

## REFERRAL FORM

The *Environment Effects Act 1978* provides that where proposed works may have a significant effect on the environment, either a proponent or a decision-maker may refer these works (or project) to the Minister for Planning for advice as to whether an Environment Effects Statement (EES) is required.

This Referral Form is designed to assist in the provision of relevant information in accordance with the *Ministerial Guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Seventh Edition, 2006). Where a decision-maker is referring a project, they should complete a Referral Form to the best of their ability, recognising that further information may need to be obtained from the proponent.

**It will generally be useful for a proponent to discuss the preparation of a Referral with the Impact Assessment Unit (IAU) at the Department of Environment, Land, Water and Planning (DELWP) before submitting the Referral.**

If a proponent believes that effective measures to address environmental risks are available, sufficient information could be provided in the Referral to substantiate this view. In contrast, if a proponent considers that further detailed environmental studies will be needed as part of project investigations, a more general description of potential effects and possible mitigation measures in the Referral may suffice.

In completing a Referral Form, the following should occur:

- Mark relevant boxes by changing the font colour of the 'cross' to black and provide additional information and explanation where requested.
- As a minimum, a brief response should be provided for each item in the Referral Form, with a more detailed response provided where the item is of particular relevance. Cross-references to sections or pages in supporting documents should also be provided. Information need only be provided once in the Referral Form, although relevant cross-referencing should be included.
- Responses should honestly reflect the potential for adverse environmental effects. A Referral will only be accepted for processing once IAU is satisfied that it has been completed appropriately.
- Potentially significant effects should be described in sufficient detail for a reasonable conclusion to be drawn on whether the project could pose a significant risk to environmental assets. Responses should include:
  - a brief description of potential changes or risks to environmental assets resulting from the project;
  - available information on the likelihood and significance of such changes;
  - the sources and accuracy of this information, and associated uncertainties.
- Any attachments, maps and supporting reports should be provided in a secure folder with the Referral Form.
- A CD or DVD copy of all documents will be needed, especially if the size of electronic documents may cause email difficulties. **Individual documents should not exceed 2MB as they will be published on the Department's website.**

- A completed form would normally be between 15 and 30 pages in length. Responses should not be constrained by the size of the text boxes provided. Text boxes should be extended to allow for an appropriate level of detail.
- The form should be completed in MS Word and not handwritten.

The party referring a project should submit a covering letter to the Minister for Planning together with a completed Referral Form, attaching supporting reports and other information that may be relevant. This should be sent to:

Postal address

**Minister for Planning  
GPO Box 2392  
MELBOURNE VIC 3001**

Couriers

**Minister for Planning  
Level 20, 1 Spring Street  
MELBOURNE VIC 3001**

In addition to the submission of the hardcopy to the Minister, separate submission of an electronic copy of the Referral via email to [ees.referrals@delwp.vic.gov.au](mailto:ees.referrals@delwp.vic.gov.au) is required. This will assist the timely processing of a referral.

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## PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION

### 1. Information on proponent and person making Referral

<b>Name of Proponent:</b>	<b>Hillview Quarries Pty Ltd</b>
<b>Authorised person for proponent:</b>	Paul Nitas
<b>Position:</b>	Chief Executive Officer
<b>Postal address:</b>	Hillview Quarry Drive, Dromana VIC 3936
<b>Email address:</b>	<a href="mailto:paul@hvq.com.au">paul@hvq.com.au</a>
<b>Phone number:</b>	T (03) 5987 2600 M (0459) 800 930
<b>Facsimile number:</b>	N/A
<b>Person who prepared Referral:</b>	Deb Neumann
<b>Position:</b>	Technical Director
<b>Organisation:</b>	Jacobs Group (Australia) Pty Ltd
<b>Postal address:</b>	PO Box 312, Flinders Lane, Melbourne 8009
<b>Email address:</b>	<a href="mailto:Deb.Neumann@jacobs.com">Deb.Neumann@jacobs.com</a>
<b>Phone number:</b>	0414 811 290
<b>Facsimile number:</b>	N/A
<b>Available industry &amp; environmental expertise:</b> (areas of 'in-house' expertise & consultancy firms engaged for project)	<p><i>Hillview Quarries</i> – Sally Harle (in-house)</p> <ul style="list-style-type: none"> <li>· Project management &amp; coordination</li> <li>· Noise (external consultant)</li> </ul> <p><i>Jacobs</i> (Consultant)</p> <ul style="list-style-type: none"> <li>· Project management and coordination</li> <li>· Land Use and environmental planning</li> <li>· Heritage (Aboriginal and historical)</li> <li>· Ecology (terrestrial and aquatic)</li> <li>· Spatial</li> </ul> <p>The Primary Group</p> <ul style="list-style-type: none"> <li>· Communications and stakeholder engagement and support</li> </ul>

### 2. Project – brief outline

<b>Project title:</b>	Hillview Quarries – Boundary Road Quarry extension
<b>Project location:</b> (describe location with AMG coordinates and attach A4/A3 map(s) showing project site or investigation area, as well as its regional and local context)	
<p>The site is located at 115 and 121 Boundary Road in Dromana. It is located approximately 80 km south-east of Melbourne and 3 km east of Dromana. It is bounded by:</p> <ul style="list-style-type: none"> <li>· Boundary Road to the north</li> <li>· Eatons Cutting to the east</li> <li>· Rural residential dwellings to the south, and</li> <li>· Arthurs Seat State Park and cleared agricultural land (161 Boundary Road) to the west.</li> </ul> <p>Latitude: 38°21'18.94" Longitude: 144°59'24.48"</p> <p>AMG coordinates: 12 AMG coordinates for the site boundaries are provided on the site map at</p>	

Appendix B and are listed in the table below.

AMG Coordinates		
I.D.	X	Y
1	144.99	-38.36
2	145.00	-38.36
3	144.99	-38.35
4	144.99	-38.35
5	145.00	-38.35
6	144.99	-38.35
7	144.99	-38.35
8	144.99	-38.35
9	144.99	-38.35
10	145.00	-38.36
11	145.00	-38.36
12	145.00	-38.36

The site is shown on the locality map at Appendix A and the site map at Appendix B. The site was previously owned and operated (1963 to 1998) by Pioneer Concrete (Vic) Pty Ltd prior to Hillview Quarries taking ownership in 1999. The site is occupied by an existing quarry pit, associated roads and cleared areas and significant areas which are yet to be extracted.

**Short project description** (few sentences):

The project seeks to resume and extend quarrying activities on the site. This will involve the:

- Removal of vegetation, topsoil, and overburden to enable rock extraction
- Extraction of granite through controlled blasting and mechanical extraction
- On-site processing of extracted rock
- Mixing of aggregates and crushed rock on site
- Transportation of finished product/material from site
- Progressive rehabilitation of extracted areas
- Final rehabilitation (post-resource exhaustion)

### 3. Project description

**Aim/objectives of the project** (what is its purpose / intended to achieve?):

Hillview Quarries aims to resume activity and extend the existing Boundary Road Quarry in order to extract the underlying granite rock reserves. Granite reserves at the site are estimated to be in the vicinity of 70 million tonnes.

The proposed extension will enable the long-term supply of high quality hard rock construction materials to the Mornington Peninsula and the broader Melbourne market, in particular Melbourne's rapidly expanding south eastern growth corridor.

The area over which the quarry is proposed to be extended, and the staging of the proposed extension, is shown on the site map at Appendix B.

**Background/rationale of project** (describe the context / basis for the proposal, e.g. for siting):

*Siting:*

The site contains an existing quarry with a stone resource of approximately 70 million tonnes. The land has been owned by various extractive industry operators for 55 years. The site is well

located to supply development on the Mornington Peninsula as well in the urban growth areas of south-east Melbourne. Current land use and planning controls in the area suggest that urban development will not further encroach on the boundaries of the quarry site.

At 60 Manna Street Dromana (Lot 1, TP447069) Hillview Quarries owns and operates the "Hillview Quarry Drive site". The Hillview Quarry on Hillview Quarry Drive site is located approximately 1.1 km to the west of the subject site and does not form part of the site subject of this referral.

The Boundary Road Quarry is intended to replace the Hillview Quarry Drive site as the permitted reserves at the latter is approximately less than 8 years. The exact timing of the cessation of quarrying at the Hillview Quarry Drive site will depend on market demand (which drives the rate of extraction).

*Rationale:*

The site has a significant reserve of high quality granite rock available for extraction. Assuming a removal volume of 1 million tonnes per annum, the site is anticipated to have a lifespan of over 70 years. However, the rate of extraction will vary with demand, so this assumed lifespan is not fixed.

*Strategic Importance:*

Melbourne has significant granite resources. However, access to these is mostly constrained by incompatible land uses with planning constraints restricting the amount of granite available for the Melbourne market (MSA, 2003).

Victoria's demand for quarry resources is expected to almost double by 2050 according to *Extractive Resources in Victoria: Demand and Supply Study 2015-2050, Final Report<sup>1</sup>* (the *Demand and Supply Study*). The site has a significant reserve of high quality granite that will enable continued supply to the local Mornington Peninsula market. It is identified as a critical region for the future supply into the Melbourne market, in particular for the expanding south eastern growth corridor.

Due to the weight of quarry resources, transportation costs are comparatively high, as are the infrastructure costs to provide and maintain roads for large volume truck movements. To keep building costs down, the *Demand and Supply Study* identifies the importance of sourcing the raw resources as close as possible to the construction sites.

The Victorian Commissioner for Better Regulation recently reviewed the performance of the Victorian mining and extractives regulator, the Earth Resources Regulator. As a result, a six-point plan to improve mine and quarry regulation was announced by the Minister for Resources, Tim Pallas, on 20 December 2017<sup>2</sup>. The Minister noted that the ongoing significant government investment in infrastructure is underpinned by the earth resources sector, stating:

*"Improving the regulation of the earth resources sector will ensure the Victorian industry operates at its best, providing materials for our record infrastructure investment while protecting communities' interests".*

The Boundary Road Quarry is a regionally significant hard rock resource. The granite resource is critical for the local requirements of the Mornington Peninsula and to the delivery of the State's infrastructure program as the site is well located to supply Melbourne's south east growth corridor.

<sup>1</sup> Department of Economic Development, Jobs, Transport and Resources (2016).

<sup>2</sup> <http://www.timpallas.com.au/media-releases/six-point-plan-to-improve-mine-and-quarry-regulation/>

**Main components of the project** (nature, siting & approx. dimensions; attach A4/A3 plan(s) of site layout if available):

*Extraction of stone:*

Stone is proposed to be extracted from approximately 43.4 ha of the 83.59 ha site. This area incorporates the existing quarry pit. The resource will be extracted in two stages as shown on the site map at Appendix B.

*Boundary setback:*

Clause 14.03 (Resource exploration and extraction) of the Victoria Planning Provisions states that buffer areas between extractive activities and sensitive land uses should be determined on consideration of matters such as:

- *“Appropriate limits on effects can be met at the sensitive locations using practical and readily available technology.*
- *Whether a change of land use in the vicinity of the extractive industry is proposed.*
- *Use of land within the buffer areas is not limited by adverse effects created by the extractive activities.*
- *Performance standards identified under the relevant legislation.*
- *Types of activities within land zoned for public use”.*

Clause 52.09-7 (Stone Extraction and Extractive Industry Interest Areas - Requirements for the use and development of land for Stone extraction) of the Victoria Planning Provisions specifies that:

*“Except with a permit, no alteration may be made to the natural condition or topography of the land within 20 metres of the boundary of the land. This does not apply to driveways, drains, bund walls or landscaping”.*

This provision provides a setback of quarrying activities from adjoining land use of at least 20 metres (as a minimum). The overall setback to be maintained from quarrying activities will be determined as appropriate for the surrounding uses, taking into account the guidance provided by the planning provisions referenced above and the guidance of EPA Publication 1518 *Recommended separation distances for industrial residual air emissions* (March 2013). This latter document is particularly relevant to the process of obtaining a Works Approval for the quarry.

*Processing of material:*

A processing plant will be established in the cleared area north of the existing pit, as shown on the site map at Appendix B. The processing plant will be sited to accept and process the raw product which will then be distributed via an existing internal road connecting to Boundary Road to the north.

The processing plant contains primary, secondary and tertiary processing equipment, with stockpiling of material between stages. Aggregate will be mixed on-site to make road base, wet-mix and cement treated products.

*Site access:*

Access will be via the existing internal road and access point to Boundary Road. The intersection of the existing internal road and Boundary Road will be upgraded.

**Ancillary components of the project** (e.g. upgraded access roads, new high-pressure gas pipeline; off-site resource processing):

There are no ancillary project components, with the exception of the upgraded intersection at the entry to the site from Boundary Road noted above.

**Key construction activities:**

The key construction activities involve the extension of the quarry pit over an area of approximately 27.3 ha at Stage 1, and a further extension eastwards over approximately 16.1 ha

at Stage 2. This combined extension area of 43.4 ha is currently vegetated and will be cleared to enable the extensions, subject to refinements to the footprint after site investigations are finalised.

The pit will be excavated to an approximate depth of 190 m. Quarry walls will be battered appropriately and the site will be fenced.

An existing laydown/staging/stockpile area immediately north of the existing quarry pit will be re-established along with the processing plant (see Appendix B).

The existing vehicle access road from the plant and stockpiling area to Boundary Road is proposed to be upgraded to accommodate heavy vehicle movements.

**Key operational activities:**

*Extraction:*

Stone will be progressively extracted from the site using mechanical excavation and blasting where required. A front end loader or excavator will load material into haul trucks. The frequency of blasting will vary from a few to several times monthly, as necessary to respond to market demand.

*Processing:*

Stone is processed in stages with primary, secondary and tertiary scalping occurring before material is screened and mixed to produce product for market.

*Stockpiling and Sales*

Stone is stockpiled between processing stages and between final screening, mixing and distribution. A final stockpile sales area is contained within the site and the final products such as crushed rock and aggregates are stored in this area prior to being sold to various customers to supply infrastructure and construction project.

*Transport*

Transportation of raw material and final product will occur throughout the operation of the quarry. Transportation is predominately via trucks which transport final product from the sales stockpile area offsite via the main access road.

*Employment:* Operation of the quarry will require employment for about 35 people.

**Key decommissioning activities (if applicable):**

The site will be progressively rehabilitated as the resource is extracted from discrete areas of the site.

Following extraction, the site will be made safe and stable and rehabilitated in accordance with a rehabilitation plan to be approved as part of the site work plan.

Section 79 of the *Mineral Resources (Sustainable Development) Act 1990* (MRSDA) requires the preparation of a rehabilitation plan that:

- responds to any special characteristics of the land and the surrounding environment
- stabilises the land
- seeks to return land as close as is reasonably possible to its state before the extraction and,
- address the potential for long term degradation.

The MRSDA requires a bond to be provided to DEDJTR to ensure the site will be appropriately rehabilitated by the proponent.

**Is the project an element or stage in a larger project?**

No  Yes If yes, please describe: the overall project strategy for delivery of all stages and components; the concept design for the overall project; and the intended scheduling of the design and development of project stages).

**Is the project related to any other past, current or mooted proposals in the region?**

No  Yes If yes, please identify related proposals.

The site has long been recognised as having a significant stone resource, with a quarry originally established on the site in the 1960s.

The site Planning Permit No. P1322/93 was issued in 1994 and was revised with an extension to the use and development approved under Planning Permit No. P97/1656 in 1998. Work Authority 380 for stone extraction across the site (plan provided in Appendix C) was approved in 2000 under the MRSDA. The nature and significance of the resource has not changed since the approval of the Work Authority and original planning permit. The MRSDA and the Victoria Planning Provisions clearly provide that Work Authorities and planning approvals apply for the life of a resource (the extraction of the winnable resource and safe and stable rehabilitation of the quarry) and should not contain expiry dates. The whole of the site was supported by Work Authority 380<sup>3</sup>, in recognition of the need to preserve the sites' significant stone resource for extraction.

The origins of the "23 March 2014" permit expiry date on Planning Permit No. P97/1656 relates to April 1998 when the then-owner (Pioneer Concrete) requested an extension of time to the permit (which was due to expire in March 1999) for the life of the reserves. Pioneer estimated that there was a further 15 years of reserves left at the site and hence, a March 2014 timeframe was written into the permit.

The Roy Everard Ross Perpetual Charitable Trust (R E Ross Trust) via Hillview Quarries subsequently purchased the site and the surrounding land which was then incorporated in 1999 and included in Work Authority 380 (Appendix C).

The Department of Primary Industries (Extractive Industry) then approved the amendment to the permit date in June 1999. Hillview Quarries has always maintained the site with a care and maintenance perspective and of the view that significant stone resources were to be extracted from the site at a future time.

In March 2014, Hillview lodged an application with the Mornington Peninsula Shire to extend the timeframe of Planning Permit No. P97/1656. This was later amended to seek an amendment to the permit to delete the expiry date condition and to update the permit conditions related to noise to reflect the current standards.

Council failed to determine the application within the prescribed statutory timeframe and the matter was referred to the Victorian Civil and Administrative Tribunal (VCAT) for determination. A preliminary hearing was held on the legal issue of whether the permit had expired. VCAT determined that the permit had expired and was therefore not able to be amended.

#### 4. Project alternatives

**Brief description of key alternatives considered to date** (e.g. locational, scale or design alternatives. If relevant, attach A4/A3 plans):

No alternative sites have been considered to date as the known natural resource is fixed at this location. However, refinements to the site disturbance footprint are being considered pending the outcomes of further site investigations.

**Brief description of key alternatives to be further investigated** (if known):

No alternatives are being investigated, beyond refinement of the footprint and staging throughout the design process.

<sup>3</sup> WA380 was varied on 28/07/2000 to extend the Work Authority to the entire site.  
Version 5: July 2013

## 5. Proposed exclusions

### Statement of reasons for the proposed exclusion of any ancillary activities or further project stages from the scope of the project for assessment:

No further ancillary activities or project stages are proposed beyond what is described in this referral.

## 6. Project implementation

### Implementing organisation (ultimately responsible for project, i.e. not contractor):

- Hillview Quarries Pty Ltd. - <http://www.hvq.com.au/>

### Implementation timeframe (Estimated):

- Assessment and approvals process (estimated duration of 15 months)
- Pre-construction preparation immediately post-approval (estimated duration 12 months)
- Design, fabricate, construct, build and commission (estimated duration 24 months)
- Operation to commence between 2023-2025 to the life of the resource
- Staged rehabilitation and revegetation will occur on terminal faces throughout the life of the resource
- Rehabilitation to be finalised post-resource depletion, with interim rehabilitation to occur progressively

### Proposed staging (if applicable):

The resource will be extracted in two stages as shown in Appendix B.

## 7. Description of proposed site or area of investigation

### Has a preferred site for the project been selected?

- No  Yes If no, please describe area for investigation.  
If yes, please describe the preferred site in the next items (if practicable).

### General description of preferred site, (including aspects such as topography/landform, soil types/degradation, drainage/ waterways, native/exotic vegetation cover, physical features, built structures, road frontages; attach ground-level photographs of site, as well as A4/A3 aerial/satellite image(s) and/or map(s) of site & surrounds, showing project footprint):

The site ranges in elevation from approximately 80 m to 200 m Australian Height Datum (AHD), excluding the existing quarry pit. The site is located on the northern flank of a ridge formed from the Devonian-aged Dromana Granite, at an elevation of approximately 200 m (AHD). The underlying Dromana Granite extends west and south west towards the coast, and Quaternary-aged colluvial sediments overlay on lower slopes to the north. The Mornington Volcanic group is present to the east and south of the site.

The site is located down-gradient of the nearby OT Dam, and is intersected by Sheepwash Creek (West Branch), which originates at the OT Dam and runs north towards the site, along the western boundary and then north and north-west to Safety Beach. An unnamed stream is present approximately 500 m east of the site, running adjacent to Eaton's Cutting before joining Sheepwash Creek. The site is within the Port Phillip and Western Port Catchment Management Authority operational area.

The site adjoins the Arthurs Seat State Park to the east and west. The site and surrounding area is within the Gippsland Plain Bioregion which is characterised by flat to gently undulating terrain with a mix of low lying alluvial and coastal plains. Typical vegetation types include Heathy Woodlands, and Damp Sands Herb-rich Woodlands.

<p>Seven Ecological Vegetation Classes (EVCs) were mapped on-site during field surveys undertaken on the project site in January 2018.</p> <p>The map at Appendix H identifies the EVCs associated with 115 and 121 Boundary Road, which is where extension of the quarry is proposed.</p>
<p><b>Site area</b> (if known):</p> <ul style="list-style-type: none"> <li>· 83.59 ha (total site)</li> </ul> <p><b>Route length</b> (for linear infrastructure) .....N/A...(km)    <b>and width</b> .....N/A..... (m)</p>
<p><b>Current land use and development:</b></p> <p>Extractive industry reserve</p>
<p><b>Description of local setting</b> (e.g. adjoining land uses, road access, infrastructure, proximity to residences &amp; urban centres):</p> <p><i>Adjoining land uses:</i></p> <ul style="list-style-type: none"> <li>· <i>North:</i> Boundary Road adjoins the northern boundary of the site. North of Boundary Road, land is in a Green Wedge Zone and is used for low density residential and agricultural purposes. This land has largely been cleared of native vegetation</li> <li>· <i>East:</i> Eatons Cutting within the Arthurs Seat State Park adjoins the south-eastern boundary of the site. This land is in a Public Conservation and Resource Zone. North of Eatons Cutting and adjoining the site is land in a Green Wedge Zone (used for low density residential and agricultural activities.</li> <li>· <i>South:</i> Land adjoining the southern boundary of the site is in a Green Wedge Zone and is used for low density residential and agricultural activities.</li> <li>· <i>West:</i> The Arthurs Seat State Park also adjoins the western boundary of the site. This land is in a Public Conservation and Resource Zone .</li> </ul> <p><i>Road access:</i></p> <p>Road access to and from the site is via Boundary Road, which connects to the Mornington Peninsula Freeway to the west and White Hill Road to the east and onto the Nepean Highway.</p> <p><i>Infrastructure:</i></p> <ul style="list-style-type: none"> <li>· Mornington Peninsula Freeway is accessed approximately 3 km to the west via the quarry access road and Boundary Road.</li> </ul> <p><i>Proximity to residences and urban centres (distances measured point to point):</i></p> <ul style="list-style-type: none"> <li>· The site is approximately 3 km east of Dromana and 3.7 km north-east of Safety Beach.</li> <li>· The closest dwellings to the site are to the south and north-east within a Green Wedge Zone. There are dwellings to the north across Boundary Road also within a Green Wedge Zone.</li> <li>· The nearest land in a residential zone is located off Boundary Road, north- west of the site. This is zoned Low Density Residential and is currently undeveloped. Developed land in a General Residential Zone is located further to the west away from the site.</li> <li>· Developed land in the Green Wedge Zone is also located to the south of the site, south of Arthurs Seat Road.</li> </ul>
<p><i>Planning context (eg. strategic planning, zoning &amp; overlays, management plans):</i></p> <p>The strategic nature of the stone resources at the two hard rock quarries at Dromana was initially recognised in the 1986 draft <i>Extractive Industries Strategy Plan</i> for Melbourne<sup>4</sup>. At this time, the Mornington Peninsula was considered to represent a 'somewhat closed supply/demand system'<sup>5</sup>. This report included all major quarries which supplied hard rock to Melbourne and its suburbs including the Mornington Peninsula.</p>

<sup>4</sup> Extractive Industries Strategy Plan Interdepartmental Committee, *Extractive Industries Strategy Plan for Melbourne – A Draft Report Stage 2*, Melbourne, 1986.

<sup>5</sup> Parliament of Victoria Environment and Natural Resources Committee, *Report on Planning Issues for Extractive Industries in Victoria*, Melbourne, 1994 p 12

The then-Department of Energy and Minerals provided hard rock demand forecast data for inclusion within the Report on Planning Issues in 1994 which included production in granted licences and those under application. The report identified the locations of the hard rock quarries which generally produce more than 50,000 tonnes per annum (i.e. medium to large). The Hillview Quarry Drive and Boundary Road Quarry (the latter being the site subject of this referral) were the only hard rock quarries identified on the Mornington Peninsula. It is likely that the Boundary Road Quarry would have been included in the production estimates as the original planning permit was granted prior to the finalisation of this report. This supports the view that the resource within this quarry is essential to the continual supply of hard rock into the future.

In 1993, the then-Department of Energy and Minerals released a report designating the *Extractive Industry Interest Areas (EIAs) in the Melbourne Supply Area (MSA)*. This report was reviewed in 1996 and 2003. While no EIAs were declared on the Mornington Peninsula, the studies clearly recognise that the location of the resource is isolated and, given the planning circumstances of the area, it was unlikely that new approvals for greenfield sites would be issued for hard rock quarry sites on the Mornington Peninsula. As a consequence, it is critical that existing sites be approved to enable the continuation of the existing resource extraction on this site.

The EIA Review 2003 highlighted that the limited stone resources on the Mornington Peninsula (Hillview Quarries' two sites being the only hard rock sources on the Mornington Peninsula) may give rise to increased costs for future stone supply within the region. The review also highlighted the need to ensure that the existing resources are protected in order to supply the established market at a reasonable cost. This review also led to the introduction of the requirements at Clause 52.09-8 of the Victoria Planning Provisions which introduced requirements for the giving of notice of planning permit applications for dwellings proposed within 500 m of land on which a proposed or existing work authority existed.

This review clearly highlights the intent of the Victorian State Government to protect the primary granite rock reserves on the Mornington Peninsula. The contribution of these established reserves to the continuous supply of construction material into the future has been factored into supply forecasts. Given that land within the Mornington Peninsula is largely sterilised from further quarry development due to planning constraints, these quarries represent the last remaining granite resources. There is a demonstrated need to continue to protect this resource given the limited opportunities for granite extraction on the Mornington Peninsula, therefore the value of the resource is significant.

The Plan Melbourne Refresh 2015 paper states:

*"The value of the production from quarries in Victoria is estimated to be about \$760 million per year. The availability of a reliable supply within economic transport distances from demand is an important factor for the Victorian economy".*

It further states

*Areas set aside for quarries more than 30 years ago are now depleted or unavailable due to the spread of the city and protection of native grassland areas. Strategic resources needed for future supply out to 2051 may be at risk due to other land uses encroaching.*

These statements provide strategic planning support for the need to protect and make use of existing resources which are close to the demand areas. The site clearly meets these parameters in that it is close to the markets it supplies. Other than the Hillview Quarry site to the west, there are no other high quality hard rock quarries within 65 km of this site.

This is supported by the Cement Concrete and Aggregates Association (CCAA) who previously stated that:

*Current forecasts indicate demand for sand in Melbourne will exceed supply in 2019 and for hard rock in 2027' (CCAA 2013).<sup>6</sup>*

Fluctuations in the market are common and as stated below, reflect the domestic demand from

<sup>6</sup> *ibid*, pps 5

the building and construction sector. The key is to ensure that there is a continual supply of stone products available within the local market to meet this fluctuating demand.

*As of 30 June 2013, there were 882 quarries operating under the Mineral Resources (Sustainable Development) Act 1990 (MRSDA) in Victoria. Of those 882, 535 quarries reported production in 2012/13 with total sales volume being 47.4 million tonnes. Sales of quarry products fluctuate from year to year, reflecting domestic demand from the building and construction sector.<sup>7</sup>*

The site is subject to the provisions of the Mornington Peninsula Planning Scheme. The strategic nature of stone resources and the need to protect these resources on the Mornington Peninsula have been identified by the State Government and by the Mornington Peninsula Shire for many years. The State and Local Planning Policy Frameworks in the Mornington Peninsula Planning Scheme recognise that:

- Extractive industry makes a significant contribution to the Victorian economy
- Stone resources should be protected from incompatible land uses
- Stone resources need to be available when required and located close to local markets to ensure competitive supply
- Planning schemes should not prohibit extractive industry or include conditions which require the use to cease by a specified date, and
- Extractive industry must be carried out in accordance with acceptable environmental standards.

The relevant clauses of the State and Local Planning Policy Frameworks have remained largely unchanged since 1999, reflecting the strategic value of the resource and intent to continue to preserve access to identified resources while balancing the conservation objectives of the Planning Scheme.

In addition, the *Mornington Peninsula Localised Planning Statement July 2014*<sup>8</sup> states:

*Extractive industries will be contained to carefully limited works and sites.*

More recently, the draft *Mornington Peninsula Green Wedge Management Plan 2018* recognises:

*The objectives of the green wedge zone are to recognise, protect and conserve green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources.*

The Particular Provision of the planning scheme for the earth and energy resource industry (Clause 52.08) aims to:

- encourage land to be used and developed for exploration and extraction of earth and energy resources in accordance with acceptable environmental standards
- ensure that mineral extraction, geothermal energy extraction, greenhouse gas sequestration and petroleum extraction are not prohibited land uses
- ensure that planning controls for the use and development of land for the exploration and extraction of earth and energy resources are consistent with other legislation governing these land uses.

#### State Planning Policy Framework (SPPF)

The relevant clauses to be addressed under the SPPF in relation to the permitting of extractive industry are:

- Clause 12.01 - Biodiversity
- Clause 12.04 - Significant environments and landscapes

<sup>7</sup> Victoria's Minerals, Petroleum and Extractive Industries 2012/2013 Statistical Report p 19

<sup>8</sup> A Reference Document to Clause 11.05-2 (Distinctive areas of state significance) of the planning scheme.

- Clause 13.03-2 - Erosion and landslip
- Clause 13.04-1 - Noise abatement
- Clause 13.04-2 - Air quality
- Clause 13.05 - Bushfire
- Clause 14.02 - Water
- Clause 14.03 - Resource exploration and extraction.

#### Local Planning Policy Framework (LPPF)

The relevant clauses to be addressed under the LPPF in relation to the permitting of extractive industry include:

- Clause 21.02 - Profile of the Mornington Peninsula
- Clause 21.09-2 - Supporting Agriculture and Primary Production
- Clause 21.12 - Reference Documents
- Clause 22.05 - Aboriginal Cultural Heritage
- Clause 22.11 - Mornington Peninsula Fire Protection Policy
- Clause 22.14 - Mornington Peninsula Land Units
- Clause 22.20 - Landslide Susceptibility.

#### Zones and overlays

Appendix D identifies the zoning of the land and surrounding area. The site is entirely within a Green Wedge Zone - Schedule 2 (GWZ2). The purpose of this zone includes:

*To recognise, protect and conserve green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources".*

The zone therefore explicitly contemplates the use and development of land for quarrying and in practice, a significant proportion of Melbourne's stone resource is supplied from land within the Green Wedge Zone. The GWZ2 specifies a minimum subdivision area of 40 ha, thereby seeking to maintain a configuration of larger allotments suitable for use and development consistent with the zone purposes.

The following overlays also apply to the site and surrounds (see Appendix E):

- Environmental Significance Overlay (Schedule 8 - Arthurs Seat Escarpment)
- Environmental Significance Overlay (Schedule 17 - Streamlines)
- Environmental Significance Overlay (Schedule 24 - Site of Scientific Significance)
- Environmental Significance Overlay (Schedule 28 - Mornington Peninsula Bushland)
- Vegetation Protection Overlay (Schedule 2 – Significant Tree lines)
- Significant Landscape Overlay (Schedule 1 - Ridge and Escarpment Areas)
- Significant Landscape Overlay (Schedule 6 - National Trust Classified Landscapes)
- Erosion Management Overlay – Schedule 1
- Erosion Management Overlay – Schedule 2
- Bushfire Management Overlay

The following Particular Provisions in the planning scheme are also relevant:

- Clause 52.08 (Earth and Energy Resource Industry)
- Clause 52.09 (Stone Extraction and extractive Industry Interest Areas)
- Clause 52.17 (Native Vegetation).

#### Areas of Aboriginal Cultural Heritage Sensitivity

Land 200 m either side of Sheepwash Creek in the western parts of the site is within an area of Aboriginal cultural heritage sensitivity.

#### **Local government area(s):**

The site is located within the Shire of Mornington Peninsula.

## 8. Existing environment

**Overview of key environmental assets/sensitivities in project area and vicinity** (cf. general description of project site/study area under section 7):

The project area is located on freehold land owned by Hillview Quarries. The site is accessed from Boundary Road and supports a large extraction (quarry) and surrounding vegetated areas, both of which are maintained by Hillview Quarries.

The site and general area has a history of stone extraction dating back to the 1930s. The specific site has a history of extraction dating from 1963 through to 1998.

The land adjoins the Arthurs Seat State Park which covers a large area to the west of the project area.

Key environmental attributes of the project area may include:

- Native vegetation
- Powerful owl
- Invasive weed species.

The closest dwelling is 120 m from the Eastern site boundary (85 Boundary Road adjacent to the Eastern boundary of the site).

## 9. Land availability and control

**Is the proposal on, or partly on, Crown land?**

No  Yes If yes, please provide details.

The access road leading off Boundary Road through 115 Boundary Road and to the northern area of 121 Boundary Road is Crown land (local government road). No extraction is proposed on this parcel. The proposed quarry (extractive) footprint does not affect any Crown land.

**Current land tenure** (provide plan, if practicable):

Certificates of Title for the site are included at Appendix F.

115 Boundary Road consists of:

- Lot 1, TP099256T – Vol 9528 Fol 114

121 Boundary Road consists of:

- Lot 1 TP 665869 – Vol 8383 Fol 740.
- Lot 2 TP 665869 – Vol 8383 Fol 740
- CA 7E Parish of Kangerong, Vol 10565 Fol. 131

Both 115 and 121 Boundary Road are owned by the R E Ross Trust

**Intended land tenure** (tenure over or access to project land):

No change in land tenure is proposed

**Other interests in affected land** (e.g. easements, native title claims):

A review of the *Native Title Vision* GIS database on 11 October 2017 indicated there are no Native Title claims that affect the site, or within 1000 m of the site.

## 10. Required approvals

### State and Commonwealth approvals required for project components (if known):

#### *Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*

As the project has the potential to impact on Matters of National Environmental Significance (MNES) a referral will be submitted to the Commonwealth Department of Environment and Energy (DoEE) who may determine that the project is a 'controlled action.' A controlled action is a matter that requires assessment and approval by the Commonwealth. However, a bilateral agreement exists between the Victorian and Commonwealth Governments which enables the Victorian Government to assess potential impacts to MNES through an accredited assessment process (under the *Planning and Environment Act 1987* and *Environment Effects Act 1978*).

#### *Mineral Resources (Sustainable Development) Act 1990*

A work plan and work authority are required pursuant to the MRSD Act.

The work plan requires extensive technical detail to be provided about the operation and design of the quarry, along with a comprehensive community engagement plan. In addition to developing the work plan, the proponent is required to consult with all agencies with an interest in the site (these agencies include those identified through the planning scheme). The removal of native vegetation, noise and dust emissions, impacts on surface and groundwater quality and the rehabilitation of the site are all managed through the work plan process. The work plan is endorsed by the Earth Resources Regulation division of the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) to ensure it is of an acceptable standard before a planning assessment process commences. The work plan may need to be amended after the planning assessment before it is approved by Earth Resources Regulation.

#### *Planning and Environment Act 1987*

Clause 52.08 (Earth and Energy Resources) requires a planning permit to use and develop the land for earth and energy resources industry. However, the clause states that no permit is required if the following condition is met:

- Complies with Section 77T of the MRSDA

If an EES is required, no planning permit is required, where a work plan is prepared and that work plan is consistent with the Minister for Planning's assessment of the EES.

Clause 52.17 (Native Vegetation) states that a planning permit is not required for the removal of native vegetation associated with stone extraction:

- *To enable the carrying out of Stone extraction in accordance with a work plan approved under the Mineral Resources (Sustainable Development) Act 1990 and authorised by a work authority granted under that Act.*

#### *Aboriginal Heritage Act 2006*

A Cultural Heritage Management Plan (CHMP) is required for the project as the proposal is a high impact activity (extractive industry) within an area of cultural heritage sensitivity.

#### *Water Act 1989*

Section 188A (1) of this Act specifies that any waterway in the management district of Melbourne Water is a "designated" waterway, along with land to 20 m either side of the waterway. The section of Sheepwash Creek between the northern side of the existing cleared laydown area and the northern site boundary is designated under the act. The section of the creek affected by the

proposed extension (i.e. between the OT Dam and the existing cleared laydown area) is not designated<sup>9</sup>. If the project design encroaches onto the designated section of Sheepwash Creek, a permit for works within the waterway will be required from Melbourne Water prior to construction.

*Environment Protection Act 1970*

This Act provides State Environment Protection Policies (SEPPs) which need to be addressed as part of the project. SEPPs are in place for ground and surface water management, land contamination, noise and air quality.

Stormwater discharges from disturbed areas of the site should be managed to ensure that surface water runoff that leaves the site is of sufficient quality to not contaminate any protected water bodies that it enters. Similarly, controls will need to be devised to ensure that the potential for discharges of contaminants from machinery and processing activities to land and water (both surface and groundwater) is appropriately managed.

A Works Approval may be required to legitimise discharges from the proposed quarry to water. This matter will be investigated with the Environment Protection Authority in due course.

**Have any applications for approval been lodged?**

No  Yes If yes, please provide details.

**Approval agency consultation** (agencies with whom the proposal has been discussed):

Discussions about the project have been undertaken with:

- Mornington Peninsula Shire
- Department of Environment, Land, Water and Planning
- Department of Economic Development, Jobs, Transport and Resources - Earth Resources Regulation
- Parks Victoria
- Environment Protection Authority

**Other agencies consulted:**

VicRoads, Southern Rural Water, Commonwealth Department of Environment and Energy.

<sup>9</sup> Melbourne Water has provided mapping which identifies the "designated" section of Sheepwash Creek as extending north from a point approximately level with the northern extent of the existing cleared laydown area.

## PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

### 11. Potentially significant environmental effects

**Overview of potentially significant environmental effects** (identify key potential effects and comment on their significance and likelihood, as well as key uncertainties):

#### Cultural heritage

- Identified (mapped) areas of cultural heritage significance (i.e. the western part of the site<sup>10</sup>) will be subject to a “high impact activity”<sup>11</sup>. As a result, a CHMP Management Plan will be required to be prepared for all proposed impact areas associated with the project.
- Field investigation associated with the preparation of a CHMP may locate sites of cultural significance requiring management and / or mitigation measures to be implemented. As a CHMP has not yet been prepared, it is not yet known if the project might have extensive or major impacts on Aboriginal cultural heritage. It is noted that ESO24 that applies to 115 Boundary Road seeks to conserve specific sites of archaeological, botanical, geological or zoological value or significance.

#### Environment

- Environment Significance Overlays ESO8, ESO17 and ESO28 apply wholly or partly to the site. ESO17 applies specifically to Sheepwash Creek. These overlays seek to advance environmental objectives including the maintenance, protection and conservation of waterways, natural flows, water quality and riparian and stream habitat. The ESO24 applies to 115 Boundary Road (i.e. excludes the area of the existing quarry within 115 Boundary Road) and seeks the following environmental objectives:
  - *“To ensure the conservation of specific areas of archaeological, botanical, geological or zoological value or significance.*
  - *To maintain the environmental context of archaeological, botanical, geological and zoological sites; and,*
  - *To avoid any modification to sites of scientific significance, including the modification by grazing or cropping, and to ensure that any development within the overlay area are necessary to maintain or enhance the archaeological, botanical, geological and zoological values of the site”.*
- The site has been subject to a recent desktop flora and fauna assessment and field survey conducted in January 2018. An Ecology Assessment Report (attached as Appendix G) describes the findings of both the desktop assessment and the field survey for the project. Previous flora and fauna surveys were undertaken on the site in 2013-2014. These surveys focussed on the quarry works area including the pit (5.9ha) and quarry face (6.7ha). Due to disturbance from the quarry, the area contains areas devoid of native vegetation or of low quality native vegetation. The area of the quarry was not assessed again in January 2018. The results from the 2018 field survey are discussed in Section 12 (Native vegetation, flora and fauna).
- Removal of more than 30 ha of native vegetation is proposed. The 2018 desktop flora and fauna assessment for the site found that the core quality of vegetation (as represented by a Site Condition Score) is likely to be moderate to high. This was confirmed by a field assessment which identified the vegetation quality of the project site (See Appendix G to I) ‘Edge effect’ issues (weeds, nutrients etc.) are likely to diminish the quality of the native vegetation towards the boundaries of the site.

<sup>10</sup> Regulation 23(1), *Aboriginal Heritage Regulations 2007*.

<sup>11</sup> Regulation 48, *Aboriginal Heritage Regulations 2007*.

- Proposed native vegetation removal will affect seven (7) Ecological Vegetation Classes (EVCs) as listed in section 12 of this referral. Of note, EVC 53 (Swamp Scrub) and EVC 175 (Grassy Woodland) are both categorised as being of “Endangered” Conservation Significance, while the other five EVCs are all categorised as being of “Vulnerable” Conservation Significance.
- Given the large area of native vegetation on-site and the contiguous nature of the site vegetation with adjoining habitat in state parks, it is considered that threatened species are likely to occur. These species are listed in the table below along with their status and likelihood of presence (Table from Jacobs Ecology Assessment Report, 2018 in Appendix G).

Name (Scientific/Common)	Status	Likelihood of Presence
<i>Stylidium dilatatum</i> (syn. <i>S. armeria</i> subsp. <i>armeria</i> ) Tasman Triggerplant	<b>Vic.Adv.</b>  Poorly known	<b>High</b> – possible component of woodland/forest areas.
<i>Caladenia dilatata</i> s.s. Green-comb Spider-orchid	<b>Vic.Adv.</b>  Poorly known	<b>High</b> – suitable habitat present on the site.
<i>Geranium solanderi</i> var. <i>solanderi</i> s.s. Austral Crane's-bill	<b>Vic.Adv.</b>  Vulnerable	<b>Moderate</b> – suitable habitat present in forested areas adjoining drainage line on the site, but limited local records.
<i>Lachnagrostis rudis</i> subsp. <i>rudis</i> Rough Blown-grass	<b>Vic.Adv.</b>  Rare	<b>Moderate</b> – may adjoin drainage line habitat in forested areas on the site.
<i>Oxalis rubens</i> Dune Wood-sorrel	<b>Vic.Adv.</b>  Rare	<b>Moderate</b> – potential habitat is present on the site.
<i>Prasophyllum lindleyanum</i> Green Leek-orchid	<b>Vic.Adv.</b>  Vulnerable	<b>Moderate</b> – possible component of woodland/forest areas.
<i>Pteris comans</i> Netted brake	<b>Vic.Adv.</b>  Rare	<b>Moderate</b> – may occur in shaded fern-rich gullies.
<i>Euphrasia collina</i> subsp. <i>muelleri</i> Purple Eyebright	<b>EPBC</b> Endangered  <b>FFG</b>  <b>Vic.Adv.</b> Endangered	<b>Moderate</b> – marginal habitat is present on site, the species generally occurs drier heathlands than present on-site, but still some potential to occur.
<i>Glossostigma diandrum</i> Spoon-leaf Mud-mat	<b>Vic.Adv.</b>  Vulnerable	<b>Moderate-Low</b> – may occur in swampy areas in the lower section of Sheepwash Creek
<i>Desmodium varians</i> Slender Tick-trefoil	<b>Vic.Adv.</b>  Poorly known	<b>Moderate-Low</b> – parts of the site present suitable habitat for the species but limited records

Name (Scientific/Common)	Status	Likelihood of Presence
<i>Glycine latrobeana</i> Clover Glycine	<b>EPBC</b> Vulnerable  <b>FFG</b>  <b>Vic.Adv.</b> Vulnerable	<b>Low-Moderate</b> – possible component of woodland/forest areas but not optimum habitat and limited nearby records.

- Ecological survey has revealed that the project may affect habitat for, “Endangered” or “Critically Endangered” fauna species listed under the EPBC Act.. The report in Appendix G identifies two (2) EPBC Act-listed species for which a “Moderate” or “Moderate-Low” likelihood of a significant impact was recorded. It is recommended that further field survey be undertaken for presence of these species on site to further assess potential impact. All EPBC Act threatened fauna, FFG Act listed fauna and that listed on the Victorian Advisory List are listed in the table below along with their status and likelihood of significant impact (Table 4.4 from Jacobs Ecology Assessment Report, 2018 in Appendix G)

Name (Scientific/Common)	Status	Likelihood of Significant Impact
<i>Accipiter novaehollandiae novaehollandiae</i> Grey Goshawk	<b>FFG</b> <b>Vic.Adv.</b> Vulnerable	<b>High</b> – Records exist on elevated ridge line, potentially associated with breeding site.
<i>Ninox strenua</i> Powerful Owl	<b>FFG</b> <b>Vic.Adv.</b> Vulnerable	<b>High</b> – The proposal will impact high quality breeding roosts utilised by the species.
<i>Lissolepis coventryi</i> Swamp Skink	<b>FFG</b> <b>Vic.Adv.</b> Vulnerable	<b>High-</b> While prime habitat on-site is not proposed to be impacted, further up the catchment potential habitat such as HZ17 is expected to be impacted
<i>Pseudemoia rawlinsoni</i> Glossy Grass Skink	<b>Vic.Adv.</b> Vulnerable	<b>High-</b> While prime habitat on-site is not proposed to be impacted, further up the catchment, potential habitat such as HZ17 is expected to be impacted.
<i>Pseudophryne semimarmorata</i> Southern Toadlet	<b>Vic.Adv.</b> Vulnerable	<b>High</b> – Species is likely to be present in forested habitat on the site.
<i>Dromaius novaehollandiae</i> Emu	<b>Vic.Adv.</b> Near threatened	<b>Moderate</b> – habitat loss would fragment the wider vegetated landscape, reducing the foraging capability for the species in the area.
<i>Haliaeetus leucogaster</i> White-bellied Sea-Eagle	<b>FFG</b> <b>Vic.Adv.</b> Vulnerable	<b>Moderate</b> – Home range likely to encompass wider vegetated area that takes in the adjoining state park.
<i>Isodon obesulus obesulus</i> Southern Brown Bandicoot	<b>EPBC</b> Endangered <b>FFG</b>  <b>Vic.Adv.</b> Near threatened	<b>Moderate</b> – Potential to occur on site.

<i>Hirundapus caudacutus</i> White-throated Needletail	<b>Vic.Adv.</b> Vulnerable	<b>Moderate</b> – Species likely to make use of the site and other vegetated ridge tops present in the vicinity of the site.
<i>Sminthopsis leucopus</i> White-footed Dunnart	<b>FFG</b> <b>Vic.Adv.</b> Near threatened	<b>Moderate-Low</b> – Species potentially occurs on site.
<b>Name (Scientific/Common)</b>	<b>Status</b>	<b>Likelihood of Significant Impact</b>
<i>Ninox connivens connivens</i> Barking Owl	<b>FFG</b> <b>Vic.Adv.</b> Endangered	<b>Moderate-Low</b> – Barking Owl appears unlikely to make significant use of the site.
<i>Varanus varius</i> Lace Monitor	<b>Vic.Adv.</b> Endangered	<b>Moderate-Low</b> - Site constitutes suitable habitat.
<i>Lathamus discolor</i> Swift Parrot	<b>EPBC</b> Critically Endangered <b>FFG</b> <b>Vic.Adv.</b> Endangered	<b>Moderate-Low</b> - While vegetation on site does not constitute breeding habitat, vegetation is within the migration corridor which may provide roosting areas to support the species.

- The review of species listed on the Victorian Biodiversity Atlas revealed that for 45 species there is a “Low” likelihood of a significant impact associated with the project. For 12 species there is a “Moderate” likelihood of a significant impact being generated by the project. For 6 species, there is a “High” likelihood of impact associated with the project. The findings in Appendix G identifies the 24 species that are moderately or highly likely to be significantly impacted by the project.
- Impacts on matters listed under the FFG Act are a relevant consideration in determining the referral of a project under the *Environment Effects Act 1978*. The desktop and field survey identifies that 32 species listed under the FFG Act are potentially impacted by the project. Of these 32 species, four (4) species have a “Moderate” likelihood of a significant impact, while a further three (3) species have a “High” likelihood of a significant impact associated with the project (see Appendix G).
- Additional seasonal field surveys will need to be undertaken to confirm the likelihood and significance of the project’s potential adverse effects on flora and fauna.

#### **Management and / or contamination of surface and /or ground water**

- Further excavation of the site for quarrying and associated processing activities present a potential risk of impacts to surface and ground water quality. The quarry works may impact surface water in downstream reaches of Sheepwash Creek, which currently leads directly through the quarry extension area in two branches. The project may also impact groundwater depending on the depth to the aquifer beneath the site, geological conditions, groundwater flows and quality.
- It is anticipated that the section of Sheepwash Creek within 115 Boundary Road that intersects the proposed quarry extension area (approximately 540 m over two branches of the waterway) will be potentially affected through stormwater run-off and/or discharges from the quarry pit (subject to EPA Approval).
- Technical studies are required to understand the likelihood, nature and significance of any potential effects on surface waterways and groundwater. Water quality monitoring regimes may be required to enable ongoing testing and management of project impacts on water quality.

#### **Erosion**

- The carrying out of earthworks associated with any quarry extension has the potential to cause erosion onsite, particularly given the undulating topography of the site and the steep batters required to be created for the pit. The site is subject to land instability, as reflected by the two Erosion Management Overlays that apply, being:
  - Erosion Management Overlay: Schedule 1 (EMO1). The EMO1 applies to the land adjoining the eastern and southern sides of the existing quarry pit.
  - Erosion Management Overlay: Schedule 2. The EMO2 applies to land adjoining the western side of the existing quarry pit.
- While methods exist to mitigate and manage the potential for erosion to occur, the exact nature of geotechnical constraints are currently unclear and will require further investigation.

#### **Public land interface**

- The site directly adjoins the Arthurs Seat State Park to the east and west. The park is used for bushwalking and mountain biking. Vantage points provide views into the site from the park. The carrying out of quarrying operations will generate emissions of noise, dust and ground vibration associated with the movement of heavy vehicles, blasting and rock processing. The significance of these effects on the aesthetic and amenity values of the adjoining state park are unknown at this time and will require further investigation

#### **Amenity**

##### Alteration of landform

- Stone extraction will alter landforms on the site over the portion of the site to be quarried. This area ranges in elevation from approximately 110m AHD in the north-eastern area of land to be quarried in Stage 2 (see Appendix B) to a ridge in the south-east corner of the site at approximately 200 m AHD elevation. Quarrying will reduce these landforms to significantly lower levels. Views into the site from adjacent ridgelines in the Arthurs Seat State Park, such as from the south-east at 81 Eatons Cutting and to the west from elevated areas near Rock Salt Track may reveal this excavation area. More distant views such as from dwellings and the wider locality may also reveal changes to the site landform.
- The SLO1 and SLO6 that apply recognise the visual values associated with the landforms on site. The ESO24 also seeks to protect and conserve sites of geological significance. As such, the alteration of these landforms may have the potential to adversely affect the integrity of the landscapes sought to be protected by these overlays.

##### Views of overburden, stockpiles and plant

- Views into the site would extend to these areas. The introduction of these elements will represent a departure from the context of the surroundings, given the extent of proposed vegetation removal and typical visual appearance of a working quarry.

##### Dust Emissions

- Quarrying activity at this site raises the potential for emissions of dust that may affect properties along Boundary Road, Eatons Cutting and Arthurs Seat Road. The significance of effects on neighbouring properties will depend on weather conditions at the time emissions are released and the effectiveness of any mitigation measures implemented to control dust.

##### Noise Emissions

- Emissions of noise may affect properties along Boundary Road, Eatons Cutting and Arthurs Seat Road, recreational users of the adjoining State Park and visitors to the wider area. Preliminary modelling of predicted noise emissions from the quarry was undertaken in 2017. Noise sources considered in this assessment included mobile crushing and screening plant, a secondary crusher, diesel powered screens, an excavator, a wheeled loader and sales trucks to cart finished saleable product.

- The significance of noise emissions will vary with meteorology, the frequency, timing and duration of emissions, the type of plant/equipment used, topography and the location of the noise source/s, among other variables.
- Noise modelling was conducted on three scenarios of normal plant operations, early morning pre-start checks and evening plant operation with no extraction. Further modelling will be undertaken as necessary to identify the effects of noise emissions, as project design and investigations progress. Predicted noise level as the nearest dwelling to the project will comply with EPA guidelines for Noise from Industry in Regional Victoria (October 2011) for recommended maximum noise levels (RMNL).
- Reduced plant operations during the early morning periods are required to meet the Recommended Maximum Noise Levels for night-time.
- Insulated enclosures are required to be installed around the primary and tertiary crushing plant and screens for evening operations. Broadband reversing beepers will also need to be fitted.

#### Air Blast

- Blasting usually results in ground and airborne vibration. The latter includes audible noise and vibration known as "airblast". This can cause objects to rattle and make noise.
- Air blast may affect properties along Boundary Road, Eatons Cutting and Arthurs Seat Road as well as users of the adjoining public land. Specialist investigations into air blast effects will need to be undertaken to better understand the potential significance of this effect, and mitigation measures (if necessary).

#### Ground Vibration

- The use of explosives in quarry gives rise to the potential for ground vibration to affect properties along Boundary Road, Eatons Cutting and Arthurs Seat Road and users of the adjoining public land. Specialist technical advice is required to be obtained before the significance of this effect can be more clearly understood.
- Air blast and ground vibration are both matters that are to be considered having regard to *The Guidelines for Ground Vibration and Airblast Limits for Blasting in Mines and Quarries*<sup>12</sup>

#### Traffic

The resumption of quarrying will necessitate the haulage of processed stone to distributors and customers. This may alter the source of traffic generation during the transitional period between the Hillview Quarry Drive site and the subject site. However, the overall quantum of traffic movements is unlikely to increase, given the Boundary Road Quarry is intended to operate as a replacement for, rather than a parallel to, the Hillview Quarry Drive site.

A transportation assessment will be prepared to assess the potential for, and significance of, any cumulative effects associated with road maintenance requirements, emissions of noise and dust and heavy vehicle movements.

<sup>12</sup> <http://earthresources.vic.gov.au/earth-resources-regulation/licensing-and-approvals/minerals/guidelines-and-codes-of-practice/ground-vibration-and-airblast-limits-for-blasting-in-mines-and-quarries>  
Version 5: July 2013

**12. Native vegetation, flora and fauna**

**Native vegetation**

**Is any native vegetation likely to be cleared or otherwise affected by the project?**

NYD  No  Yes If yes, answer the following questions and attach details.

**What investigation of native vegetation in the project area has been done?** (briefly describe)

Investigations of native vegetation in the project area consist of:

- 115 and 121 Boundary Road – an Ecological Impact Assessment in 2013. This focused on areas around the pit and laydown area.
- 121 Boundary Road - a targeted flora and fauna assessment in 2014. This included fish and nocturnal bird assessments.
- 115 Boundary Road:
  - Desktop assessment of flora and fauna values of 115 Boundary Road in 2017.
  - Preliminary Field Assessment Report in 2018

Further field surveys of certain species will need to be undertaken at future dates when ecological variables (such as seasonal patterns) allow.

In summary, the findings of the Preliminary Flora and Fauna Assessment are:

- The site contains seven EVCs including two with an “Endangered” conservation status.
- The two properties (115 and 121 Boundary Road) are estimated to contain 74 hectares of native vegetation amounting to 45 habitat hectares. Of this area, 9.203 habitat hectares (14.899 hectares) is comprised of vegetation with an “Endangered” conservation status.
- The site may host a number of flora and fauna species categorised at differing levels of conservation status.
- 11 species listed under the *Flora and Fauna Guarantee Act 1988* (FFG Act) may occur on the site.
- Four species listed under the Commonwealth EPBC Act may occur on the site.
- 24 species listed under the Victorian Advisory List are potentially relevant to the site.

**What is the maximum area of native vegetation that may need to be cleared?**

NYD Estimated area <38 hectares

**How much of this clearing would be authorised under a Forest Management Plan or Fire Protection Plan?**

N/A ..... approx. percent (if applicable)

**Which Ecological Vegetation Classes may be affected?** (if not authorised as above)

NYD  Preliminary/detailed assessment completed. If assessed, please list.

EVC Number	EVC Name	Area (ha)	Conservation significance
16	Lowland Forest	21.5	Vulnerable
23	Herb-Rich Foothills Forest	5.8	Vulnerable
53	Swamp Scrub	0.1	Endangered
59	Riparian Thicket	0.6	Vulnerable
175	Grassy Woodland	9.6	Endangered

**Have potential vegetation offsets been identified as yet?**

NYD  Yes If yes, please briefly describe.

Assessments to date have identified the presence of ecologically significant vegetation on-site. The removal of such vegetation may necessitate the procurement of significant vegetation offsets. The availability of relevant vegetation and registered credits in the region will be a matter for further consideration.

Given the large areas of native vegetation to be retained on-site, there is potential that some of the project native vegetation offset obligations could be satisfied by on-site offsetting. This potential was acknowledged in the 2013 ecological assessment of the site.

The *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP, December 2017) reflect State planning policy at Clause 12.01 Biodiversity of the Victoria Planning Provisions. The '*three-step approach*' prioritises the avoidance of native vegetation, the minimisation of vegetation removal where possible and offsetting the removal of native vegetation where its removal cannot be avoided. Given the existing vegetation coverage, the fixed location of the resource and the nature of quarrying development, there is no ability to avoid native vegetation removal. However, refinement of the work area footprint may facilitate some localised avoidance of higher quality areas of native vegetation.

**Other information/comments?** (e.g. accuracy of information)

None

**Flora and fauna****What investigations of flora and fauna in the project area have been done?**

A number of studies have considered flora and fauna across the site, as noted in the section above relating to native vegetation.

Recent investigations have included the desktop and field assessments by Jacobs' ecologists, discussed below.

**Desktop Assessment**

A Desktop Flora and Fauna Assessment was undertaken using information from NatureKit, the Victorian Biodiversity Atlas and the Protected Matters Search Tool. The desktop assessment found that the site potentially contains habitat for numerous flora and fauna species of local, regional, state and Commonwealth significance.

Site vegetation is characterised by EVCs that have been subject to widespread historic removal in the bioregion. These impacts are reflected in bioregional conservation significance ratings of Vulnerable or Endangered for site EVCs.

Recent records indicate the presence of a number of threatened species in the vicinity of the site. The site contains habitat that is potentially relevant to these species.

The extensive areas of native vegetation on-site link the two adjoining areas of the Arthurs Seat State Park. The native vegetation potentially impacted by the project is considered to be important at a local/regional scale given the limited extent of remnant native vegetation present on the Mornington Peninsula.

**Field Assessment**

A field assessment of 115 Boundary Road was undertaken in early January 2018 (see Appendix G). The outputs of the field survey were a report to detail the EVCs on-site and calculations of the quality of on-site vegetation using the Habitat Hectare methodology. The report also provided consideration of the potential for rare or threatened taxa to utilise the site.

The field survey confirmed the presence of seven EVCs on-site, as identified in the table above. These EVCs are scattered across 19 Habitat Zones.

**Have any threatened or migratory species or listed communities been recorded from the local area?**

No  Yes If yes, please:

- List species/communities recorded in recent surveys and/or past observations.
- Indicate which of these have been recorded from the project site or nearby.

Yes. The field survey confirmed the presence of seven EVCs on-site (see Appendix G). Listed threatened Ecological Communities, listed threatened species and migratory species are identified in the Protected Matters Search Tool report provided as Appendix E of the Ecology Report (Appendix G of this referral) Not all of these listed species were identified as part of the recent January 2018 field survey. Those likely to be potential species identified by the field survey are listed in the table below.

Name (Scientific/Common)	Status	Likelihood of Presence
<b>Flora</b>		
<i>Euphrasia collina subsp. muelleri</i> Purple Eyebright	<b>EPBC</b> Endangered  <b>FFG</b>  <b>Vic.Adv.</b> Endangered	<b>Moderate</b> – marginal habitat is present on site, the species generally occurs drier heathlands than present on-site, but still some potential to occur.
<i>Glycine latrobeana</i> Clover Glycine	<b>EPBC</b> Vulnerable  <b>FFG</b>  <b>Vic.Adv.</b> Vulnerable	<b>Low-Moderate</b> – possible component of woodland/forest areas but not optimum habitat and limited nearby records.
<b>Flora</b>		
<i>Isodon obesulus obesulus</i> Southern Brown Bandicoot	<b>EPBC</b> Endangered <b>FFG</b>  <b>Vic.Adv.</b> Near threatened	<b>Moderate</b> – Potential to occur on site.
<i>Lathamus discolor</i> Swift Parrot	<b>EPBC</b> Critically Endangered  <b>FFG</b>  <b>Vic.Adv.</b> Endangered	<b>Moderate-Low</b> - While vegetation on site does not constitute breeding habitat, vegetation is within the migration corridor which may provide roosting areas to support the species.
<b>Migratory</b>		
<i>Hirundapus caudacutus</i> White-throated Needletail	<b>Vic.Adv.</b> Vulnerable	<b>Moderate</b> – Species likely to make use of the site and other vegetated ridge tops present in the vicinity of the site.

**If known, what threatening processes affecting these species or communities may be exacerbated by the project?** (e.g. loss or fragmentation of habitats) Please describe briefly.

The removal of native vegetation more than 30 ha to facilitate quarrying has the potential to result in significant impact on threatened species and communities, as well as adverse effects associated with reduced habitat extent in a bioregion that has been subject to widespread historic habitat removal. Further investigations are required to determine.

**Are any threatened or migratory species, other species of conservation significance or listed communities potentially affected by the project?**

NYD  No  Yes If yes, please:

- List these species/communities:
- Indicate which species or communities could be subject to a major or extensive impact (including the loss of a genetically important population of a species listed or nominated for listing) Comment on likelihood of effects and associated uncertainties, if practicable.

**Is mitigation of potential effects on indigenous flora and fauna proposed?**

NYD  No  Yes If yes, please briefly describe.

Further site surveys are required to be carried out to confirm the use of the site by various species. As noted above, the site contains a variety of habitat types that may serve to accommodate numerous species of differing conservation status.

**Other information/comments?** (e.g. accuracy of information)

### 13. Water environments

**Will the project require significant volumes of fresh water (e.g. > 1 GI/yr)?**

NYD  No  Yes If yes, indicate approximate volume and likely source.

No – the site is self-sustaining. Currently, the run off from the site's surface water enters into the existing quarry pit. The flow of water from the OT Dam is diverted around the pit.

**Will the project discharge waste water or runoff to water environments?**

NYD  No  Yes If yes, specify types of discharges and which environments.

Further project scoping is required to determine whether it is necessary or appropriate to discharge to water environments.

**Are any waterways, wetlands, estuaries or marine environments likely to be affected?**

NYD  No  Yes If yes, specify which water environments, answer the following questions and attach any relevant details.

Sheepwash Creek is the only waterway in proximity of the site and was previously the point of discharge. The EPA licence which allowed this to occur was requested to be surrendered in 2010. A new licence will be required for any discharge into the creek.

Given the existing alignment of Sheepwash Creek through the centre of the proposed quarry extension area, the two branches of the waterway will need to be diverted, diverted subject to the approval of Melbourne Water. However, only the northern part of Sheepwash Creek (north of the existing laydown area) is a declared waterway.

**Are any of these water environments likely to support threatened or migratory species?**

NYD  No  Yes If yes, specify which water environments.

There are a number of species listed as threatened in Victoria that potentially occur within or utilise the water environments. These include:

- Eastern Great Egret (Vulnerable, FFG)
- Hardhead (Vulnerable)
- White-bellied Sea Eagle (Vulnerable, FFG)
- Lewin's Rail (Vulnerable, FFG)
- Freckled Duck (Endangered, FFG)
- Swamp Skink (Vulnerable, FFG)
- Glossy Grass Skink (Vulnerable)

**Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'?**

NYD  No  Yes If yes, please specify.

**Could the project affect streamflows?**

NYD  No  Yes If yes, briefly describe implications for streamflows.

Streamflows may be affected by the diversion of Sheepwash Creek around the extended area of excavation. Discharges to the creek would be subject to the requirements of an EPA licence, regulating discharges and any pumping from the creek.

**Could regional groundwater resources be affected by the project?**

NYD  No  Yes If yes, describe in what way.

Previous quarrying operations on the site have not intersected groundwater. However further site investigations would be required to confirm any potential for extended quarrying activity to intersect groundwater.

**Could environmental values (beneficial uses) of water environments be affected?**

NYD  No  Yes If yes, identify waterways/water bodies and beneficial uses (as recognised by State Environment Protection Policies)

It has not yet been determined if any environmental values (beneficial uses) of water environments will be affected.

**Could aquatic, estuarine or marine ecosystems be affected by the project?**

NYD  No  Yes If yes, describe in what way.

The aquatic ecosystem associated with Sheepwash Creek may be affected by the removal of vegetation, diversion of the stream and potentially by discharges (if authorised via an EPA licence).

**Is there a potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term?**

NYD  No  Yes If yes, please describe. Comment on likelihood of effects and associated uncertainties, if practicable.

It has not yet been determined if there is potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term. These risks will need to be studied before a determination can be made.

**Is mitigation of potential effects on water environments proposed?**

NYD  No  Yes If yes, please briefly describe.

Yes, in accordance with the requirements of the work plan and any EPA discharge licence.

**Other information/comments?** (e.g. accuracy of information)

## 14. Landscape and soils

### Landscape

**Has a preliminary landscape assessment been prepared?**

No  Yes If yes, please attach.

A preliminary landscape assessment is yet to be completed.

**Is the project to be located either within or near an area that is:**

- **Subject to a Landscape Significance Overlay or Environmental Significance Overlay?**

NYD  No  Yes If yes, provide plan showing footprint relative to overlay.

The site is subject to:

- Environmental Significance Overlay (Schedule 8 - Arthurs Seat Escarpment)
- Environmental Significance Overlay (Schedule 17 - Streamlines)
- Environmental Significance Overlay (Schedule 24 - Site of Scientific Significance)
- Environmental Significance Overlay (Schedule 28 - Mornington Peninsula Bushland)
- Significant Landscape Overlay (Schedule 1 - Ridge and Escarpment Areas)
- Significant Landscape Overlay (Schedule 6 - National Trust Classified Landscapes)

Plans showing the overlay extents relative to the site features are contained in Appendix E.

**Identified as of regional or State significance in a reputable study of landscape values?**

NYD  No  Yes If yes, please specify.

The site is a private property, bound to the south east and west by the Arthurs Seat State Park (land in the Public Conservation and Resource Zone).

*The Mornington Peninsula Thematic Study* (edited July 2013)<sup>13</sup> notes that the slopes of Arthurs Seat are of scenic value. The site (being part of Arthurs Seat) is identified on mapping to, and at page 101 of, the *Westernport Region Conservation Survey*<sup>14</sup> as being of "Rank 1" scenic value.

*The Preservation of the Mornington Peninsula and Western Port*<sup>15</sup> reiterates that Arthurs Seat is a National Trust<sup>16</sup>-classified area, described as:

*"A ridge, approximately 1,000 feet above sea level, carrying near-natural stands of*

<sup>13</sup> Graeme Butler & Associates (2008), edited by Context Pty. Ltd (2013). A Reference Document specified at Clause 21.12 (Reference Documents) of the planning scheme.

<sup>14</sup> Conservation Council of Victoria (1974). A Reference Document specified at Clause 21.12 (Reference Documents) of the planning scheme.

<sup>15</sup> National Trust of Australia (Victoria), May 1974, p 18. A Reference Document specified at Clause 21.12 (Reference Documents) of the planning scheme.

<sup>16</sup> It is noted that the National Trust is a non-statutory body.

<p><i>vegetation interspersed with pastures, residential allotments and orchards. Fine seascapes and landscapes can be viewed from selected vantage points”.</i></p> <p>This latter study states that “<i>The classified area excludes built up segments, the chairlift and quarried areas</i>”<sup>17</sup>. Therefore, the inclusion of the entire site in the SLO1 and SLO6 captures quarried areas that were not considered to have scenic value in the study.</p>
<p><b>Within or adjoining land reserved under the <i>National Parks Act 1975</i>?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please specify.</p> <p>The site adjoins Arthurs Seat State Park, which is reserved under the <i>National Parks Act 1975</i>.</p> <p><b>Within or adjoining other public land used for conservation or recreational purposes?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please specify.</p> <p>The site is a private property bound to the east and west by land within the Public Conservation and Resource Zone.</p>
<p><b>Is any clearing vegetation or alteration of landforms likely to affect landscape values?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please briefly describe.</p> <p>Having regard to the extent of the proposed quarrying activity and associated vegetation removal, as well as views into the site from different vantage points, the project may have the potential to generate adverse visual impacts on the values specified by the Significant Landscape Overlays.</p> <p>Methods to ensure the project responds appropriately to the visual, natural and cultural heritage values identified by the SLO1 and SLO6 will be informed by landscape assessments to be undertaken as part of the package of further site investigations.</p>
<p><b>Is there a potential for effects on landscape values of regional or State importance?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes Please briefly explain response.</p> <p>As noted in the preceding section, the site is subject to Significant Landscape Overlays in the Mornington Peninsula Planning Scheme. In particular, the SLO6 reflects the classification of the area by the National Trust as containing significant landscape values. The potential for effects on landscape values will need to be determined by landscape assessment.</p>
<p><b>Is mitigation of potential landscape effects proposed?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please briefly describe.</p> <p>Progressive rehabilitation and the staging of extraction will assist in mitigating potential landscape effects.</p>
<p><b>Other information/comments?</b> (e.g. accuracy of information)</p>

**The standard note referring to wind energy facilities has been removed from the form.**

### Soils

<p><b>Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes If yes, please briefly describe.</p> <p>Yes - A small part of 121 Boundary Road (southern part of the allotment) is subject to the EMO (Schedule 1). Much of 115 Boundary Road is also subject to the EMO (Schedule 1) and smaller parts of that allotment are subject to the EMO (Schedule 2). Refer to Appendix E for the location of these overlays relative to the proposed quarry extension area.</p>
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<sup>17</sup> Ibid, p 22.

<p><b>Are there geotechnical hazards that may either affect the project or be affected by it?</b>  <input checked="" type="checkbox"/> NYD   <input type="checkbox"/> No   <input type="checkbox"/> Yes   If yes, please briefly describe.</p> <p>Geotechnical hazards that may be present are unknown at present. This matter will need to be assessed by an appropriately qualified specialist.</p>
<p><b>Other information/comments?</b> (e.g. accuracy of information)</p>

**15. Social environments**

<p><b>Is the project likely to generate significant volumes of road traffic, during construction or operation?</b>  <input type="checkbox"/> NYD   <input type="checkbox"/> No   <input checked="" type="checkbox"/> Yes   If yes, provide estimate of traffic volume(s) if practicable.</p> <p>Traffic generation will primarily be associated with the sale of product from the land. It is anticipated that traffic volumes associated with current sales volumes will not change significantly from the situation that exists in relation to the Hillview Drive Quarry site. Given the Boundary Road Quarry is intended to replace the Hillview Drive Quarry, there will be a transition between the sites that will alter the source of traffic generation, however in the immediate term the overall quantum of traffic movements is not anticipated to increase.</p>
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<p><b>Is there a potential for significant effects on the amenity of residents, due to emissions of dust or odours or changes in visual, noise or traffic conditions?</b>  <input type="checkbox"/> NYD   <input type="checkbox"/> No   <input checked="" type="checkbox"/> Yes   If yes, briefly describe the nature of the changes in amenity conditions and the possible areas affected.</p> <p>If un-mitigated, potentially significant adverse effects may include:</p> <ul style="list-style-type: none"> <li>· Alteration of landscapes subject to SLOs, views of overburden, stockpiles and plant</li> <li>· Visual impacts associated with the removal of vegetation and further development of the quarry and processing facilities</li> <li>· Potential for dust to affect properties along Boundary Road, Eatons Cutting and Arthurs Seat Road and adjoining public land in Arthurs Seat State Park</li> <li>· Potential for noise to affect properties along Boundary Road, Eatons Cutting and Arthurs Seat Road and adjoining public land in Arthurs Seat State Park</li> <li>· Potential for air blast to affect properties along Boundary Road, Eatons Cutting and Arthurs Seat Road and adjoining public land in Arthurs Seat State Park</li> <li>· Potential for ground vibration to affect properties along Boundary Road, Eatons Cutting and Arthurs Seat Road and adjoining public land in Arthurs Seat State Park.</li> </ul> <p>Additional traffic movements along Boundary Road will require modifications at the entrance of the site and may generate road maintenance requirements.</p>
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<p><b>Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport?</b>  <input type="checkbox"/> NYD   <input type="checkbox"/> No   <input checked="" type="checkbox"/> Yes   If yes, briefly describe the hazards and possible implications.</p> <ul style="list-style-type: none"> <li>·</li> <li>· If un-mitigated, the project may create potential for the exposure of human communities to health and safety hazards such as:</li> <li>·</li> <li>· Traffic conditions: Increased traffic volumes and change in type of traffic (road haulage trucks)</li> <li>· Noise conditions: Noise emissions will be generated by the processing plant and from vehicle movements around and to and from the site.</li> <li>· Emissions to air: Air quality assessment and reporting will be undertaken to ascertain the significance of, and risk associated with, emissions of dust to air. This will enable appropriate mitigation measures to be prepared (if necessary) to ensure air quality is maintained at an appropriate standard for employees and the occupants of nearby properties.</li> </ul>
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<p><b>Is there a potential for displacement of residences or severance of residential access to</b></p>
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<p><b>community resources due to the proposed development?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe potential effects.</p>
<p><b>Are non-residential land use activities likely to be displaced as a result of the project?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe the likely effects.          No. The project is situated on private property.</p>
<p><b>Do any expected changes in non-residential land use activities have a potential to cause adverse effects on local residents/communities, social groups or industries?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe the potential effects.          No. The project is situated on private property.</p>
<p><b>Is mitigation of potential social effects proposed?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.</p>
<p><b>Other information/comments?</b> (e.g. accuracy of information)</p>

### Cultural heritage

<p><b>Have relevant Indigenous organisations been consulted on the occurrence of Aboriginal cultural heritage within the project area?</b>  <input type="checkbox"/> No If no, list any organisations that it is proposed to consult.  <input type="checkbox"/> Yes If yes, list the organisations so far consulted.           It is proposed to consult the Boon Wurrung Foundation, through preparation of the CHMP.</p>
<p><b>What investigations of cultural heritage in the project area have been done?</b>          (attach details of method and results of any surveys for the project &amp; describe their accuracy)           No investigations have been undertaken for the areas of the site proposed for the extension of quarrying.</p>
<p><b>Is any Aboriginal cultural heritage known from the project area?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, briefly describe:          . Any sites listed on the AAV Site Register          . Sites or areas of sensitivity recorded in recent surveys from the project site or nearby          . Sites or areas of sensitivity identified by representatives of Indigenous organisations</p>
<p><b>Are there any cultural heritage places listed on the Heritage Register or the Archaeological Inventory under the <i>Heritage Act 1995</i> within the project area?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please list.</p>
<p><b>Is mitigation of potential cultural heritage effects proposed?</b>  <input type="checkbox"/> NYD <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, please briefly describe.           A CHMP would be required to be prepared for the site. This document would provide management recommendations in relation to cultural heritage identified through field survey.</p>
<p><b>Other information/comments?</b> (e.g. accuracy of information)</p>

### 16. Energy, wastes & greenhouse gas emissions

<p><b>What are the main sources of energy that the project facility would consume/generate?</b>  <input type="checkbox"/> Electricity network. If possible, estimate power requirement/output  <input type="checkbox"/> Natural gas network. If possible, estimate gas requirement/output</p>
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Generated on-site. If possible, estimate power capacity/output .....  
 Other. Please describe.  
 Please add any relevant additional information.  
  
 The power requirement is yet to be determined.

**What are the main forms of waste that would be generated by the project facility?**  
 Wastewater. Describe briefly.  
 Solid chemical wastes. Describe briefly.  
 Excavated material. Describe briefly.  
 Other. Describe briefly.  
 Please provide relevant further information, including proposed management of wastes.  
  
 The volume and treatment of wastewater generated on-site is yet to be determined.

**What level of greenhouse gas emissions is expected to result directly from operation of the project facility?**  
 Less than 50,000 tonnes of CO<sub>2</sub> equivalent per annum  
 Between 50,000 and 100,000 tonnes of CO<sub>2</sub> equivalent per annum  
 Between 100,000 and 200,000 tonnes of CO<sub>2</sub> equivalent per annum  
 More than 200,000 tonnes of CO<sub>2</sub> equivalent per annum  
 Please add any relevant additional information, including any identified mitigation options.  
  
 Yet to be determined.

**17. Other environmental issues**

**Are there any other environmental issues arising from the proposed project?**  
 No  Yes If yes, briefly describe.

**18. Environmental management**

**What measures are currently proposed to avoid, minimise or manage the main potential adverse environmental effects? (if not already described above)**  
 Siting: Please describe briefly  
  
 Design: Please describe briefly minimise impact – work plan.  
  
 Environmental management: Please describe briefly.  
  
 Other: Please describe briefly  
  
 Add any relevant additional information.

As described earlier in this referral.  
  
 Further investigations will be carried out into the potential ecological, heritage, ground and surface water, geotechnical, acoustic, transport, social and amenity effects of the project. Mitigation and management measures will be investigated as appropriate having regard to the nature and significance of effects.

**19. Other activities**

**Are there any other activities in the vicinity of the proposed project that have a potential for cumulative effects?**  
 NYD  No  Yes If yes, briefly describe.

Hillview Quarries currently operates the Hillview Quarry Drive site at 60 Manna Street, Dromana, approximately 1.1 km to the west of the subject site. The two sites are separated by public land in the Arthurs Seat State Park (refer to the locality plan at Appendix A).

There will be a period of overlap between the two sites, after the commencement of quarrying at the Boundary Road Quarry and before quarrying at the Hillview Quarry Drive site ceases.

The duration of the overlap period is uncertain however, as the time at which the Hillview Quarry Drive site will be exhausted depends on market demand. It is currently estimated to have approximately 8 years of permitted reserves remaining for extraction and the Boundary Road Quarry is not expected to be operational until 2023-2025.

Cumulative impacts have the potential to occur during any overlap period, including additional traffic movements, noise and dust emissions, landscape effects, effects on the recreational amenity of the Arthurs Seat State Park and the removal of habitat for a range of flora and fauna species. The significance of any such cumulative effects is yet to be determined. However, it is not expected to be significant because the Boundary Road Quarry is intended to operate as a replacement for, rather than a parallel to, the Hillview Quarry Drive site.

## 20. Investigation program

### Study program

**Have any environmental studies not referred to above been conducted for the project?**

No  Yes If yes, please list here and attach if relevant.

A program for further environmental studies is currently being prepared.

**Has a program for future environmental studies been developed?**

No  Yes If yes, briefly describe.

A program for future environmental studies will be developed for the project.

### Consultation program

**Has a consultation program conducted to date for the project?**

No  Yes If yes, outline the consultation activities and the stakeholder groups or organisations consulted.

A consultation program is currently being prepared.

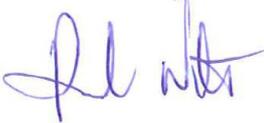
**Has a program for future consultation been developed?**

NYD  No  Yes If yes, briefly describe.

A consultation program is currently being prepared.

**Authorised person for proponent:**

I, ...Paul Nitas.....(full name),  
.....CEO, Hillview Quarries ...(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature  Date 13/4/18

**Person who prepared this referral:**

I, *Deb Neumann* (full name), *Principal, Land Use Planning and Approvals: Jacobs Group (Australia) Pty. Ltd.* (position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature  Date 13/4/18