MAROOTA SANDS PROJECT

Environmental Impact Statement
Landscape and Visual Impact Assessment

Prepared for:
Design Collaborative

SLR Ref: 630.30046-R01
Version No: 2
April 2020

PREPARED BY

SLR Consulting Australia Pty Ltd
ABN 29 001 584 612
15 Astor Terrace
Spring Hill QLD 4000 Australia
T: +61 7 38584800 8100
E: brisbane@slrconsulting.com www.slrconsulting.com

BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Allspec and Associates (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
630.30046-R01-v1.0	24 September 2020	Dean Butcher	Chloe Wegener	Dean Butcher
630.30046-R01-v2.0	11 May 2021	Dean Butcher	Chloe Wegener	Dean Butcher

CONTENTS

1 INTRODUCTION 6
1.1 Background 6
1.2 The Project Site 6
1.3 Project Description 7
2 BASELINE VISUAL ENVIRONMENT 10
2.1 Subject Site and Surrounding Context 10
2.1.1 Topography and Landform 10
2.1.2 Roads and Access 12
2.1.3 Vegetation 13
2.1.4 Structures 16
2.1.5 Infrastructure 17
2.1.6 Rivers, Creeks, Watercourses and Waterbodies 18
3 LANDSCAPE CHARACTER ASSESSMENT 19
3.1 Regional Context 19
3.2 Baseline Visual Character of Subject Site and Surrounds 21
4 THE PROPOSAL 24
4.1 Project Description 24
5 VISUAL IMPACT ASSESSMENT 26
5.1 Process 26
5.2 Zone of Theoretical Visibility (ZTV) 26
5.3 Photomontage Images 27
5.4 Assessment of Visual Impacts for Key Receptors 28
5.5 Receptor Sensitivity 30
5.6 Magnitude of Landscape Change 31
5.7 Impact Significance on the Landscape Character 32
5.8 Summary of Potential Landscape Character Impacts 33
5.8.1 Viewpoint 1 34
5.8.2 Viewpoint 2 37
5.8.3 Viewpoint 3 40
5.8.4 Viewpoint 4 43
5.8.5 Viewpoint 5 46
6 MITIGATION MEASURES 50

CONTENTS

7 SUMMARY OF ASSESSMENT 51

8 REFERENCES 53

DOCUMENT REFERENCES

TABLES

Table 1 Receptor Sensitivity Rating 31
Table 2 Magnitude of Change 32
Table 3 Effect Significance Rating 33
Table 4 Summary of Visual Impact Ratings for each Receptor 51

FIGURES

Figure 1 Subject Site Boundary (red line) 7
Figure 2 Subject Site Boundary (red line) 8
Figure 3 Existing Contours and Landform 9
Figure 4 Vegetation Communities on Site (Hills Shire Online Mapping Tool) 15
Figure 5 Subject Site within broader regional landscape 19
Figure 6 Vegetation Communities identified by Hills Shire Council 20
Figure 7 Vegetation Communities identified by Hornsby Shire Council 20
Figure 8 Proposed Extraction Stages (RPM Global) 24
Figure 9 Proposed Stage 1 and Site Infrastructure, Year 1 (RPM Global) 25
Figure 10 Proposed Final Stage Design and Rehabilitation (RPM Global) 25
Figure 11 Subject Site Showing Mapped Zone of Theoretical Visibility (all 5 Receptor Points) 27
Figure 12 Selected Visual Receptors and Direction of View 29
Figure 13 Zone of Theoretical Visibility for Viewpoint 1 (VP1) 34
Figure 14 Zone of Theoretical Visibility from Viewpoint 2 37
Figure 15 Zone of Theoretical Visibility from Viewpoint 3 40
Figure 16 Zone of Theoretical Visibility from Viewpoint 4 43
Figure 17 Zone of Theoretical Visibility from Viewpoint 5 46

PHOTOS

Photo 1 View of existing site (left) and its contextual landscape from private property 11
Photo 2 View of existing ridge 1 on site (behind) and its contextual landscape from road to north. 11
Photo 3 View along private haulage road towards the west. 13
Photo 4 View from Wisemans Ferry Road along private haulage road towards the west into the site. 13
Photo 5 View north east along Wisemans Ferry Road towards the site 13
Photo 6 View north along Old Northern Road showing surrounding vegetation on verges 13
Photo 7 Stands of native vegetation along main and local roads are prominent in some areas 16
Photo 8 Vegetated ridgelines adjoining open rural land uses is a typical of the landscape character in the area 16
Photo 9 Isolated stands of vegetation in rural landscapes is common 16
Photo 10 Vegetation along Wisemans Ferry Road adjoining the site 16
Photo 11 Mine related structures viewed in the distance from Old Northern Road 17

CONTENTS

Photo 12 Residential houses and rural sheds/ structures viewed from Old Northern Road 17
Photo 13 Residential houses in the rural landscape viewed from Wisemans Ferry Road 17
Photo 14 Petrol Station along Wisemans Ferry Road 17
Photo 15 Local dams on rural properties scattered through rural landscape 18
Photo 16 Existing gullies in both natural areas and altered landscapes 18
Photo 17 Rural/ pastoral landscapes of the region are a prominent and memorable part of the landscape 22
Photo 18 Naturally vegetated areas are also prominent along major roads defining a more natural character 22
Photo 19 Views to the site from the north along Old Northern Road 22
Photo 20 Views of the site (Ridge 2) from private property to the south 22
Photo 21 Views of the vegetated edge of the site from the south east along Wisemans Ferry Road 23
Photo 22 Views into the site from the east 23

ATTACHMENTS

Appendix A A3 Photomontage Images

1 Introduction

This Landscape and Visual Impact Assessment (LVIA) for the proposed Friable Sandstone Extractive Industry Project EIS has been prepared by SLR Consulting Australia Pty Ltd (SLR) for Design Collaborative Pty Ltd. It provides an objective assessment of the proposed sandstone extraction project demonstrating the potential level of impacts on the visual environment (visual amenity).

Whilst there are existing sandstone extraction sites currently near to and adjacent the site it is important to provide an effective and objective assessment of the anticipated impacts of the project on the surrounding visual environment.

SLR has worked closely with other members of the project team in determining and rating visual impacts of the proposed sandstone extraction project works on its immediate surrounds as well as suggesting mitigation measures to further reduce any impacts that may occur.

1.1 Background

The development requires an approval under the Protection of the Environment Operations Act 1997, Environmental Planning and Assessment Act 1979 and Roads Act 1993. As part of this, an Environmental Impact Statement (EIS) needs to be undertaken that meets the minimum form and content required as part of the Environmental Planning and Assessment Regulation 2000.
The Secretary's Environmental Assessment Requirements (SEARs) outlines the preliminary issues and potential impacts are to be assessed in further detail as part of an EIS. This required the preparation of "a detailed assessment of the likely visual impacts of the development on private landowners in the vicinity of the development and key vantage points in the public domain, paying particular attention to any new landforms".

This Assessment identifies in detail, those likely impacts caused by the proposal that may affect the site's surrounding contextual relationships and identify any potential mitigation measures, allowing the project to be assessed and approved. This section of the EIS covers impacts to the Visual and Landscape Character of the site and its surrounds in line with the relevant guidelines.

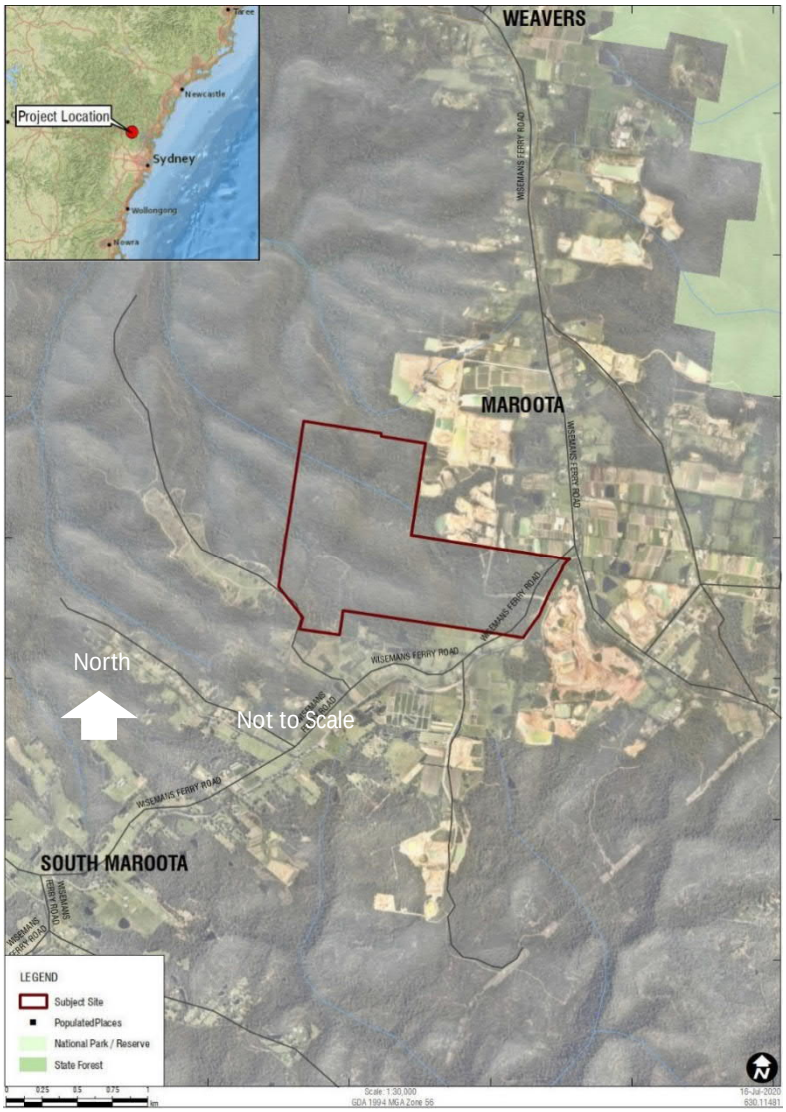
1.2 The Project Site

The subject site for the proposed friable sandstone extraction industry (the Project) is located at Wiseman's Ferry Road, Maroota (the Subject Site). The subject Site comprises three parcels of land described as Lot 7005 DP 1055724, Lot 202 DP 752025 and Lot 213 DP 752025 and occupies an area of approximately 180.7 Ha. The site is accessed from Wiseman's Ferry Road, Maroota. The site is owned by the Deerubbin Local Aboriginal Land Council (DLALC – The Applicant) who also own approximately 1,100 Ha of (potentially) extractable land to the west of the Subject Site.

The Subject Site is entirely vegetated with the exception of the access road off Wiseman's Ferry Road and a number of smaller unsealed access tracks over the area. The access road is subject to a Crown licence that gives access to the Hitchcock Road Quarry adjoining the subject site to the north.

The existing site's natural vegetation cover drapes the landform that can be generally defined by two ridgelines that separate two creek lines that run generally towards the north-west.

Figure 1 Subject Site Boundary (red line)



1.3 Project Description

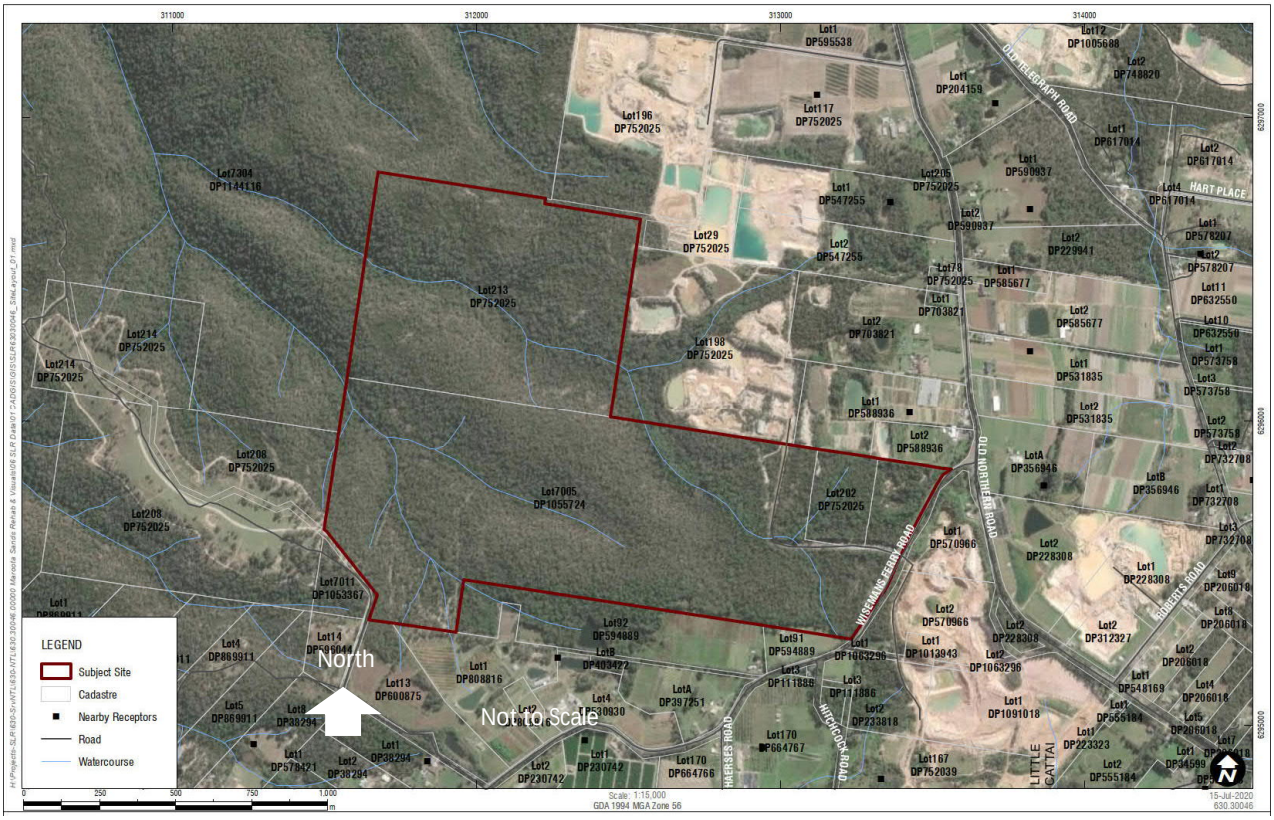
The proposed extractive industry will consist of the extraction and processing of the Hawkesbury and Maroota Sandstone into a fine-medium graded sand. Crushed sandstone, fine graded sand and fine aggregate is also to intended to be produced as a by-product of the primary process. It is anticipated that the proposed development has the capability of suppling 500,000 tonnes of extracted and processed material per year.

The following works are proposed for the project on the subject site as follows:

- The establishment of a processing plant and associated works including weighbridge, machinery sheds, office etc.
- Clearing of vegetation to expose works surface. Removed topsoil will be stored on site.
- Construction haul roads, both temporary and permanent. Typically, these will be 25m wide.

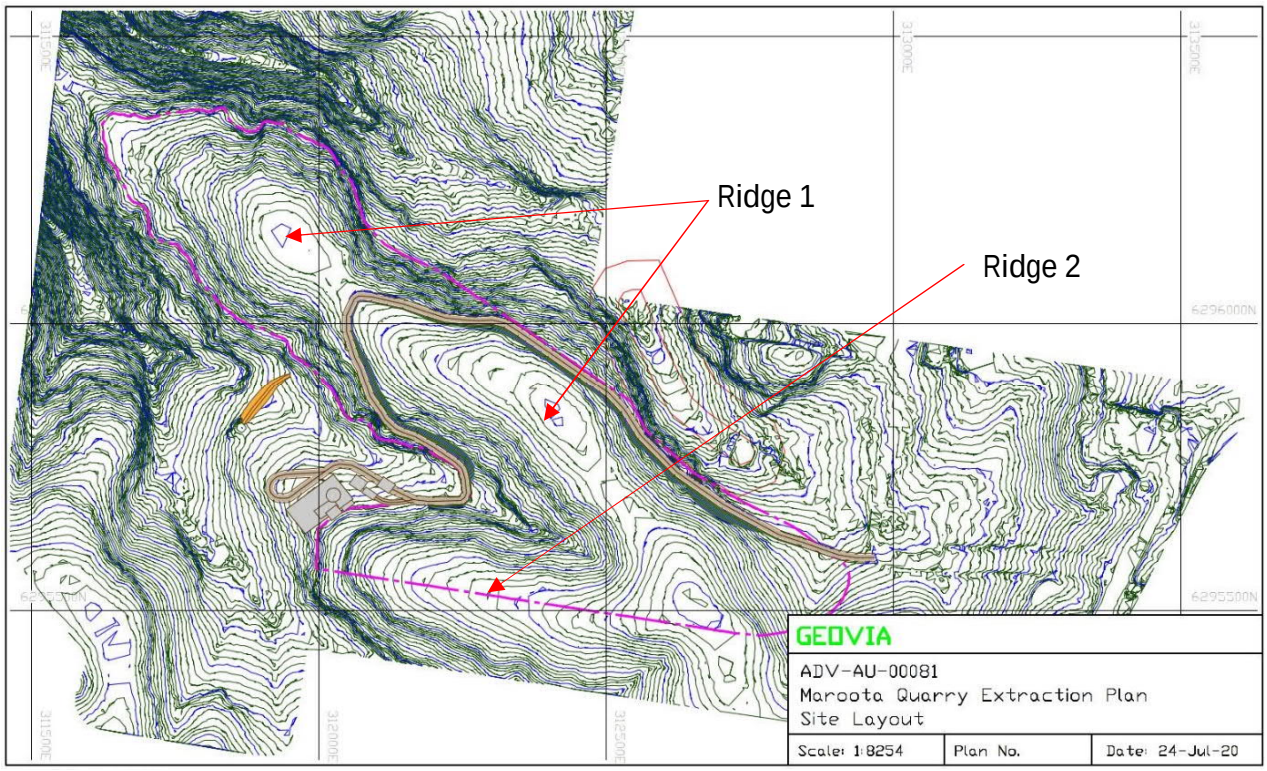
- Removal of storage of overburden.
- Extraction of Hawkesbury Sandstone within approved depths and setbacks.
- Haulage and delivery of extracted material to the processing plant.
- Establishment and operation of clean water supplies to the processing plant.
- Establishment and operation of a tailings disposal system.
- Stockpiling of processed sand.
- Loading and transport of processed sand for delivery to the metropolitan area.
- Construction of landforms within the extracted area in accordance with approved rehabilitation plan.
- Importation of clean material for construction of landforms within the extracted area in accordance with approvals (rehabilitation plan and revegetated landforms).

Figure 2 Subject Site Boundary (red line)



Stockpiles of product up to 6m high will be created and stored on site. Desired landforms as set out in the rehabilitation plan will be constructed using on-site material. The proposed site extraction limit and extent of site works and infrastructure is presented in Figure 3. The site works are to be constructed in 5 Phases but for the purpose of this Visual Impact Assessment the ultimate landform model and rehabilitation solution will be used. In line with construction phasing, the site will be progressively rehabilitated in 5 stages over a 28 year lifespan for the quarry project. After the establishment of a haul road and site infrastructure area, the progressive extraction, landform construction and rehabilitation will occur.

Figure 3 Existing Contours and Landform



2 Baseline Visual Environment

2.1 Subject Site and Surrounding Context

The baseline description outlines the current state of the site (and its surrounds) as it would likely continue to function in the absence of change resulting from the introduction of the proposal.

The subject site is typically a 'Battle Axe' shape with a narrower section approximately 590m wide adjoining Wiseman's Ferry Rd and a wider section approximately 1460m wide (north South) on the western side. At its widest, the site is approximately 2000m wide running east west.

2.1.1 Topography and Landform

Based on the existing topographic and survey information available (a Digital Terrain Model for the site as well as existing SRTM Data for the local area), the site levels generally range between RL 205 on the eastern side of the subject site along Wisemans Ferry Road and RL 90 on western boundary of the site. From north to south, the site undulates from approximately 160m – 170m in the north western section to RL 170-180 on the southern boundary. The subject site is generally situated on 2 existing ridgelines and falls east to west in line with the surrounding undulating vegetated hills. Following inspection of the site (undertaken 21st July 2020), the site was identified to be lower in height than the surrounding ridge on which Maroota is located. This includes Old Northern Road that varies in height from RL200 – RL230 in the near vicinity of the subject site.

The surrounding area bound by the Hawkesbury River is heavily incised by creeks and tributaries of the Hawkesbury.

> The Hawkesbury area contains rugged rock outcropping and benches with narrow crests and ridges and rugged to rolling hills (Chapman and Murphy, 1989). The Maroota area is located on a relatively flat ridge. The site is located on the western side of this ridge, and is relatively flat with some sections sloping gradually to the west. The topography of the site has been modified, particularly in the western and northern areas but also where dams have been formed.

For the purposes of this Visual Assessment the two major ridges can be defined as follows and as shown in Figure 3.

- Ridge 1 (major ridgeline) though centre of the site that traverses the site and slopes down towards the north west from the south eastern corner of the site. Its height ranges from Approximately RL 195 down to RL 140 on the western edge. The ridge continues north west outside of the site. Ridge 1 is the most visible part of the site as it is approached from the north along Old Northern Road, whereas it can typically not be seen from most southern aspects on public land (Figure 3).

- Ridge 2, a secondary ridge on the southern side of the site has its origins in approximately the same location as Ridge 1 in the south eastern corner of the site (RL 195) and runs east west on the western side of the site where it adjoins a local creek line at approximately RL 120. Ridge 2 is the most visible landform element as the site is approached from the south along Wideman's Ferry Road (Figure 3).

Based on the topography mapping for the subject site, the slope gradients vary from gently sloping areas along the tops of the ridgelines to steeply sloping sides of ridgelines up to a typical gradient of 1:2. In general the site is more undulating and has a higher number of steep gradients than the Maroota Ridge (Wiseman's Ferry Road) to the east of the site. However, to the west of the site, creek lines become more incised and ridgeline side gradients steeper.

As the main viewing points for the site are from along Old Northern Road and Wiseman's Ferry Road to the east of the site, a number of characteristics are typical of the site and its surrounds with regards to views and visibility. Most views face west towards the Hawkesbury River Valley which encompass views of the site based on the viewpoints taken. Views outside a distance of 1.5km north and south of the subject site are obscured by existing vegetation and other landform elements in the foreground. As the landform is generally undulating, including along the two main roads, the views are generally limited (short to medium range views) from any one point along the roads. Although the subject site topography is generally high in the context of the the land to its west, even the two ridgelines sit below the levels along Old Northern Road and Wiseman's Ferry Road which range from RL 230 to the north and RL 150m to the south of the site.

Photo 1 View of existing site (left) and its contextual landscape from private property

Photo 2 View of existing ridge 1 on site (behind) and its contextual landscape from road to north.

The landform and topography on site is accentuated by the existing vegetation cover. Even with the highest points on the subject site (landform) being lower than that of the surrounding main roads, the vegetation height provides additional height that makes the site (and other similar ridgelines in the near vicinity) more visually prominent and more visible from public and private viewpoints.

A number of creek and gully lines carve through the site in a roughly north east direction towards the west. These are typically defined by the 2 main ridges travelling in the same direction. A number of smaller gully lines and tributaries radiate from the 2 main creek lines defining minor landform variations. These gully lines are not highly visible from public and private viewpoints observed in the area. It is assumed however that in order to gain a clearer visual understanding of the incised gullies on site that views closer to the site would be necessary. The defined ridges and gully formation of the region is reflected in the subject site, however the typical patterning observed from a distance is not evident of the site primarily due to the closer proximity of viewpoints.

2.1.2 Roads and Access

The subject site has a number of main roads on or near it. Wiseman's Ferry Road adjoins the site to the east and provides access to it. Wiseman's Ferry Road terminates just north of the subject site as it meets Old Northern Road which runs general north south. Wiseman's Ferry Road meanders through the rural and natural landscapes of the surrounding areas south of the subject site and typically falls in elevation gradually from the site at approximately RL200 towards the Hawkesbury River. Visibility to the subject site from Wiseman's Ferry Road is limited by alignment and visual obstructions such as landform/ topography and existing vegetation. Glimpses of the broader Hawkesbury Valley Landscape can be glimpsed from Wiseman's Ferry Road at select locations, but this could be considered as fleeting (short duration) due to the 80km/h speed limit and for the previous reasons mentioned.

Old Northern Road travels in a north south direction past the subject site and is at its closest at the intersection with Wiseman's Ferry Road. The road ranges in elevation north of the site up to approximately RL 235 and starts to fall towards the Hawkesbury River approximately 4km north of the site. Like Wiseman's Ferry Road, the landscapes adjoining it ranges from stands of existing native vegetation, closely linked to the Marramarra National Park through to option rural (agricultural and pastoral) lands and exposed sand extraction sites closer to Maroota. Views and visibility from Old Northern Road to the surrounding landscapes are similar to that of Wiseman's Ferry Road. Old Northern Road travels southward out of Maroota towards Sydney past the Marramarra National Park wherever the prominence of the natural areas is evident, and the presence of rural land uses reduced.

The scenic qualities observed from the two roads can be considered generally medium to high due to the presence of natural landscapes adjacent and visible from along the road.

There are a number of other local roads in the area that typically feed off or join the two main roads. These service a number of rural properties and are both sealed and unsealed roads. Some of these lower orders of local roads extend from rural surrounds into totally natural areas where views of the surrounding areas are limited due to the presence of mature existing vegetation. The scenic amenity qualities of these roads are generally considered to be high. However, many of these local roads have no views back to the subject site.

There is one major access point into the site located on the eastern side of the subject site which comes off Wiseman's Ferry Road. The road is private but is sealed for approximately 190m. The remainder of the access is an unsealed track that provides access to the Hitchcock Road Quarry adjoining the subject site to the north.

There are a number of smaller access tracks through the site mainly accessed from the north eastern properties adjoining the site. Other informal tracks occur in the south western part of the site and along the main ridges appear to be typically accessed infrequently with minimal traffic. There were no pedestrian trails evident on site.

Photo 3 View along private haulage road towards the west.

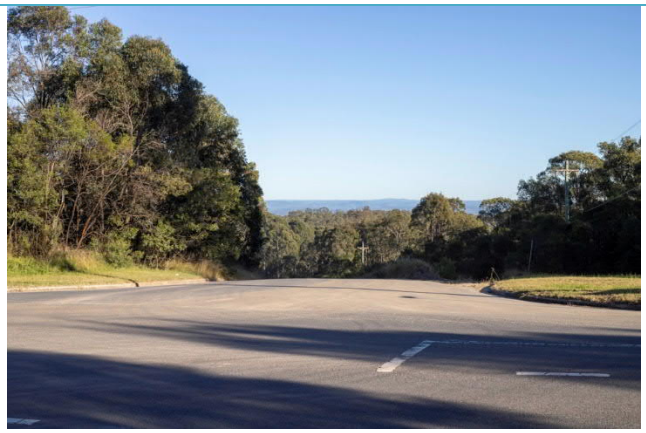


Photo 4 View from Wisemans Ferry Road along private haulage road towards the west into the site.

Photo 5 View north east along Wisemans Ferry Road towards the site

Photo 6 View north along Old Northern Road showing surrounding vegetation on verges

2.1.3 Vegetation

The vegetation on the subject site and within the surrounding context is an important element that defines the character of the site and the broader regional context. Given the established nature of the vegetation in the area, the definition between the adjoining rural land uses and the natural vegetated character is further pronounced.

Although the vegetation on site is part of a broader series of existing landscapes that are located within the local Council areas of Hills Shire, Hornsby Shire, Hawkesbury City and Central Coast, it is not identified as either a National Park, State Forest or State Conservation Area. The following locally and Nationally significant parks and reserves have close links to the broader vegetation communities of the area and the subject site in Maroota.

- Maroota Ridge State Conservation Area
- Marramarra National Park
- Dharug National Park

Marramarra National Park is located approximately 40km northwest of Sydney within the Hornsby Shire. It was established in 1979, and covers over 11,500 hectares of bushland between the Old Northern Road, Berowra Creek, and the Hawkesbury River.

The following extract from the Marramarra National Park, Muogamarra Nature Reserve & Maroota Historic Site Plann of Management (2016) describes the vegetation in the near vicinity of the subject site and would reasonably be expected to replicate a number of vegetation species found within the national park.

> The vegetation found on the ridges, plateaus and dry exposed hill slopes within Marramarra National Park, Muogamarra Nature Reserve and Maroota Historic Site is generally typical of that in other sandstone reserves within the sub-region and is dominated by a woodland of red bloodwood (Corymbia gummifera), scribbly gum (Eucalyptus haemastoma), Sydney red gum (Angophora costata) and narrow-leaved stringybark (E. oblonga). To the north-west of the national park and in the historic site the vegetation changes to a woodland of red bloodwood, Sydney red gum, yellow bloodwood (Corymbia eximia) and grey gum (E. punctata). Small patches of open scrub with dwarf apple (Angophora hispida) occur on the drier ridges in Marramarra National Park and Maroota Historic Site. In sandstone gullies and on sheltered south and east facing sandstone hillsides are open forests of Sydney peppermint (E. piperita), Sydney red gum (Angophora costata), blackbutt (E. pilularis) and turpentine (Syncarpia glomulifera). The black 17 sheoak (Allocasuarina littoralis) is a common smaller tree of this community. In the deeper gullies are closed forests of coachwood (Ceratopetalum apetalum), water gum (Tristaniopsis laurina), lilly pilly (Acmena smithii) and other rainforest species.

The character of vegetation in the landscape was reviewed and evaluated on its visual qualities in contrast to specific species identification and ecological values which can be obtained from separate assessments within the overall EIS. The site has been largely uncleared of vegetation and currently displays an established landscape character of vegetated ridgelines that define local viewsheds. Apart from the vegetation along the site frontage to Wisemans Ferry Road which has a dense coverage up to the site boundary, no other vegetation on site is directly accessible to the public.

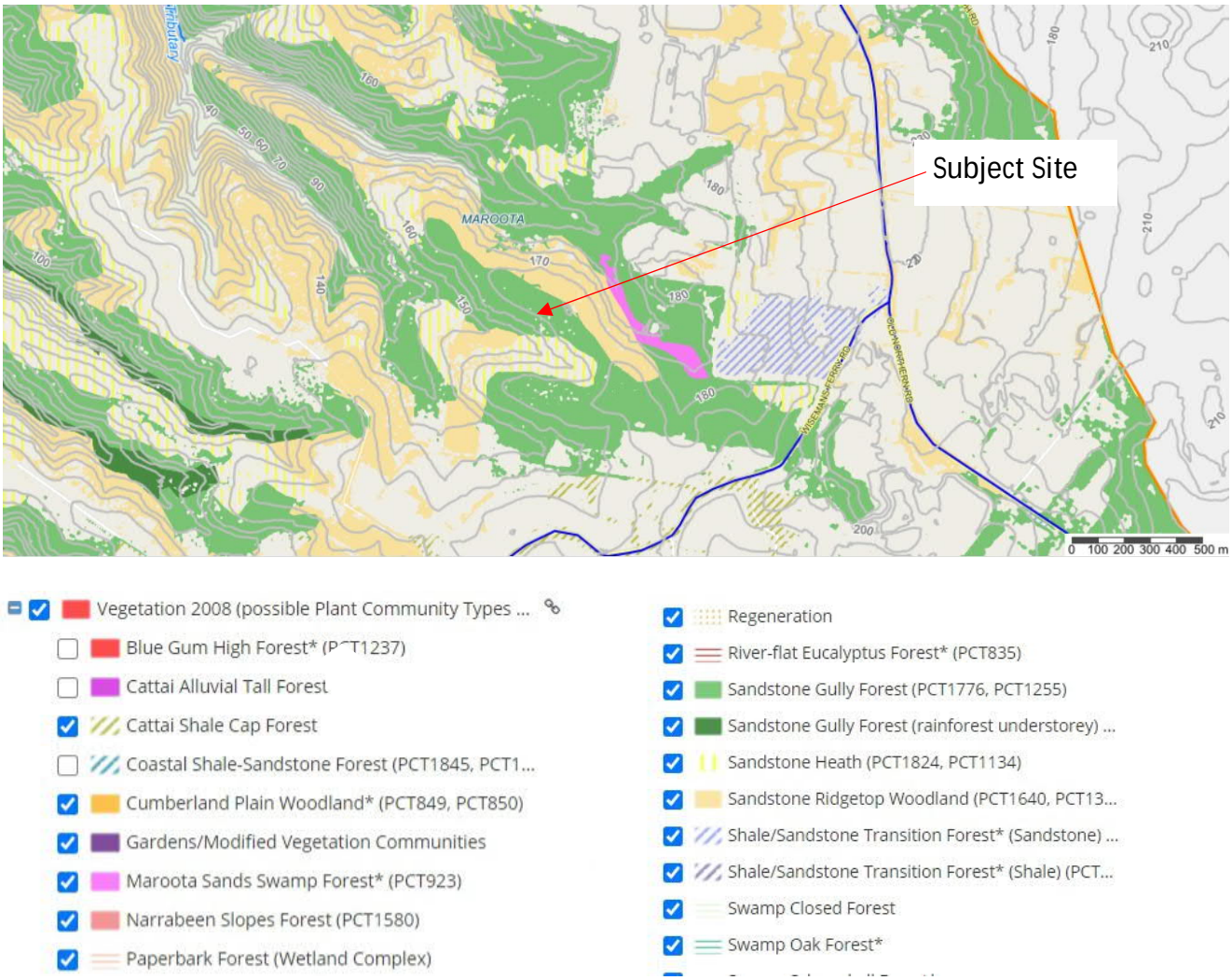
The site shares a number of private boundaries with adjoining rural and extraction land uses. To the south a number of private rural agricultural properties slope down towards the site. Apart from isolated stands of native vegetation, on the surrounding rural land the site directly adjoining the site retains a block of vegetation directly associated with the site. This reinforces the existing site vegetation cover down the southern slope of the ridge.

The land surrounding the subject site to the west is generally heavily vegetated on undulating hills similar to that on the subject site . Vegetation on the adjoining sites north of the subject site has been largely cleared for extractive industry and rural uses, except for existing stands on the north west of the site.

The Hills Shire online Interactive Mapping Tool lists the following possible plant communities that have been identified on the subject site. Whilst the vegetation has been identified and described in line with regional standards, the website discloses that the list is not exhaustive.

- Sandstone Gully Forest
- Sandstone Ridgetop Woodland
- Maroota Sands Swamp Forest
- Sandstone Heath PCT1824, PCT 1134
- Coastal Shale Sandstone Forest

Figure 4 Vegetation Communities on Site (Hills Shire Online Mapping Tool)



The typical vegetation cover and pastoral character of the adjoining areas is represented by large specimen trees or groups of trees in open fields and on grassy hills. The open pastures have an identifiable vegetation character to the north and south of the site that is typical of rural landscapes in the region. Whilst the vegetation species may vary from exotic species (identifiable with more temperate landscapes) to native and endemic species, the predominance of open fields is the most prominent element in the rural landscape. It is the opinion of the author that although the rural landscape character is identifiable close to the main roads, the broader natural landscapes are the most visually dominant character elements in the region.

Although roads have been typically cleared of vegetation, some stands remain where roads have either been constructed through existing vegetation or regeneration has occurred around them. In these cases, the vegetation along roads is a prominent character element in the area.

Photo 7 Stands of native vegetation along main and local roads are prominent in some areas

Photo 8 Vegetated ridgelines adjoining open rural land uses is a typical of the landscape character in the area

Photo 9 Isolated stands of vegetation in rural landscapes is common

Photo 10 Vegetation along Wisemans Ferry Road adjoining the site

2.1.4 Structures

There were no structures present on site.

Structures on the land surrounding the subject site were observed to be typically of several types

- Residential buildings;
- Agricultural/ pastoral related structures and
- Industrial scale structures (quarry, extraction, agricultural).

Generally, there were very few structures visible, even with the open nature of the surrounding landscape. Given the predominant rural uses in the region, residential buildings on rural properties could be seen sparsely scattered in the landscape. Due to the scale of these structures, they gave a clear understanding of the rural character but in no way dominated the landscape. The predominantly pastoral land use meant that there were no large agricultural structures (silo's) visible from the site or viewed in the local area.

The residential structures (houses) are typically 1 or 2 stories in height and sit in isolated areas in the landscape. This is typical of this type of structure and placement in the landscape. They are not typically visible but when residential houses are located in a more exposed location in the area, they still contribute to the overall rural character. The closest residential dwelling appeared to be approximately 300m from the proposed location of the works on the site, and in general was screened from the existing works by vegetation on the lot and on adjoining boundaries and roads. Many of the residential buildings in the visual catchment were well screened by local vegetation. This therefore meant that based on the lack of visibility to these structures that they would have a similar limited visibility back to the site. Most of the residential structures were located close to the main and local roads. Most of the houses observed did not have direct views of the site because of the presence of either the vegetation or landform.

Photo 11 Mine related structures viewed in the distance from Old Northern Road

Photo 12 Residential houses and rural sheds/ structures viewed from Old Northern Road

Photo 13 Residential houses in the rural landscape viewed from Wisemans Ferry Road

Photo 14 Petrol Station along Wisemans Ferry Road

2.1.5 Infrastructure

The main visible infrastructure elements (apart from the roads) were powerlines that run along the main roads adjacent the site. These were typically not highly visible, because of their permeability as viewed from the site and a number of other key local receptors.

2.1.6 Rivers, Creeks, Watercourses and Waterbodies

Information for local water bodies has been gathered based on visual impacts and not on ecological, hydraulic or flooding characteristics.

Apart from the Hawkesbury River, there are no major rivers in the vicinity of the site. Douglas Creek is the only watercourse near to the subject site and is located to the west approximately 2km from the site at its closest point. Douglas Creek runs generally north south then east west and is a tributary of the Hawkesbury River that meanders through the undulating lands adjoining it.

Although the creek is not clearly visible from the site, the dense vegetation along it can be seen amongst other local elements when viewing west. The landscape around Douglas Creek did not have an impact generally on the visual landscape around the subject site. Due to its low elevation in relation to surrounding elements and infrastructure, it is only really evident from local roads close to it such as Cliftonville Road.

There are a number of localised gullies in and around the site that are typical of the local area and critical in the landform of the area. These gullies are a result of the erosion and incision of tributaries to Douglas Creek (and ultimately the Hawkesbury River) on the surrounding land and soil profiles. The two gullies on the site were not visible due to their relative elevation compared to those of the surrounding land and in particular, the surrounding main roads where the majority of viewpoints were observed. The dense vegetation cover of the site and its surrounds also prohibited any direct views into the gullies from the viewpoints selected.

Small rural dams were viewed, on the adjoining properties which contributed to the rural character of the area. Although noted, these were not considered to be a prominent landscape element or contribute greatly to its visual character. Many of the local dams were partially or fully screened by local vegetation and the majority had no visual relationship with the subject site or its natural character.

Photo 15 Local dams on rural properties scattered through rural landscape

Photo 16 Existing gullies in both natural areas and altered landscapes

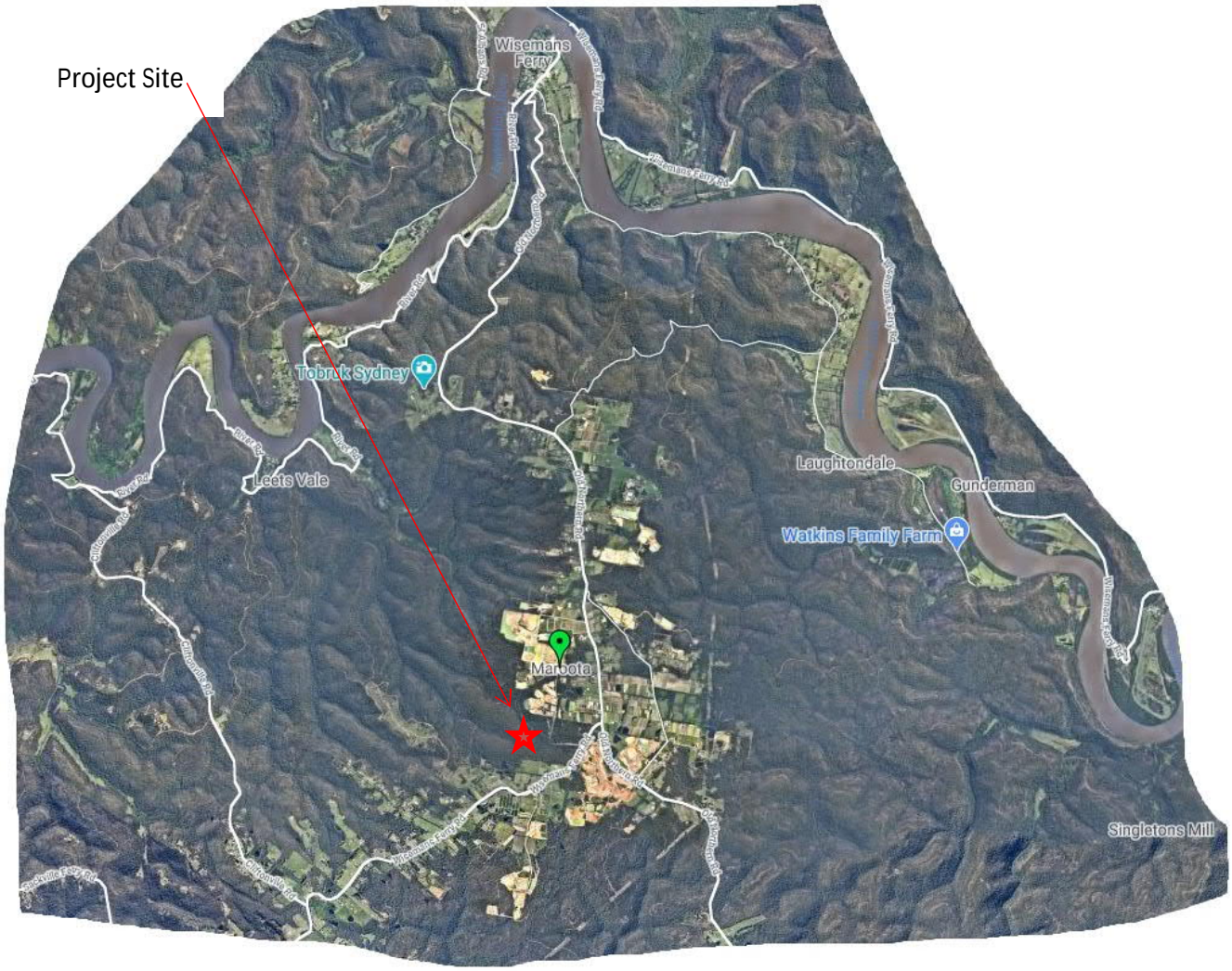
3 Landscape Character Assessment

The Landscape Character Assessment is a tool for identifying the distinctive characteristics of a site, its context and surrounds without putting a value to it. The site inspection carried out in July 2020 allowed SLR to review the site and surrounds to determine the existing landscape character.

3.1 Regional Context

The site lies within The Hills Shire Council and on the boundary of the Hornsby Shire Council (west of Wiseman's Ferry Road). Although the site is within the Hills Shire, the landscape character and key elements of the site are typical of the broader landscape character within the two shire council areas and the broader landscapes of the Hawkesbury Region. For the purposes of this Visual Assessment Report broader landscape, vegetation, topography and development patterns will play a more important role in defining the character of the site, than municipal boundaries. Figures 5 shows the vegetation communities within the Hills Shire as landscape character areas were not identified. Conversely, Figure 6 shows the relative landscape character areas and zoning and not vegetation communities.

Figure 5 Subject Site within broader regional landscape

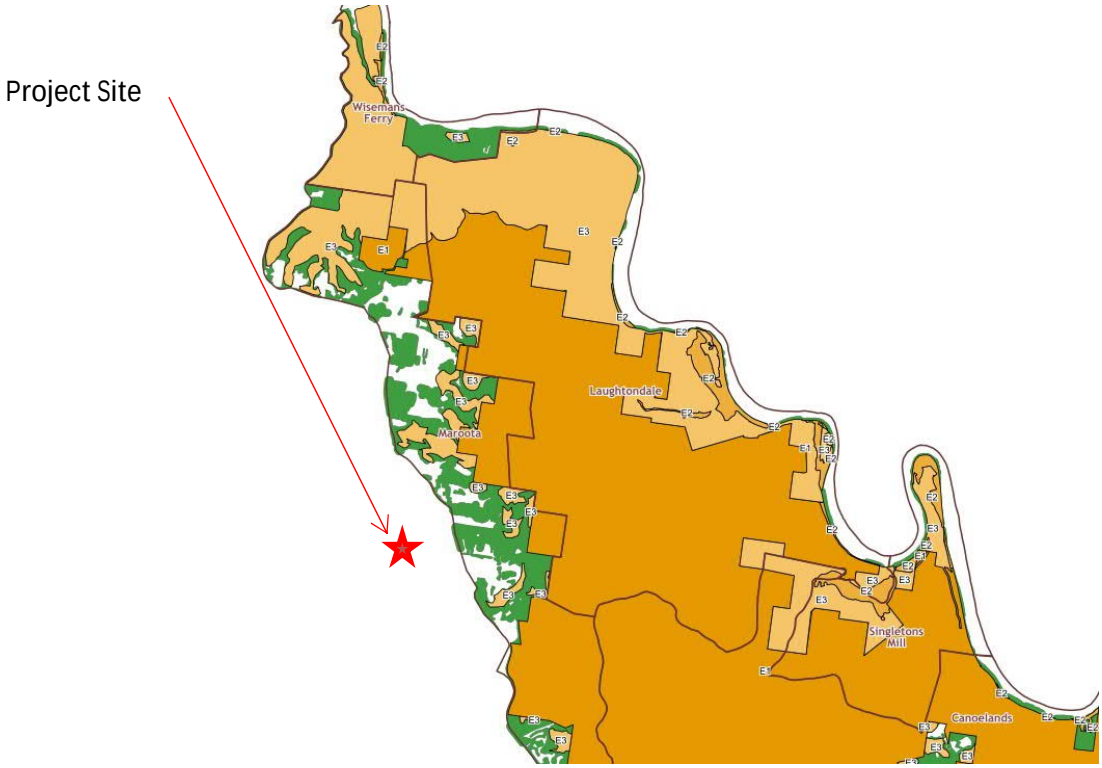


Source: Nearmap 2020

Figure 6 Vegetation Communities identified by Hills Shire Council

Source: Hills Shire Council – Online Interactive Mapping

Figure 7 Vegetation Communities identified by Hornsby Shire Council



Source: Hornsby Shire Council – Online Interactive Mapping

3.2 Baseline Visual Character of Subject Site and Surrounds

Site Context

The following is a baseline description of the visual environment outlining the subject site and its context as it exists prior to the proposed Sandstone Extraction works on site. The site inspection (July 2020) observed that the site and surrounds were a range of landscape types and local visual catchments defined by localised highpoints and ridgelines. Although the character of the local landscape context is predominantly natural, the rural landscape character was considered a prominent landscape character type, especially when viewed from the main roads around it (Wiseman's Ferry Road and Old Northern Road). These landscape types could be defined as follows:

- Open and Semi Open rural land for pastoral and agricultural purposes.
- Vegetated Natural Areas.

The rural landscape character is typified by open fields on gently undulating landform for pastoral purposes. The open areas are defined on the edges by the dense vegetation cover of natural areas as part of the Hawkesbury region (Figure 5). Informal stands of scattered vegetation (ranging from single trees to moderately dense groupings) break up the open character of fields and sloping hills. Vegetation is also evident in a more lineal arrangement along roads, fences and boundary lines. To the west of the site, the heavily vegetated character continues with undulating landscapes with ridges defined by incised gullies and waterways, most of which are heavily vegetated as well.

The rural landscape qualities of the area could be considered to be secondary to the natural character of the region as they are limited in area and visibility. They could also not be considered unique, especially within the broader natural landscapes being the more dominant landscape types where visible.

Photo 17 Rural/ pastoral landscapes of the region are a prominent and memorable part of the landscape

Photo 18 Naturally vegetated areas are also prominent along major roads defining a more natural character

Subject Site

The subject site as described in the various topics under Section 2.1 comprises heavily vegetated undulating landform defined primarily by two east west ridges. The site although surrounded by modified landscapes (sand mining and agriculture), continues the vegetated natural theme of the surrounding landscape to the west through to Wisemans Ferry Road

Much of the lower vegetated areas such as gullies are not visible from public areas and the visibility and prominence of the vegetated ridgelines varies depending on the location of the viewpoint. Whilst the site character does not appear to be unique in the area, it is representative of the broader landscape character of the region.

Photo 19 Views to the site from the north along Old Northern Road

Photo 20 Views of the site (Ridge 2) from private property to the south

Photo 21 Views of the vegetated edge of the site from the south east along Wisemans Ferry Road.

Photo 22 Views into the site from the east

As described in Section 2.1, there is an open area to the west of the site that is designated as future residential land. As this area could not be accessed during the site inspection (locked gate) the views from this area were unavailable and therefore visual impacts on future sensitive receivers were unable to be ascertained. It is presumed that the views would clearly show the subject site and the visual impacts of the proposed works would be evident, especially along the future public road.

4 The Proposal

4.1 Project Description

A full description of the proposal is provided within the main EIS document, but a brief description can be found in Section 1.3 of this Visual Impact Assessment. The following identifies key aspects of the proposal of particular relevance to an assessment of impacts on the visual environment. The project proposal comprises the extraction of friable sandstone over 5 stages on the subject site. The quarry proposal has a 28 year timeframe for extraction and will be progressively rehabilitated over the life of the project.

Figure 8 Proposed Extraction Stages (RPM Global)

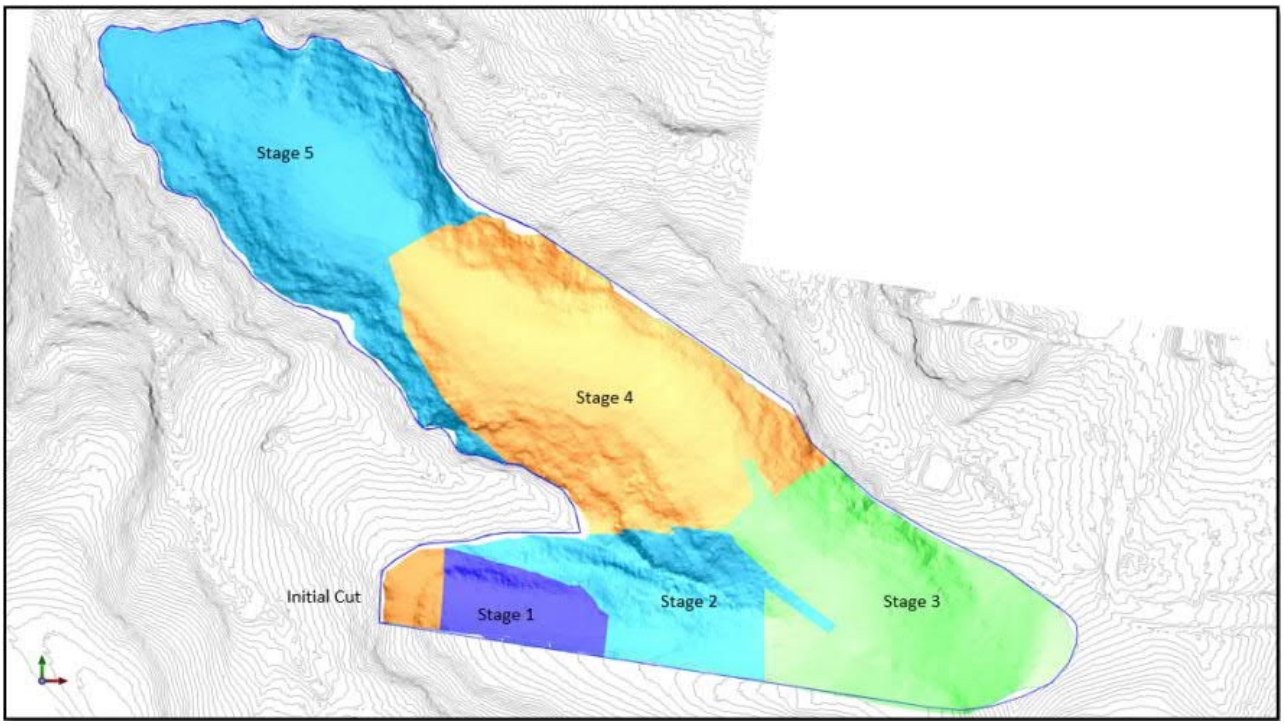


Figure 9 Proposed Stage 1 and Site Infrastructure, Year 1 (RPM Global)

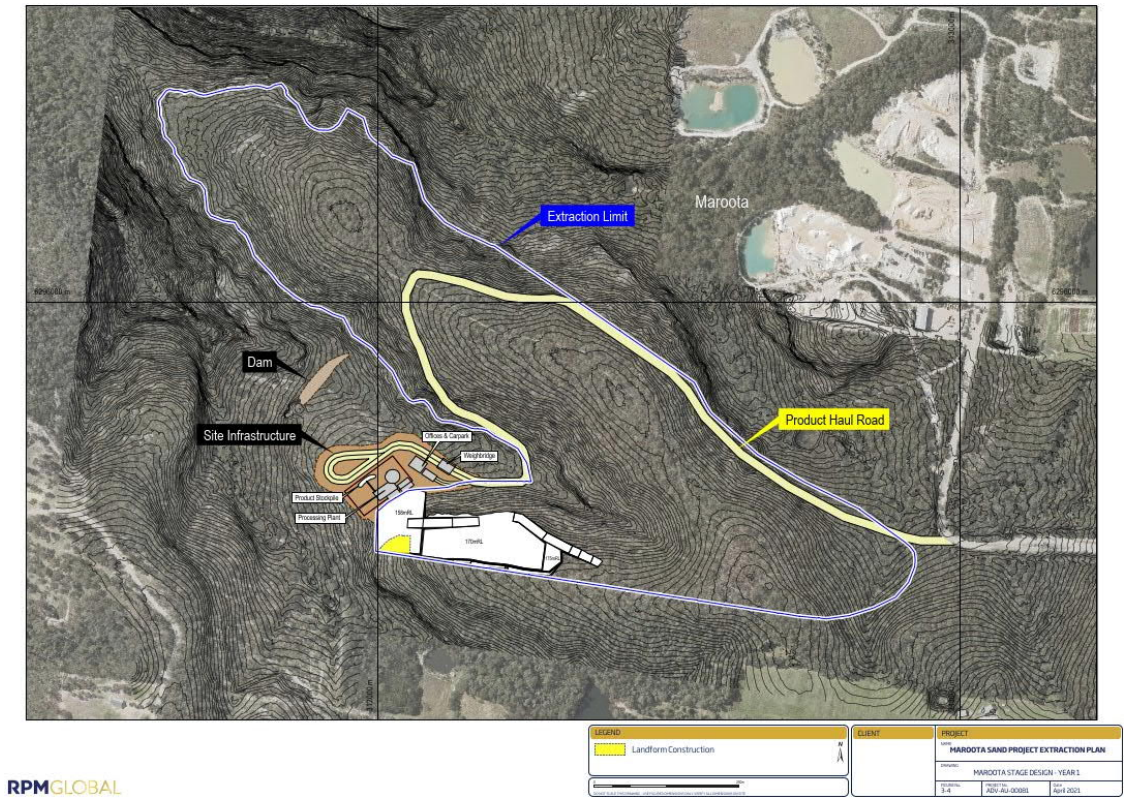
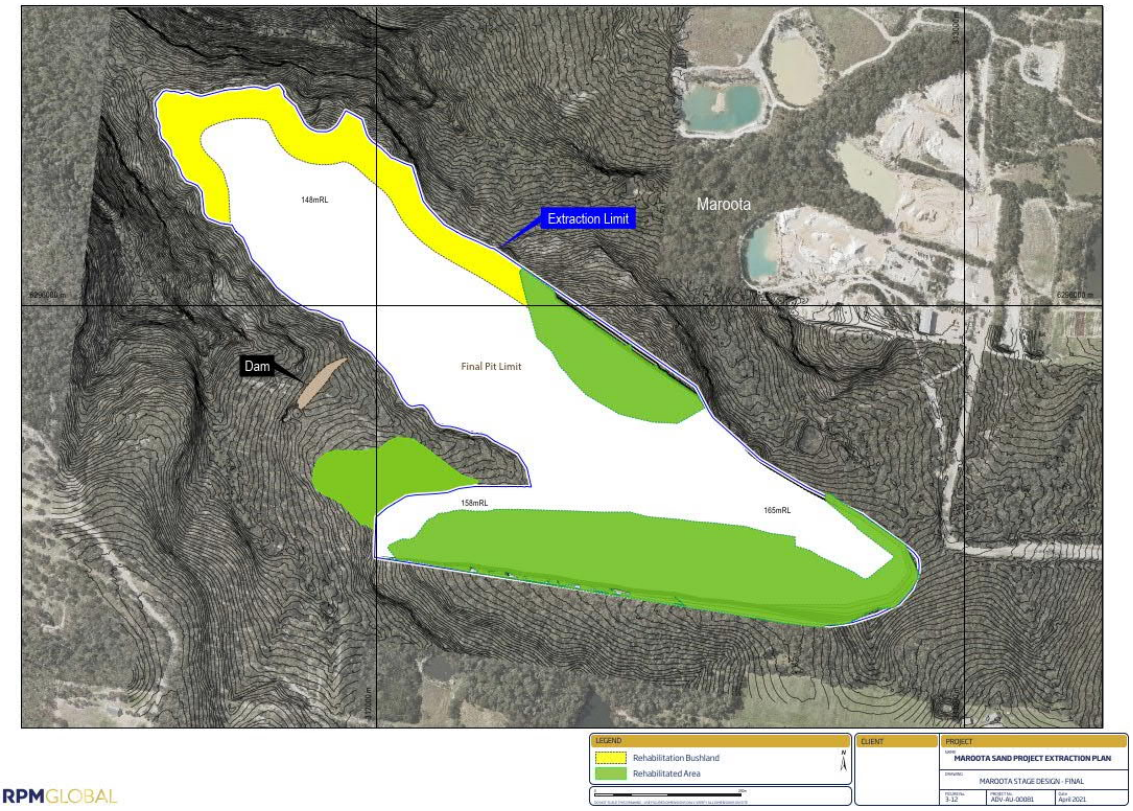


Figure 10Proposed Final Stage Design and Rehabilitation (RPM Global)



5 Visual Impact Assessment

5.1 Process

The Visual Impact Assessment generally applies the assessment techniques set out in the 'Guidelines for Landscape and Visual Impact Assessment, Third Edition' (2013) prepared by The Landscape Institute and the Institute for Environmental Management and Assessment (UK). The assessment includes the following.

- Review of the proposal (scale, bulk, height, technical specifications and landscape);
- Analysis of the subject site (visual exposure, visual qualities and landscape values);
- Mapping of Theoretical Visual Catchment, visual receptors and sensitive receptor groups;
- Identification of potential impacts on key receptors including the rating of magnitude for each receptor group;
- Rating of impact significance for each receptor group. The significance is evaluated as a product of the sensitivity or value of the receptor, and the magnitude of impacts on the receptor; and
- Potential mitigation measures to meet the necessary planning requirements and any community expectations.

The assessment included a desktop analysis and a detailed site investigation and analysis in July 2020. The desktop review included the following.

- Data review;
- Aerial photography review; and
- GIS modelling of the topography and the proposal.

Photomontages were also prepared to inform the assessment.

5.2 Zone of Theoretical Visibility (ZTV)

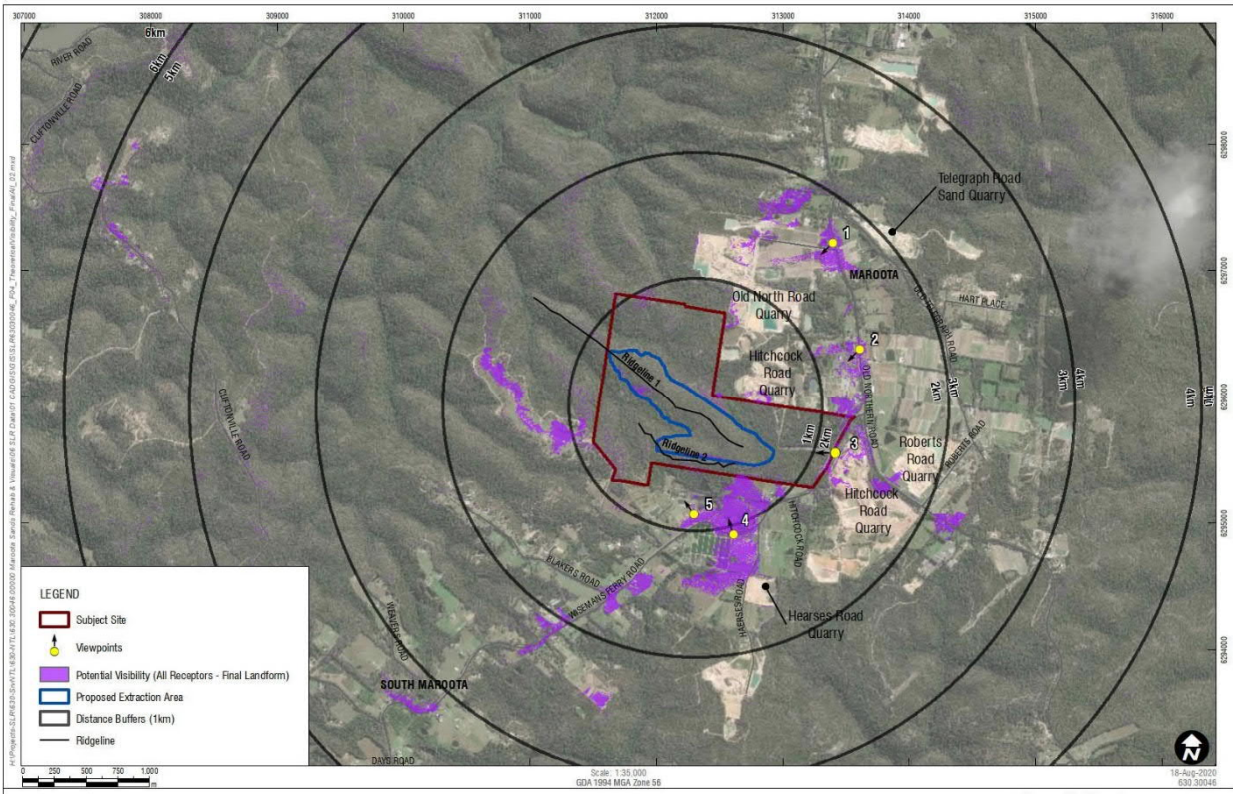
In order to identify the theoretical visual catchment of the proposed Project, a Zone of Theoretical Visibility (ZTV) was prepared as part of this Visual Assessment Report. This zone was defined by creating a 3D model of the proposed development, the existing surrounding buildings (where appropriate) and the topography. Viewpoints were identified as the most highly visible points of the proposal from the surrounding area. The model inputs were obtained using existing available data including a Digital Terrain Model (DTM), the proposed development modelled by SLR and LPI LiDar vegetation data. This assisted in the identification of potential receptors that could be ground-truthed during the site investigation process. Figure 11 shows the ZTV mapped for the site (all receptors) and its local context.

The model is based on a combination of LPI LiDar data with a grid resolution of 0.5m which has been captured in 2012, including existing vegetation and ELVIS data at 1m DEM which has been captured in 2011. The LiDAR data has been captured and processed to ICSM standards and has an accuracy of 0.3m (95% Confidence Interval) vertical and 0.8m (95% Confidence Interval) horizontal.

It was important to review the modelled theoretical information on site against actual views and viewsheds during the site investigation process. Theoretical or preliminary receptors were selected using the ZTV prior to inspecting the site and were based on an eye level of 1.65m above the ground level. Figure 11 shows the purple areas where the site is theoretically visible from nearby receptors. The earth's curvature has also been accounted for in the model.

Based on the available information, a digital 3D AutoCAD model of the proposal was produced to inform the assessment process. This was imported into the model where the outputs are a series of report figures that display the outcome of the analysis.

Figure 11 Subject Site Showing Mapped Zone of Theoretical Visibility (all 5 Receptor Points)



5.3 Photomontage Images

Photographic imagery was taken of the site to assist in the assessment of visual impacts. Photos were taken with a Canon EOS 6D Mark II Digital SLR Camera with a 50 mm lens. Five photomontage images were prepared to assist in the Visual Assessment process; four from public receptor points and one from private. Although the reference points were not surveyed to enable accurate superimposition of the model, they were sufficiently accurate to enable comprehensive testing of the likely impacts particularly on the more sensitive receptors.

The receptors used in the photomontages were selected to investigate a range of visual solutions and illustrating views from areas of perceived sensitivity. As mentioned above the initial selection of receptor locations obtained from the ZVT were investigated and ground-truthed on site during the site investigation.

Due to the following constraints, the photomontage images illustrate the proposal with the available information representing its location and impact. 3D modelling of the proposed development in 3DS Max and the creation of digital viewpoints to match these of the photographic viewpoints at each point provided a further

degree of accuracy in ascertaining the final anticipated appearance. However, the following factors created limitations in this process.

- lack of vertical height data available for trees
- more accurate contour information outside of the site
- inability to accurately ground truth site information based on the dense vegetation cover on site and the lack of accessibility over the majority of the site.

The site inspection also revealed there were a number of locations where the site was visible that were not identified on the ZVT. Conversely it was also discovered that the receptors had limited views of the site because of the presence of existing site vegetation and topography that does not match the ZTV exactly.

The Photomontage Images are represented in Section 5.8 and Appendix A (Full Size) and show the following overlays of information.

- Existing visual baseline (existing landform);
- Overlay of the Final Rehabilitated Extraction Landform.

5.4 Assessment of Visual Impacts for Key Receptors

Visual receptors are people or groups of people that may be affected by the proposal. Described below are a list of potential visual receptors that are often identified based on a number of key parameters. Depending on the site, proposed use and future anticipated impacts, not all of these may be selected as receptors.

- Proximity of the Receptor – most effected visual receptors are anticipated to be located within a 4km radius of the Project (unless in an elevated position);
- Drivers or passengers of vehicles travelling past, through or alongside the Subject site;
- Workers on or near the site that visit or work in one of the many agricultural buildings, sheds or structures;
- Members of the general public accessing adjoining public areas (creeks, canals, open spaces) for recreational or visual purposes; and
- Permanent residents living near the subject site.

Public receptors (views visible by the general public) are accepted as the most suitable for Visual Impact Assessments, because they represent the highest number of visitations or views to the nominated site in question. Private receptors (namely from private residences) can be selected if the views are unique, significant or the combined effects on a number of residents are considered high.

Receptors were initially identified through desktop assessment including the review of aerial photography and GIS data sets as well as the ZTV map. As illustrated in Figure 12 the ZTV was typically limited from each viewpoint. This was not unexpected due to the undulating nature of the site and its surrounds as well as the dense vegetation coverage. The ZTV did not take into account the height of any of the vegetation present in the area as this data was unavailable as outlined in Section 5.2. From the initial assessment of the ZTV and in identifying preliminary sensitive receptors for the site prior to the site inspection and analysis it appeared as though there were a limited number of locations in which the proposed development would be seen from both private and public receptor points.

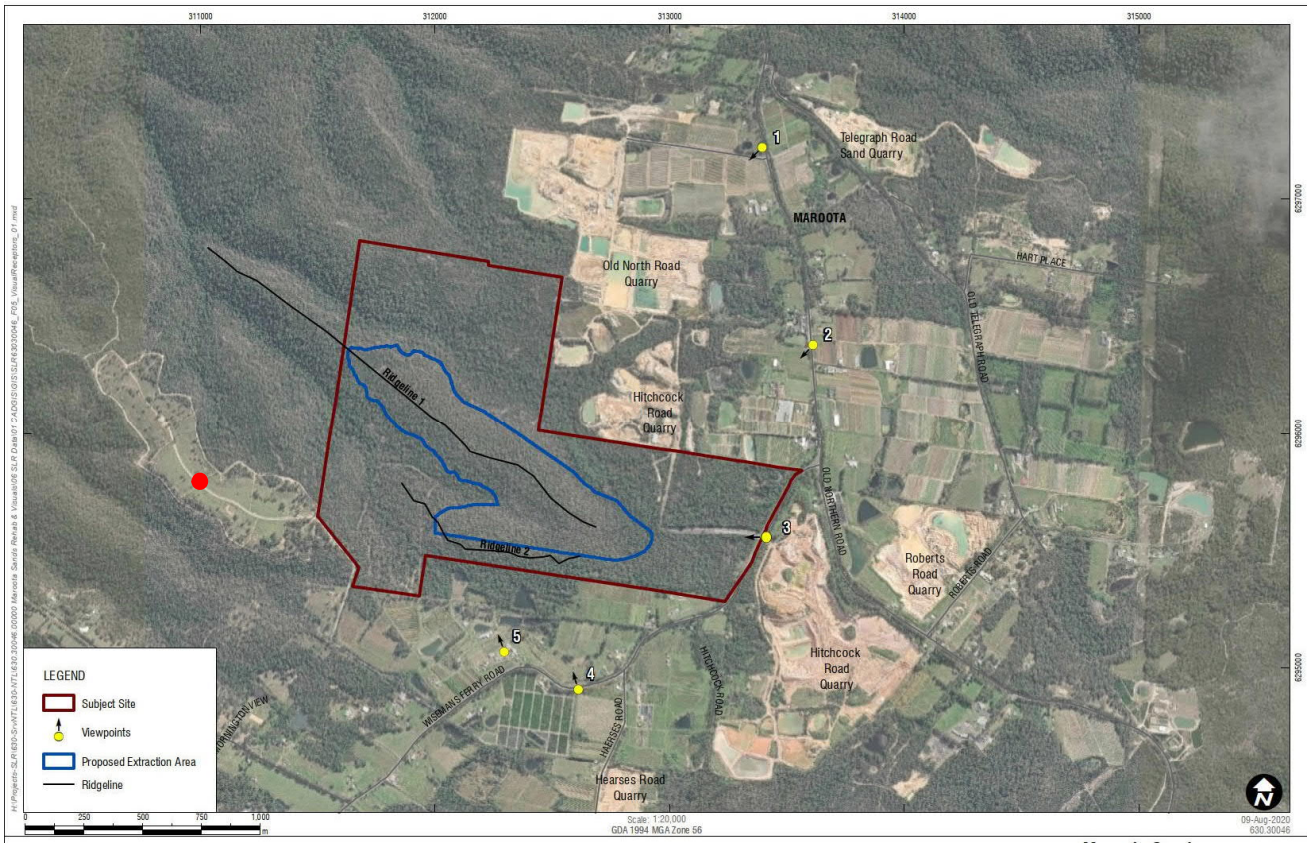
Following the identification of the visual catchment, a number of potential receptor groups were identified. These represented groups that experienced a similar visual environment and were affected by the proposed

development. Private residences/ properties in the area (the closest being approximately 0.3km from the proposed works) were discounted as a unreliable receptor locations except for one, because of the limited access to the properties, low numbers/ residences able to view the site, the distance from the site and the existing vegetation between the houses and the site. Although the majority of these were residential dwellings, the majority of these were not accessible to the public during the investigation works. The majority of these private residential receivers were positioned to the south of the site, where vegetation limited clear views of the proposed works.

All other views were discounted due to the following reasons:

- Relative distances from the site were too great;
- Views blocked or hindered due to presence of existing vegetation, topography or structures;
- Private receptors that are not subject to public access; and
- Limited viewing opportunities along roads due to relative road speeds and location of the subject site in relation to direction of travel.

Figure 12 Selected Visual Receptors and Direction of View



Note: the area adjoining the subject site marked with the red dot was not accessible for the purposes of determining visibility as a local viewpoint. This area could potentially be impacted by the proposed works.

The following viewpoints have been selected and described as follows and are located on Figure 12. They were selected to provide a representative range of views for the subject site from public areas.

- VP1, Old Northern Road – travelling southbound approx. 1.8km north of the sites access road (views to the south west). Receptor is described as vehicular users/ travellers using a public road.
- VP2, Old Northern Road – travelling south approx. 1km north of the sites access road (views to the south west). Receptor is described as vehicular users/ travellers using a public road.
- VP3, Wisemans Ferry Road – travelling north or south at the entry point to the subject sites access road (views to the west). Receptor is described as vehicular users/ travellers using a public road.
- VP4, Wisemans Ferry Road – travelling north or south approx. 1km south of the sites access road (views to the south). Receptor is described as vehicular users/ travellers using a public road.
- VP5, Private Residence 1638 Wisemans Ferry Road, Maroota – off Wisemans Ferry Road south of the subject site. Views north west to site as stationary. Receptor is described as private users/ resident using a private driveway/ track to and from residence.

In general, there were very few viable public receptors that would be influenced by the future works especially. This was, as stated above primarily due to the presence of vegetation and landform variation in the near vicinity to the site that blocked most views from public receptors. There were no discernible views from public receptors from the west, because there were no roads, public lookouts, urban or rural areas where the site could be reasonably viewed.

5.5 Receptor Sensitivity

The receptor sensitivity is derived from a combination of factors including:

- Receptors interest in the visual environment (high, medium or low interest in their everyday visual environment and the duration of the effect);
- Receptors viewing opportunity (prolonged, regular viewing opportunities); and
- Number of viewers and their distance/ angle of view from the source of the effect, extent of screening/ filtering of view.

Whilst the assessment of visual values and effects is largely measured on a qualitative basis, assessment against scale enables a more objective evaluation and comparison of sensitivity of receptors and magnitude of effects. The Receptor Sensitivity Rating is described as being High, Moderate, Low or Negligible as described in Table 1.

Table 1 Receptor Sensitivity Rating

Receptor Sensitivity	Description
High	• Visitors to heritage sites, regionally important locations, scenic routes, lookouts within 2.5km with quality views, important views of the site and surrounding areas where landscape is the specific focus. • High numbers of visitors • Views to landscape that are rare and or unique and are possibly vulnerable to change • Views from residences within 1km of the site or are representative of high quality views
Medium	• Travellers/visitors along roads or rail routes that are not scenic routes but offer quality views within 2.5km of the site • Medium numbers of visitors/ residents (rural communities or townships) • Views that are representative of local character or sense of place but are not rare or unique • Views from residences beyond immediate vicinity (1km-5km) of the site or are representative of moderate quality views • Recreational users/ viewers beyond 2.5km from the site with moderate interest in their surrounds
Low	• Travellers/visitors along roads or rail routes that are not scenic routes but offer reasonable views within 4km of the site • People at place of work where setting or views not important to quality of working environment • Recreational users not dependent on views or scenic quality of landscape • View experienced take in broad context with which site is visible but not an important element. • Small numbers of visitors with passing interest in their surroundings (those travelling along mid-level roads) • Viewers whose interest is not specifically focused on landscape or scenic qualities (commuters, workers)
Negligible	• Very occasional or low level of users with passing interest in their surrounds (those travelling along minor roads or views from the air) • Travellers/visitors along unsealed roads offering views greater than 4km of the site

5.6 Magnitude of Landscape Change

The Magnitude of Change to the landscape character depends on the nature, scale, intensity, extent and duration of the impacts/ change due to proposal. The magnitude of change also depends on the loss, change or addition of any feature to the existing landscape and is based on the character type that is most likely to be impacted by the project prior to the addition of any mitigation measures.

The Magnitude of Change is described as being High, Moderate, Low or Negligible as described in Table 2

Descriptions of Magnitude and Sensitivity are illustrative only and there is no defined boundary between levels of impacts.

Table 2 Magnitude of Change

Magnitude of Change	Description
High	Dominant Change • Major change in view at close distances, affecting substantial part of the view continuously visible for a long duration or obstructing a substantial part or important elements of the view • Overwhelming loss or additional features in the view such as the nature of view or character of landscape fundamentally changed • Views to key landscape features affected • Visual amenity of local residents or road users substantially diminished • Substantial change to the landscape due to loss of and or change to elements, features or characteristics of the landscape creating an overall worsening of landscape quality
Medium	Considerable Change • Clearly perceptible changes in views at intermediate distances resulting in either distinct new element in a significant part of the view or a more widely ranging, less concentrated change across a wider area • Significant loss or addition of features in the view, such that nature of view or character of landscape is altered • Noticeable contrast of any new features in the view such that the nature of the view or landscape character is changed • Noticeable contrast of any new features or changes compared to existing landscape • Views to key landscapes partially obstructed but views remain intact
Low	Noticeable Change • Minor memorable change to the landscape or views • Temporary or reversible impact • Landscape dominant element and built form/ development well integrated within it • Little permanent change or no fundamental change to local landscape character
Negligible	Barely perceptible change • No memorable or rarely perceptible change to landscape character or key views

5.7 Impact Significance on the Landscape Character

The Impact Significance is evaluated according to 2 key criteria as noted above and is reflected in Table 3. The rating is a means of comparing impacts on different receptors. Professional judgement and experience have been applied in order to identify the level of significance for each character type which has been assessed on its own merits.

- The sensitivity of the receptor or existing landscape; and
- The magnitude of the change or impact that is likely to occur.

The process of assessment and the use of the ratings tables reflect typical outcomes for visual impacts.

- Impacts on receptors that are particularly sensitive to change in views and visual amenity are more likely to be significant.
- Impacts that constitute a substantial change to the visual environment are likely to be more significant than the impacts that do not cause substantial change.

Table 3 Effect Significance Rating

Receptor Sensitivity	Magnitude of Change in Landscape				
	High (Dominant Change)	Medium (Considerable Change)	Low (Noticeable Change)	Negligible (Barely Perceptible Change)	
High	High	Moderate-High	Moderate	Minor-Moderate	
Medium	Moderate-High	Moderate	Minor-Moderate	Minor	
Low	Moderate	Minor-Moderate	Minor	Minor - Negligible	
Negligible	Minor-Moderate	Minor	Minor - Negligible	Negligible	

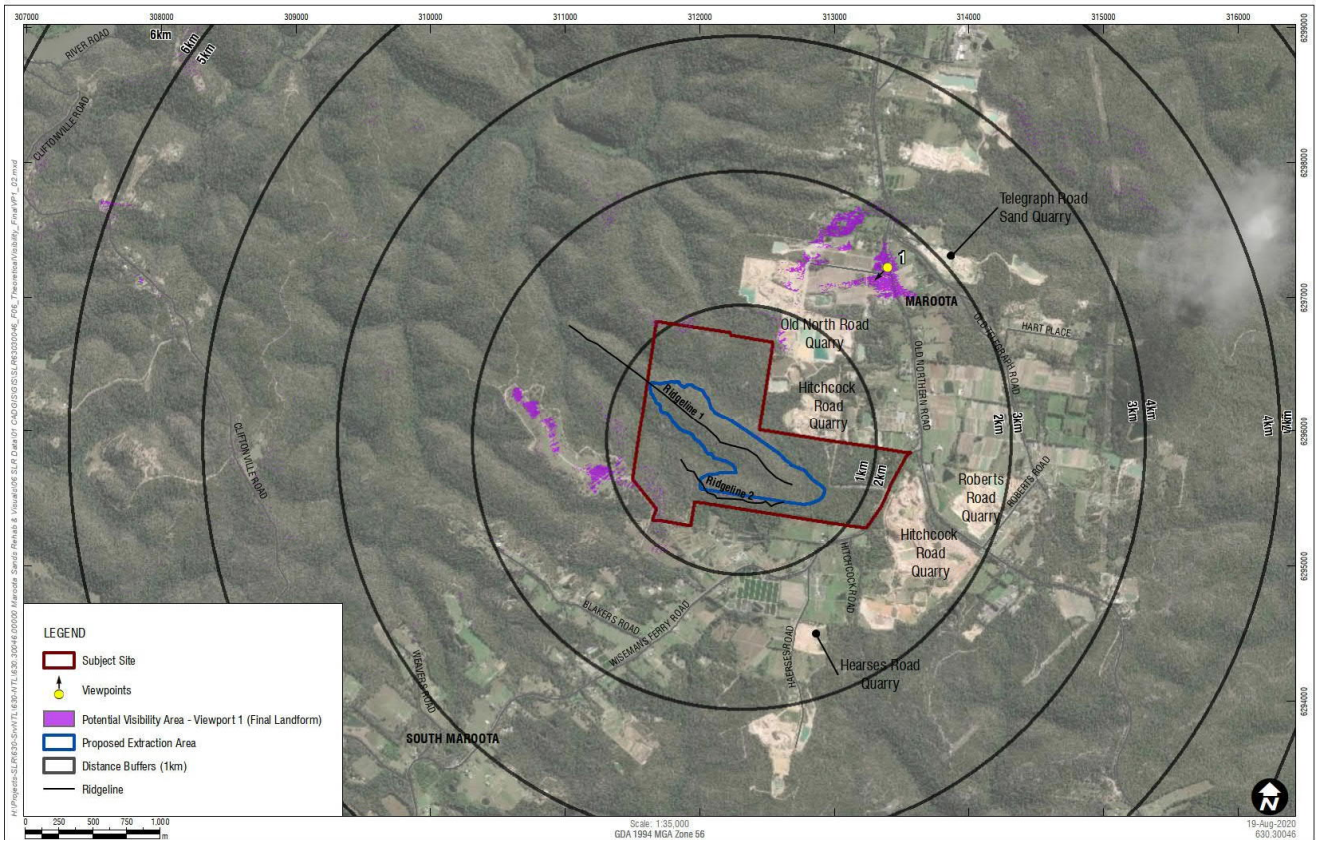
5.8 Summary of Potential Landscape Character Impacts

The following sheets summarise the assessment of impacts on each of the identified visual receptor groups. As proposed earlier, five representative viewpoints were identified, not necessarily representing each of the receptor groups. The reason for this is that a number of views from privately owned residences (homes) or workplaces (agricultural structures or buildings) were either not able to be accessed or did not include viable views. Due to the perceived impact of the proposed development, the distances from the site, presence of topographic and vegetated features and the limited views from publicly accessible areas, the choice of viable views was limited. The following sheets describe and rate the sensitivity of each receptor, the nature and magnitude of impacts likely to occur and the resultant significance of impacts for each receptor.

Photos from each receptor are provided and where possible, photomontages prepared to show how the proposed landfill extension will be perceived from that particular receptor and mitigation measures included where appropriate.

5.8.1 Viewpoint 1

Figure 13 Zone of Theoretical Visibility for Viewpoint 1 (VP1)



Receptor VP1 (Old Northern Road) – Photomontage Images

Image 1 - VP1, Existing View from Receptor 1

Image 2 - VP1, Proposed Rehabilitation Works as viewed from Receptor 1

(Refer Attachment A for A3 Images)

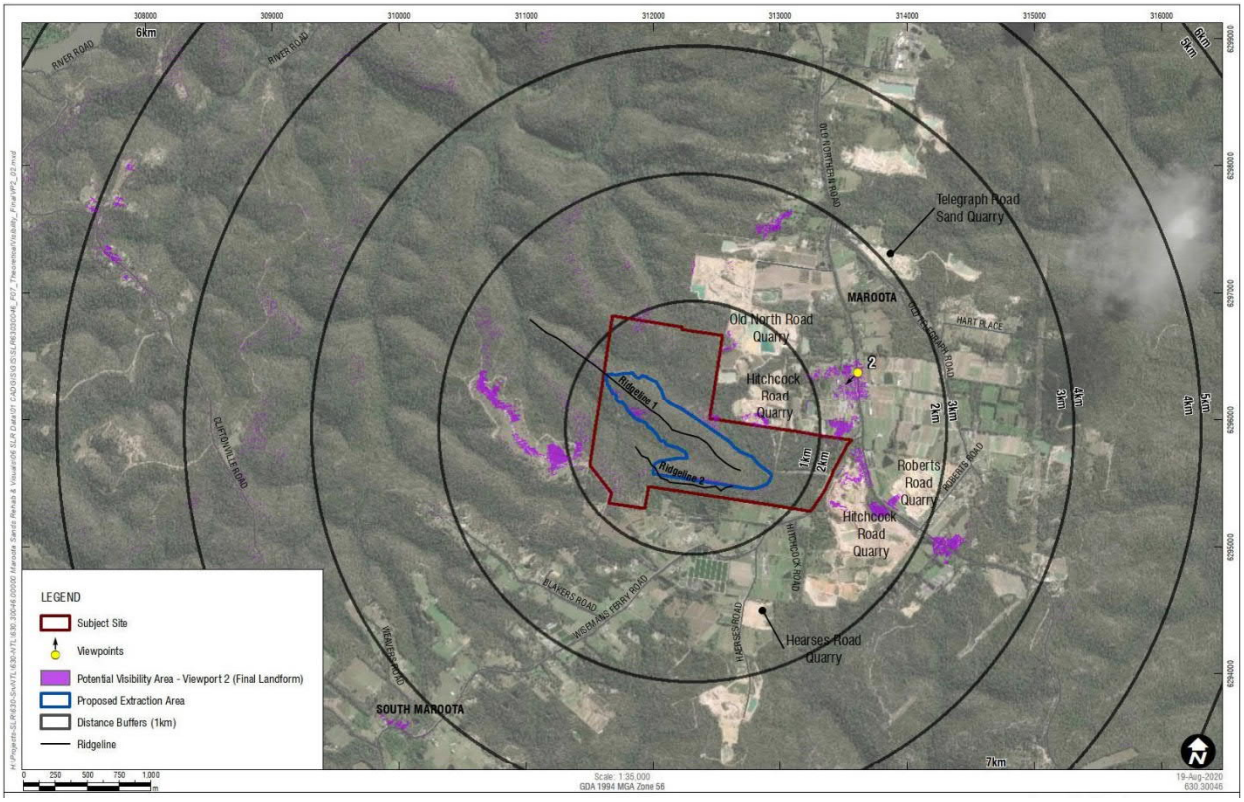
Receptor VP1 - Summary of Visual Impact Assessment

Receptor - VP1	Summary of Visual Impact Assessment
Receptor Location	Old Northern Road – travelling southbound approx. 1.8km north of the sites access road (views to the south west). Receptor is described as vehicular users/ travellers using a public road. Coordinate Location: Latitude 33° 26' 53.59" S, Longitude 150° 59' 32.45"E
Visual Baseline Description	- Views/ glimpses southwest travelling south along Old Northern Road. - Represents typical views of travelers/ road users in vehicles. - Views in the foreground are typically open, very gently undulating, rural land with patches of vegetation evident in both foreground and middle ground. The background typical highly vegetated with glimpses of existing Old North Road Quarry and Hitchcock Road Quarry. - Views of the subject site and proposed works are moderately visible in the mid-ground showing a heavily vegetated ridgeline. Agricultural land in the foreground and the trees along boundary are the most prominent landscape elements in the view. - Glimpses of existing extraction sites are visible as yellow exposed earth against the typically green backdrop of the surrounding vegetation (Ridgeline 1) particularly on the subject site.
Sensitivity Rating	- This viewpoint represents the visual experience travelling at approximately 60-80km/h southbound along Old Northern Road. At this point about 1.6km northeast of the site the viewport represents the public receptor furthest from the site. From here the road continues towards the Maroota township where views into the subject site are generally perceived as a green backdrop to the more prominent rural landscape in the foreground. Although travelling south, the vegetation on the rural properties north of the site is sparse, the canopy cover still prevents open and clear views of the site to the public. However, the openness of the landscape towards the site generally for a stretch of approximately 400m does identify the site within the views. Local topographic undulations combined with the vegetation further obstruct views to the site either side of this area.

	- Views of the rural landscape and vegetated undulating hills are typical of the local character in the region. The viewpoint shows rural land in the foreground with natural forested areas in the middle and background. - Although Old Northern Road is not a scenic route, travelers/ commuters are offered quality views of the rural countryside and the surrounding natural bushland. - At 60- 80km/h any views are expected to be generally short term (few seconds and at this distance). As a sealed state classification road, a moderate number of vehicles would travel along it during the day. This would include local residents, heavy vehicles servicing the local industries (including extractive industries). - In general, this viewpoint provides encumbered views of the northern ridgeline (ridgeline 1) located within the subject site, which the receptor could perceive to be a minor landscape element at this point - The overall sensitivity of the receptors at this viewpoint would be Medium
Impact Magnitude Rating	- The existing vegetated character of the subject site is moderately visible from this viewpoint. The subject site is part of a broader surrounding vegetated area that forms the landscape character from this location. - The subject site from this viewpoint transitions into the lower lying bushland areas to the west around the Hawkesbury River. - The subject site is not of significance (National Park or State Forest) within the local context but plays a role in forming the vegetated backdrop character typical of the region. - From this viewpoint the broad range of land uses typical of Maroota is visible (mining, rural, bushland and pastoral landscapes), although the open foreground of the rural landscape enables the vegetated ridgelines of the site to partially define or terminate this view. It is noted that the subject site adjoins an existing mining use that is visible from this viewpoint, making the impact of change on the subject site less noticeable within the surrounding context. - As the views from this location encompass a range of natural, agricultural and disturbed landscapes it could be considered to have a high degree of resilience to change. This would be demonstrated in the removal of the visible ridgeline exposing another vegetated ridgeline in the background. However, as the natural bushland character of the site complements the views to the west of the broader vegetated Hawkesbury Region, there is a visual link and changes on the subject site would still be noticed, especially if the landscape tones and colours varied from the surrounding bushland. - Generally, the elements of the proposed works which consist mainly of removal of site vegetation and excavation of the ridgeline will be perceived as a perceptible change from this viewpoint and appear to contrast with the existing landscape character (colours, textures, forms). - The Impact Magnitude Rating for this receptor would be Low.
Impact Significance	The impact of significance for receptors at this viewpoint would be considered Minor-Moderate.
Mitigation Measures	Mitigation measures recommended would be to seed/ plant the batters of the exposed new landfill works to reduce the impact (degree of variation) on the surrounding landscape. This should occur on a staged basis as the works stage is completed. As the stage 4 and 5 works are likely to occur later in the life of the project then initial impacts from this viewpoint will be negligible.

5.8.2 Viewpoint 2

Figure 14 Zone of Theoretical Visibility from Viewpoint 2



Receptor VP2 (Old Northern Road) – Photomontage Images

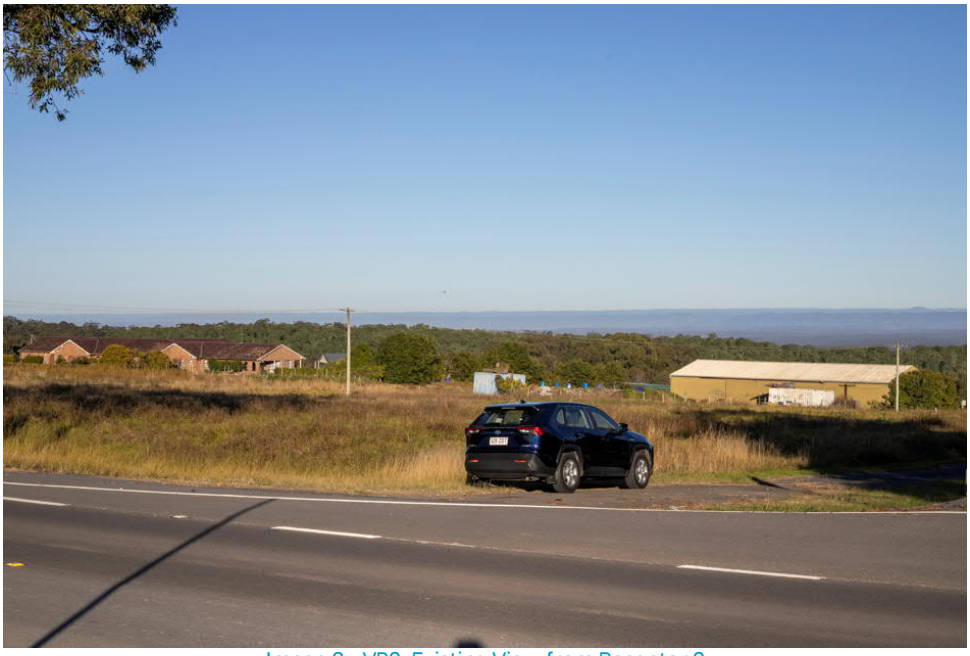


Image 3 - VP2, Existing View from Receptor 2

Image 4 - VP2, Proposed Rehabilitation Works as viewed from Receptor 2

(Refer Attachment A for A3 Images)

Receptor VP2 - Summary of Visual Impact Assessment

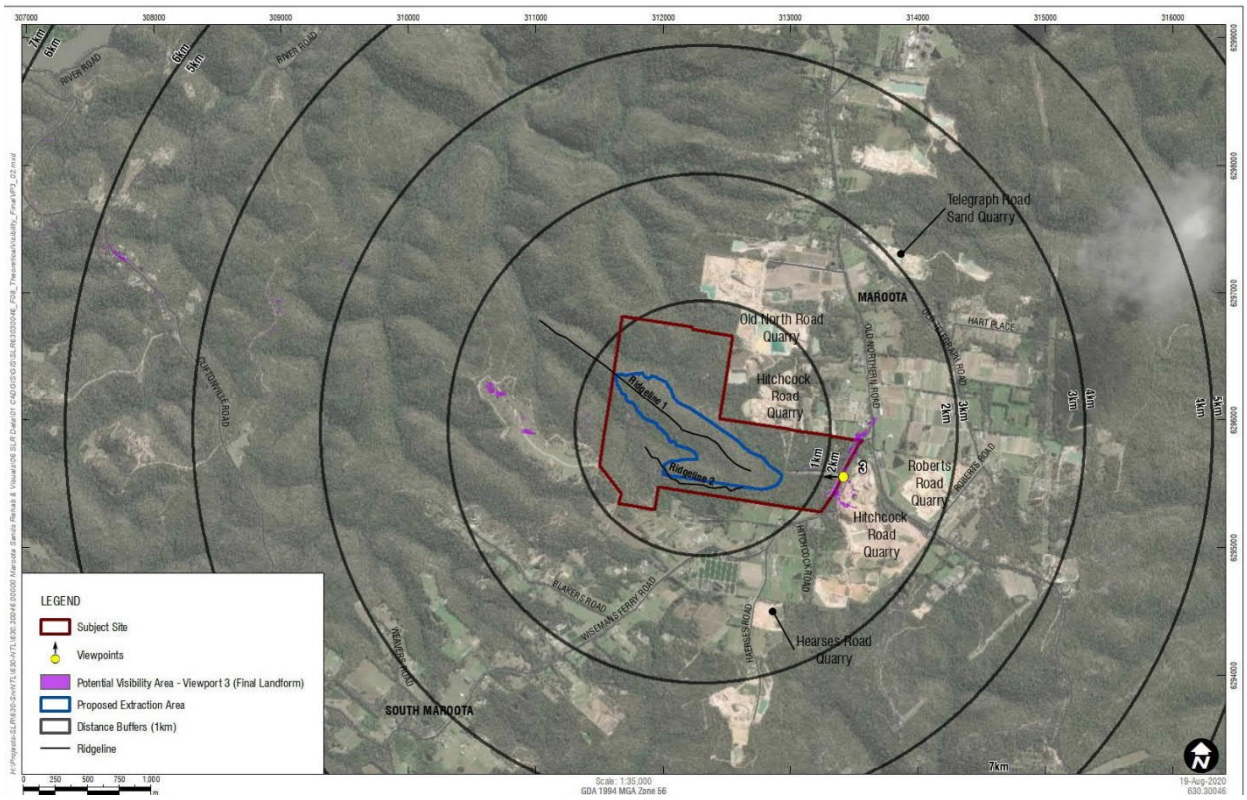
Receptor - VP2	Summary of Visual Impact Assessment
Receptor Location	Old Northern Road – travelling south approx. 1 km north of the sites access road, and opposite Maroota State School. Receptor is described as vehicular users/ travellers using a public road. Pedestrians can also be included in this receptor group especially during peak school times. Coordinate Location: Latitude 33° 27' 21.04" S, Longitude 150° 59' 40.15" E
Visual Baseline Description	- Views southwest as users travel south along Old Northern Road. Views are predominantly rural in character. - Represents typical views of travelers/ road users in vehicles, limited numbers of local residents and pedestrians near to the school. - The foreground typically open, gently sloping, rural land with two built forms (private residence and agricultural shed) present that define its visual edge. There are a number of small to medium shrubs and trees, within private property that are visible from this viewpoint. Electrical infrastructure (power poles and lines) traverse the site through private land and are visible above the structures. - Views of the subject site are considered to be located in the middle ground of the view and are moderately visible as a heavily vegetated ridgeline (ridgeline 1) that partially defines a local visual catchment. The view of the subject site is encumbered, by the built forms and vegetation in the foreground of the view. - The background offers distant views to the vegetated landscapes of the broader Hawkesbury-Nepean Catchment. Areas of urban development are not evident in the background from this viewpoint
Sensitivity Rating	- This viewpoint represents the visual experience travelling at approximately 40-60km/h southbound along Old Northern Road. At this point about 1km northeast of the site the view represents the public receptor located within the Maroota Township. Typically views of the site form this viewpoint and the adjoining areas are partially obstructed by localised

	vegetation and built form within the adjoining private properties located along the road. Unencumbered clear views of the subject site are not available. - Views of the rural landscape and vegetated undulating hills are typical of the local character in the region. The viewpoint shows rural land in the foreground with private residences, agricultural sheds and the sloping ridgeline (ridgeline 1) of the site in the middle ground. The background offers views of the heavily vegetated (bushland) rolling hills in the distance. - Although Old Northern Road is not a scenic route, travelers/ commuters are offered quality views of the rural countryside and the surrounding natural bushland. - At 40-60km/h at this point views are expected to be generally short-medium duration especially as the car slows in the school zone. However, given that the viewpoint is near to a school zone, the receptor groups' primary focus may not be on the landscape surrounds, but on the surrounding school zone. - As a sealed state classification road, a moderate number of vehicles would travel along it during the day. This would include local residents, heavy vehicles servicing the local industries (including extractive industries), commuters and visitors travelling towards the greater Sydney areas. - In general, this viewpoint provides obscured views of the vegetated ridgeline (ridgeline 1) located within the subject site, which the receptor could perceive as a backdrop to the rural property and a moderately prominent landscape element in the landscape - As Old Northern Road is not an identified scenic route but is still a Main Road, the overall sensitivity of the receptors at this viewpoint would be Medium
Impact Magnitude Rating	- The existing vegetated character of the subject site is moderately visible from this viewpoint. The subject site forms a defined (darker green) backdrop to the rural property which stands out as prominent from the broader natural landscape seen in the background. The subject site is perceived at this point as a part of a greater surrounding vegetated area that forms the landscape character from this location and helps define a natural character for the area, but is not perceived as a unique local natural element. - From this viewpoint a range of land uses is visible (residential, rural, bushland and pastoral landscapes) and the natural landscape has been altered by elements such as roads, cleared rural lands and structures. The changes proposed in the development will remove the vegetated ridgeline. Although this change can be considered as major, the existing vegetation in the foreground will be retained and revegetation will reinstate the natural character from this view. Furthermore vegetated ridgelines in the background (behind the site) would then be visible due to the earthworks and although these would not as prominent as the current vegetated ridge the natural character would continue to be viewed. Therefore, given the surrounding contextual vegetation the site would be moderately resilient to change. - Generally, the elements of the proposed works which consist mainly of removal of site vegetation and excavation of the ridgeline. This will be a perceptible vertical change in the landscape from this viewpoint and appear to contrast with the existing landscape character (colours, textures, forms) The change however would not be in the foreground of the view and therefore considered not to be highly impactful. Furthermore, the rehabilitation of the batters with endemic vegetation will ultimately result in a similar landscape character as the existing bushland views of the grassed areas visible form this viewpoint. - The Impact Magnitude Rating for this receptor would be Low.
Impact Significance	The impact of significance for receptors at this viewpoint would be considered Minor-Moderate.
Mitigation Measures	Mitigation measures as recommended in the Rehabilitation Plans are to seed/ plant the batters of the exposed new landfill works with endemic species to reduce the impact (degree of variation) on the surrounding landscape. This should occur on a staged basis as the works stage

	is completed. As the stage 4 and 5 works are likely to occur later in the life of the project then initial impacts from this viewpoint will be low.

5.8.3 Viewpoint 3

Figure 15 Zone of Theoretical Visibility from Viewpoint 3



Receptor VP3 (Wisemans Ferry Road) – Photomontage Images

Image 5 – VP3, Existing View from Receptor 3

Image 6 – VP3, Proposed Rehabilitation Works as viewed from Receptor 3

(Refer Attachment A for A3 Images)

Receptor VP3 - Summary of Visual Impact Assessment

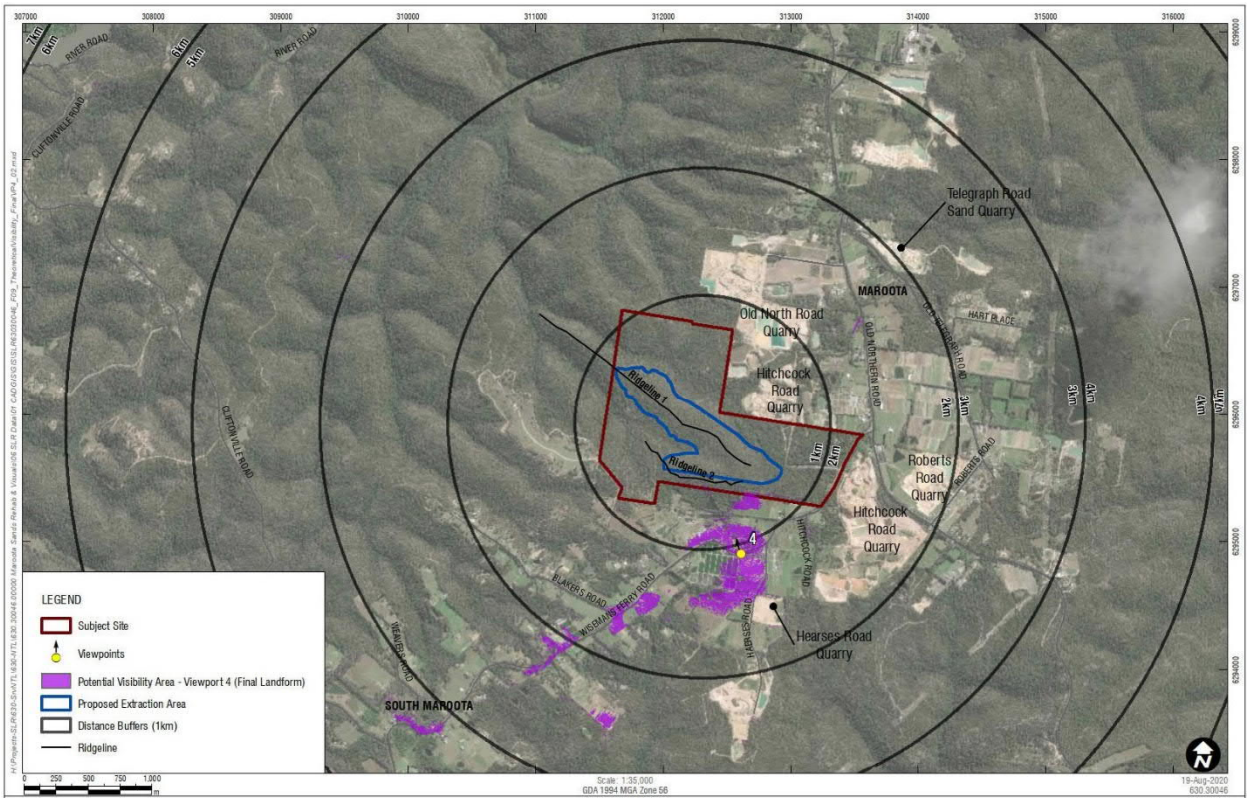
Receptor – VP3	Summary of Visual Impact Assessment
Receptor Location	Wisemans Ferry Road (View down site access road) –Wisemans Ferry Road, east of the proposed works within the subject site. Receptor is described as a public receptor when traveling along Wisemans Ferry Road (looking west). Coordinate Location: Latitude 33 °27'47.65" S, Longitude 150 °59'31.85"E

Visual Baseline Description	- Views down the site access entry road (west) looking into the subject site when travelling northbound or southbound along Wisemans Ferry Road. - Represents typical views of travelers/ road users in vehicles, particularly quarry related haulage vehicles. - The foreground is typically well vegetated with views down the sealed site access track to the greater site and beyond to the broader regional landscape. - Overhead powerline infrastructure can also be seen within the foreground travelling down into the subject site adjacent to the site access track. Road infrastructure dominates the foreground. - Views of the subject site are considered to be located in the foreground and middle ground of the view and are highly visible as a heavily vegetated bushland. The views of the subject site are unencumbered from Wisemans Ferry Road. - The background offers distant views to the vegetated landscapes of the broader Hawkesbury-Nepean Catchment with. Areas of urban development are not evident in the background from this viewpoint.
Sensitivity Rating	- This viewpoint represents the visual experience for two different receptors travelling along/ past this point. 1. Commuter/ visitor/ worker in a vehicle travelling at approximately 80km/h northbound or southbound along Wisemans Ferry Road. 2. Quarry worker in a truck or work vehicle entering the site for the purposes of extractive industry use. This receptor group would be slowing to near a stop at this point. - Views of the vegetated undulating hills are typical of the local character in the region. The viewpoint shows views of these vegetated hills in the foreground, middle ground and background. The foreground of the viewpoint is dominated by the heavily vegetated eastern bushland of the site. - For a commuter/ visitor at 80km/h any views are expected to be fleeting (few seconds) and not in the direction of the main road. As a sealed state classification road, a moderate number of vehicles would travel along it during the day. This would include local residents, heavy vehicles servicing the local industries (including extractive industries) and if passing would have limited time to appreciate or view the landscape. - For workers associated with the local quarries using this for access the visual exposure timeframes would be considered greater in length as the vehicles slowed to enter the site. There would be a greater time and more direct orientation in which to view the site and the broader landscape. However, it could also be considered that the level of interest in the landscape would be low. - In general, this viewpoint provides an encumbered view of the access track into the site and heavily vegetated bushland to the east of the subject site. - As due to Wisemans Ferry Road is not an identified scenic route the receptors will either bypass the view without a high degree of recognition or would not be focused on the overall landscape sensitivity of the receptors at this viewpoint. Therefore, the sensitivity rating would be considered as Low
Impact Magnitude Rating	- The existing vegetated character of the subject site is highly visible from this viewpoint. With the subject site forming the main vegetated character typical of the region. - Although views of the greater Hawkesbury-Nepean Catchment's vegetated hills (bushland) are visible they are heavily obstructed by vegetation in the foreground and mid ground. - The subject site is not a National Park or State Forest within the local context but plays a role in forming the vegetated backdrop character typical of the region. - As the works do not propose to remove vegetation from the eastern side of the site (visible area in viewpoint), the vegetation from this point to the eastern boundary would be

	maintained. As this is a prominent area of vegetation from this viewpoint it would therefore be assumed that the works would generally be visible from this location as they would not be hidden behind the existing retained vegetation on the alignment of the internal road. - The Impact Magnitude Rating for this receptor would be Low.
Impact Significance	The impact of significance for receptors at this viewpoint would be considered Minor
Mitigation Measures	Mitigation measures would not generally be considered necessary due to it Minor impact for this receptor. Mitigation measures recommended would be to seed/ plant the batters of the exposed new landfill works to reduce the impact (degree of variation) on the surrounding landscape. The rehabilitation of the extracted areas with grass for a rural appearance would therefore alter the appearance of the landscape. The importance of retaining any vegetation on the site outside of the works is important in softening the impact of this change.

5.8.4 Viewpoint 4

Figure 16 Zone of Theoretical Visibility from Viewpoint 4



Receptor VP4 (Wisemans Ferry Road) – Photomontage Images

Image 7 – VP4, Existing View from Receptor 4

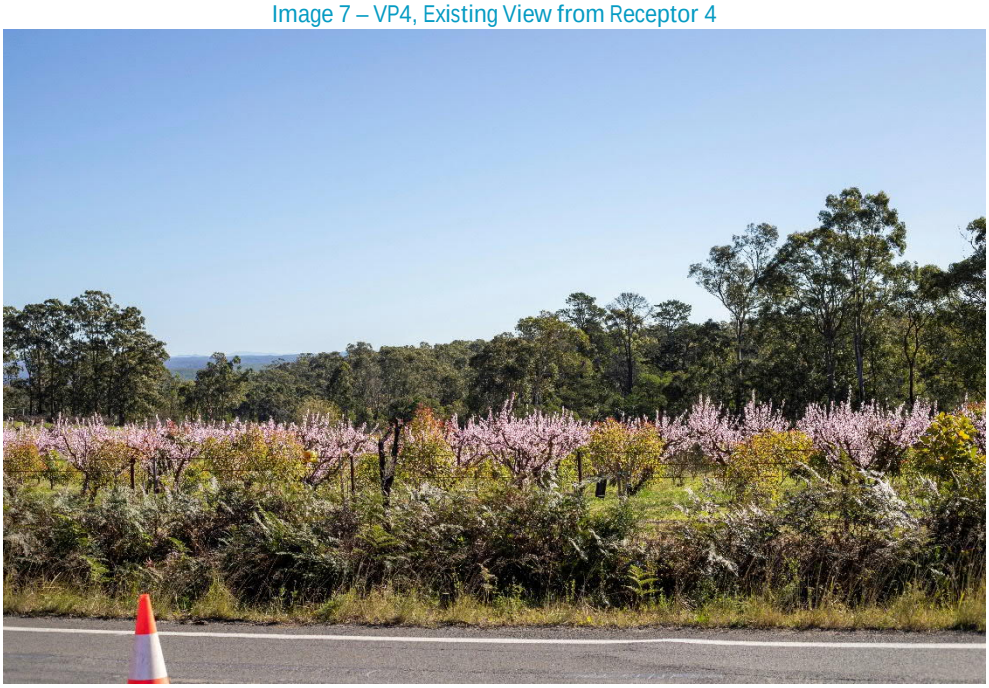


Image 8 – VP4, Proposed Rehabilitation Works as viewed from Receptor 4

(Refer Attachment A for A3 Images)

Receptor VP4 - Summary of Visual Impact Assessment

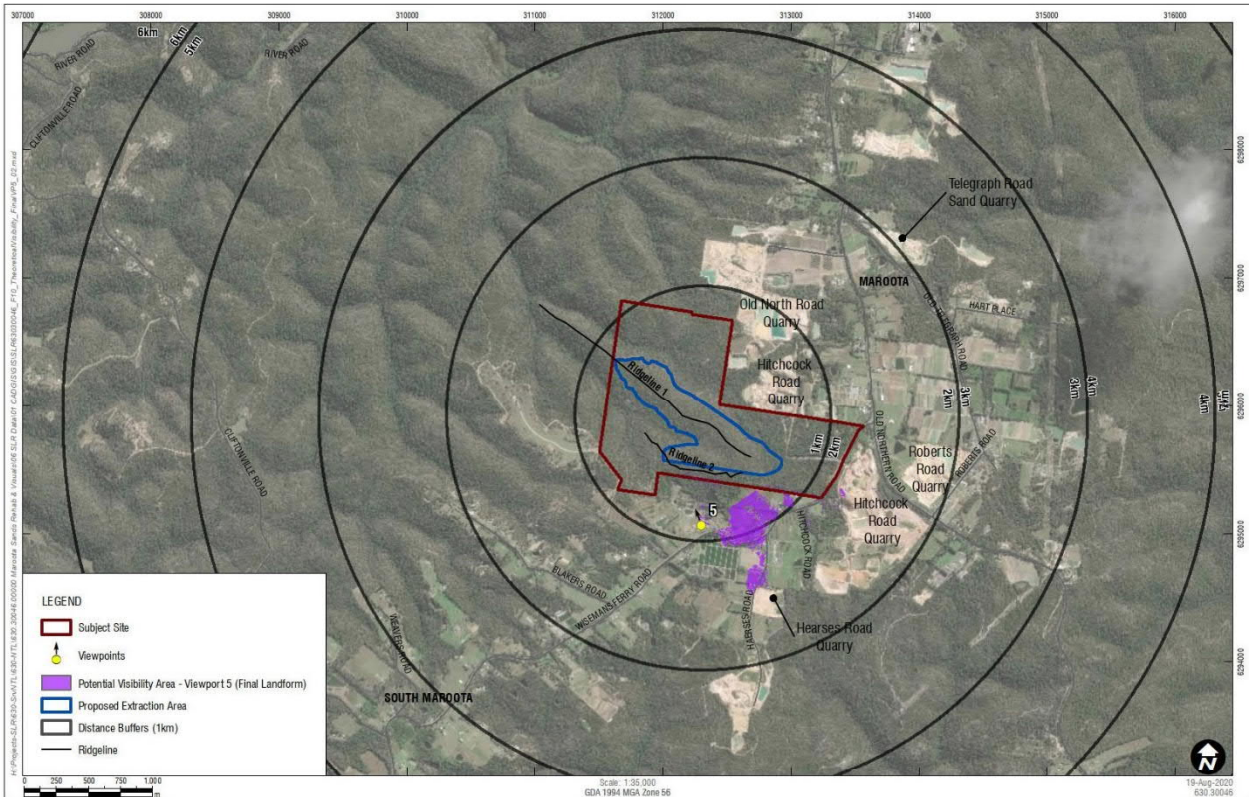
Receptor – VP4	Summary of Visual Impact Assessment
Receptor Location	Wisemans Ferry Road – travelling north or south approximately 1km south of the subject site's the sites access road (views to the north west). Receptor is described as vehicular users/ travellers using a public road

	Coordinate Location: Latitude 33° 28' 8.09" S, Longitude 150° 59' 0.26" E
Visual Baseline Description	- Views northwest as the users travels south along Wisemans Ferry Road. - Represents typical views of commuters, visitors, workers using the road in vehicles. - The foreground is dominated by agricultural uses showing produce and crops behind informal low regrowth along the verge (bracken/ ferns). - The middle ground shows the vegetated ridgeline of the subject site and the stands of mature trees located within the adjoining private property that is largely open in character. - The background shows glimpses of the broader vegetated Hawesbury-Nepean Catchment region to the west. - Views of the subject site and proposed works are moderately visible through the middle ground stands of mature vegetation showing a heavily vegetated ridgeline (ridgeline 2). The view of the subject site is encumbered by the vegetation seen in the foreground and middle ground from this viewpoint.
Sensitivity Rating	- This viewpoint represents the visual experience travelling in a vehicle at approximately 60-80km/h southbound along Wisemans Ferry Road. At this point about 1km southwest of the site the viewport represents a public receptor group such as drivers/ users of vehicles. From this location the road continues north towards the Maroota township and south towards the greater Sydney area. Views of the site become increasingly less visible traveling south away from this viewpoint and marginally increase in visibility traveling north (east side of the site), towards the access road into the site. - Views of the subject site along Wisemans Ferry Road are typically encumbered by road reserve (roadside) vegetation and localized road cut batters which forms a screen (hedge form) along the road. Views are further obstructed by agricultural plantings (shrubs and trees) and patches of retained existing bushland (trees) on private properties. - To the user traveling along Wisemans Ferry Road the site forms a prominent landscape feature within the viewshed combined with vegetation stands on private land in the middle ground vegetation. - Although Wisemans Ferry Road is not a scenic route, travelers/ commuters are offered quality views of the rural countryside and the surrounding natural bushland. - At 60-80km/h any views are expected to be generally short term (few seconds and at this distance). As a sealed state classification road, a moderate number of vehicles would travel along it during the day. This would include local residents, heavy vehicles servicing the local industries (including extractive industries) and visitors to the region. - In general, this viewpoint provides views of the vegetated site (ridgeline 2) that are partially screened. Although the mid ground vegetation visually combines with that of the site to provide a prominent landscape feature at this point, these stands do offer a greater sense of height and presence to the vegetation on site. Should this be removed, it could be reasonably assumed that the horizontal form of the site vegetation would not only be more visible but more prominent. - It is considered that the overall sensitivity of the receptors at this viewpoint would be Medium
Impact Magnitude Rating	- The existing vegetated character of the subject site is highly visible from this viewpoint. It is however enhanced by the stands of mature vegetation on the adjoining private land between the site and the viewer. - Although views of the greater Hawkesbury-Nepean Catchment regions' vegetated hills (bushland) are visible they are heavily obstructed by vegetation in the foreground and mid ground. - The subject site is not a National Park or State Forest within the local context but plays a role in forming the vegetated backdrop character typical of the region.

	- As the works propose to remove vegetation from the top of ridgeline 2 towards the north, the vegetation from this point to the southern boundary would be largely maintained. The ridgeline vegetation and appearance would remain largely intact from this viewpoint, with the exception of a few taller specimens that may be removed. - The Impact Magnitude Rating for this receptor would be Negligible.
Impact Significance	The impact of significance for receptors at this viewpoint would be considered Minor.
Mitigation Measures	Stringent protection measures to ensure the existing vegetation is not impacted or disturbed. Greater distance between the works and the retained vegetation would ensure minimised impacts on the landscape and views from this location.

5.8.5 Viewpoint 5

Figure 17 Zone of Theoretical Visibility from Viewpoint 5



Receptor VP5 (Private Residence at 1638 Wisemans Ferry Road, Maroota) – Photomontage Images

Image 9 – VP5, Existing View from Receptor 5

Image 10 – VP5, Proposed Rehabilitation Works as viewed from Receptor 5

(Refer Attachment A for A3 Images)

Receptor VP5 - Summary of Visual Impact Assessment

Receptor – VP5	Summary of Visual Impact Assessment
Receptor Location	Private Residence at 1638 Wisemans Ferry Road, Maroota – Accessed off Wisemans Ferry Road south of the subject site. Views north west to site as stationary observer/ resident of the property. Receptor is described as private users/ resident accessing property and viewing from existing and future dwelling. Coordinate Location: Latitude 33 °28'2.75" S, Longitude 150 °58'48.25" E

Visual Baseline Description	- Views northwest from private residence (stationary view) . - The foreground is typical open rural landscape, with shrub planting (productive vegetation), rural structure and dam. Plantings range from low to scattered existing mature trees in the foreground on the property. - The middle ground is considered to be the vegetated ridgeline of the subject site to the mid and northern part of the view looking west. - The background is dominated by the broader Hawkesbury-Nepean Catchment region which is heavily vegetated and demonstrates the typical landform undulations of the region. - The typography typically falls away from the viewpoint towards to west with this viewpoint being a prominent vantage point (highpoint) on the private land. Although the land is predominantly rural, the natural landscape on site and behind it is the most prominent landscape character type visible from this viewpoint.
Sensitivity Rating	- This viewpoint represents the visual experience from a private residence where the view is typically stationary. At this point about 400m from the southern subject site boundary the viewport represents a private receptor in close proximity to the subject site. From here views of the subject site are limited to ridgeline 2 but are the landscape is dominated by the elevated vegetation within the subject site and that on the lower parts of ridge 2 on the adjoining private property between the site and the private receptor point. - Views of the subject site are typically unencumbered by individual or small groups of mature vegetation (retained bushland) and built form (rural sheds and residential buildings), located on the private resident's property. However, the visible vegetation on the adjoining property to the south of the subject site extends approximately halfway up the ridgeline but forms part of the overall visible ridge as viewed from this location. - The viewpoint is typical of a view located from the future residential dwelling (residence) located on the property that was under construction at the time of the site inspection in July 2020. - To the private receptor, the vegetated ridgeline (ridgeline 2) on the subject site forms a prominent feature leading the eye to the vegetated rolling hills beyond in the Hawkesbury-Nepean Catchment region. - Duration of views from this viewpoint are expected to be long term but as with most private receptors a small number of viewers will be affected. This viewpoint is not publicly accessible. - In general, this viewpoint provides an unencumbered view of the subject site (ridgeline 2), which the receptor would perceive as a dominate landscape element within the broader visual context. - The overall sensitivity of the receptors at this viewpoint would be Medium.
Impact Magnitude Rating	- The existing vegetated character of the subject site is highly visible from this viewpoint. With the subject site forming the main vegetated ridgeline (ridgeline 2) character typical of the region. - Although views of the greater Hawkesbury-Nepean Catchment's vegetated hills (bushland) are visible they are heavily obstructed by vegetation in the foreground and mid ground. - The subject site is not of significance (National Park or State Forest) within the local context but plays a role in forming the vegetated backdrop character typical of the region. - From this viewpoint the existing open rural land uses outside of the existing natural vegetation (bushland) is moderately visible (residential, agricultural and pastoral landscapes) due to the slope of the land away from the road. The vegetation is the most prominent element in the landscape from this view and any perceptible change will result in impacts to visual landscape. - As the works propose to remove vegetation from the top of ridgeline 2 towards the north, the vegetation from this point to the southern boundary would be maintained. As this is a

	prominent area of vegetation from this viewpoint it would therefore be assumed that the works would generally not be visible from this location as they would be hidden behind the existing retained vegetation. This includes the temporary infrastructure and structures - The Impact Magnitude Rating for this receptor would be Low.
Impact Significance	The impact of significance for receptors at this viewpoint would be considered Minor-Moderate.
Mitigation Measures	Stringent protection measures to ensure the existing vegetation is not impacted or disturbed. Greater distance between the works and the retained vegetation would ensure minimised impacts on the landscape and views from this location

6 Mitigation Measures

As described in the Summary of Visual Assessments for each of the five receptors the following criteria outlined below would suggest that mitigation measures required to screen the works would be minimal.

- the nature and location of the proposed extraction works.
- the screening of the site works by existing retained vegetation and landform to the periphery of the site.
- Screening of the site works by existing vegetation, landform and land uses external to the site.
- the limited viewing/ exposure time from the chosen viewpoints.

The proposed rehabilitation works on the final batters and buffers within the site will assist in mitigating the effects of the earthworks. It could be reasonably assumed that revegetation would screen the future agricultural lands and minimise any difference in appearance with the natural surrounding vegetation.

The height and extent of the development in relation to the scale of surrounding vegetation means that change in visibility will be minimal as identified from the nominated viewpoints. The importance however must be placed on retaining and protecting the maximum amount existing vegetation particularly on those ridges and elevated positions that are not subject to extraction or excavation.

7 Summary of Assessment

The Visual Impact Assessment was undertaken to provide an objective appraisal of the likely extent and magnitude of impacts on the landscape and visual environment from the proposed Friable Sandstone Extraction Industry located at Maroota.

The Visual Impact Assessment forms part of the overall EIS for the approval of the Project and will inform ongoing planning and design for the proposed project.

The visual environment for the subject site and surrounding area is largely characterised by undulating natural bushland, that surrounds a mosaic of open rural land uses (agricultural and pastoral) and exposed extractive industries in the near vicinity of the site. The naturally vegetated ridges and gullies forming the eroded landscapes of the areas surrounding the Hawkesbury River are visually distinctive and are the most prominent landscape type in the region. Although the majority of the rural landscape around the site has been cleared of vegetation, the remaining stands along boundary lines and roads, break up the visual landscape and compartmentalise views that, in most cases are short to medium in nature.

Although the works could be considered as major with regard to disturbance to the existing baseline conditions on site, its visual impacts on the community and surrounding areas (especially from those nominated viewpoints) was identified as potentially Minor.

The assessment identified that in all 5 viewpoints the receptor sensitivity was rated as Medium or low. This resulted from the receptor points being located largely along either Wisemans Ferry Road or Old Northern Road which is are main roads and the major source of traffic movement through Maroota. This was considered to reflect the available public views to the site which could be seen mainly from these points although the duration of views was considered to be quite short.

With regard to the magnitude of change, this was considered overall to be low due to the works being relatively hidden by adjoining vegetation and landform that would remain unaffected by the works.

Table 4 provides a summary of the visual assessment for the proposed Landfill Works outlining the following points.

Table 4 Summary of Visual Impact Ratings for each Receptor

Receptor	Receptor Sensitivity	Magnitude of Change	Effect Significance
VP1	Medium	Low	Minor-Moderate
VP2	Medium	Low	Minor-Moderate
VP3	Low	Low	Minor
VP4	Medium	Negligible	Minor
VP5	Medium	Low	Minor-Negligible

In summary:

- Five (5) receptors were chosen and due to the limited number of public receptors these were intentionally selected because they represented the best available views to the site. The sensitivity of all five receptors was rated between Medium and Low.
- Impact Magnitude Rating was given for the chosen viewpoints. For all views/receptors the visibility of the proposed works was rated between Medium and Negligible due to the subject site's existing vegetation cover, degree of change created by the works and the varying levels of visual impacts on the surrounding landscape.

Based on the appraisal and findings of this Visual Impact Assessment it can be considered that the proposed Landfill Expansion Works would have a Minor-Moderate effect on the existing landscape character and values as well as its local context.

Local visual amenity of the area should be maintained as the Project would have minimal impact for most of the local community.

8 References

The Landscape Institute and the Institute for Environmental Management and Assessment, 2013, Guidelines for Landscape and Visual Impact Assessment, Third Edition. Routledge, Oxon.

Photomontage Images

Image 1 – VP1, Existing View from Receptor 1
Image 2 – VP1, Proposed Rehabilitated Works as viewed from Receptor 1
Image 3 – VP2, Existing View from Receptor 2
Image 4 – VP2, Proposed Rehabilitated Works as viewed from Receptor 2
Image 5 – VP3, Existing View from Receptor 3
Image 6 – VP3, Proposed Rehabilitated Works as viewed from Receptor 3
Image 7 – VP4, Existing View from Receptor 4
Image 8 – VP4, Proposed Rehabilitated Works as viewed from Receptor 4
Image 9 – VP5, Existing View from Receptor 5
Image 10 – VP5, Proposed Rehabilitated Works as viewed from Receptor 5

Sheet Size : A3

SLR

www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°26'53.60" S
LONGITUDE: Longitude 150 °59'32.46"E
ALTITUDE: 202.50m
CAMERA: Canon EOS 6D Mark II

FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 8:11 AM

Maroota Sands Ammenity Assesment
Photomontage Images

Image 1 - VP1, Existing View from Receptor

Note: Future works are indicative only

Sheet Size : A3

SLR

www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°26'53.60" S
LONGITUDE: Longitude 150 °59'32.46"E
ALTITUDE: 202.50m
CAMERA: Nikon DEOS 6D Mark II

FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 8:11 AM

Maroota Sands Ammenity Assesment
Photomontage Images

Image 2 - VP2, Proposed Rehabilitation Works as viewed from the Receptor

Sheet Size : A3

SLR

www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°27'21.04" S
LONGITUDE: Longitude 150 °59'40.16"E
ALTITUDE: 223.40m
CAMERA: Canon EOS 6D Mark II

FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 8:18 AM

Maroota Sands Ammenity Assesment
Photomontage Images

Image 3 - VP2, Existing View from Receptor

Note: Future works are indicative only

Sheet Size : A3

SLR

www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°27'21.04" S
LONGITUDE: Longitude 150 °59'40.16"E
ALTITUDE: 223.40m
CAMERA: Canon EOS 6D Mark II
FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 8:18 AM

Maroota Sands Ammenity Assesment
Photomontage Images

Image 4 - VP2, Proposed Rehabilitation Works as viewed from the Receptor

Sheet Size : A3

SLR

www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°27'47.65" S
LONGITUDE: Longitude 150 °59'31.85"E
ALTITUDE: 210.50m
CAMERA: Canon EOS 6D Mark II

FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 9:08 AM

Maroota Sands Ammenity Assesment
Photomontage Images

Image 5 - VP3, Existing View from Receptor

Note: Future works are indicative only

Sheet Size : A3

SLR
www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°27'47.65" S
LONGITUDE: Longitude 150 °59'31.85"E
ALTITUDE: 210.50m
CAMERA: Canon EOS 6D Mark II

FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 8:29 AM

Maroota Sands Ammenity Assesment
Photomontage Images

Image 6 - VP3, Proposed Rehabilitation Works as viewed from the Receptor

Sheet Size : A3

SLR

www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°28’8.09” S
LONGITUDE: Longitude 150 °59’0.26”E
ALTITUDE: 191.30m
CAMERA: Canon EOS 6D Mark II

FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 10:38 AM

Maroota Sands Ammenity Assesment
Photomontage Images

Image 7 - VP4, Existing View from Receptor

Note: Future works are indicative only

Sheet Size : A3

SLR

www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°28’8.09” S
LONGITUDE: Longitude 150 °59’0.26”E
ALTITUDE: 191.30m
CAMERA: Canon EOS 6D Mark II

FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 10:38 AM

Maroota Sands Ammenity Assesment Photomontage Images

Image 8 - VP4, Proposed Rehabilitation Works as viewed from the Receptor

Sheet Size : A3

SLR

www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°28’2.75” S
LONGITUDE: Longitude 150 °58’48.25”E
ALTITUDE: 185.30m
CAMERA: Canon EOS 6D Mark II

FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 9:29 AM

Maroota Sands Ammenity Assesment Photomontage Images

Image 9 - VP5, Existing View from Receptor

Note: Future works are indicative only

Sheet Size : A3

SLR

www.slrconsultingaustralia.com.au PH: 61 7 3858 4800

PHOTO METADATA

LATITUDE: Latitude 33°28'2.75" S
LONGITUDE: Longitude 150 °58'48.25"E
ALTITUDE: 185.30m
CAMERA: Canon EOS 6D Mark II

FOCAL LENGTH: 50mm
DATE: 21/07/2020
TIME: 9:29 AM

Maroota Sands Ammenity Assesment
Photomontage Images

Image 10 - VP5, Proposed Rehabilitation Works as viewed from the Receptor

ASIA PACIFIC OFFICES

BRISBANE
Level 2, 15 Astor Terrace
Spring Hill QLD 4000
Australia
T: +61 7 3858 4800
F: +61 7 3858 4801

CANBERRA
GPO 410
Canberra ACT 2600
Australia
T: +61 2 6287 0800
F: +61 2 9427 8200

DARWIN
5 Foelsche Street
Darwin NT 0800
Australia
T: +61 8 8998 0100
F: +61 2 9427 8200

MACKAY
21 River Street
Mackay QLD 4740
Australia
T: +61 7 3181 3300

MELBOURNE
Suite 2, 2 Domville Avenue
Hawthorn VIC 3122
Australia
T: +61 3 9249 9400
F: +61 3 9249 9499

NEWCASTLE
10 Kings Road
New Lambton NSW 2305
Australia
T: +61 2 4037 3200
F: +61 2 4037 3201

PERTH
589 Hay Street
Jolimont WA 6014
Australia
T: +61 8 9422 5900
F: +61 8 9422 5901

ROCKHAMPTON
rockhampton@slrconsulting.com
M: +61 407 810 417

SYDNEY
2 Lincoln Street
Lane Cove NSW 2066
Australia
T: +61 2 9427 8100
F: +61 2 9427 8200

TAMWORTH
PO Box 11034
Tamworth NSW 2340
Australia
M: +61 408 474 248
F: +61 2 9427 8200

TOWNSVILLE
Level 1, 514 Sturt Street
Townsville QLD 4810
Australia
T: +61 7 4722 8000
F: +61 7 4722 8001

AUCKLAND
68 Beach Road
Auckland 1010
New Zealand
T: +64 27 441 7849

NELSON
5 Duncan Street
Port Nelson 7010
New Zealand
T: +64 274 898 628

NEW PLYMOUTH
Level 2, 10 Devon Street East
New Plymouth 4310
New Zealand
T: +64 0800 757 695