

Environmental Impact Statement Guidelines

H.B.M.I. Pty Ltd

Leslie Vale Quarry - Increase
in Capacity, Leslie Vale

May 2023



ENVIRONMENT PROTECTION AUTHORITY

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General Information for the Proponent

Purpose of the Guidelines

The *Environmental Management and Pollution Control Act 1994* (the EMPC Act) requires the Board of the Environment Protection Authority (the Board) to provide guidance to the proponent about what should be included in the case for assessment (the Environmental Impact Statement).

The Board will assess environmental aspects of the proposal. The relevant Planning Authority (Council) will assess planning aspects if the *Land Use Planning and Approvals Act 1993* (the LUPA Act) applies. The proposal also will require assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

These Guidelines provide information on preparing an Environmental Impact Statement (EIS) for an activity being assessed by the Board under the EMPC Act. They have been prepared based on the Notice of Intent for the proposed Leslie Vale – Increase in Capacity by H.B.M.I. Pty Ltd.

Information solely for the purpose of assessment under the relevant Planning Scheme should be supplied to the Planning Authority either:

- as required under s54 of the LUPA Act, where the planning application has commenced the environmental assessment process; or
- where it is intended to submit an EIS (draft or final) with the planning application, a combined planning and environmental report can be prepared. However, the information required for the Board's assessment must be distinguished from that supplied for the purposes of the LUPA Act.

Risk Based Assessment

The EIS should be prepared using a risk-based approach. Not all issues nominated in these guidelines will have the same degree of relevance to all proposed activities. The level of detail provided on each issue should be appropriate to the level of significance of that environmental issue to the proposal.

As well as the issues identified in the guidelines, other significant matters may emerge during preparation of the EIS from environmental studies, public comments, or other sources, which will need to be factored into the EIS. The assessment process may also change the understanding of the level of risk associated with some of the issues. This may in turn change the level of detail needed in the EIS.

After the public consultation phase, additional information may be requested from the proponent in response to public and government agency submissions. This generally takes the form of a supplement to the EIS.

Commonwealth environmental assessment

On 14 February 2023, the proposal was determined to be a controlled action under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (EPBC Reference 2022/09412) and will require assessment and approval under the EPBC Act in addition to Tasmanian State and Local government requirements. It has been determined that the proposed action will have, or is likely to have, a significant impact on Matters of National Environmental Significance

(MNES) protected under Part 3 of the EPBC Act, including nationally threatened species and communities.

The Commonwealth and Tasmanian Governments have signed a bilateral agreement relating to environmental impact assessment under section 45 of the EPBC Act, which effectively accredits the State assessment process. The EIS must specifically describe the implications of the proposal for the relevant EPBC Act controlling provisions. This information should be sufficient to allow the Commonwealth Minister for the Environment to make an informed decision on whether or not to approve the taking of the action, under Part 9 of the EPBC Act, for the purposes of each controlling provision.

The EIS should contain a summary table showing that it addresses the matters specified in Schedule 4 of the Commonwealth *Environment Protection and Biodiversity Conservation Regulations 2000*.¹

Objectives of the EIS

The EIS should:

- Provide information for individuals and groups to gain an understanding of the proposal, the need for the proposal, the alternatives, the environment that it could affect, the positive and negative environmental impacts that may occur and the measures that will be taken to maximise positive outcomes, and minimise any adverse environmental impacts, including specific management measures.
- Provide a basis for public consultation and informed comment on the proposal.
- Provide a framework against which decision makers, particularly the Board, and the relevant Planning Authority, can consider the proposal and determine the conditions under which any approval might be given.
- Demonstrate that the proposal is consistent with the objectives of the relevant laws and policies, including the Tasmanian Resource Management and Planning System (RMPS) and the Environmental Management and Pollution Control System (EMPCS).

How the Board uses the EIS

The EIS is the basis on which the Board makes its assessment. The Board considers the EIS, as well as other relevant information, against the objectives of the RMPS and EMPCS objectives. These objectives focus on the concept of sustainable development, which requires consideration of the economic and social needs of people now and in the future, while sustaining the environment and avoiding or mitigating adverse effects. The Board will consider the objectives and endeavor to make the decision which best furthers them, when considered together. That decision may be to approve the proposal with conditions, or in some cases, the Board may decide the objectives cannot be upheld and the proposal must be rejected.

Structure and Formatting of the EIS

The following points should be considered when writing the EIS:

- The title page should include the proponent's name, the activity name, the proposal address or location, the EIS version number (where relevant) and the month and year of publication.

¹ See [Environment Protection and Biodiversity Conservation Regulations 2000 - Schedule 4](#).

- The main text of the EIS should be written in a clear and concise style that is easily understood by the general reader.
- Assertions and assumptions should be supported by adequate argument and/or evidence, and evidence relied upon should be referenced.
- Technical terminology should be avoided as far as possible. The detailed technical data and supplementary reports necessary to support the main text should be included in appendices.
- All sources of information should be referenced and the style of referencing should be consistent throughout. An indication should also be given about how current the information is and how its reliability was tested. In particular, the degree of confidence attached to any predictions should be indicated.
- Where necessary, to enhance understanding of the proposal, information should be presented in maps, plans, diagrams and photographs. These must be of high quality and reproducible in monochrome with all text and relevant features clearly visible. Maps and plans should include a north arrow and scale.
- When spatial information (including maps, plans, grid coordinates and heights) are provided or referred to, the coordinate reference system must be specified.² It is recommended that the following coordinate reference systems are used:
 - **Horizontal** – Geocentric Datum of Australia 2020, Map Grid of Australia Zone 55 (GDA94 MGA55)
 - **Vertical** – Australian Height Datum (Tasmania) (AHD83)
- Any sensitive information should be provided in a separate, confidential appendix. A comment should be made in the EIS that the information has been provided in this way.
- Specific management measures must be clearly identified in the text and included in the summary table referred to in Section 9 of these Guidelines.
- Where appropriate, information provided in other sections should be referenced to minimise duplication.
- The EIS should contain a summary table showing compliance with the Guidelines.

Submission of draft and final document

Close consultation with the EPA while preparing the EIS is recommended. It is advisable for the proponent to submit a draft EIS for review before it is finalised. Please note that a draft document may be rejected without detailed review if it is incomplete, contains significant formatting or typographical errors, or does not comply with the Guidelines. More than one draft may be necessary before the document is considered suitable for public release. The EIS is to be submitted in electronic format (such as Microsoft Word), and suitable for publishing on the internet (PDF format). Printed copies may also be required for public consultation.

² Information on coordinate reference systems used in Tasmania can be found at [Coordinate, Height and Tide Datums - Tasmania](#). Please note that although the Geocentric Datum of Australia 2020 (GDA2020) is the new official datum for recording the horizontal location of spatial information in Australia, implementation of this new datum in Tasmania is not yet complete and the Geocentric Datum of Australia 1994 (GDA1994) remains in use.

Once the proposal is advertised for public comment, copies of the EIS must be made available to the public on request, in either printed or electronic format. The EIS will also be available on the EPA website.

False or misleading statements

Under section 43A of the EMPC Act, 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.

Contents of the EIS

1. Executive Summary

An executive summary of the EIS should be included to provide a clear and concise overview of the proposal, its environmental implications, the approvals process, and the function of the EIS in the context of the approvals process.

For a larger EIS, it is recommended that the executive summary be written as a stand-alone document, able to be provided on request to interested parties who may not wish to read or acquire the full EIS.

2. Table of Contents

A table of the contents of the report with reference to the relevant page numbers. It should also contain a list of figures and tables.

3. List of Abbreviations

A list of the abbreviations, acronyms and, if relevant, a glossary of terms used in the EIS.

Key Issues to be addressed

While the EIS should evaluate all potential effects of the proposal, it should be principally focused on the key issues identified in the table below. The level of detail provided on other issues should be appropriate to the level of significance of that issue for the proposal. Variables or assumptions made in the assessment must be clearly stated and discussed. The extent to which the limitations, if any, of available information which may influence the conclusions of the environmental assessment should be discussed.

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

Key Issues
Noise impacts on surrounding sensitive receptors
Dust impacts on surrounding sensitive receptors
Impact on threatened species and biodiversity
Impacts on local surface water quality and flow

3.1 Other matters deemed to be significant or matters that emerge as significant from environmental studies, public comments or otherwise during preparation of the EIS, must be included in the assessment.

The following guidelines may be of use in preparing the EIS:

- Commonwealth of Australia, 2010, *Survey Guidelines for Australia’s Threatened Birds*
- Commonwealth of Australia, 2011, *Survey Guidelines for Australia’s Threatened Mammals*
- Commonwealth of Australia, 2013, *EPBC Act Policy Statement 1.1 Significant Impact Guidelines – Matters of National Environmental Significance*
- Commonwealth of Australia, 2017, *EPBC Act Policy Statement 3.21 Industry Guidelines for Avoiding, Assessing and Mitigating Impacts on EPBC Act Listed Migratory and Shorebird Species*

All discussions and conclusions should include a full justification based on best available information, including relevant conservation advice, recovery plans, threat abatement plans and guidance documents, if applicable. Commonwealth documents regarding listed threatened species and ecological communities and listed migratory species can be found at: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

Information to be provided

I. Introduction

Provide information on the following:

- Title of the proposal.
- Proponent details:
 - Name of proponent (legal entity);
 - Name of proponent (trading name);
 - Registered address of proponent;
 - Postal address of proponent;
 - ABN number;
 - ACN number (where relevant).
- Contact person's details:
 - Name;
 - Telephone;
 - Email address.
- Activity operator details (if the operator will be a different entity to the proponent);
- General background information on the proponent, such as relevant development and operational experience;
- General background information on the proposal, including location, objectives, current status and an overview of the principal components;
- Brief description of anticipated establishment costs, likely markets for the product, and the possibilities for future expansion;
- Examination of how the proposal relates to any other approved or proposed projects in the region;
- Applicable environmental legislation, standards, and guidelines (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;
- Details of any proceedings against the proponent under a Commonwealth, State or Territory environmental law;
- Details of the proponent's environmental policy and planning framework.

2. Proposal Description

Where the proposal is to be subject to a permit application under the LUPA Act, the proposal description and specification of the site must be consistent with the intended or current permit

application. Any works or activity that are for the purpose of the proposal (e.g., access works) must be included.

Provide a full description of the proposal, including construction, commissioning, operational and decommissioning phases, as well as any infrastructure and off-site ancillary facilities required for the proposal.

Notwithstanding the requirements below, the proposal description should contain sufficient information about the proposal to allow a full assessment of the environmental impacts.

2.1 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 the LUPA Act. Information requirements will vary depending on how the Land is defined.

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 136529/1;
- Lease boundaries (Mining Lease, Crown Lease, Marine Farming Lease), e.g., Mining Lease 9011P/M.

Other boundary

If the Land is not delineated by an existing defined boundary, 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 grid coordinates;
- Provide the boundary of the Land in a geospatial vector format (shapefile or DXF).

2.2 General location map

Provide a general location map (e.g., 1:25,000 scale or better as appropriate) identifying the following features:

- The location of the proposal site;
- Topographical features, aspect and direction of drainage;
- Geological mapping and sections of the proposal footprint;
- Road access to and from the site;
- Location of water features (including ephemeral water bodies);
- The distance(s) to any nearby sensitive uses (such as residences);
- Electricity transmission lines / substations;
- The land boundary;

- Surrounding land tenure;
- Surrounding land use (identify areas of conservation or recreational significance);
- Surrounding land zoning in the local government planning scheme;
- Locations of historical workings.

2.3 Site plan

Site plans are required which identify:

- The proposal site including the project components listed in Section 2.5;
- The layout and total footprint of construction activities listed in Section 2.6;
- Boundary information consistent with any intended permit application under the LUPA Act including coordinates of the Land.

2.4 Timing

Timetable for proposal including anticipated month / years, including best and most likely case of:

- Start of construction;
- Start of commissioning;
- Start of operation;
- Start of closure;
- Completion of closure.

2.5 Key components

Provide detailed description of the following key physical components of the proposal, including function, composition, size, footprint area, capacity, operational life, technical and performance requirements, inter-relationships accompanied by clear plans and sections as necessary to adequately describe the proposal and its environmental impacts.

This should clearly distinguish between:

- Existing components that will receive more use due to the increase in activity;
- Existing components that will be expanded or otherwise changed due to the increase in activity;
- New components introduced due to the increase in activity.

2.5.1 Quarry Pits

For each of the quarry pits (dolerite pit, red gravel pit, white rock pit), describe:

- Location, layout, working area boundaries;
- Any earthworks, bunds, screening, buffer zones;
- A description (in geological terms) of the resource and any associated waste rock or overburden;

- Any proposed stockpiles for temporarily storing product and waste rock.
- Quarry plan presenting a sequential description of quarrying methods including:
 - Indicative timeframes for appropriate stages in the life of the quarry and at closure;
 - Drilling and blasting activities, including the measures required to remain within permitted limits for noise and vibration;
 - Extraction methods, direction of works;
 - Pit design bench heights, ramping;
 - How the proposal will minimise the area of disturbance and allow for progressive rehabilitation of the site (cross-referencing rehabilitation description – see Section 7);
 - Plans and sections of pits for appropriate stages in the life of the quarry and at closure.

2.5.2 Processing

Description of all areas, plant, and buildings associated with processing the material to be quarried as part of the expansion, clearly stating what is existing and what, if any, new facilities, will be installed. This should include:

- Crushing and screening plant;
- Equipment for material handling;
- Material storage facilities.

2.5.3 Supporting infrastructure

Description of any on site facilities supporting the expanded quarrying, clearly stating what is existing and what, if any, new facilities, will be installed. This should include:

- Offices, amenities, carparks;
- Workshop facilities including type of maintenance activities to be carried out;
- Facilities for managing solid waste;
- Facilities for vehicle fuelling and fuel storage;
- Hazardous material storage;
- Ground profile (cuttings, earthworks, surfaces, hardstands);
- Facilities for washing vehicles and large equipment;
- Facilities for the management of solid waste (other than waste rock);
- Power generation, power supply corridors and (if applicable) means of site generation;
- Facilities for storing fuel and other hazardous materials, including capacities;
- Pollution monitoring and control instrumentation and infrastructure;
- Communication, telemetry and control systems (as relevant to environmental management);
- Power source, power supply corridors and (if applicable) means of site generation;

- Site lighting;
- Any on-site facilities not listed above.

2.5.4 Access roads

- Haul roads, access roads and associated infrastructure;
- Internal access and haul roads (size, surface, drainage);
- Works to existing roads and intersections.

2.5.5 Water management

Physical components

- Infrastructure to collect, transfer and treat other surface water runoff including drains, cut offs, retention basins and runoff discharge points, presented on a plan of site;
- Details of diversions or other works to existing creeks, drainage lines or water bodies;
- Details of design for infrastructure to collect and treat any effluent or wastewater including:
- Description of the function, design criteria and anticipated performance in removing contaminants;
- Description of any active measures to control pollution including bunding and sediment management structures;
- Infrastructure to collect, transfer and store water for use by the proposal, e.g., for dust suppression or firefighting;
- Any surface or groundwater abstractions;
- Location and design of all wastewater discharge points.

Water balance

A quantitative water balance for the proposal (for low, average, and high rainfall scenarios) including:

- In flows to the proposal (such as surface water, abstracted water, quarry pit water/ intersected groundwater, and precipitation);
- Out flows from the proposal (such as evaporation, stormwater, groundwater infiltration, point source and diffuse or point emissions of wastewater) including:
 - Site runoff (subject to contamination by contact with the proposal);
 - Quarry pit water;
 - Drainage from process or refuelling area hardstands;
 - Domestic wastewater;
 - Any other wastewater.
- Water use requirements;
- Water storage, re-use and recycling;

- Effect of changing precipitation and evaporation rates due to climate change during operation of the proposal and after closure based on appropriate IPCC climate change scenarios (see Section 7, in relation to closure assumptions).

2.6 Construction

Describe the key activities required to construct the proposal, including (but not limited to):

- A plan of all potential areas that may be disturbed during construction, including any borrow areas;
- A step-by-step description and timetable for significant construction activities including:
 - Diversions or other works to existing utilities or infrastructure;
 - Temporary or permanent removal of vegetation;
 - Stockpiling of soil, vegetation and other materials;
 - Proposed use of cleared vegetation, such as timber sale, habitat creation, closure material;
 - Ground preparation and methods for construction;
 - Building construction and equipment installation.
- Temporary construction infrastructure including site offices, temporary working areas, construction access roads, laydown areas, and temporary stockpiles, including maps showing locations;
- Estimates of the quantities, types and sources of raw materials required for construction including proposed use of materials to be sourced on site;
- Any proposed borrow areas for construction materials including location, material type, properties and suitability for proposed use, estimated reserves, method of extraction and conveyance to site;
- Systems to manage runoff during construction including details of drainage control measures such as cut-off drains, sediment settling ponds discharge points, monitoring facilities;
- Type, number and capacity of construction equipment required on-site;
- Number, type, origin, destination, timing and routes for construction vehicle movements, including a breakdown for over-dimension and heavy vehicles;
- Proposed hours per day and days per week of construction activities;
- Areas to be rehabilitated following temporary use during construction and description of proposed rehabilitation measures;
- Areas from which construction activity will be excluded and how these will be demarcated.

2.7 Operation

Describe the operation of the proposal, including (but not limited to):

2.7.1 General operational details

- Operational life of the quarry;
- Hours of operation (hours per day and days per week);
- Estimated daily maximum, daily average, and annual production rates, including for:
 - Excavated rock;
 - Product (by type);
 - Overburden or any waste rock.
- Raw materials (type, rate of consumption);
- Wastes generated (other than waste rock) (types, rate of production, proposed management);
- Water demand;
- Energy use;
- Maintenance requirements (e.g. frequency of maintenance activities, equipment access, shutdowns, etc.) and design life.

2.7.2 Vehicles and mobile plant

- Type and quantity of vehicles and mobile plant on site;
- Overall fuel demand, fuel storage capacity, and refueling arrangements;
- Any proposed bus services for personnel.
- Type, route, daily vehicle movements and hours of operation for:
 - Internal haulage;
 - External product delivery;
 - Staff vehicles.

2.7.3 Personnel

- The number of workers identified as operational personnel, sources of labour, transport of workers to and from the site, accommodation, and support servicing requirements.

3. Project Rationale and Alternatives

3.1 Project rationale

Describe the rationale for the proposal and explain the consequences of it not proceeding.

3.2 Project alternatives

Describe any alternative means to achieve the aims of the proposal that were considered during its development. Alternatives should have regard to best practice environmental management, including those measures listed under section 4(2) of the EMPC Act.

4. Public Consultation

Provide details of the nature and results of public consultation undertaken by the proponent during project planning and preparation of the EIS, as well as any proposals for further public consultation during and beyond project implementation.

Early community engagement often leads to better outcomes for all and is strongly encouraged. The Board has produced a guide to community engagement, available at:

<http://epa.tas.gov.au/assessment/assessment-process/guidance-documents>.

5. The Existing Environment

Describe the proposed site location and provide an overview of the existing environment, which may be affected by construction, and operation of the proposal, including areas associated with any ancillary activities.

Include details of salient features of the existing environment and, where appropriate, include maps, plans, photographs, diagrams, or other descriptive detail.

The following details should be included.

5.1 Planning aspects

Provide a summary of the planning aspects of the proposal and proposal site, including:

- If a permit is required for the proposal under the LUPA Act provide:
 - Use Class of the proposed activity under the applicable Planning Scheme;
 - Permissibility of the activity under the applicable Planning Scheme;
- Information on land tenure and property boundaries on which the proposal is located, with certificate of title details;
- Land zonings for the proposal footprint and surrounding areas;
- Any rights of way, easements and covenants affecting the proposal footprint;
- Land use and planning history of the proposal footprint, including the potential for site contamination³, present use and any existing buildings and significant structures;
- A description of land use and ownership in the vicinity of the proposal and those areas which may be affected by the proposal:
 - The location and nature of industrial facilities;
 - Any sensitive uses⁴ or residential zones within applicable attenuation 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 potentially affected by the proposal, which have been or are likely to be granted approval under the local planning scheme, should also be considered.

5.2 Environmental aspects

Avoiding unnecessary repetition with the more detailed 'Existing conditions' descriptions in Section 6, provide a summary of the environmental aspects of the proposal site, including:

- General physical characteristics of the proposal footprint and surrounding area;

³ Information on potentially contaminating activities and contaminated site assessment can be found at <http://epa.tas.gov.au/regulation/contaminated-sites>.

⁴ 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.'

- Natural processes of importance for maintenance of the existing environment (e.g., fire, flooding, etc);
- Any existing conservation reserves located on or within 500 metres of the proposal footprint;
- The landscape, including topography, water features, geology and soils;
- The climate, including wind, precipitation and temperature;
- Any high-quality wilderness areas identified in the *Tasmanian Regional Forest Agreement* in the vicinity of the proposal;
- 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 LIST⁵ and the Natural Values Atlas⁶;
- Vulnerability of the proposal footprint to natural hazards (e.g., flooding, seismic activity, fire, landslips, or strong winds);
- Any available ambient monitoring results in the vicinity of the proposed development (in tabular or graphical form). The results may be summarised (e.g., as annual averages) if the summary will provide adequate information.

5.3 Socio-economic aspects

Briefly describe the existing social and economic environment that may be affected by the proposal, which may include information on the following:

- A summary of the social or demographic characteristics of the population living in the vicinity of the proposal footprint, 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.

⁵ See www.thelist.tas.gov.au.

⁶ See <https://www.naturalvaluesatlas.tas.gov.au>.

6. Potential Impacts and their Management

Guide to preparing this section

While some details of the proposal may not be finalised at the time the EIS is submitted, the information in the document should be as up to date as possible. Where information is unavailable or details have not yet been finalised, estimates and the range of alternative options should be provided. However, sufficient technical detail must be provided to enable an appropriate level of assessment. For each potential impact the following should be discussed.

Existing conditions

Outline the existing conditions relevant to the impact. In the case of a proposal which involves expansion or redevelopment of an existing activity, a summary of public complaints received in recent years and a discussion of the operator's response and how this may affect the current proposal.

Performance requirements

Identify the environmental performance requirements to be achieved for each environmental impact and provide evidence to demonstrate that these can be complied with. These may be standards or requirements specified in legislation, codes of practice, state policies, national guidelines or as determined by agreement with the assessing agencies. Industry best practice standards should be referred to where appropriate. **Unsupported assertions that performance requirements will be achieved will not be considered adequate.**

Potential impacts

Outline the potential environmental, social and economic impacts of the proposal (positive and negative) through all stages, including construction, operation and closure, in the absence of special control measures. Any foreseeable variations in impacts during the start-up and operational phases should be identified. Include an analysis of the significance of the relevant impacts.

The level of detail provided on each issue should be appropriate to the level of significance of that environmental issue to the proposal.

The evaluation of potential impacts should identify **plausible worst- case consequences**, the vulnerability of the affected environment to the potential impacts, and the reversibility of the impacts. Potential cumulative impacts of this proposal in light of other activities underway or approved also need to be addressed. Interactions between biophysical, socio-economic and cultural impacts should be identified.

Predictions and evaluations of impacts should be based on scientifically supportable data (for existing operations this should include the results of monitoring of current emissions). The methodologies used or relied on should be referenced, together with the relevant research and investigations supporting them. Assumptions, simplifications and scientific judgements should be stated clearly, and the nature and magnitude of uncertainties should be clearly defined. Where relevant, the choice of a particular methodology over alternatives should be explained. Where impacts are not quantifiable, they should be adequately described.

Where positive benefits are claimed it will generally be appropriate to explain what measures are to be taken to ensure that those positive outcomes are realised and sustained.

Avoidance and mitigation measures

Describe the measures proposed to avoid or mitigate potential adverse impacts (having regard to best practice environmental management as defined in EMPCA) in order to achieve the environmental performance requirements (such as through pollution control technology or management practices). The extent to which they will overcome the anticipated impacts should be specified. Where there are clear, alternative avoidance or mitigation measures for a particular adverse environmental impact, the alternatives should be reviewed and the preferred option justified.

Where pollution control equipment and/or treatment processes are key factors in achieving satisfactory environmental performance, contingencies in the event of breakdown or malfunction of the equipment or processes should be discussed. It should be demonstrated that the maintenance of pollution control equipment can be provided for without causing performance requirements to be exceeded.

Where measures to control environmental impacts are necessary, but will not be undertaken by the proponent, the means by which the proponent will ensure that the necessary measures are implemented should be identified (e.g. lease conditions, trade waste agreement, contractual arrangement or other binding third party commitment). **Mitigation measures over which the proponent has no control will generally not be considered adequate.**

Specific measures can be presented in the form of a management plan, such as an Environmental Management Plan (EMP) that sets out the framework for management, mitigation and monitoring of relevant impacts of the action, including any provisions for independent environmental auditing. The EMP needs to address the project phases (construction, operation, decommission) separately.

Assessment of net impacts

An assessment of the overall impacts of the development on the environment after allowing for the implementation of proposed avoidance and mitigation measures. This should include an evaluation of the significance of impacts, the potential for emissions to cause environmental and health impacts and comparison with current environmental conditions (for existing activities) and with state, national and international regulations and standards. Any net benefits likely to result from the proposal should be identified.

Discuss the impacts of the proposal in terms of the constraints or benefits it may place on the current or future use of land within the proposal site and surrounding area as a result of environmental impacts or emissions, including impacts on other uses, particularly sensitive uses.

Offsetting unavoidable adverse impacts

If adverse residual environmental impacts from the proposal are considered unavoidable despite the adoption of best practice environmental management avoidance and mitigation measures, then proposals to offset such impacts should be detailed. For example, if the loss of conservation values, community assets or amenities is considered unavoidable, measures to compensate for those losses should be proposed in proportion to the loss. Any offset actions proposed must be demonstrated to be 'real' actions. That is, **the offset actions must have a measurable and relevant benefit which would otherwise not have occurred.**

Offsetting significant residual impacts to MNES

Describe the residual impacts on MNES that are likely to occur as a result of the proposed action in its entirety, after proposed avoidance and/or mitigation measures are considered. If applicable,

this should include the reasons why avoidance or mitigation of impacts cannot be reasonably achieved.

If residual impacts are proposed to be offset, provide an offset package to compensate for residual impacts to MNES. This should consist of an offset proposal and key commitments and management actions for delivering and implementing the proposed offset (e.g. an Offset Management Plan). Any offset management plan should be prepared as a separate document and attached as an appendix to the documentation.

Offsets for heritage values should improve the integrity and resilience of the heritage values involved. Offsets must deliver an overall conservation outcome that improves or maintains the ongoing viability of the species and ecological communities, as compared to what is likely to have occurred if neither the action nor the offset had taken place. The proposed offset must meet the requirements of the Commonwealth *EPBCA Environmental Offsets Policy* (October 2012) available at: www.dcceew.gov.au/environment/epbc/publications/epbc-act-environmental-offsets-policy.

The *Offset Assessment Guide* can be used as a guide to calculate the area of offset required to adequately compensate for the residual impacts of the project, it is available at: www.dcceew.gov.au/environment/epbc/publications/epbc-act-environmental-offsets-policy. The offset proposal will be assessed based on the information provided in the offsets proposal using the offsets assessment guide.

Offsets required by the State can contribute to offset obligations under EPBCA if those offsets also meet the requirements of the *EPBCA Environmental Offsets Policy*.

6.1 Key issue 1 - Noise emissions

Scope

For construction, operation and closure assess potential noise and vibration impacts, including:

- Noise and vibration impacts from activities at quarry locations (including drilling, blasting, excavation), access roads, rock breaking and processing plants, materials handling and storage, and off-site traffic on 'noise sensitive premises'⁷;
- Noise and vibration impacts from off-site vehicle movements on sensitive receptors³;
- Noise impacts on sensitive ecological receptors (this may be incorporated into the assessment described in Section 6.4);
- Air over-pressure and ground vibration impacts on sensitive receptors³ due to blasting.

Method

The noise assessment must include:

- Identify, describe and map all sensitive receptors potentially affected by noise and vibration from the proposal (see scope above);
- Identify all major fixed and mobile sources of noise and vibrations as the proposal evolves over the quarry's operating lifetime and provide:
 - Description, mapped location and estimated sound power levels;
 - Expected number of blasts per year and the notional blast plan;
 - Daily duration / frequency of emissions;
 - Route and proposed changes in traffic flows for both day and night times;
 - Measures that will be employed to control emissions.
- Describe local environmental conditions that would influence noise impacts, including:
 - Wind speed and direction;
 - Atmospheric conditions;
 - Terrain and topography.
- Local ambient and background noise measurement based on 7-day ambient noise monitoring for daytime, evening and night-time periods, at locations representative of sensitive receptors to be included in the noise model (see below) including those to the:
 - North (Leslie Vale including McKenzies Road and Leslie Road)
 - West (Sandfly)
 - Southwest (Sandfly Road and Allens Rivulet)

⁷ '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.

- East (Kingston outskirts including Jamiesons Road).
- Results of noise modelling of proposed activities to predict the 30, 35, 40 and 45 dB(A) noise level contours for normal and reasonable worst-case scenarios for operating activities and meteorological conditions, which should include noise generation from additional vehicle traffic on affected roads;
- Results of ground vibration modelling of proposed activities to predict peak particle velocity contours out to 1mm/s;
- Results of airblast overpressure modelling of proposed activities to predict dB(lin) level contours out to 100 dB(lin). This should include specific modelling for blasting at the White rock quarry;
- Describe the impacts from noise and vibration at sensitive receptors taking into account the predicted levels and changes in noise characteristics such as tonal components, increases in noise level, the time varying nature of emissions (e.g., modulation, impulsive or intermittent noise) and the temporal span of the noise emissions;
- Describe the potential impacts on structures from vibration.
- Assess potential for impacts from noise and vibration on sensitive receptors based on criteria set under the Environment Protection Policy (Noise) 2009 and elsewhere as appropriate.

It is strongly recommended that the scope and method of noise monitoring and modelling are discussed with the EPA's Noise Specialist prior to the assessment.

Legislative and policy requirements – noise emissions

Consideration should be given to the requirements of the Tasmanian *Environment Protection Policy (Noise) 2009*.⁸ Noise monitoring and modelling should be conducted by a suitably experienced and qualified specialist and undertaken according to the Noise Measurement Procedures Manual.⁹

6.2 Key issue 2 – Air quality

Scope

For the proposed construction and operation activities of the quarry, provide an assessment of the potential impacts of the proposal on local air quality and provide evidence that the increased activity would not create environmental nuisance or harm. This assessment must include the aspects of air pollution and dust control described in Section 7.5 of the Quarry Code of Practice.

Method

The air quality assessment must:

- Identify, describe, and map all sensitive receptors that could potentially be affected by fugitive dust and particulate matter emissions from the increased activity at the quarry, especially during unfavorable meteorological conditions.

⁸ See [http://epa.tas.gov.au/policy/statutory-policies/state-policies-and-environment-protection-policies/environment-protection-policy-\(noise\)-2009](http://epa.tas.gov.au/policy/statutory-policies/state-policies-and-environment-protection-policies/environment-protection-policy-(noise)-2009).

⁹ *Noise Measurement Procedures Manual Second Edition July 2008* Environment Division Department of Environment, Parks, Heritage and the Arts https://epa.tas.gov.au/Documents/Noise_Measurement_Procedures_Manual_2008.pdf

- Identify (on a site map) and characterise all possible sources of dust emissions from the various extraction areas as the proposal evolves over the lifetime of the quarry. The sources include but are not limited to dust generated from disturbed topsoil/earthworks, stockpiles, excavating, drilling/blasting, crushing, screening, materials handling, loading, and traffic movements on and off site.
- Provide details of the materials handled and equipment used on the site. Provide the location of the equipment at each proposed stage.
- For the proposal stages provide a detailed emission inventory. For each source, this should include:
 - Activity rates (number of hours per annum), frequency of operation, throughput of material, silt content of material, vehicle speed, vehicle mass (i.e., any parameter required to calculate emission rates).
 - Composition of emitted material (Total Suspended Particles (TSP), particulate matter (PM10 and PM2.5)) and conservative emission rates for each emitted pollutant.
 - Average emission rates calculated with and without emission controls, information about the proposed control measures and anticipated resultant emission reduction.
- For the proposal stages, undertake atmospheric dispersion modelling of dust (TSP, dust deposition) and particulate matter (PM10 and PM2.5) emissions from the increased activity on the site. Modelling should be conducted by a suitably experienced and qualified specialist in accordance with the EPA's Atmospheric Dispersion Modelling Guidelines available from Atmospheric Dispersion Modelling Guidelines.¹⁰
- It is strongly recommended that the scope and method of 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.
- Discuss and assess the potential impact of fugitive dust and particulate matter emissions from the proposed increased activity (at all stages) on the environment and the likelihood for the activity to cause environmental nuisance or harm at or beyond the site boundary.
- Describe measures that will be employed to minimise dust emissions from the site. These measures 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. Include an estimate of water requirements and discussion of the ongoing provision of an adequate water supply.
- Given the proximity of a significant population in the vicinity of the proposed development, and the presence of the nearest residence within 310 m from the boundary of the proposed development, consider the installation, at an appropriate location on the land, of a meteorological monitoring station capable of measuring and recording wind speed, wind direction, and rainfall to inform the application of mitigation measures during unfavourable weather conditions, and assist in complaint-response and investigation.

¹⁰ <https://epa.tas.gov.au/Documents/Atmospheric%20Dispersion%20Modelling%20Guidelines.pdf>

- Provide information about any complaints received in the last five (5) years related to dust emissions from the operation of the current activity.
- Provide information about existing and intended monitoring of dust and/or particulate matter at the site.

Legislative and policy requirements – air quality

Demonstrate that the assessment is consistent with the requirements of the Tasmanian Environment Protection Policy (Air Quality) 2004¹¹ (Air Quality EPP) and any supplementary documents, including the Board Statement Jan 2022.¹²

Given that the Air Quality EPP 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 (NSW) published by the NSW EPA.¹³

6.3 Key issue 3 – Biodiversity and natural values

6.3.1 Scope

For the construction, operation, and rehabilitation phases, discuss the potential impacts of the proposed quarry and associated activities on species and habitats, with particular reference to those species listed under the relevant Schedules of the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* and the Tasmanian *Threatened Species Protection Act 1995* (TSPA) as described in Table I.

Assessments relating to EPBC Act listed threatened species and ecological communities must address the relevant recovery plans, threat abatement plans and approved conservation advice.

Table I: Summary of threatened flora and fauna species and vegetation communities

Fauna Species	Common name	EPBCA	TSPA
<i>Aquila audax subsp. fleayi</i>	Tasmanian wedge-tailed eagle	endangered	endangered
<i>Dasyurus viverrinus</i>	eastern quoll	endangered	
<i>Dasyurus maculatus subsp. maculatus</i>	spotted-tailed quoll	vulnerable	rare
<i>Lathamus discolor</i>	swift parrot	critically endangered	endangered
<i>Perameles gunnii</i>	eastern barred bandicoot	vulnerable	
<i>Sarcophilus harrisii</i>	Tasmanian devil	endangered	endangered
<i>Tyto novaehollandiae subsp. castanops</i>	masked owl (Tasmanian)	vulnerable	endangered

¹¹ See [Tasmanian Environment Protection Policy \(Air Quality\) 2004](#)

¹² See [EPA Board Statement - January 2022 - Update to Air Pollutant Design Criteria used in the EIA Process](#).

¹³ See [Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales](#). In the 2022 revision, see Table 7.1 on page 27.

Littoria raniformis	green and gold frog	vulnerable	vulnerable
Ammoniropa vigens	ammonite pinwheel snail	critically endangered	endangered
Accipiter novaehollandiae	grey goshawk	not listed	endangered
Haliaeetus leucogaster	white-bellied sea-eagle	not listed	vulnerable
Lissotes menalcas	Mount Mangana stag beetle	not listed	vulnerable
Flora Species	Common name	EPBCA	TPSA
Epacris virgata	Pretty heath	endangered	vulnerable
Vegetation community	Common name	EPBCA	NCA
<i>Eucalyptus ovata</i> forest and woodland	Black gum forest	critically endangered	threatened

6.3.2 Threatened avian fauna

Discuss the short term and long-term relevant impacts of the proposed quarry expansion, operation and staged rehabilitation on threatened fauna including:

- A description of the Matters of National Environmental Significance (MNES) that are within the development footprint and surrounding areas, including the Tasmanian wedge-tailed eagle, swift parrot, and masked owl.
- Information about the identification of threatened avian fauna including survey data and historical records. Details of surveys undertaken, including survey effort, timing and an assessment of the adequacy of the surveys. Any new records of threatened avian fauna recorded during surveys and data from nest searching and productivity assessment should be submitted to the Natural Values Atlas (NVA) within three months following surveys.
- Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.
- Impacts on species and habitats, with particular reference to migratory species and habitats, including those listed under the relevant Schedules of the Commonwealth EPBC Act and the Tasmanian TSP Act.
- Where impacts cannot be avoided, proposed measures to mitigate and/or compensate adverse impacts on biodiversity and nature conservation values must be presented.

Tasmanian wedge-tailed eagle and white-bellied sea eagles

Targeted utilisation surveys must be carried out across the proposed project footprint to determine utilisation of the area by eagle species.

There are 5 known eagle nests within close proximity of the proposed development. Nest searches should be undertaken to a distance of 1 km from the proposed development and operational areas, to better understand the use of the project site by eagles and the potential impact upon them.

Nest searches must be conducted outside the eagle breeding season (July-January inclusive), in accordance with the Commonwealth's Survey Guidelines for Australia's Threatened Birds¹⁴ and the Forest Practice's Authority's Technical Note 1 on eagle nest searches and management¹⁵ (including any updates the FPA may make during the development of the EIS). The results should be used to inform development activities and the design of the layout, and be provided in the EIS.

Masked owl

A targeted survey for masked owl habitat potentially affected by the proposal and details of how any impacts will be managed is required. Masked owl habitat is characterised by mature trees with large hollows ($\geq 15\text{cm}$ entrance diameter). A combination of survey techniques is to be implemented to ensure no potential nest is overlooked. These include:

- An audio recording survey of the area.
- For all potential nest trees, checking for signs of nesting (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.
- Broadcast (playback) surveys as advised for related species in the *Survey Guidelines for Australia's Threatened Birds*.
- Where necessary, additional survey methods may include use of cameras, manual observation at sunset and/or song meters. Note that that lack of vocalisation from call back cannot be taken as proof of absence (as masked owls can be silent even when known to be present).

Swift parrot

A targeted survey for known and potential foraging and nesting swift parrot habitat potentially affected by the proposal is required. Swift parrot foraging habitat includes Tasmanian blue gum (*Eucalyptus globulus*), black gums (*Eucalyptus ovata*) and any eucalypt forest containing hollow-bearing trees (nesting habitat). Known habitat is any habitat in or near habitat where the species has been recorded and potential habitat are areas with appropriate habitat characteristics and within the species potential range.¹⁶

Detail how any impacts that cannot be avoided will be managed.

Grey goshawk

Given an active grey goshawk nest was observed during eagle nest surveys, it is recommended that the EIS address the potential for impacts to this species and how these will be managed, including the consideration of vegetation buffers.

¹⁴ See [Survey guidelines for Australia's threatened birds](#).

¹⁵ See [Fauna Technical Note No. 1: Eagle nest searching, activity checking and nest management](#).

¹⁶ For more information see [Swift Parrot - Threatened Species Link](#).

Key legislative and policy requirements – threatened avian fauna

Regard should be given to Australia’s Strategy for Nature 2019-2030¹⁷ and the Threatened Species Strategy for Tasmania.¹⁸

Surveys must be undertaken in accordance with NRE’s *Guidelines for Natural Values Surveys related to Development Proposals*¹⁹ the Commonwealth’s Survey Guidelines for Australia’s Threatened Birds,²⁰ and any other relevant guidelines. All surveys should refer to the relevant survey guidelines, and include an assessment of the adequacy and appropriateness of the surveys with respect to these guidelines.²¹

6.3.3 Threatened terrestrial fauna

Discuss the impacts of the proposed quarry expansion on threatened fauna species, including the species listed in Table I. The EIS must include:

- A description of the MNES that are within the proposal area and surrounding areas.
- Information about the identification of threatened terrestrial fauna including survey data and historical records. Details of surveys undertaken, including survey effort, timing and an assessment of the adequacy of the surveys. Reference should be made to potential impacts of vehicle movements on wildlife as a result of the proposal, and to mitigation measures for any wildlife priority areas.
- Impacts on species and habitats with particular reference to rare and threatened species and habitats, including those listed under the relevant Schedules of the Commonwealth EPBC Act and the Tasmanian TSP Act.
- Information detailing known/recorded populations and known or potential habitat, including habitat in the area surrounding the proposed action.
- The potential for migration and/or introduction of pests and animal diseases as a result of the proposal.
- Reference must be made to potential impacts of vehicle movements on wildlife as a result of the proposal, and to mitigation measures for any wildlife priority areas.
- Where impacts cannot be avoided, proposed measures to mitigate and/or compensate adverse impacts on biodiversity and nature conservation values must be presented.

Surveys must be undertaken in accordance with NRE’s Guidelines for Natural Values Surveys related to Development Proposals²² and the Commonwealth’s Survey Guidelines for Australia’s Threatened Mammals,²³ and must be in accordance with specific Commonwealth guidelines for EPBC Act listed species.

¹⁷ See [Australia's Strategy for Nature 2019-2030](#).

¹⁸ See [Threatened Species Strategy for Tasmania](#).

¹⁹ See [Guidelines for Natural Values Surveys related to Development Proposals](#).

²⁰ See [Survey guidelines for Australia's threatened birds](#).

²¹ Documents regarding listed threatened and migratory species can be found at: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

²² See [Guidelines for Natural Values Surveys related to Development Proposals](#).

²³ See [Survey Guidelines for Australia's threatened mammals](#).

Tasmanian devils, spotted-tailed quolls and eastern quolls

Surveys to inform potential impacts on the Tasmanian Devil must be carried out in accordance with the State's *Survey guidelines and management advice for development proposals that may impact on the Tasmanian Devil (Sarcophilus harrisii)*.²⁴

In the absence of specific guidelines for quolls, the Devil guidelines can be applied, because they have similar habitat requirements and are susceptible to a similar range of threats.

Surveys, assessment and proposed management measures must address all potential impacts to the species, including vegetation clearance/ground disturbance, increased habitat fragmentation, impacts to dens, changes to food resources, roadkill management, changes in land use and changes to fire regimes. An assessment of impacts to all suitable habitat for Tasmanian devils and quolls is required, including areas of denning, foraging, and other uses.

Suitable habitat is required to be mapped in relation to the position of the proposed expansion and associated infrastructure to assist in demonstrating how the site layout minimises impacts on devils and quolls.

In relation to assessing roadkill risk, the EIS must include an analysis of the expected vehicle movements, including estimated number and frequency of vehicles and their hours of operation, during both expansion and operational phases, and a comparison made with existing vehicle movements. The EIS should also include a summary (e.g., table) showing what new roads/tracks are proposed if any, and how much distance they cover.

The EIS must include an assessment of the potential for roadkill during both expansion and operational phases and provide mitigation measures that will address this risk. Identification of high-risk roadkill areas may help to inform mitigation considerations for the Tasmanian devil and quolls.

If, after avoidance and mitigation measures are applied, there are likely to be residual impacts to the species, these must be identified.

Mount Mangana stag beetle

The proposed quarry expansion footprint is within the known range of the Mount Mangana stage beetle. A targeted survey for the stag beetle to determine the potential presence of this species in areas identified as suitable habitat is required. The EIS must include an assessment of the potential impacts and detail mitigation measures.

Aquatic fauna

Changes to water quality from run-off may impact aquatic fauna, including green and gold frogs, listed under the TSP Act and the EPBC Act. This EIS must describe how potential habitat, including small farm dams, and other waterways will be protected from the risk of run-off, including sedimentation. A targeted survey for green and gold frogs is required where there is potential for the species to be directly impacted by the proposed development and use. The assessment of habitat and ecology of watercourse impacts must identify any freshwater ecosystems of High Conservation Management Priority Potential using the Conservation of Freshwater Ecosystem Values (CFEV) database and macro-invertebrate surveys for all streams potentially impacted by the activity, including listed freshwater molluscs.

²⁴ See [Tasmanian Devil Survey Guidelines and Advice](#).

Key legislative and policy requirements – threatened terrestrial fauna

Regard should be given to Australia’s Strategy for Nature 2019-2030²⁵ and the Threatened Species Strategy for Tasmania.²⁶ All surveys should refer to relevant survey guidelines, including an assessment of the adequacy and appropriateness of the surveys with respect to these guidelines.²⁷

6.3.4 Threatened flora and ecological communities

Discuss the impacts of the proposed quarry expansion on native vegetation and ecological communities. The EIS should include:

- A map (or maps) of existing vegetation and type, threatened flora species, and threatened native vegetation communities.
- A description of the MNES that are within the proposal area and surrounding areas.
- Impacts on flora, vegetation communities and habitat, with particular reference to values listed under the Commonwealth EPBC Act, Tasmanian TSP Act and *Nature Conservation Act 2002* (NCA), including *Eucalyptus ovata* forest and woodland (DOV) and Kettering pretty heath *Epacris virgata*.
- Identify and detail the areas of native vegetation and habitat proposed for clearing to accommodate the expansion of the quarry and the impact of any clearing on sites, species or ecological communities of special conservation significance, including any impact on the comprehensive, adequate and representative reserve system identified as part of the Tasmanian RFA, maintenance of forest communities under the Tasmanian Government *Policy for Maintaining a Permanent Native Forest Estate 2017*, and wildlife habitat strips under the *Tasmanian Forest Practices Code 2015* and on non-forest communities.
- The potential for migration and/or introduction of pests, weeds and plant and animal diseases as a result of the proposal.
- Rehabilitation of disturbed areas following the cessation of the activity, including any proposed seed collection and progressive rehabilitation program.
- How potential impacts to threatened flora, communities and habitats will be avoided.
- Where impacts cannot be avoided, proposed measures to mitigate and/or offset adverse impacts on biodiversity and nature conservation values must be presented.
- Any new records of threatened flora recorded during surveys should be submitted to the NVA within three months following surveys.

Threatened flora surveys

Ecological surveys are required to be undertaken in all areas proposed to be impacted by the proposed expansion. Surveys must be conducted at appropriate times of the year to detect threatened flora that may occur in the area (i.e., during the flowering periods of candidate species). Surveys should be done in accordance with State Guidelines for Natural Values Surveys related to Development Proposals.²⁸

²⁵ See [Australia's Strategy for Nature 2019-2030](#).

²⁶ See [Threatened Species Strategy for Tasmania](#).

²⁷ Documents regarding listed threatened and migratory species can be found at: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

²⁸ See [Guidelines for Natural Values Surveys related to Development Proposals](#).

A permit to take will be required under the TSP Act, if “taking” (as defined under the TSP Act) threatened flora (e.g., for the purposes of identification) is necessary.

Threatened vegetation communities

Vegetation community ground surveys and vegetation mapping of the project site is required to be undertaken, to verify the actual distribution and condition of communities listed under the NCA and the EPBC Act.

Any discrepancies between field survey results and the existing TASVEG layer should be submitted directly to the NVA.

Weeds & diseases

The EIS must address the potential for project activities to result in the introduction and/or spread of weeds, pests and diseases. Mapping of weed occurrences should be included in the natural values survey, particularly for areas proposed to be disturbed by the development.

Information must be provided in the EIS regarding the measures that will be taken to minimise the risk associated with weeds and pathogens and to avoid associated potential impacts on threatened flora and fauna.

Legislative and policy requirements

Regard should be given to the Australia’s Biodiversity Conservation Strategy 2010-2030, Natural Heritage Strategy for Tasmania (2013-2030) and the Threatened Species Strategy 2021-2031, *Threatened Species Protection Act 1995* and associated regulations, *Nature Conservation Act 2002* and associated regulations, *Forest Practices Act 1985*, *Forest Practices Regulations 2017*, the Forest Practices Code 2015 and Policy for Maintaining a Permanent Native Forest Estate 2017.

All surveys should refer to relevant survey guidelines, including an assessment of the adequacy and appropriateness of the surveys with respect to these guidelines.²⁹

6.4 Key issue 4 – Surface water

Scope

For construction, operational phases and closure assess any potential impacts of the proposal on surface water (quality and flow), including:

- Potential impacts on the flow and distribution of drainage in the North West Bay River and Browns River catchments, detailing impacts on directly affected tributaries, specifically:
 - Mafeking Creek and sub-tributaries;
 - Minor tributaries on the west side of the lease close to the expanded white rock pit;
 - Boddys Creek and sub-tributaries;
 - Any other watercourse potentially affected by the expansion. This should include impacts due to:
 - Changes to local runoff caused by the proposal (such as stream diversions, cut off drains, site drainage);

²⁹ Documents regarding listed threatened and migratory species can be found at: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>.

- Changes in local runoff from discharge of water pumped from excavated pits;
- Impacts surface water flows from changes to groundwater levels / flows due to quarrying.
- Potential impacts on water quality of affected watercourses from the discharge of wastewater by the proposal, including:
 - Diffuse sediment laden runoff;
 - Diffuse leaching of residues from quarrying activities such as blasting;
 - Discharges from sediment capture and treatment systems;
 - Discharge of groundwater pumped from pits;
 - Point discharges of wastewater from any domestic or industrial wastewater treatment systems (see Section 2.5.5);
 - Any other discharges to the local aquatic receiving environment.
- Potential impact on the condition of aquatic and riparian habitat of affected watercourses, including:
 - Changes to water quality;
 - Diversion of watercourses;
 - Change to flows;
 - Deposition of sediment;
 - Loss or damage to riparian vegetation.

Method

The assessment should include:

- Baseline information, sufficient to determine relevant ANZG 2018 guidance criteria for surface water quality for watercourses affected by the proposal including for Mafeking Creek, North West Bay River upstream and downstream of Mafeking Creek and any other water body likely to be substantially affected by the proposal. This should include:
 - General desktop ecological survey information;
 - Identified Protected Environmental Values (PEVs);
 - Indicative water quality for regional streams;
 - Any relevant historical recorded data;
 - Where proposed discharges have potential for substantial changes in water quality, baseline monitoring covering at least a 12-month period.
- Description of aquatic and riparian ecology (see Section 6.4);
- Mapped location, quantity (frequency, volume, daily and annual flow rates) and composition (including contaminant concentrations and mass loads, turbidity, TSP, acidity, pH for total nitrogen, total ammonia-nitrogen and nitrate-nitrogen) for:

- Proposed discharges from sediment basins (for low flow, average and reasonable worst- case runoff scenarios, and annual probability of capacity exceedance, based with reference to sediment basin designs (see Section 2.5.5);
- Groundwater pumped from pits;
- Other proposed wastewater discharges;
- Appropriate quantitative analysis of the effects of point and diffuse discharges on Mafeking Creek, North West Bay River downstream of Mafeking Creek and any other water body likely to be substantially affected by the proposal;
- Description of potential impacts of the proposal on affected watercourses including comparison against relevant water quality guideline values³⁰;
- Analysis of the cumulative impact of the quarry expansion proposals on the North West Bay River and Browns River (Boddys Creek) immediately downstream of all potentially affected watercourses;
- Identification of measures to mitigate impacts, which should include:
 - Size and design criteria for settling basins and any other wastewater treatment processes design (where necessary cross referencing the proposal description);
 - Detail surface stormwater management systems including design annual exceedance probabilities for drainage infrastructure;
 - Measures to reduce sedimentation at source, such as erosion control and progressive rehabilitation;
 - Other measures to reduce risk of contaminating watercourses;
 - Details of surface water monitoring programs during construction and operation;
 - Details of sewage and wastewater management;
 - Assessment of how differing climate change scenarios (see water balance in Section 2.5.5), would influence potential changes to surface water flows and quality.

Legislative and policy requirements

Define the Protected Environmental Values (PEVs) potentially affected by the proposal. Demonstrate that the proposal is consistent with the objectives and requirements of relevant water management policies and legislation including the *State Policy on Water Quality Management 1997*,³¹ the *State Stormwater Strategy 2010*, and the *Inland Fisheries Act 1995*.

Provide justification for any proposed emission of contaminants to surface water in accordance with the principles under the *State Policy on Water Quality Management 1997* and with application of a ‘weight of evidence approach’ consistent with the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.³² Reference should be made to published or determined (site specific) water quality guideline values for receiving environments.³³

³⁰ Refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).

³¹ See [State Policy on Water Quality Management 1997](#).

³² See [Australian and New Zealand Guidelines for Fresh and Marine Water Quality](#).

³³ For information regarding the water quality management framework and evaluation criteria in Tasmania refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).

6.5 Groundwater

Scope

For construction, operation and closure phases, assess potential impacts of the proposal on groundwater. This should include:

- Potential impacts on the level, flows and recharge of local groundwater from dewatering of the quarry pits and any proposed abstractions for water use, including:
 - Impacts on water resources;
 - Impacts on flows in surface water bodies;
 - Impacts on ecosystems.
- Potential impacts on the quality of groundwater including those due to:
 - Contamination by construction activities;
 - Contamination by operational activities.

Method

The assessment should include, as a minimum:

- Identification and description of groundwater uses and values;
- Description of local groundwater conditions, including:
 - A conceptual groundwater model for regional and local aquifer flows;
 - Estimates of volume and quality of groundwater to be pumped from the quarry pits;
 - Should the proposed works result in substantial changes to groundwater levels / flows, numerical modelling of groundwater to assess the effect of the project on rate and extent of water table drawdown and post closure recovery.
 - A map showing the location of any existing and proposed groundwater abstraction or monitoring bores;
 - Establishment of baseline or reference monitoring sites to assess impact over time;
 - Identification of measures to mitigate impacts.

Information on groundwater in Tasmania is available at: <http://wrt.tas.gov.au/groundwater-info>.

Legislative and policy requirements

Provide justification for any potential impact to groundwater in accordance with the principles in the *State Policy on Water Quality Management 1997*³⁴ and with reference to likely groundwater community values, associated guideline values and guideline values for receiving surface waters.³⁵

6.6 Waste management

³⁴ See [State Policy on Water Quality Management 1997](#).

³⁵ For information regarding the water quality management framework and evaluation criteria in Tasmania refer to [Technical Guidance for Water Quality Objectives \(WQOs\) Setting for Tasmania, August 2020](#).

Scope

Except for waste rock (which is addressed elsewhere) for construction and operation and closure phases, assess the impacts of all types of waste generated by the proposal.

Method

The assessment of waste impacts must describe:

- The source, nature and quantities of all wastes, (liquid, atmospheric or solid) likely to arise, including sludges / residues, by-products from the various processing stages and general refuse;
- All solid waste streams not dealt with elsewhere in these guidelines (including their physical and chemical composition);
- Methods and facilities proposed to collect, store, reuse, treat or dispose of each waste stream should be identified;
- Maintenance requirements for all waste facilities;
- The source, nature, quantity, and method of treatment, storage, and disposal for any controlled wastes.

Legislative and policy requirements

Waste management measures must be in accordance with the following hierarchy of waste management, arranged in decreasing order of desirability:

- avoidance;
- recycling/reclamation;
- re-use;
- treatment to reduce potentially adverse impacts;
- disposal.

Controlled waste is defined in the EMPC Act and associated regulations.³⁶

6.7 Dangerous goods and environmentally hazardous materials

Scope

For construction, operation and closure phases, assess the impacts of the proposal in relation to dangerous goods and environmentally hazardous materials (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).

Method

The assessment of waste impacts must include:

- Description of nature, quantity and storage location of all environmentally hazardous materials including Dangerous Goods (as defined in the Australian Code for the Transport of

³⁶ A non-exhaustive listing of categories of Controlled waste can be found at <http://epa.tas.gov.au/regulation/identify-a-material-as-a-controlled-waste>.

Dangerous Goods by Road and Rail) that will be used during the construction and operation of the proposal;

- A map showing the location of temporary and permanent storage areas for fuels, oils, and other dangerous goods or chemicals;
- The 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;
- Contingency plans for control measure failure, equipment break down or accidentally spills to the environment, including proposed emergency and clean-up measures and notification procedures;
- Identification of any safety management requirements for the protection of human health and safety affecting the community.

Particular reference should be made to the management of fuels, lubricants, processing inputs (reagents etc.) required for equipment during construction, processing and maintenance activities.

6.8 Greenhouse gases and ozone depleting substances

Scope

For construction, operation and closure phases assess the impacts of the proposal in relation to Greenhouse Gases and ozone depleting substances.

Method

The assessment of greenhouse gas and ozone depleting substances must 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 estimate of greenhouse gas emissions, energy production, and energy consumption for a year of operation. Calculators are available on the Australian Government Clean Energy Regulator website;
- Demonstrate that the development will use cost-effective greenhouse 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;
- 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 Action Plan 2017-2021.

Legislative and policy requirements

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* and *Climate Smart Tasmania: A 2020 Climate Change Strategy*. Proponents will need to determine whether they are required to report to the Commonwealth under the *National Greenhouse and Energy Reporting Act 2007*.

6.9 Socio-economic issues

Scope

For construction, operation and closure phases assess the social and economic impacts of the proposal, including:

- Economic costs and benefits of the scheme to the local, regional, state economy;
- Impact on social and community amenity values or facilities including recreational, cultural, health and sporting facilities and services;
- Impacts on community demographics, employment, access to services;
- Impacts on land values, and demand for land and housing.

Method

Details may include the following:

- A qualitative assessment of economic impacts with economic data on the scale of the proposal, including:
 - The direct and indirect jobs, skills and training opportunities arising from the proposal;
 - An estimate of the intended capital expenditure, operational expenditures, revenues, and employment (distinguishing between direct and indirect employment);
 - Any impacts on Local, State and Federal Government rate, taxation and royalty revenues;
 - The impacts on local and State labour markets for both the construction and operational phases of the proposal;
 - The extent to which raw materials, equipment, goods and services will be sourced locally;
 - The impacts on upstream/downstream industries, both locally and for the State;
 - Any publicly funded subsidies or services to be relied upon for the construction or operation of the proposal.
- A qualitative assessment of impacts on the community, including:
 - Any proposals to enhance or provide additional community services or facilities;
 - Impact on ongoing community use of shared infrastructure including Leslie Road;
 - Any changes to demographics, employment, or access to services.
- A qualitative assessment of impacts on land-use including potential loss of alternative future uses of the land.

6.10 Hazard analysis and risk assessment

Provide a preliminary analysis (appropriate to the scale of the proposal) of the potential for major hazard events to occur and proposed safeguards to prevent such an occurrence.

6.11 Infrastructure and off-site ancillary facilities

Discuss 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. For example, upgrading or re-routing of roads, rail or other services required as a result of the proposal, should be detailed.

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.

6.12 Cumulative and interactive impacts

The EIS must assess the potential cumulative impacts of the proposal in combination with other current or future proposed actions within the mining lease, including but not limited to:

- Concrete batching;
- Any other commercial activities within the mining lease.

Specifically, the assessment should describe the cumulative impacts relating to:

- Listed threatened species and vegetation communities, described in Section 6.4;
- Surface water quality impacts;
- Noise and air quality impacts from off-site truck movements.

7. Site Decommissioning and Closure

Provide a detailed closure plan for the quarry, sufficient to demonstrate the feasibility of all measures proposed, which describes:

- Environmentally and ecologically sustainable post-closure land use objectives and criteria;
- Demonstration of how the proponent will meet these objectives, including:
 - Methods for decommissioning and rehabilitation of the site, specifically addressing the approach to decommission each of the project components (see Section 2.5);
 - Description of progressive rehabilitation and how the staged rehabilitation of the quarry will be designed to minimise impacts and hasten recovery of affected natural values;
 - Proposed final landform, drainage and revegetation to support post mining land use, how the long-term stability of post closure landforms will be ensured;
 - Approximate quantities, types and sources of suitable cover materials required for closure including any rock, clay and soils, and any resulting requirements for borrow areas.
- With reference to the requirements of Section 6, an assessment of potential environmental social and economic risks of failure to meet the post-closure land use objectives;
- How the site would be managed to ensure safety and prevent environmental pollution in the case of an unanticipated closure / temporary suspension of activity;

- Monitoring and maintenance required to ensure the long-term performance and integrity of rehabilitated structures/areas;
- Cost estimates for both unexpected early and planned final closure, and demonstration of the proponent's ability to support these costs;
- Assessment of how differing climate change scenarios would influence closure concepts for the site over the long term.

8. Monitoring and Review

Provide a summary of all monitoring, review and reporting programs as described in detail within Section 6. Include a map showing the location of all monitoring sites and table(s), summarising the proposed monitoring regimes. Include location, parameters, frequency, and reporting.

The description of monitoring proposals within the relevant parts of Section 6 should be designed to meet the following objectives:

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

9. Management systems

Provide an outline of the management systems which will be employed to implement the measures described in the EIS. Include, as relevant:

- Proposed environmental policies, environmental management systems, and environmental management plans;
- Organisational structure and environmental responsibility within that structure for the proposal;
- An outline Construction Environment Management Plan, summarising management arrangements required for the implementation of mitigation during the construction phase.

Provide a consolidated management measures table listing all management measures detailed throughout the EIS. Measures must be sequentially numbered, unambiguous statements of intent. The table must specify when each measure is to be implemented and refer to the section of the EIS where the measure is detailed.

10. Conclusion

Describe the proposal and draw together the critical environmental, social and economic impacts of the proposal, both positive and negative. Present a balanced overview of the net impacts of the proposal, and the extent to which any adverse impacts can be satisfactorily 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 Commonwealth and State 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.

The EIS must provide an overall conclusion as to the environmental acceptability of the proposal, including discussion on compliance with the principles of Ecologically Sustainable Development (ESD) and the objects and requirements of the EPBC Act. Reasons justifying undertaking the proposal in the manner proposed should also be outlined.

Measures proposed or required by way of offset for any unavoidable impacts on MNES and the relative degree of compensation, should be restated here.

11. References

This section should provide details of authorities consulted, reference documents etc.

12. Appendices

As a means of improving readability of the EIS document, detailed technical information which supports the EIS should be included in 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.

13. Glossary

EIS	Environmental Impact Statement
EMPC Act	<i>Environmental Management and Pollution Control Act 1994 (Tas.)</i>
EMPCS	Environmental Management and Pollution Control System objectives, found in Schedule 1 of the EMPC Act
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Cth)
EPBC Regulations	Environment Protection and Biodiversity Conservation Regulations 2000 (Cth)
MNES	Matter of National Environmental Significance (under the EPBC Act)
NoI	Notice of Intent
NRE	Department of Natural Resources and Environment Tasmania
PAF	Potentially Acid Forming
RMPS	Resource Management and Planning System of Tasmania objectives to be found in Schedule 1 of the EMPC Act
Runoff	Water which flows over the surface of the land following precipitation (also called ‘stormwater’)
Tasmanian RFA	Tasmanian Regional Forest Agreement

TSP	Total suspended particulates
Wastewater	Any water released to the receiving environment that has been contaminated or physically changed by the proposal

Appendix A: Other issues and agency contacts

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

Your proposal may have been referred to other agencies in the process of preparing Guidelines. Should assessments or approval outside of the Board's responsibilities be required, you should engage with the respective agency to progress them. The following list identifies some of the key agencies you may need to contact.

Conservation Assessments Section, 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, permits to deal with threatened species.

Heritage 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 in close proximity to 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

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 Service

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.

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

Telephone: 03 6165 4800

Email: info@mrt.tas.gov.au

Website: www.mrt.tas.gov.au

Purpose: Mining leases

Agriculture and Water, Department of Natural Resources and Environment Tasmania

Telephone: (03) 6165 3222

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

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

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