

# Mt Shamrock Quarry Project

Preliminary Landscape and Visual Impact Assessment October 2024





# PAKENHAM QUARRY EXTENSION

Preliminary Landscape and Visual Impact Assessment

**FINAL**

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**UMWELT PTY LTD**

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# 1. Introduction

Holcim operates the existing Mount Shamrock Quarry (the Quarry) located at 95 Mt Shamrock Road, Pakenham, Victoria.

The Quarry has an estimated seven years of resources remaining at current product rates. Holcim has identified additional basalt resources (the Extension ) located beneath approximately 30 m of overburden and weathered rock. The potential resource is within the existing Work Authority boundary (WA 174) but outside the current extraction limit approved under WA 174.

Holcim is seeking to extend the Quarry to the Extension area to access the additional resource to secure up to nine million tonnes (Mt) of fresh basalt.

The current location of the processing plant and access roads are not proposed to change for the proposed Extension . The hours of operation would remain unchanged.

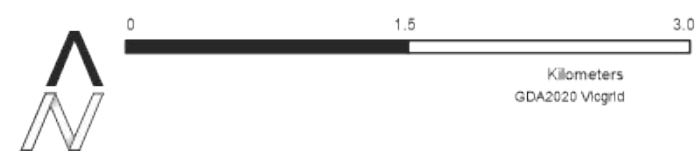
Key works and activities associated with the proposed Extension to be considered by the Preliminary Landscape and Visual Impact Assessment (PLVIA) include:

- Vegetation removal
- Stripping and stockpiling of overburden
- Extraction
- Landscape screening

Holcim is seeking a determination from the Minister for Planning (the Minister) if an Environment Effects Statement (EES) is required for the proposed Extension.

Landform Architects has been engaged to undertake this PLVIA of the proposed Extension area, which will be measured against the existing visual setting and activities that are approved under the existing Planning Permit PA2000997 (the 'Permit') and WA 174 which are yet to be approved.

Figure 1-1 Site Location



## 2. Report structure

The following sets out the approach to assessing the visual impacts of the changes between the existing Quarry and the proposed Extension.

### 2.1 Report Structure

This report will:

- Review the previous approvals.
- Review the changes the proposed Extension may have on the existing Quarry in view from publicly accessible locations surrounding the existing Quarry.
- Assess the significance of the change in Landscape and Visual Impacts between the permitted Quarry development under the endorsed plans and the proposed Extension layout.
- Summarise the key findings in the Conclusion.

The approach and methodology respond to the key issues required to be considered by previous assessments and existing approvals. The key steps are illustrated in Figure 2-1, opposite.

### 2.2 Site Visit

A site visit was undertaken in March 2024. to examine the existing landscape setting and views in the direction of the Quarry and to consider the potential change in views that may be brought about by the proposed Extension.

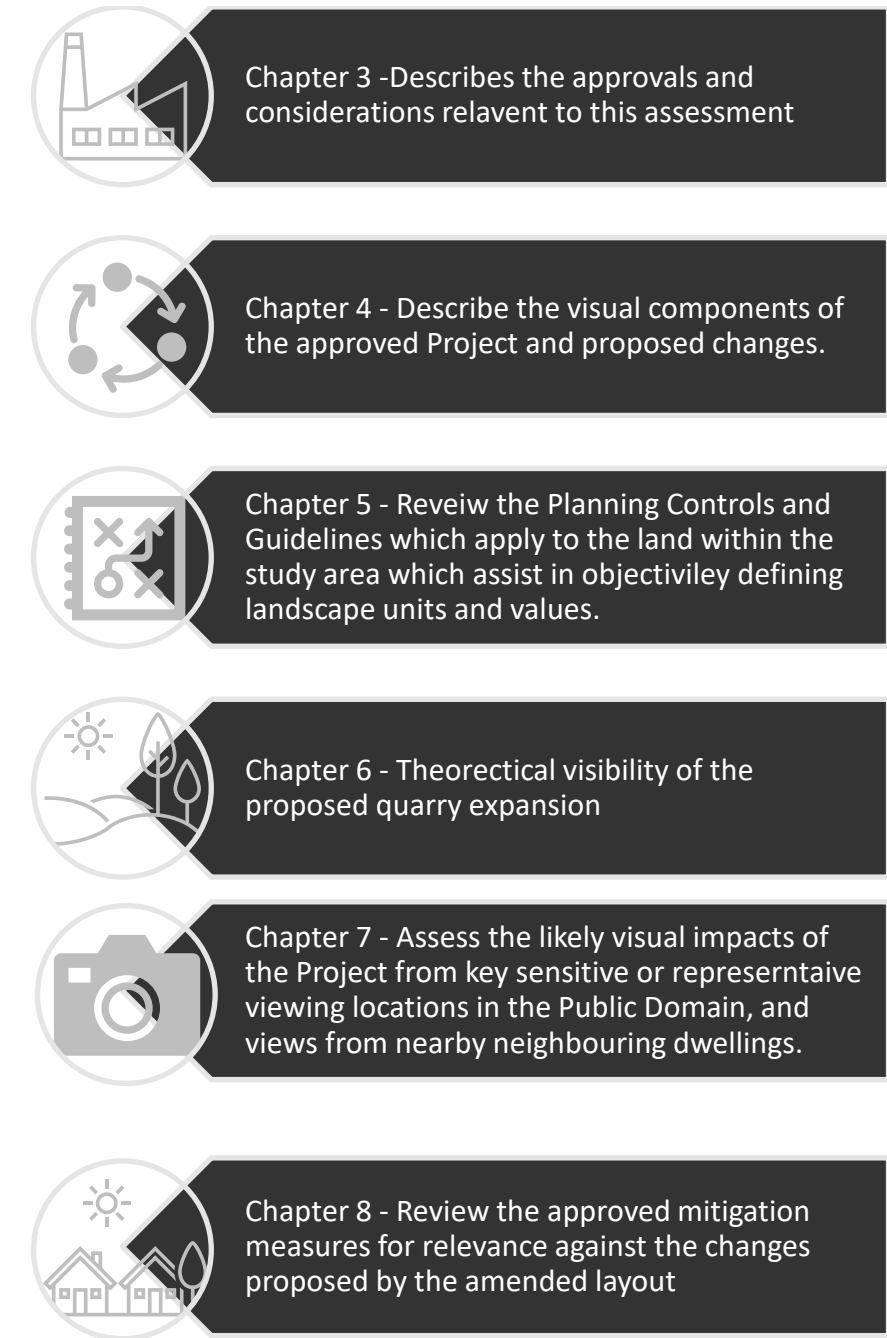


Figure 2-1 PLVIA Methodology



### 3. Background and Approvals

The Quarry, which has been in operation since 1974 operates under Work Authority WA 174.. Existing approvals include Planning Permit T050156 (Permit) issued by the Cardinia Shire Council under the *Planning and Environment Act 1987* (P&E Act) and WA 174, issued under the *Mineral Resources (Sustainable Development) Act 1990* MR(SD) Act.

The Quarry was last approved for Extension in 2008 following an assessment under the *Environment Effects Act 1978*, including landscaping and rehabilitation. Holcim identified an estimated seven years of resources remaining at the Quarry within the northeast corner at current product rates.

Figure 3-1 shows the approved limit of extraction and areas to be rehabilitated.

#### 3.1 Work Authority 174

The following licences and Work Authorities apply to the Quarry and operational areas:

- Extractive Industry License #544 Working proposal - Approved 5th August 1991
- WA174 – Schedule of Conditions 4th August 1998 and
- WA174 – Transfer of Work Authority (section 23) from CSR Ltd to Readymix on May 5, 2004.
- Insert current WA approval Date WA174 - 2008

#### 3.2 Planning Approvals

Planning approvals and conditions relevant to the assessment of landscape and visual impacts are set out in:

- Planning Permit T050156 issued June 29 2007 and endorsed plans
- An agreement under Section 173 of the *Planning and Environment Act* between Cardinia Shire
- Agreement between Council and Holcim - April 14, 2008. The agreement ensures landscaping maintenance and NetGain offset protection.

The approved landscape and rehabilitation prepared in support of the EES, which now forms part of the permit approvals, is shown in Figure 3-1 (Opposite). Landscaping installed along the Quarry boundaries and former extraction areas that have transitioned into rehabilitation demonstrates that screening and rehabilitation of extraction areas can be successful.

Figure 3-1 Approved Limit of Extraction and Landscape Rehabilitation (Source ERM)



## Mount Shamrock Quarry - Pakenham

### Landscape and Rehabilitation Plan



# 4. Project Description

This Chapter will review changes to the Quarry and existing features brought about by the proposed Extension that may contribute to a change the landscape and views.

Key features and activities proposed by the Extension include:

- Retention of the existing site access from Mount Shamrock Road to the south.
- Retention of the existing site office, administration building, carpark and weighbridge.
- Retention of the existing processing plant and stockpile areas
- 20m wide landscape buffer retained along the Site's eastern and northern boundaries
- Staged removal of vegetation within the proposed Extension area
- Site stripping and stockpiling of topsoil and overburden material.
- Extraction and rehabilitation of terminal faces; and
- Revegetation

Figure 4-1 shows the location of key features associated with the proposed Extension area relative to the Quarry

The highest elevation within the proposed Extension areas is approximately 240m AHD. The lowest point around the perimeter of the Extension area that may be visible is approximately 185m AHD, along the southern edge of the proposed Extension area. Levels and extraction areas below 185m AHD will be within the quarry void and not visible.

The highest elevation along the Quarry boundary is 244m AHD in the northeastern corner.

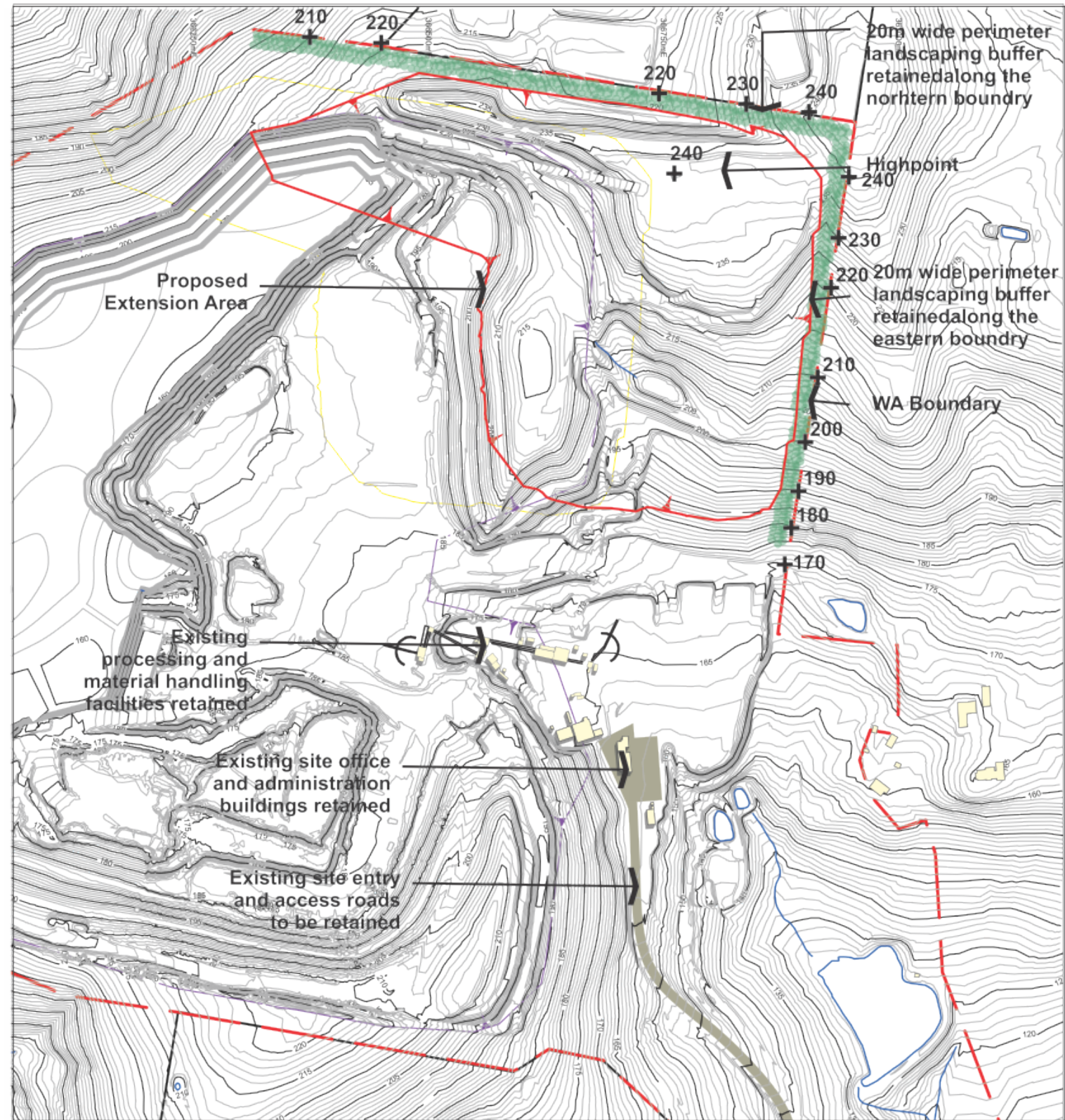
## 4.1 Relevance to this assessment

The proposed Extension seeks to retain the existing buildings, plant and equipment associated with the Quarry operation. It was apparent during the site inspection along public roads and locations surrounding the Quarry that these features are screened by topography and vegetation. Screening of these features in public domain views is demonstrated in views examined in Chapter 7.

For these reasons, this assessment will focus on the proposed Extension area's potential visibility and visual impact.

The following section will briefly review policy considerations that apply to the Quarry and the surrounding area that may be relevant to landscape and visual impact.

Figure 4-1 Proposed amended Layout Placeholder)





## 5. Policy Review

A detailed review of government policies was undertaken as part of the PLVIA prepared in support of the EES and the Quarry. The review examined relevant legislation and policy to identify significant landscapes and sensitive receptors recognised by policy.

The Cardinia Planning Scheme covers the Quarry, and the surrounding area. This review will focus on land-use zones and overlays that apply to the Quarry and surrounding area that recognise views and landscape values.

### 5.1 Land use Zones

Figure 5-1 shows the Land-use Zones that apply to the Quarry and the proposed Extension. The land owned by Holcim, which includes the Quarry is shown marked in red. The proposed Extension area that is the subject of this review is shown hatched.

The Quarry and much of the surrounding area is in the Green Wedge Zone (GWZ). The purpose of this zone is to conserve green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources.

The triangular site which shaded green directly north of the Quarry is the Huxtable Road Horseriding Reserve and is zoned Public Park and Recreation Zone (PPRZ). The purpose of this zone is to recognise areas used for public recreation and open space and to conserve these areas where appropriate. The use of these areas and the purpose of the underlying land-use zones has not changed materially since the original approvals were permitted.

### 5.2 Overlays

Overlays which recognise landscape character, views, and amenity include the Environmental Significance Overlay (ESO), Significant Landscape Overlay (SLO) and Vegetation Protection Overlay (VPO). Schedule 1 to the Environmental Significance Overlay – ESO 1 Northern Hills is the only relevant overlay identified (See inset in Figure 5-1).

ESO 1 seeks to protect the environment and landscape values rather than views and visual amenity. The overlay applies to the Quarry and much of the surrounding area and was in force at the time of the original assessment and approvals,

### 5.3 Relevance to this assessment

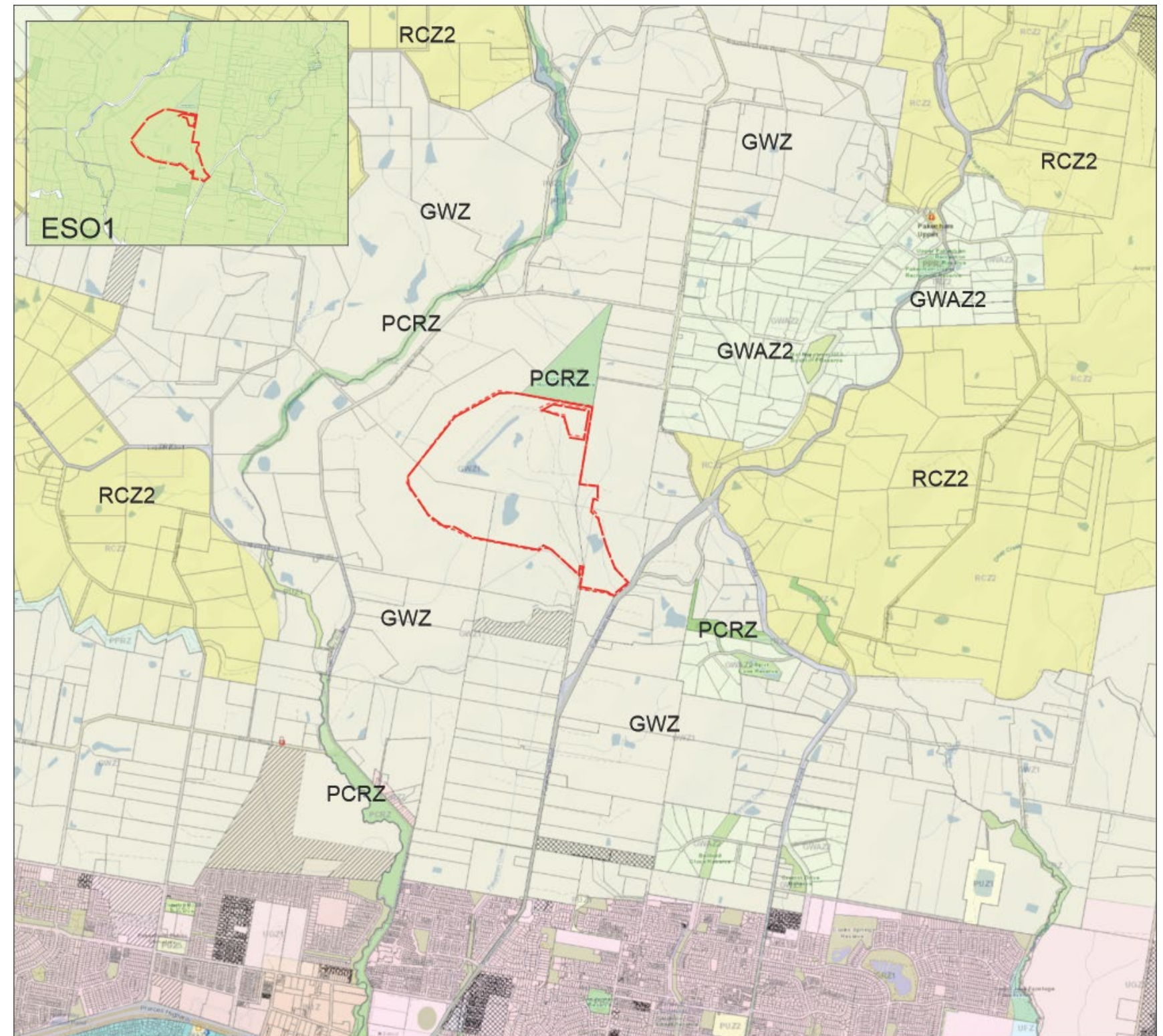
There appear to have been no material changes to or land-use provisions (zones and overlays) that apply to the Quarry, the proposed Extension area or the surrounding area since the Quarry was assessed and approvals granted.

There are no overlays that specifically seek to protect views and amenity. The planning scheme does, however, refer to such protections through controls that apply to siting and design of buildings and works so that they do not adversely impact the area's diverse and interesting landscape.

Central to this assessment is the limited visibility of the existing quarrying operation, its proximity to a major growth corridor, and a landscape that includes many instances of built form and other modifications through transitional change, which is characteristic of urban fringe areas.

There have also been no new sensitive locations defined in the public realm, such as reserves, recreation areas or open spaces. The following Chapter will review the areas surrounding the Quarry which may have theoretical visibility of the proposed Extension. This review assisted in the site visit undertaken in March, and the selection of viewpoints from the public realm examined in Chapter 7.

Figure 5-1 Zones and Overlays





## 6. Zones of Theoretical Visibility

A Zones of Theoretical Visibility analysis (ZTV) illustrates areas where the proposed Extension area will be theoretically visible from the surrounding landscape. This mapping does not consider the potential screening effect of existing vegetation on roadsides, property boundaries, fencelines or surrounding private dwellings, buildings and structures that may screen views or topographic changes such as road cuttings or dam walls.

As such, mapping is high-level only and intended to guide the selection of viewing locations for inclusion in the viewpoint assessment included in Chapter 7.

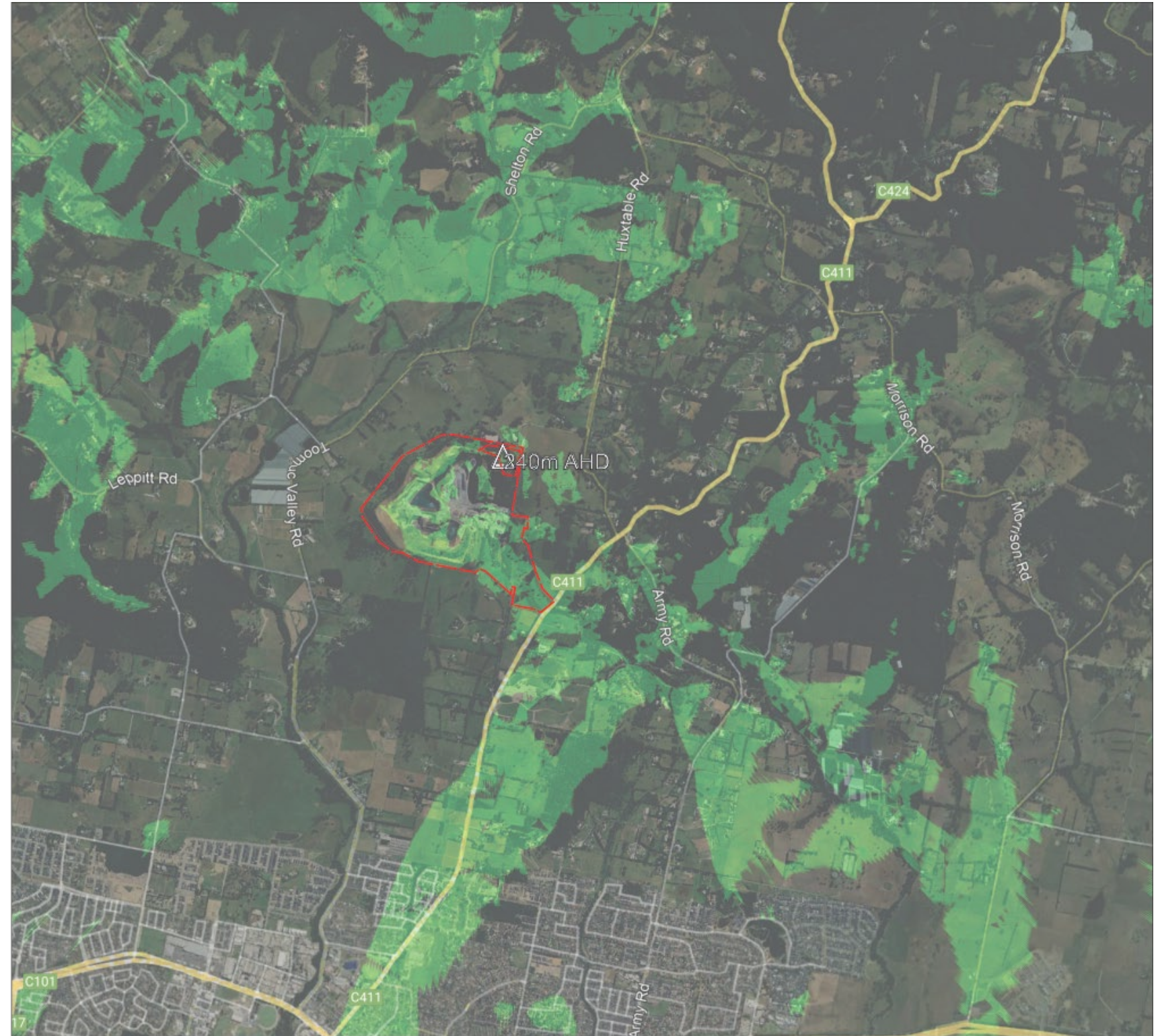
Figure 6-1 maps the areas in green that theoretically have visibility of the highest point within the proposed Extension area. To be conservative, mapping is based upon a height of 250m AHD.

### 6.1 Relevance to this assessment

Existing topography screens the proposed Extension area from most nearby locations to the south, west, north and northwest.

Areas with potential visibility are limited to residential areas along the northern fringes of Pakenham to the south, a short section of Pakenham Road to the south and east, Army Road to the east, and Toomuc Valley Road to the north. Views from publicly accessible locations in these areas are examined in the following Chapter.

Figure 6-1 Theoretical Visibility





# 7. Impact assessment

This Chapter will assess the potential visual impact of the proposed Extension area from publicly accessible locations. Where the proposed Extension area was theoretical visibility

The assessment of the overall visual impact from each location is based on the following criteria. Their relevance to the assessment of the overall visual impact from the public domain is set out below:

- **Landscape Change:** The physical change or alteration to a landscape depends on the nature of the Project being assessed. For example, a Project may transform the landscape, or it may be simply inserted or added to a landscape with minimal alteration. For example, a quarry will alter topography, vegetation and use of a site, thereby transforming the landscape. Whereas a telecommunication tower or wind turbine may be inserted into a landscape without fundamentally changing the character, setting or use.
- **Visibility:** The visibility can be affected by topography, vegetation, built form and infrastructure.
- **Distance:** Infrastructure visibility and dominance will decrease with distance. The ZVI provides an indication of visual dominance and potential impact based on distance.
- **Duration:** The duration of a view is also relevant and must be considered in assessing the overall visual impact. The visual impact from places where people may see the Extension area for an extended period is given greater weight than view, which is transient or occasional view and, therefore, short in duration. Examples of views from the public domain which may be longer in duration include roadside stops, public parks, reserves or lookouts.
- **Landscape character and sensitivity:** The landscape character of an area, which is based upon visual features such as topography, vegetation and the use of the land, the naturalness of the area and planning provisions. Sensitivity may also be influenced by specific landscape studies and assessments within the study area. Typically, a modified landscape prevalent within the study area or the region is less sensitive than one ostensibly natural.
- **Viewer numbers:** The overall visual impact level will decrease when there are fewer people who may view the Extension area. Conversely, the level of visual impact may also increase where the viewing location is a recognised key vantage point or tourist route where a greater number of people may view the change.

Viewer sensitivity is based on the nature or purpose of the viewing location. For example, the sensitivity of a person viewing a project from a reserve or lookout will be higher than the same viewer travelling the local road network town.

The overall visual impact is not assessed numerically or through a matrix, rather, it is the examination of the qualitative aspects observed at each selected viewpoint, supported by the criteria listed above and shown in Figure 7-1: opposite. The overall visual impact at each viewpoint will range from Nil to High. A definition is provided opposite.

## 7.1 Scale of Effects

The scale of effects for assessing the overall visual impact of the telecommunication facility from a publicly accessible viewpoint ranges from negligible to high visual impact.

### 7.1.1 Nil visual impact

An overall assessment of Nil will be arrived at where the proposed Extension area Extension area will be screened by topography, vegetation, buildings and other structures or Project features are at such a distance that they will no longer be a readily discernible feature in views.

### 7.1.2 Negligible visual impact

An overall assessment of **Negligible** is a minute level of effect that is barely discernible over ordinary day-to-day effects. The assessment of a 'negligible' level of visual impact is usually based on distance. That is, the proposed Extension area will be at such a distance that, when visible in good weather, it will be a minute element in the view within a modified landscape or will be predominantly screened by topography, vegetation and buildings or will be added to a view that includes many other similar features.

### 7.1.3 Low visual impact

An overall assessment of **Low** will be arrived at where the proposed Extension area is noticeable but will not cause significant adverse impacts. A "low" level of visual impact will be assessed if the rating of several, but not all, assessment criteria (visibility, distance, viewer numbers and landscape sensitivity) is assessed as low.

Examples of a low level of visual impact are where the proposed Extension area is visible in a highly modified landscape, there are few people who will see the proposed Extension area, or where views are transient rather than stationary. Another example may be where the proposed structures are viewed from such a distance that they appear to be similar or smaller in scale than other elements in a view.

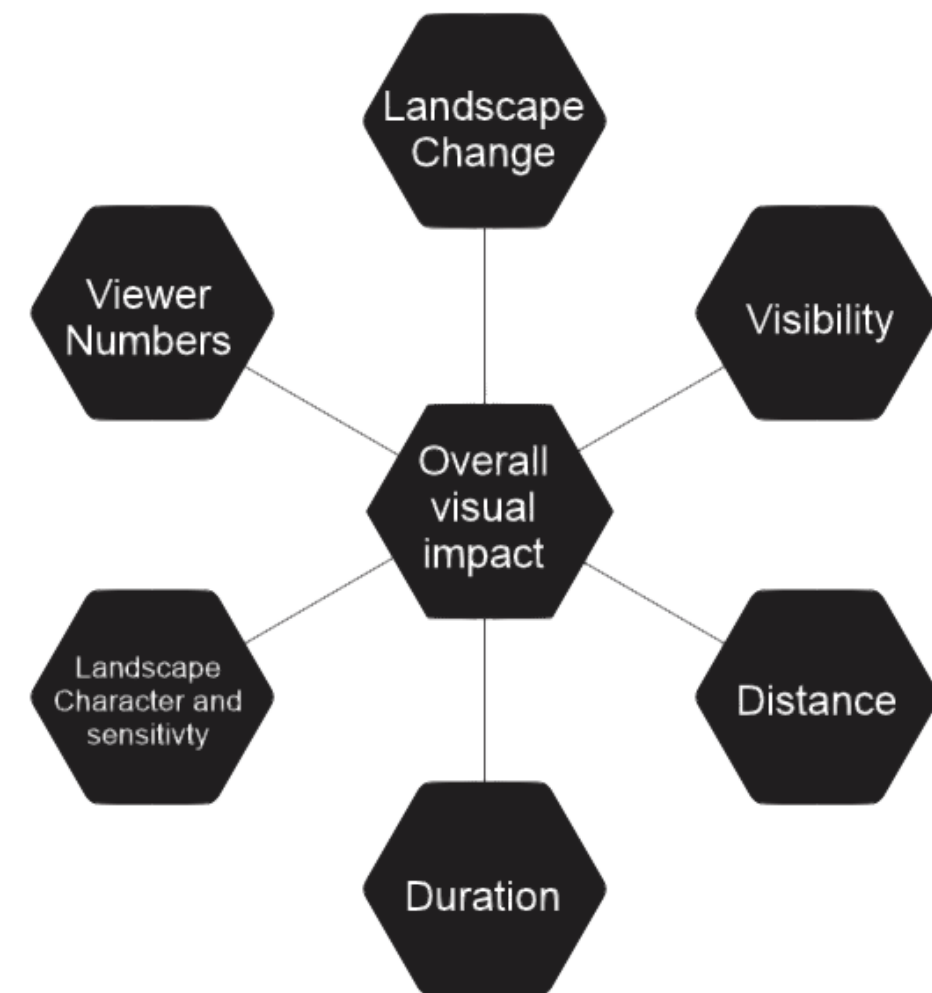
### 7.1.4 Medium visual impact

An overall assessment of Moderate may occur where several criteria are considered to be higher than "low", or the visual effects can be mitigated/remedied from an initial rating of High.

### 7.1.5 High visual impact

An overall assessment of **High** will be arrived at where significant adverse effects cannot be avoided, remedied, or mitigated. For example, a highly sensitive landscape, viewed by many people, with the proposed Extension area in close proximity and largely visible, will lead to an assessment of a high level of visual impact.

Figure 7-1: Visual impact – public realmScale of effects





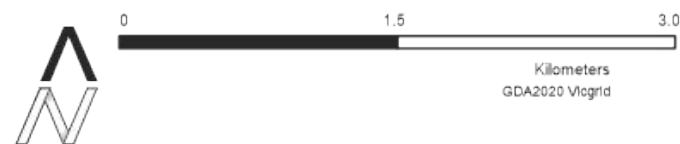
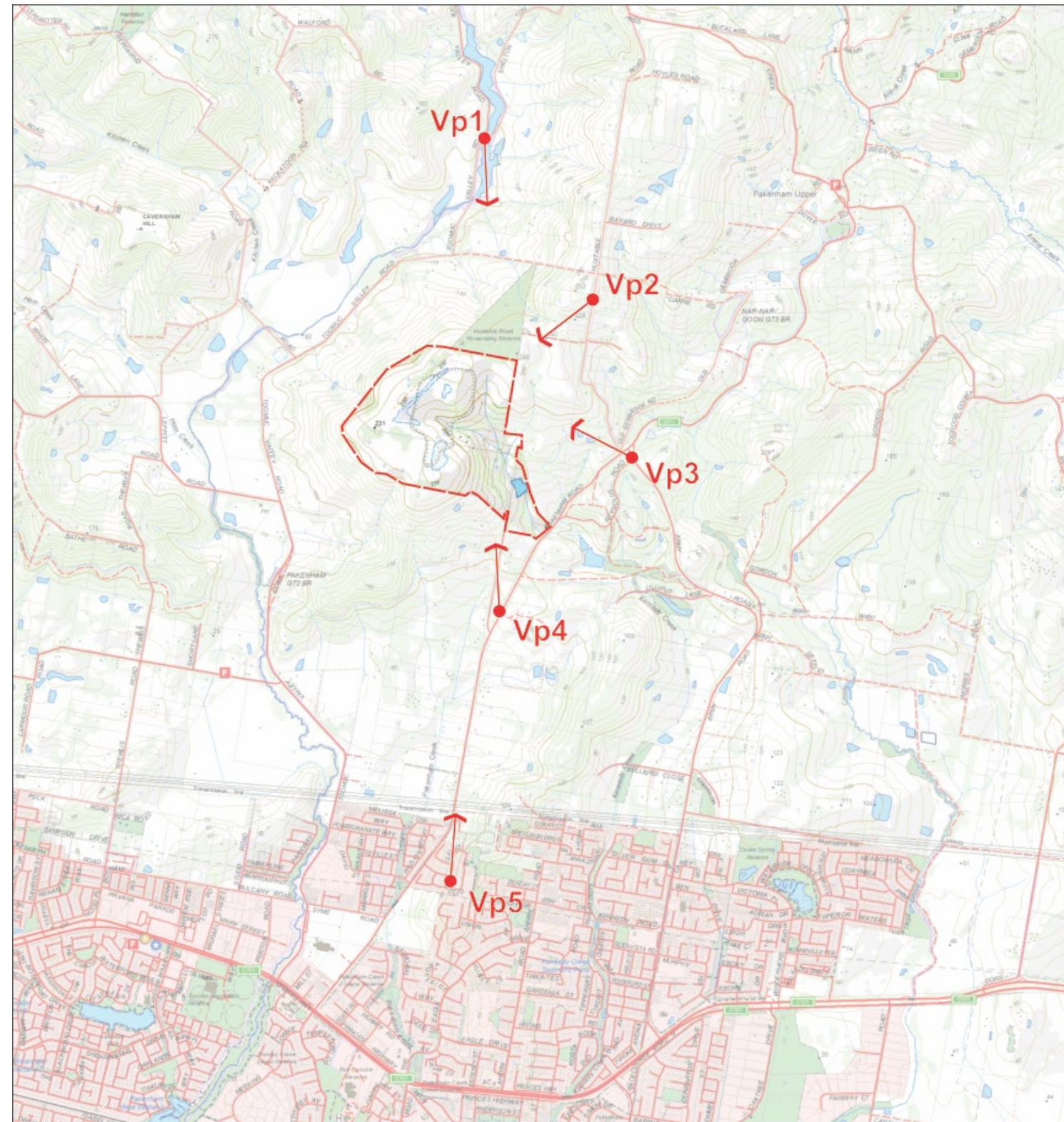
## 7.2 Selected viewing locations

Five publicly accessible viewing locations have been chosen locations where the ZTV mapping undertaken in Chapter 6 had demonstrated theoretical visibility of the proposed Extension area from the public domain.

Viewpoints were chosen from locations that are identifiable by the local community or visitors to the area, such as roadside stops and intersections, bus shelters or reserves.

Where there were no such features, locations were selected from public roads where stopping was safe.

Figure 7-2 Selected viewing locations

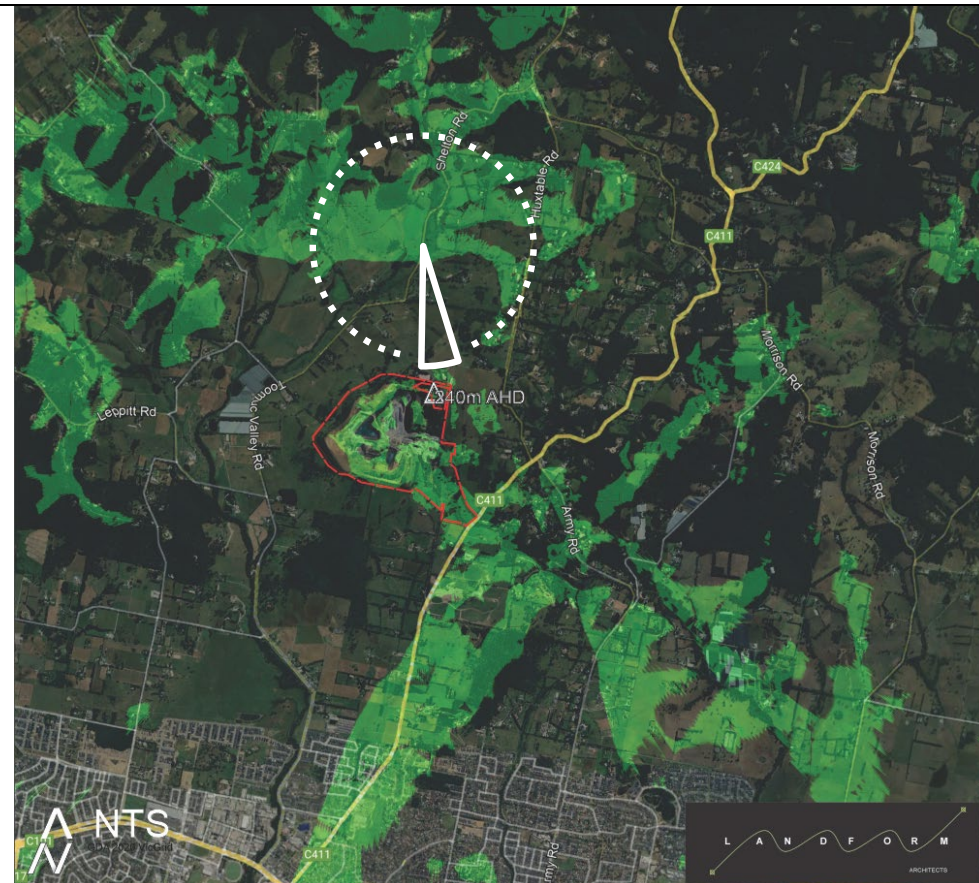




7.3 Viewpoint 1 – Intersection Toomuc Valley and Shelton Road – GPS 55H 366675E 5792282N



Figure 7-3 Viewpoint 6 – View looking south



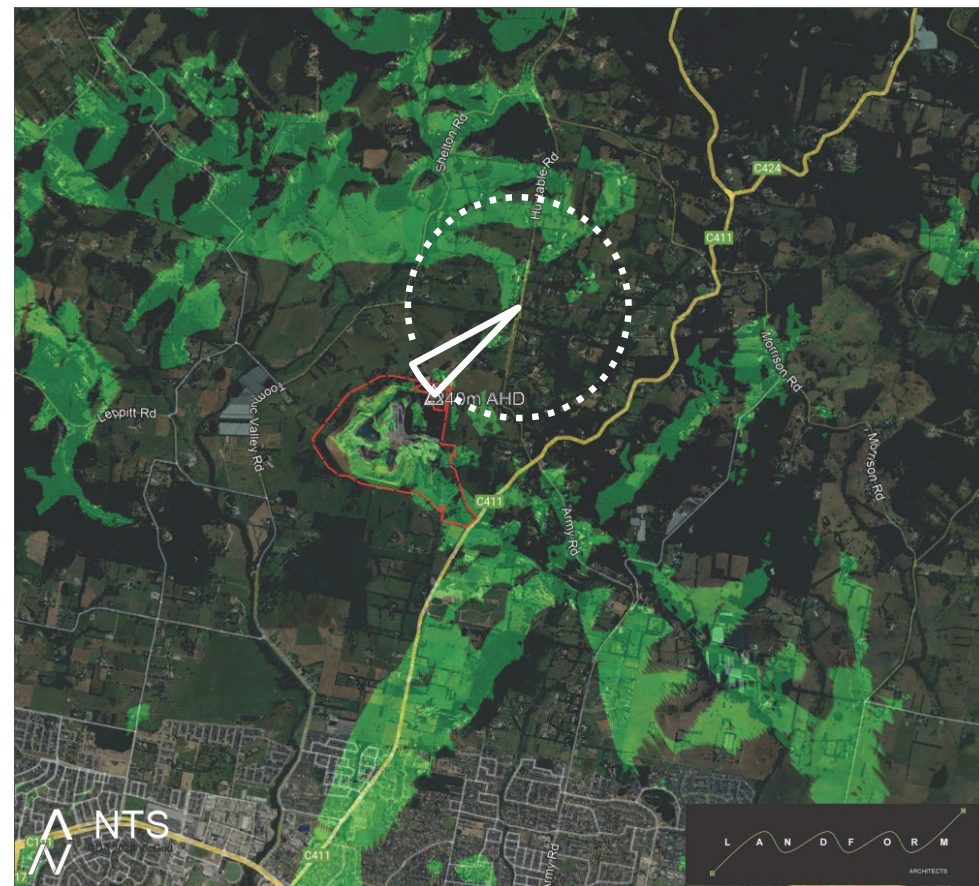
Summary of "Scale of Effects" Criteria		Existing Setting and change in views	Assessment
Visibility	Screened	Viewpoint 1 is from the intersection of Toomuc Valley and Shelton Road.	The visual impact from this location would Nil.  Although this view is from a location where the ZTV model predicted visibility, views a screened partly by topography and vegetation along roadsides, property boundaries and fencelines.
Landscape Change	Transformational	Toomuc Valley and Shelton Road is a local gravel road with limited road users.	
Distance to nearest extraction boundary	1.7 km southeast	The closest proposed boundary of the proposed Extension area is approximately 1.7 km to the southeast.	
View Duration	Short	Existing vegetation along roadsides, property boundaries and fencelines limits views to the south and in the direction of the existing Quarry and proposed Extension area.	
Viewer numbers	Low – Local Road		
Landscape Character / Viewer sensitivity	Low – modified, not protected		
Overall Visual Impact	Nil		



7.4 Viewpoint 2 – Huxtable Road – GPS 55H 367525E 5791125N



Figure 7-4 Viewpoint 2 – View looking southwest



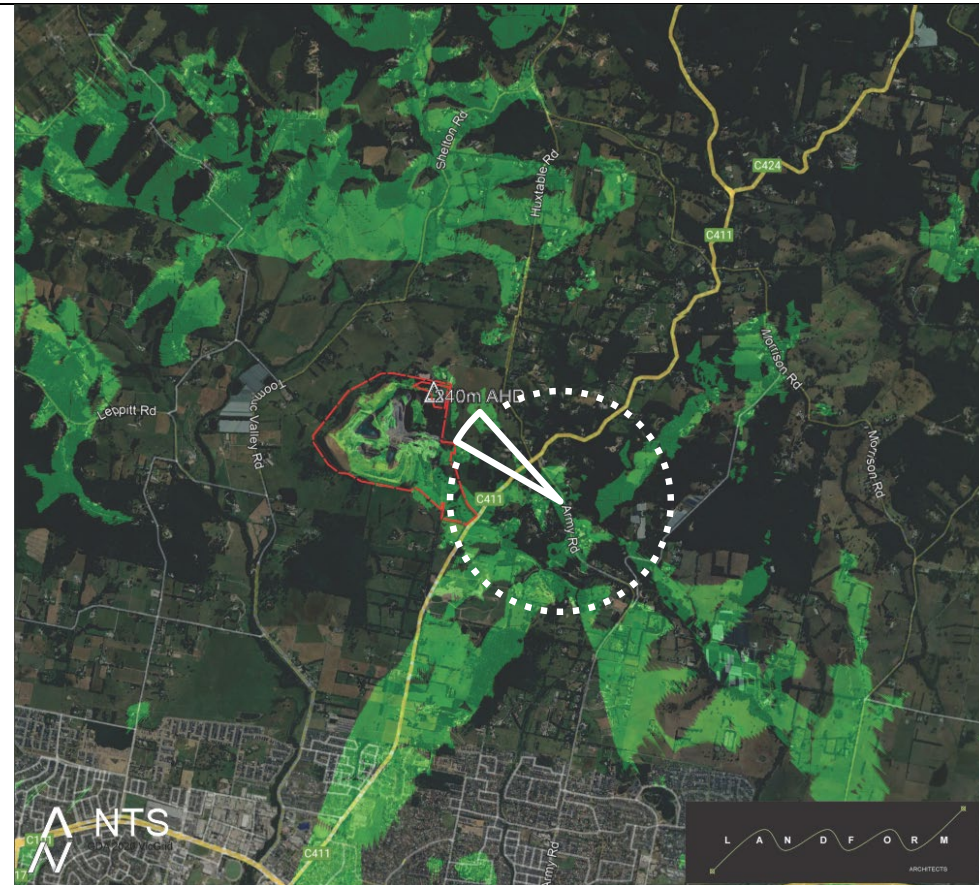
Summary of "Scale of Effects" Criteria		Existing Setting and change in views	Assessment
Visibility	Screened	Viewpoint 2 is from Huxtable Road, approximately 930m northwest of the closest proposed boundary of the proposed Extension area  Nearby rolling hills and existing vegetation along roadsides, property boundaries and fencelines confine views to nearby areas, limiting views in the direction of the Quarry and the proposed Extension area.  Further, the proposed Extension area seeks to retain a 20m wide buffer of established vegetation along the northern and eastern boundary, further limiting the potential for views from locations further north along Huxtable Road.	The visual impact from this location would Nil.  Similar to the previous viewpoint, although this view is from a location where the ZTV model predicted visibility, views a screened partly by topography and vegetation along roadsides, property boundaries and fencelines.  Further, the proposed Extension area seeks to retain a 20m wide buffer of established vegetation along the northern and eastern boundary, further limiting the potential for views from locations further north along Huxtable Road.
Landscape Change	Transformational		
Distance to nearest extraction boundary	0.93 km southwest		
View Duration	Short		
Viewer numbers	Low – Local Road		
Landscape Character / Viewer sensitivity	Low – modified, not protected		
Overall Visual Impact	Nil		



7.5 Viewpoint 3 – Army Road / Bus Shelter – GPS 55H 367871E 5789861N



Figure 7-5 Viewpoint 3 – View looking northwest



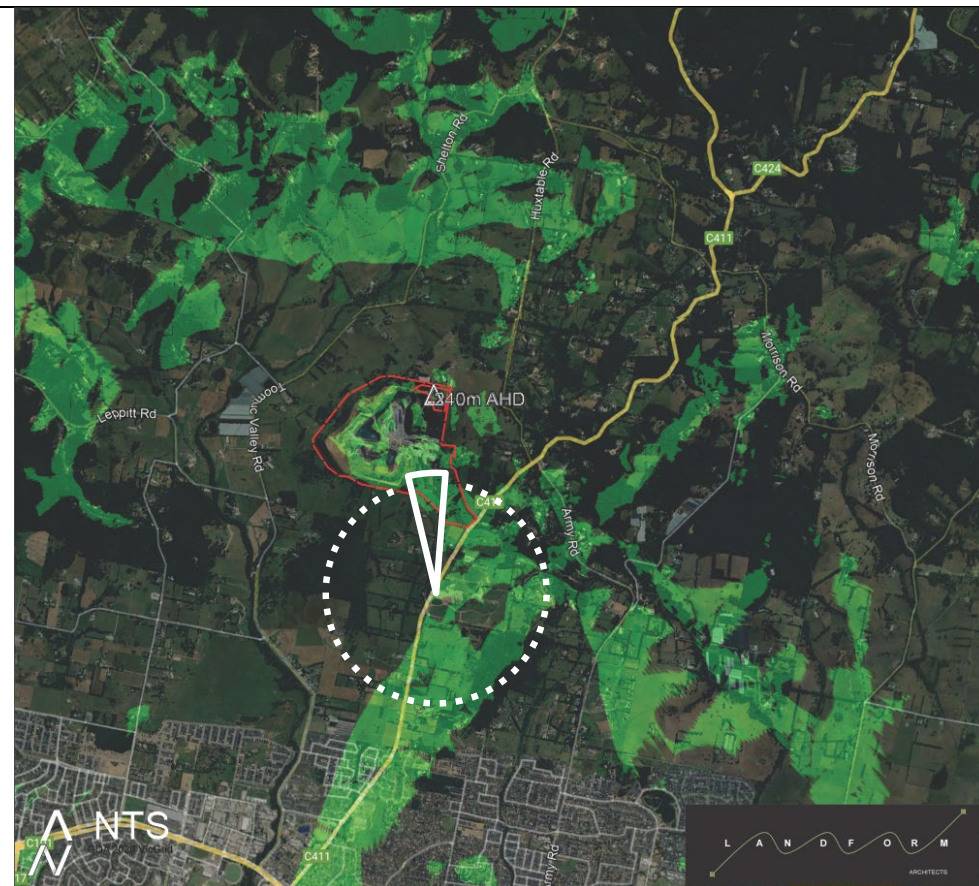
Summary of "Scale of Effects" Criteria		Existing Setting and change in views	Assessment
Visibility	Screened	<p>Viewpoint 3 is from a bus shelter along Army Road, approximately 100m from its intersection with Pakenham Road.</p> <p>The closest proposed boundary of the proposed Extension area is approximately 1.2 km to the northwest.</p> <p>Topography in the intervening landscape and existing vegetation along roadsides, property boundaries and fencelines limit views to the northwest and the direction of the existing Quarry and proposed Extension area.</p>	<p>The visual impact from this location would Nil.</p> <p>Similar to the previous viewpoint, although this view is from a location where the ZTV model predicted visibility, views are screened partly by topography and vegetation along roadsides, property boundaries and fence lines.</p> <p>Further, the existing 20m wide vegetation buffer that is proposed to be retained to the north and east of the Extension area further limits views from locations further east along Army Road.</p>
Landscape Change	Transformational		
Distance to nearest extraction boundary	1.2 km northwest		
View Duration	Short to medium		
Viewer numbers	Low – Local Road		
Landscape Character / Viewer sensitivity	Low-modified, not protected		
Overall Visual Impact	Nil		



7.6 Viewpoint 4 – Pakenham Road – GPS 55H 366879E 5788742N



Figure 7-6 Viewpoint 4 – View looking north



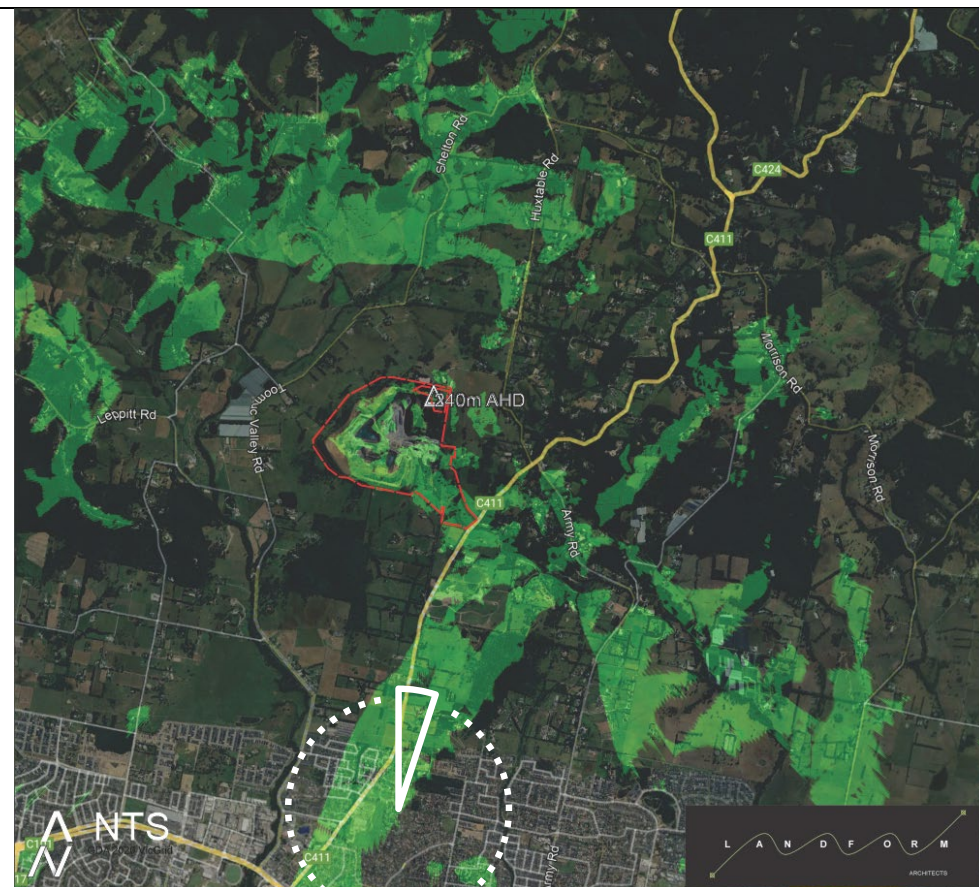
Summary of "Scale of Effects" Criteria		Existing Setting and change in views	Assessment
Visibility	Screened	<p>Viewpoint 4 is from an informal pullout bay along Pakenham Road, approximately 180m north of Mount Shamrock Road.</p> <p>The closest proposed boundary of the proposed extraction extension area is approximately 1.5 km to the north.</p> <p>Topography in the intervening landscape and existing vegetation along roadsides, property boundaries and fencelines limit views to the northwest and the direction of the Quarry and proposed Extension area.</p>	<p>The visual impact from this location would Nil.</p> <p>Similar to the previous viewpoint, although this view is from a location where the ZTV model predicted visibility, views are screened partly by topography and vegetation along roadsides, property boundaries and fencelines.</p> <p>Vegetation which is to be retained along the Quarry's eastern boundary would further limit views from locations along Pakenham Road.</p>
Landscape Change	Transformational		
Distance to nearest extraction boundary	1.5 km north		
View Duration	Short		
Viewer numbers	Low – Local Road		
Landscape Character / Viewer sensitivity	Low – modified, not protected		
Overall Visual Impact	Nil		



7.7 Viewpoint 5 – Intersection Sold Drive and Tranquil Way – GPS 55H 366537E 5786678N



Figure 7-7 Viewpoint 5 – View looking southeast



Summary of "Scale of Effects" Criteria		Existing Setting and change in views	Assessment
Visibility	Yes	Viewpoint 5 is from an elevated residential area approximately 3.8 km south of the closest boundary of the proposed Extension area.	The visual impact from this location would be Negligible.
Landscape Change	Transformational		
Distance to nearest extraction boundary	3.8 km north	There are generally clear views ranging from the southwest through to north. This is partly due to elevation, and vacant development sites which are yet to be established with dwellings.	The most noticeable change in views from this location would be vegetation removal prior to stripping and stockpiling of topsoil and overburden.
View Duration	Short		
Viewer numbers	Low – Local Road	Views include dwellings and development in nearby sites and lower-lying areas to the west and east, high-voltage transmission lines establishing the northern boundary of Pakenham and the vegetated hills to the northwest and north.	A small part of the upper terminal extraction face would be visible above the tree line. The remainder of the works would be screened by existing vegetation and topography retained within the Quarry.
Landscape Character / Viewer sensitivity	Low – modified, not protected		
Overall Visual Impact	Negligible	Site features associated with the existing Quarry are screened by distance, topography and vegetation. The most noticeable change in views from this location would be vegetation removal prior to stripping and stockpiling of topsoil and overburden.	These features would be at a distance where they would be background element and oblique to views that include many instances of built form and other modifications characteristic of urban fringe areas.



# 8. Rehabilitation

The Quarry has been operational for several decades. Many features within the Quarry, including former terminal faces and extraction areas, overburden and material stockpile areas have transitioned from active quarrying to rehabilitation. Rehabilitation of features associated with the approved Quarry, demonstrates the ability for rehabilitation of the proposed Extension area to also be successful should it be approved.

Examples include the 20m buffer planting established along the perimeter of the work authority boundary, which is proposed to be retained.

Following quarrying, the terminal extraction faces will be rehabilitated following the methodology implemented and adapted successfully elsewhere within the Quarry. Following establishment, the rehabilitated faces will merge with the existing stand of trees on the site boundary and will have similar height and character within the Quarry and surrounding areas to the south, west, and north.

## 8.1 Rehabilitation Techniques

All rehabilitation techniques seek to provide a safe environment after extraction. Revegetation should be cognisant of the flora and fauna values of the area, but also species that have proved successful elsewhere at the Quarry.

## 8.2 Spreading of Topsoil and Plant Establishment

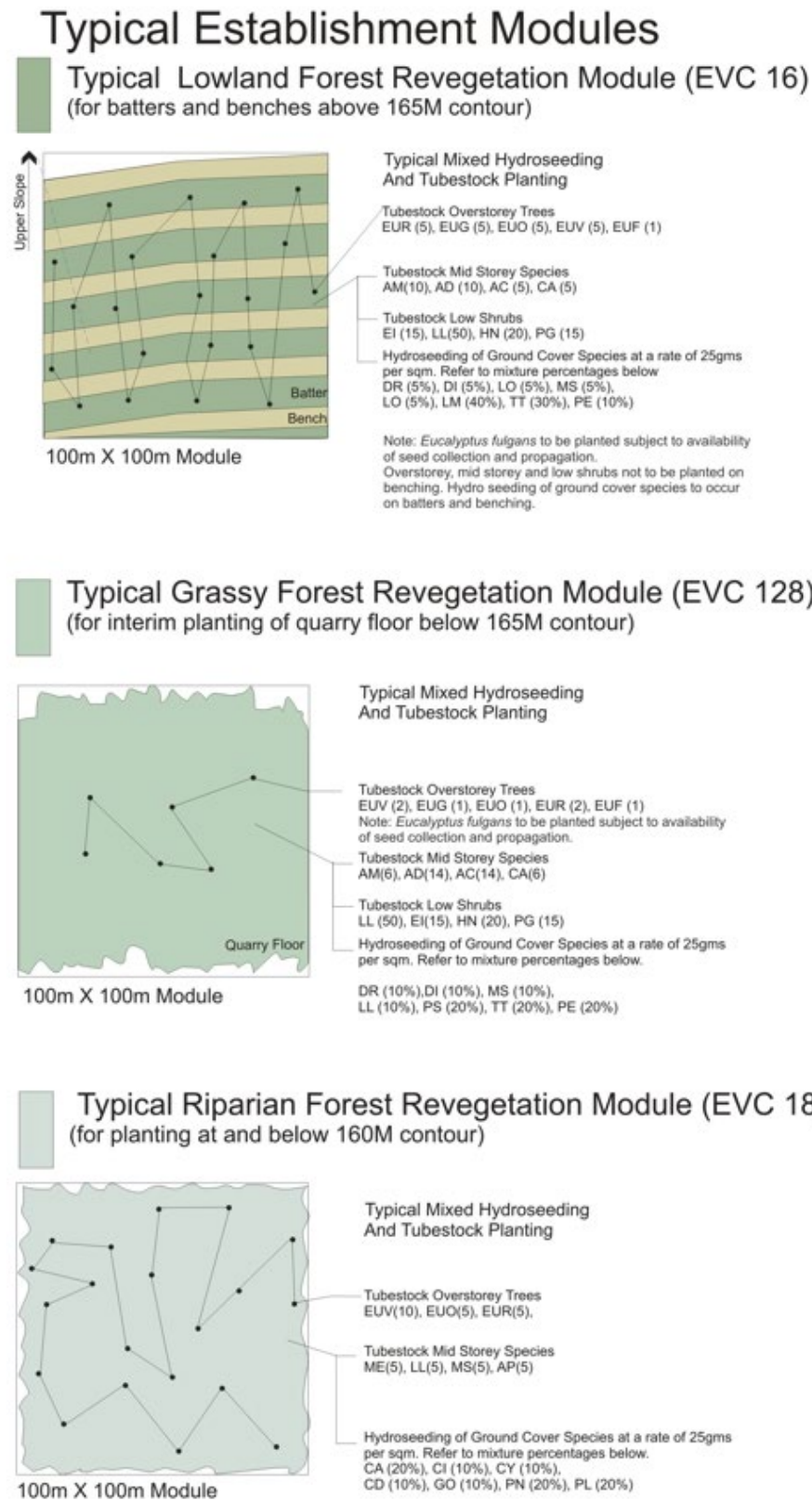
Topsoil and overburden stockpiled elsewhere within the Quarry is available for use in the rehabilitation of the proposed Extension.

Terminal extraction faces will be rehabilitated at both the upper and lower areas consistent with existing approvals and rehabilitation undertaken successfully elsewhere at the Quarry.

In areas where slopes have been created, topsoil will be spread down the slope from the upper level, where it can fill the voids between the rocks. Topsoiled areas will be hydro-seeded with a range of species selected from the relevant local Ecological Vegetation Classes (EVC's). A list of the relevant EVC's and selected species are set out in Figure 8-1. This species list is updated regularly (refer EMP)

It is recognised that the council may have a preferred species list based on the local area and rehabilitation undertaken elsewhere at the Quarry. Council's preference should take precedence over those provided opposite.

Figure 8-1 Proposed rehabilitation planting matrix



## Species List

Canopy Species			
EUV	<i>Eucalyptus viminalis</i>	Manna Gum	
EUG	<i>Eucalyptus globoides</i>	White Stringybark	
EVO	<i>Eucalyptus obliqua</i>	Messmate Stringybark	
EUR	<i>Eucalyptus radiata</i> ssp. <i>radiata</i>	Narrow-leaf Peppermint	
EUF	<i>Eucalyptus fulgens</i>	Green Scented Gum	
Mid Storey Species - Tall Shrubs			
AM	<i>Acacia melanoxylon</i>	Blackwood	
AD	<i>Acacia dealbata</i>	Silver Wattle	
AC	<i>Acacia myrtifolia</i>	Myrtle Wattle	
CA	<i>Cassinia aculeata</i>	Common Dogwood	
Low Shrubs			
LL	<i>Leptospermum lanigerum</i>	Woolly Tea-tree	
EI	<i>Epacris impressa</i>	Common Heath	
HN	<i>Hakea nodosa</i>	Yellow Hakea	
PG	<i>Pultanea gunni</i>	Golden Bush-pea	
Ground Layer			
DR	<i>Dicentra repens</i>	Kidney Weed	5%
DI	<i>Dianella revoluta</i>	Black-anther Flax-ily	5%
MS	<i>Microleuca stipoides</i>	Weeping Grass	5%
LO	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	5%
LM	<i>Lolium multiflorum</i>	Italian Rye Grass	40%
TT	<i>Themeda triandra</i>	Kangaroo Grass	30%
PE	<i>Pteridium esculentum</i>	Austral Bracken	10%

Canopy Species			
EUV	<i>Eucalyptus viminalis</i>	Manna Gum	
EUG	<i>Eucalyptus globoides</i>	White Stringybark	
EVO	<i>Eucalyptus obliqua</i>	Messmate Stringybark	
EUR	<i>Eucalyptus radiata</i> ssp. <i>radiata</i>	Narrow-leaf Peppermint	
EUF	<i>Eucalyptus fulgens</i>	Green Scented Gum	
Mid Storey Species - Tall Shrubs			
AM	<i>Acacia melanoxylon</i>	Blackwood	
AD	<i>Acacia dealbata</i>	Silver Wattle	
AC	<i>Acacia myrtifolia</i>	Myrtle Wattle	
CA	<i>Cassinia aculeata</i>	Common Dogwood	
Low Shrubs			
LL	<i>Leptospermum lanigerum</i>	Woolly Tea-tree	
EI	<i>Epacris impressa</i>	Common Heath	
HN	<i>Hakea nodosa</i>	Yellow Hakea	
PG	<i>Pultanea gunni</i>	Golden Bush-pea	
Ground Layer			
DR	<i>Dicentra repens</i>	Kidney Weed	10%
DI	<i>Dianella revoluta</i>	Black-anther Flax-ily	10%
MS	<i>Microleuca stipoides</i>	Weeping Grass	10%
LL	<i>Lomandra longifolia</i>	Spiny-headed Mat-rush	10%
PS	<i>Poa seiberiana</i>	Grey Tussock-grass	20%
TT	<i>Themeda triandra</i>	Kangaroo Grass	20%
PE	<i>Pteridium esculentum</i>	Austral Bracken	20%

Canopy Species			
EUV	<i>Eucalyptus ovata</i>	Swamp Gum	
EVO	<i>Eucalyptus obliqua</i>	Messmate Stringybark	
EUR	<i>Eucalyptus radiata</i> ssp. <i>radiata</i>	Narrow-leaf Peppermint	
Mid Storey Species - Tall Shrubs			
LL	<i>Leptospermum lanigerum</i>	Woolly Tea-tree	
ME	<i>Melaleuca ericifolia</i>	Swamp Paperbark	
MS	<i>Melaleuca squarrosa</i>	Scented Paperbark	
AP	<i>Acacia paradoxa</i>	Hedge Wattle	
Ground Layer			
CA	<i>Carax appressa</i>	Tall Sedge	20%
CI	<i>Carax inversa</i>	Knob Sedge	10%
CY	<i>Cyathea australis</i>	Rough Tree Fern	10%
CD	<i>Calochlaena dubia</i>	Common Ground-fern	10%
GO	<i>Goodenia ovata</i>	Hop Goodenia	10%
PN	<i>Poa ensiformis</i>	Sword Tussock-grass	20%
PL	<i>Poa labillarderi</i>	Common Tussock-grass	20%



## 9. Conclusion

The proposed Extension aligns with the objectives of the planning policies, which encourage minimal disturbance to existing landscape values and recognise that the proposed Extension is likely to have less impact than the establishment of new extractive industry sites. This observation is supported by the following:

- Five viewpoints have been selected from publicly accessible locations surrounding the Quarry and the proposed Extension area. Viewpoints were selected from locations where the ZTV model predicted that the proposed Extension would be theoretically visible.
- Most views in the direction of the Quarry and the proposed Extension area are either screened by topography, vegetation or a combination of both. The visual impact from nearby areas would be negligible to nil.
- Areas where the proposed Extension Area would be visible are from elevated residential areas approximately 3.8km to the south. These areas are at such a distance that the proposed Extension area would be a background element to views that include many other constructed elements such as development in neighbouring lots, high-voltage transmission lines and features associated with growth areas.
- The Quarry and proposed Extension area is in a -modified landscape adjacent to agricultural activity and development commensurate with urban fringe areas.
- The topography within the Quarry and the surrounding area restricts most nearby viewing opportunities and locations that are further removed.
- There were no nearby dwellings observed during the site visit where the proposed Extension Area would be visible. This is due partly to topography and vegetation in the surrounding area and partly to the 20m wide vegetation buffer retained along to the east and north of the proposed Extension area.
- There will be limited to no views of the proposed Extension area from either main roads secondary or local roads.
- Rehabilitation planting can treat the upper faces of the Quarry and remove any minor visual impact that will occur.

In summary, the surrounding areas have a low visual exposure to the existing Quarry, which will not significantly alter as a result of the proposed Extension area.

Figure 9-1 Landscape Screening within the Site





