:

- Revisit the first evaluation of impact, taking into account the effects of the measures to reduce the magnitude of the impacts and present a revised statement of significance.
- Where required, identify appropriate offsetting, based on the relevant guidelines.

Appendix B: Other issues and agency contacts

In addition to a permit under LUPAA and EMPCA, there may be other legal requirements to allow your proposal to proceed, including other permits, licences or landowner consent. You may also need to contact other Government agencies to obtain information for the purpose of assessment.

Your proposal has been referred to other agencies by EPA and a summary of the advice received is outlined below. If assessments or approvals outside of the Board's responsibilities are required, you should engage with the respective agency to progress them.

Advice Summary

The following record of advice was provided by AHT:

There are no known Aboriginal heritage recorded within the proposed works area. The northern borrow pit extension area has been recently surveyed during an Aboriginal heritage assessment (CHMA 2023). This report is still under review by AHT, however the findings indicate that no Aboriginal heritage was recorded and that there is a very low likelihood for undetected Aboriginal heritage to be present. CHMA has not recommended any further assessment and instead recommended that the works in the northern borrow pit extension area should proceed under the guidance of the Unanticipated Discovery Plan.

It is understood that the proposed works outside of the northern borrow pit extension are confined to the existing footprint of the storage facility and southern borrow pit. Both of these areas are highly disturbed and therefore it is believed that there is a low likelihood of Aboriginal heritage being impacted. (25/05/2023)

AHT advise that the proposed works should be guided by the Unanticipated Discovery Plan.

TasNetworks notes the following regarding the proposed development:

The northern borrow pit is not within the easement corridor of the transmission line.

Dust generated "has the potential to marginally increase during the proposed construction activity" and will be monitored and controlled accordingly. Note that severe dust levels can impact transmission line operation and cause risk to nearby personnel and assets. This is unlikely in this instance.

It is unlikely that blasting activities (fly rock, or vibration) will impact TasNetworks Assets due to the distance from the northern borrow pit to the Transmission lines.

In the unlikely event that TasNetworks assets are impacted please contact the fault centre immediately on 1800 638 449 (24/7).

The following list identifies some of the agencies you may need to contact:

Conservation Assessments

Department of Natural Resources and Environment Tasmania

Telephone: (03) 6165 4396

Email: conservationassessments@nre.tas.gov.au

Website: www.nre.tas.gov.au/conservation

Purpose: Natural values including flora, fauna, and geoconservation values, or permits to deal with threatened species.

Heritage Tasmania

Department of Natural Resources and Environment Tasmania

Telephone: (03) 6165 3700

Email: enquiries@heritage.tas.gov.au

Website: www.heritage.tas.gov.au

Purpose: Historic cultural heritage, including State-level site listings, impacts and permits as required under the Historic Cultural Heritage Act 1995. Where works are proposed in or near a heritage place entered on the Tasmanian Heritage Register or likely to be of heritage significance to the whole of Tasmania, and a permit is required under the Land Use Planning and Approvals Act 1993, the proposal will be referred to Heritage Tasmania by the planning authority. There may also be additional sites listed under local planning schemes, impacts on which are assessed by the relevant planning authority.

Aboriginal Heritage Tasmania

Department of Premier and Cabinet

Telephone: 1300 487 045

Email: aboriginal@dpac.tas.gov.au

Website: www.aboriginalheritage.tas.gov.au

Purpose: Aboriginal heritage, including desktop assessment, artefact survey requirements, permits and advice.

Parks and Wildlife – Property Services

Department of Natural Resources and Environment Tasmania

Telephone: (03) 6169 9015

Email: PropertyServices@parks.tas.gov.au

Website: www.parks.tas.gov.au

Purpose: Impacts on parks and reserves managed by Parks and Wildlife, or Crown land.

Agriculture and Water

Department of Natural Resources and Environment Tasmania

Telephone: 1300 368 550

Email: Water.Enquiries@nre.tas.gov.au

Website: www.nre.tas.gov.au/water

Purpose: Water licences and works impacting natural waterway flow (e.g., dams or fords).

Transport Services

Department of State Growth

Telephone: (03) 6166 3369

Email: permits@stategrowth.tas.gov.au

Website: www.transport.tas.gov.au

Purpose: State roads, including where any proposal requires works on or access from a State-managed road.

Mineral Resources Tasmania

Department of State Growth

Telephone: (03) 6165 4800

Email: info@mrt.tas.gov.au

Website: www.mrt.tas.gov.au

Purpose: Mining Leases

Appendix C: Example of project description summary table

Location and Planning Context

Location	State the address of the site, and CTs and PIDs (as applicable) for all titles on which the activity will take place.
Land zoning	Describe the land zoning of the site and surrounds. If rezoning of the site is required, provide details.
Land tenure	Provide the land tenure of the proposal.
Use Class and Permissibility	If a permit is required under LUPAA, provide the Use Class of the proposed activity and Permissibility of the activity with reference to the relevant Planning Scheme.

For extractive industries only, delete if not required

Mining lease	
Lease area	
Bond	State the amount of any bond required by MRT (for extractive industries)

Existing site

Land Use	Describe the existing land use of the site and surrounds.
Topography	Describe the topography of the site and surrounds.
Geology	Describe the geology of the site, including the likelihood that potentially acid forming (PAF) material will be found on site. Describe any geoconservation values on or near the site, e.g., karst.
Soils	Describe the potential to encounter acid sulphate soils and or contaminated soil (from past activities, as relevant).
Hydrology	Describe groundwater and surface drainage (including waterways, lakes, wetlands and coastal areas) Describe the waterbodies and aquatic values on site and in the surrounding area. State the distance from the activity to the nearest waterbody.
Natural Values	List the threatened fauna, flora and vegetation communities, including potential habitat for any such species, that are known to occur on or near the site (use the Natural Values Atlas, TASVEG 4.0 or results of any relevant survey). State the vegetation types on and near the site.
Potential Hazards	Provide a brief assessment of the vulnerability of the site to natural hazards (e.g. flooding, seismic activity, fire, landslips or strong winds) or climate change.

Local Region

Climate	State the annual rainfall and predominant wind direction.
Surrounding land zoning, tenure and uses	Describe the surrounding land use, distance to the nearest residences in other ownership, note any conservation reserves or recreation areas in the area, and provide a coastal description if the coast is nearby.
Species, sites or areas of conservation significance	Provide information on species, sites or areas of landscape, aesthetic, wilderness, scientific or otherwise special conservation significance which may be affected by the proposal. Relevant information resources include the LIST (www.thelist.tas.gov.au) and the Natural Values Atlas (https://www.naturalvaluesatlas.tas.gov.au).

Proposed Infrastructure

Major equipment	List all existing and proposed plant, machinery, or other major equipment (distinguish between existing and proposed).
Other infrastructure	List the existing and proposed buildings, structures, access roads, internal haul roads (can refer to the Site Plan) (distinguish between existing and proposed).

Inputs

Water	Include quantities and characteristics
Energy	Include quantities and characteristics
Other raw materials	Include quantities and characteristics

Wastes and Emissions

Liquid	Include quantities and characteristics
Atmospheric	Include quantities and characteristics
Solid	Include quantities and characteristics
Controlled wastes	Include quantities and characteristics
Noise	Include major sources of noise emissions
Greenhouse gases	Provide a brief description of changes to greenhouse gas emissions that will be caused by the proposal.

Construction, Commissioning and Operations

Proposal timetable	Provide a brief timetable for construction, commissioning and commencement of operations, with stages if applicable.
Construction hours	e.g. xx-xx Monday to Friday xx-xx Saturday
Operating hours (ongoing)	e.g. xx-xx Monday to Friday xx-xx Saturday

Other Key Characteristics

Other	Describe any additional characteristics relevant to the proposal/environment which will provide increased understanding as part of this existing environment summary.
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