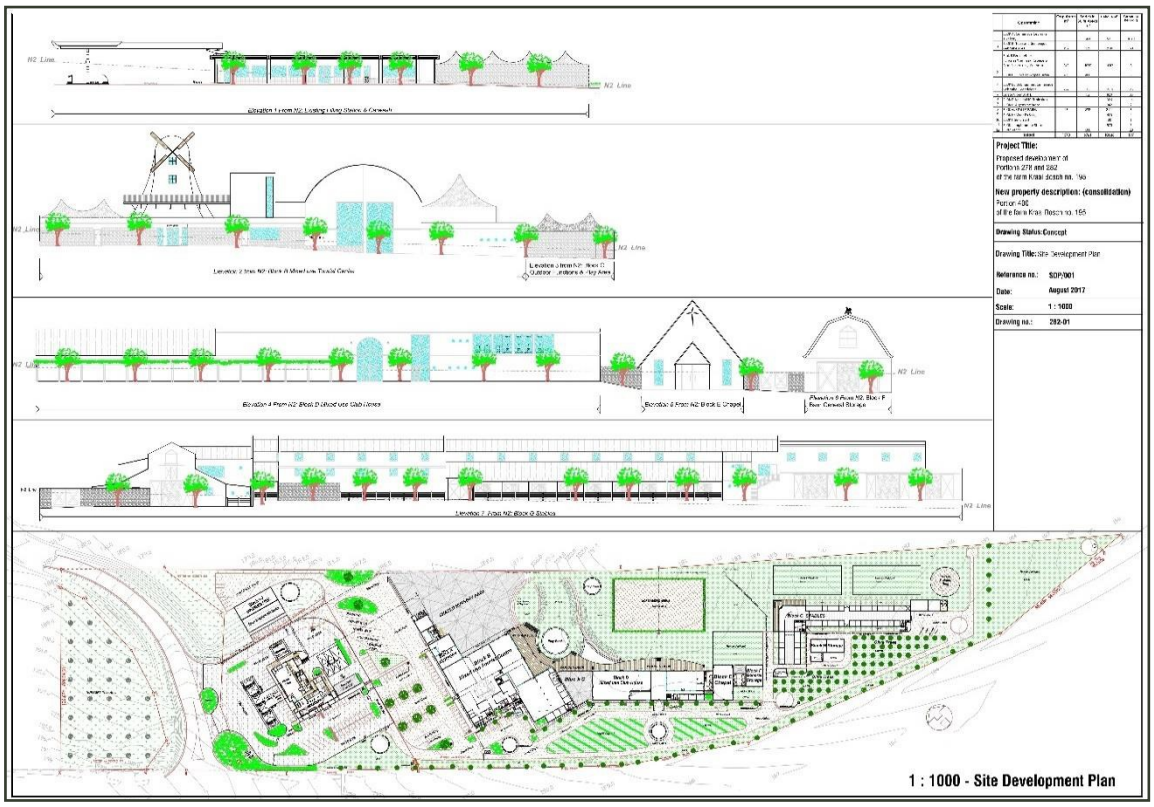

Report:

Visual impact assessment report for the proposed development of portions 278 and 282 of the farm Kraaibosch 195, George

Reference: GR092020

Prepared for: Sharples Environmental Services CC

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Report details

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CONTENTS:

Figures

Tables

No table of figures entries found.

Annexures

No Annexures

GLOSSARY

Aesthetics	Relates to the pleasurable characteristics of a physical environment as perceived through the five senses of sight, sound, smell, taste, and touch.
Adverse visual impact	Any modification in landforms, water bodies, vegetation or any introduction of structures which negatively impacts the visual character of the landscape and disrupts the harmony of the basic elements (i.e. form, line, colour and texture).
Basic elements	The four design elements (form, line, colour and texture) which determine how the character of a landscape is perceived.
Contrast	Opposition or unlikeness of different forms, lines, colours or textures in a landscape and therefore the degree to which project components visually differs from its landscape setting.
Colour	The property of reflecting light of a particular intensity and wavelength (or a mixture of wavelengths) to which the eye is sensitive. It is the major visual property of surfaces.
Form	The mass or shape of an object(s) which appears unified, such as a vegetative opening in a forest, a cliff formation or a water tank.
Integration	The degree to which a development component can be blended into the existing landscape without necessarily being screened from view.
Interfluve	The area of higherground which separates two rivers/watercourses which flow into the same drainage system
Key viewing locations	One or more points on a travel route, use area or a potential use area, where the view of a management activity would be most revealing.
Landscape character	The arrangement of a particular landscape as formed by the variety and intensity of the landscape features and the four basic elements of form, line, colour and texture. These factors give the area a distinctive quality which distinguishes it from its immediate surroundings.
Landscape features	Land and water form, vegetation and structures which compose the characteristic landscape.
Line	The path (real or imagined) that the eye follows when perceiving abrupt differences in form, colour or texture. Within landscapes, lines may be found as ridges, skylines, structures, changes in vegetative types or individual trees and branches.
Micro-topography	Small scale variations in the height and roughness of the ground surface; in the context of this report the definition includes structures such as buildings and larger-sized vegetation that can restrict views
Mitigation measures	Methods or procedures designed to reduce or lessen the adverse impacts caused by management activities.
Mountain, hill or ridge	Is a physical landscape feature, elevated above the surrounding landscape. It includes the foot/base, slopes and crest of the mountain, hill or ridge
Rehabilitation	A management alternative and/or practice which restores landscapes to a desired scenic quality.
Ridgelines	Ridgelines are defined as the line formed by the meeting of the tops of sloping surfaces of land. Significant ridgelines are ridgelines which, in general, are highly visible and dominate the landscape.
Scale	The proportionate size relationship between an object and the surroundings in which the object is placed.

Sense of place	The unique quality or character of a place, whether natural, rural or urban and relates to uniqueness, distinctiveness or strong identity. It is also sometimes referred to as genius loci meaning 'spirit of the place.
Texture	The visual manifestations of the interplay of light and shadow created by the variations in the surface of an object or landscape.
Visual modification	A measure of the visual interaction between a development and the landscape setting within which it is located.
Viewshed	The creation of a computer generated probable viewshed to define the extent to which the planned infrastructure is visible from key viewing locations.
Visual Sensitivity	The degree to which a change to the landscape will be perceived adversely.
Visual Impact	A measure of joint consideration of both visual sensitivity and visual modification

1. INTRODUCTION

1.1 General

Visual impact assessments should not be an obstacle in the approval process of a proposed development. Visual input, especially at the early concept stage of the project, can play an important role in helping to formulate design alternatives, as well as minimising impacts, and possibly even costs, of the project

It is in the nature of visual and scenic resources to include abstract qualities and connotations that are by their nature difficult to assess or quantify as they often have cultural or symbolic meaning. An implication of this is that impact ratings cannot simply be added together. Instead, the assessment relies on the evaluation of a wide range of considerations, both objective and subjective, including the context of the proposed project within the surrounding area.

The analysis of the interaction between the existing visual environment and the planned infrastructure provides the basis for determining visual impacts and mitigation strategies. This visual impact assessment provides an overview of the landscape character of the locality and assesses the degree to which the proposed development would be visually appropriate.

1.2 Methodology

1.2.1 The sequence of work employed in this study

A desktop survey using 1:50,000 topographical survey maps, Google Earth, and ArcMap (Esri, ArcGIS software) were undertaken. Following the desktop information gathering process, a site visit was conducted to test the conclusions of the terrain analysis, to identify receptors and appraise the local landscape.

The methodology employed by this visual assessment is based on the following methodologies:

- The United States Department of Agriculture: Forestry Service - *Landscape Aesthetics*.
- The United States Bureau of Land Management Visual Resources Management.
- The Landscape Institute and the Institute of Environmental Management & Assessment - Guidelines for Landscape and Visual Impact Assessment; and
- The Provincial Government of the Western Cape's Guideline for involving visual and aesthetic specialists in EIA processes and the Guidelines for Landscape

1.2.2 Written and drawn material was made available

- A town planning report: "*Motiveringsverslag: Vergunning en afwyking: Gedeeltes 278 en 282 van die plaas Kraaibosch 195*"

1.2.3 Receiving site

The receiving site was assessed, and areas of the locality from where the development appeared to be likely to be visible, adjacent lands, and local roads.

This study was conducted during September 2020. The weather on the days of the site visit was clear and open. A photographic survey of the site and surrounding areas was carried out.

The visual assessment was undertaken using standard criteria such as geographic view-sheds and viewing distances as well as qualitative criteria such as compatibility with the existing landscape character and settlement pattern. Potentially sensitive areas were assessed, and mitigation measures were evaluated.

1.3 Assumptions and limitations

It should be noted that the 'experiencing' of visual impacts is subjective and largely based on the perception of the viewer or receptor. The presence of a receptor in an area potentially affected by the proposed development does not thus necessarily mean that a visual impact would be experienced.

Value can be placed in a landscape in terms of its aesthetic quality, or in terms of its sense of identity or sense of place with which it is associated. If no such values are held with respect to a landscape, there is less likely to be a perception of a visual impact if the landscape becomes subject to visual alteration. Development within a landscape may not be perceived negatively at all if the development is associated with progress or upliftment of the human condition.

The perception of visual impacts is thus highly subjective and a involves 'value judgements' on behalf of the receptor. The context of the landscape character, the scenic / aesthetic value of an area, and the types of land use practised tending to affect the perception of whether landscape change (through development) would be considered an unwelcome intrusion.

The abovementioned landscape values can be interlinked, but can also be conflicting, e.g. amenity values associated with a landscape held by a certain group of people as described above may conflict with economic values associated with the market or development possibility of the landscape that is held by others. It is in this context that visual impact associated with a potential development often arises as an issue in environmental impact assessments.

1.3.1 Data

The best currently and readily available datasets were utilized for the visual impact assessment. It is important to note that variations in the quality, format and scale of available datasets could limit the scientific confidence levels of the visual impact assessment outcomes.

1.3.2 Viewshed analysis (view catchment)

Slope and aspect are very important in the context of views. Topography expressed in the form of slope and aspect can perform an important role in limiting views or 'focusing' views in a certain direction. Viewers located low down within an enclosed valley would experience a limited visual envelope or viewshed, as the rising topography around them would prevent wider views of the surrounding terrain beyond the immediate valley.

Similarly, an object placed lower down in such an enclosed valley would have a limited viewshed, being shielded or partly shielded by the terrain surrounding it. A viewer located on a hill slope with a certain aspect would only be able to view the surrounding tertian in the direction of the aspect of the slope. Conversely, a viewer on a higher-lying interfluve will be exposed to potentially wide-ranging views over the surrounding terrain, and large objects placed in these terrain settings could similarly be visible from a wide area.

The micro-topography within the landscape setting in which the viewer and object are located is also important. The presence of micro-topographical features and objects such as buildings or vegetation that would screen views from a receptor position to an object can remove any visual impact factor associated with it.

Fischer (1995) analysed the effects of data errors on viewsheds calculated by Geographic Information Systems and has shown that the calculations are extremely sensitive to small errors in the data and the resolution of the data and the errors in viewer location and elevation. Other studies have also shown that a view-shed calculated using the same data but with eight different Geographic Information Systems can produce eight different results.

Hankinson (1999) also states that view-shed are never accurate, and they contain several sources of error and may not always be feasible to separate these errors or to estimate their size and potential effects. It is, therefore, better to describe a view-shed analysis as a probable view-shed that must be subjected to subsequent field testing and verification.

A probable viewshed can be based on topography only and shows areas that will be screened by intervening hills, mountains etc. A probable topographic view-shed does not consider heterogeneous and complex natural and man-made elements in the surrounding landscape. Intervening vegetation, buildings or small variations in topography, such as road cuttings are therefore not considered.

Therefore, it is a conservative assessment of those areas that may be visually impacted by the planned infrastructure. Increasing sophistication/accuracy of the probable view-shed by the addition of data on complex natural and man-made elements in the landscape is desirable, but it will introduce further errors of detail and interpretation in the view-shed analysis.

1.3.3 Visualisation

It must be remembered that any visualisation (3D models, photomontages, photos and maps) of complex natural and man-made elements produce perceptions, interpretations and value judgements that are not always consistent with those that would be produced by actual encounters with the elements represented. Visualisations should, therefore, be considered an approximation of the three-dimensional visual experiences that an observer would receive in the field and must be subjected to subsequent field testing and verification

Photomontage is the superimposition of an image onto a photograph to create a realistic representation of proposed or potential changes to any view. The overall aim of photography and photomontage is to represent the landscape context under consideration and the proposed development, both as accurately as is practical. It must be kept in mind that the human eye sees differently than a camera lens, both optically and figuratively.

The focusing mechanisms of human eyes and camera lenses are different. Human vision is binocular, and dynamic compared to a camera that tends to flatten an image.

2. APPLICABLE POLICIES AND GUIDELINES

Several government policies and plans, guidelines, environmental management instruments and other decision-making instruments are relevant to the site and development and have been reviewed. These include:

2.1 The Western Cape Provincial Spatial Development Framework (PSDF)

Makes provision for:

- The protection and sustainable use of Landscape and Scenic Resources.
- The protection, management and enhancement of the provinces Sense of Place, Heritage and Cultural Landscape and Scenic Routes
-

2.2 The Heritage and Scenic Resources: Inventory and Policy Framework for the Western Cape

The report identifies the greatest threats to scenic routes and passes as the following:

- The intrusion of commercial development next to scenic routes
- Insensitive road improvements, road widenings, street furniture, lighting, etc.

These threats lead to the loss of scenic values, wilderness experience and rural character. It also states that incremental erosion by developments along scenic routes through rural landscapes should be avoided.

2.3 The George Spatial Development Framework

The George Spatial Development Framework (GSDF) states that the impact of developments on visual landscapes and corridors must be minimized.

The GSDF recognizes the following:

- Valuable view corridors, undeveloped ridgelines, cultural landscape assets and existing vistas should not be compromised by any development proposal or cumulative impact of development proposals. The proportion of urban development up the slope of prominent hill or mountain should not degrade its aesthetics/visual value.
- Developments higher than the 280m contour line or on slopes steeper than 1:4 must be prevented
- Scenic routes provide public access to the enjoyment of the landscapes located in the municipal area. The routes and the land use alongside these routes should be managed in such a way as to not compromise the views offered but to mark and celebrate the landscapes and the origins or nature of their significance.

2.4 The George Municipality Landscape Characterisation Visual Resources Management Analysis

The George Municipality's Landscape Characterisation Visual Resource Management Analysis (2009) determines visually sensitive areas in the George landscape and must be applied to manage visual impacts of development.

The George Municipality's Landscape Characterisation Visual Resource Management Analysis states the following:

- Significant view corridors add value to the George sense of place and create a perception of space by focussing on views outside of the built-up envelope.
- The road systems in the Garden Route are a vital component of the tourism economy as they create scenic view corridors. View corridors are linear geographic areas that are visible to users of the route, usually situated along movement routes such as the N2 road.
- The N2 highway through the Garden Route has been identified as an important viewing corridor providing important views into the surrounding landscape.
- Developments should be set back from the N2 allowing unobstructed views of the Outeniqua Mountains to the north, views down valleys and the ocean to the south

2.5 The Garden Route Environmental Framework

This document provides baseline data on the Topographical, Visual and 'Sense of Place' aspects in the Garden Route, the sensitivity, constraints and development guidelines for the area assist in informing decision-making.

Management Guidelines are provided for Ecologically Sensitive Geographical Areas. Of particular reference to this report are the guidelines for development in:

- Topographically Sensitive Geographical Areas.
- Conservation and Protected Areas; and
- Visually Sensitive Landscape Geographical Areas.

The Garden Route Environmental Framework identifies the landscape surrounding the N2 Highway as topographical sensitive geographical area.

Risks include:

- Erosion of steep slopes.
- The potential for visual and light pollution.
- Destruction of visual topographical quality.
- Development impact of sensitive topographical features and landscapes.
- Inappropriate large-scale development.
- Sprawling urbanization; and
- Large scale change of land use developments outside of the urban edge.

Objectives include:

- Maintain the integrity of the Garden Route Landscape.
- Limit development on steep slopes.
- Enhance and protect the topographical landscape backdrop to the Garden Route.
- Manage development on steep slopes, discouraging development.
- Limit development densities.
- Retain the 'sense of place' of villages and hamlets.
- Enforce building control and aesthetics.
- Protect the 'sense of place' of the Garden Route.
- Protect and enhance the visual quality of prominent tourism routes, meanders, and nodes.
- Protect the visual integrity of the South African National Park asset, as well as provincial nature reserves; and
- Limit and prohibit development on prominent visually sensitive and exposed features.

2.6 Heritage and Scenic Resources: Inventory and Policy Framework for the Western Cape

The study provides input on cultural and scenic resources and provides a guide for the identification and conservation of these resources. The report focuses on the broader regional scale rather than the local landscapes or individual site scales and is, therefore, an overview rather than a detailed inventory of cultural and scenic resources.

The study identifies the greatest threats to scenic routes and passes as the following:

- The intrusion of commercial development next to scenic routes
- Insensitive road improvements, road widenings, street furniture, lighting, etc.

These threats lead to the loss of scenic values, wilderness experience and rural character. It also states that incremental erosion by developments along scenic routes through rural landscapes should be avoided.

2.7 DEA&DP Guideline for Management of Development on Mountains, Hills & Ridgelines

Key decision-making criteria regarding development on mountains, hills, and ridges, relevant to this visual impact assessments, are:

- to avoid inappropriate development (i.e. intrusive and consumptive development) on mountains, hills and ridges considering the character of the existing environment.
- to ensure that where development does take place, that its layout and design takes account of sensitive features and environmental constraints, thereby promoting environmentally sensitive development of projects on mountains, hills, and ridges where development is authorized.

- to preserve landform features through ensuring that the siting of facilities is related to environmental resilience and visual screening capabilities of the landscape.
- to ensure that the scale, density, and nature of the developments are harmonious and in keeping with the sense of place and character of the area.

Environmental characteristics such as steep slopes (steeper than 1:4) and development on the crest of a mountain, hill or ridge will serve as key indicators of environmental sensitivity.

3. PROJECT DESCRIPTION

3.1 Project location

The proposed development is located on Portion 278 and 282 of the Farm Kraaibosch 195. Portion 278 of the project area covers a surface area of 5.97 hectares and Portion 282 1.17 hectares with a combined area of 7.15 hectares. The project site is located approximately 1.5km east of the Garden Route Mall along the N2 highway just outside the George (Figure 1). The project property is located directly next to the N2 and borders onto the existing Sasol Garage. Access to the site currently being provided by driving past the Sasol Garage and following a gravel road across the property Figure 20).

The area is characterised by a mountainous area to the far north and flat grassy areas incised by valleys infested with invasive alien plants (Figure 12 & 16). Housing estates are located to the north-west and smallholdings mixed with business developments are located on the opposite side (south) of the N2 (Figure 11 & 15). The site is currently vacant and being utilised for recreational activities.

3.2 Development description

The proposed development will consist out of the following components:

- A horseriding school that will consist out of an arena, horses paddocks, riding arena, approximately fifty (50) stables, bathrooms, storage unit and a multi-purpose clubhouse on the eastern section of Portion 278 (Figure 2: Blocks C, D, F, G & H).
- A multi-function clubhouse with wooden decks will be used to host conferences, functions and weddings. The clubhouse will include a small wine and beer storage and tasting section (Figure 2: Blocks C, D).
- The store building located next to the clubhouse will be converted into a chapel (Figure 2: Block F).
- The western section of Portion 278 will contain mix-use tourism centre, plant nursery, restaurant, deli, bakery, farm stall, children playground and amphitheatre (Figure 2: Block A, B & C).
- A tourism office and equipment store will be located on the western section of the property next to the Sasol Garage (Figure 2: Block J).
- An organic vegetable garden will be established on a portion of the roof of the mix-use tourism centre (Figure 2: Block B).
- A small vineyard, hops and olive trees will be planted in front of the development (Figure 2).
- A parking area will be established to accommodate approximately 197 vehicles (Figure 2).
- The proposed development will be extensively landscaped to create a rural feeling and screen the development from the N2 highway. This will include the planting of trees and the establishment of the vineyard, hops and planting of olive trees (Figure 2)

3.3 Proposed rezoning and subdivision

Portion 278 is currently zoned and Agriculture Zone I and Portion 282 is zoned as Business Zone VI. The proposed horse riding school will be located in the Agricultural Zone 1 and does not require any change in zoning. The Western Cape Spatial Development Framework identifies the George area as a tourism development area. The concept Victoria Bay/Kraaibosch South Concept Structure Plan also proposes tourist facilities, plant nurseries, rural recreational facilities, conference facilities and rural lifestyle retail for the area.

4. METHODOLOGY

It is in the nature of visual and scenic resources to include abstract qualities and connotations that are by their nature difficult to assess or quantify as they often have cultural or symbolic meaning. It is necessary therefore to include both quantitative criteria (such as viewing distances), and qualitative criteria (such as a sense of place), in visual impact assessments.

An implication of this is that impact ratings cannot simply be added together. Instead, the assessment relies on the evaluation of a wide range of considerations, both objective and subjective, including the context of the proposed project within the surrounding area. The phrase “beauty is in the eye of the beholder” is often quoted to emphasize the subjectivity in undertaking a visual impact assessment

The analysis of the interaction between the existing visual environment (landscape character and sense of place) and the planned infrastructure provides the basis for determining visual impacts and mitigation strategies. This is completed by defining the visual effect of the planned infrastructure and visual sensitivity of viewing locations to determine impact.

The evaluation of the existing visual environment consists of the assessment of both the landscape setting and key viewing locations within it. The landscape setting can be defined in terms of topography, vegetation, hydrology

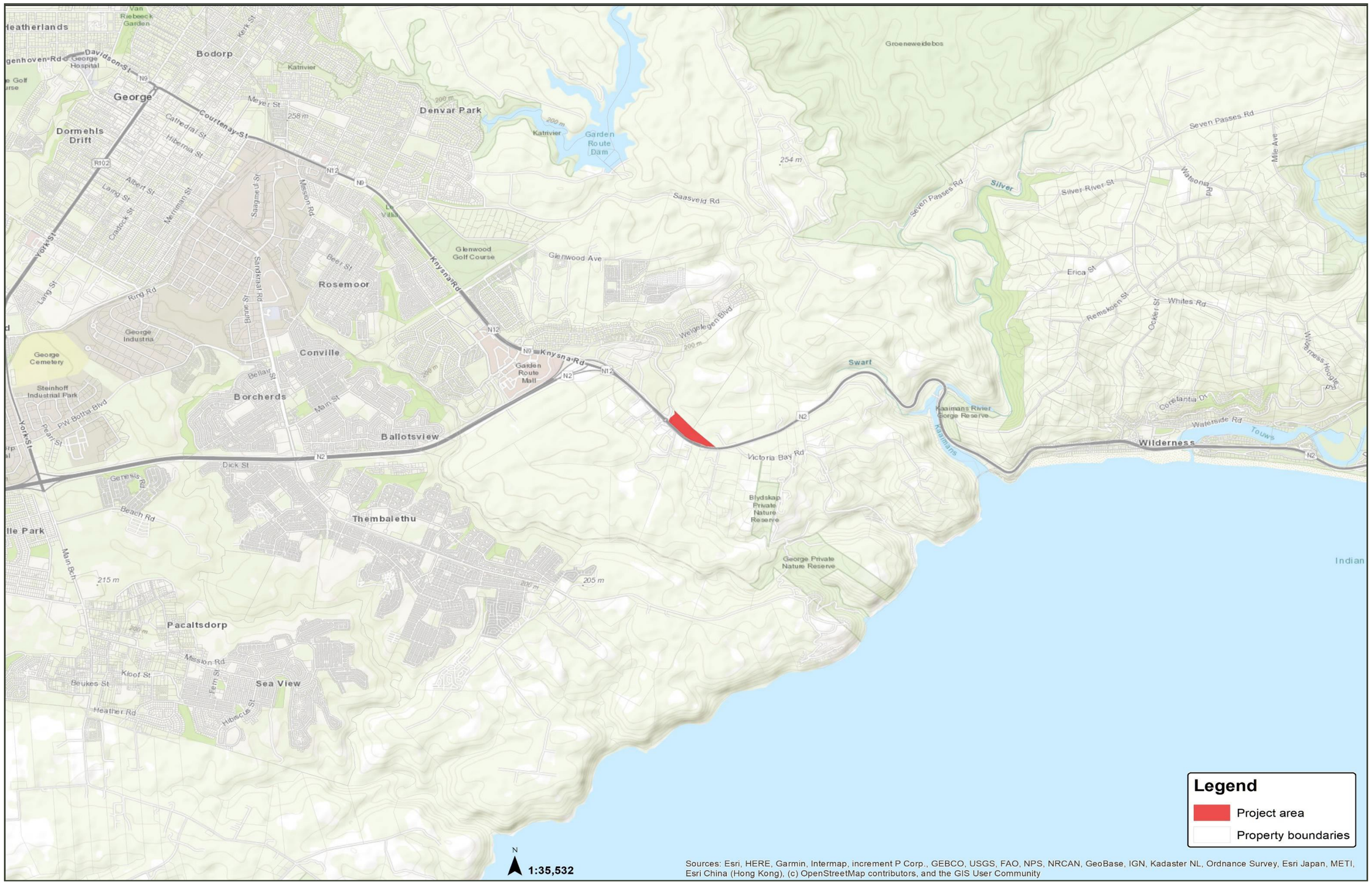
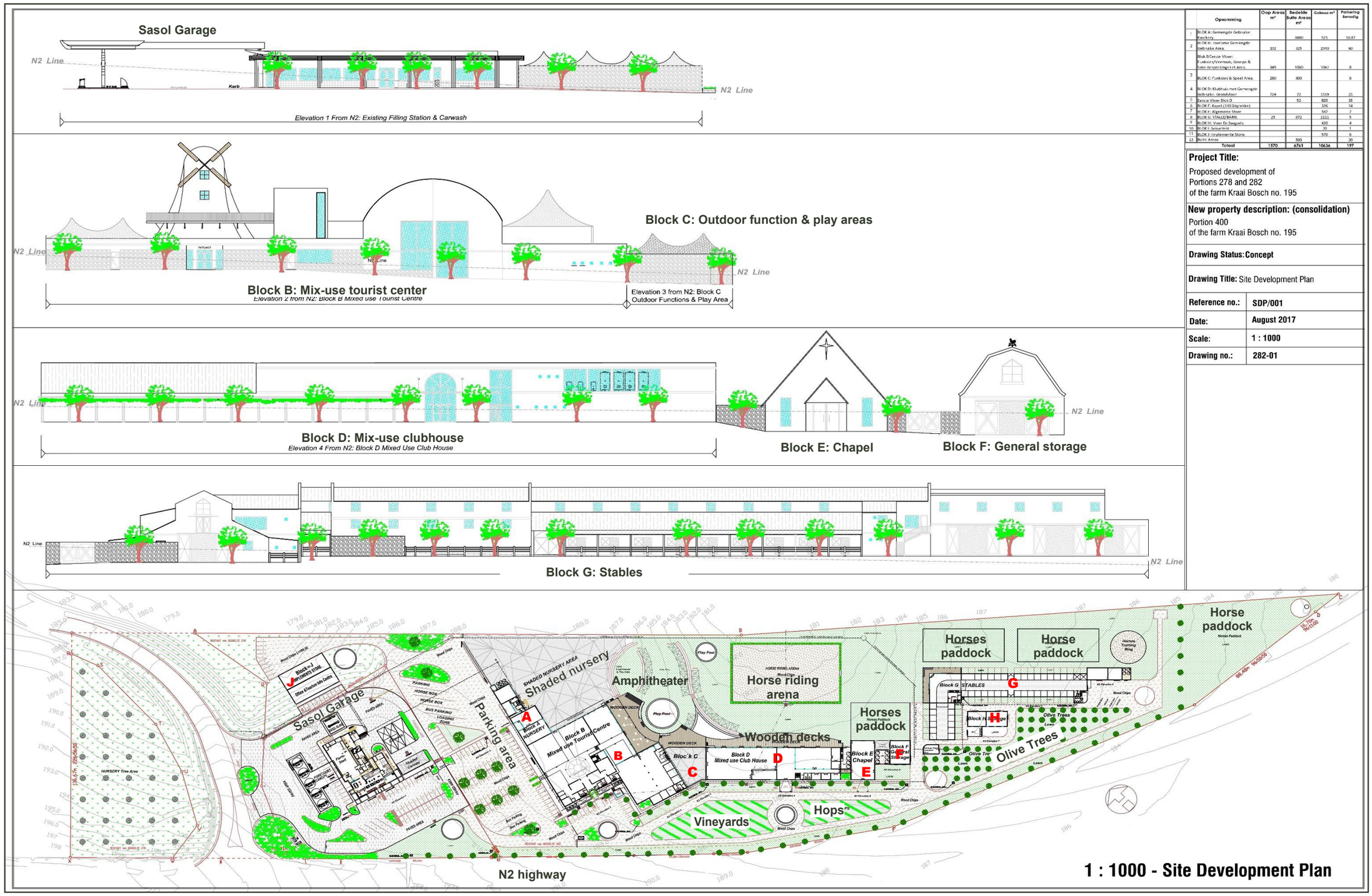


Figure 1: Project location



	Opsomming	Oop Areas m²	Bedekte Buite Areas m²	Gebeue m²	Parkering Benodig
1	BLOK A: Gemengde Gebruike Kwekery		8480	571	10.87
2	BLOK B: Toeriste Gemengde Gebruike Area	372	925	2593	60
	Blok B Eerste Vloer: Funksies/Vergaderings, Groepe & Sake-Ontspanningstot Area	549	1060	1047	8
3	BLOK C: Funksies & Speel Area	280	400		8
4	BLOK D: Klubhuis met Gemengde Gebruike: Grondvloer	724	72	1519	25
5	Eerste Vloer Blok D		52	820	38
6	BLOK E: Kapel (150 Sitplekke)			326	14
7	BLOK F: Algemene Stoor			447	7
8	BLOK G: STALLE/BARN	25	872	2311	5
9	BLOK H: Voer En Saagsels			420	4
10	BLOK I: Sekuriteit			20	1
11	BLOK J: Implementsle Store			570	6
12	Buite Areas		500		20
	Totaal	1570	6761	10636	197

Project Title:
Proposed development of
Portions 278 and 282
of the farm Kraai Bosch no. 195

New property description: (consolidation)
Portion 400
of the farm Kraai Bosch no. 195

Drawing Status: Concept

Drawing Title: Site Development Plan

Reference no.:	**SDP/001**
Date:	**August 2017**
Scale:	**1 : 1000**
Drawing no.:	**282-01**

Figure 2: Project layout

and land-use features. These elements define the existing visual character of the landscape with which the planned infrastructure interacts.

The use of the basic elements of form, line, colour and textures has become the standard in describing and evaluating landscapes. Modifications in a landscape which repeat the landscape's basic design elements are said to be in harmony with their surroundings. Modifications which do not harmonize, often look out of place and are said to contrast or stand out in unpleasing ways.

Value can be placed in a landscape in terms of its aesthetic quality, or in terms of its sense of identity or sense of place with which it is associated. If no such values are held with respect to a landscape, there is less likely to a perception of a visual impact if the landscape becomes subject to visual alteration. Development within a landscape may not be perceived negatively at all if the development is associated with progress or upliftment of the human condition.

The perception of visual impacts is thus highly subjective and thus involves 'value judgements' on behalf of the receptor. The context of the landscape character, the scenic / aesthetic value of an area, and the types of land use practised tending to affect the perception of whether landscape change (through development) would be considered to be an unwelcome intrusion. Sensitivity to visual impacts is typically most pronounced in areas set aside for the conservation of the natural environment (such as protected natural areas or conservancies), or in areas in which the natural character or scenic beauty of the area acts as a drawcard for visitors (tourists) to visit an area, and accordingly where amenity and utilitarian ecological values are associated with the landscape.

When landscapes have a highly natural or scenic character, amenity values are typically associated with such a landscape. Structural features such as power lines and other electricity transmission developments and related infrastructure are not a feature of the natural environment but are rather representative of human (anthropogenic) change to a landscape.

Thus, when placed in a largely natural landscape, such structural features can be perceived to be highly incongruous in the context of the setting, especially if they affect or change the visual quality of a landscape. It is in this context of incongruity with a natural setting that new developments are often perceived to be a source of visual impact.

4.1 Observer locations

Observer locations (views from communities, major roads, conservation areas etc.) are those areas where people (receptors) are likely to obtain a view of the planned infrastructure. These viewing locations have different significance based on numerous factors, collectively evaluated through land use and viewing distance to the planned infrastructure.

The selection of the key viewing locations is based on their location within the defined view-shed where they would have a clear view of the planned infrastructure.

Factors that will be considered in selecting the key viewing locations are:

- **The angle of observation** - The apparent size of a project is directly related to the angle between the viewer's line-of-sight and the slope upon which the planned infrastructure is to take place. As this angle nears 90 degrees (vertical and horizontal), the maximum area is viewable.
- **Numbers of viewers** - Areas seen and used by large numbers of people are potentially more sensitive. Protection of visual values usually becomes more important as the number of viewers increase.
- **Length of time the project is in view** - If the viewer has only a brief glimpse of the planned infrastructure, the contrast may not be of great concern. If, however, the planned infrastructure is subject to view for a long period, as from an overlook, the contrast may be very significant.
- **Distance from the project** - The greater the viewing distances, the lower the visual sensitivity. The visual modification of a development is assumed to be the highest when the observer is very close to it

and has a direct line of sight. The visual modification then decreases with distance and is also known as distance decay (Hull & Bishop, 1988).

- **Field of vision** - The visual impact of a development can be quantified to the degree of influence on a person's field of vision both horizontally and vertically. The visual impact of a development will vary according to the proportion in which a development impacts on the central field of vision. Within the central field of vision images are sharp, depth perception occurs and colour discrimination is possible. Developments, which take up less than 5% of the central field of vision, are usually insignificant in most landscapes (Human Dimension and Design, 1979).
- **Visibility** - Viewed by the human eye 1.8 m from the ground across a "flat" surface such as the sea, the horizon will be of the order of 6 km distant, due to the curvature of the earth. Viewed at an elevation of 60 m, the horizon will be of the order of 32 km distant and from the top of a 1000 m mountain, the horizon will be at a distance of approximately 113 km. A tall structure standing above the horizon would, of course, increase these distances significantly; for example, for an observer at 1.8 m who is viewing a man-made structure 50 m tall, the effective distance to the horizon is 34 km and for a 100 m structure the distance is 46 km (Miller & Morrice, no date). In addition, mist, haze or other atmospheric conditions may significantly affect visibility (Hill et al, 2001).

4.2 Visual sensitivity

Visual sensitivity is a measure of how critically a change to the existing landscape is viewed by people from different land-use areas in the vicinity of a development.

The degree of visual sensitivity of an area is closely related to the aesthetic quality of the area, as well as to the value placed in the aesthetic quality of the landscape but is also related to the area's socio-economic profile. In this regard, residential, tourist and/or recreation areas generally have a higher visual sensitivity than other land use areas (e.g. industrial, agricultural or transport corridors), because they use the scenic amenity values of the surrounding landscape and may be used as part of a leisure experience and often over extended viewing periods.

It is important to note that the presence of natural/perceived natural and rural elements or areas within the landscape as viewed from the surrounds of the project area can engender perceptions of aesthetic quality or value to the landscape. Many studies of landscape conservation have highlighted the value placed by people in rural or natural landscapes. A rural landscape can be defined as an area where interaction between humans and nature over time has led to the development of a landscape that has its own characteristics, and which is a middle ground between an urban landscape and wilderness, consisting of human activities that are related to the natural environment, such as agriculture and pastoral activities (Mazehan et al, 2013). A natural landscape, as defined in this report is close in appearance to how the landscape would appear without human alteration – i.e. mimicking or closely resembling that of a wilderness.

Placing value in a landscape is a psychological and cultural practice; values and meanings are not intrinsic to the landscape, but rather they are phenomena created by humans through their cultural practices (Pun, 2004). It is thus important to note that perceptions of a landscape may not be universally shared, and different individuals or groups of people may perceive or treat the same landscape differently, in turn ascribing different values and meanings to it (Pun, 2004). Values and meanings ascribed by local people may not be evident to an outsider.

There are different types of values that can be placed on a landscape; i.e. economic values (e.g. the relevance of the landscape for business enterprises, or the market possibility of products from the landscape), amenity values (values related to the non-material benefits associated with it) and security values (Pun, 2004). Amenity values can be subdivided into different sub-categories; "intrinsic" ecological value, scientific and educational value, aesthetical and recreational value, and orientational and identity value.

Landscapes and the viewing of landscapes have also been shown to have positive psychological and health benefits; Velarde et al (2007), have shown through an examination of various environmental psychology studies that visual exposure to natural landscapes (e.g. by means of viewing natural landscapes during a walk, or viewing

from a window) generally has a beneficial impact on human health (e.g. reduced stress, facilitating recovery from illness, and behavioural changes that improve mood and general well-being).

Landscape as a source of beauty is prevalent within the arts and is a strong drawcard for recreational activities. In addition, the landscape is an element in the ability of people to orient themselves and is strongly related to people's cultural identity and sense of place. It is in this context that value is placed in natural or rural landscapes, and it follows that such value would be placed on views in an area such as the study area which is largely natural, and which has high aesthetic value by virtue of its scenic nature.

The above values can be interlinked, but can also be conflicting, e.g. amenity values associated with a landscape held by a certain group of people as described above may conflict with economic values associated with the market or development possibility of the landscape that is held by others. It is in this context that visual impact associated with a potential development often arises as an issue in environmental impact assessments.

The latter three sub-categories of amenity value described above – aesthetic, identity and psychological health value are typically involved in the perception of visual impact and constitute the elements of the 'visual sensitivity' associated with that landscape, as development within a landscape can change the landscape to the degree to which the amenity value associated with a landscape would be considered to be degraded or no longer present.

Visual sensitivity may range from high to low, depending on the following additional factors:

- **The visual absorption capacity** - The potential of the landscape to conceal the proposed project will reduce or increase visual sensitivity.
- **Viewing distance** – The greater the viewing distances, the lower the visual sensitivity. The visual modification of a development is assumed to be the highest when the observer is very close to it and has a direct line of sight. The visual modification decreases with distance and is also known as distance decay (Hull & Bishop 1988).
- **Length of time** the project is in view - If the viewer has only a brief glimpse of the planned infrastructure, the contrast may not be of great concern and the visual sensitivity low. If, however, the planned infrastructure is subject to view for a long period, as from an overlook, the contrast may be very significant.
- **General orientation** - General orientation of residences to landscape areas affected by a project. Residential, tourist and/or recreation areas with a strong visual orientation towards the planned infrastructure (i.e. those with areas such as living rooms and/or verandas orientated towards it), will have a higher visual sensitivity than those not orientated towards the planned infrastructure.
- **Relative planned infrastructure size** - The contrast created by the project is directly related to its size and scale as compared to the surroundings in which it is placed.
- **Type of users** - Visual sensitivity will vary with the type of users. Recreational sightseers may be highly sensitive to any changes in visual quality, whereas workers who pass through the area regularly may not be as sensitive to change.
- **Numbers of viewers** - Areas seen and used by large numbers of people are potentially more sensitive. Protection of visual values usually becomes more important as the number of viewers increase.
- **Adjacent land uses** - The inter-relationship with land uses in adjacent lands can affect the visual sensitivity of an area. For example, an area within the view-shed of a residential area may be very sensitive, whereas an area surrounded by commercially developed lands may not be visually sensitive.
- **Special areas** - Management objectives for special areas such as natural areas, wilderness areas, conservation areas, scenic areas, scenic roads or trails frequently require special consideration for the protection of the visual values. This does not necessarily mean that these areas are scenic, but rather that one of the management objectives may be to preserve the natural landscape setting. The management objectives for these areas may be used as a basis for assigning sensitivity levels.

Landscapes are subdivided into three (3) distanced zones based on relative visibility from travel routes or observation points (receptors). The three zones are:

- Foreground-Middle ground Zone - This is the area that can be seen from each travel route for a distance of 0 to 5 kilometres where management activities might be viewed in detail. The outer boundary of this distance zone is defined as the point where the texture and form of individual plants are no longer apparent in the landscape. In some areas, atmospheric conditions can reduce visibility and shorten the distance normally covered by each zone.
- Background Zone - This is the remaining area which can be seen from each travel route to approximately 24 kilometres but does not include areas in the background which are so far distant that the only thing discernible is the form or outline. To be included within this distance zone, vegetation should be visible at least as patterns of light and dark.
- Seldom-Seen Zone - These are areas that are not visible within the foreground-middle ground and background zones and areas beyond the background zones.

Land-use areas are generally characterised in terms of low, moderate or high visual sensitivity, as follows:

- Low visual sensitivity - industrial areas, local roads, mining and degraded areas.
- Moderate visual sensitivity - tourist roads, major roads, sporting or recreational areas and places of work.
- High visual sensitivity - rural residences, recreation areas, conservation areas, scenic routes or trails.

4.3 Visual modification

Visual modification is a measure of the level of visual contrast and integration of the planned infrastructure with the existing landscape. An existing landscape has certain visual characteristics expressed through the visual elements of form, shape, line colour and texture. A development that has different visual characteristics than the existing landscape will create contrast with the existing landscape. If similar infrastructure already forms part of the existing landscape, the visual effects of the planned infrastructure will borrow visual character from these operations, reducing visual modification.

The degree to which the visual characteristics of the planned infrastructure contrast with the existing landscape will determine the level of visual modification. For example, a newly created mine will have a high visual modification due to strong contrast. An extension of operations in an existing mine will have a lesser visual modification. A successfully rehabilitated mine area will also have a lower visual modification due to limited contrast with the existing landscape.

Similarly, a project is said to be integrated with the existing landscape based on issues of scale, position in the landscape and contrast. High visual integration is achieved if a development is dominated by the existing landscape, is of small scale and/or limited contrast.

The level of visual modification generally decreases with distance and is categorised as follows:

- **Negligible (or very low) level of visual modification** – where the development is distant and/or relates to a small proportion of the overall view-shed.
- **Low level of visual modification** - where there are minimal visual contrast and a high level of integration of form, line, shape, pattern, colour or texture values between the development and the landscape. In this situation, the development may be noticeable but does not markedly contrast with the landscape.
- **Moderate level of visual modification** - where a component of the development is visible and contrasts with the landscape, while at the same time achieving a level of integration. This occurs where surrounding topography, vegetation or existing modified landscape provide some measure of visual integration or screening.
- **High level of visual modification** - where the major components of the development contrast strongly with the existing landscape and demand attention.

The following factors must be considered when applying visual modification categories:

- **Length of time the project is in view** - If the viewer has only a brief glimpse of the project, the contrast may not be of great concern. If, however, the project is subject to view for a long period, as from a viewing location, the contrast may be very significant.
- **Relative size or scale** - The contrast created by the project is directly related to its size and scale as compared to the surroundings in which it is placed.
- **Recovery time** - The amount of time required for successful re-vegetation should be considered. Recovery usually takes several years and goes through several phrases (e.g. bare ground to grasses, to shrubs, to trees, etc.). It may be necessary to conduct contrast ratings for each of the phases that extend over long periods. Those conducting contrast ratings should verify the probability and timing of vegetative recovery.
- **Atmospheric conditions** - The visibility of planned infrastructure due to atmospheric conditions, such as air pollution or natural haze, should be considered
- **Motion** - Movement such as waterfalls, vehicles or plumes draw attention to a project.
- **Form** - Contrast in form results from changes in the shape and mass of landforms or structures. The degree of change depends on how dissimilar the introduced forms are to those continuing to exist in the landscape.
- **Line** - Contrasts in line results from changes in edge types and interruption or the introduction of edges, bands, and silhouette lines. New lines may differ in their sub-elements (boldness, complexity, and orientation) from existing lines.
- **Colour** - Changes in value and hue tend to create the greatest contrast. Other factors such as chroma, reflectivity and colour temperature, also increase the contrast.
- **Texture** - Noticeable contrast in texture usually stems from differences in the grain, density and internal contrast. Other factors such as irregularity and directional patterns of texture should also be considered.

5. VISUAL ASSESSMENT OF THE SITE AND PROPOSED DEVELOPMENT

The DEA&DP Guideline for involving visual & aesthetic specialists in EIA processes document provides a number of criteria that relate specifically to Visual Impact Assessments namely:

- Visibility of the project.
- Visual exposure.
- Visual sensitivity of the area.
- Visual sensitivity of receptors.
- Visual Absorption Capacity; and
- Visual Intrusion.

It is recommended that the proposed project should be assessed against these criteria before attempting to assess the visual impact of the proposed development.

5.1 Description of the affected area and the scenic resources

George and the site of the proposed development are situated in the ‘Garden Route’, in the southeastern extent of the Western Cape. The area is a scenic, coastal area with rich, visual diversity. This diverse and beautiful coastal area is a landscape formed over millions of years and numerous sea-level changes. The Outeniqua and Tsitsikamma mountains, which consist of hard and folded Table Mountain Quartzite (TMQ), form a majestic backdrop to a coastal platform, in the north (Figure 3).

The undulating coastal platform falls relatively gently towards the ocean and is drained by numerous rivers that either finds their way to the ocean through steep-sided gorges, where the substrate is TMQ, or via estuaries where the substrate is softer. The coastline is again diverse with half heart bays, with headlands of hard TMQ and sandy beaches, estuaries and dunes or cliffs and river gorges.

Figure 3: Undulating coastal platform and Outeniqua mountains

From: Oberholzer and Winter, Western Cape Provincial Spatial Development Framework – Heritage and Scenic Resources: Inventory and Policy Framework (May 2013)

"The Cape Fold Mountains, predominantly the Langeberg and Outeniqua ranges, continue east from the Overberg as far as Plettenberg Bay (and even further to Port Elizabeth). Between the mountains and the coast, the well-known 'Garden Route' traverses a series of estuaries, lakes and forests of scenic value between Mossel Bay and Plettenberg Bay. The northern boundary of the Eden District is defined by the impressive

Swartberg Mountains, a range consisting of the same Table Mountain Group sandstones, reaching over 2100m in places, and often covered by snow in winter" (Figure 11)

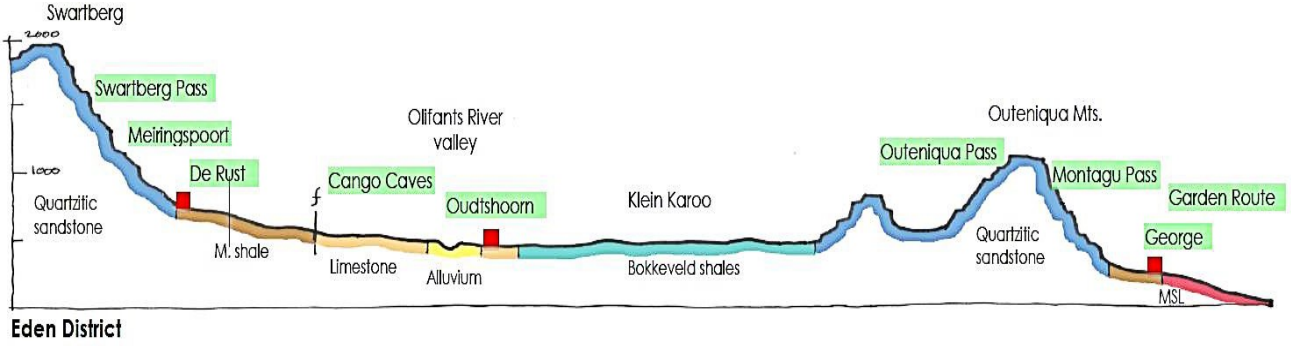


Figure 4: Cross-section through the Eden District (source: Oberholzer and Winter 2013)

From: The Garden Route Environmental Framework (2010)

"The landscape of the Garden Route comprises an intricate mosaic of landforms, which further supports its diverse ecological features. These features extend from coastal features, through to the lake system, framed

by the backdrop of the high Outeniqua mountains. The area is similarly dissected by numerous rivers draining the highlands to the coast. The coastal landscape is characterised by sensitive foredune systems which are prone to erosion, and which perform critical ecological functions, and which similarly are sought after for residential property development. The area is characterised by cover sands on steep slopes surrounding the lakes and estuaries, which are unstable and unsuitable for development activity.

and

The Garden Route has been named as such due to the visual and aesthetic quality attached to the region. Similarly, the region is considered as one of the most scenic in the country, attracting significant numbers of domestic and international tourist throughout the year. This asset is, unfortunately, one of the regions limiting factors. Due to the perceived high - quality of life associated with the region underpinned by scenic topography, quaint villages and hamlets, large tracts of natural open space systems supported by an extensive national park system (Garden Route National Park); the Garden Route has become the ideal location of retired individuals from the larger cities, as well as a growing international interest. This insatiable demand for development land for residential and tourism use is limited by the biophysical, physical and aesthetic constraints of the area. It is indeed the case of the "exact reasons for the attraction could become its downfall".

5.2 Surrounding land uses

The project area borders onto the N2 highway and is surrounded by the following land uses (Figure 5, 8, 10-17, 21):

- Smallholdings with single buildings and trees that include several species of invasive alien plants.
- Business developments that include a Shell and Sasol garage with accompanying shops and restaurants. The Garden Route Mall is located just west of the proposed development.
- Tourist accommodation that includes the George Country Resort and Overdale self-catering units
- Housing estates (Welgelegen, Groeneweide and Kraaibosch0 are located just north-west of the proposed development.
- Open grass areas are located north-east and west of the development. These areas used to be commercial Pine plantations that included small farming areas used for grazing.
- Degraded areas include grassy areas and invasive alien trees.
- The grassy areas are incised by valleys predominantly covered with invasive alien plants such as Black Wattle.
- Small pockets of degraded natural areas remain in some of the valleys.

5.3 Topography

The project is located on a gentle down sloping area from the south, west and east with the lowest portion of the property located in the middle (Figure 6). The lowest point on the property is located on the northern boundary where the amphitheatre will be located and the remaining infrastructure such as the stables and mix-use tourist centre will be located on the flatter areas next to the N2 highway. The topography (gentle slope) of the project site is of such a nature that no major earthworks will be required during the construction phase.

5.4 Local vegetation

The project site has been an agricultural area (grazing) for many years and bordered onto commercial Pine plantations (Figure 8). The property used to be covered by Wolwedans Grassy Fynbos before being completely transformed by agricultural activities and commercial Pine plantations. Currently, only grasses and invasive alien trees are present on the property (Figure 6,13,14,21). The surrounding areas have also been largely transformed by agricultural activities, Pine plantations, housing developments and invasive alien plants (Figure 5,7,10-17,21).

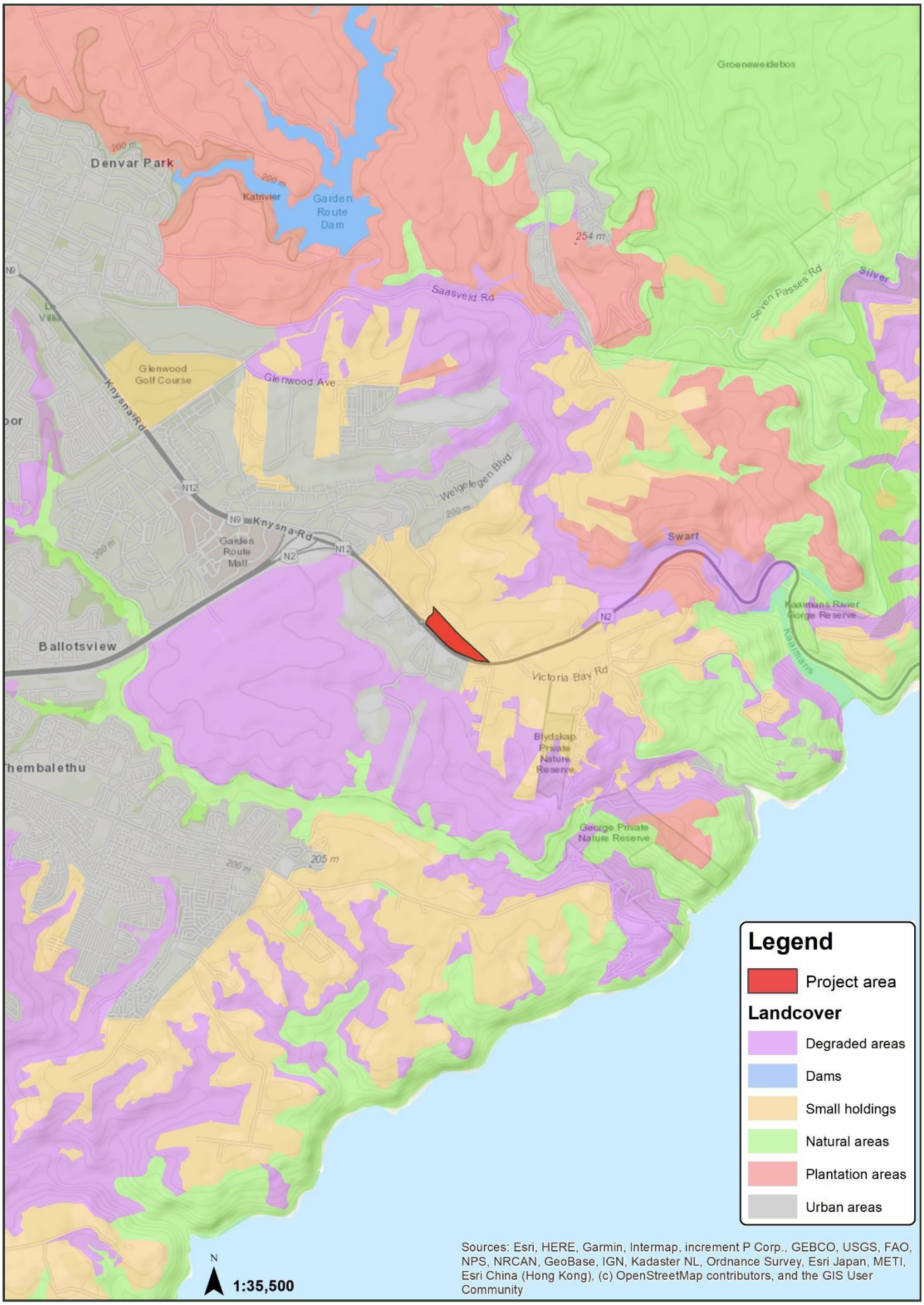


Figure 5: Land cover

5.5 Protected landscapes

The site lies within the Garden Route Biosphere Reserve. The Blydskap, Kleinbaai and the Kaaimans River Gorge Private Nature Reserves lies approximately 2 kilometres south of the project site. No protected areas are located on the project site. The project area contains Critical Biodiversity Areas 2 (Terrestrial) and Ecological Support Areas 1 (Terrestrial) areas. As noted before the project area has been transformed over many years by intensive agricultural activities (grazing) and very little remains of any indigenous vegetation that used to occur in the area historically. (Figure 9).

5.6 Landscape character & value

Landscape character is defined as the distinct, recognisable, and consistently occurring pattern of elements in a particular type of landscape as created by specific combinations of geology, landform, soils, vegetation, land use, field patterns, and human settlement.

The George Spatial Development Framework (GSDF) states (Policy D6) that valuable view corridors, undeveloped ridgelines, cultural landscape assets and existing vistas should not be compromised by any development proposal or cumulative impact of development proposals.

Rural residential areas in the George area have a primary land use which has changed from solely agricultural to more rural lifestyle-related living that includes the Kraaibosch, Groeneweide and Welgelegen housing estates that are close to the proposed development (Figure 21). Many areas have a unique sense of place and attract tourists to small B&B's developing in these areas. Parts of Victoria Bay Heights are near the N2 and the proposed development, which has been recognised as an important view or tourist corridor with a commercial/tourism node. However other areas are more rural with sporadic development.

Evident in these areas are examples of large dwellings where large tracts of land have been cleared of any significant screening vegetation This clearing of the landscape in association with inappropriate architecture and building on prominent ridges with limited vegetation screening are some of the most important limits to the region's sense of place. They are often subjected to subdivisions which fragment the landscape with the introduction of new access routes.

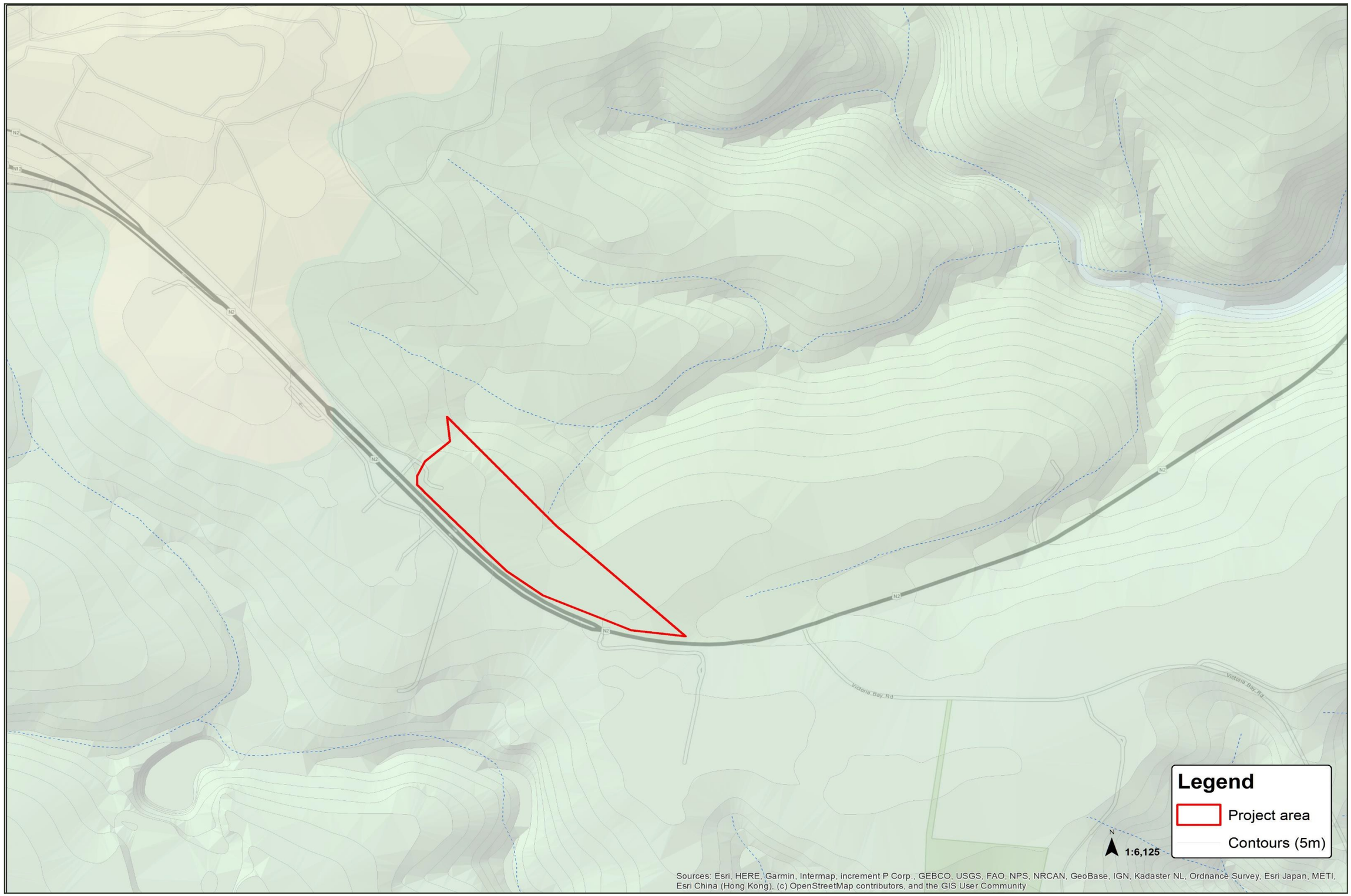


Figure 6: Project site topography

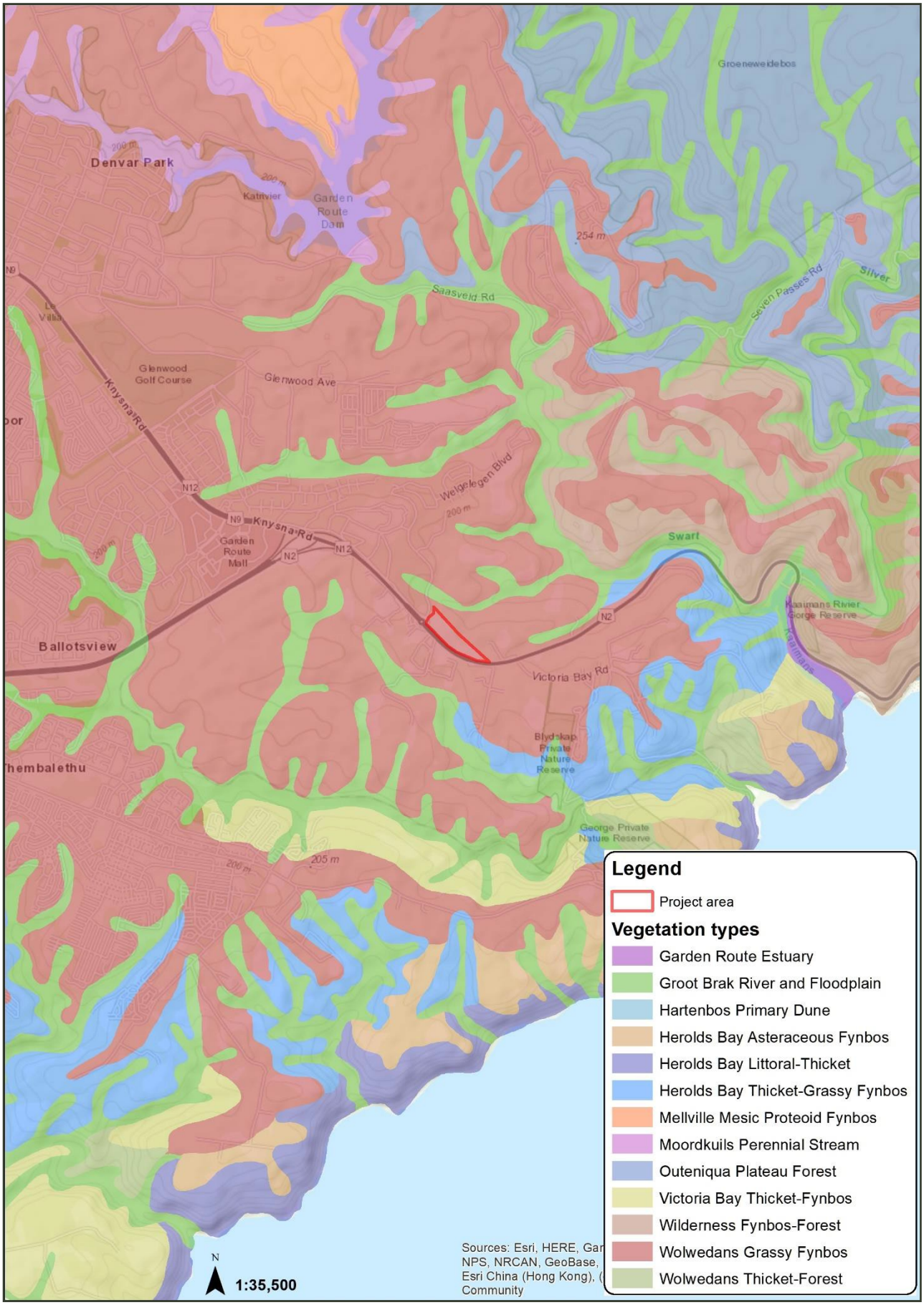


Figure 7: Vegetation map

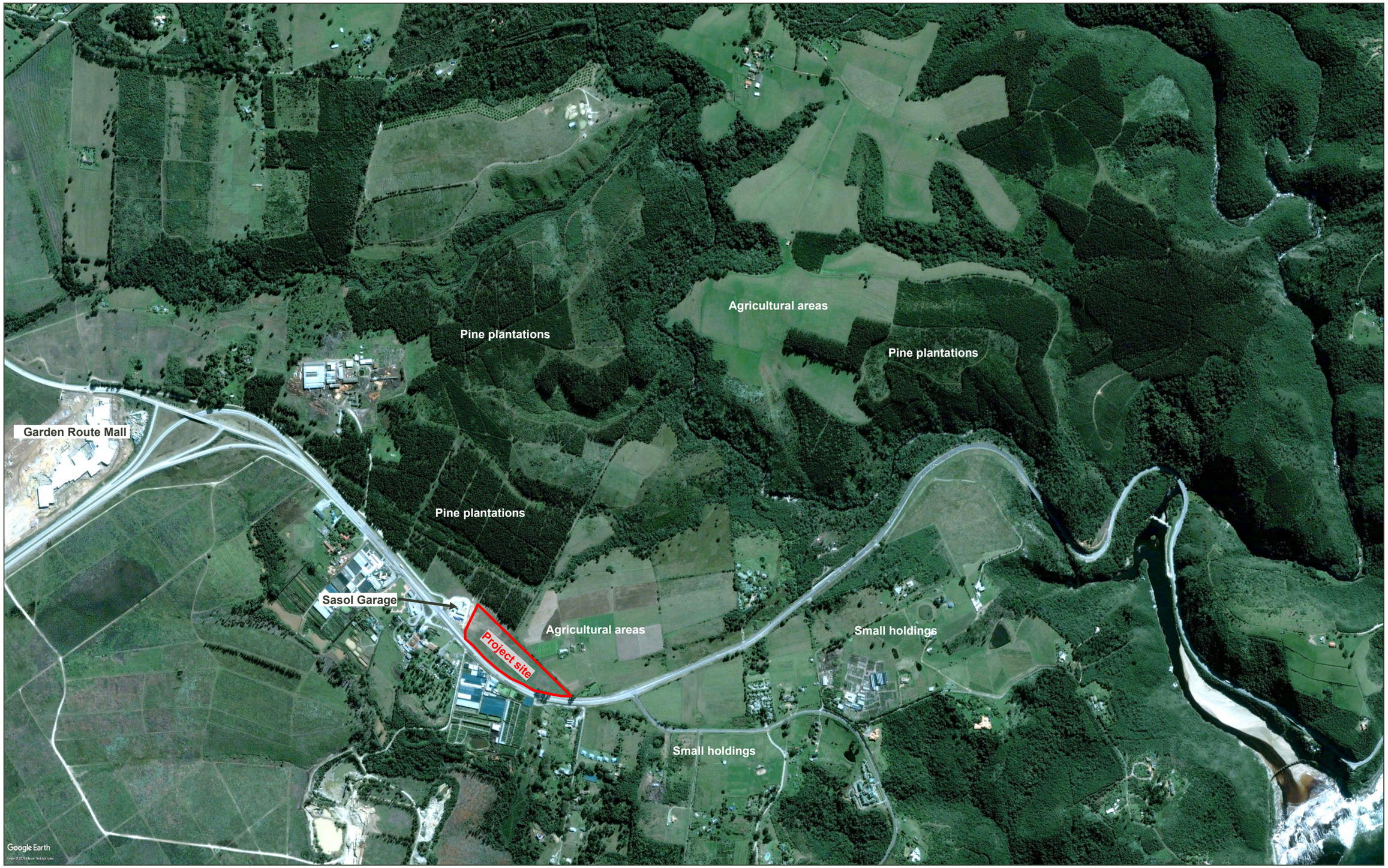


Figure 8: 2005 surrounding land uses

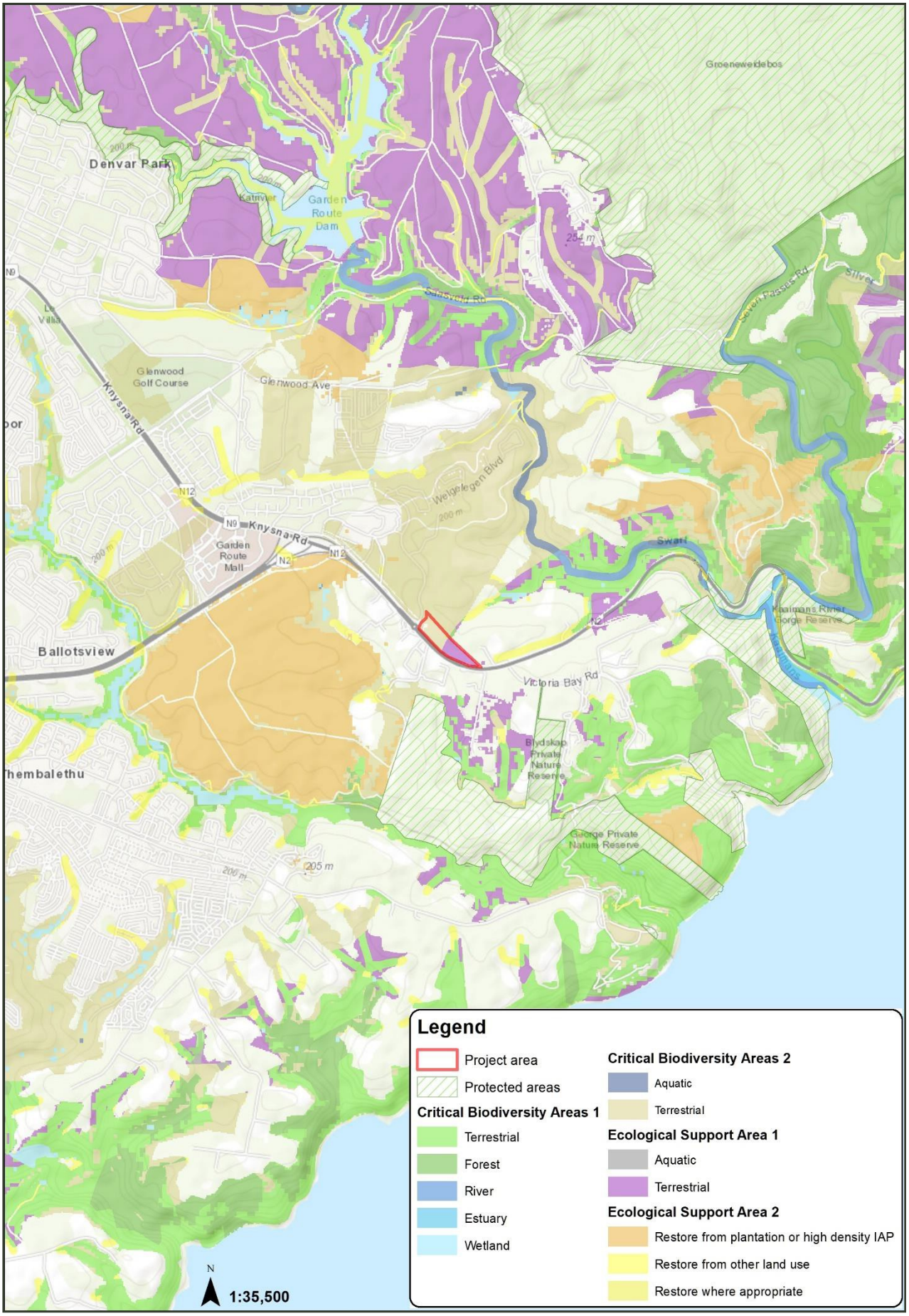


Figure 9: Protected landscapes

6. VISIBILITY OF THE PROPOSED DEVELOPMENT

6.1 View catchment

The geographical area from which the project will theoretically be visible, or view catchment (probable viewshed), is dictated by topography. Theoretically, the project site could be seen from the Outeniqua Mountains and the Nelson Mandela University in the north, Wilderness Heights in the east and the Thembalethu township in the south (Figure 18).

However, distance, infrastructure, vegetation and topography will reduce the actual view catchment that the project will have, to a much smaller area.

6.2 Zone of visual influence

The project area is surrounded by smallholdings, agricultural areas, garages with shops, degraded areas covered with grass, invasive alien trees, housing estates, accommodation facilities and valleys predominantly infested with invasive alien plants (Figure 21). The project area is also located in a low-lying area with small hills (micro-topographic features) towards the east and north-west that screen views into the development. Towards the north, there is also a small hill on which a portion of the Welgelegen housing estate is located that screens views into the proposed development from the Groeneweide housing estate (Figure 6 & 21).

From Garden Route Mall in the west views into the project area is blocked by topographic (hilly area) and vegetation features (Figure 10). The project area only becomes visible from the west once the hilly area has been crossed approximately one kilometre from the Garden Route Mall along the N2 highway (Figure 11). From the north, the project area is only visible from the hilly area on which a portion of the Welgelegen housing estate is located (Figure 12 & 21). The project area will be highly visible from the N2 highway passing by the property (Figure 13 & 14). Once the Victoria Bay turn of is reached along the N2 very little will be visible of the proposed development because the highway starts dropping down towards the Kaaimans river towards the east (Figure 15). The hilly area on which the Welgelegen housing estate is located screen any views into the proposed development from the Groeneweide housing estate (Figure 16). The project area is barely visible from an agricultural area approximately three kilometres north of the property (Figure 17).

The zone of visual influence of the proposed development is illustrated in Figure 19. It spans an area of approximately 500 meters south, 700 west, 3km north and 500 meters to the east. According to the specific criteria for visual impact assessments, the visibility of the site is local, being visible from the area less than 5km away.

6.3 Receptors

The level of visual impact considered acceptable is dependent on the type of receptors. The following receptor sensitivity ratings were considered:

- High sensitivity – e.g. residential areas, nature reserves and scenic routes or trails
- Moderate sensitivity – e.g. sporting or recreational areas, or places of work
- Low sensitivity – e.g. industrial, or degraded areas

Highly sensitive receptors of the site and proposed development include vehicles passing the proposed development on the N2 highway but will only have brief glimpses (short viewing time) of the proposed development (Figure 11,13,14). Views from the Welgelegen housing estate will be of moderate sensitivity and the surrounding degraded and agricultural areas will have a low sensitivity (Figure 12 & 17).

Figure 10: Observer location A

Figure 11: Observer location B

Figure 12: Observer location C

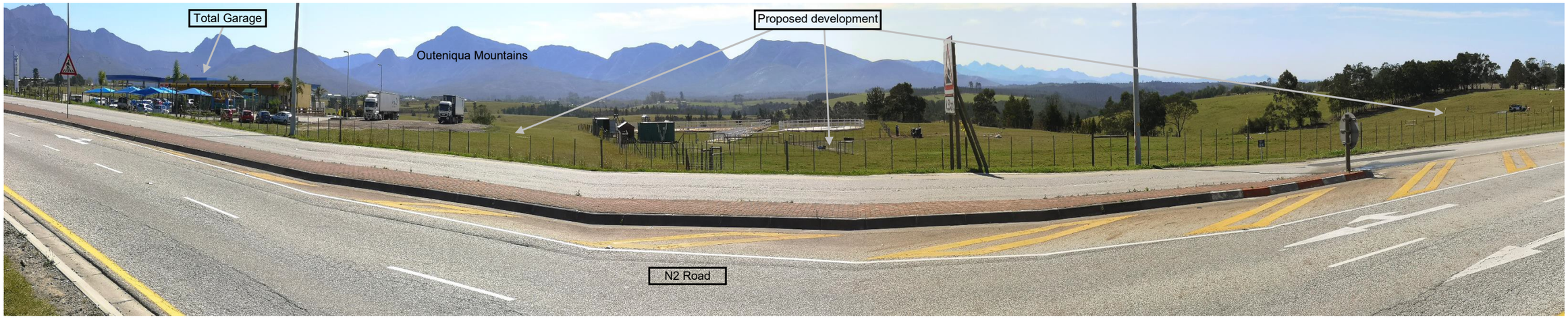


Figure 13: Observer location D

Figure 14: Observer location E

Figure 15: Observer location F

Figure 16: Observer location G

Figure 17: Observer location H

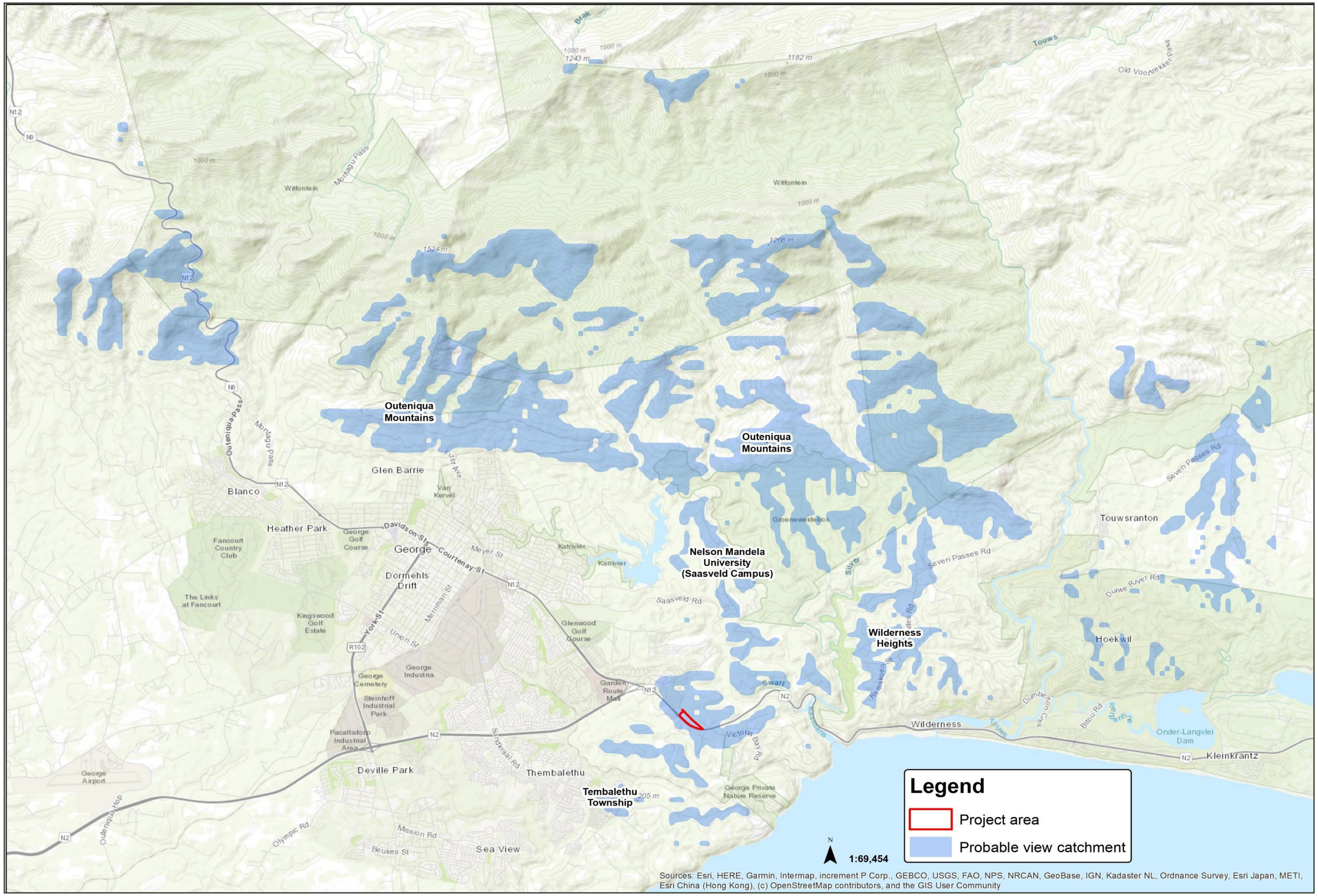


Figure 18: Probable view catchment

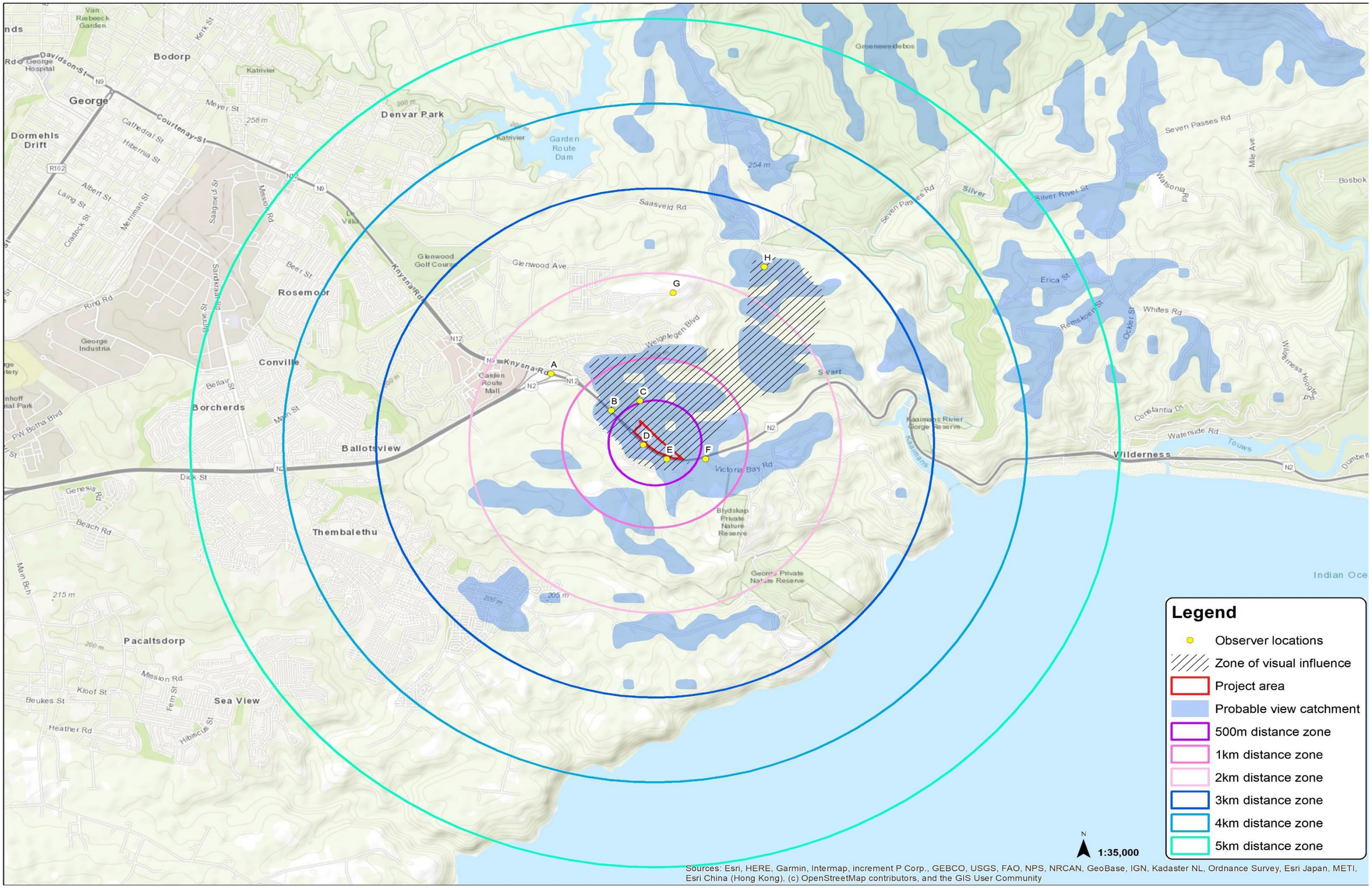


Figure 19: Project zone of visual influence and observer locations

6.4 Visual exposure

The visual impact of a development diminishes at an exponential rate as the distance between the observer and the object increases. Relative humidity and fog in the area directly influence the effect. Increased humidity also causes the air to appear greyer that diminishes detail. Thus, the impact at 1 000 m would be 25% of the impact as viewed from 500 m. At 2 000 m, it would be 10% of the impact at 500 m. The inverse relationship between distance and visual impact is well recognised in visual analysis literature (Hull and Bishop, 1998) and was used as important criteria for this study.

Thus, visual exposure is an expression of how close receptors are expected to get to the proposed interventions on a regular basis. For the purposes of this assessment, close-range views (equating to a high level of visual exposure) are views over a distance of 500 m or less, medium-range views (equating to a moderate/medium level of visual exposure) are views of 500 m to 2 km, and long-range views are over distances greater than 2 km (low levels of visual exposure).

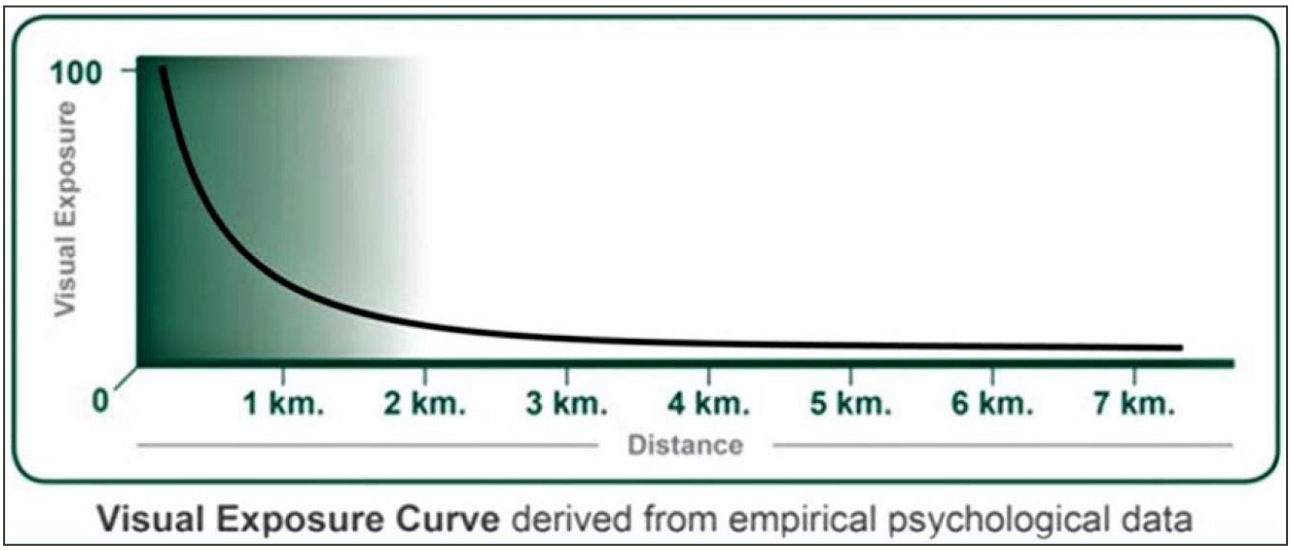


Figure 20: Visual exposure graph

Within the Zone of Visual Influence view corridors, observer locations and receptors will experience “Visual Exposure” to the site and proposed development. The following visual exposure classes were considered during the assessment:

- High exposure – the development is clearly noticeable
- Moderate exposure – the development is recognisable to the viewer
- Low exposure – the development is not particularly noticeable to the viewer

6.4.1 Observer locations

6.4.1.1 Observer location A

The proposed project is completely screened by topographical features and vegetation from observer location A that is located more than one kilometre away. Observer location A has therefore no visual exposure (Figure 10 & 19).

6.4.1.2 Observer location B

Observer location is located next to the N2 highway just over 500 meters away from the proposed development. Although the project will be visible it would be partially screened by the Sasol Garage and has, therefore, a moderate visual exposure (Figure 11,19, 21)

6.4.1.3 Observer location C

Observer location C is located 500 meters from the proposed development next to the road leading north to the Welgelegen housing estate. The observer location has clear views of the proposed development and therefore has a high visual exposure (Figure 12,19,21).

6.4.1.4 Observer location D

Observer location D next to the N2 highway directly opposite the proposed development and has, therefore, a high visual exposure. Vehicles travelling along the N2 highway will only have brief glimpses (short viewing time) of the development (Figure 13,19).

6.4.1.5 Observer location E

Observer location E is located next to the N2 highway a few hundred meters east of the proposed development. The observer location has clear views of the development and therefore has a high visual exposure. Vehicles travelling along the N2 highway will only have brief glimpses (short viewing time) of the development (Figure 14,19).

6.4.1.6 Observer location F

Observer location F is located at the Victoria Bay turn off from the N2 highway and is located more than 500 meters from the proposed development. The development is partially screened from this observer location by topographic and vegetation features and has therefore a low visual exposure (Figure 15,19).

6.4.1.7 Observer location G

Observer location G is located nearly two kilometres from the proposed development at the Groeneweide housing estate (Figure 19 & 21). The development is completely screened by topographic and infrastructure from this observer location and has therefore no visual exposure (Figure 16,19,21).

6.4.1.8 Observer location G

Observer location H is located nearly three kilometres from the proposed development in an agricultural area. Due to the distance, the development is barely visible and has therefore a low visual exposure (Figure 17,19,21).

6.5 Visual sensitivity

The inherent visibility of a project location landscape is usually determined by a combination of topography, landform, vegetation cover, settlement pattern and special features. This translates into visual sensitivity. The following visual sensitivity classes were considered during the assessment:

- High visual sensitivity – highly visible and potentially sensitive areas in the landscape,
- Moderate visual sensitivity – moderately visible areas in the landscape,
- Low visual sensitivity – minimally visible areas in the landscape

The topography of the project area can be described as gently sloping down from the N2 highway northwards and the west and the east with the lowest point in the middle of the property. The sloping nature of the property from the west and east screen the development when driving along with the N2 highway and it only becomes visible when within 500 meters of the property (Figure 11,13,14,19). From the north, the project area is visible from a section of the Welgelegen housing estate but further beyond the landscape is dominated by degraded and agricultural areas with very few observers. The hilly topography with valleys in between screen views into the project area.

For this visual assessment, the screening value of the vegetation is considered and not the ecological value thereof. i.e. tall vegetation provides screening while lower (<1m) vegetation does not provide screening. The project site has very few remaining trees and limited to a handful of mature invasive alien trees on the eastern

boundary. The surrounding degraded landscape includes valleys heavily infested with invasive alien trees that screen some views into the development.

The settlement (smallholdings) and business patterns (accommodation, garage, shops) directly to the south and west of the proposed development partially block views into the proposed development. The proposed project integrates with the surrounding rural settlement and business patterns.

Based on the abovementioned information the of visual sensitivity of the site was categorised as medium visual sensitivity (Figure 21).

Figure 21: Visual sensitivity map

6.6 Visual absorption capacity

Visual Absorption Capacity (VAC) is the capacity of the landscape to conceal the proposed development. The VAC of a landscape depends on its topography and on the type of vegetation that occurs in the landscape. The size and type of development also play a role. The following visual absorption classes were considered during the assessment:

- High VAC – effective screening is provided by topography and vegetation
- Moderate VAC - partial screening is provided by topography and vegetation
- Low VAC - little screening is provided by topography or vegetation

The project area topography to the east and west provides some screening but grassy vegetation with a few invasive alien trees provide no screening effect. The visual absorption capacity of the project site is therefore low. However, reducing building heights combined with effective landscaping could provide some screening to the development and increase the VAC.

6.7 Visual intrusion

Visual intrusion is defined as the level of compatibility or congruence of the project with the particular qualities of the area, or its sense of place. This is related to the idea of context and maintaining the integrity of the landscape or townscape. The following visual intrusion classes were considered during the assessment:

- High visual intrusion – the proposed development results in a noticeable change or is discordant with the surroundings
- Moderate visual intrusion – the proposed development partially fits into the surroundings, but clearly noticeable
- Low visual intrusion – the proposed development creates minimal change or blends in well with the surroundings

The proposed development is an extension of the surrounding rural settlement and business patterns and is as such compatible with the qualities of the area. The visual intrusion for the proposed development therefore ranges from low to moderate.

7. POTENTIAL VISUAL IMPACTS OF THE PROPOSED DEVELOPMENT

The assessment of visual impacts is based on a synthesis of criteria including nature of impact, extent, duration of the impact, intensity, probability of occurrence, reversibility, irreplaceable loss of resources, cumulative effect and level of significance.

7.1 Nature of the impact

The nature of the visual impacts will be the visual effect the activity would have on the receiving environment. These visual impacts will be:

Pre-construction phase:

- Removal of some vegetation will be required for earthworks and increase the visibility of the project area, but the property is covered predominantly in grass with no remaining indigenous vegetation due to agricultural activities over many years. There will therefore be no loss of the vegetation visual resource.

Construction phase:

- Due to the gently sloping nature of the project area, there will be very little cut and fill operations that create visual scarring. During the construction of buildings, there will be a temporary visual impact created by materials and construction activities.

Operational phase:

- The site is currently undeveloped and covered with grass and some invasive alien trees. The proposed development is located next to a garage with a restaurant and surrounded by smallholdings, housing estates, accommodation and other businesses and will therefore not change the visual character of the surrounding landscape.

7.2 Impact assessment criteria

7.2.1.1 The extent of the impact

The spatial or geographic area of influence of the visual impact: the extent of the impact for the prosed development is local (limited to the immediate surroundings).

7.2.1.2 Duration of the project

The predicted lifespan of the visual impact: the duration of impacts for the proposed development ranges from short (duration of the construction phase) to medium term (duration of screening vegetation to mature).

7.2.1.3 The intensity of the impact

The magnitude of the impact on views, scenic or cultural resources (intensity of the impacts): the intensity of the impacts for the proposed development will be medium (visual and scenic resources are affected to a limited extent).

7.2.1.4 The probability of the impact

The degree of possibility of the visual impact occurring (probability of the impact occurring): the probability of the impact occurring for the proposed development is improbable where the possibility that the impact will occur is low.

7.2.1.5 Reversibility

The impact of the project is partially reversible by implementing a landscaping plan for the proposed development that includes the planting of indigenous vegetation.

7.2.1.6 The irreplaceable loss of resources

The degree to which resources will be irreplaceably lost due to the proposed development is marginal.

7.2.1.7 Cumulative effect

An effect which in itself may not be significant but may become significant if added to other existing or potential impacts that may result from activities associated with the proposed development. The cumulative impacts of the proposed development before mitigation is medium and after mitigation low.

7.2.1.8 Significance

The significance of impacts is determined through a synthesis of the assessment criteria. The significance of the impacts of the proposed development is medium negative that will have moderate negative effects and will require moderate mitigation

7.3 Conclusion

Grassy vegetation with a few invasive alien trees provide some screening to the east and west of the proposed project. The project site has low visual absorption capacity but by keeping building heights low and ensuring effective landscaping, the VAC could be increased. The planned development is compatible with the area's qualities and an extension of the rural settlement and business patterns. The planned development has low to moderate visual intrusion and the impacts are local (limited to immediate surroundings).

The development impacts range from short (construction phase) to medium (maturity of screening vegetation). The intensity of the impacts of the planned development will be medium and the impact is partially reversible by implementing a landscaping plan for the proposed development that includes planting indigenous vegetation.

The significance of the impacts of the proposed development is medium negative that will have moderate negative effects and require moderate mitigation. The degree to which resources will be irreplaceably lost due to the proposed development is marginal and the cumulative impacts of the proposed development before mitigation are medium and after mitigation is low.

8. VISUAL CONSTRAINTS & MITIGATION

The Garden Route Environmental Management Framework (GREMF) states that proposed developments within areas of outstanding natural beauty, scenic drives and panoramic views must be sensitive to the natural beauty and consider the following aspects when planning the development:

- Infrastructure should be visually unobtrusive
- Materials and colours used for the development should blend into the surrounding landscape
- Infrastructure should be grouped in clusters with open spaces between clusters
- Infrastructure should not interfere with the skyline (ridgelines), landmarks, major views and vistas
- The development should not increase light, noise or effluent pollution
- The development should correspond to the historical, architectural and landscape style of surrounding layout and buildings

Infrastructure should be designed to conform to the natural topography of the project area and be as low as possible to allow views onto the Outeniqua mountains from the N2 highway and surrounding properties. Buildings and associated infrastructure should follow the contours of the project area and blend with the existing terrain to reduce bulk and mass. Infrastructure should be positioned to allow adequate space for tree planting and other vegetation screening interventions. Roof forms and rooflines should be broken into smaller building components to reflect the irregular forms of surrounding natural features. The slope of roofs should be oriented in the same direction as the natural slope.

The potential visual impacts and proposed mitigation thereof must be undertaken by a professionally registered landscape architect that must be part of the design team (including engineers and architects). The brief of the landscape architect (LA) must include:

- The LA must consult with both engineers and architects to ensure that sensitive earthwork and buildings design development occurs, that will allow for reducing the construction and operation phase visual impacts.
- The LA must work with the project surveyor, arborist and planners in establishing which trees are to remain on-site for visual screening and taking this information into the design development of the civil and building works.
- The LA must prepare a landscape plan, design development thereof and monitoring implementation and thereafter maintenance. The plan must include the tree survey and what trees are, and indigenous vegetation is, to be retained, what is to be removed, the planting of indigenous trees, new tree and

shrub planting along roadways and in open spaces in the built areas.

Once the construction phase of the project has been completed mitigation measures implemented during and after the construction phase must be monitored and maintained where required. This would include the regular monitoring and maintenance of re-vegetated areas especially at disturbed sites and on constructed slope areas until they have established successfully

8.1 Visual mitigation principles

General visual mitigation principles to reduce visual impact can be categorised as:

- On-site treatments to reduce visual effects; and
- Treatments at viewer locations to reduce visual sensitivity.

On-site treatments involve rehabilitation of landforms and land cover, while viewer location treatments involve a range of treatments to screen views, filter views and/or re-orientate primary views.

On-site treatments might include:

- Visual and ecological planting patterns of indigenous vegetation to achieve landscape patterns that emulate in part what used to occur in the surrounding landscape.
- Minimising exposure of work areas to sensitive receptors.
- Preparing an internal landscape plan for rehabilitation areas.

At viewer location treatments include:

- Landscape design and plantings for affected locations. This will require an appropriately qualified person to visit the affected locations and develop a landscape plan to screen or filter views to the project areas.

Design fundamentals are general design principles that can be used for all forms of activity or development, regardless of the resource value being addressed. Applying the following three fundamentals will assist with mitigation measures:

- Proper siting or location.
- Reducing unnecessary disturbance.
- Repeating the elements of form, line, colour and texture of the surrounding landscape.

Design strategies are more specific activities that can be applied to address visual design problems. The following strategies will not necessarily applicable to every proposed activity or project:

- Colour selection
- Earthwork
- Vegetative manipulation
- Structures
- Reclamation/restoration
- Linear alignment design considerations

The fundamentals and strategies mentioned above are all interconnected, and when used together, can help resolve visual impacts from proposed activities or developments.

8.2 Visual mitigation measures

The following mitigation measures should be considered when constructing the proposed infrastructure for this project to reduce the visual impact.

8.2.1 Reducing unnecessary disturbance

As a general rule, reducing the amount of land disturbed during the construction of a project reduces the extent of visual impact. Measures relevant to the project include:

- Retain as much of the existing vegetation as possible and where practical to screen construction activities from key viewing locations. This is also referred to as vegetation manipulation.
- Establish limits of disturbance that reflect the minimum area required for construction.
- Existing vegetation should be retained where possible through the use of retaining walls.

8.2.2 Colour selection

The selection of the best colour for the planned project will have the greatest impact on the visual success or failure of the project. Strong contrasts in colour create easily recognizable visual conflicts in the landscape. Measures relevant to the project include:

- The selection of colours that blend with or are in harmony with the surrounding landscape will drastically reduce the visual impact of the project. Such colours would include tonal variations of existing colour in the surrounding landscape. Contrasting but discordant colours that stand out in the landscape should be avoided.
- Select colours for smooth structures that are two or three shades darker than the background colours to compensate for shadow patterns created by natural textures that make colours appear darker.
- Galvanized steel on structures should be darkened to prevent glare. Low lustre paints should be used wherever possible to reduce glare.

8.2.3 Reduce contrasts from earthworks

The scars left by excessive cut and fill activities during construction often leave long-lasting negative visual impacts. Once the dark surface soil layer is disturbed, exposing the much lighter colour of the subsurface soil, a strong contrast is created that may take many years to recover.

There are several ways to reduce the contrasts created by earthwork construction. Proper location and alignment are the most important factors. Other earthwork design techniques, such as balancing cut and fill or constructing with all fill or all cut should be considered, where appropriate, as methods to reduce strong visual impacts. Measures relevant to the project include:

- The scars left by excessive cut and fill activities during construction often leave long-lasting negative visual impacts. Where possible fitting the proposed project infrastructure to the existing landforms in a manner that minimizes the size of cuts and fills will greatly reduce visual impacts from earthwork.
- The dumping of excess rock and earth on downhill slopes should be limited.

8.2.4 Limiting the footprints and heights of structures

Visual impact can be reduced by limiting the footprint of the buildings and hardscaping as well as the heights of buildings. Limiting the footprint of infrastructure will help to provide more greening areas in between buildings which will assist with screening and visual absorption of structures. The height of structures should be kept as low as possible to keep infrastructure unobtrusive as possible and allow scenic views (Outeniqua mountain range).

8.2.5 Development and architectural guidelines

Development and building guidelines need to address procedural, planning and aesthetic considerations required for the successful design and development of the property and the architectural ethos of the development. The purpose of design guidelines is to protect and safeguard the environment and scenic resources and guide the appropriate architectural character to protect the investment value of the development.

The guidelines should not be restrictive conditions but should promote an overall design sensitivity whilst allowing flexibility for individual expression. The buildings should aim to be as visually recessive as possible.

Of importance to visual impact, aspects will be height, finishes and form, with the grouping of components in separate but linked forms providing a better visual impact than one larger component. Orientation, materials, low pitch roofscape will all contribute to visual mitigation. Colours of walls should be muted earth colours excluding white, beige and cream. Roof colour should be dark grey. Windows should be recessed with overhangs to prevent reflection of the sun.

8.2.6 Landscaping

A Landscape Plan must be drawn up by a professionally registered Landscape Architect. The objective of the Landscape Plan must be:

- To identify and retain indigenous trees and shrubs that will visually screen the development.
- To provide a planting plan of indigenous trees and shrubs for streets and open spaces that will allow for the medium – long-term visual screening of the development and enhance the living environment of the development.
- To draw up a management plan for phasing in indigenous trees and phasing out of invasive alien trees such that the proposed development will always be screened from sensitive receptors, by trees. The plan should include the planting of fast-growing, pioneer type trees, trees with a medium growth rate and those that have a slower growth rate. This management plan should be for a minimum of 20 years and should be monitored and revised every 5 years.
- The planting of lawns alone will exacerbate the visibility of the development. The mix of lawn, shrubs and trees should be carefully designed with the importance of trees and large shrubs emphasized, to provide further greening of the built environment.
- To draw up a Landscape Operational Maintenance Plan for the development to manage the open spaces effectively.
- To provide guidelines on visually permeable boundary treatments, using fencing for the most part and walls at entrances only.

8.2.7 Lightning design

Effective light management needs to be incorporated into the design of the lighting to ensure that the visual influence is limited.

Several measures can be implemented to reduce light pollution and those relevant to the project are as follows:

- Where possible construction activities should be conducted behind noise/light barriers that could include vegetation screens.
- Low flux lamps and direction of fixed lights toward the ground should be implemented where practical. Choose “full-cut off shielded” fixtures that keep light from going uselessly up or sideways. Full cut-off light fixtures produce minimum glare. They also increase safety because they illuminated people, cars, and terrain. Bright light bulbs can be seen from a distance.
- The design of night lighting should be kept to a minimum level required for operations and safety
- The utilisation of specific frequency LED lighting with a green hue on perimeter security fencing.
- Where feasible, put lights on timers to turn them off each night after they are no longer needed

8.2.8 Restoration and reclamation

Strategies for restoration and reclamation are very much similar to the design strategies for earthwork, as well as the design fundamentals of repeating form, line, colour, and texture and reducing unnecessary disturbance.

The objectives of restoration and reclamation include reducing long-term visual impacts by decreasing the amount of disturbed area and blending the disturbed area into the natural environment while still providing for project operations.

Though restoration and reclamation are a separate part of project design, they should not be forgotten or ignored. It is always a good idea to require a restoration/reclamation plan as part of the original design package. All areas of disturbance that are not needed for operation and maintenance should be restored as closely as possible to previous conditions. Measures relevant to the project include:

- The objective of restoration and reclamation efforts is to reduce the long-term visual impacts by decreasing the amount of disturbed area and blending the disturbed area into the natural environment while still providing for project operations.
- Topsoil should be stripped, saved, and replaced on earth surfaces disturbed by construction activities.
- Planting holes should be established on cut/fill slopes to retain water and seeds.
- Indigenous plant species should be selected to rehabilitate disturbed areas.
- Where possible rehabilitation efforts such should emulate surrounding landscape patterns in terms of colour, texture and vegetation continuums that historically occurred in the area.
- Replacing soil, brush, rocks and forest debris over disturbed earth surfaces when appropriate, thus allowing for natural regeneration rather than introducing an unnatural looking grass cover.
- Revegetation of disturbed areas should occur as soon as practicable possible after the completion of various construction activities.

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