

# Yarra Valley Quarry- Stage 3 Development

## Landscape and Visual Impact Assessment

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Technical Assessment

Prepared for **Dandy Premix Quarries**



# Quality Assurance

## Yarra Valley Quarry- Stage 3 Development

Landscape and Visual Impact Assessment

Project Number

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Prepared By

**Jack Collings**

Reviewed By

**Brigitte Walsh**

Project Principal

**Alistair Wenn**

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# Executive Summary

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This Landscape and Visual Impact Assessment report has been prepared by Tract Consultants Pty Ltd for Dandy Premix Quarries. The report provides a technical evaluation of the landscape and visual effects associated with the proposal to expand the existing extraction area into 40ha of adjoining Dandy Premix Quarries freehold land to the north, north-west of the existing Yarra Valley Quarry, known as Lot 50C. The assessment is based on the *BCA Consulting, Figure 3: Site Layout (Staged) Plan* (Work Authority No: WA375).

## Project Description / Background

The Site area is located approximately 4.5km northeast of Woori Yallock township in an elevated location which is characterised by a dense Eucalypt Forest and several ridges and valleys.

The Site area has been subject to quarrying for several decades and the existing extraction area is currently in operation. The existing operational quarry site is positioned within a location that currently limits visual impacts within the surrounding study area. However, there are limited views available of the existing site area and the operating quarry within background views (3-5km) which becomes the existing baseline condition.

The proposed further expansion of the quarry extraction area is a four-stage development to the immediate north, north-west of part of the existing Work Authority Boundary. (refer to Section 3 for the full Project Description).

## Strategic Context

The site area is located within the municipal area of the Yarra Ranges Council, located east of Melbourne. It is therefore subject to the Yarra Ranges Planning Scheme and the Upper Yarra Valley and Dandenong Ranges Regional Strategy Plan.

The strategic context review recognises that the policy emphasises the diverse rural activities within the Yarra Ranges, and the scenic natural landscape within which the Shire is situated. Specifically, the scenic quality of the distant Yarra Ranges National Park and the Foothills are mentioned.

The following strategic points are the most relevant findings within the study area for this assessment:

- The scenic beauty and unique landscape features within Yarra Ranges is emphasised as a core component of its landscape quality. This includes the foothills of the Ranges and the visual amenity provided by the ranges as a backdrop throughout the Shire. These characteristics should be maintained and protected, with particular regard to both middle and long views throughout the Yarra Ranges.
- There are several townships within the study area, including Launching Place, Woori Yallock and Seville East. These townships are expected to experience varying levels of urbanisation in the future.
- Major recreation routes through the Yarra Valley (roads & trails, such as the Warburton Rail Trail and O'Shannassy Aqueduct Trail) and key visitor destinations are likely to form the basis of visitor perceptions of the Yarra Valley region. On that basis, the amenity values associated with tourism routes are of importance.

## Baseline Values

The Lot 50C expansion site area is located adjacent to an existing operating quarry which has been subject to stone and gravel extraction activities for over four decades. The broader landscape setting surrounding the existing operating

quarry includes the Yarra Ranges foothills environment, which is considered to contribute to the scenic quality of the Yarra Ranges and is valued by the community.

- The foothills landform includes several elevated ridgelines and valleys which screen views inward towards the foothills and screen several viewing angles towards the existing operating quarry.
- The existing quarry and adjoining expansion site are located within a densely vegetated Eucalypt Forest. The vegetation effectively screens the quarry's operational area from the majority of external views; however, it is visible from two representative viewpoints limited to the southwest of the study area and from background views (3 – 5km).
- The Foothills landscape within the study area includes a mosaic of existing clearings along the lower slopes which include farmland and rural residential properties, the clearings become a component of the wider view which includes the limited background views of the existing operational quarry. The existing visibility of the operating quarry and the existing rehabilitation forms the current baseline of this Assessment.

This assessment includes an existing conditions assessment from existing viewpoints (refer to Section 5.8 for the full existing conditions assessment).

The visual impacts 'nature of change and magnitude of change' from these existing views was determined to be negligible, as the existing quarry constitutes a discernible but minor component of the wider view. It is visible in part but has an insignificant effect on the perceived values or scenic quality of the setting. The existing view of the operational quarry includes views from Old Warburton Highway and Symes Road Bus Stop, as shown below.



Image 1 Existing Viewpoint condition (Viewpoint 5: Old Warburton Hwy)

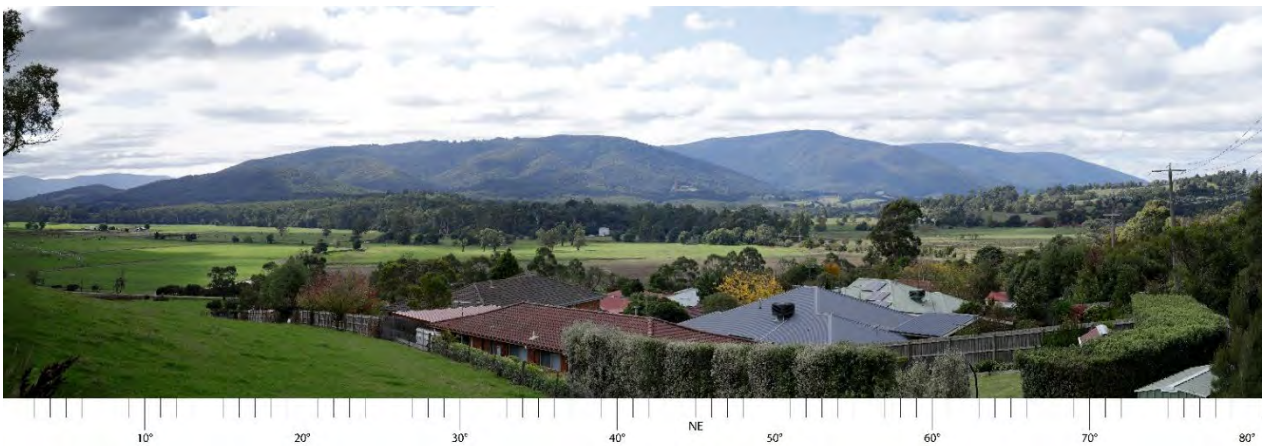


Image 2 Existing Viewpoint condition (Viewpoint 6: Symes Road Bus)

(refer to Figure 16: Viewpoint Locations and for full sized existing viewpoint conditions refer to Appendix 2 - Existing Conditions Viewpoints).

## **New Conditions - Assessment**

### **Visual impact Assessment**

A Zone of Visual Influence (ZVI) model has been produced to identify the theoretical line of sight from the proposed staged development of the Yarra Valley Quarry expansion. A site inspection and photography of the existing conditions have been captured to confirm the existing baseline condition of the study area and the existing views available from the existing operational quarry.

The site inspection confirmed that various existing viewpoints have an existing uninterrupted or partial line of sight towards the existing operational quarry within background views (3-5km).

Additional wireframe visualisations have been produced to verify the anticipated nature of change and magnitude of change from representative viewpoints within the study area. The wireframe visualisations confirm that various viewpoints have an existing uninterrupted or partial line of sight towards the proposed expansion, these key findings include:

- Foreground views are not available due to the surrounding foothills environment, vegetation, and landform.
- The middle-ground views (1 -3km) with no existing views of the current operational quarry (as identified in Viewpoint 7 and Viewpoint 8) would be subject to a 'new impact' which is a **Low** nature of change and a **Low** magnitude of change onto these views.
- The background views (3- 5km) with an existing discernible view of the current operational quarry are considered to have an existing **negligible** impact (as identified in Viewpoint 5 and Viewpoint 6). This impact will change as a result of the proposed new extraction area. The nature of change would remain similar to the existing view; however, the magnitude of change would become a **Low** magnitude of change.
- Most distant views (+5km) are not available due to the surrounding landform and when they are available, they are almost imperceptible due to the viewing distance or foreground features screening views.

The identified impacts of concern therefore have predominantly been limited to middle-ground and background viewing distances which has included receptors of **High** sensitivity (recreational users of Warburton Rail Trail) and receptors of **Moderate** sensitivity (rural residents and road users).

The overall 'worst case' visual impacts of the quarry development proposal are considered to be a **Moderate** significance of impact rating, due to having sensitive visual receptors with a **High** sensitivity rating and a **Low** nature and magnitude of change before the implementation of mitigation measures.

### **Landscape Impact Assessment**

The existing cleared area and extraction pit is considered to be the baseline condition of the existing operating quarry.

The landscape character type of the surrounding site area, which is yet to be cleared and extracted is classified as a Foothills environment which has a **Moderate** landscape value.

The proposed quarry development is an extension to the existing quarry operation and therefore only the extension to the extraction area will be considered as a landscape impact. The following points include the anticipated landscape changes:

- The vegetation clearing through the expanding quarrying operation will create a clear change to the Foothills vegetation.
- The extraction and remnant terraced bench and batters, resulting from the quarrying operation will extend the current extraction area to the north-and lower the existing landform.
- Two existing drainage lines will be altered due to extraction activities.

The overall landscape impacts of the quarry development are considered to be **Moderate** before the implementation of mitigation measures.

### **Mitigation Measures**

The assessment suggests that the landscape and visual impacts nature of change and magnitude of change is **Low**.

The new impacts resulting from the proposed expansion would be long term but partially reversible (The landform can't be reversed but revegetation can visually mitigate the impact over time). The new impacts would be offset by the effects of the progressive rehabilitation of areas following Stage 1 and Stage 2 sequential extraction. The current rehabilitation visible from within the study area is seen to be effective and is currently offering mitigation to existing background views and some remediation to the landscape impacts.

The proposed mitigation measures have therefore been derived from the success of the previous rehabilitation and include the following mitigation measures:

1. General siting and design mitigation measures
2. Sequential rehabilitation and revegetation mitigation measures

Implementing a similar sequential, or progressive rehabilitation plan during the staged extraction of the quarry would reduce the anticipated magnitude of change and the nature of change. The reduced impact would occur over time and is anticipated to take effect from Stage 3 onwards.

### **Evaluation**

The existing operational quarry site is positioned within a location that currently limits visual impacts within the surrounding study area and is well positioned to reduce landscape and visual impacts. The expansion of the quarry site will increase the visibility of the existing operating quarry from the identified representative viewpoints.

The visual impact will become a new impact from some middle ground views (1-3 km) and background views (3- 5km) with an existing view would have increased visibility of the quarry. The nature of change and magnitude of change would be seen to be a **Low** impact from all discernible viewpoints.

The duration of impacts would still be anticipated to be a long-term duration of impact throughout the staged expansion; however, the impact can be partially reversed. The successful implementation of sequential revegetation would allow the sites vegetation to slowly revert back to the surrounding Eucalypt Forrest environs albeit the landform would retain an adverse impact from the extracted landform.

Through the implementation of mitigation measures and sequential rehabilitation during the four stage extraction plan, the visual impacts, nature of change and magnitude of change could be reduced to a **Negligible** impact once the progressive revegetation matures.

Through the implementation of mitigation measures and sequential rehabilitation during staged development the landscape impacts would similarly be reduced to a **Negligible** impact. Although, the landscape would retain landform changes, this would not have an overall dominant effect on the foothills landscape attributes.

Therefore, the overall significance of impact for both the Landscape assessment and the Visual assessment of the proposed quarry expansion with the implementation of successful mitigation measures is considered to reduce the Significance of impact rating to **Low**.

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# Glossary of terms

<i>Amenity</i>	A measure of scenic quality.
<i>Analysis</i>	Process of breaking down landscape or visual attributes into component parts to understand how it is made or valued.
<i>Assessment</i>	General term for description, classification and analysis of landscape or visual attributes.
<i>Classification</i>	A process of sorting the landscape into different types using selected criteria, but without attaching relative values to the different kinds of landscape.
<i>Community values</i>	Commonly held perceptions and values that the community attach to environmental attributes or qualities. These can include individual views.
<i>Duration of effects</i>	Measure of both time and the reversibility of effects.
<i>Effect</i>	A consequence of change.
<i>Impact</i>	A positive or negative change to the landscape or the visual environment.
<i>Landscape</i>	A distinctive physical area as perceived by people, whose character is the result of the action and interaction of natural and / or human factors. Human perception of the land conditioned by knowledge and identity with a place.
<i>Magnitude of effect</i>	Combination of scale, extent and duration of an effect.
<i>Mitigation</i>	Measures to avoid, reduce or compensate for adverse landscape and visual effects.
<i>Perception of landscape</i>	The psychology of seeing and potentially attaching value or meaning to a landscape
<i>Receptor</i>	Physical landscape resource, viewer or special element that will experience an effect as a result of change.
<i>Scenic quality</i>	A relative judgement, based on common community perceptions, about the visual qualities associated with a landscape type or character area.
<i>Sense of place</i>	A relative judgement, based on common community perceptions, about the essential character and spirit of an area.
<i>Sensitivity</i>	The extent to which changes in landscape and visual resources can accept change without unacceptable, adverse effects on its character.
<i>Significance</i>	A relative measure of the importance of a landscape or visual change against a defined value system
<i>Study area</i>	Combination of the proposed development site and the surrounding area, typically to a radius of 6km.
<i>Viewshed</i>	A region visible to an observer, defined by reference to an actual view or area of theoretical visibility determined by a ZVI analysis.
<i>Visual absorption capability</i>	Index of an areas ability to accommodate changes without a significant reduction in landscape and visual quality or amenity.
<i>Visual amenity</i>	The value of a particular area or view in terms of what is seen.
<i>Visual assessment</i>	Deals with potential effects on the visual resources of the setting from changes in the composition and quality of views, people's response to likely changes and the overall effect on visual amenity.
<i>Visual sensitivity</i>	The extent to which a landscape can change without unacceptable adverse effects on its visual character or scenic quality.
<i>Wireframe Visualisation</i>	A computer simulation to illustrate the appearance of a proposed development.
<i>Zone of Visual Influence (ZVI)</i>	An area within which a proposed development may have an effect on visual amenity. This is also referred to as the 'Zone of Theoretical Visibility'.

# 1 Introduction

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This Landscape and Visual Impact Assessment (LVIA) report has been prepared by Tract Consultants Pty Ltd for Dandy Premix Quarries Pty Ltd (Yarra Valley Quarries).

## 1.1 Introduction

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Dandy Premix is seeking to extend the existing WA375 extraction boundary in order to increase the life of the quarry operation in response to market demand for its products.

The report provides a technical evaluation of the potential landscape and visual effects associated with the Proposal, and the expansion of the current development of the Yarra Valley Quarry.

The activities proposed are effectively a continuation of those currently undertaken in the current quarry extraction areas. All processing and other infrastructure related to quarrying activities would continue to be carried out within the existing operating quarry area and processing plant. The extended extraction area has been assumed to include the typical quarry pit haul road construction and extractive method of work, based on the previous stages of the operating quarry.

In terms of site rehabilitation, the LVIA will consider the minimum end use rehabilitation outcomes for the quarry based on Work Authority requirements (the site operates under Work Authority 375 (WA 375)).

## 1.2 Scope of assessment

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The scope of this study covers the following key elements.

- Description of the development proposal
- Policy context
- Baseline understanding of the landscape and visual values of the current landscape setting.
- The sensitivity of the landscape and visual receptors to the proposed development related changes.
- New conditions assessment, including a visibility analysis and impact assessment.
- Potential impact mitigation measures or strategies.
- An overall evaluation of the development proposal in terms of landscape and visual effects.

## 1.3 Assumptions

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This assessment is based on technical information provided at the time of writing and the WA375 Yarra Valley Quarries Site Layout Plan (NS-2339, Rev 1, 16 May 2024). The assessment does not consider:

- Any changes to the location of the processing facilities or other fixed infrastructure as a result of the future quarry expansion.
- Future land use changes such as additional roads, residential development or new tourist activities that may occur within the study area.
- Specific impacts from every possible viewing location. The assessment is to establish the nature and magnitude of related changes, from identified, publicly accessible representative viewpoints.
- No empirical research or targeted consultation relating to community values or visitor perceptions of landscape and visual quality was undertaken as a part of this study.
- The scope of this assessment does not include consideration of landscape and visual impacts from lighting during night-time conditions.

- It has been noted that the Site Layout Plan used for this assessment has been recently updated to Dwg. No NS-2339, Rev 1, 16 May 2024. Tract has reviewed this and as there has been no increase in the area of disturbance it has been determined that no additional modelling or assessment has been required to finalise this LVIA report.

The overall approach for this Landscape and Visual Impact Assessment is outlined within Section 2 and Figure 1.

## 2 Study Methodology

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### 2.1 Assessment methodology

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#### General assessment methodology reference

The overall method applied to assess landscape and visual impacts of the existing landscape is based on principles outlined in *Guidelines for Landscape and Visual Impact Assessment (third edition)*, The Landscape Institute & Institute of Environmental Management & Assessment, Spon Press, April 2013, which represents a 'best practice' approach within the United Kingdom and has been extensively trialled since 1995 on a range of project types including extractive industry projects, wind farms, property and road infrastructure development.

Refer to Figure 1 for Tracts overall LVIA methodology which forms the basis of understanding the baseline condition of this LVIA.

The Landscape and Visual Impact Assessment covers both 'landscape' and 'visual' assessment:

**Landscape assessment** deals with the potential effects on the quality of the landscape setting, considered as an environmental resource, independent of views of that landscape.

**Visual assessment** deals with potential effects on the visual resources of the setting from changes in the composition and quality of views, people's response to likely changes and the overall effect on visual amenity.

#### Visualisation references

In terms of visual representation of effects (wireframe visualisation images), the methodology is based on the principles outlined in the following publications which are cross referenced within the UK based LVIA guideline:

*Visual Representation of Development Proposals, Advice Note 17/19*, Landscape Institute (UK) 2019

*Photography & Photomontage in Landscape & Visual Impact Assessment, Advice Note 1/11*, Landscape Institute (UK) 2011 *Visualisation Standards for Wind Energy Developments*, The Highland Council (Scotland), 2013.

#### Professional judgement in LVIA

Structured professional judgement (qualitative assessment) is an integral part of the LVIA process and has been used in conjunction with quantitative based assessment procedures in this project. Tract has used a team-based approach to validate professional judgements.

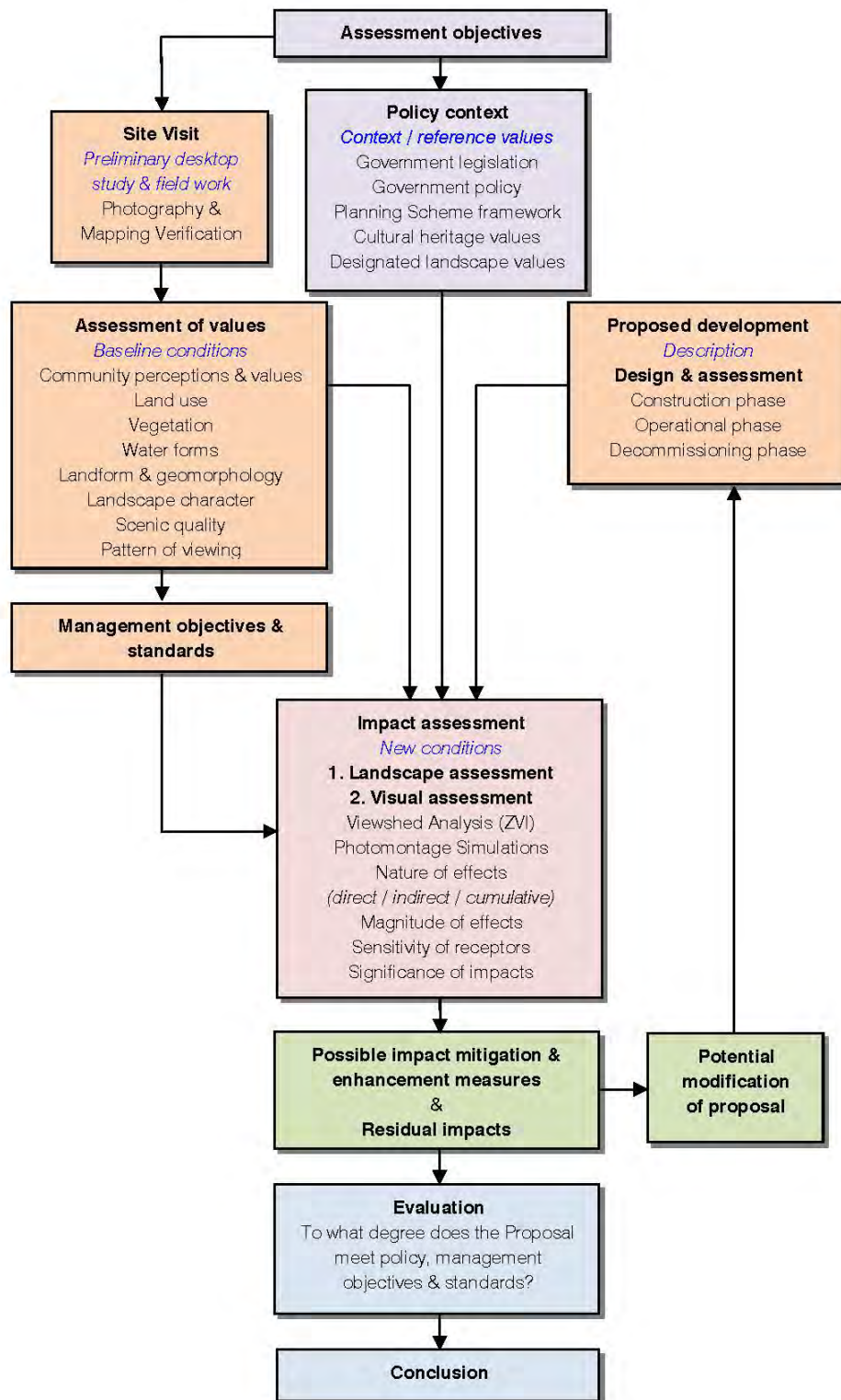


Figure 1: Landscape and Visual Assessment Methodology (Tract Consultants)

## 2.2 Impact assessment definitions

Impact assessment has been based on the criteria of sensitivity of receptors including landscape and its users (viewers), the nature, magnitude and duration of impacts, and the significance of impacts.

### Receptor sensitivity

A visual receptor is a place, route, viewer or interest group. Receptor sensitivity is a measure of the direct or indirect effects that development changes may have on a receptor or their view, refer to Section 2.3 for the identified sensitivity levels within the study area.

### Nature and magnitude of impacts

The nature and magnitude of impacts is the anticipated extent of change that will be experienced by receptors, refer to Section 6.1 for the definition of impact significance levels.

### Duration of impacts

Duration of impacts is assessed in terms of short, medium and long duration of effects and whether the effects are permanent or reversible.

### Significance

The significance of impacts will be determined by a combination of sensitivity of the receptor (whether it is landscape or a viewer) and the magnitude of the predicted changes. The ratings shown in Table 1, define the levels of significance of impacts expressed as three levels.

The impact ratings are made against the baseline values identified within Section 5.

The significance ratings reflect an assessment of the overall importance of the predicted impact and they also indicate mitigation priorities.

A number of 'moderate' rating factors may collectively represent a relatively 'high' degree of change to a receptor (cumulative impact) and therefore mitigation measures may need to be considered for more than 'high significance' rated impacts.

Table 1: Impact significance matrix

MAGNITUDE OF CHANGE	high	moderate	high	high
	moderate	moderate	moderate	high
	low	low	moderate	moderate
	negligible	Low	Low	Low
	No Change	Nil	Nil	Nil
		low	moderate	high
		RECEPTOR SENSITIVITY (Landscape / Viewers)		

## 2.3 Receptor sensitivity

Visual receptor sensitivity is a measure of the direct or indirect effects that development changes may have on a view or scenic resource. Sensitivity factors could include physical elements, visual character and cultural values. For the purposes of the impact assessment viewer sensitivity is defined as a combination of the following factors:

- A direct relationship to or dependence on the visual environment
- Familiarity with the place and its landscape and scenic qualities
- The distance of the receptor from the potential impact and the available angle of view (field of view)
- The number of people that use that location and are likely to experience changes to scenic quality.

Table 2: Receptor Sensitivity

Sensitivity	Receptors
<b>High Sensitivity</b>	<ul style="list-style-type: none"> <li>• Designated state level parks and scenic reserves, major recreation trails and formal scenic view locations (e.g., Yarra Ranges and Warburton Rail trail)</li> <li>• Highways (Warburton Highway)</li> <li>• Town centres and associated open spaces.</li> <li>• Commercial facilities (e.g., Wineries) or sites based specifically on scenic values</li> <li>• Residential properties</li> </ul>
<b>Moderate</b>	<ul style="list-style-type: none"> <li>• Large volume regional link roads, secondary tourist roads and recreational driving routes (e.g., Healesville-Koo Wee Rup Road)</li> <li>• Major landscape dependant outdoor recreation facilities &amp; settings</li> <li>• Schools, hospitals and residential care facilities</li> <li>• Rural residential properties</li> </ul>
<b>Low</b>	<ul style="list-style-type: none"> <li>• Local rural roads</li> <li>• Farming properties</li> <li>• Industrial land uses</li> </ul>

## 2.4 Nature and magnitude of impacts

Table 3 defines the nature and magnitude of impacts, resulting from each anticipated impact significance level from major adverse (high) to major beneficial (negligible) .

Table 3: Nature and magnitude of impacts – definition

Impact Significance Levels	Definition	Definition
	Landscape impacts	Visual impacts on receptors
Major adverse <b>HIGH (6)</b>	<p>Total or substantial alteration to key features of the baseline conditions.</p> <p>Effects are at considerable variance with the landform, scale and pattern of the landscape and cannot be substantially mitigated.</p> <p>Would cause a high quality or designated landscape to be substantially changed and its quality and values diminished.</p>	<p>Total or substantial alteration to key features of the baseline conditions.</p> <p>The Proposal forms a significant and dominant part of a view of high scenic quality. Other scenic elements become subordinate and diminished in value.</p> <p>The valued scenic character of the site is markedly changed.</p> <p>Sensitive visual receptors are adversely affected by the change.</p>
Moderate adverse <b>MODERATE (5)</b>	<p>Would be noticeably out of scale with the landscape and clearly at variance with key landscape attributes identified within the baseline conditions.</p> <p>Will leave an adverse impact on a landscape of recognised quality.</p>	<p>The Proposal forms a clearly visible and recognisable new element within the overall scene that is readily noticed by the receptor.</p> <p>The scenic character and quality of the site is diminished.</p>
Minor adverse <b>LOW (4)</b>	<p>Will have an apparent but not obvious or dominant effect on an area of recognised landscape character or its key attributes.</p>	<p>The Proposal constitutes a discernible but minor component of the wider view.</p> <p>Awareness of the element will have a negative but not a marked effect on overall scenic quality.</p>
Neutral <b>NEGLIGIBLE (3)</b>	<p>Only a very slight change to baseline conditions and maintains existing landscape character and quality.</p> <p>New features complement the scale, landform and pattern of the site landscape and its broader setting.</p>	<p>No part of the Proposal or associated activity is visually discernible.</p> <p>The activity or feature is visible but has an insignificant effect on the perceived values or scenic quality of the setting.</p>
Minor beneficial <b>NEGLIGIBLE (2)</b>	<p>Likely to enable the restoration of valued landscape characteristics or features lost or diminished through existing land use activities.</p> <p>Potential to contribute to the development of a new and higher quality landscape character.</p>	<p>The Proposal fits comfortably within the existing visual landscape.</p> <p>The Proposal helps to articulate existing visual character and amenity values.</p> <p>Potential for the Proposal to contribute to the development of a new and higher value visual character.</p>
Moderate / Major beneficial <b>NEGLIGIBLE (1)</b>	<p>Fits comfortably within the existing landscape character and clearly contributes to the development of higher landscape values.</p> <p>Results in a significant improvement to the quality of the landscape through the rehabilitation of damaged areas or the removal of features or activities that have a negative impact on landscape values.</p> <p>Results in a distinctive landscape feature that has the potential to add new values to the landscape without diminishing existing valued landscape characteristics.</p>	<p>Fits comfortably within the existing landscape character and clearly contributes to the development of higher landscape values.</p> <p>Results in a significant improvement to the visual quality of the landscape through the rehabilitation of damaged areas or the removal of features or activities that have a negative impact on scenic values.</p> <p>Results in a distinctive landscape feature that has the potential to add new visual or tourism values to the landscape without diminishing existing valued visual characteristics.</p>

Table 4: Impact duration factors

## Impact duration

The *duration* of impacts is defined as:

Duration	Definition
Short term	<ul style="list-style-type: none"> <li>Project construction and establishment phase (&lt;2 years)</li> </ul>
Medium term	<ul style="list-style-type: none"> <li>Early project operational phase (2 – 10 years)</li> </ul>
Long term	<ul style="list-style-type: none"> <li>Within projected operational phase (10 – 25 years)</li> </ul>
Permanent	<ul style="list-style-type: none"> <li>Beyond projected operational phase (25 years +)</li> </ul>
Reversible	<ul style="list-style-type: none"> <li>Physical potential for full rehabilitation to original baseline condition within feasible cost parameters and land use objectives</li> </ul>
Irreversible	<ul style="list-style-type: none"> <li>Permanent physical change to the baseline condition beyond feasible cost parameters and land use objective</li> </ul>

Table 5: Distance factors – dependant on the nature of the change

Distance	Definition of typical effects
<b>Foreground</b> (<1 km)	<ul style="list-style-type: none"> <li>Obvious or dominant visual change to the landscape and landform characteristics including Colour contrast and textural details are clearly perceived.</li> <li>Views are more likely to be broken by foreground features.</li> <li>Landform characteristics and the relationship between landscape features are clearly discernible.</li> </ul>
<b>Middle ground</b> (1 – 3 km)	<ul style="list-style-type: none"> <li>Potentially obvious visual change to the landscape and landform characteristics.</li> <li>Views are more likely to be broken by foreground features.</li> <li>Landform characteristics and the relationship between landscape features may be clearly discernible.</li> </ul>
<b>Background</b> (3 – 5 km)	<ul style="list-style-type: none"> <li>Likely minimal visual recognition of strong colour and light contrasts and large -scale vegetation clearance only.</li> <li>Minimal recognition of form and detail and no appreciation of vehicle movement.</li> <li>Distance zone where different landscape elements or types are visually apparent.</li> </ul>
<b>Distant views</b> (5 km +)	<ul style="list-style-type: none"> <li>Textures are no longer visible. Only landform features such as valleys, skyline and ridgelines are visible.</li> <li>Depending on the scale of change, likely minimal visual recognition of strong colour and light contrasts and large-scale vegetation clearance only.</li> <li>Minimal recognition of form and detail and no appreciation of vehicle movement.</li> <li>Depending on the scale of the development, the visual scale of the change may be barely discernible and appear as a relatively minor visual element within a larger landscape complex.</li> </ul>



## 2.5 Community perceptions and values

There has been no community consultation relating to this Landscape and Visual Impact assessment. However, The Shire of Yarra Ranges may have specific consultation findings related to the project and its setting or data that is relevant to the landscape and specific site perceptions for the area. Where appropriate, this data will be incorporated into the impact assessment rating process.

Many levels of perception will also be based on generic physiological factors that are broadly consistent for people across all communities. The common perceptions, listed below in Table 6, create a basis for subsequent value judgements.

### Common perceptions and values

Existing empirical research suggests that there are common physiological, visual and aesthetic factors affecting visual perception and that these factors are likely to be relatively consistent across communities.

These findings, in isolation are indicative only factors to be considered as a part of the assessment. The factors do not provide a quantitative measure or definitive analysis of likely perceptions of visual effects / impacts or the values that may be attached to those changes in the viewed landscape, as they do not consider elements such as context, cultural meaning and the manner in which the receptor views the landscape.

Table 5 Common perceptions & values

<b>Visibility</b>	The magnitude of visual impact is at least partly determined by the nature of that view and whether it is moving or static.
<b>Field of view</b>	<p><b>Horizontal line of sight:</b> The normal binocular field of vision (horizontal line of sight / width of view) is considered to be between 100° and 124°. Within the binocular field of vision, the viewer has depth perception.</p> <p>Either side of the binocular field is a monocular field of 42° for each eye (peripheral vision) which provides the viewer with an awareness of movement, speed and locational cues.</p> <p>Within the binocular field is a central field of view of around 10° which allows symbol recognition.</p> <p>Within the central field of view is a foveal field (zone of visual acuity) of 2.5° where viewed objects are sharply fixed and in detailed focus.</p> <p><b>Vertical line of sight:</b> The normal vertical field of view is considered to be 120 degrees (50° above horizontal and 70° below horizontal) with the limit of colour discrimination at 55 degrees (25° and 30° below horizontal).</p>
<b>Method of Perception:</b>	These fields of vision indicate a field of view and visual 'recognition' but in isolation, are not meaningful measures of scenic perception. The process of recognising and observing an object or scene (Dynamic Visual Acuity) is complex and involves constant scanning of the seen area, recognition and refocussing within the field of view; a process that is modified (narrowed and simplified) by viewer movement, the speed of movement of the viewer and secondary activities such as driving, but enhanced by colour contrasts, illumination, proximity, size, shape, symbol recognition based on expectation and other factors.

<b>Occupied view area:</b>	<p>The nature and magnitude of the visual impact is likely to have a proportional relationship to the percentage of the available view taken up by development infrastructure, new activities or landscape interventions.</p> <p>Objects may be visible, but not dominant, particularly when they occur within landscapes that have been modified by human activity and where the context and complexity of the natural landscape has been significantly altered.</p> <p>A spread of built elements or landscape changes across a wide view or several viewable areas is likely to result in a perception of greater overall visual impact than a similar number of built elements within a more confined viewable area.</p>
<b>Horizontal field of view</b>	<p>As a general guide only, a visual element of less than <b>5°</b> of a field of view may be considered insignificant, depending on the nature of background visual contrasts and the movement of the viewer.</p> <p>A field of view of between <b>5° and 30°</b> may be potentially noticeable, depending on the nature of background visual contrasts and the movement of the viewer.</p> <p>A field of view of over <b>30°</b> is likely to be highly noticeable and potentially dominant.</p>
<b>Vertical field of view</b>	<p>As a general guide only, less than <b>0.5°</b> of a field of view may be considered insignificant, depending on the nature of background visual contrasts and the movement of the viewer.</p> <p>A field of view of between <b>0.5° and 2.5°</b> may be potentially noticeable, depending on the nature of background visual contrasts and the movement of the viewer.</p> <p>A field of view of over <b>2.5°</b> is likely to be highly noticeable and potentially dominant.</p>
<b>Speed of movement</b>	<p>As the speed of movement increases, viewer concentration on a fixed area increases and peripheral vision diminishes, effectively shrinking the visual field. Foreground detail begins to fade.</p>
<b>Distance</b>	<p>The greater the viewing distance, the less detail is observable and the more difficult it is to distinguish between the site or object and its background, diminishing the impact.</p>
<b>Relative elevation</b>	<p>Objects viewed against a skyline silhouette or at the edge of a break in slope are likely to have a greater visual impact than objects or changes viewed from a location where features are viewed against a land backdrop. Colour contrasts may modify this outcome.</p>
<b>Size, colour &amp; form</b>	<p>The greater proportion of a view occupied by new features or activities the greater the impact. Contrasting colours and forms increase the relative impact of change.</p>
<b>Illumination</b>	<p>Luminance contrast increases the visual definition of the shape, size and location of objects and potentially changes the context in which objects are re viewed. Lighting colour and movement increase the potential level of contrast.</p>
<b>Activity</b>	<p>Movement of objects, including vehicles and light reflection changing with movement will increase impact.</p>
<b>Complexity</b>	<p>Changes to a visually complex field of view with elements of varying scales and form are likely to result in lower impacts than changes to a relatively uniform field of view.</p>
<b>Context</b>	<p>The extent to which the proposed development is in character with the land use and landscape character of the site will affect the perceived level of impact.</p>

<b>Weather conditions</b>	The overall clarity of the view, the angle of the sun and the degree to which skyline silhouettes are masked by clouds etc will affect visibility.
<b>Change</b>	The degree of change in the view and the process of change will affect the degree of impact on the viewer.
<b>Familiarity</b>	Changes to a familiar visual setting or where the viewer interacts with the setting is likely to have a relatively greater impact on the viewer than changes to a setting that is rarely seen or poorly understood.
<b>Cultural context</b>	Changes to a visual setting with significant cultural value or purpose is likely to have a relatively greater impact on the viewer than what may be considered a 'generic' landscape setting with no specific value.
<b>Individual context</b>	The perception of a visual impact or visual improvement within a landscape is likely to differ between communities, cultural groups and among individuals. Personal context and values strongly influence the manner in which visual effects are valued.

## 2.6 Landscape sensitivity

Landscape character and scenic quality assessment is used as a basis to assess the landscape's sensitivity to change, which is used further to assess the visual impacts resulting from proposed development within the landscape. Visual sensitivity refers to the extent to which a landscape can change without unacceptable adverse effects on its visual character and quality. Landscape sensitivity levels are described in Table .

Table 7: Landscape Sensitivity

<b>Sensitivity Level</b>	<b>Definition</b>
<b>HIGH</b>	Key characteristics of the landscape are highly vulnerable to the type of change being assessed, with such change likely to result in a significant change in valued character.
<b>MODERATE</b>	Some of the key characteristics of the landscape may be vulnerable to the type of change being assessed. Although the landscape may have some ability to absorb change, some alteration in character may result. Considerable care may be needed in locating and designing change within the landscape.
<b>LOW</b>	Key characteristics of the landscape are less likely to be adversely affected by the proposed change. Change can potentially be more easily accommodated without significantly altering character and there may be opportunities to positively create new character. Sensitive design is still needed to accommodate change.

## 2.7 GIS and computer-based modelling procedures

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### Visibility analysis

Visibility analysis through Zone of Visual Influence (ZVI) modelling of the Proposal and surrounding terrain was used to produce a model identifying potential visual receptors and areas that may be subject to views of the Proposal.

ZVI modelling produces a theoretical zone indicating all places with a line of sight to the modelled data points. The data points have been chosen to best represent the layout of the Proposal based on the WA375 Yarra Valley Quarries Site Layout Plan.

ZVI modelling was based on:

- Digital Terrain Model only and did not consider existing vegetation. This results in a 'worst case' scenario in terms of the theoretical extent of visibility.
- A modelling height of 1.6m above the predicted surface level of the future structure to simulate a typical viewer eye height.

The actual extent of visibility was verified by reference photographs and representative wireframe visualisations, as described within Section 2.9.

### Data limitations

Modelling and assessment outcomes are limited by the following:

- LiDAR data provided (2017-18 Greater Melbourne LiDAR Project MGA Zone 55, GDA2020 8pts/m2, Accuracy of 0.2m Horizontal, 0.1m Vertical), in combination with publicly available contour data of Metropolitan contour data 1-5 meter – Vicmap elevation data (DELWP).

It is considered that, given the scale of the Proposal, the size of the investigation area and the margins of accuracy applying to the modelling process, the modelling results are sufficiently accurate for the purposes of this assessment.

### Best-practice modelling process

As the first step in the process, several photo locations and GPS points were recorded during the site visit. Photos were taken with a DSLR Camera (Canon EOS R5) with a 50mm fixed lens focal length. Conditions on the day of photography were clear and with adequate long-range visibility for the purposes of the assessment.

Photos have been photo stitched into planar panoramas, to provide a realistic impression of the scale of development. It is noted that planar panoramas have an increasing distortion towards the edges of the panorama in order to maintain a correct impression, when it is being viewed flat (planar). The planar projection panoramas have been limited to a HFoV of 80 degrees to reduce the distortion represented within the panorama, and it is recognised that beyond a HFoV of around 60 degrees from the centre point within a panorama that distortion may become present (Landscape Institute United Kingdom, 2019) .

Survey equipment was used to establish the GPS location and elevation of viewpoints. This information was used in 3D software to match the virtual camera with the photos taken on site.

A 3D virtual model was developed in 3D software (3D Studio Max) including the 3D model of the Proposal, based on the Site layout plan (refer to Appendix 1 – Yarra Valley Quarries Site Layout Plan). The viewpoint GPS locations were added into the 3D model to setup virtual cameras for camera matching. Once the views were matched, a Wireframe visualisation was produced to superimpose on the existing conditions photograph to create before and after conditions.

## Background

The photographic and imaging techniques adopted for this study are intended to produce visual representations that:

- Are as geometrically and aesthetically accurate as possible to permit decision makers, after suitable field inspections, to make a reasonable, balanced judgement of the effects of a proposed change.
- Are based on a transparent, structured and replicable procedure, to allow others to confirm the accuracy of the information presented; and
- Are intended to present findings in a manner that is easily understood by non-technical people.

It is important to note that photographic images and simulations cannot provide the visual experience that a human observer would receive in the field. The detailed technical assessments and professional judgements presented in this study have been made on the basis of site inspections, modelling and other information.

### 2.8 Selection of viewpoints

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The potential viewpoints identified within this technical assessment are represented by photographed existing conditions from the site inspection (refer to Appendix 2 - Existing Conditions Viewpoints).

The viewpoints have been selected based on the following criteria:

- Locations have been nominated for testing based on a desktop assessment that were considered to be the most representative receptors.
- Viewpoints were identified and tested through the ZVI modelling process as being the most likely areas of potential visual impact. Within these areas, the most representative and the likely 'worst case' visual impact locations were selected to be tested during a site inspection.
- The selected viewpoints were all publicly accessible.

### 2.9 Photomontage (wireframe) simulations

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The appearance of the Proposal is further assessed by wireframe-based visualisations. These simulations provide an accurate representation of the scale, shape and location of the proposal within the site photographs. The wireframe visualisations of the model from each selected representative viewpoint show:

- Existing baseline conditions
- Wireframe visualisation of the expanding quarry operations, and the likely extent of vegetation clearing that would be seen from the viewpoints.

## 3 Project Description

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### 3.1 Project background

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A previous Landscape and Visual Assessment (LVIA) was prepared based on the extension of the extraction area within the Yarra Valley Quarry. The previous LVIA was prepared for the Submission in support of Planning Permit Application prepared by Focus Creative Development Solutions, Report No. 2460L01, January 2010 (Focus CDS Report) and in the Work Plan Variation for Extractive Industry Work Authority No 375 prepared by Bell Cochrane & Associates 6/10/09.

The site was known as the Yarra Valley Quarry and is owned and operated by Dandy Premix Quarries Pty Ltd (T/a Yarra Valley Quarries).

The Yarra Valley Quarry site has been subject to logging, vegetation removal, stone and gravel extraction activities and rehabilitation operations since the 1940's.

The previous assessments and data suggest:

The shape and position of the quarrying operation and vegetation clearance area has continuously changed over time.

The pre 1997 quarry operation has been filled and progressively reclaimed since the current phase of stone extraction commenced in the existing pit in 1997. Until that time, the site was not subject to a systematic program of rehabilitation or revegetation.

- The current site rehabilitation works have been sequentially undertaken over the course of the past 25 years and have achieved a highly discernible level of success. The planting growth rate has performed well within this timeframe, the coverage having completely screened the pre 1997 extraction area. Significant progress towards screening and revegetating the more recent Stage 1 and Stage 2 extraction stages is also now very evident.

### 3.2 Study area

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The site area is known as the Yarra Valley Quarry and due to the site development, a focused study area of 6km has been established to capture background views, given the landscape setting. A further 10km landscape context has been considered for any potential distant views (refer to Table for distance factor definitions).

Refer to Figure 3 for the study area.

### 3.3 Site development (Site area)

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The Site area is located approximately 6.5km northeast of Woori Yallock township and is located on an elevation within several ridges and valleys at the foothills of Mt Toolebewong.

The site area includes the existing quarry operations area, the land within the proposed expansion area is mostly covered with regrowth native vegetation. The site area has been subject to earlier timber harvesting and quarrying for several more recent decades. The existing extraction area is located south of an east – west ridge of Mt Toolebewong.

The proposed quarry extraction area expansion is to occur as a four-stage development from the existing north-west boundary of WA375 towards the north, north-west of the existing WA375 extraction area into land known as Lot 50C.

### Access to the site

Access to the quarry will continue to be from the existing T-intersection of Dalry Road with McMahons Road, then via the 1.5km of sealed McMahons Road. Internal access to the proposed Lot 50C extraction area will similarly be along existing gravel haul roads, as well as newly constructed haul roads that would be developed within the expanded extraction area as required. The haul roads would be a minimum 9-meter-wide carriageway.



Image 3: Typical Haul Roads



Image 4: Typical Haul Roads

### Construction Sequence / Construction phase

The proposed extraction sequence is illustrated in the *Site Layout Staged Plan* (Work Authority No: WA375), as shown within Figure 2. The Staged development is separated into 4 stages of extraction which will further expand the extraction area and the existing Work Authority (WA375) Boundary towards the north, north-west into lot DPQ Lot 50C land.

Development of the new quarry extraction stage(s) is expected to occur as a routine part of the existing quarry operation and is not expected to create construction activities, or other impacts that differ from the existing quarrying and progressive rehabilitation operations.



Image 5: Existing Extraction Pit



Image 6: Existing Extent of Extraction Pit

## Quarry Extension / Operation phase

The proposed staged quarry development is expected to operate in a similar manner at a comparative level of extraction activity to the existing operation. This includes:

- Method of quarry development will not change
- Less overburden is anticipated to be stripped to access fresh rock as extraction progresses
- Quantity of stone being extracted, processed and transported within the Site is not estimated to increase dramatically in the near period.
- Vehicle movements on the public road system may increase to match output
- Ancillary infrastructure including Office building, weighbridge, truck parking, Pugmill, Processing plant, fuel store, stockpile area, etc. remain as currently operated



Image 7: Processing plant



Image 8 Ancillary Infrastructure

## Lighting

The site operates during daylight hours only. The only lighting provided at the site is low level security lighting at the weighbridge / office and the workshop areas.

## Rehabilitation Plan

Rehabilitation within the quarry operations area will continue in accordance with the revised, or updated rehabilitation plan / Work Plan provisions and the related Environmental Management Plan. The objective of the site rehabilitation is to conceal the worked-out areas of the site as much as practicable from surrounding views by revegetating with native species that will blend in with the surrounding landscape and establish a diverse, self-sustaining, woodland ecosystem that maintains or enhances conservation, recreation and other natural values. A pit lake is also formed as part of the final landform, which further enhances repurposed opportunities for the site at the end of quarrying.

The quarry operation area has previously been divided into several zones of rehabilitation planting based on landform characteristics. The rehabilitation zones would remain the same for this staged expansion:

- Zone 1: Benching and Batters
- Zone 2: Swales and Wetlands
- Zone 3: Stockpile and Hardstand Areas

This planting has been establishing over the past 25 years and the growth has been successful as identified on site (refer to Image 9 - Image 12).





Image 9: Benching and Batters Rehabilitation Planting



Image 10: Benching and Batters Rehabilitation Planting



Image 11: Stockpile and Hardstand Areas Rehabilitation Planting



Image 12: Stockpile and Hardstand Areas Rehabilitation Planting

### Proposed Offset Biolink

The site area includes areas of a proposed native vegetation offsets that will form a Biolink within the northern undisturbed area of DPQ – LOT 50C and within DPQ – LOT 49A which adjoins to the immediate west of the Site area. Refer to Appendix 1 – Yarra Valley Quarries Site Layout Plan.

### Decommissioning phase

Decommissioning and site rehabilitation will be conducted progressively in accordance with the Work Plan and Environmental Management Plan.

After decommissioning, the site will be a safe, stable and sustainable landform. It is expected to be a rural bush property, with a sizeable lake and part, if not all will be incorporated into the net gain register of the State of Victoria. Land uses are not specified at this time.

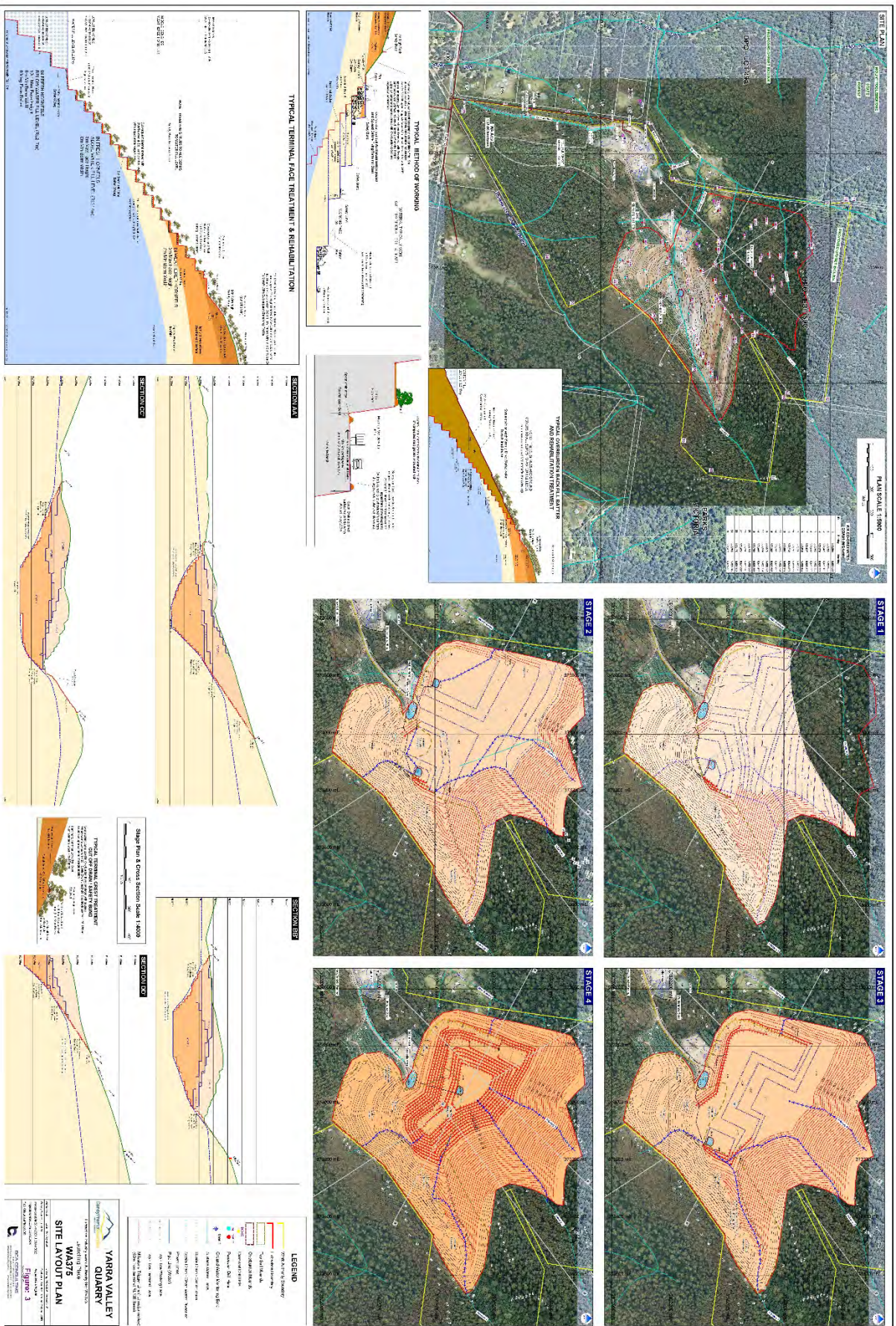
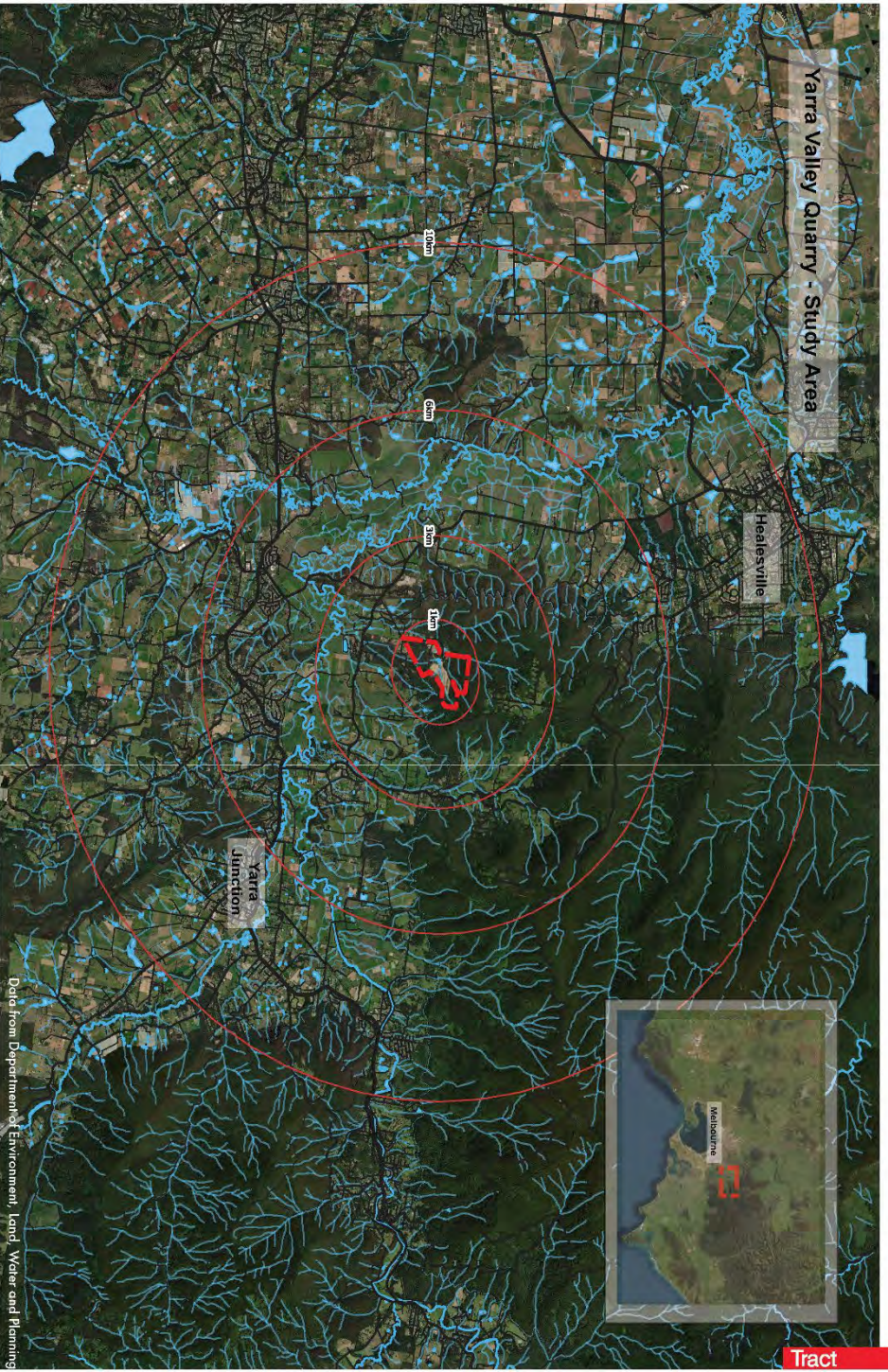


Figure 2: Site layout Plan (Site area)



Drawing File: Drawing File  
 Project Name: Yarra Valley Quarry Stage 3 Development  
 Drawing No: 322-0107-00-DR01  
 Revision: 00    Date: 12/05/23    Drawn: JR    Checked: JC    Approved: MKR  
 Scale: 1:25000  
 Scale bar: 0 0.25km 0.5km 1km

Figure 3: Study Area

## 4 Planning Policy & Strategic context

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The purpose of this section is to provide an overview of the landscape and visual study area and its surroundings and highlight the community values, as expressed through planning policy, that can inform or provide an appropriate reference for the landscape and visual assessment process.

The site area is located within the municipal area of the Yarra Ranges Council, located east of Melbourne. It is therefore subject to the Yarra Ranges Planning Scheme and the Upper Yarra Valley and Dandenong Ranges Regional Strategy Plan (refer to Figure 4 Land Use Overlays).

### 4.1 Existing Planning Controls

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The Site is subject to the following relevant planning controls:

Clause 42.01 – Environmental Significance Overlay – Schedule 1 (ESO1)

Clause 42.03 – Significant Landscape Overlay – Schedule 6 (SLO6)

The following is a summary of relevant points identified for this assessment.

#### 4.1.1 Clause 42.01 – Environmental Significance Overlay – Schedule 1 (ESO1)

The purpose of the ESO is:

*To identify areas where the development of land may be affected by environmental constraints.*

*To ensure that development is compatible with identified environmental values.*

Schedule 1 relates to the 'Highest Biodiversity Habitat Areas and Biolink Corridors' which sets out the following environmental objective:

*To protect and manage the larger patches of remnant highest biodiversity bushland from fragmentation and incremental loss so that they continue to provide high quality biolink corridors and sustainable habitat for indigenous flora and fauna.*

#### 4.1.2 Clause 42.03 – Significant Landscape Overlay – Schedule 6 (SLO6)

The purpose of the SLO is:

*To identify significant landscapes.*

*To conserve and enhance the character of significant landscapes.*

The SLO sets out the following relevant decision guidelines (inter alia):

*The conservation and enhancement of the landscape values of the area.*

*The impact of the proposed buildings and works on the landscape due to height, bulk, colour, general appearance or the need to remove vegetation.*

*The impact of buildings and works on significant views.*

Schedule 6 relates to 'Rolling Hills and Bushy Agriculture Landscape' which sets out the following landscape character objectives:

*To maintain a comparatively open rural landscape of farmland and bushland patches in which houses, farm buildings and tourist facilities are generally inconspicuous.*

*To ensure that the siting and design of new buildings complements their setting and reinforces the rural landscape character of the area.*

*To retain established trees and patches of indigenous vegetation as an important element of the rural landscape and habitat for wildlife.*

*To allow middle and long distance views from the valley to the surrounding ranges.*

*To maintain the appearance of an uninterrupted forested backdrop to views.*

Schedule 6 sets out further decision guidelines derived from Shire of Yarra Ranges' (Yarra Ranges Council, 2008) 'Vision 2020 by Design – A Built Environment Framework for Yarra Ranges' (inter alia):

*The visual impact on views from adjoining roads and other publicly accessible viewing points.*

*Whether buildings and associated works are sited to avoid visually prominent sites such as exposed hilltops or ridgelines.*

*Whether the design and materials of large buildings such as storage and equipment sheds reflect the rural environment and the traditions of farm buildings.*

*The retention of established trees and patches of indigenous vegetation.*

#### 4.1.3 Municipal Planning Strategy

Clause 02.02 (Vision) recognises that the natural environment will continue to be the most defining characteristic of Yarra Ranges.

Clause 02.03-2 (Environmental and Landscape Values) sets out the strategic directions for the biodiversity, river corridors, catchments and waterways within the municipality. It reiterates that the natural environment, dominated by hills and trees, will continue to be the most defining characteristic of Yarra Ranges.

This is to be achieved through the retention of extensive areas of forested land together with a complex network of fragmented remnants of indigenous vegetation and waterways that provide habitats for a rich biodiversity.

## 4.2 Regional policy documents

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### 4.2.1 Upper Yarra Valley and Dandenong Ranges Regional Strategy Plan

The Plan seeks to achieve a balance between protecting the Region's natural environmental values and amenity, and developing a comprehensive economic and social infrastructure that adequately meets the current and future needs of residents and visitors (Yarra Ranges Council, 1995).

It acknowledges that extractive industry, such as quarries, has occurred in a relatively stable and unchanged manner for several decades and is an activity that is important in the provision of materials for road making, local roads maintenance and manufacturing of building supplies, e.g., premixed concrete.

Key policy directions for extractive industries include:

- *Extractive Industry, whether as an expansion of an existing operation or through the establishment of a new operation, must be controlled to minimise detriment to the Region's environment, landscape and water resources and on the amenity of its residents.*
- *All extractive industry sites must be satisfactorily rehabilitated in accordance with conditions specified in the relevant extractive industry approvals for the site.*

- *The expansion of an existing extractive industry may occur within a Site of Natural Significance provided that the expansion is in accordance with a detailed working plan, which has been agreed by the responsible authority and which restricts the removal of vegetation to specific areas shown within that detailed working plan.*

#### 4.2.2 Vision 2020 by Design (May 2008)

This report looks at the Shire in terms of the landscape, built environment and agricultural character and develops visual amenity-based recommendations for nine distinct urban and rural area types. The report also provides guidelines for a range of specific development types and landscape areas.

The Site is located in what is classified as the Rolling Agricultural / Bushy Agricultural rural landscape type, although the actual landscape of the quarry setting more closely aligns with the Yarra Ranges National Park & Public Land areas which are not specifically addressed within this study.

Key attributes of the Rolling Agricultural / Bushy Agricultural rural landscape type include the following:

- Scenic landscape with undulating topography
- A presence of native vegetation
- Views to the backdrop of the Yarra Ranges

This report does not specifically deal with the quarry site or other heavily vegetated settings, but the design guidelines include the following recommendations:

- Retain areas of remnant vegetation, streamside and roadside plantings.
- Site buildings within the topography and minimise earthworks.
- Use siting, size, materials to enable buildings to be inconspicuous elements in landscape.

#### 4.2.3 Yarra Ranges National Park Management Plan (2002)

The Yarra Valley Quarries site is located approximately 3km from the Yarra Ranges National Park boundary.

Parks Victoria's Yarra Ranges National Park Management Plan (Parks Victoria, 2002) discusses several aspects relating to conservation, sustainability and strategies for visitors and other issues that illustrate broader landscape values.

The landscape management plan includes the following relevant protection policies:

- *Improve visual quality by rehabilitating or upgrading sites that do not meet current visual standards.*
- *Participate in planning processes and continue to liaise with the Forests Service and the Shires of Yarra Ranges and Murrundindi to maintain visual quality from high-use visitor destinations and viewing points in the park*

### 4.3 Policy Context – Key findings

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The planning policy applicable to the study area and the landscape and visual values identified have been reviewed and included within the Baseline Values of this assessment (refer to Section 5).

The policy context highlights the focus on retention and protection of landscapes scenic quality, particularly in regard to the Ranges and the foothills scenic quality as an integral component of the image and identity of the Shire.

The following points are the most relevant findings within the study area:

- **Landscape quality:** The scenic beauty and unique landscape features within Yarra Ranges is emphasised as core component of its landscape quality.' This includes the foothills of the Ranges and the visual amenity provided by the ranges as a backdrop throughout the Shire. These characteristics should be maintained and protected, with particular respect to both middle ground views and background views throughout the Yarra Ranges.
- **Native vegetation and biodiversity:** Conserving native vegetation and areas of biodiversity is noted as important as the municipality contains expansive canopy cover and sites of ecological significance.
- **Green wedge land:** The Yarra Ranges Green Wedge encompasses diverse activities including rural living, agriculture, rural industry, water catchments, tourism facilities and State and national parks. While this diversity contributes to both the visual and social appeal of the Yarra Ranges, it understandably contributes to competing objectives.
- **Urban land:** There are several townships in close proximity south of the Site area, including Launching Place, Woori Yallock and Seville East which are expected to experience varying levels of urbanisation in the near future.
- **Extractive industries:** The ongoing operation of existing extractive industries should be balanced with environmental constraints, including the amenity and landscapes values attached to adjacent land.
- **Tourism: Parks** Yarra Valley continues to be a maturing tourism destination, and that tourism and recreation values will be primarily based around natural and cultural landscape quality as well as region specific activities such as wineries. Site sensitive development and the response to development context is likely to be a key requirement.
- **Recreation:** Major recreation routes through the Yarra Valley (roads & trails, such as the Warburton Rail Trail and O'Shannassy Aqueduct Trail) and key visitor destinations are likely to form the basis of visitor perceptions of the Yarra Valley region. On that basis, the amenity values associated with tourism routes are likely to be rated by Authorities.

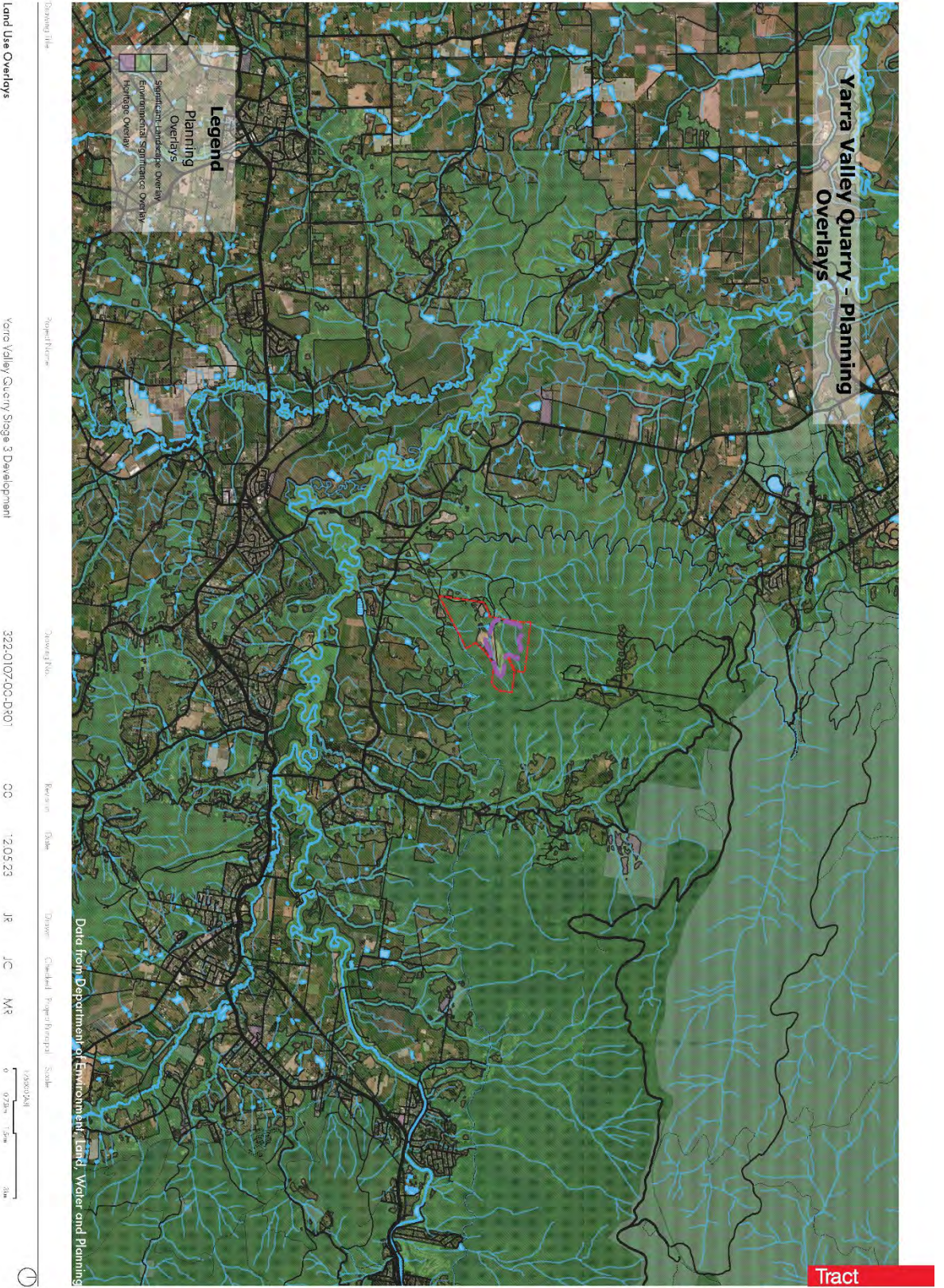


Figure 4 Land Use Overlays



## 5 Baseline Values

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This section provides a description and analysis of the conditions that currently exist within the study area and surrounds, along with conditions which are likely to exist in the future as a result of the continuation of existing site uses and activities. The assessment provided is based against these baseline conditions.

### 5.1 Existing site

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The Yarra Valley Quarry site is currently used as a hard rock quarry and processing operation. Areas within the site boundary have previously been quarried for gravel or disturbed from logging activities.

The quarry produces predominantly fresh or weathered hornfels rock which is suited to the production of high-quality crushed rocks, concrete, asphalt and sealing aggregates. The colour of the stone ranges from brown to dark grey and overburden is light grey / yellow / brown material.

Apart from the existing quarrying operations the Site area is covered with native vegetation that has been rehabilitated from previous activities or native woodland vegetation (regrowth). The rehabilitated land within the extraction extension has evidence of the historic timber harvesting and hill gravel extraction.

Refer to Section 4 for planning policy and the sites land use summary.

### 5.2 Vegetation

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Apart from the existing quarrying operations the Site area is mostly covered with native vegetation represented by Ecological Vegetation Classes (EVC) 29 – Damp Forest and EVC 45 – Shrubby Foothill Forest, as shown within Figure 10.

The vegetation typically is located within the foothills and include an existing mosaic of small clearings which blend into the wider cleared farmland and agriculture nature of the surrounding area. The vegetation canopy cover within the foothills is seen to be predominantly intact and the existing Quarry Site does not have a significantly adverse impact on to the foothill's vegetation (albeit the cleared extraction pit), as shown within Figure 11.

The vegetation is represented by the local indigenous species listed in the EVC of Highlands Southern Fall Bioregion with key characteristics including:

- Shrubby Foothill Forest (EVC 45) typically located on ridge lines and southern and eastern slopes.  
EVC 45 has an overstory Eucalypt Forest of up to a typical average height of 20 – 25m @ 20 years and an understory of distinctive middle strata dominated by a diversity of narrow leaved shrubs and a paucity of ferns, graminoids and herbs in the ground stratum.
- Damp Forest (EVC 29) typically located on a variety of aspects.  
EVC 29 has a an overstory Tree layer up to a typical average height of 25 – 30m @ 20 years over a dense medium to tall dense shrub layer of broad-leaved species typical to wet forest mixed with elements of dry forest types.

The Yarra Ranges National Park is located within the wider study area towards the northeast of the Site, which includes dense vegetation which is a valued landscape within the region.

## Rehabilitated planting

The Site area has been extensively rehabilitated over the years and additionally has evidence of historic timber harvesting and hill gravel extraction. Refer to Figure 5 to Figure 8 for aerial images of progressive rehabilitation.

Rehabilitated planting includes several planting zones:

### Zone 1 - Benching and Batters

Final bench formations stabilised by sterile rye grass for approximately 18-24 months, during which time indigenous vegetation will be established. Indigenous planting will include fast growing understorey shrubs like Acacia species with longer lifespan overstorey trees such as Eucalyptus species. The introduction of vegetation with fibrous root systems such as Burgan (*Kunzea ericoides*) will also aid the stabilisation of topsoil and benching. Native planting will be selected from local indigenous species as listed in the EVC of Highlands Southern Fall Bioregion. Planting communities are intended to reflect natural conditions and will include:

- Shrubby Foothill Forest (EVC 45) on ridge lines
- Damp Forest (EVC 29) on southern slopes
- Montane Damp Forest (Riparian) (EVC 38) in alluvial gullies

### Zone 2 - Swales and Wetlands:

Quarry swales will be rock lined and planted to minimise erosion. The Bio-Retention Basin will be planted with indigenous sedges. The planting will include species listed in:

- EVC 38 – Montane Damp Forest (Riparian).

### Zone 3 - Stockpiles and Hardstand Areas

The stockpile and hardstand areas are cleared and ripped upon quarry closure and covered with between 200 - 300mm overburden. Sterile rye grass will provide immediate soil stabilisation and erosion control, followed by the introduction of native grass.



Figure 5: Aerial Image (December ,2015)



Figure 6: Aerial Image (December, 2018)



Figure 7: Aerial Image (November, 2021)



Figure 8: Aerial Image (January, 2023)

### 5.3 Landform (Topography & Hydrology)

The land is undulating with a number of ridges and valleys. The existing extraction area is south of an east west ridge, the proposed expansion would remain south of this east west ridge (refer to Figure 12).

Landform is an important feature of the Site area and broader study area in that:

- The Site area is located on the southern edge of the Mount Toolebewong formation, as a result the site is partially visible from locations to the southwest of the Site area.
- Localised landform is frequent and undulating in nature, this typically filters views to the Site area.
- Existing vegetation cover includes vegetation located within elevated landform areas. This tends to visually enhance the definition of the location and detailed shape of landforms.
- The rolling landforms and associated vegetation patterns within the Yarra Valley are likely to both promote and screen views to the Site area.

Two small ephemeral drainage lines run through the proposed extended extraction area.

Nearby water forms generally sit lower within the landscape and include associated vegetation which would screen views from the viewing source. The nearby water forms surrounding the Site area include:

- Ephemeral streams / drainage lines
- Localised dams
- Ure Creek, a tributary to the Yarra River
- The Yarra River is located 1.7km away to the south.
- The Don River is located 1.9km to the west.

### 5.4 Climate

The climate of the study area is broadly similar to central Melbourne, with the following characteristics.

- Weather conditions are likely to vary due to the effects caused by the surrounding hills. The site often experiences clear morning conditions and hazy afternoon conditions.
- The study area typically experiences a relatively higher level of rainfall and frequency than central Melbourne.
- Vegetation growth rates are considered to be high within this environment as a result of soil conditions, mild temperatures and relatively high rainfall rates.

## 5.5 Key Landscape features

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The key landscape features within the study area and surrounds include:

- Yarra Ranges and the associated landform and valleys
- Warburton Highway
- Healesville-Koo Wee Rup Road
- Warburton Rail Trail and O'Shannassy Trail
- Yarra River and Don River



Showing The  
 Proposed  
 Bioregions  
 Yarra Valley Quarry Stage 3 Development  
 Drawing No.  
 322.0107.00-DR01  
 Revision  
 00  
 Drawn  
 12.05.23  
 Checked  
 JR JC  
 Project Progress  
 M/R  
 Scale

Figure 9 Bioregions

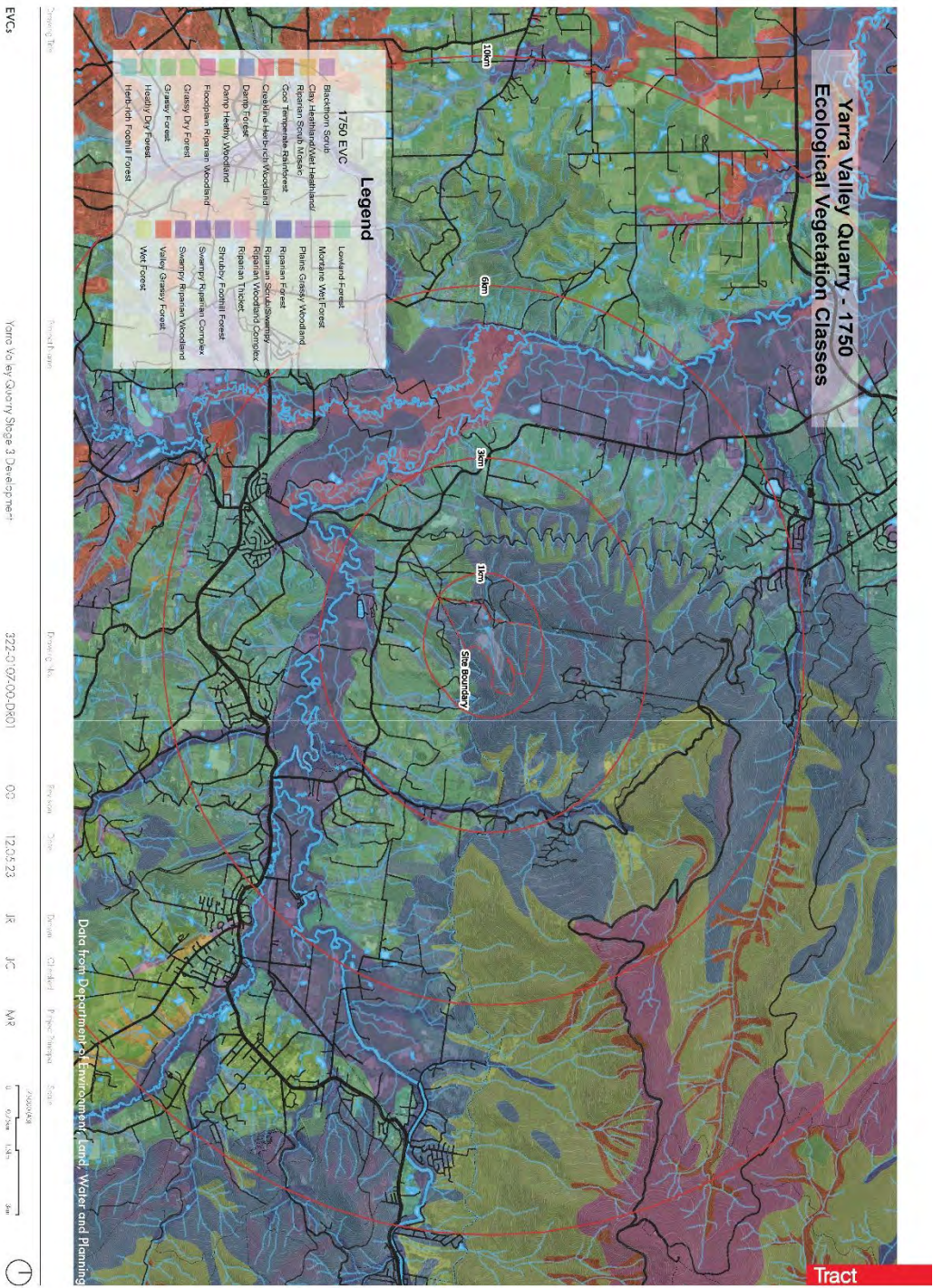


Figure 10 Ecological Vegetation Classes

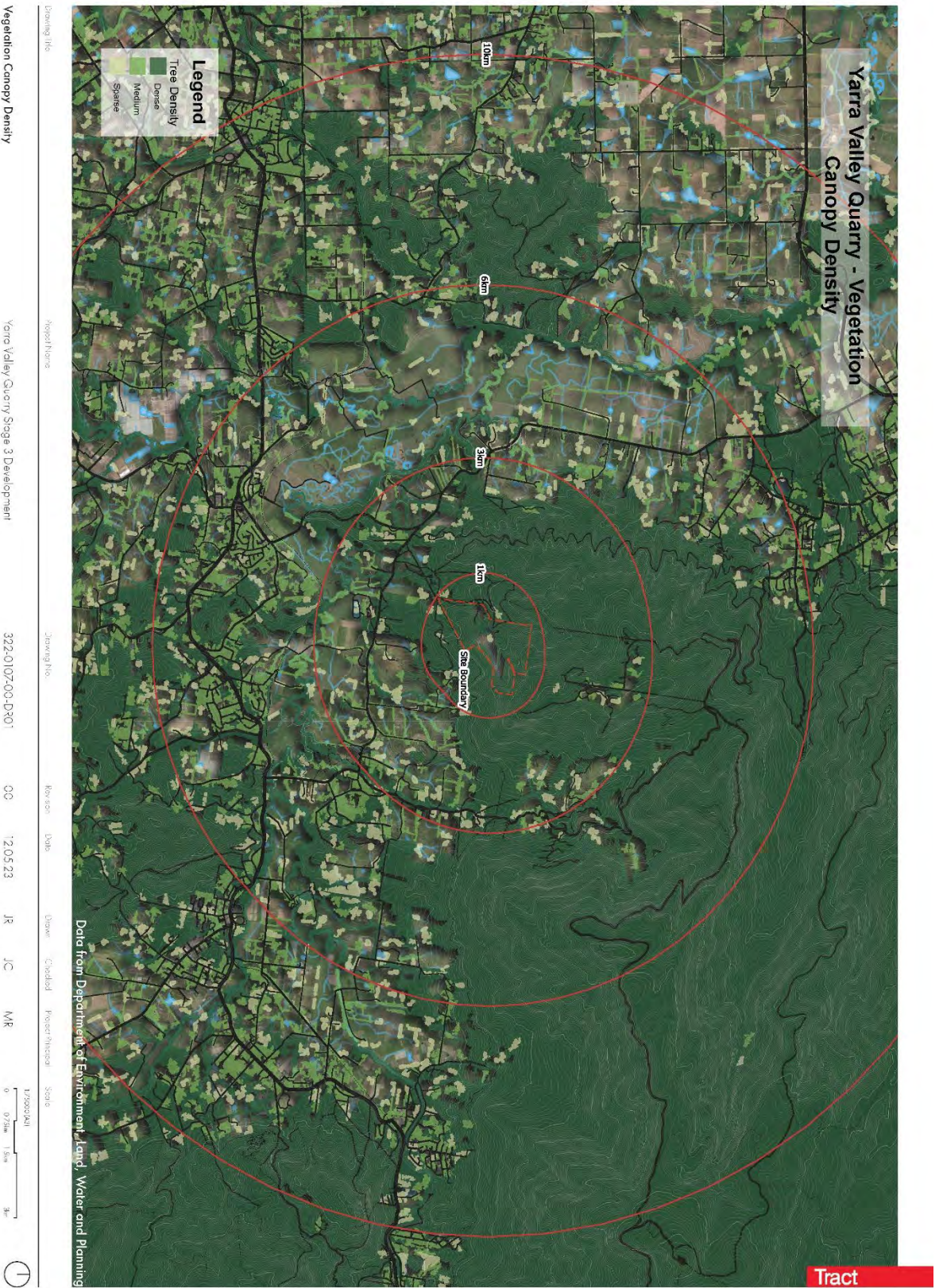


Figure 11 Vegetation Canopy Density





## 5.6 Landscape character & scenic qualities

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Landscape character and scenic quality are assessed at two levels - **status** and **classification**.

The **status** of the area as a recorded or listed landscape of National, State, Regional or Local importance on the basis of its formal natural, cultural heritage or scenic value.

The **classification** of representative landscape character types and related scenic qualities is derived through the definition of common distinguishing visual characteristics – landform, climate, vegetation, water-form and land use pattern. Under this system of classification, each landscape type establishes its own benchmarks for scenic quality.

### Landscape status

In terms of formal status of the study area:

The Site area and large parts of the surrounding landscape are located around public land reserve subject to a Significant Landscape Overlay (SLO3) and Environmental Significance Overlay as well as a series of planning policies and controls that refer to landscape character and scenic quality (refer Section 4). On that basis, the landscape of the Site area and broader landscape setting is regionally significant, being a part of the Yarra Ranges.

The landscape of the Yarra Valley is linked to its tourism value and on that basis, is considered to be of regional significance as a tourism asset.

### Landscape Classification

The classification of representative landscape character types and related scenic qualities is derived through the definition of common distinguishing visual characteristics – landform, climate, vegetation, water form and land use pattern. Under this system of classification, each landscape type establishes its own benchmarks for scenic quality.

The publication Landscape Character Types of Victoria, Forests Commission 1984 establishes a framework of reference for broad scale landscape types along with common community perceptions and standards relating to scenic quality values for landscape types within Victoria (Forests Commission, 1984).

The Shires Character Type design guidelines classify the landscape as a Rolling Agricultural / Bushy Agricultural rural landscape type (Yarra Ranges Council, 2008). While several of the characteristics of this classification do not relate to the Site area the key attributes identified within the Rolling Agricultural / Bushy Agricultural rural landscape type include the following relevant characteristics:

- Scenic landscape with undulating topography
- A presence of native vegetation

Based on the classification of 'Landscape Character Types of Victoria' (Forests Commission, 1984), the overall landscape character type is categorised as a 'Foothills' landscape. The scenic quality frame of reference relevant for the landscape character type are based on the physical characteristics within the landscape, as listed within Table .

The Scenic Quality has therefore been deemed to have a **Moderate** Scenic Quality within the **Foothills Landscape Character Type**, which aligns with the Shire of Yarra Ranges descriptions (Yarra Ranges Council, 2008).

The landscape type would be vulnerable to the type of change being assessed and therefore the landscape sensitivity has been deemed **Moderate** (refer to Section 2.62.5 for landscape sensitivity classification).

Table 8: Foothills Scenic Quality Classification - Frame of Reference

Description	High Scenic Quality	Moderate Scenic Quality	Low Scenic Quality
<b>Landforms</b>	<ul style="list-style-type: none"> <li>Sharply defined peaks and / or serrated ridges that are emphasised by adjacent landforms.</li> <li>Isolated peaks with form and colour contrast that become focal points</li> <li>Well defined 'V' shaped valleys tending to deep gorges.</li> <li>Large rock faces or outcropping that dominate the surrounding landscape.</li> </ul>	<ul style="list-style-type: none"> <li>Undulating and/or rounded hills, ridges and peaks that are not generally distinctive.</li> <li>Dissections varying from 'V' shaped valleys lacking in distinctive configuration, colour, elevation, drop or focus. Lateral tributary valleys lack distinctive configuration or colour.</li> <li>Rock outcroppings evident but indistinct.</li> </ul>	<ul style="list-style-type: none"> <li>Significant expanses of indistinctly dissected (rolling) landform that are not dramatically defined by adjacent landform.</li> </ul>
<b>Vegetation</b>	<ul style="list-style-type: none"> <li>Strongly defined patterns of vegetation resulting from combinations of Eucalypt Forest and naturally occurring open grassland.</li> <li>Dramatic displays of seasonal colour</li> <li>Stands of vegetation that create unusual form, colour or texture in comparison to the surrounding forest.</li> </ul>	<ul style="list-style-type: none"> <li>Open and/or scattered forest combined with natural openings and species mix in patterns that offer some visual diversity.</li> <li>Vegetative pattern evident but of common pattern relative to the surrounding landscape character.</li> </ul>	<ul style="list-style-type: none"> <li>Extensive areas of similar vegetation with very limited variation in texture and/or colour</li> </ul>
<b>Water forms</b>	<ul style="list-style-type: none"> <li>Major streams, lakes or reservoirs</li> </ul>	<ul style="list-style-type: none"> <li>Intermittent streams and/or minor reservoirs</li> </ul>	<ul style="list-style-type: none"> <li>Water forms absent.</li> </ul>

## 5.7 Landscape condition

Landscape condition is a measure of the physical status of the site and factors which may influence landscape changes over time.

The landscape of the area surrounding the Yarra Valley Quarry site has been developed as a mosaic of modified forested areas with clearings for roads, fire breaks, housing and a variety of agricultural uses.

The landscape within the existing quarry boundary has been altered by vegetation clearance due to past quarrying operations, logging and track construction. The overall landscape condition includes the following characteristics:

- Altered landforms from the existing operational quarry as well as intact landform (away from the existing quarry site) that are characteristic of the Foothills Landscape.
- Vegetation displaying varying vegetation cover density and at various maturity levels throughout the Site area.
- An apparently low level of physical change to the landscape in general (outside of the current operational areas)

## 5.8 Pattern of viewing

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The pattern of viewing within the study area has been recognised as having varied views towards the foothills and the Yarra Ranges from within an agricultural setting or from the rural township of Woori Yallock.

The foothills and the Yarra Ranges silhouette are a constant feature of the areas wider view. These wider views are linked to road corridors, related residential development areas and Warburton Rail Trail.

The foothills are visible at varying scales, view orientations and visual prominence. Small clearings along the foothills are evident within the wider view and the existing operational quarry is perceptible from existing background views (3-5km), located within a higher elevation and with a direct line of sight towards the Site area as represented by:

- Viewpoint 5 located along Old Warburton Highway
- Viewpoint 6 located at Symes Road Bus Stop

The available views are derived from either the road orientation or from static views with an available viewshed as shown within Figure 15: Zone of Visual Influence.

The study area has the following main pattern of viewing towards the Foothills and Yarra Ranges:

- From moving views along the regional roads.
- Moving views from Warburton Rail Trail.
- Potential static and / or moving filtered views from residential development areas within Woori Yallock.
- Potential static and / or moving filtered views from rural residential locations

Representative viewpoints were captured during the site inspection and included an existing view of the current operational quarry from higher elevated areas with a direct line of sight towards the Site area, as shown within Image 13 and Image 14. These viewpoints are representative of potential static and / or moving filtered views from regional roads and static views from residential development areas and rural residential locations.

Whilst the existing view of the quarry forms the baseline condition, the view includes an associated visual impact. An existing conditions assessment has been provided below.

Refer to Appendix 2 - Existing Conditions Viewpoints for full scale images.

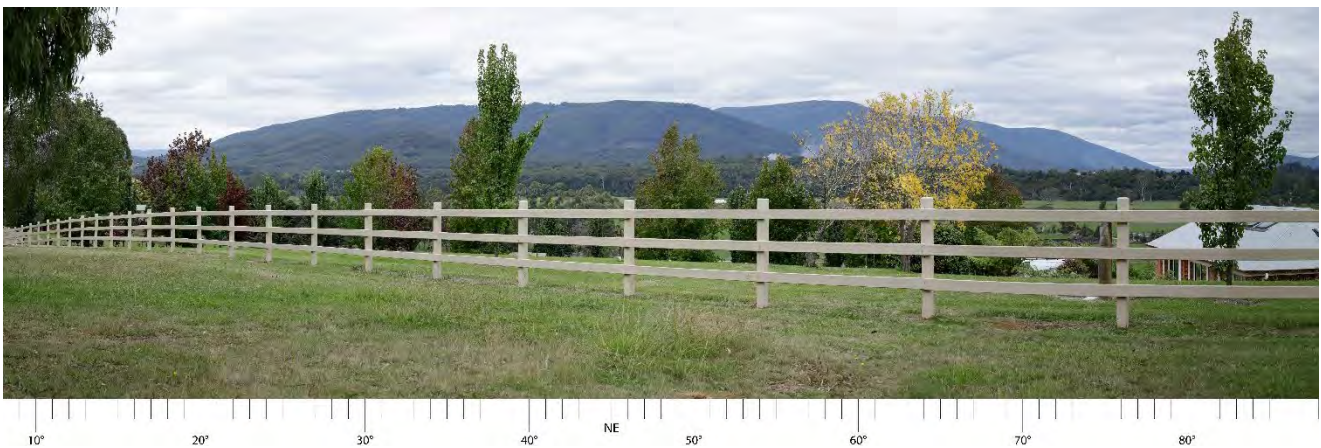


Image 13 Existing Viewpoint (Viewpoint 5: Old Warburton Hwy)

Table 6 Viewpoint 5 – Existing Conditions Assessment

Old Warburton Highway – 4000 meters away from Site Area Description of exiting conditions	Receptor Sensitivity	Duration of Impact	Nature and magnitude of change	Significance rating
<p>The foreground includes a view over a rural residential properties fence line and private garden, with some trees filtering views beyond. Within the background the foothills and the Yarra Ranges can be seen covered by dense vegetation. The foothills include a mosaic of cleared development which can be seen throughout the region, which include the existing operational Quarry.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 3 degrees of visibility towards the existing quarry, this is considered an insignificant effect (refer to Table 5)</p>	<b>Moderate</b> Rural residential and local road users	<b>Medium- Long Term Duration</b> partially reversable  (The landform can't be reversed but revegetation can visually mitigate the impact over time)	<b>Negligible</b> The existing quarry constitutes a discernible but minor component of the wider view. It would be visible in part but has an insignificant effect on the perceived values or scenic quality of the setting.	<b>Low</b>



Image 14 Existing View (Viewpoint 6: Symes Road Bus)

Table 7 Viewpoint 6 – Existing Conditions Assessment

Symes Road Bus Stop – 4200 meters away from Site Area Description of exiting conditions	Receptor Sensitivity	Duration of Impact	Nature and magnitude of change	Significance rating
<p>The foreground includes a view over local agricultural fields and residential dwellings. Within the background of view there are some pockets of development and small clearings The clearings include a small discernible area of the existing quarry. The wider view within the background is predominantly vegetated foothills expanding upward towards the distant Yarra Ranges.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 2 degrees of visibility towards the stage 1 pit expansion, , this is considered an insignificant effect (refer to Table 5).</p>	<b>Moderate</b> Rural residential and local road users	<b>Medium Term - Long Term</b> partially reversable  (The landform can't be reversed but revegetation can visually mitigate the impact over time)	<b>Negligible</b> The existing quarry constitutes a discernible but minor component of the wider view. It would be visible in part but has an insignificant effect on the perceived values or scenic quality of the setting.	<b>Low</b>

## 5.9 Visual absorption capability

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Visual absorbency is a measure of the area's ability to accommodate changes while maintaining existing landscape character and without a significant reduction in landscape and visual quality or amenity. Three major factors are likely to influence the visual absorption capability within the quarry setting:

- Landform and its ability to visually conceal development at the view source or in the location of the change.
- Vegetation patterns, height and location that have the capacity to visually conceal development at the view source only.
- The orientation and location of public roads, recreation trails and potential viewing points.

Within the context of the landscape character type, the site has a moderate visual absorption capability based on the following characteristics:

- The wider view of the Foothills includes a mosaic of additional agricultural clearings and rural residential properties within the dense vegetation canopy cover.
- The Site area makes up a small piece of the valued view of the long-range background views towards the Yarra Ranges as well as background views of the Foothills.
- The existing views of the operational quarry have only been captured from the representative viewpoints with background views (3– 5km)
- No existing views of the operational quarry were seen to be available from foreground views (0 – 1 km) or middle ground views (1- 3km)

## 6 New Conditions – Impact Assessment

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### 6.1 Introduction

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The new conditions assessment deals with potential impact on visual resources resulting from changes in the composition and quality of views, and the overall effect on landscape character and visual amenity.

The assessment of impacts describes the nature and magnitude of changes, sensitivities and the significance of impact, as described within Section 2.2.

The impact assessment is based on the proposed development, and the likely changes on the baseline existing conditions identified. Refer to Section 6.3.4 for the visual impact assessment and Section 6.2 for the landscape character impact assessment.

#### Visual Impacts – Definition

Visual impacts relate to changes in the available views of the landscape and the effects of those changes on people. Visual impact is therefore concerned with:

- The direct impacts of the proposed development on views of the landscape through intrusion or obstruction.
- The likely reaction of viewers who may be affected.
- The overall impact on visual amenity, which can range from degradation through to enhancement.

#### Landscape Impacts - Definition

Landscape impacts are changes in the fabric, character, and quality of the landscape as a result of development and can include:

- Direct impacts on specific landscape elements or values such as scenic quality.
- More subtle effects on the overall pattern of elements that give rise to landscape character and regional and local distinctiveness.
- Impacts upon acknowledged special interests or values such as designated landscapes, conservation sites or community valued assets.
- Cumulative or indirect effects that extend impacts beyond the site boundary.

## 6.2 Landscape Impact Assessment

The baseline values of the landscape have been summarised within Section 5, and the landscape classification of Landscape Character Types have been identified within Section 5.6 The following Character Types assessed within Table 8 are anticipated to be directly impacted by the proposal.

Table 8: Landscape Assessment – New Conditions

Description of likely impacts	Landscape Sensitivity	Nature of change and magnitude of change	Duration	Significance rating	Mitigation measure / Recommendations	Nature of change and magnitude of change (With mitigation)	Significance Rating (with mitigation)
<p>The site area is located within the Landscape Character Type classified as the <b>Foothills</b> which has been classified as having a moderate landscape value.</p> <p><b>Impact Assessment -</b></p> <ul style="list-style-type: none"> <li>The proposed quarry development is an extension to an existing quarry operation. Only the quarry extraction area will change. Extension of the extraction area will enlarge the existing cleared area and extraction pit.</li> <li>The vegetation removed through the quarrying operation will create a clear change to the landscape of the quarry site.</li> <li>The terracing resulting from the quarrying operation will extend the current extraction area to the north, north-west and lower the existing landform from higher elevations.</li> </ul>	<b>Moderate</b>	<p><b>Low</b></p> <p>Will have an apparent but not obvious or dominant effect on an area of recognised landscape character or its key attributes. The new impact would increase the existing effect of the existing Quarry and its existing attributes.</p>	<p><b>Long term</b></p> <p>partially reversable</p> <p>(The landform can't be reversed but revegetation can visually mitigate the impact over time)</p>	<b>Moderate</b>	<ol style="list-style-type: none"> <li>Minimising the footprint / cleared area will minimise landscape impact.</li> <li>Progressive rehabilitation of the upper levels of the extraction area will minimise visibility of the land use.</li> <li>Ensure that plant species mixes used in rehabilitation planting match indigenous EVC material.</li> <li>Ensure rapid rehabilitation of affected areas as per the rehabilitation plan. Allow for ongoing management and maintenance of landscapes to ensure maximum growth potential.</li> </ol>	<p><b>Negligible</b></p> <p>The re-vegetation would over time infill the vegetation clearing and blend the site back into the existing scenic qualities of the landscape setting.</p>	<p><b>Low</b></p> <p>The mitigation measures would progressively reduce the significance rating over time.</p>

## 6.3 Visual Impact Assessment

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### 6.3.1 Visibility analysis

The viewshed / Zone of Visual Influence (ZVI) modelling for the existing study area is shown in Figure 15.

The ZVI modelling exercise provided the necessary level of detail for confirming the likely 'worst case' visual receptors and conducting the site inspection. The ZVI shows the areas that can be seen within a direct 'line of sight' from the expanded development. The purpose of the modelling is to:

- Identify all possible theoretical viewing areas.
- Indicate possible representative or 'worst case scenarios' viewing areas that can be verified during a site inspection.

Actual levels of visibility will be less than the modelled results due to:

- Existing vegetation within the study area.
- Existing structures or built form screening views within the study area.
- View alignment and viewing distance.
- Localised topographic elements that may not be included in the terrain model.

### 6.3.2 ZVI modelling results

- The modelling results indicate a limited direct 'line of sight' from the expanded development within the southwest. This is due to the landform screening views.
- The modelling results identify possible viewing locations from Woori Yallock, Seville East, residential areas, rural residential properties, Warburton Highway, Warburton Rail Trail and within farmland.

### 6.3.3 Viewpoint selection

Nine representative viewpoints have been selected to provide a basis for the assessment of baseline values and future new conditions related to the proposal (Refer to Figure 16 for viewpoint locations).

The viewpoints have been selected as a representation of view lines predominantly based on the ZVI modelling, view direction, visual receptors, and proximity to the development site throughout the study area (refer to Section 2.8 for selection methodology).

### 6.3.4 Viewpoint Assessment

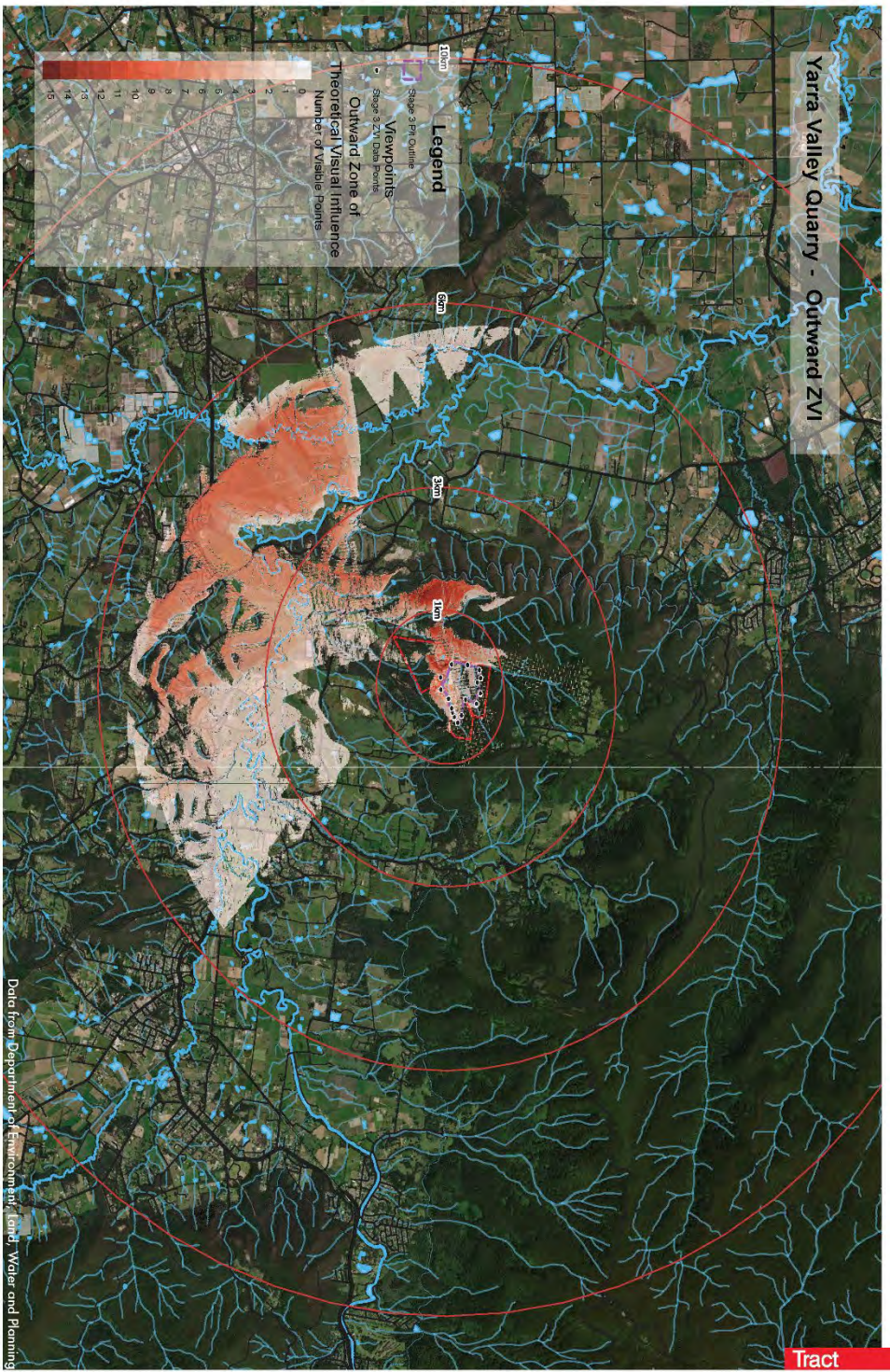
An assessment of the representative viewpoint locations has been provided below.

The assessment defines the likely impact of change resulting from the anticipated nature and magnitude of change identified within each viewpoint against the visual receptor sensitivity. The ratings are based on the Methodology described within Section 2.2 and the new conditions identified within the visualisations, including:

- Seven wireframe visualisations have been created based on the representative viewpoint selection to test the likely visual effects of the proposal; however, they also provide a basis for describing baseline values.

Refer to Appendix 2 - Existing Conditions Viewpoints





Drawn: JTC  
 Project Name: Yarra Valley Quarry Stage 3 Development  
 Drawing No: 322-0107-00-3101  
 Revision: 00  
 Date: 12.05.23  
 Drawn: JTC  
 Checked: JJC  
 Project Manager: MKR  
 Scale: 1:75000  
 0 750M 1500M 3KM

Figure 15: Zone of Visual Influence



Drawing Title: Yarra Valley Quarry - Stage 3 Development  
 Drawing No: 322-0197-00-DP01  
 Date: 00 12.05.23  
 Author: JR JC MR  
 Checked: MF  
 Project Manager: MF  
 Scale: 1:25000  
 Scale bar: 0 0.75km 1.5km 3km

Figure 16: Viewpoint Locations

## Viewpoint 1 – Healesville Road



Refer to Appendix 2 - Existing Conditions Viewpoints for the full-size Viewpoint Images and Wireframe Visualisations.

Table 9 Viewpoint 1 – New Conditions Assessment

Healesville Road – 2750 meters away from the Site area Description of view and likely impacts.	Receptor Sensitivity	Duration of impact	Nature of change and magnitude of change	Significance rating	Mitigation measures	Nature of change and magnitude of change (with mitigation)	Significance Rating (with mitigation)
The foreground includes a view over farmland with scattered trees throughout agricultural paddocks and trees running along fence lines, filtering views beyond. Within the background the foothills of the ranges can be seen including the dense Eucalypt Forrest along the defined ridgeline within the distance. <b>Impact Assessment – Expansion pit stage 1.</b> The development site would be positioned behind the ridgeline seen within view. The Proposed expansion would not be visible from this viewpoint.	Moderate Rural residential and local road users	Nil	No change No part of the Proposal or associated activity is visually discernible.	Nil	-	No change	Nil
<b>Expansion pit stage 2:</b> The Proposed expansion of Stage 2 would not be visible from this viewpoint.	Moderate	Nil	No change	Nil	-	No change	Nil
<b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint.	Moderate	Nil	No change	Nil	-	No change	Nil
<b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 (Final Stage) would not be visible from this viewpoint.	Moderate	Nil	No change	Nil	-	No change	Nil

## Viewpoint 2 – Dalry Road

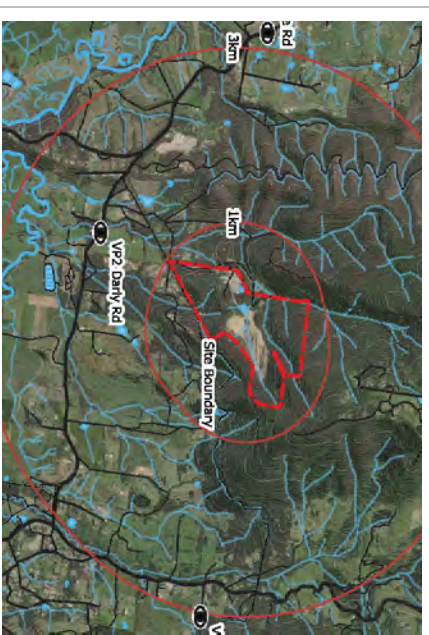
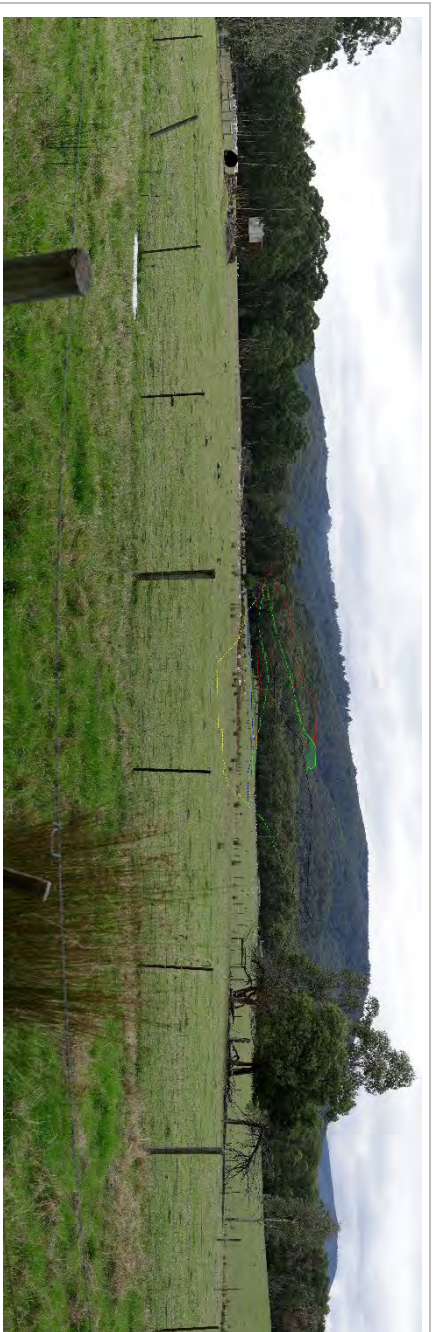


Table 10 Viewpoint 2 – New Conditions Assessment

Dalry Road – 1000 meters away from the Site Area Description of likely impacts	Receptor Sensitivity	Duration of impact	Nature of change and magnitude of change	Significance rating	Mitigation measures	Nature of change and magnitude of change (with mitigation)	Significance Rating (with mitigation)
<p>The foreground includes a view over gently undulating farmland, including an open paddock of grazing stock. Behind the paddock are the foothills of the Ranges and dense Eucalypt Forest. The middle ground of view rises upward towards the ridge line which screens views beyond.</p> <p><b>Impact Assessment – Expansion pit Stage 1:</b> The development site would be positioned within the background of the view, behind the ridge line seen within the middle ground. The Proposed expansion would include vegetation clearing which would be visible within the Eucalypt Forest in the Middle ground view.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 2 degrees of visibility towards the stage 1 pit expansion, this is considered an insignificant effect (refer to Table 5).</p>	<b>Moderate</b> Rural residential and local road users	<b>Long Term</b> partially reversible (The landform can't be reversed but revegetation can visually mitigate the impact over time)	<b>Negligible</b> The vegetation clearing of Stage 1 would be visible in part but has an insignificant effect on the perceived values or scenic quality of the setting.	<b>Low</b>	2. Re-vegetation mitigation measures	The re-vegetation would over time infill the vegetation clearing visible.	<b>Nil</b>
<p><b>Expansion pit Stage 2:</b> The Proposed expansion of Stage 2 would be partially visible due to the additional vegetation clearing next to the Stage 1 changes.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 3 degrees of visibility towards the stage 2 pit expansion, this is considered an insignificant effect (refer to Table 5)</p>	<b>Moderate</b>	<b>Long Term</b> partially reversible	<b>Negligible</b> The vegetation clearing of Stage 2 would be visible in part but has an insignificant effect on the perceived values or scenic quality of the setting.	<b>Low</b>	2. Re-vegetation mitigation measures	The re-vegetation would over time infill the vegetation clearing visible.	<b>Nil</b>
<p><b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint.</p>	<b>Moderate</b>	<b>Long Term</b> partially reversible	<b>Negligible</b>	<b>Low</b>		<b>No change</b>	<b>Nil</b>
<p><b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 (Final Stage) would not be visible from this viewpoint.</p>	<b>Moderate</b>	<b>Long Term</b> partially reversible	<b>Negligible</b>	<b>Low</b>		<b>No change</b>	<b>Nil</b>

### Viewpoint 3 – Ferrungully Road (Don Valley)



Table 11 Viewpoint 3 – New Conditions Assessment

<b>Ferrungully Road – 2600 meters away from Site Area</b>	<b>Description of likely impacts</b>	<b>Receptor Sensitivity</b>	<b>Duration of Impact</b>	<b>Nature of change and magnitude of change</b>	<b>Significance rating</b>	<b>Mitigation measures</b>	<b>Nature of change and magnitude of change (with mitigation)</b>	<b>Significance Rating (with mitigation)</b>
	<p>The foreground includes a view down Ferrungully Road with a glimpse out towards the Ranges foothills. The surrounding vegetation is dense canopy cover, and it filters views from the viewing source.</p> <p>The glimpse available to the foothills is limited and it includes a view of the ridgeline which screens views beyond.</p> <p><b>Impact Assessment – Expansion pit stage 1:</b> The development site would be positioned within the background of the view, behind the ridgeline seen within the view.</p> <p>The Proposed expansion of Stage 1 would not be visible from this viewpoint</p>	<b>Moderate</b> Rural residential and local road users	<b>Nil</b>	<b>No Change</b> No part of the Proposal or associated activity is visually discernible.	<b>Nil</b>	-	<b>No Change</b>	<b>Nil</b>
	<p><b>Expansion pit stage 2:</b> The Proposed expansion of Stage2 would not be visible from this viewpoint.</p>	<b>Moderate</b>	<b>Nil</b>	<b>No Change</b>	<b>Nil</b>		<b>No Change</b>	<b>Nil</b>
	<p><b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint.</p>	<b>Moderate</b>	<b>Nil</b>	<b>No Change</b>	<b>Nil</b>		<b>No Change</b>	<b>Nil</b>
	<p><b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 (Final Stage) would not be visible from this viewpoint.</p>	<b>Moderate</b>	<b>Nil</b>	<b>No Change</b>	<b>Nil</b>		<b>No Change</b>	<b>Nil</b>

## Viewpoint 4 – Old Warburton Hwy (Seville East)

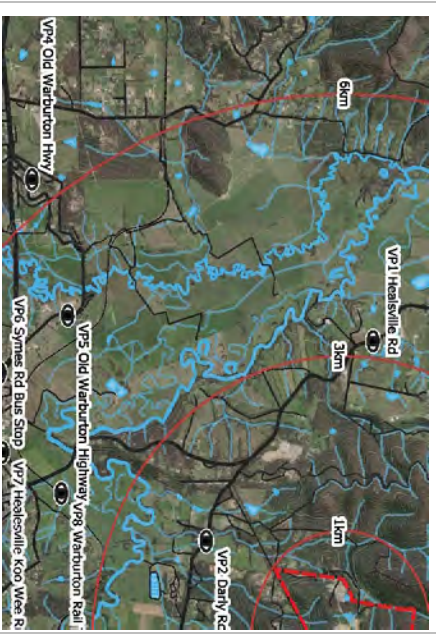


Table 12 Viewpoint 4 – New Conditions Assessment

Old Warburton Highway – 5500 meters away from Site Area Description of likely impacts	Receptor Sensitivity	Duration of impact	Nature of change and magnitude of change	Significance rating	Mitigation measures	Nature of change and magnitude of change (with mitigation)	Significance Rating (with mitigation)
<p>The foreground includes a view down Old Warburton Highway with foreground views of private gardens and residential homes. There are glimpses out towards the background of the foothills and the Ranges.</p> <p>The residential receptors within Seville East are nestled into this landscape and views are typically filtered by private gardens and trees.</p> <p><b>Impact Assessment – Expansion pit stage 1:</b> The development site would be positioned within the background of the view, typically filtered by the foreground residential properties and tree canopy cover. The positioning of the development site would additionally be located behind a ridge line which would reduce the discernibility of the Site area.</p> <p>The Proposed expansion of Stage 1 would not be visible from this viewpoint</p>	High Residential	Nil	No Change No part of the Proposal or associated activity is visually discernible.	Nil	-	No Change	Nil
<b>Expansion pit stage 2:</b> The Proposed expansion of Stage 2 would not be visible from this viewpoint	High Residential	Nil	No Change	Nil		No Change	Nil
<b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint	High Residential	Nil	No Change	Nil		No Change	Nil
<b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 would not be visible from this viewpoint	High Residential	Nil	No Change	Nil		No Change	Nil

## Viewpoint 5 – Old Warburton Highway

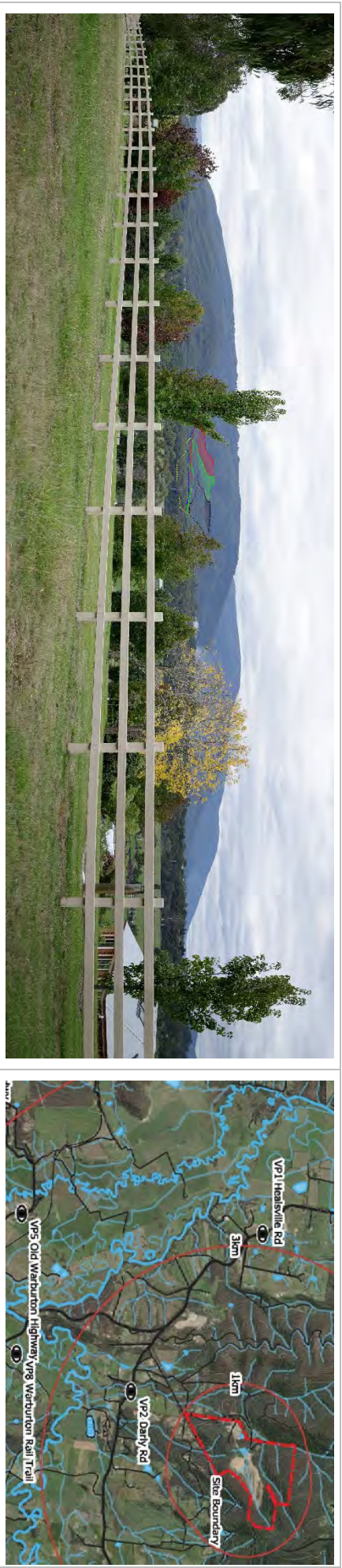


Table 13 Viewpoint 5 – New Conditions Assessment

<b>Old Warburton Highway – 4000 meters away from Site Area</b> <b>Description of likely impacts</b>	<b>Receptor Sensitivity</b>	<b>Duration of impact</b>	<b>Nature of change and magnitude of change</b>	<b>Significance rating</b>	<b>Mitigation measures</b>	<b>Nature of change and magnitude of change (With mitigation)</b>	<b>Significance Rating (with mitigation)</b>
<p>The foreground includes a view over a rural residential properties fence line and private garden, with some trees filtering views beyond. Within the background the foothills and the Ranges can be seen covered by dense vegetation. The foothills include a mosaic of cleared development which can be seen throughout the region, which include the existing Yarra Valley Quarry Site area.</p> <p><b>Impact Assessment – Expansion pit stage 1:</b> The development site would be positioned within the background of the view, next to the existing clearing of the quarry which is discernible in the view of the foothills.</p> <p>The Proposed expansion of Stage 1 would be visible from this viewpoint, expanding the existing clearing.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 6 degrees of visibility towards the stage 1 pit expansion, this is considered a noticeable effect (refer to Table 5)</p> <p><b>Expansion pit stage 2:</b> The Proposed expansion of Stage 2 would be visible from this viewpoint, expanding the existing clearing and the clearing of Stage 1.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 8 degrees of visibility towards the stage 2 pit expansion, this is considered a noticeable effect (refer to Table 5)</p> <p><b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p> <p><b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p>	<p><b>Moderate</b></p> <p>Rural residential and local road users</p>	<p><b>Long Term</b></p> <p>partially reversible (The landform can't be reversed but revegetation can visually mitigate the impact over time)</p>	<p><b>Low</b></p> <p>The Proposal constitutes a discernible but minor component of the wider view. Awareness of the element will be a 'cumulative impact' in addition to the existing operational quarry. It will have a negative but not a marked effect on overall scenic quality.</p>	<p><b>Moderate</b></p>	<p>1. General siting and design 2. Re-vegetation</p>	<p><b>Negligible</b></p> <p>The re-vegetation would over time infill the vegetation clearing visible and blend the site back into the existing scenic qualities of the setting.</p>	<p><b>Low</b></p> <p>The mitigation measures would progressively reduce the significance rating over time.</p>
<p><b>Expansion pit stage 2:</b> The Proposed expansion of Stage 2 would be visible from this viewpoint, expanding the existing clearing and the clearing of Stage 1.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 8 degrees of visibility towards the stage 2 pit expansion, this is considered a noticeable effect (refer to Table 5)</p>	<p><b>Moderate</b></p>	<p><b>Long Term</b></p> <p>partially reversible</p>	<p><b>Low</b></p>	<p><b>Moderate</b></p>	<p>1. General siting and design 2. Re-vegetation</p>	<p><b>Negligible</b></p>	<p><b>Low</b></p>
<p><b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p> <p><b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p>	<p><b>Moderate</b></p>	<p><b>Long Term</b></p> <p>partially reversible</p>	<p><b>Low</b></p>	<p><b>Moderate</b></p>	<p>-</p>	<p><b>Negligible</b></p>	<p><b>Low</b></p>

## Viewpoint 6 – Symes Road Bus Stop

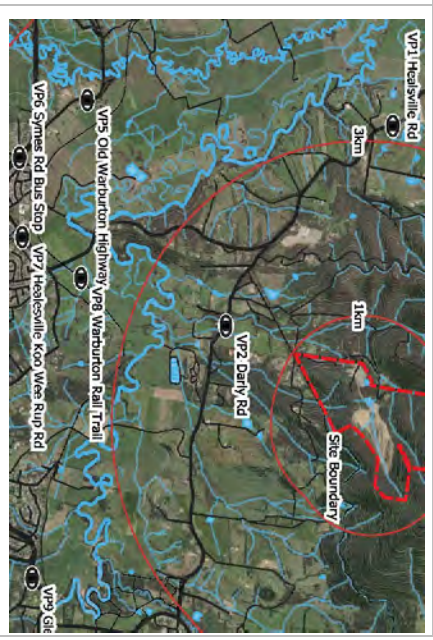
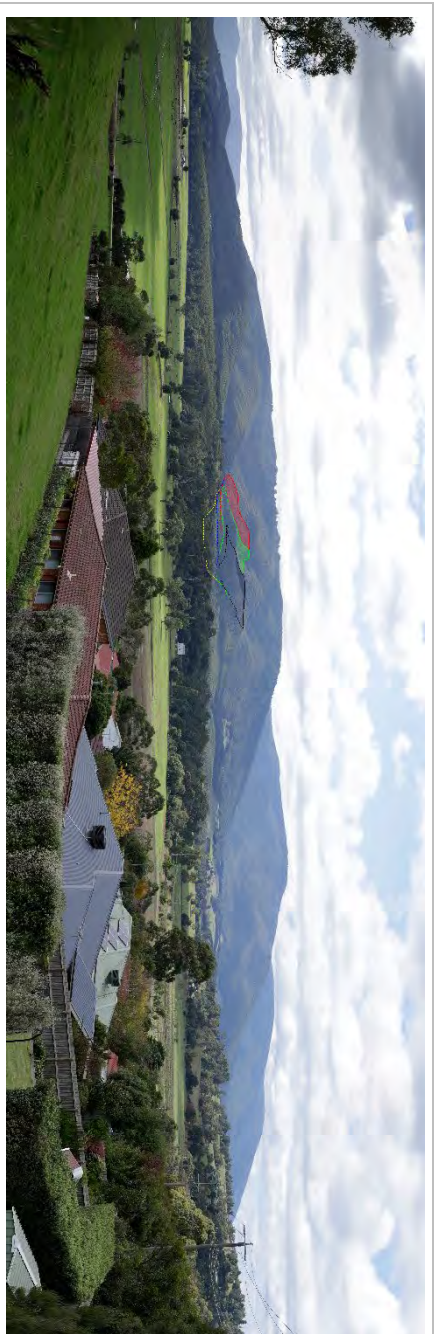


Table 14 Viewpoint 6 – New Conditions Assessment

Symes Road Bus Stop – 4200 meters away from Site Area	Receptor Sensitivity	Duration of Impact	Nature of change and magnitude of change	Significance rating	Mitigation measures	Nature of change and magnitude of change (with mitigation)	Significance Rating (with mitigation)
<p><b>Description of likely impacts</b></p> <p>The foreground includes a view over local agricultural fields and residential dwellings. Within the middle ground of view there are some pockets of development and small clearings which include a small discernible area of the existing quarry. The wider view within the background is predominantly vegetated foothills expanding upward towards the distant Yarra Ranges.</p> <p><b>Impact Assessment – Expansion pit stage 1:</b> The development site would be positioned within the foothills vegetation and would become a minor component of the background.</p> <p>The Proposed expansion of Stage 1 would be visible from this viewpoint, creating a ‘cumulative impact’ onto this viewpoint.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 5 degrees of visibility towards the stage 1 pit expansion, this is considered a noticeable effect (refer to Table 5)</p>	<p><b>Moderate</b></p> <p>Rural residential and local road users</p>	<p><b>Long Term</b></p> <p>partially reversible (The landform can’t be reversed but revegetation can visually mitigate the impact over time)</p>	<p><b>Low</b></p> <p>The Proposal constitutes a discernible but minor component of the wider view. Awareness of the element will be a ‘cumulative impact’ in addition to the existing operational quarry. It will have a negative but not a marked effect on overall scenic quality.</p>	<p><b>Moderate</b></p>	<p>1. General siting and design 2. Re-vegetation mitigation measures</p>	<p><b>Negligible</b></p> <p>The re-vegetation would over time infill the vegetation clearing visible and blend the site back into the existing scenic qualities of the setting.</p>	<p><b>Low</b></p> <p>The mitigation measures would progressively reduce the significance rating over time.</p>
<p><b>Expansion pit stage 2:</b> The Proposed expansion of Stage 2 would be visible from this viewpoint, next to the Stage 1 expansion creating a ‘cumulative impact’ onto this viewpoint.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 8 degrees of visibility towards the stage 2 pit expansion, this is considered a noticeable effect (refer to Table 5)</p>	<p><b>Moderate</b></p>	<p><b>Long Term</b></p> <p>partially reversible</p>	<p><b>Low</b></p>	<p><b>Moderate</b></p>	<p>2. Re-vegetation mitigation measures</p>	<p><b>Negligible</b></p>	<p><b>Low</b></p>
<p><b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p>	<p><b>Moderate</b></p>	<p><b>Long Term</b></p> <p>partially reversible</p>	<p><b>Low</b></p>	<p><b>Moderate</b></p>		<p><b>Negligible</b></p>	<p><b>Low</b></p>
<p><b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 (Final Stage) would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p>	<p><b>Moderate</b></p>	<p><b>Long Term</b></p> <p>partially reversible</p>	<p><b>Low</b></p>	<p><b>Moderate</b></p>		<p><b>Negligible</b></p>	<p><b>Low</b></p>



## Viewpoint 7 – Healesville Koo Wee Rup Road

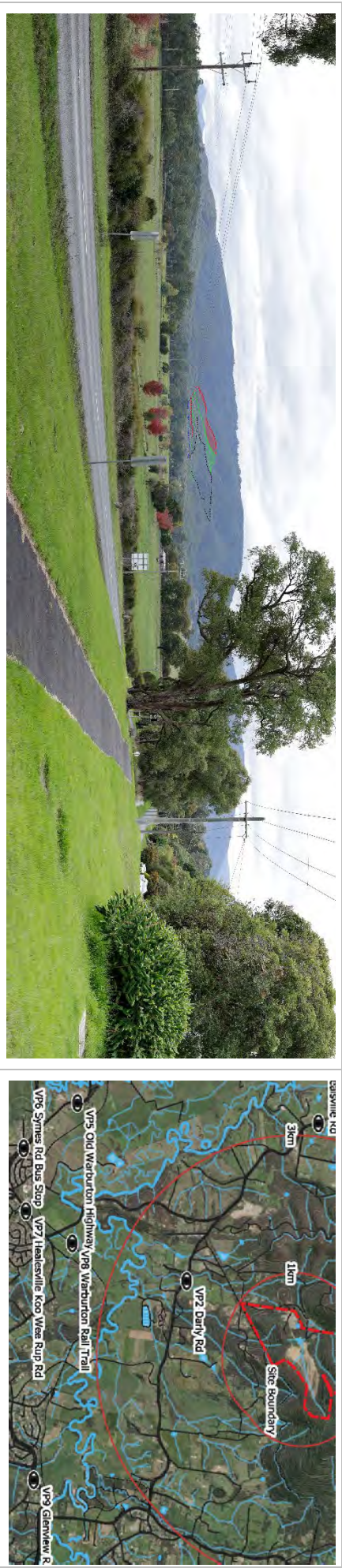


Table 15 Viewpoint 7 – New Conditions Assessment

Healesville Koo Wee Rup Road – 3750 meters away from Site Area									
Description of likely impacts	Receptor Sensitivity	Duration of impact	Nature of change and magnitude of change	Significance rating	Mitigation measures	Nature of change and magnitude of change (with mitigation)	Significance Rating (with mitigation)		
<p>The foreground includes a view over local agricultural fields and some vegetation running along Healesville Koo Wee Rup Road which screens views towards the right of the view. Within the middle ground there is dense vegetation spanning up towards the foothills. The wider view within the background is predominantly vegetated foothills expanding upward to the hills and the ridge line.</p> <p><b>Impact Assessment – Expansion pit stage 1:</b> The development site would be positioned within the middle ground of view. It would be located predominantly behind a ridge line seen within the middle ground of view. The Proposed expansion of Stage 1 would be visible from this viewpoint, creating a perceived 'new impact' onto this viewpoint.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 3 degrees of visibility towards the stage 1 pit expansion, this is considered an insignificant effect (refer to Table 5)</p>	Moderate Road users	Long Term partially reversible	Low The Proposal constitutes a discernible but minor component of the wider view. Awareness of the element will be perceived as a 'new impact'. It will have a negative but not a marked effect on overall scenic quality of the Foothills.	Moderate	1. Shading and design 2. Re-vegetation mitigation measures	Negligible The re-vegetation would over time infill the vegetation clearing visible and blend the site back into the existing scenic qualities of the setting.	Low The mitigation measures would progressively reduce the significance rating over time.		
<p><b>Expansion pit stage 2:</b> The Proposed expansion of Stage 2 would be visible from this viewpoint, creating a perceived 'new impact' onto this viewpoint.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 5 degrees of visibility towards the stage 2 pit expansion, this is considered a noticeable effect (refer to Table 5)</p>	Moderate Road users	Long Term partially reversible	Low	Moderate	2. Re-vegetation	Negligible	Low		
<p><b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p>	Moderate Road users	Long Term partially reversible	Low	Moderate		Negligible	Low		
<p><b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 (Final Stage) would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p>	Moderate Road users	Long Term partially reversible	Low	Moderate		Negligible	Low		

## Viewpoint 8 – Warburton Rail Trail

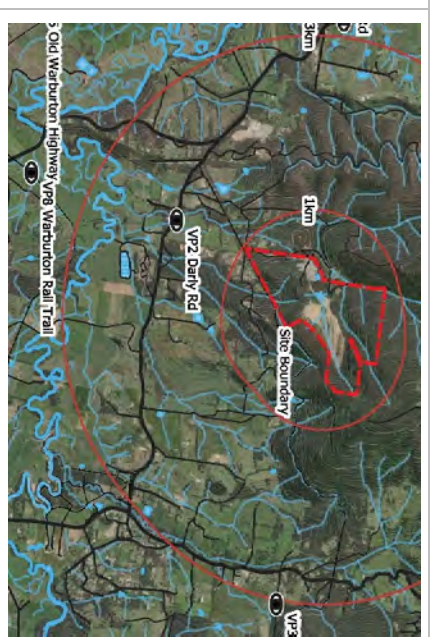
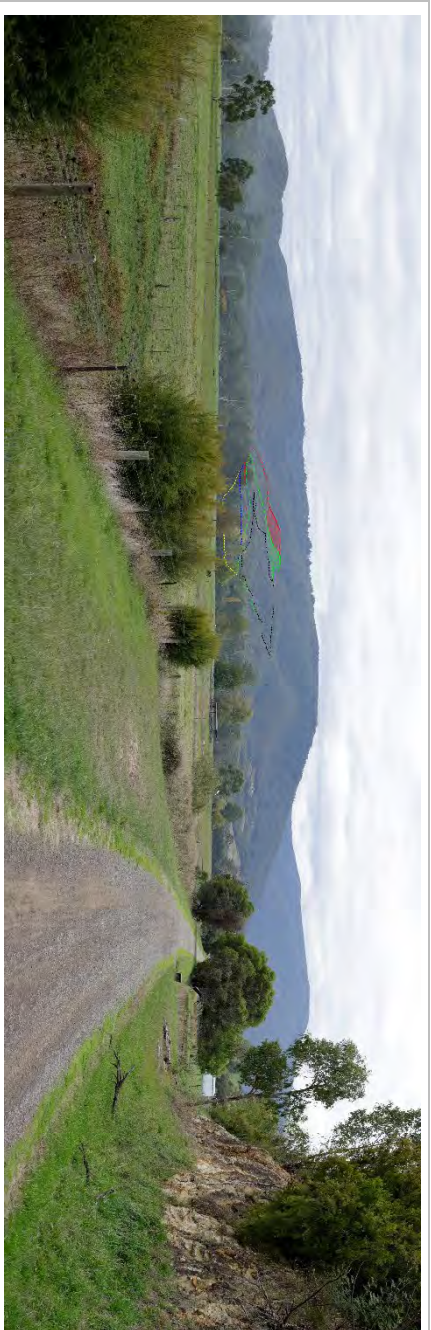


Table 16 Viewpoint 8 – New Conditions Assessment

Warburton Rail Trail – 2900 meters away from Site Area Description of likely impacts	Receptor Sensitivity	Duration of Impact	Nature of change and magnitude of change	Significance rating	Mitigation measures	Nature of change and magnitude of change (with mitigation)	Significance Rating (with mitigation)
<p>The foreground includes a view over local agricultural fields and some vegetation running along the Warburton Rail Trail which screens views towards the right of the view. Within the middle ground there is dense vegetation running along the nearby watercourse which spans up towards the foothills. Within the middle ground of view there are some pockets of development / clearings, but the wider view within the background is predominantly vegetated foothills expanding upward to the hills and the ranges ridge-line.</p> <p><b>Impact Assessment – Expansion pit stage 1:</b> The development site would be positioned within the foothills vegetation and would become a minor component of the wider view. It would potentially blend into the existing composition of the small pockets of development.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 3 degrees of visibility towards the stage 1 pit expansion, this is considered an insignificant effect (refer to Table 5)</p>	High Recreation al users of the Warburton Rail Trail	Long Term partially reversible  (The landform can't be reversed but revegetation can visually mitigate the impact over time)	Low The Proposal constitutes a discernible but minor component of the wider view. Awareness of the element will be perceived as a "new impact". It will have a negative but not a marked effect on overall scenic quality of the Foothills	Moderate	1. Shing and design 2. Re-vegetation mitigation measures	Negligible The re-vegetation would over time infill the vegetation clearing visible and blend the site back into the existing scenic qualities of the setting.	Low The mitigation measures would progressively reduce the significance rating over time.
<p><b>Expansion pit stage 2:</b> The Proposed expansion of Stage 2 would be visible from this viewpoint, creating a perceived 'new impact' onto this viewpoint.</p> <p><b>Field of view visible:</b> The horizontal field of view includes 4 degrees of visibility towards the stage 2 pit expansion, this is considered an insignificant effect (refer to Table 5).</p>	High	Long Term partially reversible	Low	Moderate	1. Shing and design 2. Re-vegetation	Negligible	Low
<p><b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p>	High	Long Term partially reversible	Low	Moderate		Negligible	Low
<p><b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 (Final Stage) would not be visible from this viewpoint. The re-vegetation from stage 1-2 would over time infill the vegetation clearing visible.</p>	High	Long Term partially reversible	Low	Moderate		Negligible	Low

## Viewpoint 9 – Glenview Road (Launching Place)

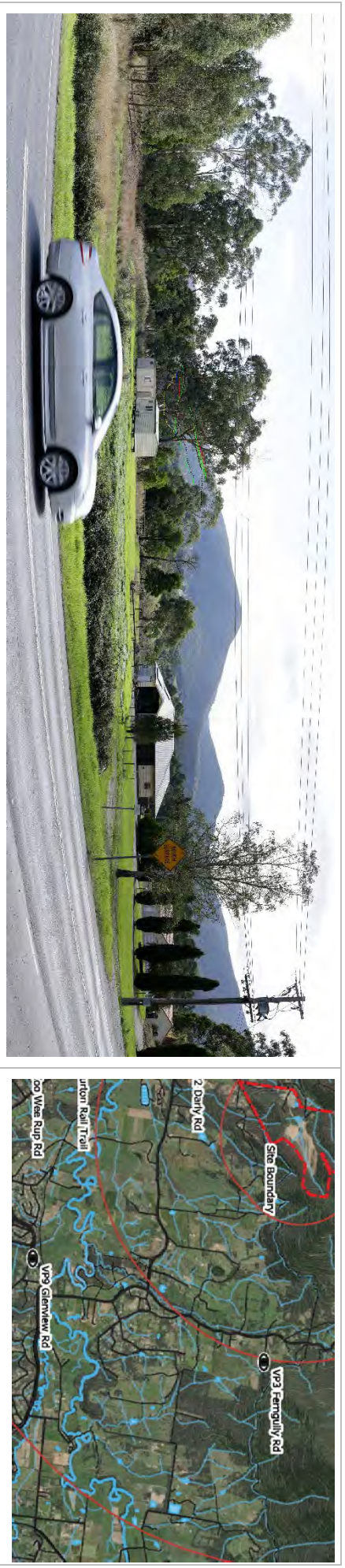


Table 17 Viewpoint 9 – New Conditions Assessment

Glenview Road – 4100 meters away from Site Area Description of likely impacts	Receptor Sensitivity	Duration of impact	Nature of change and magnitude of change	Significance rating	Mitigation measures	Nature of change and magnitude of change (with mitigation)	Significance Rating (with mitigation)
<p>The foreground includes a view over local farmland with associated built form and a dwelling towards the right of view. Dense vegetation runs along the watercourse within view and filters further views beyond. Within the background the foothills make up the wider view which is predominantly vegetated and spans upward to the hills and further views aren't available beyond the ridgeline.</p> <p><b>Impact Assessment – Expansion pit stage 1:</b> The development site would be positioned within the background of the view, behind the ridgeline seen within the middle ground. The Proposed expansion would not be perceptible from this viewpoint.</p>	<p><b>Moderate</b> Rural residential and regional road users</p>	<p><b>Nil</b></p>	<p><b>No Change</b> No part of the Proposal or associated activity is visually discernible.</p>	<p><b>Nil</b></p>	<p>-</p>	<p><b>No Change</b></p>	<p><b>Nil</b></p>
<p><b>Expansion pit stage 2:</b> The Proposed expansion of Stage 2 would not be visible from this viewpoint.</p>	<p><b>Moderate</b></p>	<p><b>Nil</b></p>	<p><b>No Change</b></p>	<p><b>Nil</b></p>	<p>-</p>	<p><b>No Change</b></p>	<p><b>Nil</b></p>
<p><b>Expansion pit stage 3:</b> The Proposed expansion of Stage 3 would not be visible from this viewpoint.</p>	<p><b>Moderate</b></p>	<p><b>Nil</b></p>	<p><b>No Change</b></p>	<p><b>Nil</b></p>	<p>-</p>	<p><b>No Change</b></p>	<p><b>Nil</b></p>
<p><b>Expansion pit stage 4:</b> The Proposed expansion of Stage 4 (Final Stage) would not be visible from this viewpoint.</p>	<p><b>Moderate</b></p>	<p><b>Nil</b></p>	<p><b>No Change</b></p>	<p><b>Nil</b></p>	<p>-</p>	<p><b>No Change</b></p>	<p><b>Nil</b></p>

## 6.4 Cumulative Impact Assessment

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The proposed quarry development is an extension to the current quarry pit and some visual impacts would be seen as being related to the existing Quarry site and would be perceived as a 'cumulative impact'. These existing views include:

- Viewpoint 5: Old Warburton Highway
- Viewpoint 6: Symes Road Bus Stop

The existing conditions ratings from both viewpoint 5 and viewpoint 6 are considered to have a **Negligible** nature of change and magnitude of change. The receptor sensitivity is **Moderate** and therefore the significance of impact rating is **Low** (refer to Table 6 and Table 7 for the existing conditions Assessment).

The 'cumulative impact' from the proposal is considered to be a similar nature of change, however, it would increase the magnitude of change to a **Low** rating and therefore the significance of impact rating would also increase to a **Moderate** rating.

In summary the perceived 'cumulative impact' would change from **Low** to **Moderate**.

The cumulative impact would be offset by the progressive rehabilitation of the existing quarry pit, and similarly by the mitigation measures within the assessment (refer to Table 13 and Table 14).

Other future development within the foothill's environment may contribute to altering the overall scenic quality if it was visible within the existing field of view. Any future clearing or changes to the foothill's vegetation quality may increase the visibility of the existing operational quarry and proposed quarry expansion. Any of the combined additions to the wider view of the foothills may potentially impact the valued middle and long-range views that have been identified by the Yarra Ranges Shire (refer to Section 4.3).

There currently have been no future developments identified nearby that would result in any additional cumulative impacts of this nature.

## 6.5 New Conditions – key findings

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### Visibility Analysis:

- There are potential views from the southwest of the study area, although these views are highly dependent on screening vegetation within the foothills.
- There are potential theoretical views from Woori Yallock, Seville East, regional roads, residential areas, recreational users of the Warburton rail trail and rural residents.
- Visibility was confirmed from the periphery of Woori Yallock and rural residents (Viewpoint 5 and Viewpoint 6), regional roads (Viewpoint 7), and Warburton Rail trail (Viewpoint 8).
- Majority of the viewshed analysis has been identified to be screened by foreground elements (including built form and vegetation from the source of viewing), and screening vegetation from the foothills.

### Visual Assessment

- The Proposal is typically screened from existing vegetation within foreground views (0-1 km)
- Views with a direct line of sight of the proposal are typically from elevated areas with middle ground views (1 km – 3km) and background views (3-5 km).
- Due to the distance of views, when the site is discernible it only forms a minor component of the wider view.
- The visual impacts from some views are seen as related to the existing quarry, and therefore the baseline condition of these views see the changes as a 'cumulative impact'. This includes viewpoint 5 (Old Warburton Highway) and viewpoint 6 (Symes Road Bus Stop) (Viewpoint 6).

- The new visual impacts that previously could not discern the existing quarry include views from viewpoint 7 (Healesville Koo Wee Rup Road) and viewpoint 8 (Warburton Rail Trail), these views perceive the impact as a 'new impact' which would include a discernible view of the proposed quarry face and vegetation clearing. The nature of change and magnitude of change has been considered to be a **Low** impact.

#### Landscape Assessment

- The nature of change and magnitude of change onto the landscape character would be apparent but not obvious or be a dominant effect on the recognised landscape character type or its key attributes. This is due to the existing quarry attributes within the site area.
- The vegetation removed through the quarry expansion will create a clear change to the foothill's vegetation and allow views of the quarry's upper northern face.
- The terracing resulting from the quarry expansion will extend the current extraction area to the north-and lower the existing landform of the foothills elevation. The majority of this terracing would not be visible from the viewpoints captured and the awareness of the landform changes would appear as a visual colour contrast from the foothills environment, due to the views available being from middle ground and background views only.
- The landscape impact assessment has rated the landscape with a **Moderate impact significance** rating.
- The rehabilitation areas would progressively improve the landscape characters impact over time.

## 7 Mitigation Measures & Recommendations

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The objective of mitigation is to avoid, reduce, remedy, or offset any significant adverse effects on the environment arising from the proposed development. Mitigation may also compensate for unavoidable effects or residual impacts.

### 7.1 Mitigation measures

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The assessment of landscape and visual impacts suggests that the highest magnitude of change and nature of change would likely have a rating of a **Low** impact.

With the successful implementation of sequential mitigation measures the nature of change and the magnitude of change would have the potential to be reduced to a **Negligible** impact rating over time.

The effects of the current rehabilitation area have shown the success of the previous mitigation measures and rehabilitation within the operating quarry. Based on the success of the current vegetation growth along the rehabilitated benches, batters and stockpile areas the same rehabilitation has been suggested to be implemented within this staged expansion. The following mitigation measures would be continued alongside the expansion of the operating quarry:

#### 1. General siting and design mitigation measures

- Maintaining dominant landform features (dominant ridge lines, major drainage lines)
- Implement siting design of stages that can allow for a sequencing of extraction that would permit rehabilitation to be established as quickly as possible.
- Keep layout siting changes to elevations below dominant surrounding landforms / ridgelines (avoiding silhouette changes and landform profile changes).
- Keep layout siting changes within the existing and proposed WA375 expanded site boundary that is enclosed by surrounding terrain.

#### 2. Revegetation mitigation measures

- Maintaining the existing rehabilitated vegetation areas and continue to support the establishing surrounding Eucalypt Forest.
- Keeping the amount of apparent visual change (through sequential development) to an amount that is perceived as 'minor' in comparison to the overall landscape. That maintains a continuous progressive rehabilitation process whilst expansion continues.
- Implement similar rehabilitated vegetation areas as the existing operational quarry. E.g., the previous three zones of Bench and batter planting, swales and wetlands, and stockpiles and hard areas (refer to Section 5.2).

Refer to Section 6.3.4 for a summary of the new conditions assessment with mitigation measures and the potential changes to ratings of these impacts.

## 8 Evaluation

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The existing WA375 operational quarry site is positioned within a location that currently limits visual impacts within the surrounding study area and is seen to be positioned well to reduce landscape and visual impacts.

The existing operational quarry has been identified to be visible from viewpoints located within the southwest of the study area with background views (3 -5km). These views were deemed to have a **Negligible** nature of change and magnitude of change impact rating due to being discernible but a minor component of the wider view.

### Visual Impacts

#### 1) Existing quarry impacts

Viewpoints which include the existing operational quarry are limited background views (3- 5km).

The addition of the proposed expansion will combine the existing impact with the new impacts identified from Stage 1 and Stage 2. This will increase the magnitude of change from **Negligible** to a **Low** magnitude of change. This is due to the increased awareness of the element within the horizontal field of view having an increased negative impact, however, it still would not have a marked effect on overall scenic quality. This is represented by the impacts shown within:

- Viewpoint 5 Warburton Highway (refer to Table 13)
- Viewpoint 6 Symes Road Bus Stop (refer to Table 14)

#### 2) New impacts

New impacts will be introduced to the study area from several visual receptors that currently do not have a view of the existing operational quarry. These new views will be from more populated locations within the study area and from middle ground views (1-3km).

The new impacts include a **Low** nature of change and a **Low** magnitude of change. This is due to the new discernability of the Stage 1 and Stage 2 expansion that would be perceived as a 'new impact' against the existing conditions. The impact, however, would not be a marked effect on overall scenic quality. This is represented by:

- Viewpoint 7 Healesville Koo Wee Rup Road (refer to Table 15).
- Viewpoint 8 Warburton Rail Trail (refer to Table 16).

The representative viewpoints indicated that the overall worst visual impact of the proposed expansion would be from:

- Viewpoint 7 Healesville Koo Wee Rup Road, due to the sensitivity of the users being **High** and having a **Low** nature of change and magnitude of change. The significance of impact rating would therefore be considered **Moderate** before implementing mitigation measures.

### Landscape Impacts

The Proposed quarry expansion will change the nature of the site areas landscape character type.

- The nature and magnitude of change is a **Low** impact rating as the proposal will have an apparent but not an obvious effect on key attributes of the landscape. This is due to existing attributes within the site area.
- The overall significance of impact rating is considered to be a **Moderate** impact before implementing mitigation measures.

### Mitigation measures

The success of the current quarry rehabilitation suggests that implementing a similar progressive rehabilitation of the staged development would reduce the anticipated nature and magnitude of change over time.

The duration of impacts from the proposal is anticipated to be long term but partially reversible throughout the progressive stages of expansion, especially following the proposed Stage 1 and Stage 2 extraction timeframes.

The successful implementation of the revegetation mitigation measure would allow the sites vegetation to slowly be reverted towards the surrounding Eucalypt Forest environs following each extraction stage, albeit the landform would retain an adverse impact which would be a permanent change to the landscape.

### Significance of impact rating

The assessment of landscape and visual impact suggests that the highest magnitude of change and nature of change would likely have a rating of a **Low** impact.

With the successful implementation of mitigation measures the nature of change and the magnitude of change would have the potential to sequentially be reduced to a **Negligible impact** rating over time.

Therefore, the overall significance of impact for both the Landscape assessment and the Visual assessment of the proposed quarry expansion with the implementation of successful mitigation measures is considered to reduce Significance of impact ratings to **Low**.



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# Appendices

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Appendix 1 – Yarra Valley Quarries Site Layout Plan

Appendix 2 - Existing Conditions Viewpoints

Appendix 3 – Wireframe Visualisations