

Environment Effects Act 1978

Scoping requirements for Boundary Road Quarry
Environment Effects Statement

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List of abbreviations

CHMP	Cultural heritage management plan
DELWP	Department of Environment, Land, Water and Planning
EE Act	<i>Environment Effects Act 1978</i>
EES	Environment EFFECTS STATEMENT
EMF	Environmental MANAGEMENT FRAMEWORK
EMP	Environmental MANAGEMENT PLAN
EMS	Environmental MANAGEMENT SYSTEM
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
FFG Act	<i>Flora and Fauna Guarantee Act 1988</i>
km	Kilometre
m	Metre
MNES	Matters of national environmental significance
MRSD Act	<i>Mineral Resources (Sustainable Development) Act 1990</i>
PASS	Potential acid sulphate soils
PEM	Protocol for Environmental Management – Mining and Extractive Industries
RM Act	<i>Road Management Act 2004</i>
RAP	Registered Aboriginal Party
SEPP	State environment protection policy
TRG	Technical reference group

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1 Introduction

In light of the potential for significant environmental effects, on 28 May 2018 the Victorian Minister for Planning (the Minister) determined under the *Environment Effects Act 1978* (EE Act) that Hillview Quarries Pty Ltd (the proponent) is to prepare an environment effects statement (EES) for the Boundary Road Quarry Project (the project). The purpose of the EES is to provide a sufficiently detailed description of the proposed project, assess its potential effects on the environment¹ and assess alternative project layouts, designs and approaches to avoid and mitigate effects. The EES will inform and seek feedback from the public and stakeholders and enable the Minister to issue an assessment of the project's environmental effects under the EE Act at the conclusion of the process. The Minister's Assessment will then inform statutory decision-makers responsible for the project's approvals.

These scoping requirements for the Boundary Road Quarry Project, set out the specific matters to be investigated and documented in the EES. The Minister issued the scoping requirements for the EES following consideration of public comments received on a draft which was available for public comment over a three-week period in February-March 2019.

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, especially those relevant to statutory decisions that will be informed by the assessment.

1.1 The project and setting

The proponent is seeking a new work authority for the prior quarry and to access additional resources within 115 and 121 Boundary Road, Dromana (Figure 1). Extraction at the prior quarry previously occurred between 1963 and 1998.

Existing disturbance in the project area is due to the previous quarrying operations and includes a 7.56 ha, 120 m-deep open pit and adjacent area used for access and associated infrastructure.

The proposed quarry is estimated to produce 70 million tonnes of granite products over 70 years. However, the estimate is currently being confirmed and reviewed. Activities on the site would include quarrying, processing, stockpiling materials, sales and transport. The maximum depth of extraction will be defined by feasibility and technical studies run in parallel with the EES process.

1.2 Minister's requirements for this EES

The Minister's decision to require an EES included procedures and requirements applicable to this EES, in accordance with section 8B(5) of the EE Act (Appendix A). These requirements specify key matters for the EES to examine (*italicised below*).

The EES is to document the investigation and avoidance or minimisation of potential environmental effects of the proposed project, including for any relevant alternatives (such as for the quarrying extent, methods for quarrying and processing, locations of processing equipment and transport of quarry products), as well as associated environmental mitigation and management measures. In particular, the EES should address:

- *effects on biodiversity and ecological values within and near the site including: native vegetation; listed threatened ecological communities and species of flora and fauna; and other habitat values;*
- *effects on the landscape values and land uses, particularly those associated with the adjacent Arthurs Seat State Park;*
- *effects of project construction and operation on air quality, noise and visual amenity, on nearby sensitive receptors (in particular residences);*
- *effects on groundwater resources and surface water environments including hydrology, quality, uses and dependent ecosystems; and*

¹ 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 (*Ministerial Guidelines*, p. 2).

- *effects on Aboriginal and non-Aboriginal cultural heritage values.*

The 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).

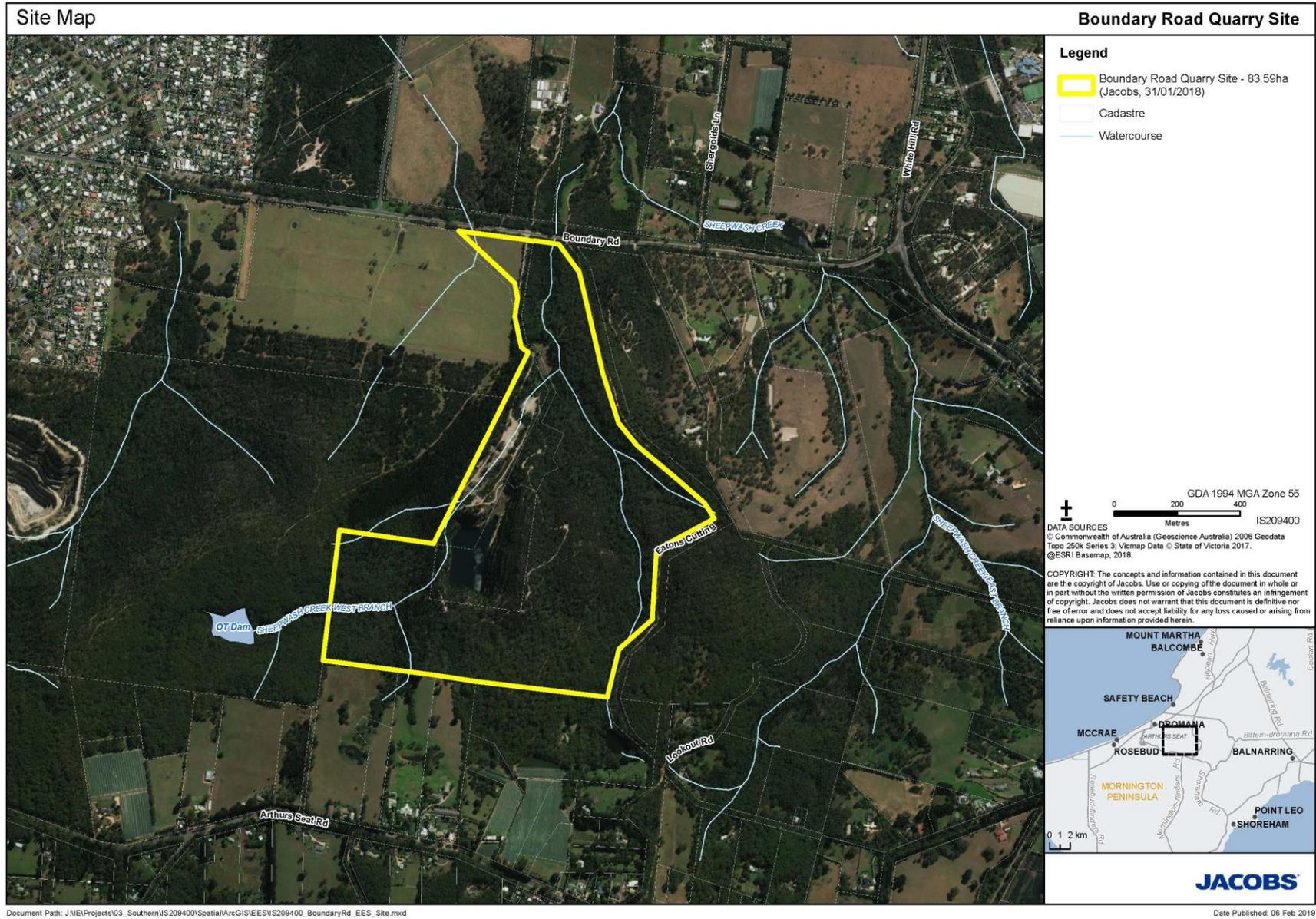


Figure 1: Location of the project (source: Jacobs, 2019).

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. It 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. The main report draws on technical studies, data and statutory requirements such as specific limits for air quality, noise, surface water and groundwater quality and waste discharge to the environment and should clearly identify which components of the scoping requirements are being addressed throughout the report.
2. The EES technical reports – specialist studies, investigations and analyses that provide the basis for the EES main report. These reports will be exhibited in full, as appendices to the main report.

The potential environmental effects of the project that require technical studies are set out in Section 4 of this document.

2.2 The EES process

The proponent is responsible for preparing the EES, including conducting technical studies and undertaking stakeholder consultation. The Planning Group within 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 draft scoping requirements by DELWP (Planning) on behalf of the Minister with public comments received during the advertised exhibition period (completed);
- finalisation and issuing of scoping requirements (this document) by the Minister;
- review of the proponent's EES studies and draft EES documentation by DELWP (Planning) and a technical reference group (TRG)²;
- completion of the EES by the proponent;
- review of the complete EES by DELWP (Planning) 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 public submissions received, conduct public hearings and provide a report to the Minister; and finally
- following receipt of the inquiry report, the Minister provides an assessment of the project's effects to decision-makers to inform their approval decisions.

Further information on the EES process can be found on the department's website³.

Technical reference group

DELWP has convened a technical reference group (TRG), comprised of representatives of relevant state government agencies and departments and Mornington Peninsula Shire Council. The TRG will advise DELWP and the proponent on:

- applicable policies, strategies and statutory provisions;
- the scoping requirements for the EES;
- 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; and
- coordination of statutory processes.

² For critical components of the EES studies, peer review by an external, independent expert may also be appropriate.

³ www.delwp.vic.gov.au/environment-assessment.

EES consultation plan

The proponent is responsible for informing and engaging the public and stakeholders to identify and respond to their issues and keep them informed about the EES studies. Stakeholders include potentially affected parties, the local community and interested organisations and individuals, as well as government bodies. Under its consultation plan the proponent informs the public and stakeholders about the EES process and associated investigations and provides opportunities for input and engagement during the EES investigations. The consultation plan is reviewed and amended in consultation with DELWP and the TRG before it is published on the DELWP website. The final consultation plan will:

- identify stakeholders;
- characterise public and stakeholders' interests, concerns and consultation needs, local knowledge and inputs;
- describe consultation methods and schedule; and
- outline how public and stakeholder inputs will be recorded, considered and/or addressed in the preparation of the EES.

Approvals coordination with the EES process

The project may require a range of approvals under Victorian legislation. DELWP coordinates the EES process as closely as practicable with the approvals procedures, consultation and public notice requirements. Figure 2 outlines the steps in the EES process and the parallel coordination of statutory processes.

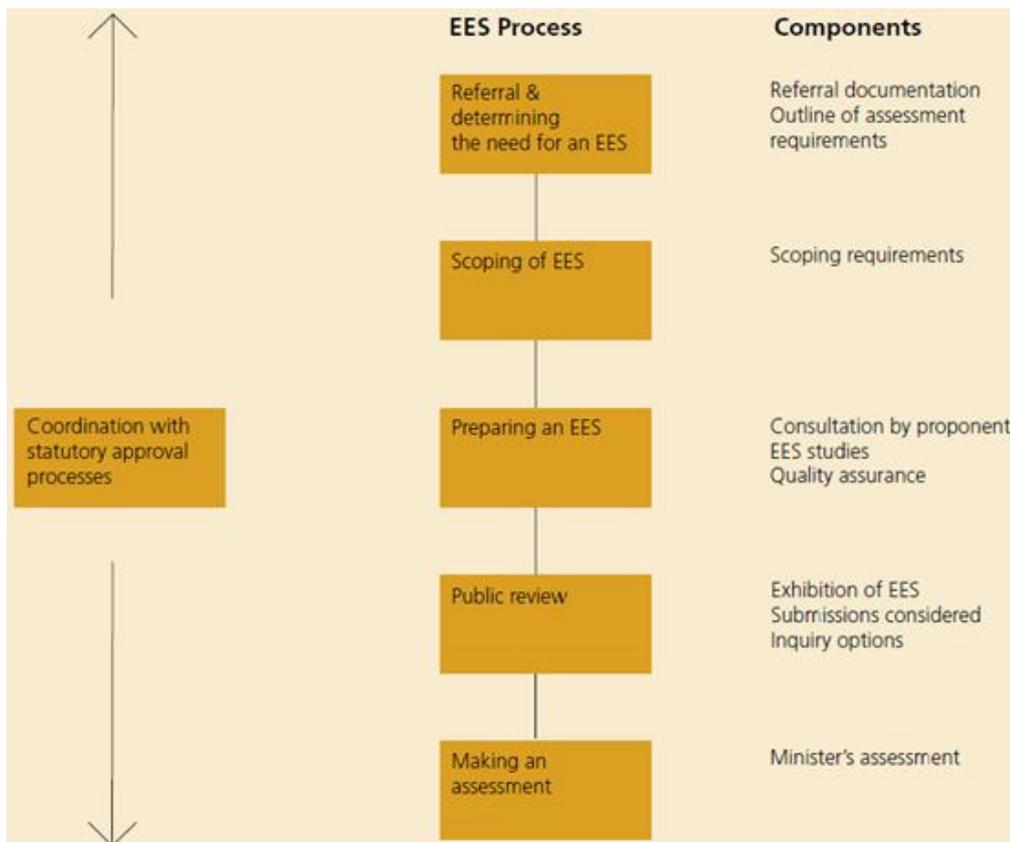


Figure 2: Coordination of statutory assessment and approvals processes

To facilitate the integrated consideration of issues and the timely completion of required approval processes, the EES is expected to include a draft Work Plan that is consistent with the requirements of the *Mineral Resources (Sustainable Development) Act 1990* (MRSD Act) and Regulations. Provided the requirements of section 77T of the MRSD Act are fulfilled, no planning permit under the *Planning and Environment Act 1987* will be required.

The key approvals required under Victorian legislation are: an approved work plan and a work authority under the MRSD Act; and an approved cultural heritage management plan (CHMP) under the *Aboriginal Heritage Act 2006*. Other approvals may be required and will be determined throughout the course of the EES.

2.3 Accreditation of the EES 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 for the Environment and Energy determined on 31 July 2018 that the project is a controlled action⁴, as it is likely to have a significant effect on the following matters of national environmental significance (MNES), which are protected under Part 3 of the EPBC Act: listed threatened species and communities (sections 18 and 18A).

The EES is an accredited assessment process under the EPBC Act through a Bilateral Assessment Agreement between the Commonwealth and State of Victoria. These scoping requirements will also address the assessment requirements for MNES. The Commonwealth Minister or delegate will decide whether the project is approved, approved with conditions or refused under the EPBC Act, after considering the Victorian 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.

4. Under the EPBC Act, projects are considered as "actions". For the purposes of this document the term "project" also means "the action".

3 Matters to be addressed in the EES

3.1 General approach

The EES should assess the environmental effects⁵ arising from all components and stages of the project. The assessment should include:

- the 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; and
- the likely residual effects, including on relevant MNES, that are likely to occur after all proposed measures to avoid and mitigate environmental effects are implemented.

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

3.2 Content and style

The content of the EES and related investigations is to be guided by these scoping requirements and the Ministerial Guidelines. To facilitate decisions on required approvals, the EES should address statutory requirements associated with approvals that will be informed by the Minister's assessment, including decision-making 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 that the EES has effective internal quality assurance 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 EES main report should provide a clear, well-integrated analysis of the potential effects of the proposed project, including proposed avoidance, mitigation and management measures, as well as relevant alternatives. Maps, diagrams and other illustrative material should be included where appropriate. Overall, the main report should include the following:

- an executive summary of the potential environmental effects of the project, including potential effects on identified MNES outlined in section 4.2;
- a description of the entire project, including its objectives, rationale, key elements, associated requirements for new infrastructure and use of existing infrastructure;
- a description of the approvals required for the project to proceed, and its relationship to relevant policies, strategies, guidelines and standards;
- 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);
- descriptions of the existing environment, where this is relevant to the assessment of potential effects;
- appropriately detailed assessments of potential effects 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;
- predictions of residual effects of the project assuming implementation of proposed environmental management measures;
- any proposed offset measures where avoidance and mitigation measures will not adequately address effects on environmental assets and values, including the identified MNES, and discussion of how any proposed offset package meets the requirements of the Victorian Guidelines for the Removal, Destruction or Lopping of Native Vegetation and the EPBC Act Environmental Offsets Policy as it relates to MNES;

⁵ Effects include direct, indirect, cumulative, combined, consequential, short and long-term, beneficial and adverse effects.

- documentation of the process and results of the consultation undertaken by the proponent during the preparation of the EES, including the issues raised by stakeholders or the public and the proponent's responses to these issues, in the context of the EES studies and the associated consideration of mitigation measures;
- an outline of a program for community consultation, stakeholder engagement and communications proposed for implementation during the construction and operation of the project, including opportunities for local stakeholders to engage with the proponent to identify values, information or issues for consideration by specialist studies and seek responses to issues that might arise during project implementation; and
- evaluation of the implications of the project and relevant alternatives for applicable legislation and policy, including the principles and objectives of ecologically sustainable development and environmental protection.

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 is to describe the project in sufficient detail both to allow an understanding of all 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 and their environmental performance regime and track record, including relevant experience in developing, operating and rehabilitating projects (including any EPBC Act approval(s)) as well as 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 (if relevant), including the basis for selecting the area proposed to be quarried and implications of the project not proceeding.
- Land use activities (including beneficial and sensitive uses) in the project area and vicinity, supported by plans and maps where applicable.
- Locations of potential sensitive receptors.
- 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 overburden handling, rock extraction, blasting, crushing and product management and storage;
 - 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;
 - information on local and regional geology, including any adverse geological structures;
 - 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 or upgrade of roads and other services required for transporting material or 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 slope stability/landslip protection, 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), energy supply and use and predicted greenhouse gas emissions;
 - solid waste, wastewater and hazardous material generation and management;
 - lighting, safety and security;
 - proposed hours of operation, workforce requirements (total work force) and recruitment policies; and

- approach to be taken regarding site rehabilitation, including progressive rehabilitation and closure.

3.4 Rehabilitation

The EES is to document the proponent's approach to progressive rehabilitation and rehabilitation post-closure to ensure stable rehabilitated landforms capable of supporting future use of the project site. The description of rehabilitation should canvass the following.

- Changes in topography, groundwater conditions, drainage and vegetation cover at the end of the quarry life.
- Consideration of potential end land uses of the project site, including associated strategy for community and stakeholder consultation.
- Consideration of establishing sustainable vegetation cover, including native vegetation, for example ecological communities and suitable habitat for threatened species.
- Consideration of landscape and visual values from local vantage points, roads, tourist attractions, nearby residences and offshore, where possible.
- 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.
- Propose appropriate design criteria to ensure rehabilitation is appropriate for potential end land uses including to avoid long-term landform degradation (e.g. slope geometry, physical/chemical characteristics of final upper soil profile) and manage surface drainage and erosion.

The EES will need to include a draft rehabilitation framework that incorporates proposed:

- depth of topsoil to be extracted, storage and management of stockpiled topsoil and subsoils and treatment measures.
- strategy for assessment and management of residual geotechnical risk of rehabilitated areas.
- management of surface water and groundwater flows, including flood risks, and consideration of site drainage.
- rehabilitation and closure criteria for all environmental, geophysical and structural elements of the rehabilitation framework.
- design criteria relating to landform and geology.
- approach to identifying potential end land uses of the project site.
- approach for establishing sustainable vegetation cover, including native vegetation, for example ecological communities and suitable habitat for threatened species.
- fire and emergency management measures.
- rehabilitation monitoring and maintenance methodologies including contingency measures for unplanned/forced closure.
- rehabilitation plan for progressive rehabilitation and quarry closure.

3.5 Project alternatives

The EES should document the proponent's assessment of relevant alternatives and include an explanation of how specific alternatives were shortlisted for evaluation within the EES. The EES should investigate and document the likely environmental, social and economic effects of the alternatives (as set out in Section 4), particularly where these offer a potential to achieve beneficial environmental, social and economic outcomes and are capable of meeting the objectives of the project. The discussion of relevant alternatives should include:

- the basis for selecting the site, as well as the area proposed to be quarried within the broader boundaries of the proponent's land, including alternatives for the extent, layout and staging of the quarry;
- the site selection process for any ancillary infrastructure, including processing facilities;
- selection process for electricity, water, gas and fuel supply, transport of products and workers and solid and liquid waste disposal; and
- the technical feasibility and environmental implications of alternative establishment, extraction and product processing, management and site rehabilitation methods.

3.6 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:

- *Aboriginal Heritage Act 2006* (amended 2016) and *Aboriginal Heritage Regulations 2007* and 2018;
- *Catchment and Land Protection Act 1994*;
- *Conservation, Forests & Lands Act 1987*;
- *Dangerous Goods Act 1985* and *Dangerous Goods (Storage and Handling) Regulations 2012*;
- *Environment Effects Act 1978*;
- *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;
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth);
- *Flora and Fauna Guarantee Act 1988* (FFG Act) and advisory lists, action statements and guidelines;
- *Heritage Act 2017*;
- *Mineral Resources (Sustainable Development) Act 1990* and Regulations;
- *Planning and Environment Act 1987* and relevant provisions in the Mornington Peninsula Planning Scheme;
- *Public Health and Wellbeing Act 2008*;
- *Road Management Act 2004*;
- *Water Act 1989*; and
- *Wildlife Act 1975*.

3.7 Draft evaluation objectives

Draft evaluation objectives are provided in Section 4 for each of the topics to be addressed in the EES. The draft evaluation objectives identify desired outcomes in the context of key legislative and statutory policies, as well as the principles and objectives of ecologically sustainable development and environment protection, including net community benefit. They provide a framework to guide an integrated assessment of environmental effects, in accordance with the Ministerial Guidelines, and for evaluating the overall implications of the project. These objectives may be refined by the proponent or DELWP as the EES is prepared.

3.8 Environmental management framework

Inadequate management of environmental effects during project construction, operation and rehabilitation and closure could result in a failure to meet statutory requirements or sustain stakeholder confidence.

The proponent needs to provide a transparent environmental management framework (EMF) for the project in the EES with clear accountabilities for managing and monitoring environmental effects and hazards associated with construction, operation, rehabilitation and post-closure phases of the project.

The EMF should describe the baseline environmental conditions to be used to monitor and evaluate the residual environmental effects of the project, as well as the efficacy of applied environmental management and contingency measures. The framework should include the following.

- The context of required approvals and consents.
- Any existing or proposed environmental management system to be adopted.
- Organisational responsibilities and accountabilities for environmental management.
- A register of environmental risks associated with the project which is to be maintained during project implementation (including matters identified in preceding sections in these directions as well as other pertinent risks).
- The environmental management measures proposed in the EES to address specific issues, including commitments to mitigate adverse effects and enhance environmental outcomes.
- The proposed objectives, indicators and monitoring requirements, including for managing or addressing:
 - biodiversity (including MNES) values on and near the project site;

- biodiversity (including MNES) offsets to be established and managed offsite;
 - landscape and visual values;
 - recreational values;
 - landform and slope stability;
 - air quality;
 - noise and vibration;
 - public health and safety;
 - social impacts;
 - land use;
 - potential impacts on downstream surface water, marine waters and groundwater beneficial uses;
 - monitoring of water quality and water table level;
 - ongoing protection of relevant cultural heritage values;
 - traffic and road management measures; and
 - rehabilitation.
- Arrangements for management of and access to baseline and monitoring data, to ensure the transparency and accountability of environmental management and to contribute to the improvement of environmental knowledge.
 - A complaints management procedure.
 - The procedures for monitoring or verifying compliance with requirements and review of the effectiveness of the environmental management framework for continuous improvement.
 - Procedures for auditing and reporting of performance including compliance with relevant statutory conditions and standards.

The EMF should outline the relevant environmental management plans for construction, operation, rehabilitation phases of the project, as well as a program for community consultation, stakeholder engagement and communications for the project, including opportunities for local stakeholders to engage with the proponent to seek responses to issues that might arise when the project is undertaken.

4 Assessment of specific environmental effects

Preparation of the EES document and the necessary investigation of effects should be proportional to the environmental risks, 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.

1. **Key issues or risks** – that the project poses to the environment. The proponent could identify any key issues and risks beyond those identified in the following sections through an environmental risk assessment.
2. **Priorities for characterising the existing environment** – to underpin predictive impact assessments.
3. **Design and mitigation measures** – that could substantially reduce and/or mitigate the risk of significant effects.
4. **Assessment of effects** – through predictive studies or estimates of potential and residual effects, as well as evaluation of their significance and likelihood.
5. **Approach to manage performance** – monitoring and contingency measures to ensure that effects are controlled if monitoring demonstrates more significant effects than predicted or permitted.

The description and assessment of effects must not be confined to the immediate area of the proposed project but must also consider the potential of the proposed project to impact on adjacent areas that are likely to contain habitat for relevant species and communities, including conservation reserves, wetlands and parklands.

4.1 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 resources.

Priorities for characterising the existing environment

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

Design and mitigation measures

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

Assessment of effects

- 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 ensure efficient stone extraction and processing.

4.2 Biodiversity and habitat

Draft evaluation objective

To avoid or minimise potential adverse effects on biodiversity values within and near the site including native vegetation, listed threatened species and ecological communities, and habitat for these species, as well as

address offset requirements for residual environmental effects consistent with State and Commonwealth 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.
- Disturbance and/or degradation of adjacent habitat, including Arthurs Seat State Park, that may support listed species or other protected flora or fauna.
- 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, vibration, light and traffic.
- Disruption to the movement of fauna between areas of habitat across the broader landscape.
- The availability of suitable offsets for the loss of native vegetation and habitat for relevant listed threatened species under the FFG Act and EPBC Act.
- Potential for other significant effects on biodiversity values including those associated with weed/pathogen introduction and mortality of protected species resulting from road traffic and clearing of vegetation or soil.

Priorities for characterising the existing environment

- Characterise the local terrestrial and aquatic environments in the broader area including the adjacent Arthurs Seat State Park that could be directly or indirectly impacted by the project.
- Identify and characterise any groundwater dependant ecosystems that may be affected, particularly by dewatering.
- Describe the specific biodiversity values 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 other protected flora and fauna species; and
 - use of habitat corridors by wildlife.
- Describe existing threats to biodiversity values in the vicinity of the project, including:
 - direct removal of individuals or destruction of habitat (including direct loss of MNES flora and fauna);
 - 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; and
 - the presence of any declared or environmental weeds or pathogens in the project area that could be dispersed.
- Characterisation of the existing environment is to be informed by relevant data, literature and appropriate seasonal or targeted surveys on the potential and actual presence of threatened species and communities, in line with commonwealth and state survey guidelines, including commonwealth conservation advices and threatened species recovery plans. Where surveys do not identify a listed species but past records and/or habitat analysis suggest that it may occur locally and further investigations or further mitigation measures are not proposed, this will need to be justified.

Design and mitigation measures

- Identify potential alternatives and proposed design options and measures which could avoid or minimise significant biodiversity effects. This includes potential effects on native vegetation, EPBC Act listed ecological communities and/ or threatened flora or fauna species or any other listed protected flora and fauna species and their habitat.
- Develop hygiene controls for vehicle and machinery movement to minimise the spread of pathogens and weeds.
- Justify and describe the assumptions and level of uncertainty associated with the proposed measures achieving their desired outcomes.

Assessment of effects

- Assess the effects (including facilitated effects) of the project, including of relevant alternatives, on native vegetation, and listed ecological communities, listed threatened and other protected flora, including any relevant species listed under the EPBC Act and/or FFG Act.
- Assess the effects (including facilitated effects) of the project, including of relevant alternatives, on protected fauna, and associated habitat and movement corridors, especially for listed threatened fauna species under the EPBC Act and/or FFG Act.

Approach to manage performance

- Describe proposed commitments to manage residual effects of the project on biodiversity values, including an outline of an offset strategy and offset management plan that sets out the ability to secure the appropriate offsets to satisfy both commonwealth and state offset policy requirements.
- Describe 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 commitments proposed to monitor and manage risks and effects on biodiversity values and native vegetation, including as part of the EMF (see Section 3.8).

4.3 Landscape and visual values

Draft evaluation objective

To minimise adverse effects on landscape and visual amenity associated with the environs of the project site including the Arthurs Seat State Park.

Key issues

- Changes to the visual amenity and character of the project vicinity as the quarry is progressively developed, with particular regard to vantage points on public land and offshore including roads, nearby private residences and tourist attractions.
- Effects on the landscape values of the project vicinity, including the adjacent Arthurs Seat State Park.
- Possible cumulative landscape and visual effects of the proposed quarry and Hillview Quarry site.

Priorities for characterising the existing environment

- Characterise the visual character and associated landscape values of the project vicinity.
- Identify viewsheds in which the project site features, including from nearby residences (where permitted), public lookouts, tourist attractions, roads and key vantage points in the vicinity.

Design and mitigation measures

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

Assessment of effects

- Assess the effects of the project on landscape values of the project area and environs having regard for the significant landscape overlays of the Mornington Peninsula Planning Scheme.
- Assess the effects of the project on visual amenity values of the project vicinity, with respect to public and private vantage points, having regard to both visual changes and viewer perceptions.

Approach to manage performance

- Describe proposed environmental management commitments to mitigate or manage effects on landscape and visual amenity values including in relation to the configuration and staging of works and progressive rehabilitation, including appropriate provision for post-closure planning.
- Describe the approach to monitor effects and develop contingency measures to be implemented in the event of adverse residual effects on landscape and visual values requiring further management.

4.4 Public health, safety and amenity

Draft evaluation objective

To protect the health, safety and wellbeing of residents and local communities, and minimise effects on air quality, noise, vibration and bushfire, 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.
- Potential for nearby residents to be exposed to excessive noise, vibration or airblast over pressure.
- Public health risks for sensitive receptors (e.g. nearby residences, schools, etc.) that could arise from a reduction in air quality, including potentially elevated levels of Class 3 indicators such as respirable crystalline silica, or other off-site impacts including excessive noise or vibration.
- Public safety hazards including in relation to site access; use of explosives; use of dangerous goods; fly rock; the geotechnical stability of the quarry, rehabilitated landform and surrounding land; and bushfire.

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.
- Monitor and assess the local meteorological conditions and background air quality, including levels of airborne particulates (e.g. dust) in the vicinity of the project site during potential weather conditions at different times of the year, with due regard to data and assessment requirements under the PEM, in consultation with of the Environment Protection Authority.
- Establish the representative existing noise and vibration setting via baseline monitoring.
- Identify and map dwellings and any other potentially sensitive receptors that could be exposed to project-related air quality, noise, vibration and other blasting effects.
- Identify credible fire scenarios having regard to likely fire weather conditions, fuel, topography and fire history.
- Identify existing bushfire management activities occurring on the site and in the surrounding area.

Design and mitigation measures

- Describe and evaluate proposed alternatives and design and mitigation measures that could avoid or minimise the exposure of people to substandard or hazardous levels of airborne particulate matter.
- Describe and evaluate proposed alternatives and design responses and/ or other mitigation measures (including quarrying and processing equipment and methods, and staging and scheduling of works), which could minimise noise, vibration and other blasting effects on sensitive receptors.
- Describe and evaluate proposed design and mitigation measures that could ensure public safety.
- Identify bushfire mitigation measures having regard to credible bushfire scenarios, the potential for ignition on site, likely fire brigade response and support of bushfire management activities on surrounding land.

Assessment of effects

- Predict potential atmospheric concentrations of particulate matter and other relevant Class 1, 2 or 3 indicators for sensitive receptors. Model the dispersal of relevant emissions 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 and Ambient Air Quality).
- Predictions of likely noise levels at dwellings in the vicinity of the project area and along transport routes, and at any other nearby sensitive receptors during 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.
- Identify the residual bushfire risk following implementation of proposed bushfire mitigation measures.

Approach to manage performance

- Outline proposed commitments 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 proposed commitments to monitor and manage noise and vibration levels to minimise residual effects and ensure compliance with relevant standards.
- Outline proposed commitments to implement any proposed bushfire mitigation measures including monitoring.
- Describe contingency plans to mitigate or manage public safety hazards, including fly rock and road safety, and public health risks.

4.5 Social, land-use and recreational values

Draft evaluation objective

To minimise potential adverse social, land use and recreational value effects.

Key issues

- Potential impacts on social cohesion resulting from adverse effects on existing businesses or other activities.
- Potential impacts on existing local industries, including tourism, agriculture and viticulture, businesses 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 Mornington Peninsula Planning Scheme.
- Effects on the recreational values of the project vicinity, including the adjacent Arthurs Seat State Park.

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 industries in the project area which could be affected by the construction and operation of the project.
- Characterise the recreational values and uses of the areas adjacent to the quarry site including Arthurs Seat State Park.

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;
 - protect and where practicable enhance recreational values of the project vicinity; 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 effects

- Assess potential social, local economic and land use impacts arising from the project.
- Assess the effects of the project on recreational values in the vicinity, especially with respect to Arthurs Seat State Park.

Approach to manage performance

- Describe any proposed commitments to mitigate or manage potential social, local economic, land use and recreational value impacts.

4.6 Cultural heritage

Draft evaluation objective

To avoid or minimise adverse effects on Aboriginal and historical cultural heritage.

Key issues

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

Priorities for characterising the existing environment

- Provide contextual information on past and contemporary activities in and connections to 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 through consultation and investigations to the satisfaction of the Bunurong Land Council Aboriginal Corporation, the registered Aboriginal party.
- Identify and document any known and previously unidentified places and sites of historical cultural heritage significance within the project area and its vicinity, including any necessary investigations to supplement past studies.

Design and mitigation measures

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

Assessment of effects

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

Approach to manage performance

- Outline any proposed commitments to mitigate and manage residual effects on sites and places of Aboriginal cultural heritage significance, within the framework of a draft CHMP.
- Outline any proposed commitments to mitigate and manage residual effects on sites and places of historical heritage significance, including site investigation and recording procedures.

4.7 Traffic and Transport

Draft evaluation objective

To protect the fabric and safe use of roads by project-related traffic

Key issues

- Safety of all users of roads used by project-related traffic.
- Protection of road infrastructure.
- Possible cumulative effects of quarry-related traffic associated with the Hillview Quarry and Boundary Road Quarry sites.

Priorities for characterising the existing environment

- Characterise relevant roads and intersections in terms of existing road condition, hazards and capacity in the context of historical and proposed future usage.

Design and mitigation measures

- Identify and validate optimum site access points, including secondary and emergency access points, and routes to the public road network.
- Identify upgrades to the existing public road network to accommodate proposed project traffic.
- Describe applicable design standards for any proposed road or intersection upgrades.
- Identify potential operational measures to minimise and manage conflicts between project and non-project traffic on public roads.

Assessment of effects

- Assess potential effects of the project on the safe use of public roads and intersections.
- Assess potential effects of the project on the structural condition and capacity of public roads.

Approach to manage performance

- Describe monitoring programs to be implemented to measure performance of the road network, the adopted mitigation measures and outline contingency plans to respond to any potential impacts on the efficient and durable performance of the road network.

4.8 Catchment values

Draft evaluation objective

To protect surface water and groundwater resources and their beneficial and licensed uses, including downstream environmental values and users, over the short and long-term.

Key issues

- Potential impacts on beneficial uses of surface water nearby and downstream of the project site arising from interception or redirection of flows, potential discharge to Sheepwash Creek or from polluted run-off, in the context of projected climate change.
- Potential impacts on beneficial uses and behaviour of groundwater, due to interception of flows or groundwater drawdown.
- Potential impacts on environmental values, including ecological health of waterways, downstream of the project site.

Priorities for characterising the existing environment

- Describe the local and downstream surface water environment for relevant catchments with respect to water quality, hydrology and environmental values and other beneficial uses of surface water.
- Describe the existing groundwater environment on and in the vicinity of the project site using available database information and project-specific data collection (e.g. bore installation, monitoring, pump tests, etc.), with regard to the beneficial uses, values and behaviour of groundwater.
- Identify and characterise any groundwater dependent ecosystems that may be affected by quarry dewatering or drawdown of groundwater.
- Characterise the interaction between surface water and groundwater within the project site and in the broader area.
- Provide a sufficient hydrological 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 to protect local and downstream beneficial uses of surface water.
- Describe proposed measures for managing impacts on groundwater level and quality.

Assessment of effects

- Develop a water balance model to quantify the project's interactions (both flows and quality) with groundwater and/ or surface water resources.
- Assess the impacts and risks to surface water, including the bay, and groundwater flows/movement and quality due to the project, and including risks in the context of projected climate change.
- Assess impacts and risks to 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.
- The impact assessment should define the uncertainty associated with any model and include some sensitivity analysis of model outputs, using a range of relevant groundwater and surface water parameters, including climatic variability.

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 effects associated with the project.
- Identify possible contingency actions to respond to foreseeable changes that may be identified through the monitoring program.

Appendix A

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 EE 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 the investigation and avoidance or minimisation of potential environmental effects of the proposed project, including for any relevant alternatives (such as for the quarrying extent, methods for quarrying and processing, locations of processing equipment and transport of quarry products), as well as associated environmental mitigation and management measures. In particular the EES should address:
 - a. effects on biodiversity and ecological values within and near the site including: native vegetation; listed threatened ecological communities and species of flora and fauna; and other habitat values;
 - b. effects on the landscape values and land uses, particularly those associated with the adjacent Arthurs Seat State Park;
 - c. effects of project construction and operation on air quality, noise and visual amenity, on nearby sensitive receptors (in particular residences);
 - d. effects on groundwater resources and surface water environments including hydrology, quality, uses and dependent ecosystems; and
 - e. effects on Aboriginal and non-Aboriginal cultural heritage values.
- (ii) The matters to be investigated and documented in the EES will be set out in detail in scoping requirements prepared by the Department of Environment, Land, Water and Planning (the department). Draft scoping requirements will be exhibited for 15 business days for public comment, before being finalised and then issued by the Minister for Planning.
- (iii) The level of detail of investigation for the EES studies should be consistent with the scoping requirements issued for this project and be adequate to inform an assessment of the potential environmental effects (and their acceptability) of the project and any relevant alternatives, in the context of the Ministerial Guidelines.
- (iv) The proponent is to prepare and submit to the department a draft EES study program to inform the preparation of scoping requirements.
- (v) The department is to convene an inter-agency Technical Reference Group (TRG) to advise the proponent and the department, as appropriate, on scoping and adequacy of the EES studies during the preparation of the EES, as well as coordination with statutory approval processes.
- (vi) The proponent is to prepare and submit to the department its proposed EES Consultation Plan for consulting the public and engaging with stakeholders during the preparation of the EES. Once completed to the satisfaction of the department, the EES Consultation Plan is to be implemented by the proponent, having regard to advice from the department and the TRG.
- (vii) The proponent is also to prepare and submit to the department its proposed schedule for the studies, preparation and exhibition of the EES, following confirmation of draft scoping requirements. This is to enable effective management of the EES process based on an agreed alignment of the proponent's and department's schedules, including for TRG review of technical investigations and the EES documentation.
- (viii) The proponent is to apply appropriate peer review and quality management procedures to enable the completion of EES studies and documentation to an acceptable 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 and report on the environmental effects of the proposal.