

*Environment Effects Act 1978*

**SCOPING REQUIREMENTS**

For

**PROPOSED BUNYIP NORTH GRANITE QUARRY,  
HANSON CONSTRUCTION MATERIALS PTY LTD**

September 2017



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List of Abbreviations

AH Act	Aboriginal Heritage Act 2006
C&LP Act	Catchment and Land Protection Act 1994
CHMP	Cultural Heritage Management Plan
DELWP	Department of Environment, Land, Water and Planning
EE Act	Environment Effects Act 1978
EES	Environment Effects Statement
EMF	Environmental Management Framework
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environment Protection Authority
EP Act	Environment Protection Act 1970
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
FFG Act	Flora and Fauna Guarantee Act 1988
Hanson	Hanson Construction Materials Pty Ltd (proponent)
MNES	Matter of national environmental significance
MRSDD Act	Mineral Resources (Sustainable Development) Act 1990
NIRV	Noise from industry in regional Victoria
P&E Act	Planning and Environment Act 1987
PEM	Protocol for Environmental Management – Mining and extractive industries
PHW Act	Public Health and Wellbeing Act 2008
RM Act	Road Management Act 2004
SEPP	State Environment Protection Policy
TRG	Technical Reference Group

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# **1 Introduction**

## ***1.1 Purpose of this document***

In light of the potential for significant environmental effects, on 22 November 2015 the Victorian Minister for Planning (the Minister), Hon. Richard Wynne MP, determined under the *Environment Effects Act 1978* (EE Act) that Hanson Construction Materials Pty Ltd (Hanson) needs to prepare an Environment Effects Statement (EES) for its proposed granite quarry at Bunyip North ('the project')<sup>1</sup>. The purpose of the EES is to provide a sufficiently detailed description of the project, assess its potential effects on the environment<sup>2</sup> and assess relevant alternative designs and approaches to mitigation. The EES process also informs, and seeks feedback from, the public and stakeholders, prior to the Minister for Planning issuing an assessment of the project under the EE Act. The Minister's assessment will then inform statutory decision-makers responsible for the project's approvals.

This document is the Scoping Requirements for the Bunyip North granite quarry, which sets out the specific matters to be investigated and documented in the EES for the project. The Minister has issued the Scoping Requirements following the consideration of public comments on draft Scoping Requirements.

While the Scoping Requirements are intended to cover all relevant matters, the EES will need to address other issues that emerge during the EES investigations, including those relevant to statutory decisions that will be informed by the assessment process under the EE Act.

## ***1.2 The project and setting***

Hanson proposes to establish a granite quarry on a greenfield site in Bunyip North (Figure 1). The stone reserves at the site comprise about 100 million tonnes of granite, which might resource production of crushed rock products over a period of 80-120 years, depending on demand. The project site covers some 280 hectares, and has frontages to Bunyip-Tonimbuk Road and Sanders Road. The indicative pit design has a footprint of about 134 hectares, and a maximum depth of about 140 metres below natural surface, which is undulating. The project would also include a crushing plant, stockpiles, administrative and facilities buildings and haul and access roadways. Site access is proposed to be via Bunyip-Tonimbuk Road.

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<sup>1</sup>The project is to be considered in terms of proposed works, noting that the EE Act is concerned with the effects of works to which the Act applies (as per s.8B(7)). Note that under the EPBC Act, projects are considered as 'actions': for the purposes of this document, the term 'the project' also means 'the action'.

<sup>2</sup>For the purpose of assessment of environmental effects under the EE Act, the meaning of 'environment' includes physical, biological, heritage, cultural, social, health, safety and economic aspects (page 2 of the *Ministerial Guidelines*).

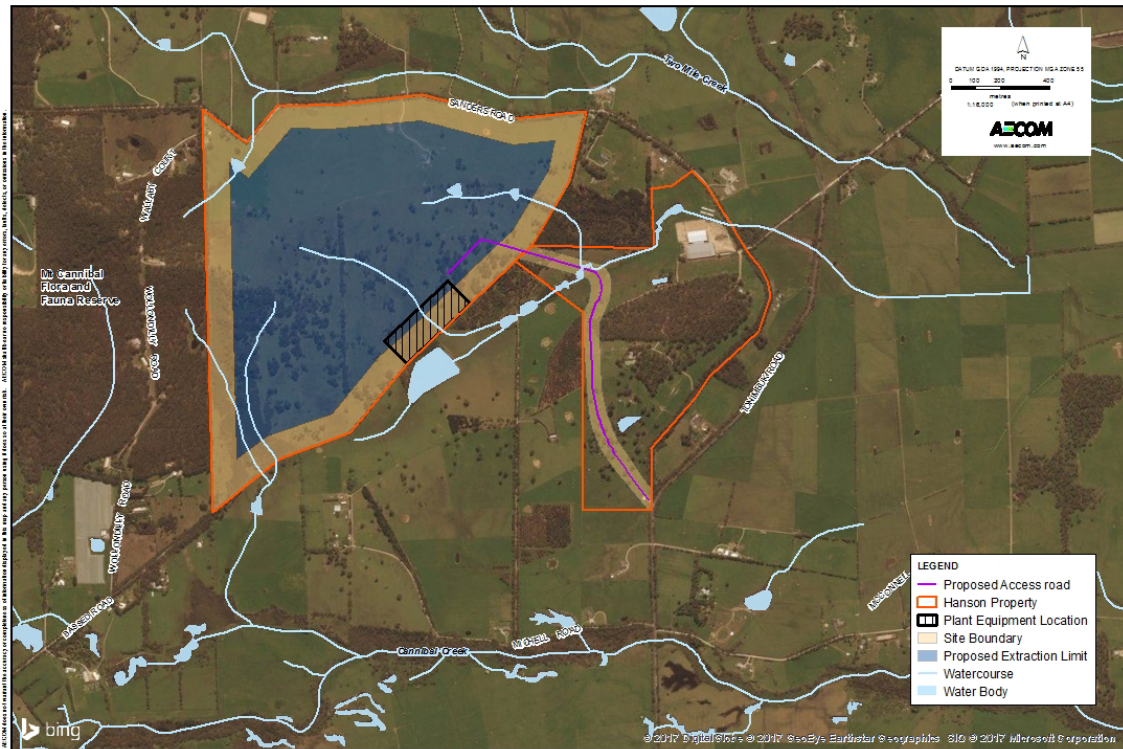


Figure 1: Location of the project.

### 1.3 Minister's requirements for this EES

The Minister's decision to require an EES included the procedures and requirements applying to its preparation in accordance with section 8B(5) of the EE Act (see Appendix A). These requirements included the following key matters that the EES is primarily to focus on.

*The EES is to document investigations of potential environmental effects of the proposed project, including the feasibility of associated environmental mitigation and management measures, in particular for:*

- a. *potential effects on native vegetation and associated biodiversity values, in particular listed threatened species and communities, such as through the loss, degradation or fragmentation of habitat or through other indirect causes, as well as related ecological effects*
- b. *potential effects on surface and groundwater environments and related beneficial uses, including as a result of changes to groundwater levels, movement, affected stream flows and discharges*
- c. *effects on Indigenous cultural heritage values*
- d. *effects arising from the transport from the site onto the public road system*
- e. *other effects on amenity, landscape values, land uses and the community.*

These Scoping Requirements provide further detail on the specific matters to be investigated in the EES in the context of *Ministerial guidelines for assessment of environmental effects under the EE Act 1978* (Ministerial Guidelines).

## **2 Assessment process and required approvals**

### **2.1 What is an EES?**

An EES is prepared by the project's proponent to describe the project and its potential environmental effects. An EES should enable stakeholders and decision-makers to understand how the project is proposed to be implemented and the likely environmental effects of doing so. An EES has two main components.

1. The EES main report – An integrated, plain English document that sets out an analysis of the potential impacts of the project. It may be supported to an appropriate extent by digital material (on-line content). The main report draws on technical studies, data and statutory requirements such as specific limits for waste discharge to the environment.
2. The studies that inform the EES – Technical reports on expert investigations and analyses that provide the basis for the EES main report. They will be exhibited in full, as appendices to the main report.

The potential impacts that require technical studies are set out in Section 4 of this document.

### **2.2 The EES process**

Hanson is responsible for preparing the EES, including ensuring that adequate technical studies are completed and appropriate stakeholder consultation is undertaken. The Department of Environment, Land, Water and Planning (DELWP) is responsible for managing the EES process.

This EES process has the following steps:

- Preparation of a draft Study Program and draft schedule by the proponent (completed)
- Preparation and exhibition of the draft Scoping Requirements by DELWP on behalf of the Minister for Planning. Public comments are received during the advertised exhibition period
- Finalisation and issuing of Scoping Requirements by the Minister
- Preparation and implementation of an EES Consultation Plan by the proponent
- Review of the proponent's EES studies and draft documentation by DELWP and a Technical Reference Group (TRG)<sup>3</sup>
- Completion of the EES by the proponent
- Review of the complete EES by DELWP to establish its adequacy for public exhibition
- Exhibition of the proponent's EES and invitation for public comment by DELWP on behalf of the Minister
- Appointment of an Inquiry by the Minister to:
  - review the EES and any public submissions
  - conduct public hearings
  - provide a report to the Minister
- Following receipt of the Inquiry report, the Minister provides an assessment of the project for decision-makers.

Further information on the EES process can be found on the department's website at <https://www.planning.vic.gov.au/environment-assessment/what-is-the-ees-process-in-victoria>.

#### **Technical Reference Group**

DELWP has convened an agency-based TRG to advise it and the proponent on:

- Applicable policies, strategies and statutory provisions
- The scoping requirements for the EES

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<sup>3</sup> For critical components of the EES studies, peer review by an external, independent expert may be appropriate.

- The design and adequacy of technical studies for the EES
- The proponent's public information and stakeholder consultation program for the EES
- Responses to issues arising from the EES investigations
- The technical adequacy of draft EES documentation
- Coordination of statutory processes.

The TRG comprises invited representatives of relevant state government agencies and departments, as well as Cardinia Shire Council.

### **Consultation**

The proponent is responsible for informing and engaging the public and stakeholders to identify and respond to their issues in conjunction with the EES studies. Stakeholders include potentially affected parties, the local community and interested organisations and individuals, as well as pertinent government bodies. Under its EES consultation plan the proponent needs to inform the public and stakeholders about the EES process and associated investigations, as well as provide opportunities for input and engagement during the EES investigations. The consultation plan may be reviewed and amended in consultation with DELWP and the TRG, and is published on the DELWP website. The plan:

- Identifies the relevant stakeholder groups
- Characterises the stakeholder groups in terms of their interests, concerns and consultation needs and potential to provide local knowledge
- Describes the consultation methods to be used and outline a schedule of consultation activities
- Outlines how inputs from stakeholders will be recorded, considered and/or addressed in the preparation of the EES.

### **Approvals coordination with the EES process**

DELWP coordinates the EES process as closely as practicable with relevant approvals procedures, consultation and public notice requirements. Figure 2 outlines the steps in the EES process and the parallel coordination of statutory processes.

To facilitate the integrated consideration of issues and the timely completion of required approval processes, it is recommended that the EES include a draft Work Plan required under the *Mineral Resources (Sustainable Development) Act 1990* (MRSD Act). Ideally the exhibited EES should include a draft work plan that has been endorsed.

The EES will not address any approvals which may be required for specific uses of the rehabilitated land that might be proposed following the conclusion of quarrying.

The key approvals required under Victorian legislation to be informed by the EES process include:

- An approved work plan under the MRSD Act<sup>4</sup>
- Works approval and licence to discharge waste under the *Environment Protection Act 1970* (EP Act)<sup>5</sup>
- Approvals for works on waterways and to extract groundwater under the *Water Act 1989*
- Approvals to take protected flora under the *Flora and Fauna Guarantee Act 1988* (FFG Act)
- Approvals to damage or disturb historic heritage or archaeological sites under the *Heritage Act 1995*
- An approved Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006* (AH Act)
- Approvals for works on declared roads under the *Road Management Act 2004* (RM Act).

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<sup>4</sup> Provided the requirements of s.77T of the MRSD Act are fulfilled, no planning permit under the *Planning and Environment Act 1987* will be required.

<sup>5</sup> Subject to project parameters, might not be required.



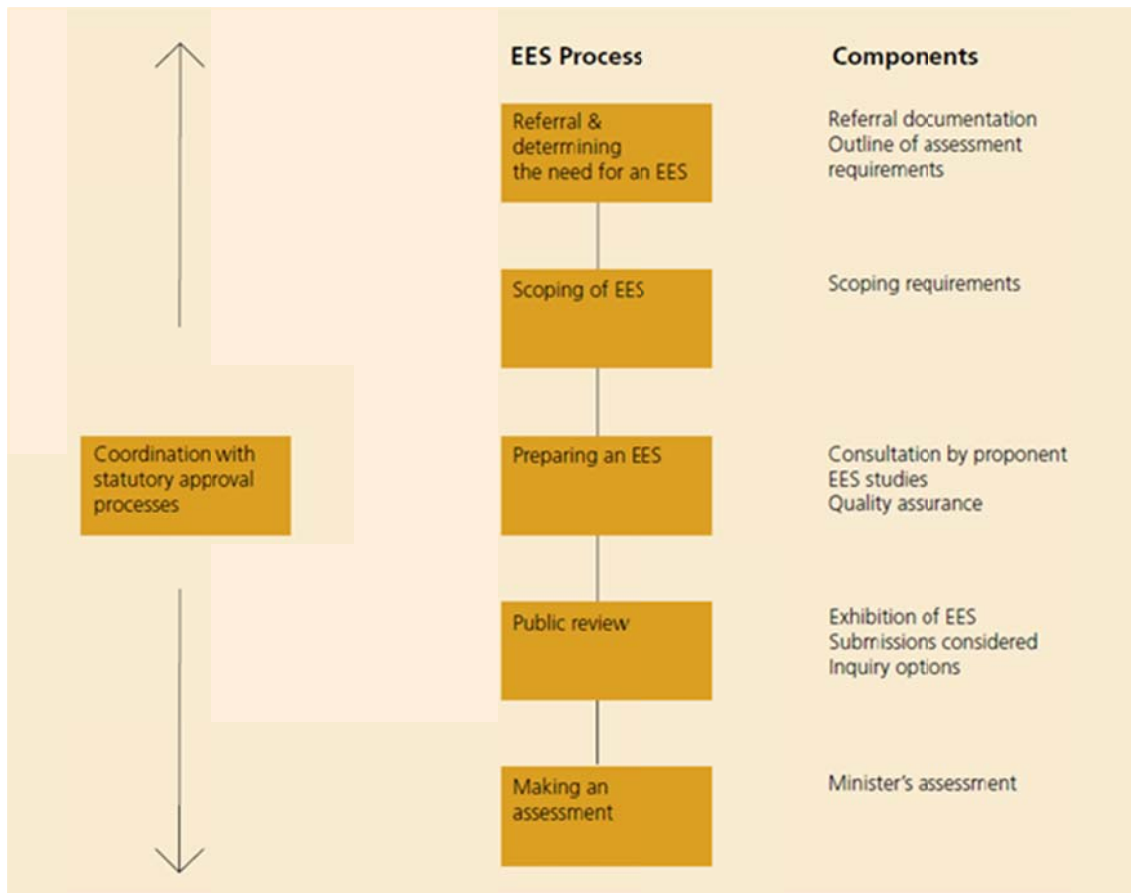


Figure 2: Coordination of statutory assessment and approvals processes.

### 2.3 Accreditation of the EES process under the EPBC Act

The project was also referred to the Australian Government under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). The delegate for the Commonwealth Minister determined on 23 November 2015 that the project is a 'controlled action' as it is likely to have a significant impact on the following matters of national environmental significance (MNES), which are protected under Part 3 of the EPBC Act:

- threatened species and ecological communities (s18 and s18A); and
- listed migratory species (section 20 and 20A).

The EES is an accredited assessment process under the EPBC Act through a bilateral agreement that exists between the Commonwealth and the State of Victoria. The Commonwealth Minister or delegate will decide whether the project is approved, refused or approved with conditions under the EPBC Act, after having considered the Minister for Planning's assessment under the EE Act. Note that what are generally termed 'effects' in the EES process correspond to 'impacts' defined in section 82 of the EPBC Act.

### **3 Matters to be addressed in the EES**

#### **3.1 General approach**

The EES needs to assess the environmental effects<sup>6</sup> arising from all components and stages of the project. The assessment should include:

- Potential effects on individual environmental assets – magnitude, extent and duration of change in the values of each asset – having regard to intended avoidance and mitigation measures.
- The likelihood of adverse effects and associated uncertainty of available predictions or estimates.
- Further management measures that are proposed where avoidance and mitigation measures do not adequately address effects on environmental assets, including specific details of how the measures address relevant policies.
- Likely residual effects assuming proposed measures are implemented.

Further advice on the approach to be adopted in preparing the EES is provided in section 4.

#### **3.2 General content and style of the EES**

The content of the EES and related investigations is to be guided by these Scoping Requirements and the Ministerial Guidelines. To facilitate timely decisions on required approvals, the EES should address relevant aspects of the statutory requirements associated with approvals that will be informed by the Minister's assessment, including the work plan under the MRSD Act. The EES should also address any other significant issues that emerge during the investigations.

Ultimately it is the proponent's responsibility to ensure that adequate studies are undertaken and reported to support the assessment of environmental effects and preparation of the EES and that effective quality assurance is in place. Close consultation with DELWP and the TRG during the investigations and preparation of the EES will be necessary to minimise the need for revisions prior to authorisation of the EES for public exhibition.

The main EES report should provide a clear, objective and well-integrated analysis of the potential effects of the proposed project, including proposed mitigation and management measures, as well as relevant alternatives. In conjunction with any integrated on-line content, it should enable the local community and stakeholders to understand the likely environmental effects of the proposed project. Overall, the main report should include:

- An executive summary of the potential environmental effects of the project, including potential effects on identified MNES outlined in section 4.3.
- A description of the entire project, including its objectives, key elements, associated requirements for new infrastructure and use of existing infrastructure.
- A description of relevant alternatives capable of substantially meeting the project's objectives that may also offer environmental or other benefits (as well as the basis for the choice where a preferred alternative is nominated).
- Description of the approvals required for the project to proceed, and its relationship to relevant policies, strategies, guidelines and standards.
- Descriptions of the existing environment, to the extent relevant to the assessment of potential effects.
- Appropriately detailed assessments of potential effects and risks of the project (and relevant alternatives) on environmental assets and values, relative to the 'no project' scenario, together with an estimation of likelihood and degree of uncertainty associated with predictions.
- Intended measures for avoiding, minimising, managing and monitoring effects, including a statement of commitment to implement these measures.

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<sup>6</sup> Effects include direct, indirect, combined, consequential, short and long-term, beneficial and adverse effects.

- Any proposed offset measures where avoidance and mitigation measures will not adequately address effects on environmental values, including the identified MNES, and discussion of how any offset package proposed meets the requirements of the EPBC Act Environmental Offsets Policy as it relates to MNES.
- Responses to issues raised through public and stakeholder consultation.
- Evaluation of the implications of the project and relevant alternatives for the implementation of applicable legislation and policy, including the principles and objectives of ecologically sustainable development and environmental protection.
- A description of the environmental performance regime and environmental history of the proponent.

The proponent must also prepare a concise non-technical summary document (hard copy A4) for free distribution to interested parties. The EES summary document should include details of the EES exhibition, public submission process and availability of the EES documentation.

### ***3.3 Project description***

The EES must describe the project in sufficient detail both:

- to allow an understanding of all relevant components, processes and development stages; and
- to enable assessment of their likely potential environmental effects.

The project description should canvass the following.

- An overview of the proponent, including relevant experience in developing and operating similar projects (including EPBC Act approved projects) and its health, safety and environmental policies.
- Contextual information on the project, including its objectives and rationale, its relationship to relevant statutory policies, plans and strategies, including the basis for selecting the area proposed to be quarried and implications of the project not proceeding.
- Land use activities (including compatible and sensitive uses) within the vicinity of the project area, supported by plans and maps where applicable.
- Details of all the project components to the extent practicable, including:
  - Location, footprint, layout, site establishment and access arrangements during project establishment and operation.
  - Design principles of main components, including rationale for overall layout, overburden handling, rock extraction, blasting, crushing and product management/ storage.
  - Fixed and mobile plant and equipment to be installed or used on site.
  - Information on the project's operational life, including total volumes of overburden and rock to be extracted, expected timetabling and staging of site establishment, extraction, rehabilitation, decommissioning and closure.
  - Necessary works directly associated with the project, such as any infrastructure and services upgrade and relocation, groundwater dewatering and installation of other plant and facilities, including potential construction of roads and other linear services required for transporting material/ products on and off-site.
  - Proposed establishment techniques and extent of areas to be disturbed as part of proposed project works, including total area expected to be cleared, particular requirements for groundwater and surface water management, dust and noise management, traffic management and proposed management of sensitive environmental locations.
  - Water sources, demand and extraction (including operations and post-closure water balances) and electricity supply and use.
  - Solid waste, wastewater and hazardous material generation and management during operation.
  - Lighting, safety and security requirements during establishment and operation.
  - Proposed hours of operation, workforce requirements (total work force) and recruitment policies during establishment operation, and rehabilitation.
  - Approach to be taken regarding site rehabilitation, including progressive rehabilitation and

closure.

### **3.4 Project alternatives**

The EES should document the proponent's consideration of relevant alternatives and include an explanation of how specific alternatives were identified for evaluation through the EES. The EES should investigate and document the likely environmental effects of relevant alternatives, particularly where these offer a potential to achieve better environmental outcomes and are capable of meeting the objectives of the project.

For a proposal such as a quarry, practicable options may be limited, in the context of fixed parameters such as location and nature of the resource and property tenure. However, there can still be significant alternatives to be considered. The discussion of relevant alternatives should include:

- The basis for selecting the site and area proposed to be quarried within the broader boundaries of the proponent's land, including alternatives for the layout and staging.
- The site selection process for any ancillary infrastructure, including processing facilities.
- The technical feasibility and environmental implications of alternative establishment, extraction and product processing, management and site rehabilitation methods.

Relevant alternatives for electricity, water, gas and fuel supply, transport of products and workers and solid and liquid waste disposal should be described. Where appropriate, the assessment of environmental effects of relevant alternatives is to address the matters set out in the subsequent sections of this document.

The depth of investigation of alternatives should be proportionate to their potential to reduce potential adverse effects.

### **3.5 Applicable legislation, policies and strategies**

The EES will need to identify relevant legislation, policies, guidelines and standards, and assess their specific requirements or implications for the project, particularly in relation to required approvals, including (but not limited to):

- *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)
- *Aboriginal Heritage Act 2006*
- *Catchment and Land Protection Act 1994*
- *Environment Protection Act 1970* including the principles of environment protection and relevant State Environment Protection Policies (SEPPs), the *Protocol for Environmental Management – Mining and extractive industries* (PEM) and other relevant policies and guidelines
- *Flora and Fauna Guarantee Act 1988*
- *Heritage Act 1995*
- *Mineral Resources (Sustainable Development) Act 1990*
- *Planning and Environment Act 1987*, and relevant provisions in the Cardinia Planning Scheme
- *Public Health and Wellbeing Act 2008*
- *Road Management Act 2004*
- *Water Act 1989*
- *Wildlife Act 1975*

### **3.6 Consultation**

The proponent is responsible for informing and consulting the public and stakeholders throughout the preparation and exhibition of the EES, in accordance with a suitable EES Consultation Plan (Section 2.2).

The EES should document the process and results of consultation undertaken by the proponent prior to and during the preparation of the EES, including:

- issues raised and suggested by stakeholders or members of the public; and
- the proponent's responses to these issues, in the context of the EES studies or the associated consideration of mitigation measures.

The EES should also provide an outline of a program for community consultation, stakeholder engagement and communications during the construction and operation of the project, including opportunities for local stakeholders to engage with the proponent to seek responses to issues that might arise if the project is approved and proceeds.

### ***3.7 Draft evaluation objectives***

Table 1 includes draft evaluation objectives that identify desired outcomes in the context of potential project effects and relevant legislation. They provide a framework to guide an integrated assessment of environmental effects, in accordance with the Ministerial Guidelines. During the development of the EES, the proponent may consider suggesting refined objectives and proposed evaluation framework, and may develop specific assessment criteria to assist with the evaluation of effects. Final evaluation objectives will form the basis for the Minister's assessment.

The framing of the draft objectives reflects the key matters to be investigated for the EES, relevant legislation and policies, the objectives and principles of ecologically sustainable development and environmental protection, and environmental issues identified by the proponent.

The level of effort applied to the investigation, management and mitigation of issues in the context of the draft evaluation objectives should be proportionate to the significance of potential adverse effects. The proponent should consult closely with DELWP Impact Assessment Unit and the TRG throughout the preparation of the EES to ensure that the investigation of issues is undertaken soundly and is appropriately targeted.

Table 1: Draft evaluation objectives.

Draft evaluation objective	Key legislation
<b>Resource development.</b> <i>To enable an economically viable extractive industry project that makes the best use of and extracts the value from the available stone resource.</i>	MRSD Act
<b>Biodiversity.</b> <i>To avoid or minimise adverse effects on native vegetation, listed threatened species and listed migratory species, other protected flora, fauna and ecological communities, habitat for listed threatened species, listed migratory species and other protected flora and fauna, and address offset requirements for residual environmental effects consistent with relevant Commonwealth and State policies.</i>	EPBC Act; MRSD Act; FFG Act; Wildlife Act
<b>Water.</b> <i>To protect surface water and groundwater resources and their beneficial and licensed uses, including downstream environmental values (including habitat for MNES) and users, over the short and long-term.</i>	EPBC Act; EP Act and SEPPs; Water Act; C&LP Act
<b>Cultural heritage.</b> <i>To avoid or minimise adverse effects on Aboriginal and historic cultural heritage values.</i>	AH Act; Heritage Act
<b>Traffic and transport.</b> <i>To protect the fabric and safe use of roads that may be used by project-related traffic or may be otherwise affected due to the project, with regard to relevant design standards and capacity.</i>	P&E Act; RM Act
<b>Environmental quality, safety and amenity.</b> <i>To protect the health and wellbeing of residents and local communities, and minimise effects on air quality, noise and the social amenity of the area, having regard to relevant limits, targets or standards.</i>	EP Act, SEPPs and PEM; PHW Act; MRSD Act; P&E Act
<b>Social impact and land use.</b> <i>To minimise potential adverse social and land use effects, including with respect to effects on the local economy.</i>	MRSD Act; P&E Act; CF&L Act
<b>Landscape, visual and recreational values.</b> <i>To minimise adverse effects on landscape, visual amenity and recreational values associated with the environs of the project site.</i>	P&E Act
<b>Rehabilitation.</b> <i>To establish sound progressive rehabilitation and approach to post-closure, including stable rehabilitated landforms capable of enabling sustainable use of the project site.</i>	EPBC Act; MRSD Act; C&LP Act; Water Act
<b>Environmental management framework.</b> <i>To provide a transparent framework with clear accountabilities for managing environmental effects and hazards associated with site establishment, operation, rehabilitation, decommissioning and closure phases of the project, in order to achieve acceptable environmental outcomes.</i>	EPBC Act; MRSD Act; EP Act; EE Act
<b>Integrated and ecologically sustainable development.</b> <i>Overall, to demonstrate that the project would achieve a balance of economic, social and environmental outcomes that contribute to ecologically sustainable development and provide a net community benefit, over the short and long-term.</i>	EPBC Act; MRSD Act; EE Act

## 4 Assessment of specific environmental effects

### 4.1 Approach to assessment

Preparation of the EES document and the necessary investigation of effects should be consistent with the principles of a systems approach and proportionality to risk, as outlined in the Ministerial Guidelines (p. 14). A risk-based approach should be adopted during the EES studies, so that a greater level of effort is directed at investigating and managing those matters that pose relatively higher risk of adverse effects. The following sections set out specific requirements for the assessment of effects, using the following structure for each draft evaluation objective:

- **Key issues** or risks that the project poses to the achievement of the draft evaluation objective. In addition to addressing the highlighted issues, the proponent should consider undertaking an environmental risk assessment as appropriate.
- **Priorities for characterising the existing environment** to underpin predictive impact assessments having regard to the level of risk. Any risk assessment by the proponent could guide the necessary data gathering.
- **Design and mitigation measures** that could substantially reduce and/or mitigate the risk of significant effects.
- **Assessment of likely effects** through predictive studies or estimates of effects that are reasonably likely, as well as evaluation of their significance, having regard to their likelihood.
- **Approach to manage performance**, in terms of further measures that are proposed to manage risks of effects, assuming that identified design and mitigation measures are applied, to achieve appropriate outcomes. This should inform the assessment of likely residual effects (assuming proposed measures are implemented) and consideration of relevant environmental effects where applicable.

### 4.2 Resource development

**Draft evaluation objective** - *To enable an economically viable extractive industry project that makes the best use of and extracts the value from the available stone resource.*

#### Key issues

- Opportunity for development of a known stone resource.
- Efficient, safe and environmentally acceptable quarrying of available resources.
- Potential impacts of external influences on project sustainability.

#### Priorities for characterising the existing environment

- Identify opportunities for workers and suppliers of goods and services that could support the project.
- Identify accessible stone reserves within the site using different extraction layouts and methods.

#### Design and mitigation measures

- Describe alternative quarry configurations or methods to access stone reserves.

#### Assessment of likely effects

- Assess the ability to extract stone by alternative quarry configurations or strategies.
- Assess the positive and negative economic effects from construction and operation of the project, including income to the State and regional economies, employment and opportunities for local suppliers.

#### Approach to manage performance

- Describe key elements of the proposed quarry work plan to enable efficient stone extraction and processing.

### 4.3 Biodiversity

**Draft evaluation objective** - *To avoid or minimise adverse effects on native vegetation, listed threatened species and listed migratory species, other protected flora, fauna and ecological communities, habitat for listed threatened species, listed migratory species and other protected flora and fauna, and address offset requirements for residual environmental effects consistent with relevant Commonwealth and State policies.*

#### Key issues

- Direct loss of native vegetation and associated listed ecological communities.
- Direct loss or degradation of habitat for flora and fauna listed as threatened under the EPBC Act, the FFG Act and/ or DELWP Advisory Lists, including, but not limited to:
  - Southern Brown Bandicoot (*Isodon obesulus obesulus*)
  - Australasian Bittern (*Botaurus poiciloptilus*)
  - Growling Grass Frog (*Litoria raniformis*)
  - Dwarf Galaxias (*Galaxiella pusilla*)
  - Green-striped Greenhood (*Pterostylis chlorogramma*)
  - Strzelecki Gum (*Eucalyptus strzeleckii*)
  - other protected species.
- Disturbance and/ or degradation of adjacent habitat that may support listed species or other protected flora or fauna.
- Direct loss or degradation of habitat for fauna listed as migratory under the EPBC Act, including Latham's Snipe (*Gallinago hardwickii*).
- Indirect habitat loss or degradation resulting from other effects of quarrying, such as edge effects, surface hydrological changes, groundwater drawdown, dust deposition or other disturbance impacts such as noise.
- The availability of suitable offsets for the loss of native vegetation and habitat for relevant listed threatened species and migratory species under the EPBC Act.
- Potential for other significant effects on biodiversity values including but not limited to those associated with changes in hydrology, hydrogeology, water quality, dust emissions, weed/ pathogen introduction and risk of significantly increased mortality of protected species resulting from quarry-related activities such as road traffic and clearing of vegetation or soil.

#### Priorities for characterising the existing environment

- Characterise the local terrestrial and aquatic environments and any wildlife movement in the broader area that could be directly or indirectly impacted by the project.
- Identify and characterise any groundwater dependant ecosystems that may be affected, in particular by dewatering.
- Describe<sup>7</sup> the specific biodiversity values on or in the vicinity of the project site that could be affected by the project, including:
  - remnant native vegetation and any ecological communities listed under the EPBC Act or the FFG Act
  - presence of, or suitable habitats for, flora and fauna species listed as threatened under the EPBC Act, the FFG Act or DELWP Advisory Lists
  - presence of, or suitable habitats for, species listed as migratory under the EPBC Act
  - presence of other protected flora and fauna species
  - use of habitat corridors by wildlife.

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<sup>7</sup> The EES will need to demonstrate that appropriate and adequate information (e.g. desktop database and literature searches, seasonally-appropriate targeted surveys and/or modelling) has been compiled on the potential and actual presence of threatened species and ecological communities, having regard to the likelihood and consequence of impact. Where preliminary field studies have not identified a species but past records and/ or habitat analysis suggest that it may occur locally, the proponent will need to justify why further investigations or further mitigation measures have not been applied on a precautionary basis.



- Describe hazards that the project could present to biodiversity values, including:
  - direct removal of individuals or destruction of habitat
  - disturbance or alteration of habitat conditions or other sources of increased habitat threat, including possible effects on potentially threatening processes listed under the FFG Act and on MNES protected under the EPBC Act
  - the presence of any declared weeds or pathogens in the project area that could be dispersed.
- This characterisation is to be informed by relevant data, literature and appropriate seasonal or targeted surveys, in line with Commonwealth and State survey guidelines as they apply to MNES.

#### **Design and mitigation measures**

- Identify potential and proposed design options and measures which could avoid or minimise significant effects on or in the vicinity of the project site on native vegetation and any EPBC Act listed ecological communities or threatened flora or fauna species or listed migratory species or any other listed threatened or protected flora and fauna species and their habitat.
- Develop rehabilitation strategies to enable the return of protected flora and fauna species impacted by project works.
- Develop hygiene controls for vehicle and machinery movement to minimise the spread of pathogens and weeds.

#### **Assessment of likely effects**

- Assess the direct and indirect effects of the project and relevant alternatives on native vegetation, and listed ecological communities, listed threatened and other protected flora and fauna and listed migratory species on or in the vicinity of the project site, including any relevant species listed under the EPBC Act or FFG Act.
- Assess the direct and indirect effects of the project and relevant alternatives on protected fauna, especially listed threatened species under the EPBC Act or FFG Act and listed migratory species under the EPBC Act.

#### **Approach to manage performance**

- Describe and evaluate proposed measures to manage residual effects of the project on biodiversity values, including an outline of an offset strategy that sets out the offsets that have been secured or are proposed to satisfy both Commonwealth and State offset policy requirements.
- Describe and evaluate the approach to develop contingency measures to be implemented in the event of adverse residual effects on flora and fauna values requiring further management.
- Identify any further methods proposed to manage risks and effects on other biodiversity values and native vegetation, including as part of the EMF (see section 4.11).

### **4.4 Water**

**Draft evaluation objective** - *To protect surface water and groundwater resources and their beneficial and licensed uses, including downstream environmental values (including habitat for MNES) and users, over the short and long-term.*

#### **Key issues**

- Potential impacts on beneficial uses and behaviour of groundwater, due to interception of flows or groundwater drawdown, in the context of the proposed depth, volume and duration of extraction.
- Potential impacts on downstream environmental values, including habitat for MNES downstream of the project site, in the context of the likely duration of the project.
- Potential impacts on beneficial uses of surface water environments downstream of the project site arising from interception or redirection of flows or from polluted run-off from operational areas or other areas disturbed by project works, in the context of projected climate change over the anticipated duration of the project.

#### **Priorities for characterising the existing environment**

- Describe the existing groundwater environment on and in the vicinity of the project site, with regard to available database information and project-specific data collection, and with regard to the protected beneficial uses, values and behaviour of groundwater.
- Identify and characterise any groundwater dependent ecosystems that may be affected by quarry dewatering or resultant drawdown of groundwater.
- Describe the local and downstream surface water environment, in the context of the catchments within which the project site is located, with respect to water quality, hydrology and environmental values and other beneficial uses relying on surface water.
- Characterise the interaction between surface water and groundwater within the project site and in the broader area, including that required for maintenance of habitat for reliant MNES.
- Provide a sufficient hydrogeological characterisation (e.g. a model) for the site and its environs, including the current allocations, extractions and uses of groundwater or surface water in the area.

#### **Design and mitigation measures**

- Describe proposed measures for managing impacts on groundwater level and quality, with regard to both consumptive and non-consumptive off-site uses of groundwater (including environmental uses).
- Describe the measures to be taken to ensure protection of downstream beneficial uses of surface water, including environmental uses, during quarry establishment, operations, rehabilitation and (at least conceptually) post-closure.

#### **Assessment of likely effects**

- Assess the impacts and risks to surface water and groundwater quality resulting from the conduct of the project, and including risks which may continue after project works have been completed, in the context of projected climate change.
- Assess impacts and risks to downstream uses (including environmental uses) of groundwater and surface water that could result from interception or redirection of flows or from water table drawdown resulting from the project over its anticipated lifespan.
- Assess potential changes resulting from the project to groundwater and surface water flows, including those involving interactions between groundwater and surface water, and consequent impacts on environmental values and beneficial uses reliant on flows.
- Develop a water balance model to quantify the project's demand (both quantity and quality) on groundwater and/ or surface water resources, including volume to be extracted, recycled, stored and released during the establishment, operations, rehabilitation and post-closure phases of the project.

#### **Approach to manage performance**

- Describe monitoring programs to be implemented to ensure prompt detection of hydrology, water supply or water quality issues with respect to surface water and groundwater.
- Identify possible contingency actions to respond to foreseeable (even if unintended) changes that may be identified through the monitoring program.

### **4.5 Cultural heritage**

**Draft evaluation objective** - *To avoid or minimise adverse effects on Aboriginal and historic cultural heritage values.*

#### **Key issues**

- Destruction or disturbance of sites or places of Aboriginal or historic cultural heritage significance.

#### **Priorities for characterising the existing environment**

- Provide contextual information on past and contemporary activities in the project area and its vicinity by Aboriginal people.

- Identify and document any Aboriginal cultural heritage sites or areas of sensitivity within the project area, supported by appropriate consultation, especially with relevant traditional owner groups, and investigations.
- Identify and document any known and previously unidentified places and sites of historic cultural heritage significance within the project area and its vicinity, including any necessary investigations to supplement past studies, having regard to the heritage overlay of the Cardinia Planning Scheme and Heritage Victoria guidelines.

#### **Design and mitigation measures**

- Describe and evaluate proposed design, operations methods or site protection measures which could avoid or minimise direct impacts on Aboriginal and historic cultural heritage values.

#### **Assessment of likely effects**

- Assess potential effects of the project and relevant alternatives on:
  - identified sites or places of Aboriginal cultural heritage significance; and
  - sites and places of historic cultural heritage significance, having regard to the Heritage Council's Guidelines for Investigating Historical Archaeological Artefacts and Sites (2012).

#### **Approach to manage performance**

- Outline and evaluate any proposed additional measures to mitigate and manage residual effects on:
  - sites and places of Aboriginal cultural heritage significance, within the framework of a draft CHMP; and
  - sites and places of historic heritage significance, including site investigation and recording procedures.

### **4.6 Traffic and transport**

**Draft evaluation objective** - *To protect the fabric and safe use of roads that may be used by project-related traffic or may be otherwise affected due to the project, with regard to relevant design standards and capacity.*

#### **Key issues**

- The capacity, durability and safe use of roads and intersections that might be directly or indirectly affected by project-related traffic.

#### **Priorities for characterising the existing environment**

- Identify and quantify usage of roads in the vicinity of the project site, especially those roads proposed to carry project-related traffic.
- Describe the construction standards and condition of roads and intersections in the vicinity of the project site.
- Identify existing hazards associated with relevant roads and intersections, having regard to relevant incident databases

#### **Design and mitigation measures**

- Identify and validate optimum on-site project roads and access points, including secondary and emergency access points, to the public road network.
- Identify appropriate upgrades to the existing public road network to accommodate proposed project traffic.
- Identify potential operational measures to minimise and manage conflicts between project and non-project traffic on public roads.

#### **Assessment of likely effects**

- Assess potential effects of the project and relevant alternatives on:

- The capacity and safe usage of potentially affected public roads and intersections; and
- The structural condition of potentially affected public roads, having regard to relevant design standards in the context of historical and proposed future usage.

#### **Approach to manage performance**

- Describe monitoring programs to be implemented to measure performance of the road network and the adopted mitigation measures.
- Outline contingency plans to respond to unintended but foreseeable potential impacts on the safe, efficient and durable performance of the road network in the vicinity of the project site.

### **4.7 Environmental quality, safety and amenity<sup>8</sup>**

**Draft evaluation objective** - *To protect the health and wellbeing of residents and local communities, and minimise effects on air quality, noise and the social amenity of the area, having regard to relevant limits, targets or standards.*

#### **Key issues**

- Potential for nearby residents and other sensitive receptors to be exposed to substandard or hazardous air quality during quarry establishment, operation and rehabilitation.
- Potential for nearby residents to be exposed to excessive noise or vibration.
- Public health risks that could arise from elevated levels of respirable particles in the air, including Class 3 indicators such as respirable crystalline silica, or other off-site impacts including excessive noise or vibration.
- Public safety hazards during quarry establishment, operation, rehabilitation and post-closure, including in relation to use of explosives and the excavation of a deep void in the vicinity of existing dwellings, the geotechnical stability of the quarry and rehabilitated landform and bushfire response.

#### **Priorities for characterising the existing environment**

- Describe the physical and chemical characteristics of overburden to be removed and stone to be extracted during quarry establishment and operations, including specific aspects that may be relevant to air quality.
- Assess background levels of airborne particulates (dust) in the vicinity of the project site during potential weather conditions at different times of the year, with due regard to data requirements under the PEM for background air quality monitoring, to the satisfaction of the Environment Protection Authority (EPA).
- Identify dwellings and any other potentially sensitive receptors that could be exposed to project-related air quality, noise or vibration impacts.
- Establish the existing noise setting via baseline monitoring.
- Characterise air emissions and noise and vibration generation by proposed quarry activities, including processing, handling and transport within the site of extracted stone, crushed rock products and overburden.
- Identify bushfire response aspects which could be affected by the project, including egress routes.

#### **Design and mitigation measures**

- Describe and evaluate potential and proposed design and mitigation measures that could avoid or minimise the exposure of people to substandard or hazardous levels of airborne particulate matter.

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<sup>8</sup> Assessment should be completed to a level commensurate with the detailed hazard and risk assessment required for the Work Plan under MRS Act.

- Describe and evaluate both potential and proposed design responses and/or other mitigation measures (including quarrying and processing equipment and methods, and staging and scheduling of works), which could minimise noise and vibration and effects on sensitive receptors.
- Describe and evaluate potential and proposed design and mitigation measures that could ensure public safety during quarry development, operation, rehabilitation and post-closure and prevent the exposure of people to intrusive or hazardous levels of noise or vibration or other elevated risks.

#### **Assessment of likely effects**

- Predict likely atmospheric concentrations of particulate matter and other relevant Class 1, 2 or 3 indicators in surrounding areas during quarry establishment, operation and rehabilitation. Modelling of the dispersal of relevant emissions is to be provided for varying weather conditions, including evaluation of predicted levels relative to criteria specified in the PEM or design criteria in Schedule A of SEPP (Air Quality Management).
- Predictions of likely noise levels at dwellings in the vicinity of the project area, and at any other sensitive receptors within the vicinity, including for relevant alternatives, during different stages of quarry development and operation and different weather conditions, describing sources of uncertainty associated with the noise modelling.
- Predictions of likely vibration levels at dwellings in the vicinity of the project area, describing any sources of uncertainty associated with vibration modelling.
- Assess potential safety hazards and health risks to the public arising from the project.

#### **Approach to manage performance**

- Outline proposed measures to ensure that the public is not exposed to levels of airborne particulate matter exceeding PEM or SEPP criteria due to the project, including measures to monitor and control exposure to such risks.
- Outline and evaluate proposed additional measures to monitor and manage noise and vibration levels to minimise residual effects and ensure compliance with relevant standards.
- Describe and evaluate any proposed measures to mitigate or manage public safety hazards and public health risks.

### **4.8 Social impact and land use**

**Draft evaluation objective** - *To minimise potential adverse social and land use effects, including with respect to effects on the local economy.*

#### **Key Issues**

- Potential impacts on social cohesion resulting from disruption of existing networks or adverse effects on existing businesses or other activities.
- Potential impacts on existing local industries, businesses, farmers and landholders.
- Compatibility of the project with existing land use patterns, trends and objectives, in the context of relevant strategies, policies and provisions of the Cardinia Planning Scheme.

#### **Priorities for characterising the existing environment**

- Describe the characteristics of the existing community in the vicinity of the project site, having regard to demographic, socio-economic and societal connection factors and with reference to relevant municipal or sub-regional benchmarks.
- Describe local industry sectors including tourism and farming in the project area which could be affected directly or indirectly by the construction and operation of the project.

#### **Design and mitigation measures**

- Describe and evaluate potential and proposed design and mitigation measures that could:
  - protect and where practicable enhance social cohesion and business values; and
  - protect or enhance achievement of relevant land use planning objectives.

- Outline measures to enhance potential benefits to local and regional businesses and minimise potential adverse effects to local land-uses and businesses.

#### **Assessment of likely effects**

- Assess potential social, local economic, farming and land use impacts arising from the project.

#### **Approach to manage performance**

- Describe and evaluate any proposed measures to mitigate or manage potential social, local economic, farming and land use impacts.

### **4.9 Landscape, visual and recreational values**

*Draft evaluation objective - To minimise adverse effects on landscape, visual amenity and recreational values associated with the environs of the project site.*

#### **Key issues**

- Changes to the visual amenity and character of the project vicinity as the quarry is progressively established, operated and rehabilitated, with particular regard to vantage points on public land.
- Short-term and potentially permanent effects on the landscape values and recreational values of the project vicinity, including but not limited to Mount Cannibal Flora and Fauna Reserve.

#### **Priorities for characterising the existing environment**

- Characterise the visual character and associated landscape, amenity and recreational values of the project vicinity.
- Identify viewsheds in which the project site features, including from nearby residences, public lookouts, and key vantage points in the vicinity.

#### **Design and mitigation measures**

- Outline and evaluate potential and proposed quarry design, lighting, staging and progressive rehabilitation options that could mitigate effects on landscape and visual amenity from nearby residences, public lookouts, and key vantage points, and on recreational assets, in the vicinity.

#### **Assessment of likely effects**

- Assess the effects of the project and relevant alternatives on:
  - landscape and visual amenity values of the project vicinity, with respect to public and private vantage points, having regard to both visual changes and viewer perceptions; and
  - recreational values in the vicinity, especially but not only with respect to Mount Cannibal Flora and Fauna Reserve.

#### **Approach to manage performance**

- Describe and evaluate any proposed additional measures to mitigate or manage effects on landscape, visual amenity and recreational values, including in relation to:
  - the configuration and staging of works; and
  - progressive rehabilitation, including appropriate provision for post-closure planning.

### **4.10 Rehabilitation**

*Draft evaluation objective - To establish sound progressive rehabilitation and approach to post-closure, including stable rehabilitated landforms capable of enabling sustainable use of the project site.*

#### **Key issues**

- Changes in topography, groundwater conditions, drainage and vegetation cover.
- Adequate progressive rehabilitation of the project site to enable sound post-closure uses, including stability of rehabilitated landforms.

- Appropriate design criteria required to avoid long-term landform degradation with regard to slope geometry, upper soil profile characteristics (physical/ chemical) and surface drainage and erosion mitigation.

#### **Priorities for characterising the existing environment**

- Describe the existing topography, soil profiles, drainage, plant-soil-water interactions and vegetation cover within the project site, in particular in the proposed works footprint.

#### **Design and mitigation measures**

- Provide a draft rehabilitation framework that incorporates:
  - proposed storage and management of stockpiled topsoil and subsoils
  - representative geotechnical cross-sections of rehabilitated areas
  - proposed management of surface water and groundwater flows, including flood risks, and consideration of site drainage
  - design criteria relating to landform and geology
  - consideration of establishing sustainable vegetation cover, including habitat suitable for EPBC Act and/ or FFG Act listed threatened species, ecological communities and EPBC Act listed migratory species
  - proposed fire and emergency management measures
  - consideration of landscape and visual values from local vantage points and tourist spots
  - a plan for progressive rehabilitation and quarry closure.

#### **Assessment of likely effects**

- Assess best practice methods for storage and management of stockpiled topsoil and subsoils, restoring soil profiles, drainage and productivity, as well as landscape rehabilitation in the context of quarry voids and decommissioning of structures/ facilities.

#### **Approach to manage performance**

- Outline and evaluate the proposed performance requirements for rehabilitation, including monitoring and auditing of performance.
- Prepare design criteria to ensure rehabilitation is appropriate for potential end land-uses.
- Prepare a draft rehabilitation and closure plan with strategies for progressive rehabilitation, appropriate design criteria, completion criteria, monitoring methodologies and contingency measures for unplanned/ forced closure.

### **4.11 Environmental management framework (EMF)**

**Draft evaluation objective** - *To provide a transparent framework with clear accountabilities for managing environmental effects and hazards associated with site establishment, operation, rehabilitation, decommissioning and closure phases of the project, in order to achieve acceptable environmental outcomes.*

#### **Key Issues**

- Inadequate management of environmental effects during project establishment and operation could result in failure to meet statutory requirements and sustain stakeholder confidence.

#### **Priorities for characterising the existing environment**

- Outline the means by which a register of environmental risks associated with the project will be developed and maintained during project implementation (including matters identified in preceding sections in these directions as well as other pertinent risks).

#### **Design and mitigation measures**

- Provide a proposed framework for managing the risks of adverse environmental effects, including:



- the context of required approvals and consents, in particular requirements for related environmental management plans (EMPs)
- the environmental management system (EMS) to be adopted, including organisational responsibilities and accountabilities
- a summary of environmental management measures proposed in the EES to address specific issues, including commitments to mitigate adverse effects and enhance environmental outcomes
- proposed objectives, indicators and monitoring requirements, including for managing:
  - biodiversity (including MNES) values on the project site
  - biodiversity (including MNES) offsets to be established and managed offsite
  - potential impacts on downstream water and groundwater uses, both consumptive and environmental
  - monitoring of water quality and water table levels
  - ongoing protection of relevant cultural heritage values
  - traffic and road management measures
  - air quality
  - noise and vibration
  - public health and safety
  - social impacts
  - land use
  - landscape and visual impacts
  - recreational values and impacts
- outline of any relevant EMPs for establishment and operational phases.

#### **Assessment of likely effects**

- Evaluate the likely effectiveness of the proposed EMF in controlling adverse effects.

#### **Approach to manage performance**

- Characterise the proponent's overarching EMS in the context of the ISO14001 standard.
- Describe procedures for:
  - verifying or monitoring environmental performance and compliance with requirements
  - review of the effectiveness of the EMF for continuous improvement.
- Describe arrangements for management of and access to baseline and monitoring data, to ensure the transparency and accountability of environmental management as well as to contribute to the improvement of environmental knowledge.

### ***4.12 Integrated and ecologically sustainable development***

**Draft evaluation objective** - *Overall, to demonstrate that the project would achieve a balance of economic, social and environmental outcomes that contribute to ecologically sustainable development and provide a net community benefit over the short and long-term.*

#### **Key issues**

- The balance of environmental, social and economic outcomes from the project needs to be beneficial.

#### **Assessment of likely effects**

- Provide an integrated assessment of the environmental, social and economic performance of the project either proceeding or not, drawing on the findings of the specific assessments set out above, including the proposed approaches to avoiding, mitigating, managing and offsetting potential adverse effects.
- Provide a proportionate assessment of any relevant aspects of sustainability not otherwise addressed in the preceding sections.



- Evaluate the overall implications of the project in the context of key aspects of legislation and statutory policy as well as the principles and objectives of ecologically sustainable development and environment protection.

## Appendix A

### Procedures and requirements for the Bunyip North granite quarry EES

Assessment through an Environment Effects Statement (EES) under the *Environment Effects Act 1978* is required for the reasons set out in the attached Notice of Reasons for Decision.

### Procedures and requirements under section 8B(5) of the *Environment Effects Act 1978*

The procedures and requirements applying to the EES process, in accordance with both section 8B(5) of the Act and the *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Ministerial Guidelines), are as follows:

- (i) The EES is to document investigations of potential environmental effects of the proposed project, including the feasibility of associated environmental mitigation and management measures, in particular for:
  - f. potential effects on native vegetation and associated biodiversity values, in particular listed threatened species and communities, such as through the loss, degradation or fragmentation of habitat or through other indirect causes, as well as related ecological effects;
  - g. potential effects on surface and groundwater environments and related beneficial uses, including as a result of changes to groundwater levels, movement, affected stream flows and discharges;
  - h. effects on Indigenous cultural heritage values;
  - i. effects arising from the transport from the site onto the public road system; and
  - j. other effects on amenity, landscape values, land uses and the community.
- (ii) The matters to be investigated and documented in the EES will be set out more fully in scoping requirements. Draft scoping requirements will be exhibited for 15 business days for public comment, before final scoping requirements are issued by the Minister for Planning.
- (iii) The proponent is to prepare and submit to the Department of Environment, Land, Water and Planning (DELWP) a draft EES study program to inform the preparation of draft scoping requirements.
- (iv) The level of detail of investigation for the EES studies should be consistent with the approach set out in the scoping requirements and be adequate to inform an assessment of the significance and acceptability of its potential environmental effects, in the context of the Ministerial Guidelines.
- (v) DELWP will convene an inter-agency Technical Reference Group (TRG) to advise the Department and the proponent, as appropriate, during the preparation of the EES on the scoping requirements, the design and adequacy of the EES studies, and coordination with statutory approval processes.
- (vi) The proponent is to prepare and implement an EES Consultation Plan for informing the public and consulting with stakeholders during the preparation of the EES, having regard to advice from DELWP and the TRG.
- (vii) The proponent is also to prepare and submit to DELWP its proposed schedule for the completion of studies, preparation and exhibition of the EES, following confirmation of the scoping requirements. This schedule is intended to facilitate the alignment of the proponent's and DELWP's timeframes, including for timely TRG review of technical studies for the EES and the main EES documentation.
- (viii) The proponent is to apply appropriate peer review and quality assurance procedures to enable the completion of EES studies to a satisfactory standard.
- (ix) The EES is to be exhibited for a period of 30 business days for public comment, unless the exhibition period spans the Christmas–New Year period, in which case 40 business days will apply.

- (x) An inquiry will be appointed under the *Environment Effects Act 1978* to consider environmental effects of the proposal.

**Notification**

The following parties (proponent and relevant decision-makers) are to be notified of this decision in accordance with sections 8A and 8B(4)(a)(i) of the *Environment Effects Act 1978*, as appropriate:

- Hanson Construction Materials Pty Ltd (proponent)
- Minister for Energy and Resources
- Cardinia Shire Council
- Office of Aboriginal Affairs Victoria [now Aboriginal Victoria]
- Southern Rural Water.

**HON RICHARD WYNNE MP**

**Minister for Planning**

22 November 2015