Visual Impact Assessment for the Proposed Tergniet Mixed-Use Development, Tergniet, Western Cape Province

SUBMITTED FOR ENVIRONMENTAL AUTHORISATIONS IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) (NEMA).

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Applicant:	3MP Sales and Education Services	
Revision Number:	000	
Date Issued:	14th October 2024	

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EXECUTIVE SUMMARY

The proposed Tergniet Mixed-Use Development is located to the north of the N2 highway, adjacent to the small coastal village of Tergniet, ~14km north-east of Mossel Bay town, Western Cape Province. The site is strategically positioned between the towns of Groot Brakrivier and Klein Brakrivier, making it an accessible and potentially significant development area in terms of local urban expansion. The site's proximity to major transport routes, including the N2 and R102, enhances its potential for mixed-use development, catering to both residential and commercial needs.

The VIA for the proposed Tergniet Mixed-Use Development has been conducted with a comprehensive analysis of the potential visual impacts across all phases of the project, including construction, operation, and decommissioning. This assessment considers the project's visibility from key viewpoints, the potential impact on residents and scenic corridors, and the effectiveness of proposed mitigation measures.

Based on the findings, the project site demonstrates a moderate capacity to absorb the visual changes due to the existing semi-urban and agricultural landscape, as well as its proximity to transport routes like the N2 and R102. The operational phase introduces new structures and activities that will alter the landscape and potentially affect the sense of place for nearby residents. However, with the implementation of key mitigation measures—such as vegetative screening, landscape integration, and lighting management—the visual impacts can be reduced to an acceptable level.

The visual impact of the development is not anticipated to result in significant or irreversible visual disruption. Furthermore, the mitigation strategies outlined align with industry best practices and are deemed practical and achievable within the project's scope. The overall

landscape character, which consists of mixed residential, agricultural, and open spaces, can accommodate the proposed development without compromising the visual integrity of the area.

In addition to site-specific impacts, cumulative visual impacts were evaluated considering other developments along the N2 and R102 corridors. The introduction of the Tergniet Mixed-Use Development will contribute to the evolving landscape character, but it aligns with the region's broader development trends. Given the existing infrastructure and semi-urban context, the project is unlikely to result in significant cumulative visual disruption. However, continued collaboration with local authorities and neighbouring developments is recommended to maintain visual coherence in the area.

The VIA concludes that the proposed Tergniet Mixed-Use Development does not present any fatal flaws from a visual perspective. The project is supported from a visual perspective and can be authorised, provided that the recommended mitigation measures are implemented and maintained throughout the construction and operational phases. Continuous monitoring and adaptive management are advised to address any unforeseen visual impacts that may arise.

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LIST OF ABBREVIATIONS

Abbreviation	Description
BAR	Basic Assessment Report
CA	Competent Authority
CBA	Critical Biodiversity Area
DFFE	Department of Forestry, Fisheries and Environment
EA	Environmental Authorisation

Abbreviation	Description
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme Report
ESA	Ecological Support Area
ETC	Eco Thunder Consulting (Pty) Ltd
GIS	Geographical Information Systems
HA	Hectares
IFC	International Finance Corporation
MEA	Millennium Ecosystem Assessment
MW	Megawatts
NEMA	National Environmental Management Act
O&M	Operation and Maintenance
OHL	Overhead Line
SACLAP	South African Council for the Landscape Architectural Profession
SES	Sharples Environmental Services CC
SLA	Service Level Agreement
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VAC	Visual Absorption Capacity
VIA	Visual Impact Assessment
WHC	World Heritage Convention

GLOSSARY LIST

Glossary Item	Description
Aesthetic Value	Aesthetic value is the emotional response derived from the experience of the environment with its natural and cultural attributes. The response can be either to visual or non-visual elements and can embrace sound, smell and any other factor having a strong impact on human thoughts, feelings, and attitudes (Ramsay, 1993). Thus, aesthetic value encompasses more than the seen view, visual quality, or scenery, and includes atmosphere, landscape character and sense of place (Schapper, 1993).

Glossary Item	Description
Aesthetically significant place	A formally designated place visited by recreationists and others for the express purpose of enjoying its beauty. For example, tens of thousands of people visit Table Mountain on an annual basis. They come from around the country and even from around the world. By these measurements, one can make the case that Table Mountain (a designated National Park) is an aesthetic resource of national significance. Similarly, a resource that is visited by large numbers who come from across the region probably has regional significance. A place visited primarily by people whose place of origin is local is generally of local significance. Unvisited places either have no significance or are "no trespass" places. (After New York, Department of Environment 2000).
Aesthetic impact	Aesthetic impact occurs when there is a detrimental effect on the perceived beauty of a place or structure. Mere visibility, even startling visibility of a Project proposal, should not be a threshold for decision making. Instead, a Project, by its visibility, must clearly interfere with or reduce (i.e., visual impact) the public's enjoyment and/or appreciation of the appearance of a valued resource e.g., cooling tower blocks a view from a National Park overlook (after New York, Department of Environment 2000).
Cumulative Effects	The summation of effects that result from changes caused by a development in conjunction with the other past, present, or reasonably foreseeable actions.
Glare	The sensation produced by luminance within the visual field that is sufficiently greater than the luminance to which the eyes are adapted, which causes annoyance, discomfort, or loss in visual performance and visibility. See Glint. (USDI 2013:314)
Glint	A momentary flash of light resulting from a spatially localized reflection of sunlight. See Glare. (USDI 2013:314)
Landscape Character	The individual elements that make up the landscape, including prominent or eye-catching features such as hills, valleys, woods, trees, water bodies, buildings, and roads. They are generally quantifiable and can be easily described.
Landscape Impact	Landscape effects derive from changes in the physical landscape, which may give rise to changes in its character and how this is experienced (Institute of Environmental Assessment & The Landscape Institute 1996).
Study area	For the purposes of this report this Project the study area refers to the proposed Project footprint/Project site as well as the ‘zone of potential influence’ (the area defined as the radius about the centre point of the Project beyond which the visual impact of the most visible features will be insignificant) which is a 5,0km radius surrounding the proposed Project footprint/site.
Project Footprint/Site	For the purposes of this report the Project site/footprint refers to the actual layout of the Project as described.

Glossary Item	Description
Sense of Place (genius loci)	Sense of place is the unique value that is allocated to a specific place or area through the cognitive experience of the user or viewer. A genius locus literally means 'spirit of the place'.
Sensitive Receptors	Sensitivity of visual receptors (viewers) to a proposed development.
Viewshed analysis	The two-dimensional spatial pattern created by an analysis that defines areas, which contain all possible observation sites from which an object would be visible. The basic assumption for preparing a viewshed analysis is that the observer eye height is 1,8m above ground level.
Visibility	The area from which Project components would potentially be visible. Visibility depends upon general topography, aspect, tree cover or other visual obstruction, elevation, and distance.
Visual Exposure	Visibility and visual intrusion qualified with a distance rating to indicate the degree of intrusion and visual acuity, which is also influenced by weather and light conditions.
Visual Impact	Visual effects relate to the changes that arise in the composition of available views because of changes to the landscape, to people's responses to the changes, and to the overall effects with respect to visual amenity available views because of changes to the landscape, to people's responses to the changes, and to the overall effects with respect to visual amenity.
Visual Intrusion	The nature of intrusion of an object on the visual quality of the environment resulting in its compatibility (absorbed into the landscape elements) or discord (contrasts with the landscape elements) with the landscape and surrounding land uses.
Visual Absorption Capacity (VAC)	VAC is defined as the landscape's ability to absorb physical changes without transformation in its visual character and quality. The landscape's ability to absorb change ranges from low- capacity areas, in which the location of an activity is likely to cause visual change in the character of the area, to high-capacity areas, in which the visual impact of development will be minimal (Amir & Gidalizon 1990).
Worst-case Scenario	Principle applied where the environmental effects may vary, for example, seasonally or collectively to ensure the most severe potential effect is assessed.
Zone of Potential Visual Influence	By determining the zone of potential visual influence, it is possible to identify the extent of potential visibility and views which could be affected by the proposed development. Its maximum extent is the radius around an object beyond which the visual impact of its most visible features will be insignificant primarily due to distance.

SPECIALIST CHECKLIST

No.	NEMA 2014 (as amended) Regs - Appendix 6(1) Requirement	Report Section
	A specialist report prepared in terms of these Regulations must contain -	
a	details of - • the specialist who prepared the report; and • the expertise of that specialist to compile a specialist report including a curriculum vitae.	Specialist Details and Appendix A
b	a declaration that the specialist is independent in a form as may be specified by the competent authority (CA);	Specialist Declaration
c	an indication of the scope of, and the purpose for which, the report was prepared;	Section 5.1
	an indication of the quality and age of base data used for the specialist report	Section 1.4
	a description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change	Section 7 and Section 8
d	the duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 5.4
e	a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Section 5
f	details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure, inclusive of a site plan identifying site alternatives;	Section 7
g	an identification of any areas to be avoided, including buffers;	Section **Error! Reference source not found.**
h	a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Section **Error! Reference source not found.**
I	a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 0
j	a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	Section 8.2
k	any mitigation measures for inclusion in the EMPr;	Section 8.2.4
l	any conditions for inclusion in the EA;	Section 9

No.	NEMA 2014 (as amended) Regs - Appendix 6(1) Requirement	Report Section
m	any monitoring requirements for inclusion in the EMPr or EA;	Section 8.2.4
n	a reasoned opinion - • whether the proposed activity, activities or portions thereof should be authorised; • regarding the acceptability of the proposed activity or activities; and • if the opinion is that the proposed activity, activities or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan.	Section 9
o	a description of any consultation process that was undertaken during the course of preparing the specialist report;	N/A
p	a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	N/A
q	any other information requested by the CA.	N/A

SPECIALIST DETAILS

ETC is a 100% woman-owned, private company that specialises in a range of specialist studies, such as visual impact assessments, air quality impact assessments, noise impact assessments socio-economic impact assessments, socio-economic research, economic development planning, development program design and implementation as well as community trust management. Based across South Africa, Eco-Thunder has established itself as an expert on the conditions, needs and assets of communities that are linked to independent power generation facilities.

SPECIALIST DECLARATION

Full Name	Title/Position
Brogan Geldenhuys	Director
Telephone Number	**Email Address**
064 655 2752	brogan@eco-thunder.co.za
Qualification(s):	BEng
Registration(s):	ILASA, IAIAsa, GISSA, IAP2

I, **Brogan Geldenhuys**, declare that: –

- I act as an independent specialist in this application;
- I will perform the work relating to the application objectively, even if this results in views and findings that are not favourable to the applicant;
- I declare that there are no circumstances that may compromise my objectivity in performing such work;
- I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with the Act, Regulations and all other applicable legislation;
- I have no, and will not engage in, conflicting interests in the undertaking of the activity;
- I undertake to disclose to the applicant and the CA all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken concerning the application by the CA; and - the objectivity of any report, plan or document to be prepared by myself for submission to the CA;
- All the particulars furnished by me in this form are true and correct; and
- I realise that a false declaration is an offense and is punishable by law.

Signature of the Specialist

14/10/2024

Date

Eco Thunder Consulting, acting as an independent specialist in the field of visual impact assessment within the renewable energy sector, hereby affirms its professional standing and expertise. Appointed by Sharples Environmental Services CC for the specific purpose of conducting an independent and unbiased assessment, our firm leverages approaches and methodologies that have been meticulously refined and successfully applied across various projects.

Our engagement with this project is characterized by a commitment to maintaining the highest standards of integrity and professionalism. The opinions and viewpoints expressed within this report are solely those of Eco Thunder Consulting and reflect our extensive experience and specialized knowledge in visual impact assessment within the renewable energy sector.

This assessment is conducted in accordance with the best practices and industry standards, ensuring a comprehensive and objective analysis. It is our firm belief that the methodologies employed are robust and have established precedence in maintaining the quality and accuracy required for such evaluations.

In fulfilling our role as an independent specialist, we have adhered to all relevant legal and regulatory requirements, ensuring that our assessment is both transparent and accountable. We

affirm that our relationship with Savannah Environmental and all other parties involved in this project is free from any conflict of interest or undue influence, thereby safeguarding the impartiality of our findings and recommendations.

Eco Thunder Consulting remains dedicated to providing an assessment that is not only thorough and precise but also contributes positively to the renewable energy sector, reflecting our ongoing commitment to environmental sustainability and responsible development.

The author of this report, however, accepts no liability for any actions, claims, demands, losses, liabilities, costs, damages, and expenses arising from or in connection with services rendered, and by the use of the information contained in this document.

No form of this report may be amended or extended without the prior written consent of the author and/or a relevant reference to the report by the inclusion of an appropriately detailed citation.

Any recommendations, statements, or conclusions drawn from or based on this report must cite or refer to this report. Whenever such recommendations, statements or conclusions form part of the main report relating to the current investigation, this report must be included in its entirety.

1 Background

1.1 Scope and Objective of the Specialist Study

The main aim of the study is to document the baseline and to ensure that the visual/aesthetic consequences of the proposed Tergniet Mixed-Used Development are understood. The Visual Impact Assessment (VIA) therefore aims to identify scenic resources, and visually sensitive areas or receptors. It also aims to identify key concerns or issues relating to potential visual impacts arising from the Project, and which must be addressed in the assessment phase.

1.2 Structure of the Report

The report is organised into ten sections:

- Section 1: Background;
- Section 2: Project Description;
- Section 3: Requirement for a VIA;
- Section 4: Legislation and Policy Review;
- Section 5: Approach and Methodology;
- Section 6: Baseline Environmental Profile;
- Section 7: Identification of Visual Impacts;
- Section 8: Impacts and Risks Assessment;
- Section 9: Environmental Impact Statement Conclusion; and
- Section 10: References.

1.3 Seasonal Change

In terms of Appendix 6 of the 2014 EIA Regulations, a specialist report must contain information on “the date and season of the site investigation and the relevance of the season to the outcome of the assessment”. The site visit was undertaken in **Late Winter (13 August 2024).** The seasonal variation in vegetation and landscape characteristics will be taken into consideration when evaluating the significance of the impacts identified, the mitigation measures, and the conclusions of the assessment.

1.4 Information Base

The following information was used to conduct the VIA:

- Documentation and KML files supplied by the client;

- ToR for the visual specialist;
- Photographs and information captured during the site visit;
- Google Earth software and data;
- Sentinel-2 Satellite Imagery;
- SRTM Digital Elevation Model;
- South African National Landcover dataset;
- Local zoning and planning documents;
- Historical maps and aerial photographs;
- Stakeholder input and feedback (if provided);
- Meteorological data;
- Landscape character assessments;
- Relevant Basic Assessment (BA) reports (if provided);
- Geographic Information System (GIS) data;
- Local biodiversity data; and
- Regulatory and policy documents.

1.5 Terms and Reference

A specialist study is required to establish the visual baseline and to identify and potential visual impacts arising from the proposed development based on the general requirements for a comprehensive VIA.

The following terms of reference were established:

- Data collected allows for a description and characterisation of the receiving environment;
- Describe the landscape character, quality and assess the visual resource of the study area;
- Describe the visual characteristics of the components of the Project;
- Identify issues that must be addressed in the impact assessment phase; and
- Propose mitigation options to reduce the potential impact of the Project.

1.6 Level of Confidence

The level of confidence in the assessment is determined by two key factors: the availability of information and the practitioner's understanding of the study area and experience with similar projects. These factors are rated on a scale of 1 to 3, as follows:

- Availability of Information of the Study Area /Project:
  - 3: High level of information available; thorough knowledge base established through accessible site visits, surveys, etc.
  - 2: Moderate level of information available; moderate knowledge base established, with acceptable accessibility to the study area.
  - 1: Limited information available; poor knowledge base established, or no site visits and/or surveys carried out.
- Understanding of the Study Area, and Experience with Similar Projects:
  - 3: High level of information and knowledge available; visual impact assessor is highly experienced with this type of project and level of assessment.
  - 2: Moderate level of information and knowledge available; visual impact assessor has moderate experience with this type of project and level of assessment.
  - 1: Limited information and knowledge available; visual impact assessor has low experience with this type of project and level of assessment.

The level of confidence for this assessment is determined to be 9 and indicates that the author's confidence in the accuracy of the findings is high.

1.7 Limitations and Assumptions

The following assumptions and limitations are applicable to this Report:

Assumptions:

- The assessment has been based on the requirements of the Western Cape Department of Environmental Affairs & Development Planning Guidelines (WC DEDP)[1]
- The assessment assumes that all necessary consultations with stakeholders, including local communities, authorities, and other interested parties, have been/will be

[1] The WC DEDP Guidelines offer detailed directives on incorporating visual and aesthetic specialists into the EIA processes. These guidelines represent the primary legislative framework specifically pertaining to Visual Impact Assessments (VIA) in the region. While provincial insights and information will be integrated into the respective reports where feasible, it is important to note that the WC DEDP Guidelines are regarded as the definitive legislative standard for best practices in VIA.

conducted in accordance with legal requirements, and that their views and concerns have been duly considered.

- Whilst most homesteads and housing areas were visited during the site visit in order to confirm their nature and likely visibility of the development, it was not possible to visit all homesteads and housing areas.
- The information and analysis provided in this report is based on the details available during the undertaking of the VIA. As the VIA specialists, we have, to the best of our ability, analysed and interpreted the data provided.
- We operate under the assumption that all information supplied by the client is accurate, current, and reflective of the agreements made with relevant landowners. Our assessments and recommendations are based on the information provided to us, and we rely on the client to ensure that this information is complete and up to date.
- The Project report uses the concept of 'worst case scenario' to identify issues and rate visual impacts. This scenario assumes that all facilities would be constructed at the same time.

Limitations:

- It was not possible to visit all homesteads and housing areas.
- The information and analysis are based on the details available during the undertaking of the VIA, and there is an inherent limitation in the data available at any given time.
- There is a reliance on the accuracy, currency, and completeness of the information supplied by the client. Any decisions regarding development on specific portions of land, including agreements on relocations, demolitions, or other alterations, should be confirmed and discussed directly with the relevant landowners.
- Regulation 11(3) of the EIA Regulations, which suggests that if more than one activity is part of the same development, a single application may be required, discourages the practice of splitting components or assessing them in isolation, thereby promoting a unified and integrated approach to cumulative impact assessment.
- The findings, assessments, and recommendations represent the professional judgment of the VIA practitioners at the time of the assessment. While every effort has been made to ensure accuracy and completeness, this report does not constitute legal, financial, or other specialised advice.
- The responsibility for implementing the recommendations, mitigation measures, and any other actions outlined in this report lies solely with the client or project proponent. The VIA practitioners are not responsible for monitoring, enforcing, or ensuring compliance with these measures.

2 Project Description

3MP Sales and Education Services has appointed Sharples Environmental Services (SES) to conduct the necessary Basic Assessment (BA) process for the proposed Tergniet Mixed-Use Development near Mossel Bay, Western Cape, South Africa. SES has further commissioned Eco-Thunder Consulting (Pty) Ltd (ETC) to undertake a VIA for the proposed development. The VIA is a critical component of the overall BA process, designed to identify and evaluate the potential visual impacts associated with the proposed mixed-use development.

The goal of the VIA is not to predict whether individual receptors will find the project attractive or not. Instead, the goal is to identify visual characteristics of the surrounding landscape, especially the features and characteristics that contribute to scenic quality, as the basis for determining how and to what degree the proposed project will affect those scenic values.

The primary aim of the impact assessment phase is to ensure that visual impacts are adequately assessed and considered so that the relevant environmental authorities can assess whether the visual impacts are significant and require mitigation or whether they fall within acceptable limits. The secondary aim is to identify effective and practical mitigation measures, where possible.

The VIA process involves several key steps, including:

- Identifying and mapping existing sensitive receptors, buffers, key viewpoints, and view corridors;
- Identifying and screening potential visual concerns;
- Ensuring that the visual assessment will be in compliance with relevant standards, policies, laws, and regulations; and
- Providing recommendations and mitigation measures, where applicable, to the impact assessment phase.

The VIA is conducted in accordance with the guidelines provided by relevant authorities, and while there is little legislation relating directly to VIAs, there are guidelines that provide direction for visual assessment as well as a number of laws which aim to protect visual resources.

2.1 Project Location

The proposed Tergniet Mixed-Use Development is located to the north of the N2 highway, adjacent to the small coastal village of Tergniet, ~14km north-east of Mossel Bay town, Western Cape Province.

The site is strategically positioned between the towns of Groot Brakrivier and Klein Brakrivier, making it an accessible and potentially significant development area in terms of local urban expansion. The site’s proximity to major transport routes, including the N2 and R102, enhances its potential for mixed-use development, catering to both residential and commercial needs.

Table 1, Table 2, Figure 1 and Figure 2 below provides the details of the project, including the main infrastructure components and services that will be required during the project life cycle.

Table 1: Locality Overview

Component	Description
Local Municipality	Mossel Bay Local Municipality
District Municipality	Garden Route District Municipality
Ward Number	Ward 4
Nearest Town(s)	Groot Brakrivier (~3.6km north-east) and Klein Brakrivier (3.8km south-west)
Access Road	Access via Old Mossel Bay Road and R102

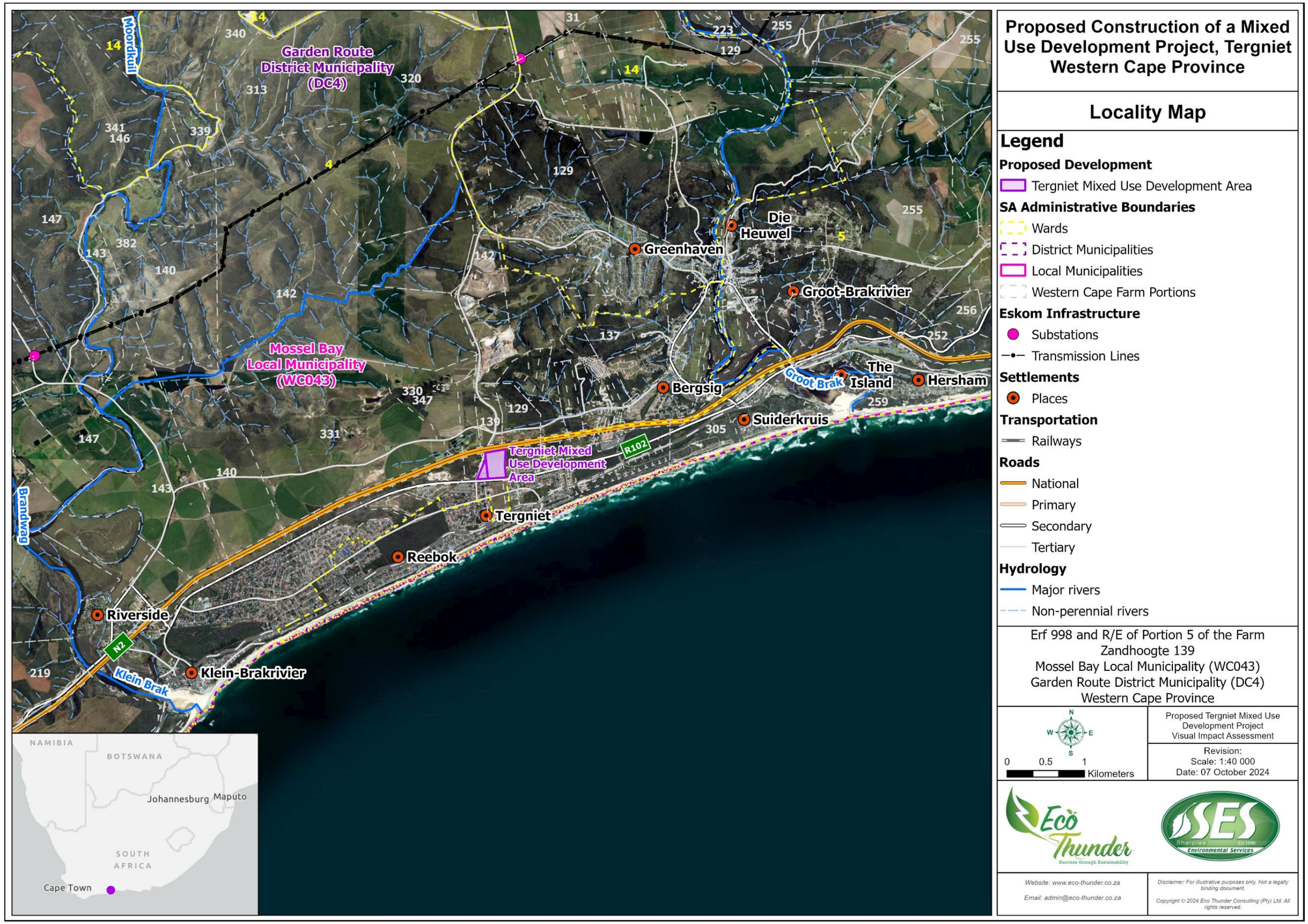


Figure 1: Locality Map

2.2 Project Technical Details

Table 2, Figure 2 and Figure 3 provides the technical details of the project, including the main infrastructure components and services that will be required during the project life cycle.

Table 2: Technical Details of the Proposed Tergniet Mixed-Used Development

Component	Description/Dimensions
Farm name(s) and number(s) of properties affected by the Development, incl SG 21 Digit Code (s)	• Erf 998 (C05100090000099800000); and • Remaining Extent of Portion 5 of the Farm Zandhoogte 139 (C05100000000013900005)
Current zoning	Agricultural Zone 1
Site Coordinates (centre of development area)	Lat: 34° 3'48.90"S Long: 22°11'22.87"E
Total extent of the Affected Properties, also referred to as the project site[2]	~10.3751ha
Total extent of the Development area[3]	Up to ~10.3751ha
Total extent of the Development footprint[4]	~10.236ha
Proposed Zoning Categories	Business Zone I (BZI); Business Zone IV (BZIV); General Residential Zone II (GRZII); General Residential Zone III (GRZIII); Mixed Use Zone II (MZII); Community Zone III (CZIII); Open Space Zone II (OSZII); and Transport Zone II (TZII).
Building Heights and Density	The Tergniet Mixed-Use Development is designed with a variety of zoning categories, each with specific regulations regarding building heights and density, such as: • Business Zone I (BZI): In this zone, building heights will generally be limited to a maximum of 3 storeys (~12m), allowing for commercial developments such as retail

[2] The project site is that identified area within which the development area and development footprint are located. It is the broader geographic area assessed as part of the EIA process, within which indirect and direct effects of the project may occur. The project site is ~10.3751ha in extent.

[3] The development area is that identified area where the proposed project is planned to be located, within which indirect and direct effects of the project may occur. This area has been selected as a practicable option for the facility, considering technical preference and constraints. The development area is ~10.3751a in extent.

[4] The development footprint is the defined area (located within the development area) where the project and other associated infrastructure for the mixed-use development is planned to be constructed. This is the actual footprint of the facility, and the area which would be disturbed. The development footprint is ~10.236ha in extent.

Component	Description/Dimensions
	outlets, offices, and small businesses. The density is regulated to ensure that these commercial areas remain accessible and do not overwhelm the surrounding infrastructure. • General Residential Zone II (GRZII): This zone is intended for higher-density residential development, with a maximum allowable density of up to 60 dwelling units per hectare. Buildings in this zone will typically be limited to 2 to 3 storeys (~8 to 12m in height). This density is aimed at providing a mix of housing options, including townhouses and low-rise apartment buildings, catering to a range of residential needs within the community. • General Residential Zone III (GRZIII): The GRZIII zone is intended for medium-density residential development, with a lower density compared to GRZII. The maximum allowable density is up to 40 dwelling units per hectare, with building heights generally limited to 2 storeys (~8m). This zone is designed for single-family homes, duplexes, and small clusters of residential units, promoting a more suburban character within the development. • Mixed Use Zone II (MZII): In this zone, a combination of residential, commercial, and retail spaces will be developed. Building heights may vary depending on the specific use, with a general limit of 4 storeys (up to 16m). The density in MZII zones will be managed to ensure that the mixed-use environment is vibrant and dynamic, supporting both residential living and commercial activity while maintaining a comfortable scale. • Community Zone III (CZIII): This zone is designated for community facilities such as schools, clinics, and other public amenities. Building heights in CZIII zones will typically be limited to 2 storeys (~8m), ensuring that these structures blend into the surrounding residential and commercial areas. The density is managed to allow for adequate space for outdoor activities, parking, and other community needs. • Open Space Zone II (OSZII): This zone is reserved for parks, green spaces, and recreational areas. No significant building development is planned for OSZII zones, except for small structures such as pavilions, restrooms, or storage facilities necessary for park

Component	Description/Dimensions
	maintenance. These structures will generally be single-storey and will not exceed 4m in height, preserving the open and natural character of these areas.
On-site Facilities and Infrastructure	• Commercial buildings (retail, offices, etc.); • Residential units and mixed-use buildings; • Community facilities, including schools and clinics; • Open spaces and recreational areas; • Internal roads and parking facilities; • Utility infrastructure, including water, sewage, and electricity systems.
Access roads and internal roads	• The site will be accessed via existing roads, including the N2 and R102. • New internal roads will be developed, with primary routes within the development measuring up to 6m wide to accommodate traffic flow and access to different zones.
Other Infrastructure	• Water and sewage infrastructure connected to municipal services • Stormwater management systems • Electrical infrastructure, including connections to the local grid • Perimeter fencing and security features where necessary.

The operational requirements for the proposed Tergniet Mixed-Use Development include provisions for electrical usage, water sourcing, sewage management, and responsibilities during the construction phase. Nominal electrical needs for the development will be supplied by the local grid, with minimal electricity usage expected for regular operations. Water will be sourced from the Mossel Bay Municipality's network, which includes several supply sources, and will be used for sanitation, dust control, and general operational purposes. Rainwater collection systems may also be implemented in certain residential areas to supplement water needs.

For sewage and sanitation, the development is expected to connect to the municipal sewage system where capacity allows. However, if municipal capacity is insufficient, alternative methods such as storage tanks or contracted removal services will be considered to ensure effective waste management. During the construction phase, the appointed contractor will be responsible for managing water, sanitation, and solid waste, with water for construction activities (such as dust control) sourced from the local municipality. All waste management practices during construction will adhere to the requirements outlined in the Environmental Management Programme (EMPr), ensuring compliance with environmental regulations and best practices.

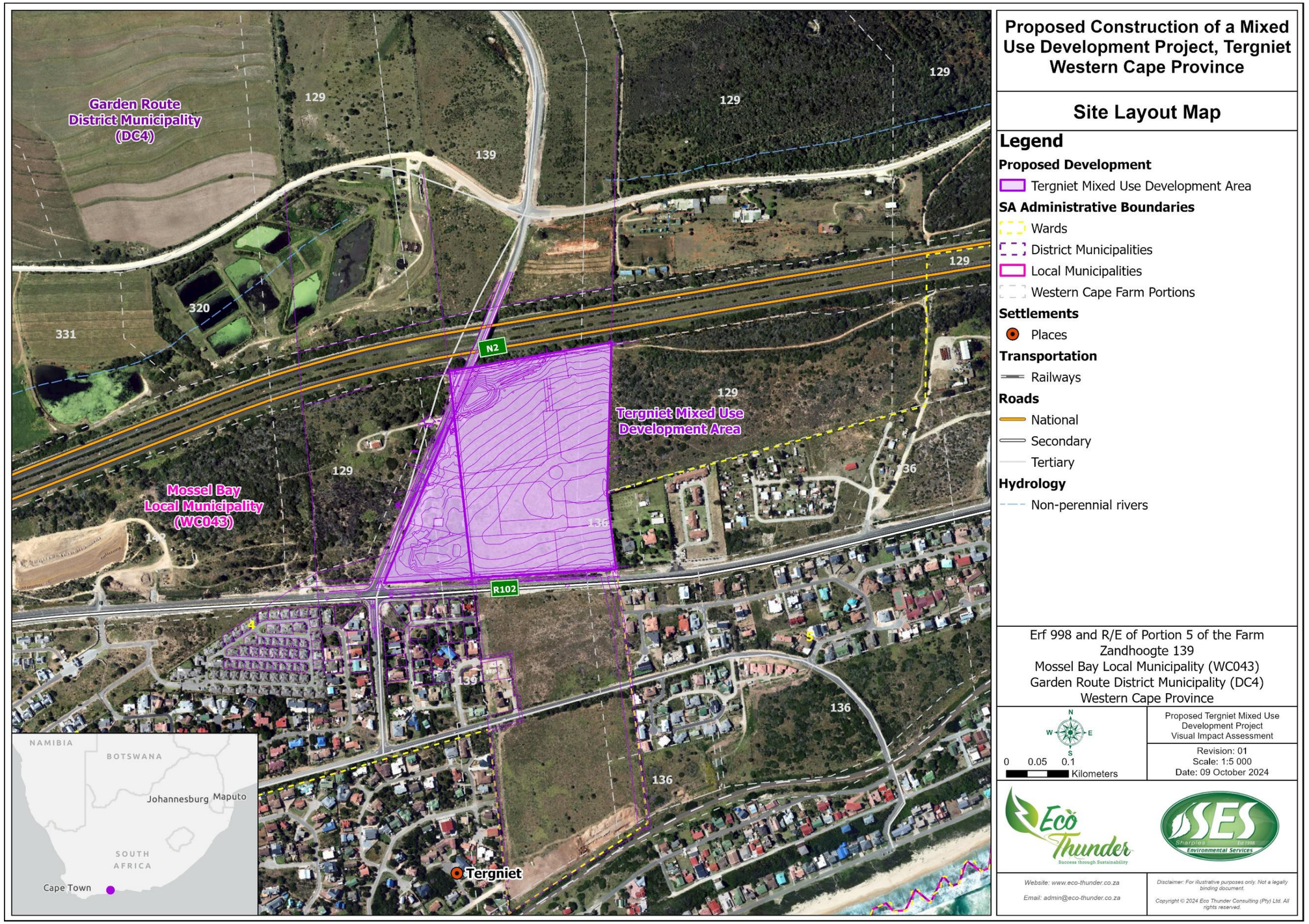


Figure 2: Site Layout Map

2.3 Assessment Alternatives

2.3.1 Location Alternatives

No alternative locations are being considered for the Tergniet Mixed-Use Development. The decision to develop on the chosen site was made based on the ownership of the land by the Applicant. This specific site was selected for its strategic location between Groot Brakrivier and Tergniet, with easy access to major transport routes such as the N2 and R102, which are essential for commercial and residential development. These factors render alternative locations unnecessary for this particular project.

2.3.2 Layout Alternatives

For the Tergniet Mixed-Use Development, three layout alternatives have been considered, each involving different buffer sizes on the northern boundary to address environmental and visual concerns. These alternatives vary in terms of their approach to mitigating impacts on sensitive areas, particularly along the site's boundary with the N2 highway.

The preferred layout includes a 40m buffer along the northern boundary of the site, which is adjacent to the N2 highway. This buffer serves as a mitigation measure to reduce the visual impact of the development on passing motorists and to preserve a degree of natural landscape along this boundary. The layout also accommodates internal roads, mixed-use zones, and open spaces, with careful attention paid to minimising disturbance to the surrounding environment. This alternative strikes a balance between development needs and environmental considerations, making it the preferred option.

Alternative 1 presents a layout without a buffer along the northern boundary. While this option maximises the use of the available land, it offers less visual and environmental protection along the boundary with the N2 highway. Without a buffer, the development may be more visible from the highway, which could have implications for both aesthetic and environmental factors. This alternative is considered less desirable due to the increased visibility and potential for greater environmental impact.

Alternative 2, recommended by one of the environmental specialists, proposes an 80m buffer along the northern boundary. This alternative was suggested as a way to further reduce the visual impact of the development and enhance the natural buffer zone between the development and the N2 highway. However, it is not the preferred option due to the significant reduction in usable land area for development. While this alternative provides the most substantial mitigation for visual and environmental impacts, it is not favoured because it limits the development potential of the site.

Figure 3: Proposed Site Development Plan

2.3.3 No-Go Alternative

The ‘no-go’ alternative is the option of not undertaking the proposed Tergniet Mixed-Use Development, leaving the site unchanged, retaining its current agricultural zoning and the existing nursery, ornamental garden, and café on Erf 998. Hence, if the ‘no-go’ option is implemented, there would be no development. This alternative would result in no environmental impacts from the proposed project on the site or surrounding local area. It provides the baseline against which other alternatives are compared and will be considered throughout the report.

3 Requirement for a VIA

As outlined in Table 3, the requirement for visual input may arise from the characteristics of both the receiving environment and the project itself. The following indicators are identified as potential signals for the necessity of visual input:

The nature of the receiving environment:

- Areas with protection status, such as national parks or nature reserves;
- Areas with proclaimed heritage sites or scenic routes;
- Areas with intact wilderness qualities, or pristine ecosystems;
- Areas with intact or outstanding rural or townscape qualities;
- Areas with a recognized special character or sense of place;
- Areas lying outside a defined urban edge line;
- Areas with sites of cultural or religious significance;
- Areas of important tourism or recreation value;
- Areas with important vistas or scenic corridors; and
- Areas with visually prominent ridgelines or skylines.

The nature of the project:

- High intensity type projects including large-scale infrastructure;
- A change in land use from the prevailing use;
- A use that is in conflict with an adopted plan or vision for the area;
- A significant change to the fabric and character of the area;
- A significant change to the townscape or streetscape;
- Possible visual intrusion in the landscape; and
- Obstruction of views of others in the area.

These indicators can help determine whether a visual impact assessment is necessary for a particular project. It's important to note that this list is not exhaustive and other factors may also suggest the need for visual input.

3.1 Components of Visual Studies

As per Western Cape Department of Environmental Affairs & Development Planning: Guideline for Involving Visual and Aesthetic Specialists in EIA Processes Edition 1 (CSIR, 2005), the typical components of visual studies according to Box 8 are as follows:

Table 3: Typical Components of Visual Studies

Box 8: Typical Components of Visual Studies
• Identification of issues and values relating to visual, aesthetic and scenic resources through involvement of I&APs and the public. • Identification of landscape types, landscape character and sense of place, generally based on geology, landforms, vegetation cover and land use patterns; • Identification of viewsheds, view catchment area and the zone of visual influence, generally based on topography; • Identification of important viewpoints and view corridors within the affected environment, including sensitive receptors; • Indication of distance radii from the proposed project to the various viewpoints and receptors; • Determination of the VAC of the landscape, usually based on topography, vegetation cover or urban fabric in the area; • Determination of the relative visibility, or visual intrusion, of the proposed project. • Determination of the relative compatibility or conflict of the project with the surroundings; • A comparison of the existing situation with the probable effect of the proposed project, through visual simulation, generally using photomontages.

The approach to visual assessment should be based on both quantitative and qualitative aspects. Quantitative aspects often make use of landscape resource classification methods. These may include combinations of landforms (geomorphology), vegetation cover, and land use mapping.

The actual approach and method used would depend on the level of visual input required in the EIA process. Effective interaction with other specialists should be facilitated by the EIA practitioner to ensure that an integrated approach is adopted, where the various components of the environment are seen.

This visual guideline document is therefore an attempt to develop a 'best practice' approach for visual specialists, EIA practitioners and authorities involved in the EIA process.

4 Legislation and Policy Review

A vital aspect of this process involves assessing the suitability of a proposed development in relation to key planning and policy documents.

Although there is limited legislation specifically addressing VIAs, there exist guidelines that offer guidance for conducting visual assessments. Additionally, several laws are in place to safeguard visual resources, as well as regulations applicable to specialists in various fields.

This report adheres to the following legal requirements and guideline documents:

- International Good Practice.
- National Legislation and Guidelines; and
- Policy Fit.

4.1 International Good Practice

The following documentation provides good practice guidelines, specifically:

- Guidelines for Landscape and VIA[5];
- Millennium Ecosystem Assessment (MEA);

4.1.1 Guidelines for Landscape and Visual Impact Assessment, Second Edition

These guidelines establish principles that promote consistency, credibility, and effectiveness in landscape and VIA within the EIA process. According to the guidelines, landscape encompasses the entirety of our external environment, whether in urban or rural areas, including buildings, streets, open spaces, trees, and their interconnected relationships. The guidelines highlight the importance of landscape for various reasons, including being a natural resource, containing archaeological and historical evidence, providing habitats for plants and animals (including humans), evoking sensual, cultural, and spiritual responses, and contributing to our quality of life in urban and rural settings. Additionally, landscapes offer valuable opportunities for recreation and resources.

4.1.2 Millennium Ecosystem Assessment

According to the Ecosystems and Human Well-being document compiled by the MEA in 2005, ecosystems play a vital role in supporting human well-being through their provisioning, regulating, cultural, and supporting services. The document highlights the increasing evidence of human activities negatively impacting ecological systems globally, raising concerns about the potential consequences of these ecosystem changes on human well-being.

The MEA defined the following non-material benefits that can be obtained from ecosystems.

5 The Western Cape Guidelines are the only official guidelines for VIA reports in South Africa and can be regarded as best practice throughout the country.

- **Inspiration:** Ecosystems provide a rich source of inspiration for art, folklore, national symbols, architecture, and advertising.
- **Aesthetic values:** Many people find beauty or aesthetic value in various aspects of ecosystems, as reflected in the support for parks, scenic drives, and the selection of housing locations.
- **Sense of place:** Many people value the "sense of place" that is associated with recognised features of their environment, including aspects of the ecosystem.
- **Cultural heritage values:** Many societies place high value on the maintenance of either historically important landscapes ("cultural landscapes") or culturally significant species; and
- **Recreation and ecotourism:** People often choose where to spend their leisure time based in part on the characteristics of the natural or cultivated landscapes in a particular area. (MEA, 2005)

The MEA Ecosystems and Human Well-being: Synthesis report indicates that there has been a "rapid decline in sacred groves and species" in relation to spiritual and religious values, and aesthetic values have seen a "decline in quantity and quality of natural lands". (MEA, 2005).

4.2 National Legislation and Guidelines

To comply with the Visual Resource Management requirements, it is necessary to clarify which National and Regional planning policies govern the proposed development area to ensure that the scale, density and nature of activities or developments are harmonious and in accordance with the sense of place and character of the area.

4.2.1 National Environmental Management Act (Act 107 of 1998), EIA Regulations

The specialist report is in accordance with the specification on conducting specialist studies as per Government Gazette (GN) R 982 of the National Environmental Management Act (NEMA) (Act 107 of 1998). The mitigation measures as stipulated in the specialist report can be used as part of the EMPr and will be in support of the EIA and Appendix 6 of the EIA Regulations 2014, as amended on 7 April 2017.

4.2.2 NEMA: Protected Areas Act 57 of 2003

- Management of declared World Heritage Sites (WHS) and buffer areas within South Africa;
- The purpose of the National Environmental Management: Protected Areas Act (Act 57 of 2003) (NEMPAA) is to, inter alia, provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes. To this end, it provides for the declaration and management of various types of protected areas;

- Section 39 of NEMPAA requires the preparation and submission of a management plan for a protected area declared in terms of the Act. The objective of a management plan, as stated in Section 41 of NEPAA, is to ensure the protection, conservation and management of the protected area concerned in a manner that is consistent with the objectives of NEMPAA and for the purpose it was declared;
- Section 50(5) of NEMPAA states that “no development, construction or farming may be permitted in a nature reserve or world heritage site without the prior written approval of the management authority;
- The management authority for a WHS is established through a NEMPAA process. The Management Authority (MA) is located within and funded by the DFFE; and
- The MA is tasked with ensuring that activities within the WHS and its buffer area comply with the approved Conservation Management Plan developed for the WHS.

4.2.3 Western Cape DEA: Guideline for Involving Visual and Aesthetic Specialists in EIA Processes Edition 1 (CSIR, 2005)

Although the guidelines were specifically compiled for the Province of the Western Cape, they provide guidance that is appropriate for any BA process. According to the Western Cape Department of Environmental Affairs & Development Planning's guideline on involving visual and aesthetic specialists in BA processes, the following information is relevant for our visual impact assessment report:

- Current South African environmental legislation governing the EIA process includes the National Environmental Management Act (NEMA) (Act No. 107 of 1998) and the EIA regulations under the Environment Conservation Act (Act No. 73 of 1989).
- The Protected Areas Act (NEMA) (Act 57 of 2003, Section 17) aims to protect natural landscapes.
- The National Heritage Resources Act (Act No. 25 of 1999) and associated provincial regulations provide legislative protection for listed or proclaimed sites, such as urban conservation areas, nature reserves, and scenic routes.
- Visual pollution is controlled, to a limited extent, by the Advertising on Roads and Ribbons Act (Act No. 21 of 1940), which deals mainly with signage on public roads.
- The Municipal Systems Act (Act 32 of 2000) requires municipalities to undergo an Integrated Development Planning (IDP) process, including the preparation of a five-year strategic development plan. The IDP process, particularly the spatial component known as the Spatial Development Framework, follows a bioregional planning approach in the Western Cape Province. Bioregional planning aims to achieve landscape continuity, protect natural areas, and integrate social, environmental, and economic criteria in local planning initiatives.

Specialists should refer to the relevant provincial or local authority to determine the existence of policies, by-laws, or other restrictions regarding visual impact or the protection of scenic, rural, or cultural resources.

4.3 Policy Fit

Policy fit refers to the extent to which the proposed changes to the landscape align with planning and policy at the International, National, Provincial, and Local levels.

Regarding international best practices, the proposed landscape modifications do not meet the criteria for triggering best practice guidelines, as there are no significant cultural or landscape resources within the site or its immediate surroundings.

ETC followed the United States Bureau of Land Management's Visual Resource Management method (USDI, 2004) to determine the significance of the landscape. This method, based on mapping and Geographical Information System (GIS) techniques, enhances objectivity and consistency by utilizing standardized assessment criteria.

5 Approach and Methodology

5.1 Purpose of the Study

The purpose of the study is to document the baseline and to ensure that the visual/aesthetic consequences of the proposed Project are understood. The report therefore aims to identify scenic resources, and visually sensitive areas or receptors. It also aims to identify key concerns or issues relating to potential visual impacts arising from the Project, and which must be addressed in the assessment phase.

5.2 Approach to Study

Assessing the effects of the development on landscape resources and visual amenity involves a combination of quantitative and qualitative evaluations. Visual impact is evaluated based on the worst-case scenario, while landscape and visual assessments are distinct but interconnected processes. The landscape analysis and assessment of impacts contribute to the baseline for VIA studies. The assessment of potential landscape impacts focuses on the physical landscape as an environmental resource. In contrast, visual impacts are evaluated as the effects on viewers when an object is introduced into a view or scene.

To conduct the study, Geographic Information System (GIS) software was utilised as a tool for generating viewshed analysis and applying relevant spatial criteria to the proposed infrastructure. A detailed Digital Terrain Model (DTM) of the study area was created using topographical data provided by the Japan Aerospace Exploration Agency (JAXA), specifically the ALOS Global Digital Surface Model "ALOS World 3D - 30m" (AW3D30) elevation model.

The scope of work for this report includes.

- Identify the scope of work/assessment required;
- Establish the baseline profile of the Environment;
- Identify potentially sensitive visual receptors within the receiving environment;
- Determine visual distance/observer proximity to the development;
- Determine viewer incidence/viewer perception;
- Determine the VAC of the landscape;
- Determine significance of identified impacts;
- Propose mitigation to reduce or alleviate potential adverse visual impacts; and
- Conclude with an impact statement of significance and a project recommendation.

The VIA is determined according to the nature, extent, duration, intensity or magnitude, probability, and significance of the potential visual impacts, and will propose management

actions and/or monitoring programs and may include recommendations related to the proposed Tergniet Mixed-Use Development.

The visual impact is determined for the highest impact-operating scenario (worst-case scenario) and varying climatic conditions (i.e., different seasons, weather conditions, etc.) are not considered.

The VIA considers potential cumulative visual impacts, or alternatively the potential to concentrate visual exposure/impact within the region.

5.3 Site Verification and Specific VIA Approach

Selecting the appropriate approach for a VIA is a crucial step in the process. The method and input for a VIA should be determined based on the expected level of visual impact, the nature of the project, and the characteristics of the receiving environment– that is the baseline landscape and visual conditions.

This in turn will form the basis from which the magnitude and significance of the landscape and visual effects of the development may be identified and assessed.

Table 4 provides the site verification report for an analysis of the existing landscape features, characteristics, the way the landscape is experienced, and the condition and the value or importance of the landscape and visual resources in the vicinity of the proposed development as well as the level of assessment deemed suitable for the proposed Tergniet Mixed-Use Development.

Based on the evaluation conducted, the findings from the site verification report indicate that a Level 4 Visual Assessment will be required.

Table 4: Categorisation of Approaches and Methods Used for Visual Assessment

Approach and Method	**Type of Issue**				
	Little or No Visual Impact Expected	**Minimal Visual Impact Expected**	**Moderate Visual Impact Expected**	**High Visual Impact Expected**	**Very High Visual Impact Expected**
Level of Visual Assessment Recommended	Level 1 Visual Assessment	Level 2 Visual Assessment	Level 3 Visual Assessment	Level 4 Visual Assessment	

5.4 Significance of Visual Impact

Having established the specific type of VIA required, it is now crucial to delve into the generic aspects and themes associated with a VIA. These elements will be examined at a site-specific

level within this report, enabling us to accurately identify and understand the unique impacts associated with the site under consideration[6].

A combined quantitative and qualitative methodology, as supplied by the Environmental Practitioner, was used to describe the significance of impacts.

- **Significance** of impact is rated as consequence of impact multiplied by the probability of the impact occurring; and
- **Consequence** is determined using intensity, spatial scale, and duration criteria.

A summary of each of the qualitative descriptions along with the equivalent quantitative rating scale is given in Figure 4 below.

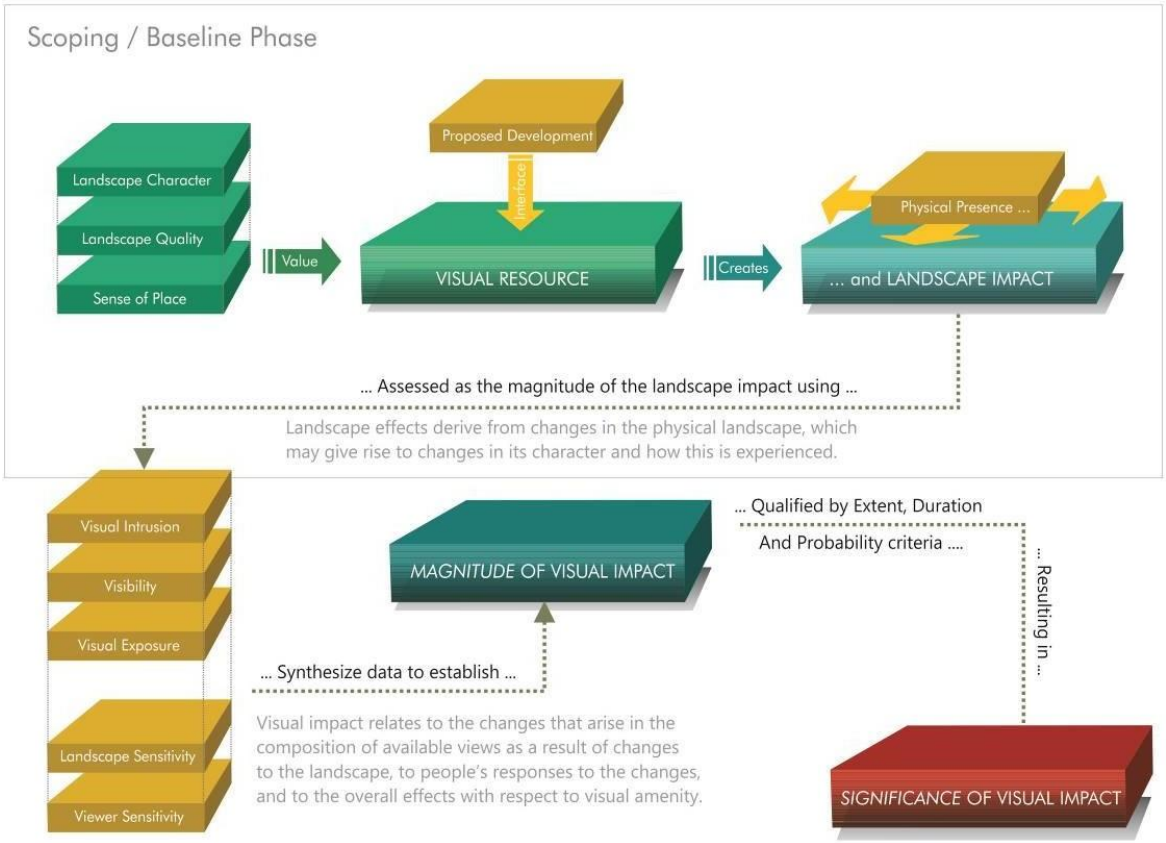


Figure 4: VIA Process

5.4.1 Landform (Topographical) and Micro-Topographical Context

The visibility of a feature within a landscape is significantly influenced by its landform context. Factors such as the feature's placement (e.g., valley bottom or ridge top), the viewer's location, and the slope's morphology can either enhance or obstruct visibility. Micro-topographical elements like buildings or vegetation can also screen views, potentially eliminating visual

[6] Themes and Elements discussed in 5.4.1 to 5.4.9 will be site specifically addressed in Session 6.

impact. Therefore, a comprehensive understanding of the topographical context is crucial in assessing visual impact.

5.4.2 Landscape Development Context

The presence/existence of other anthropogenic objects associated with the built environment may influence the perception of whether a new development is associated with a visual impact. Where buildings and other infrastructure exists, the visual environment could be already altered from a natural context and thus the introduction of a feature into this setting may be considered to be less of a visual impact than if there was no existing built infrastructure visible.

5.4.3 Receptor Type and Nature of the View

Visual impacts can be perceived by various types of receptors, including individuals driving along roads or residing/working in the vicinity where the structural feature is visible. The type of receptor influences the typical "view" of a potential source of visual impact, with views being constant in the case of residences or permanent human habitats, and transient in the case of vehicles moving along a road. The nature of the view encountered directly influences the intensity of the visual impact experienced.

5.4.4 Presence of Receptors

It is important to note that visual impacts are only experienced when there are receptors present to experience the impact; thus, in a context where there are no human receptors or viewers present there are not likely to be any visual impacts experienced.

5.4.5 Viewing Distance

The distance between the viewer or receptor location and an object is the primary factor influencing the perception of visual impacts. Beyond a certain distance, even large structural features become less visible and blend into the surrounding landscape. The visibility of an object tends to decrease exponentially as the distance from the object increases. The maximum impact is typically felt by receptors within a distance of 500m or less.

As one moves away from the source of impact, the visual impact diminishes exponentially. At a distance of 1000m, the impact is approximately one-quarter of that experienced at 500m. At distances of 5000m or more, the impact becomes negligible.

5.4.6 Sense of Place

According to Lynch (1992), a sense of place is the extent to which a person can recognise or recall a place as being distinct from other places - as having a vivid, unique, or at least particular character of its own. The sense of place for the study area derives from a combination of the local landscape types described above, their relative ‘intactness’, and their impact on the senses.

Sense of place goes hand in hand with place attachment, which is the sense of connectedness a person/community feels towards certain places. Place attachment may be evident at different

geographic levels, e.g., site specific (e.g., a house, burial site, or tree where religious gatherings take place), area specific (e.g., Zululand), and physiography specific (e.g., wetlands). Territorial behaviour is viewed as a set of behaviours and cognition a group exhibits based on perceived ownership. The concept of sense of place attempts to integrate the character of a setting with the personal emotions and memories associated with it.

Much of what is valuable in a culture is embedded in place, which cannot be measured in monetary terms. It is because of a sense of place and belonging that people loath to be moved from their dwelling place, despite the fact that they will be compensated for the inconvenience and impact on their lives. Places/natural resources should be assessed in terms of its cultural value by studying visiting and consumption patterns, behaviour patterns, etc.

5.4.7 Viewer Perception

The perception of visual impact by viewers is subjective and influenced by various factors, including the aesthetic value, identity, and sense of place associated with a landscape. The way development is perceived can vary; it may be viewed positively if it is seen as linked to progress or human upliftment, or negatively if it disrupts a cherished landscape.

The character of the landscape, its scenic value, and the surrounding land use context all play a role in determining whether new developments are seen as unwelcome intrusions. Areas of natural conservation or scenic beauty are often more sensitive to visual impacts since the natural or scenic character of the landscape contributes to its overall appeal. In such areas, structural features like high voltage power lines may be perceived as incongruous within a natural setting, often resulting in a perceived visual impact.

5.4.8 Visual Character

Visual character is shaped by human perception and the observer's response to the relationships and composition of the landscape, including the land uses and identifiable elements within it. The assessment of visual character involves describing the scenic attractiveness of the landscape, considering the landscape attributes that hold aesthetic value and make significant contributions to the visual quality of the views, vistas, and viewpoints within the study area (ALA, 2013).

5.4.9 Weather and Visibility

Meteorological factors, such as weather conditions like haze or heavy mist, can influence the nature and intensity of a potential visual impact associated with a structural feature. These factors directly impact visibility, potentially altering the way the structural feature is perceived and affecting the extent of its visual impact.

Vegetation, particularly trees and shrubs, can serve as an effective visual screen for developments helping to mitigate the visual impact on surrounding receptors. By strategically placing vegetation around the development, it can obscure or soften the view of the infrastructure, blending the development more harmoniously into the existing landscape.

5.5 Methodology

The following methodology was employed for the assessment:

- A comprehensive field survey was conducted to accurately document and describe the receiving environment. **Refer to Section 6.**
- The physical characteristics of the project components were described and depicted based on information provided by SES. **See Section 2 and Section 6 for a detailed overview.**
- The visual resource general landscape characterisation, representing the receiving environment, was mapped using data from the field survey, Google Earth imagery, and Mucina and Rutherford's (2006) reference book, *"The Vegetation of South Africa, Lesotho, and Swaziland"*. The landscape description focused on the natural features of the land rather than subjective viewer responses (refer to Appendix A).
- The landscape's character was evaluated and rated based on its aesthetic appeal, utilising established research in perceptual psychology as the foundation, and its sensitivity as a landscape receptor. **See Section 6 for a detailed overview.**
- The unique and distinct sense of place in the study area was described, considering the spatial form and character of the natural landscape, as well as the cultural transformations associated with the historical and current land use. **Section 6.1.5 for a detailed overview.**
- Viewshed analysis was conducted from the proposed project site to determine visual exposure and assess the topography's capacity to absorb potential visual impacts. The analysis considered the dimensions of the proposed structures and activities. **See Sections 7.1 and** Error! Reference source not found.**. for a detailed overview.**
- The potential impacts of the proposed projects on the visual environment were identified and rated using SES's significance rating criteria. **More information can be obtained in Section 8.2.**
- Recommendations were provided for mitigating the negative impacts of the proposed projects. **See Section 8.2 and 8.2.4 for a detailed overview.**

5.6 Project Phases and Activities

Activities to be undertaken during each of the phases are described in the following sections.

5.6.1 Environmental Authorization and Public Participation

The stakeholder consultation process is an essential component of this VIA. Rather than conducting a separate consultation, we have integrated this process with the public participation for the environmental authorisation documents. This integrated approach provides stakeholders, government authorities, and other interested parties with a 30-day period to review the VIA document and provide feedback.

All comments received during this consultation period will be carefully considered and incorporated into the final VIA. This ensures that the assessment is comprehensive, accurate, and addresses stakeholder concerns effectively.

5.6.2 Design Phase

This phase would include the clearance of vegetation, installation of perimeter fencing and levelling of the site and preliminary earthworks. Thereafter the Project site will be marked out, a construction camp set up and the access road to the site is constructed. The clearance of vegetation is not anticipated to be site wide and will depend on the detailed layout of the proposed Project[7].

5.6.3 Construction Phase

During the construction phase of the proposed Tergniet Mixed-Use Development, a systematic and comprehensive approach to development construction is followed[8], encompassing a variety of activities:

- Site Preparation: This includes site clearance, excavation, and grading based on the approved layout, while ensuring minimal disturbance to environmentally sensitive areas.
- Vegetation Clearance: Clearance will occur only in areas designated for development, with special attention to preserving natural buffers and green spaces.
- Access Roads: Construction of internal access roads, with a focus on using existing road infrastructure (N2, R102) where possible to minimise disruption.
- Foundation and Infrastructure Setup: Excavation for the foundations of residential, commercial, and community buildings, along with the installation of necessary utility infrastructure (e.g., water, sewage, electrical).
- Building Construction: Erection of commercial buildings, residential units, and community facilities, following the specifications in the site development plan.
- Stormwater and Drainage Systems: Installation of stormwater management systems to ensure adequate drainage and prevent flooding or erosion.
- Perimeter Fencing: Installation of perimeter fencing, where necessary, for security and safety.
- Rehabilitation: Rehabilitation of any disturbed areas not being developed, such as natural buffers or green spaces, with appropriate landscaping to integrate the development into the surrounding environment.

[7] During the design phase it is advisable that landowners and occupiers be engaged to ensure structures are adequately avoided
[8] Please note that the specific sequence and activities may be subject to adjustment based on the project's unique requirements and conditions.

The construction phase of the proposed project is expected to span a period of 12 to 24 months. However, this timeline can be influenced by factors such as weather conditions and unforeseen challenges encountered during construction.

5.6.4 Operational Phase

Once operational, the proposed Tergniet Mixed-Use Development will function as a mixed-use hub catering to residential, commercial, and community activities. Key activities during the operational phase include:

- Building Maintenance: Regular maintenance of residential and commercial structures, including routine inspections and repairs.
- Utility Management: Continuous operation of water, sewage, and electrical systems to support residents and businesses.
- Security: 24/7 site security monitoring, including surveillance and access control for commercial and residential areas.
- Landscaping and Vegetation Management: Ongoing management of landscaped areas, including trimming, irrigation, and upkeep of open spaces and recreational areas.
- Waste Management: Waste collection and disposal will be managed through municipal services or private contractors, ensuring minimal solid waste impact.
- Community Services: Maintenance of community facilities, such as schools, clinics, and recreational areas, ensuring their continued operation and service to local residents.
- Water Usage: Water will be sourced from the local municipality for sanitation, landscaping, and maintenance. In case of water shortages, temporary storage or alternative sourcing methods may be used.
- The operational phase will require constant monitoring to ensure that all systems are functioning efficiently and that environmental impacts are kept to a minimum.

5.6.5 Decommissioning Phase

The proposed Tergniet Mixed-Use Development is designed to be a permanent fixture within the local landscape, with ongoing maintenance and possible future expansions in line with urban development strategies. It is unlikely that the development would be decommissioned within the foreseeable future.

However, in the unlikely event of decommissioning due to changes in land use planning or redevelopment initiatives, the following steps would be undertaken:

- Dismantling of Infrastructure: Any buildings, roads, or utility infrastructure slated for removal would be dismantled, with efforts made to recycle or repurpose materials.

- Site Rehabilitation: If the site is to be restored to its natural state or repurposed, rehabilitation efforts would focus on restoring natural vegetation and addressing any environmental concerns.
- Waste Disposal: Non-recyclable materials would be disposed of according to local regulations and international best practices.

In practice, the development is expected to remain operational indefinitely, with decommissioning only considered in rare future cases of repurposing or redevelopment.

6 Baseline Environmental Profile

6.1 Character and Nature of Environment

The proposed Tergniet Mixed-Use Development is located north of the N2 highway, adjacent to the coastal village of Tergniet, ~14km north-east of Mossel Bay in the Western Cape. The site is strategically positioned between Groot Brakrivier and Klein Brakrivier, providing accessibility via the N2 and R102 highways, which serve as important transport routes in the region.

The landscape is a mix of agricultural land and semi-urban development, reflecting a transition from rural to urban land uses. Currently, the site houses a nursery, ornamental garden, and a café, with zoning as Agricultural Zone 1, but it is earmarked for a shift to mixed-use residential and commercial purposes.

The surrounding environment features flat terrain, scattered vegetation, and adjacent residential areas to the south, with undeveloped land to the west. The site's proximity to the coast influences both its climate and visual sensitivity, as coastal winds and views from key roads will play a role in shaping the potential visual impacts of the development.

6.1.1 Climate Conditions

The proposed Tergniet Mixed-Use Development is located ~14km north-east of Mossel Bay, a region characterised by a mild coastal climate with distinct seasonal variations. The climate plays a role in shaping the visual and aesthetic characteristics of the environment and must be considered when assessing the visual impacts of the development.

Summer: Summers in Mossel Bay, from December to March, are generally warm and dry. Average daily highs reach around 24°C, with minimal rainfall. The landscape during this period is often characterized by dry conditions, which can affect the visibility and colour of the natural surroundings. Long, clear days enhance visibility, making the built environment and any new structures more prominent in the landscape.

Winter: Winters, from June to September, are cooler and windier, with daily highs averaging around 19°C and lows dropping to about 11°C. Rainfall during this season is modest, with the wettest months typically being between May and July. The cooler temperatures and frequent winds can create a sharper, clearer landscape, though the greening effect of winter rains may soften the visual impact of the development.

The region’s climate is generally conducive to year-round development, with mild conditions that avoid extremes. However, the variation between the dry, clear summers and the cooler, wetter winters must be considered in the visual assessment, as these conditions affect how the landscape is perceived and how the development will blend into its surroundings.

(Source: WeatherSpark.com)

6.1.2 Topography and Landscape

The proposed site displays a moderately sloped terrain, characteristic of the coastal landscapes in the region. The development area is bordered by major transport routes, including the N2 and R102 highways, and is flanked by residential areas to the south and west. The site's proximity to these transport routes makes it visually prominent, adding to its potential impact on the surrounding environment.

The North to South elevation profile ranges from approximately 64.19m to a maximum of 74.54m, with a relatively gentle descent over the total distance of ~285.9m. The slope presents a gain of 1.2m and a total loss of approximately 11.48m. This gradual decline suggests that the northern portion of the site is slightly elevated, which could make parts of the development more visible from the north. However, the topography is not extreme, allowing for potential landscaping interventions to help blend the development into its surroundings.

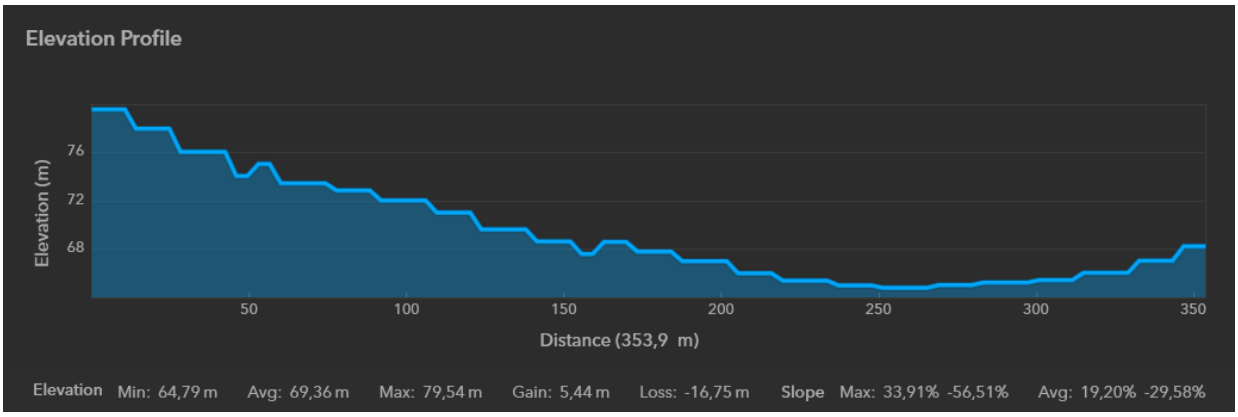


Figure 5: North to South Elevation Profile (captured from the site's midpoint)

The West to East elevation profile displays a similar variation, with the highest point being ~79.54m and the lowest ~64.79m, over a distance of ~353.9m. The profile suggests a more complex terrain with a 5.44m gain and a 16.75m loss, which may offer opportunities for partial visual screening by using the natural topography to reduce the visibility of certain built structures from the surrounding areas.

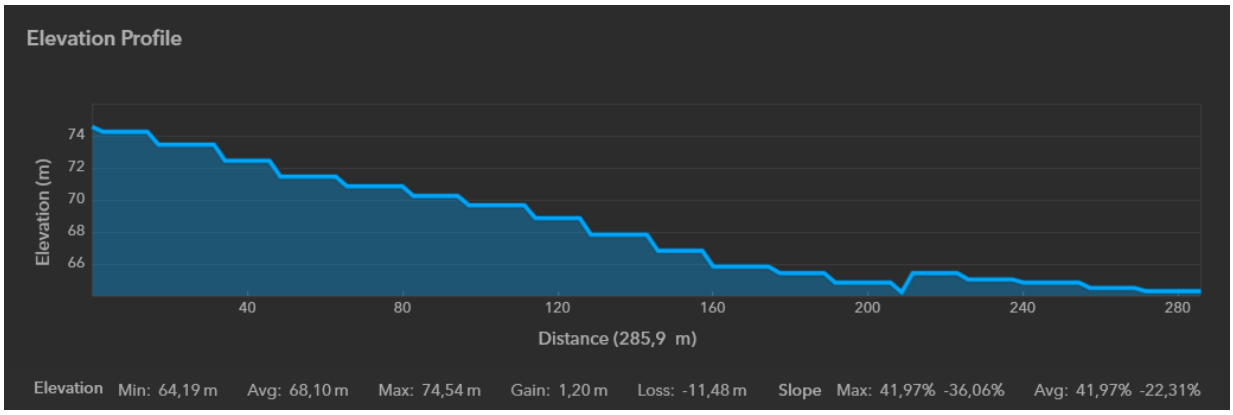


Figure 6: West to East Elevation Profile (captured from the site's midpoint)

The site's topography is predominantly characterised by these gradual slopes, which, when properly managed, can be conducive to the integration of the development into the landscape. The natural slopes and the use of native vegetation can play a key role in mitigating the visual impacts of the built environment, ensuring that the development does not stand out unnecessarily within the coastal landscape.

The existing landscape consists of agricultural and residential land uses, with surrounding undeveloped parcels and natural vegetation. The development's visual effect must consider the interplay of open space, road infrastructure, and residential zones to ensure that it aligns with the area's character. Given the site's positioning between key transportation routes, the landscape design will need to integrate both functional and aesthetic elements to minimise disruption to the scenic quality of the region.

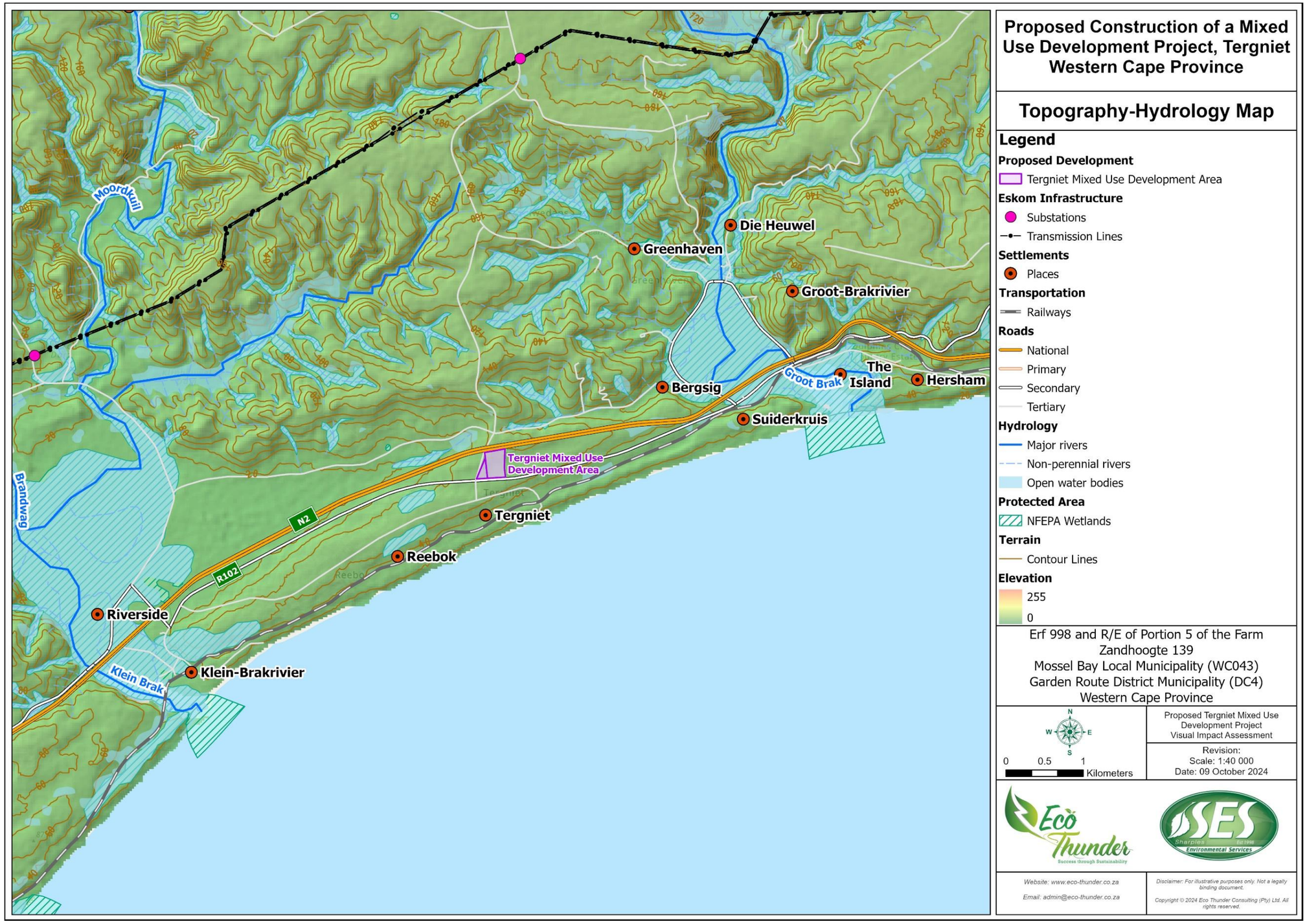


Figure 7: Map of Topographical Profile of the Proposed Site

6.1.3 Natural Landscapes

The landscape surrounding the proposed Tergniet Mixed-Use Development is notable for its diverse natural features, including open water bodies, wetlands, and conservation areas. According to the Freshwater Compliance Statement, no significant watercourses such as major rivers or perennial streams exist within the proposed development area, but the presence of non-perennial streams does introduce hydrological elements that must be considered.

Additionally, the site's position within proximity to the larger hydrological network, including catchment areas and minor wetland patches as indicated by Figure 7, underscores its connection to regional water flow and biodiversity. The Groot Brak River is located ~2km north-east, and the Klein Brak River is located ~4km south-west of the proposed Tergniet Mixed-Use Development site. These features provide habitat corridors that maintain ecological connectivity across the landscape, despite the temporary presence of water in the streams.

The project area falls within the broader context of fynbos and thicket vegetation types, as described in the Botanical Comment for the proposed development. Specifically, the Groot Brak Dune Strandveld, a vulnerable vegetation type in this region, occurs near the development area. This vegetation provides essential ecosystem services such as soil stabilisation and water filtration, which are crucial for managing runoff from non-perennial streams. Care must be taken to preserve these vegetative systems, which contribute to both the visual and ecological quality of the area.

To protect these watercourses and their surrounding vegetation, the proposed Tergniet Mixed-Use Development must implement buffer zones as per the aquatic and terrestrial biodiversity (flora) specialists' recommendations, ensuring that construction activities do not intrude upon these natural assets. These buffers will also serve as visual transitions between the built environment and the natural landscape, preserving the visual harmony of the region.

In conclusion, the natural landscapes around the Tergniet Mixed-Use Development site are integral to the ecological and visual quality of the region. The presence of non-perennial streams, vulnerable vegetation types, and the surrounding ecological support areas emphasise the need for a development approach that prioritises environmental sensitivity.

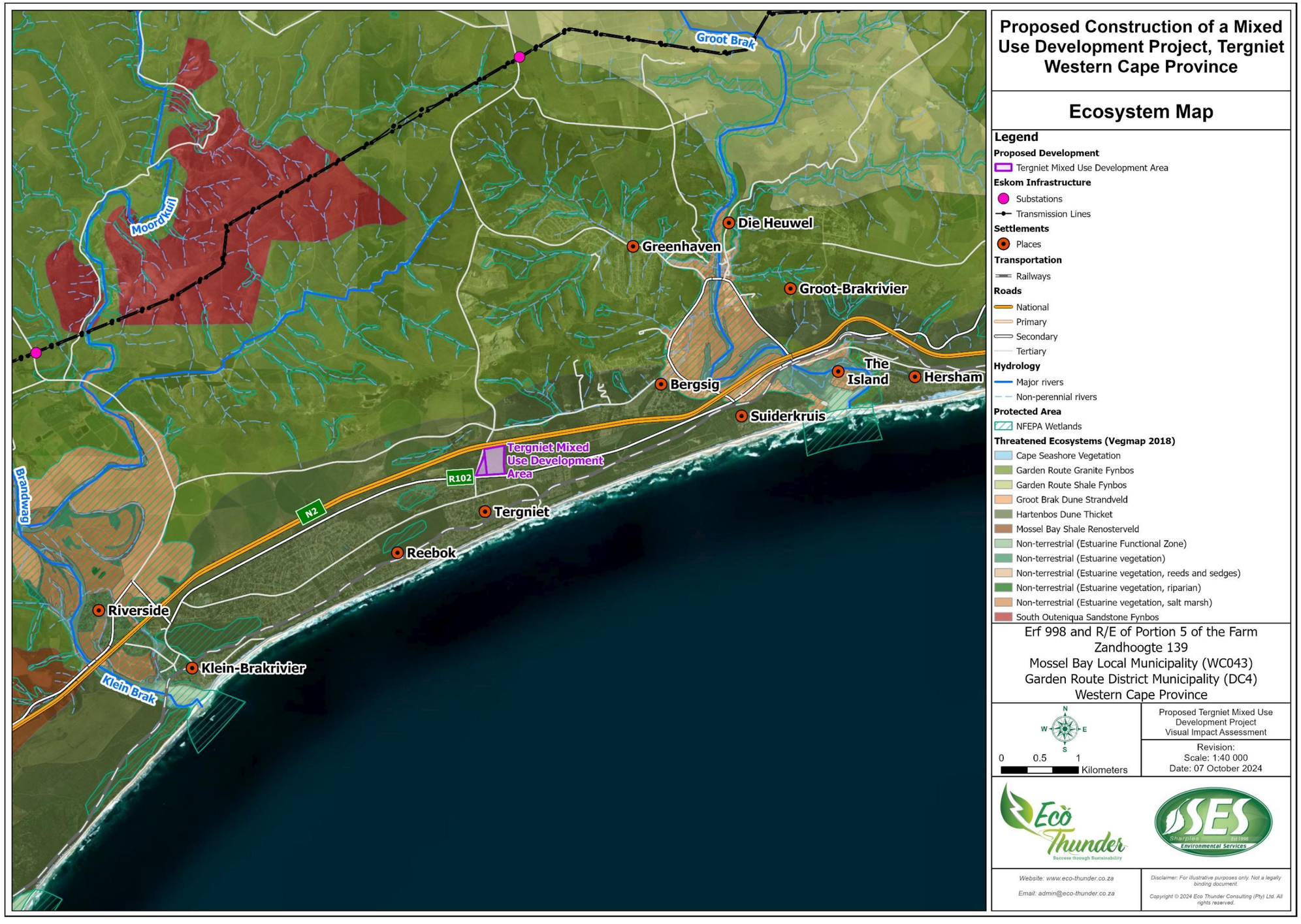


Figure 8: Protected Ecosystems Map for the Proposed Site

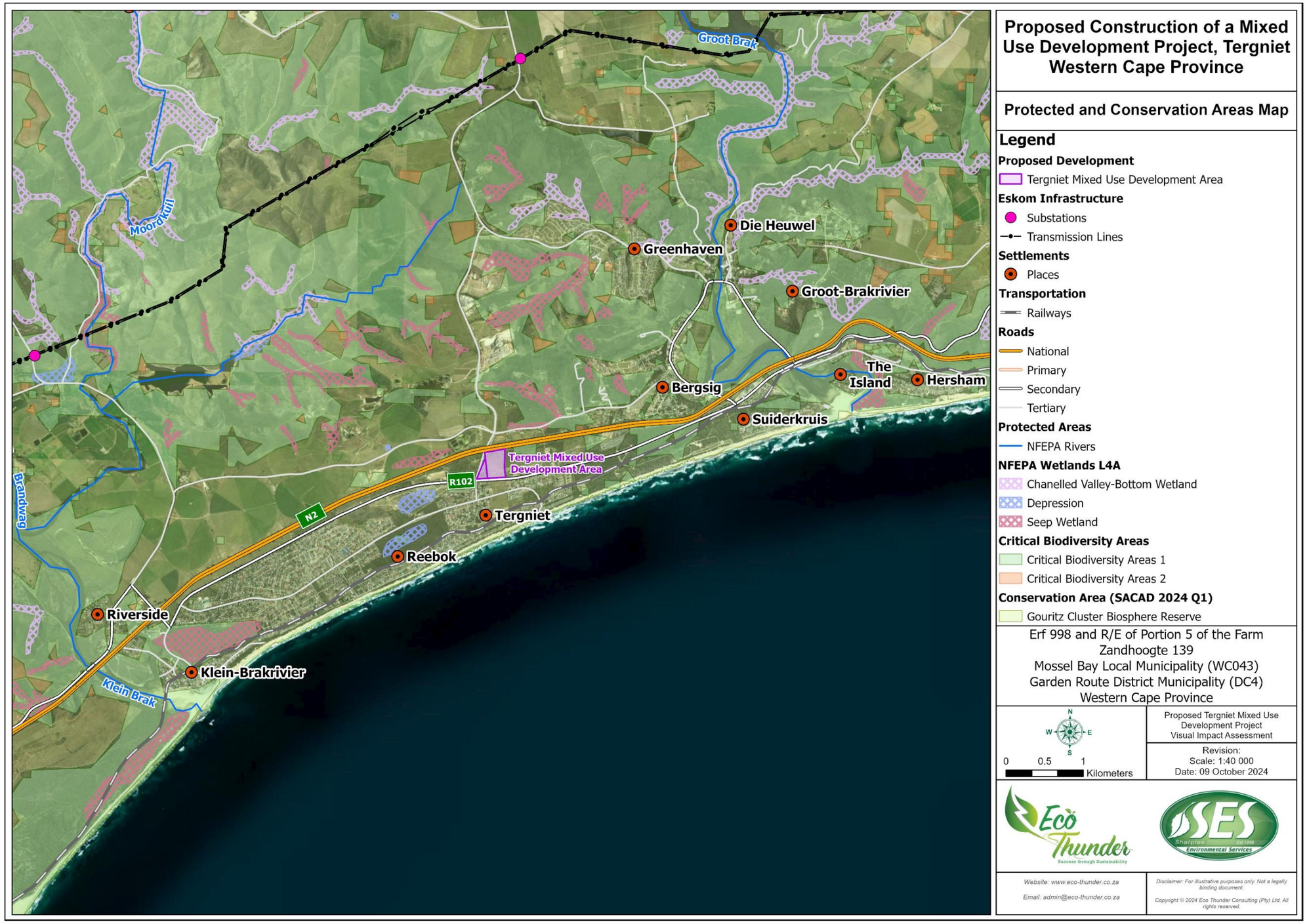
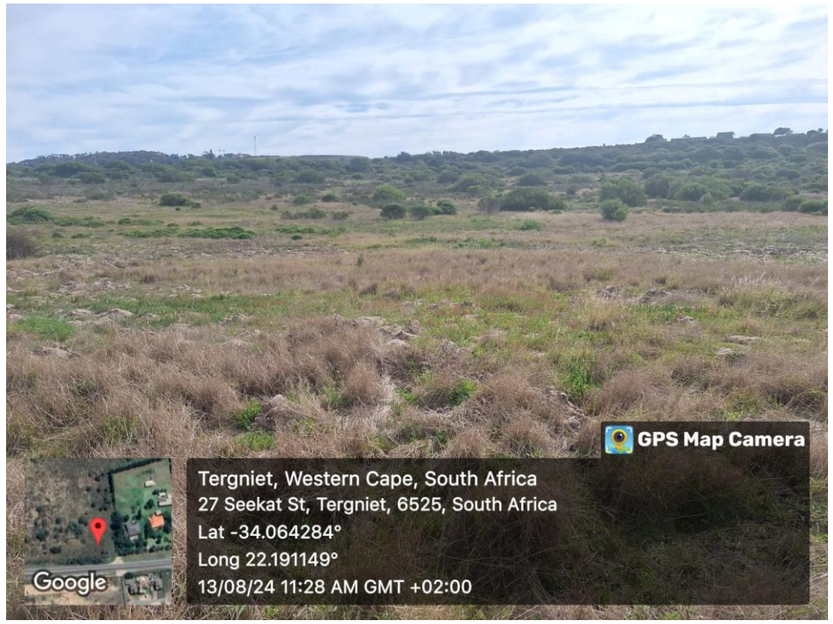
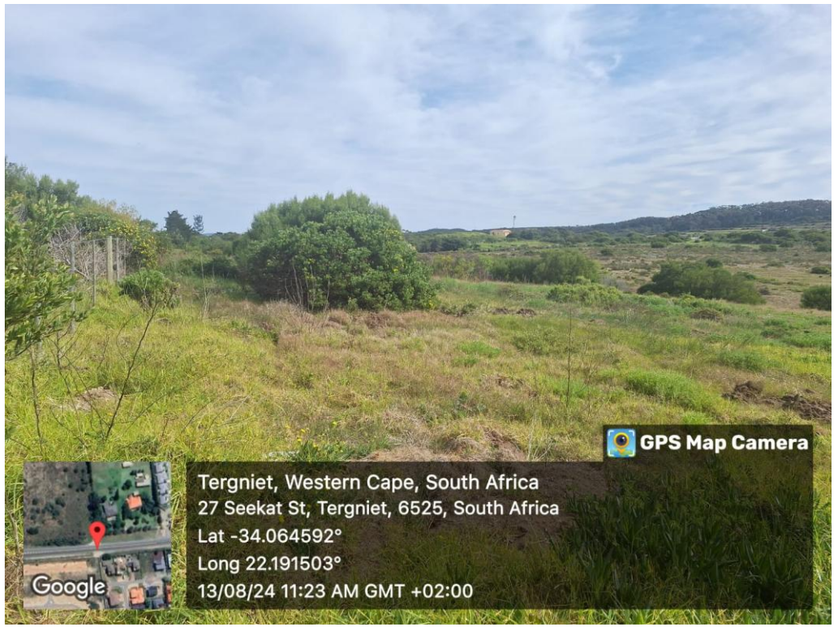


Figure 9: Protected and Conservation Area Map of the Proposed Site

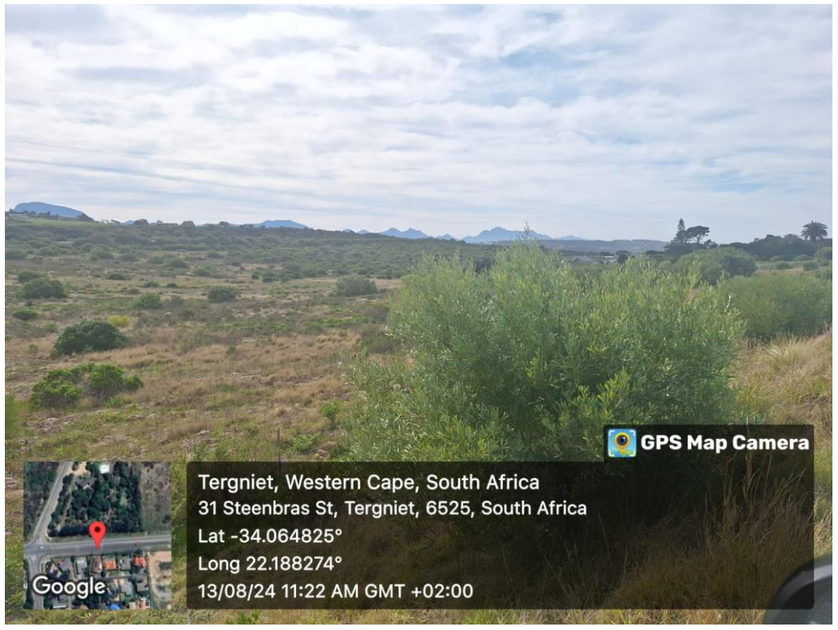
Photograph 1: Natural Landscape within the Proposed Development Area: View 1



Photograph 2: Natural Landscape within the Proposed Development Area: View 2



Photograph 3: Natural Landscape within the Proposed Development Area: View 3



Photograph 4: Natural Landscape within the Proposed Development Area: View 4

6.1.4 Cultural and Tourism Resource

The proposed Tergniet Mixed-Use Development is located in the Garden Route District of the Western Cape, an area recognised for its scenic beauty and cultural significance. Tergniet and its surrounding areas form part of a region with a rich historical background, reflecting the agricultural and coastal heritage of the Western Cape. The nearby Mossel Bay area is historically important, notably as one of the early European landing sites during Bartholomeu Dias' exploration in the late 15th century.

The Heritage Impact Assessment for the development site indicates no significant heritage resources, such as burial grounds or archaeological sites, within the project boundaries. The overall heritage sensitivity of the site is considered low, with no anticipated impacts on historical resources. This is supported by desktop analysis and on-site surveys, which show the area is primarily characterised by modern residential development and coastal vegetation.

Although no heritage resources are present on the development site, the broader Mossel Bay region holds cultural and historical significance. Groot Brakrivier, located ~4km east of the site, contains heritage sites, including historical buildings and museums that reflect the area's colonial and agricultural past. The Groot Brak Museum, for example, documents the local timber and agricultural industries, which played a vital role in the region’s development.

From a tourism perspective, Mossel Bay is an established destination known for its natural beauty, cultural heritage, and recreational opportunities. Tergniet, located along the R102, offers a peaceful, residential environment that attracts visitors for activities such as whale watching, fishing, and hiking. While Tergniet is not a primary tourism hub, its coastal location and proximity to the broader Garden Route, with its biodiversity and natural reserves, contribute to the region’s overall visual and tourism appeal.

To preserve the visual and cultural integrity of the area, the design of the proposed development should consider the surrounding landscape and local heritage. Appropriate architectural styles and landscaping will help ensure the development integrates with the existing environment, maintaining the area's sense of place.

6.1.5 Land Management

The land surrounding the proposed Tergniet Mixed-Use Development in the Garden Route District, Western Cape, consists of a mix of natural landscapes, residential areas, and agricultural activities. This reflects the region’s environmental diversity, agricultural heritage, and growing residential infrastructure driven by its coastal appeal.

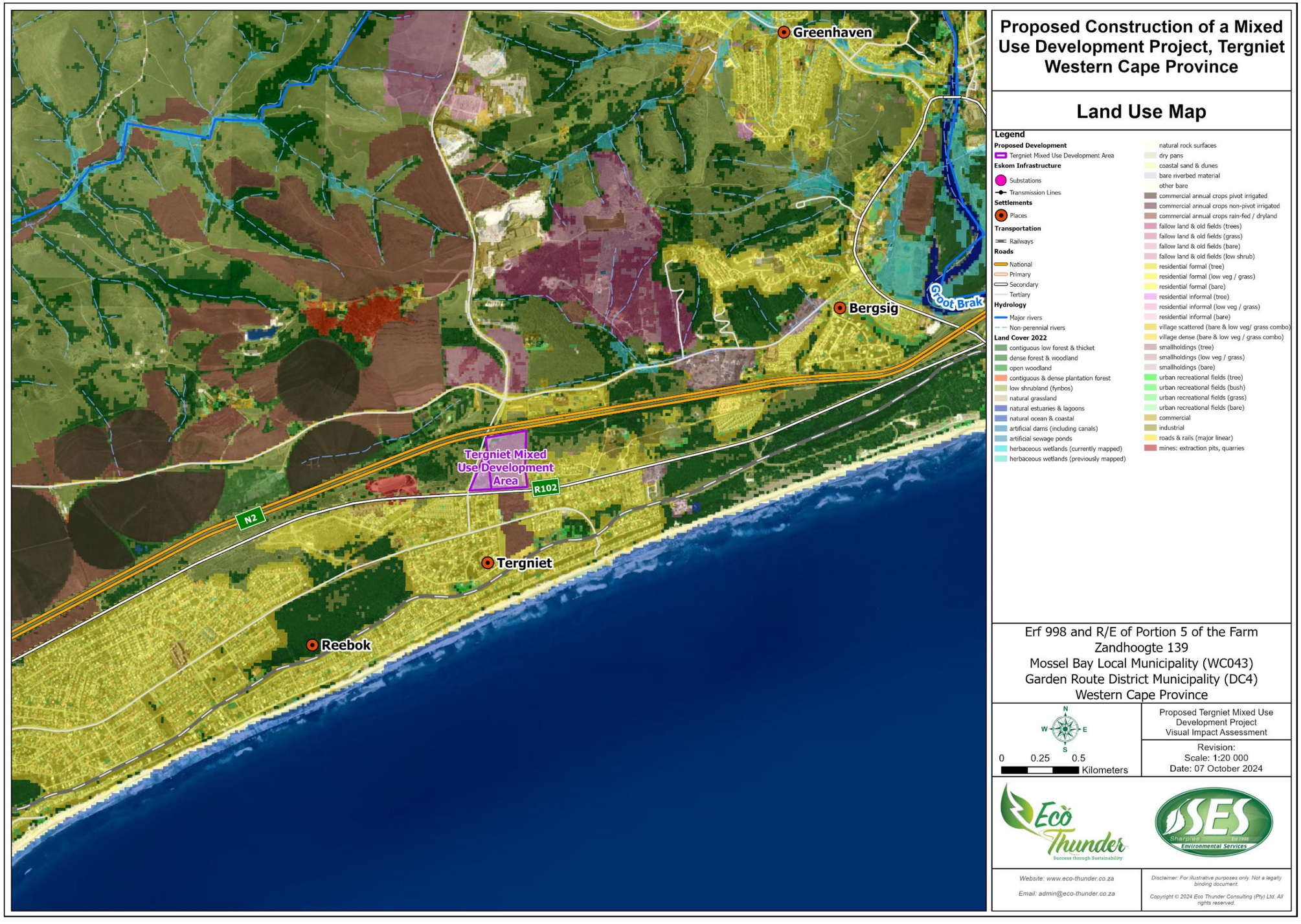


Figure 10: Land Use Map

6.1.5.1 Land Use

The area around the proposed Tergniet Mixed-Use Development reflects a growing intersection between natural conservation efforts, residential expansion, and agricultural land use. This coastal region, known for its scenic and environmental value, supports a variety of land uses, with residential development becoming a prominent feature.

The development site itself is located near the N2 highway and the R102 road, both of which provide major access routes to the surrounding towns. These roads facilitate the growing residential and tourism-based developments in the region. In terms of infrastructure, the site is not heavily industrialised but rather consists of natural coastal vegetation interspersed with undeveloped plots.

To the north and west of the site, agricultural lands dominate the landscape. These are primarily used for small-scale farming and grazing, maintaining the region's agricultural tradition. To the south and east, residential developments characterise the coastal areas, with Tergniet and surrounding communities experiencing steady growth due to their appeal as coastal retreats. The proximity of these areas to the development will influence how the project is integrated into the broader land use framework.

While the development area is largely open, its strategic location near residential and agricultural zones will require careful planning to minimise visual disruption and ensure that the development harmonises with the existing land use patterns. It will be important to incorporate landscape buffers, both for aesthetic purposes and to preserve the area's natural character.

6.1.5.2 Agricultural Land Use

Agriculture remains a key land use in the areas surrounding the proposed Tergniet Mixed-Use Development, with small-scale farming and livestock grazing contributing to the rural character. The region's fertile soils and favourable climate support these activities, although residential expansion is gradually reducing the extent of agricultural land.

As development increases, the project must carefully consider its impact on adjacent agricultural areas. Buffer zones should be established to maintain a clear distinction between agricultural and residential zones, helping preserve the rural atmosphere.

While agricultural activities continue in the region, the expansion of residential developments like the Tergniet Mixed-Use project requires careful planning to minimise disruption to farming practices and maintain the visual balance between rural and developed landscapes.

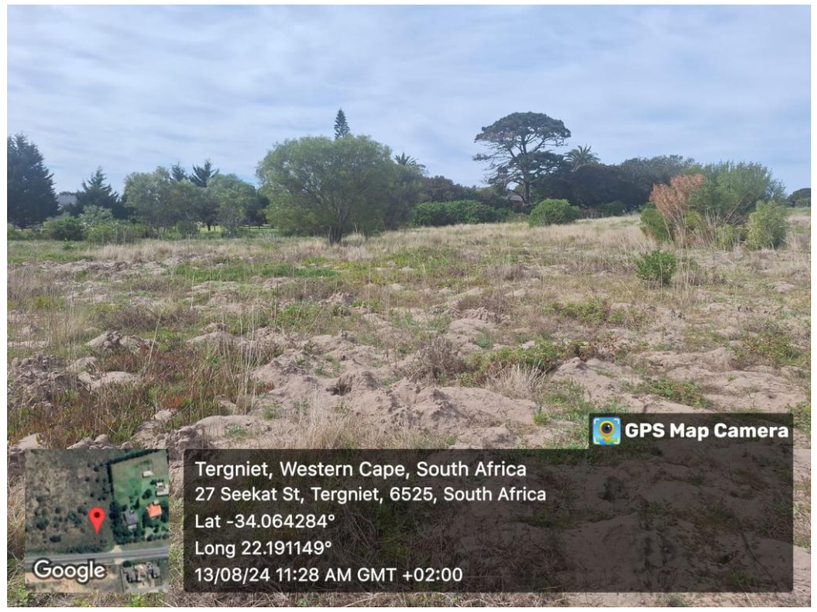
6.1.5.3 Housing/farming Land Use

The region surrounding the proposed Tergniet Mixed-Use Development includes a combination of residential areas and agricultural land use. The coastal town of Tergniet, directly to the south of the proposed development site, is primarily a low-density residential area that has

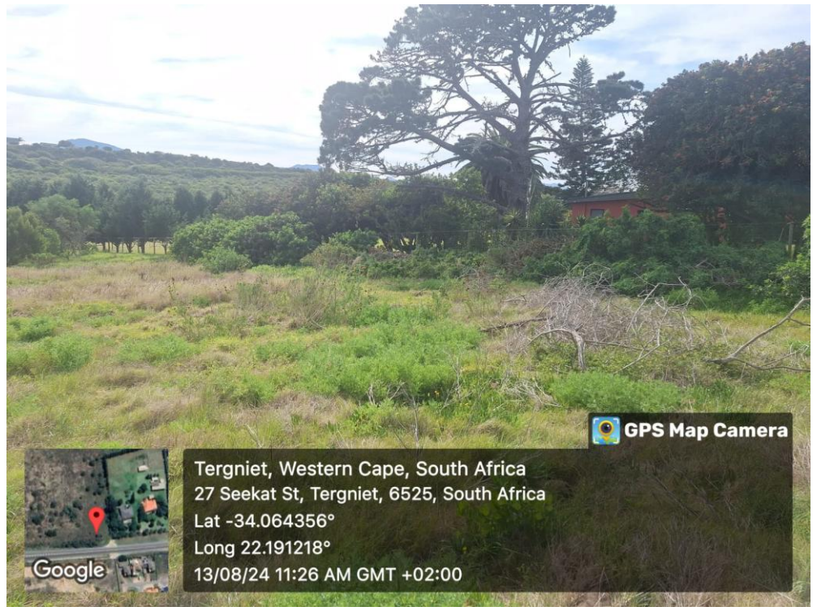
experienced gradual growth due to its attractive coastal setting. Adjacent villages such as Reebok (~2km south-west), Bergsig (~3km north-east), Suiderkruis (~3.2km east), Groot Brakrivier (~3.6km north-east), and Klein-Brakrivier (~3.8km south-west) are also key residential settlements within the broader landscape of the proposed development area. These areas share similar characteristics, offering a tranquil, semi-rural lifestyle with strong appeal to both residents and tourists.

Given the proximity of these residential zones, particularly Tergniet and Reebok, the visual integration of the mixed-use development will be crucial. The site is located just north of the R102 road, which connects these villages and serves as a key transport route. Ensuring that the development aligns with the existing landscape through thoughtful design, such as incorporating natural materials and vegetative buffers, will help maintain the visual appeal of the region. This approach is particularly important in Tergniet, where residential properties may have direct views of the proposed development.

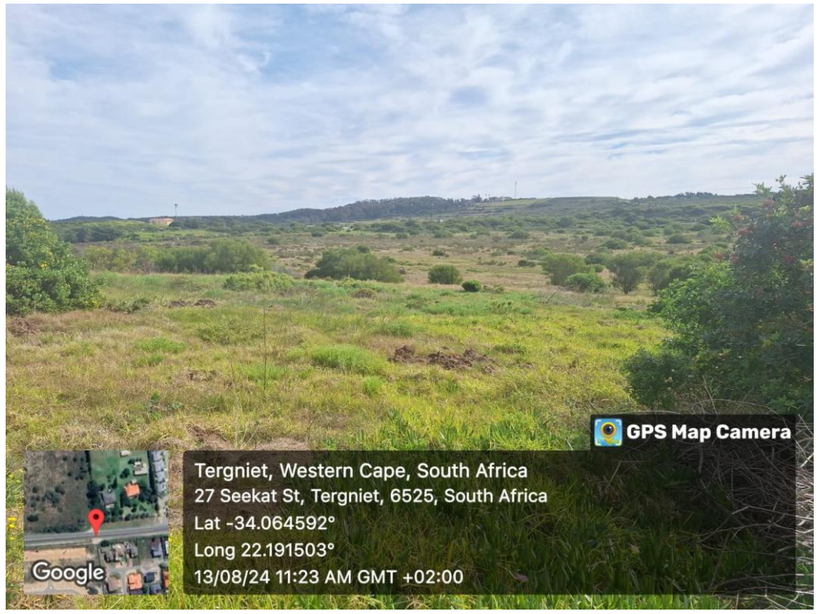
Photograph 5: Land Use within the Proposed Development Area: View 1



Photograph 6: Land Use within the Proposed Development Area: View 2



Photograph 7: Land Use within the Proposed Development Area: View 3



Photograph 8: Land Use within the Proposed Development Area: View 4

6.1.5.4 *Natural and Conservation Areas*

The proposed Tergniet Mixed-Use Development is located near several visually and ecologically significant areas, including the Botlierskop Private Game Reserve, approximately 5.6km north-west of the site. Botlierskop is known for its scenic landscapes and role in ecotourism, contributing to the visual appeal of the broader region.

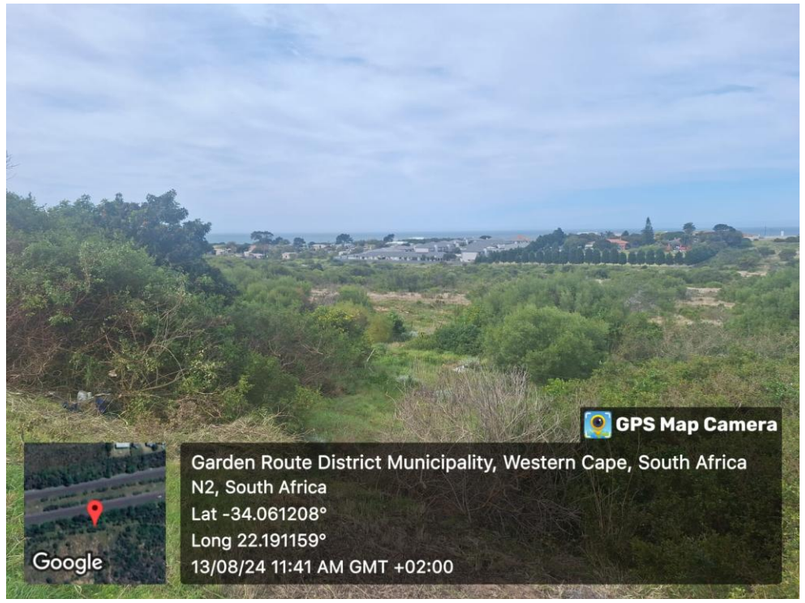
The surrounding landscape features CBAs and wetlands that further enhance the region's visual diversity. Although the development does not directly affect these areas, its proximity underscores the need for sensitive design and landscaping to ensure the visual character of the region, particularly views toward Botlierskop and the adjacent natural areas, is maintained.

6.1.5.5 *Roads*

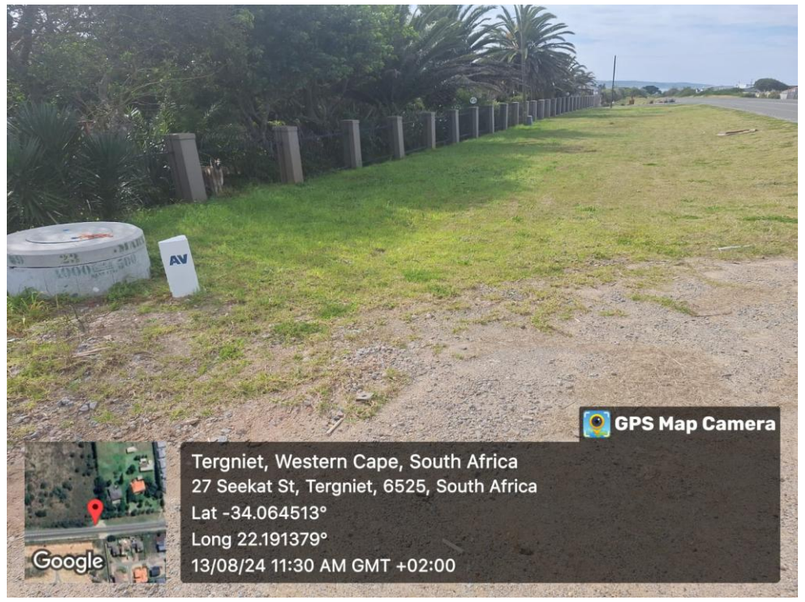
The road network surrounding the proposed Tergniet Mixed-Use Development provides a variety of visual perspectives on the landscape. Major roads, such as the N2 highway and the R102, run parallel to the site and are key regional routes connecting Mossel Bay and other nearby coastal towns. These roads serve as potential viewpoints for the development and will influence its visibility from various angles.

- **N2:** This national road runs to the north of the proposed development and acts as a significant regional connector. The N2 also serves as a key route for long-distance travel along the Garden Route, offering views of the proposed development site, particularly when approaching from the east.
- **R102:** Located to the south, this scenic coastal road provides direct access to Tergniet and is frequented by both local residents and tourists. The R102 offers clear views of the site, making it a significant visual corridor for evaluating the impact of the development.
- **Old Mossel Bay Road:** This smaller municipal road lies west of the proposed development and serves local traffic. It is also a potential visual access route, especially for those travelling between the inland areas and the coastal towns.

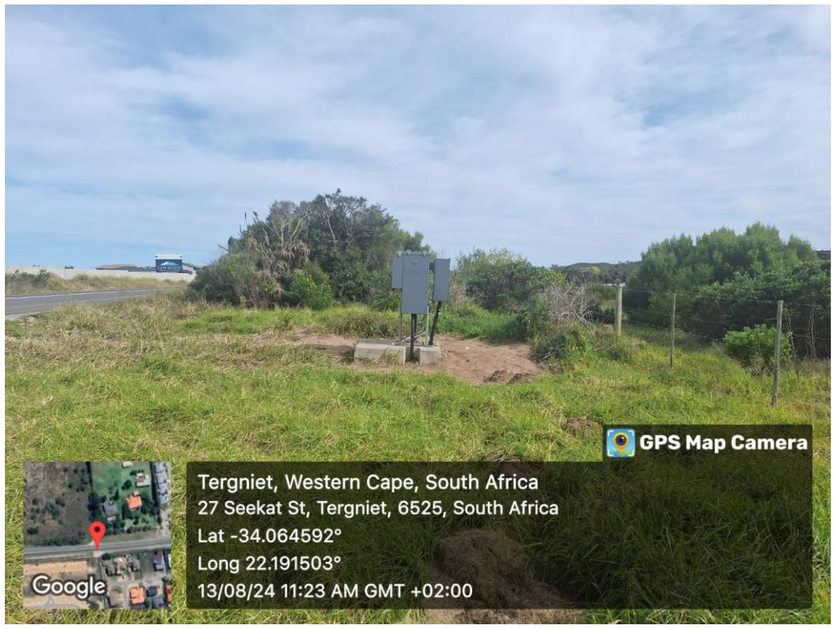
The road network's proximity to the proposed development necessitates careful planning to ensure that the visual experience for travellers is not negatively impacted. Mitigation measures such as landscape screening or architectural design features can help maintain the visual quality of the area, particularly from the highly visible N2 and R102 routes.



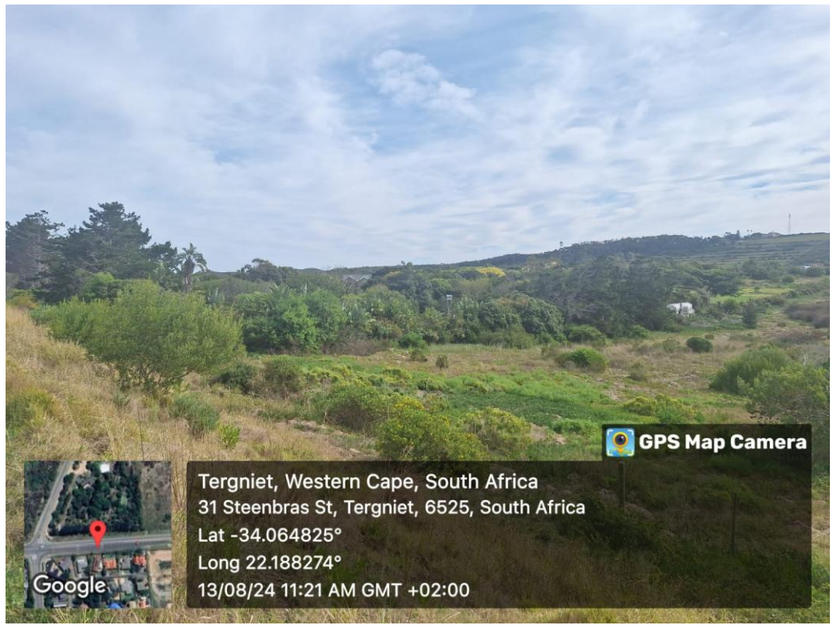
Photograph 9: View of the Proposed Development Area from the N2



Photograph 10: View of the Proposed Development Area from the R102: View 1



Photograph 11: View of the Proposed Development Area from the R102: View 2



Photograph 12: View of the Proposed Development Area from Old Mossel Bay Road

6.2 Visual Resource

6.2.1 Visual Receptors

Visual receptors, also known as viewer groups, are individuals or groups of individuals who have the potential to view or perceive the proposed development. The identification of visual receptors is a crucial step in the visual impact assessment process as it helps to understand who will be affected by the visual changes brought about by the project. Visual receptors that have been identified can be assessed in terms of ‘’beneficiaries and losers[9]’’, resulting from the proposed development.

Beneficiaries may include the following:

- Residents or users of a project, such as a resort in a scenic area;
- Individuals or communities who will benefit from infrastructure development, such as power lines or communication masts provided for an area;
- Poor or unemployed individuals who will benefit from economic-type development and related job opportunities.

Losers may include the following:

- National parks, nature reserves, and other protected or pristine areas that rely on a wilderness experience for their visitors;
- Individuals and organizations who depend on scenic and recreation resources for their livelihood;
- Property owners who may rely on uninterrupted views and the absence of visual intrusions.

This comprehensive identification of visual receptors ensures that the assessment considers both the positive and negative visual impacts of the proposed development, taking into account the specific needs and concerns of various stakeholders. For the proposed Tergniet Mixed-Use Development, a general recommendation is made to utilise vegetation screening, landscaping techniques, vegetation covers, or barriers, where applicable, to mitigate the visual impact on highly sensitive receptors, specifically those living in close proximity but not on the affected area.

It is postulated that all structures, homes, or buildings within the buildable area are owned by the developer. These structures are deemed to have a lower significance in the context of the

[9] Landowners (those who financial benefit) who have agreed to leasing their land for this development are seen as Beneficiaries and therefore assessed at a lower impact class. Residents, neighbours, tourists, and settlers are identified as losers.

VIA. Conversely, where land or structures are owned or occupied by a different holder or group, it is assumed that these individuals have been informed of the development, and their properties have been adequately avoided or thoroughly screened, in accordance with the recommendations of the social impact assessment.

- **Local Residents:** Residents in settlements like Tergniet, Reebok, Die Heuwel, and Groot Brakrivier are expected to view the development, particularly from homes or communal areas.
- **Road Users:** Individuals traveling along R102, Old Mossel Bay Road and N2 may have intermittent views of the development, with varying sensitivity depending on the frequency of travel and the visual exposure.
- **Farmers and Agricultural Workers:** Given the agricultural land use in the surrounding area, farmers and agricultural workers are likely to be visual receptors. They could potentially view the project while working on their lands or moving between different agricultural plots.
- **Tourists:** Visitors who frequent the nearby coastal areas and the broader Garden Route, known for its scenic appeal, may view the development as part of their travel experience. Tourists may have a higher sensitivity to changes in the landscape, especially those seeking coastal and natural views.

Each of these visual receptors will have a different level of sensitivity to changes in the visual environment, depending on factors such as their location, the frequency and duration of their views, and their personal or cultural values.

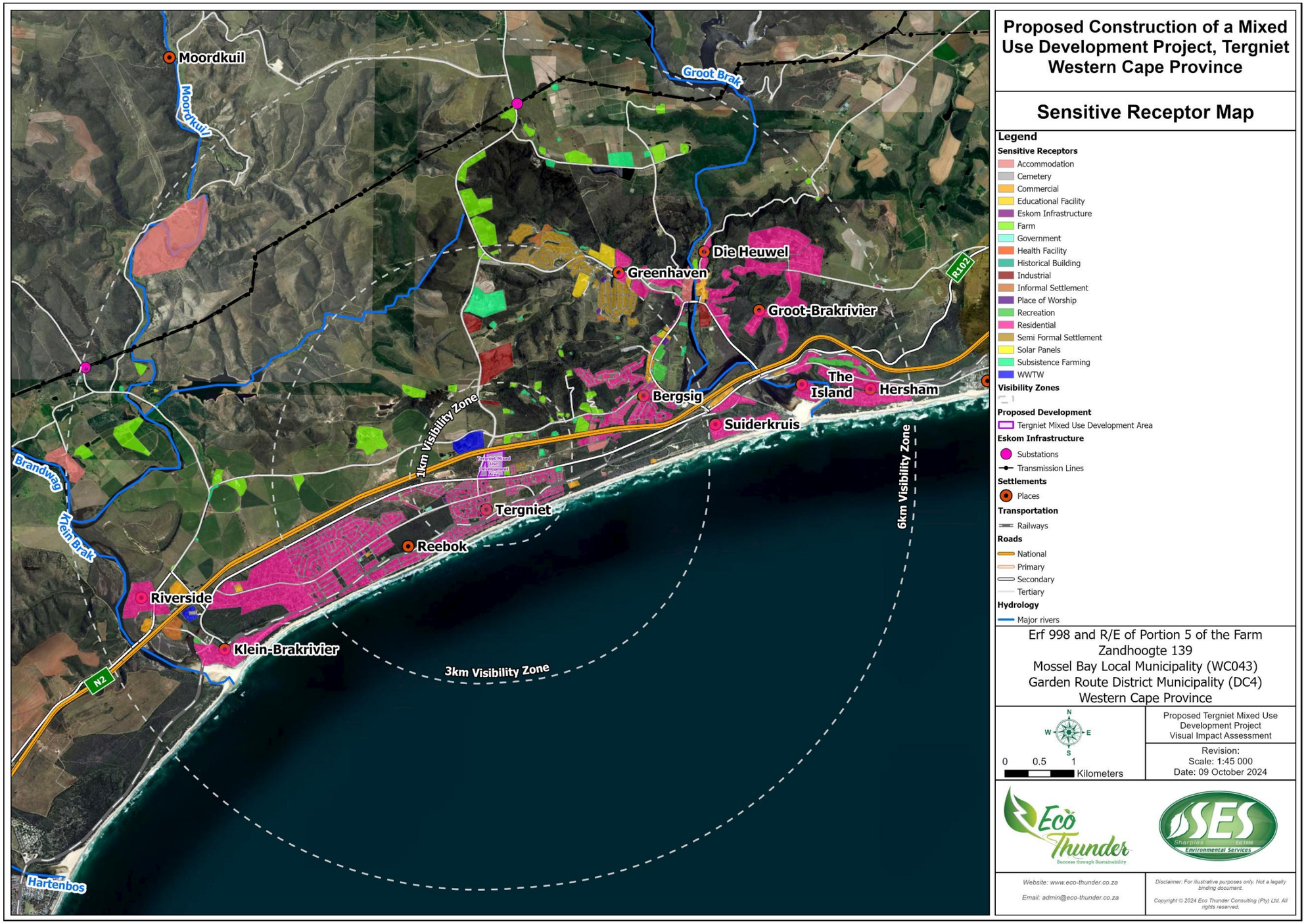


Figure 11: Visual Receptors for the Broader Study Area

6.2.2 Visual Absorption Capacity

The Visual Absorption Capacity (VAC) of the landscape designated for the proposed Tergniet Mixed-Use Development is a pivotal aspect of our VIA. This capacity is determined by the landscape's ability to assimilate the proposed development without substantially detracting from its visual qualities. Influential factors include the landscape's topography, vegetation, current land usage, and the extent of anthropogenic modifications.

The Tergniet area features a mix of natural coastal vegetation, dominated by thicket and fynbos, and built environments. These natural elements help soften the visual intrusion of new developments, particularly from key receptor points like the R102 and nearby residential areas such as Tergniet, Reebok, and Suiderkruis. The area's moderate VAC is supported by the presence of significant existing development, the variety of vegetation heights and the undulating topography.

However, the site’s proximity to visually sensitive areas, including the Botlierskop Private Game Reserve (~5.6km north-west) and nearby CBAs, presents challenges in maintaining visual harmony. These areas contribute to the region’s scenic value and ecotourism, increasing their sensitivity to visual changes.

Mitigation measures, such as indigenous landscaping, natural buffers, and context-sensitive architectural design, will be essential to minimise the visual impact. Thoughtful placement of buildings and infrastructure will also be crucial to preserving visual integrity, especially when viewed from sensitive areas like Botlierskop or along the R102.

In conclusion, the VAC of the Tergniet landscape is moderate, meaning it can absorb the visual impact of the development with proper planning and mitigation. Sensitive design and careful integration will be necessary to maintain the area's scenic value.

7 Identification of Visual Impacts

The VIA forms a crucial part of the BA for the proposed Tergniet Mixed-Use Development. This assessment entails an evaluation of various criteria including visual intrusion, visibility, visual exposure, and viewer sensitivity. These factors collectively determine the intensity of potential visual impacts. Once the intensity is ascertained, it is further refined by considering spatial, temporal, and probability criteria to establish the overall significance of the visual impact.

This visual environment is a significant resource that contributes to the quality of life, sense of place, and cultural identity of local communities. Consequently, any alterations to the visual environment as a result of the proposed development necessitate careful assessment and management[10]

7.1 The Viewshed

The viewshed analysis for the proposed Tergniet Mixed-Use Development outlines the zones of visual influence, which are key to assessing the potential visual impact on the surrounding landscape. The development is located within a landscape characterised by moderate VAC, which includes natural vegetation, residential areas, and some agricultural land. While these elements provide some natural visual screening, the varying topography and the presence of visually sensitive areas make the viewshed an important component of this assessment.

The visibility of the proposed development has been categorised into 'Very High,' 'High,' 'Medium,' and 'Low' visibility zones. The 'Very High' visibility zone is concentrated immediately around the proposed site, where the development will be clearly visible to nearby residents and road users, especially those travelling along the R102 and N2. Visibility decreases as the distance from the proposed development increases, with 'Medium' to 'Low' visibility zones extending into more distant areas, including parts of Suiderkruis and Hersham.

Receptor-Specific Impacts:

- Residential Areas: The closest residential areas, including Tergniet, Reebok, and Greenhaven, fall within the 'High' to 'Very High' visibility zones. Given the proximity of these settlements, residents will experience the most significant visual changes. However, existing residential and natural elements, like vegetation, can offer some screening, reducing the overall impact on local residents.
- Tourists: Tourists traveling through the Garden Route or visiting the nearby beaches and nature reserves, such as the Botlierskop Private Game Reserve (~5.6km north-west of the site), may have intermittent views of the development. The visual impact on tourists

[10] In this assessment, we adopt a worst-case scenario approach, assuming simultaneous construction of the PV facilities and grid connection infrastructure. Given their close proximity, these components are likely to be observed within the same visual range from sensitive viewing areas, albeit to varying degrees.

is expected to be moderate, as the development will likely blend with existing residential and built-up areas.

- Road Users: Travellers on the R102, Old Mossel Bay Road and N2, especially those passing through the 3km visibility zone, will have clear views of the development. The visual impact on road users is classified as 'High', particularly for those approaching the development from the south.
- Agricultural Land: Agricultural workers and landowners on the outskirts of the development may experience 'Medium' visibility of the new structures, though existing vegetation and natural landforms could provide partial screening. The potential visual impact on agricultural land is mitigated by the fact that these areas are already part of a mixed-use landscape.

Given the range of visibility and the sensitivity of certain receptor groups, mitigation strategies such as vegetative screening and appropriate architectural designs should be considered. These measures will help reduce the visual impact on sensitive areas, ensuring that the development blends with its surroundings while maintaining the scenic value of the region.

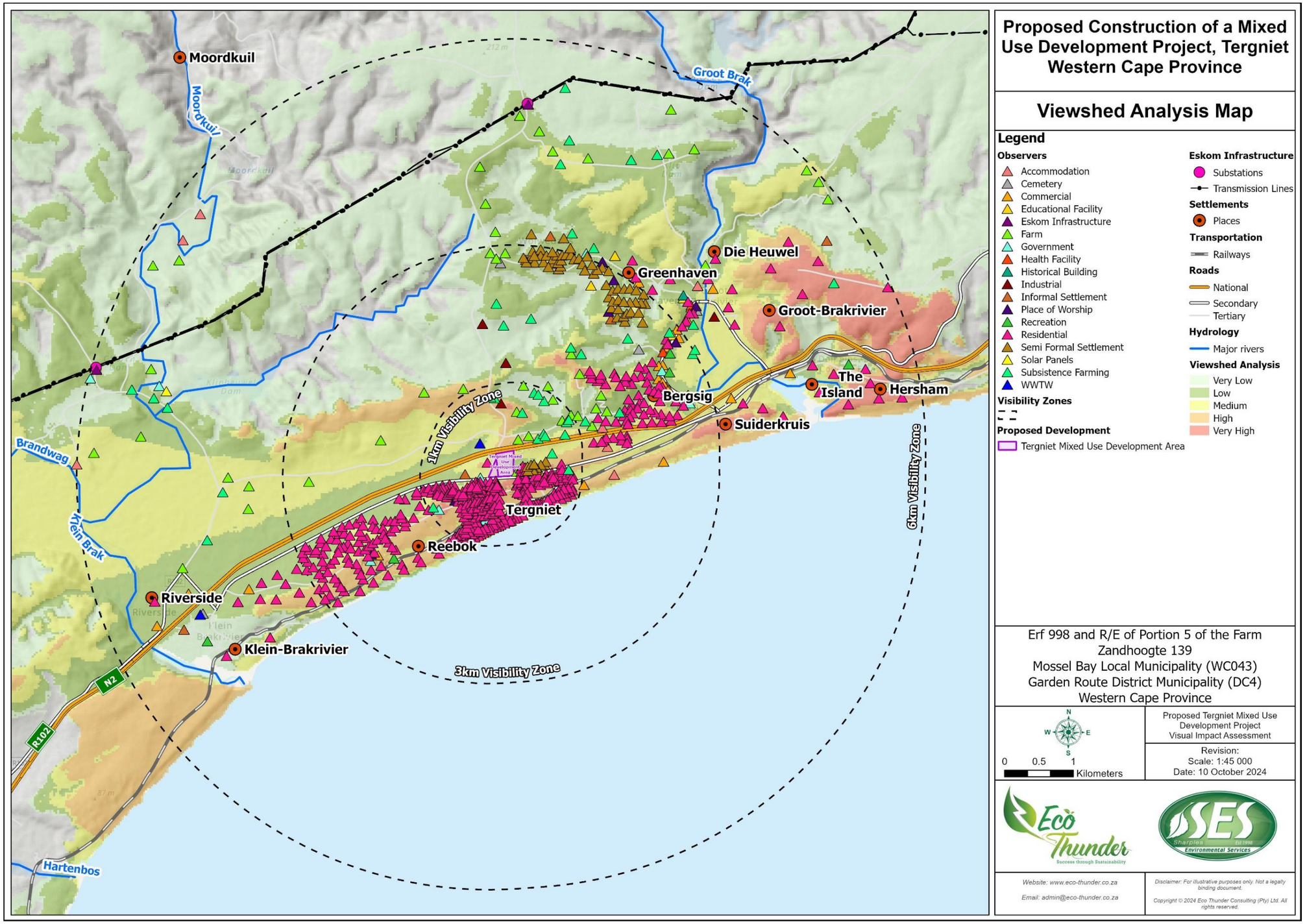


Figure 12: Viewshed analysis for the Proposed Tergniet Mixed-Use Development

7.2 Impact Index

The Visual Impact Index (VII) for the proposed Tergniet Mixed-Use Development offers a multi-faceted evaluation of the development's potential visual influence on the surrounding landscape. The index assesses the visual impact by analysing Viewer Sensitivity (VS), Project Visibility (PV), and Magnitude of Change (MC), providing an overall measure of the likely visual effects.

- **Viewer Sensitivity (VS)**: Viewer sensitivity measures how various stakeholders perceive changes to their visual environment. For the Tergniet Mixed-Use Development, the key viewer groups include residents in nearby settlements like Tergniet, Reebok, and Suiderkruis, road users along the R102 and N2, and tourists frequenting coastal areas and nature reserves like Botlierskop Private Game Reserve. Residential viewer sensitivity is considered high, given their close proximity to the development and daily exposure to the landscape. Tourists are likely to have a higher sensitivity due to their expectations of uninterrupted coastal and natural views. Road users, who experience the landscape transitorily, are expected to show moderate sensitivity. Farmers and agricultural workers, given their connection to the land, may exhibit moderate sensitivity to visual changes in the region.
- **Project Visibility (PV)**: The visibility of the Tergniet Mixed-Use Development varies depending on location and viewpoint. The development will have a high degree of visibility from residential areas like Tergniet, Reebok, and Greenhaven, as well as from major roads such as the R102 and N2. The moderately undulating terrain and the presence of natural vegetation will provide some degree of visual screening, particularly from distant viewpoints. However, areas closer to the site, particularly those within the immediate 1km visibility zone, will experience a more pronounced visual change, with the development being a prominent feature in the landscape.
- **Magnitude of Change (MC)**: The magnitude of change considers the extent to which the proposed development alters the current visual environment. The introduction of mixed-use buildings, infrastructure, and residential areas will represent a change in what is currently a semi-rural and coastal setting, predominantly characterised by natural vegetation and scattered residential and agricultural developments. While the development will introduce new elements into the landscape, the existing built environment around Tergniet and Reebok provides some context for this transformation.

The VII for the proposed Tergniet Mixed-Use Development suggests a moderate visual impact overall. This is attributed to the proximity of sensitive viewer groups, such as local residents and tourists, the relatively clear visibility of the development in key areas, and the magnitude of change in certain parts of the landscape. The visual impact will be most pronounced where sensitive receptors, such as residents and tourists, have unobstructed views of the development, especially along the coastal stretches and in proximity to nature reserves.

Mitigation strategies, such as the use of indigenous vegetation for screening, careful architectural design, and sensitive placement of buildings and infrastructure, should be implemented to minimise the visual impact. By ensuring that the proposed development complements the existing landscape and adopting appropriate mitigation measures, the project can reduce its visual footprint while still achieving its objectives.

8 Impacts and Risks Assessment

This section aims to rate the significance of the identified potential impacts pre-mitigation and post-mitigation. The potential impacts identified in this section are a result of both the environment in which the Project activity takes place, as well as the activity itself. The identification of potential impacts is performed by determining the potential source, possible pathways and receptors. In essence, the potential for any change to a resource or receptor (i.e., environmental aspect) brought about by the presence of a Project component or by a Project-related activity has been identified as a potential impact.

The potential impacts are discussed per environmental feature/aspect and according to each phase of the Project i.e., the Construction, Operational and Decommissioning/Post Closure Phases. The significance, probability and duration of these potential impacts have been assessed based on the detailed specialist studies undertaken on the sensitivity of the receiving environment.

8.1 Impacts and Risk Methodology

The EIA Methodology assists in evaluating the overall effect of a proposed activity on the environment. Determining of the significance of an environmental impact on an environmental parameter is determined through a systematic analysis.

8.1.1 Determination of Significance of Impacts

Significance is determined through a synthesis of impact characteristics which include context and intensity of an impact. Context refers to the geographical scale (i.e. site, local, national or global), whereas intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

8.1.2 Impact Rating System

The impact assessment must take account of the nature, scale and duration of effects on the environment and whether such effects are positive (beneficial) or negative (detrimental). Each issue/impact is also assessed according to the various project stages, as follows:

- Planning;
- Construction;
- Operation; and

- Decommissioning.

The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the possible mitigation of the impact. Impacts have been consolidated into one (1) rating. The impact assessment undertaken for the proposed Tergniet Mixed-Use Development was done as per the methodology provided by SES.

- The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- The **extent**, wherein it will be indicated whether:
  - **Site specific** - On site or within 100 m of the site boundary, but not beyond the property boundaries (1).
  - **Local** - The impacted area includes the whole or a measurable portion of the site and property, but could affect the area surrounding the development, including the neighbouring properties and wider municipal area (2).
  - **Regional** - The impact would affect the broader region (e.g., neighbouring towns) beyond the boundaries of the adjacent properties (3).
  - **National** - The impact would affect the whole country (if applicable) (4).
- The **duration**, wherein it will be indicated whether:
  - **Temporary** - The impact will be limited to the construction phase (1).
  - **Short term** - The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than 8 months after the completion of the construction phase (2).
  - **Medium term** - The impact will last up to the end of the construction phase, where after it will be entirely negated in a period shorter than 3 years after the completion of construction activities (3).
  - **Long term** - The impact will continue for the entire operational lifetime of the development but will be mitigated by direct human action or by natural processes thereafter (4).
  - **Permanent** - This is the only class of impact that will be non-transitory. Such impacts are regarded to be irreversible, irrespective of what mitigation is applied (5).
- The **consequence of significance (magnitude),** wherein it will be indicated whether:
  - **Negligible** - The impact would result in negligible to no consequences (2).
  - **Low** - The impact would result in insignificant consequences (4).

- **Medium** - The impact would result in minor consequences (6).
- **High** - The impact would result in significant consequences (8).

- The **probability** of occurrence, which shall describe the likelihood of the impact actually occurring:
  - **Improbable** - The possibility of the impact occurring is very low, due either to the circumstances, design or experience (2).
  - **Probable** - There is a possibility that the impact will occur to the extent that provisions must therefore be made (3).
  - **Highly probable** - It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up to mitigate the activity before the activity commences (4).
  - **Definite** – The impact will take place regardless of any prevention plans.
- the **significance**, which shall be determined through a synthesis of the characteristics described above and can be assessed as no significance, low, medium or high; and
- the **status**, which will be described as either positive, negative or neutral.
- the degree to which the impact can be reversed.
- the degree to which the impact may cause irreplaceable loss of resources.
- the degree to which the impact can be mitigated.

The significance is calculated by combining the criteria in the following formula:

$$S=(E+D+M)P$$

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),

- > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

8.2 Impacts and Mitigation

8.2.1 Construction Phase

Table 5 to Table 6 summarise the consequence and significance of the visual impact of the Project. These results are based on worst-case scenario when the impacts of all aspects of the Project are taken together. Consequence of impact is a function of intensity, duration, and spatial extent. Intensity of impact is taken from the worst-case situation. These facilities are rated together, from a visual impact perspective, as the one would not exist without the other and they must be understood as the collective/cumulative.

Table 5: Potential Impacts during the Construction Phase

Impact: Altered Landscape and Sense of Place during Construction		
Nature: The introduction of construction activities and infrastructure of the proposed Tergniet Mixed-Use Development will temporarily alter the visual character of the landscape. The current landscape will be interspersed with construction materials and equipment. This could evoke feelings among local residents and visitors of a landscape in transition.		
	Before Mitigation	**After Mitigation**
Extent	Local (2)	Local (2)
Duration	Short-Term (2)	Short-Term (2)
Magnitude	Medium (6)	Low (4)
Probability	Highly Probable (4)	Probable (3)
Significance	Medium (40)	Low (24)
Status: Negative - The construction phase will introduce temporary visual disturbances that could be perceived as out of harmony with the existing landscape.		
Reversibility: High - Post-construction, with proper landscaping and mitigation measures, the site can regain a semblance of its original character, although some permanent changes, will remain.		
Irreplaceable loss of resources? No - While the landscape's visual character might be altered, with proper mitigation, there won't be an irreplaceable loss. However, care should be taken to ensure that no unique or endangered flora is affected during construction.		
Can impacts be mitigated? – Yes		

Mitigation Measures:

- Use of Natural Colours and Materials: Use materials and colours that blend with the natural landscape for any temporary structures or construction materials. Mimic the texture and colours of the natural environment, where possible.
- Vegetative Screens: At key points of sensitivity, indigenous vegetation around the construction site's perimeter may be planted to act as a natural screen, reducing the visual impact.
- Localised Construction: Focus construction activities in smaller, localised areas rather than spreading out across the entire site simultaneously. This phased approach can reduce the overall visual disturbance at any given time.
- Revegetation for Restoration: Post-construction, prioritise revegetation efforts, especially in areas where native grasslands were disturbed. This can help in restoring the site's original visual character.
- Community Engagement: Engage with the local communities, to keep them informed about construction progress and the measures being taken to reduce visual impacts.
- Minimise Night-time Activities: Limit construction activities during the night to reduce light pollution, especially given the proximity to residential areas like Tergniet.
- Visual Simulations: Before starting construction, provide visual simulations to stakeholders, showcasing the expected changes to the landscape, if feasible.

Cumulative Impact

Medium - When combined with other existing infrastructure the cumulative visual impact during construction could be more pronounced. However, with mitigation measures in place, this can be managed.

Residual Risk

Low - With the proposed mitigation measures, the residual visual impact during the construction phase is expected to be reduced. However, some temporary visual disturbances will be unavoidable.

Impact: Visibility of the Development for Residents during Construction

Nature: Given the undulating terrain, construction activities can stand out prominently against the backdrop of the landscape. For residents, up to 1 km away, they would be watching a new urban development rise. The horizon might now be dotted with cranes, construction equipment, and the beginnings of the Tergniet Mixed-Use Development infrastructure.

	Before Mitigation	After Mitigation
Extent	Local (2)	Local (2)
Duration	Short-Term (2)	Short-Term (2)
Magnitude	Medium (6)	Low (4)
Probability	Definite (5)	Highly Probable (4)
Significance	Medium (50)	Medium (32)

Status:

Negative - The visibility of construction activities could be perceived as a visual intrusion into the daily lives of nearby residents.

Reversibility:

Medium - While the construction activities are temporary, the mixed-use infrastructure, once erected, will be a permanent addition to the landscape. However, over time, residents might acclimatise to the new visual elements.

Irreplaceable loss of resources?

No - The visual change does not result in the loss of any irreplaceable resources. However, the familiar visual character for residents might be altered.

Can impacts be mitigated? – Yes

Mitigation Measures

- Site Screening: Use natural topography, existing vegetation, or temporary screens to shield construction activities from viewers. Situate construction activities in lower-lying areas or behind hills. Use screens made of materials that blend with the natural environment.
- Minimise Structure Heights: Keep temporary structure heights to a minimum to reduce their visibility. Use materials and colours that blend with the surrounding landscape.
- Lighting Control: Minimise light pollution by directing lights downwards, using shields to prevent light spill, and turning off lights when not in use.
- Strategic Placement: Where possible, prioritise the placement of taller construction equipment and initial construction materials in areas less visible to the majority of residents.
- Vegetative Barriers: Enhance and fast-track the planting of native vegetation barriers, especially in areas facing major residential zones, to provide a natural screen.
- Informational Signage: Erect informational signboards around the construction site, explaining the project's benefits and duration, to keep residents informed and manage perceptions.
- Visual Mock-ups: Share visual mock-ups or simulations with the community, showcasing the expected landscape changes during and post-construction, if feasible.

Cumulative Impact

Medium - The combined visual impact of the construction activities, along with existing structures could be more noticeable for residents. However, with mitigation measures, this cumulative impact can be managed.

Residual Risk

Medium - Even with mitigation measures, the visibility of certain construction activities to residents will be evident. However, as the construction phase progresses and residents become more accustomed to the changes, the perceived impact may reduce.

Impact: Dust and Noise Impact during Construction

Nature: The construction activities for the Tergniet Mixed-Use Development will inevitably disturb the soil, leading to potential dust generation. This dust can be carried by winds, affecting the immediate surroundings. Residents nearby might experience a temporary increase in dust levels. This could affect their daily activities, health, and overall quality of life. Additionally, the movement of construction vehicles, machinery operations, and groundwork can cause noise and vibrations, further adding to the disturbances experienced by nearby residents.

	Before Mitigation	**After Mitigation**
Extent	Local (2)	Site (1)
Duration	Short-Term (2)	Short-Term (2)
Magnitude	Medium (6)	Low (4)
Probability	Definite (5)	Highly Probable (4)
Significance	Medium (50)	Low (28)

Status:

Negative - The dust and other disturbances from construction activities can be perceived as nuisances by nearby residents and can have potential health implications.

Reversibility:

High - The dust and construction-related disturbances are temporary and will cease once construction is completed. The environment is expected to return to its pre-construction state in terms of dust levels.

Irreplaceable loss of resources?

No - The dust and construction disturbances do not result in the loss of any irreplaceable resources. However, there might be a temporary decline in air quality and ambient noise levels.

Can impacts be mitigated? – Yes

Mitigation Measures

- Dust Suppression: Regularly water down the construction site, especially during dry and windy conditions, to minimise dust generation.
- Windbreaks: Install temporary windbreaks or barriers around the construction site to reduce the spread of dust.
- Vehicle Speed Limits: Implement strict speed limits for construction vehicles within the site to reduce dust kick-up.
- Construction Scheduling: Schedule dust-generating activities for times when wind speeds are low or when wind direction is away from sensitive receptors, where possible.
- Use of Dust Screens: Install dust screens or barriers around the construction site, particularly in areas close to sensitive receptors, to contain dust within the site.
- Rehabilitation of Disturbed Areas: Promptly rehabilitate areas where construction activities have ceased. Re-vegetate with native species or suitable ground cover to stabilise the soil and reduce dust generation.
- Regular Monitoring: Implement a monitoring program to assess the effectiveness of dust control

measures.

- Machinery Maintenance: Ensure construction machinery is well-maintained to minimise excessive noise and vibrations.
- Work Hours: Restrict the noisiest construction activities to daytime hours and avoid work during early mornings, late evenings, or weekends when residents are more likely to be at home.
- Community Communication: Keep the local community informed about construction schedules, especially during particularly disruptive activities. This allows residents to prepare or adjust their schedules accordingly.

Cumulative Impact

Medium - The combined impact of dust, noise, and other construction-related disturbances, along with existing activities in the area, could be more noticeable for residents. However, with mitigation measures, this cumulative impact can be managed.

Residual Risk

Low - With the proposed mitigation measures, the residual impact of dust and construction disturbances should be significantly reduced. However, occasional spikes in dust or noise might still be experienced during certain construction activities.

8.2.2 Operational Phase

Table 6: Potential Impacts during the Operational Phase

Impact: Altered Landscape and Sense of Place during Operation		
Nature: The operational phase of the Tergniet Mixed-Use Development will introduce a new visual element to the landscape. The presence of this mixed-use infrastructure can alter the visual harmony and the intrinsic sense of place that residents and visitors associate with the area. The facility will become a permanent feature in the landscape, potentially influencing how the area is perceived and experienced.		
	Before Mitigation	**After Mitigation**
Extent	Local (2)	Local (2)
Duration	Long-Term (4)	Long-Term (4)
Magnitude	Medium (5)	Low (3)
Probability	Highly Probable (4)	Probable (3)
Significance	Medium (44)	Low (27)
Status: Negative - The transformation of the landscape due to the presence the mixed-use infrastructure can be perceived as a visual intrusion by some, especially those who value the natural aesthetics of the region.		
Reversibility: Low - While the landscape alteration is long-term during the facility's operational phase, if it is decommissioned, there's potential for the land to be restored to a more natural state, albeit with some		

lasting changes.

Irreplaceable loss of resources?

No - The sense of place is subjective and can evolve over time. While the landscape's visual character changes, no tangible resources are irrevocably lost.

Can impacts be mitigated? – Yes

Mitigation Measures

- Vegetative Screening: Plant indigenous trees and shrubs along site boundaries, especially near major roads, to create natural visual buffers and blend the development into the surrounding landscape.
- Landscape Integration: Use materials, textures, and colours that reflect the local architectural styles to harmonise with the surrounding environment and maintain a sense of place.
- Lighting Control: Employ downward-facing, low-glare lighting systems with motion sensors to minimise light pollution and preserve the area's nighttime character.
- Seasonal Landscaping Maintenance: Implement an ongoing maintenance program to ensure that the landscaped areas remain in good condition, reflecting seasonal changes and preventing visual degradation.

Cumulative Impact

Medium - The facility, in combination with other developments and infrastructure in the area, contributes to a changing landscape character. However, with mitigation measures, the cumulative visual impact can be managed.

Residual Risk

Low - With the proposed mitigation measures, the residual impact on the landscape and sense of place would be reduced. However, the presence of the developments will still be a noticeable change in the landscape during its operational phase.

Impact: Visibility of the Facility to Residents during Operation

Nature: During the operational phase, the Tergniet Mixed-Use Development will become a prominent feature in the landscape. Residents of nearby areas will have varying degrees of visibility of the development. This increased visibility can influence residents' daily visual experience, potentially altering their sense of place and connection to the landscape.

	Before Mitigation	After Mitigation
Extent	Local (2)	Local (2)
Duration	Long-Term (4)	Long-Term (4)
Magnitude	Medium (6)	Low (4)
Probability	Highly Probable (4)	Probable (3)
Significance	Medium (48)	Medium (30)

Status:

Negative - For residents who value the landscape, the visibility of the development can be perceived as a visual intrusion.

Reversibility:

Low - The visual impact is persistent during the development's operational phase. However, if decommissioned, and if the land is restored, the visibility factor can be reversed to a large extent.

Irreplaceable loss of resources?

No - While the visual character of the area changes, there's no permanent loss of tangible resources. The sense of place, though altered, can evolve and adapt over time.

Can impacts be mitigated? – Yes

Mitigation Measures

- Vegetative Buffers: Plant indigenous vegetation along site boundaries adjacent to residential areas to reduce direct visibility of infrastructure and enhance visual screening.
- Architectural Integration: Utilise materials and colours that complement the local landscape, minimising visual contrast and promoting architectural harmony.
- Lighting Control: Employ downward-facing, low-glare lighting systems with motion sensors to minimise light pollution and preserve the area's nighttime character.

Cumulative Impact

Medium - The facility's visibility, combined with other infrastructural elements in the area, contributes to a changing visual landscape. However, with mitigation measures in place, the cumulative visual impact can be moderated.

Residual Risk

Medium - Implementing the proposed mitigation measures should reduce the facility's visibility impact on residents.

Impact: Potential Visual Impact of Operational, Lighting during Operation

Nature: Operational lighting is essential for the Tergniet Mixed-Use Development to ensure safe and efficient operations, especially during nighttime hours. However, this lighting can introduce a new source of light in the area, potentially causing light pollution.

	Before Mitigation	After Mitigation
Extent	Local (2)	Local (2)
Duration	Long-Term (4)	Long-Term (4)
Magnitude	Moderate (6)	Low (4)
Probability	Highly Probable (4)	Probable (3)
Significance	Medium (48)	Medium (30)

Status: Negative - The introduction of artificial lighting can be perceived as a visual disturbance, especially if it contrasts starkly with the existing ambient light levels.
Reversibility: Medium - The impact is directly tied to the operational phase. If the facility is decommissioned or lighting practices are modified, the impact can be reversed.
Irreplaceable loss of resources? No - While the night-time visual character might change, there's no permanent loss of resources. However, the natural night sky, if significantly affected, can be considered a non-renewable resource in the context of the project's lifespan.
Can impacts be mitigated? – Yes
Mitigation Measures • Downward-facing Lights: Use fixtures that direct light downwards to minimise upward light spill, preserving the night sky. • Motion Sensors: Install motion sensors so that lights are only activated when necessary, reducing the duration of light emissions. • Low-intensity Lighting: Opt for low-intensity lighting that provides sufficient illumination for safety without being overly bright. • Shielding: Use shields on lights to direct illumination to the intended areas and prevent light spill into unintended areas. • Educate Staff: Ensure that staff are aware of the importance of minimising light pollution and are trained to use lighting efficiently. • Periodic Reviews: Conduct periodic reviews of lighting practices to identify and rectify any unnecessary light emissions.
Cumulative Impact Medium - The facility's lighting, when combined with other light sources in the area could contribute to an overall increase in light pollution. However, with effective mitigation, this cumulative impact can be managed.
Residual Risk Low - With the proposed mitigation measures in place, the residual risk of significant light pollution from the facility should be reduced. Some localised light spill might still occur, but its impact should be limited.

8.2.3 Decommission Phase

While decommissioning of the proposed Tergniet Mixed-Use Development is not anticipated, should it occur in the future due to land-use changes or redevelopment initiatives, the following impacts are likely to arise. The removal of infrastructure, such as buildings, roads, and utilities,

may lead to temporary visual disruption, particularly for nearby residents. Site clearance activities, including the dismantling of structures and removal of fencing, could create visual disturbances due to the presence of heavy machinery and exposed surfaces. Additionally, the absence of previously established vegetation or landscaped areas may result in a temporary loss of visual buffers, potentially increasing the visual exposure of the site. Without proper management, decommissioning could alter the character and sense of place that had developed around the site. Mitigation measures would need to focus on the phased removal of infrastructure, careful rehabilitation of the site with indigenous vegetation, and continuous communication with affected communities to manage expectations and ensure visual impacts are minimised throughout the process

8.2.4 Vegetative Screening Guidelines for Mixed-Use Developments

To effectively integrate mixed-use developments into the surrounding landscape and minimise their visual impact, the following vegetative screening guidelines should be implemented. These guidelines outline appropriate vegetation heights, coverage requirements, and planting arrangements based on building height.

Table 7: Screening Guidelines Based on Building Height

Building Height	Recommended Vegetation Height	Minimum Screening Coverage (%)
Single-storey (≤4m height)	Shrubs/trees of 1m+ height	20 – 30% of the façade length
Double-storey (4m – 8m height)	Trees of 1.5m+ height	25 – 35% of the façade length
Three-storey (8m – 12m height)	Trees of 3m+ height	30 – 40% of the façade length
Larger Developments (≥12m height)	Trees of 5m+ height, with layered understory shrubs	40% of the façade length

Planting Arrangements and Density

- Tree Spacing: Trees should be planted at 3m – 5m intervals, depending on canopy spread.
- Shrub Placement: Dense shrubs should be planted at 1m – 1.5m intervals to provide lower-level screening.
- Multi-Layered Buffering: A combination of tall trees, mid-sized shrubs, and ground cover should be used to maximise screening effectiveness.
- Hedge Rows for Additional Screening: Fast-growing hedge species can provide immediate coverage for lower structures.

- Minimum Vegetative Buffer Width: A 5m-wide vegetated buffer should be maintained along property boundaries.

Maintenance Considerations

- Regular Pruning and Trimming: Trees and shrubs should be maintained to prevent overgrowth while ensuring effective screening.
- Vegetation Replacement Strategy: A replanting plan should be established to manage plant loss due to weather, aging, or disease.
- Soil and Water Conservation Measures: Mulching and appropriate irrigation should be implemented to support healthy vegetation growth.

These guidelines ensure that mixed-use developments are effectively integrated into the landscape while reducing their visual impact through structured vegetative screening.

8.3 Environmental Management Programme

Table 8 to Table 9 management plan tables aim to summarise the key findings of the visual impact report and suggest possible management actions in order to mitigate the potential visual impacts.

Table 8: Management Programme during the Construction Phase

Project Component/s	**Construction site and activities**	
Potential Impact	**Altered Landscape and Sense of Place during Construction**	
Activity/Risk Source	The introduction of construction activities and infrastructure of the proposed Tergniet Mixed-Use Development will temporarily alter the visual character of the landscape. The current landscape will be interspersed with construction materials and equipment. This could evoke feelings among local residents and visitors of a landscape in transition.	
Mitigation: Target/Objective	Optimal construction of infrastructure to minimise the visual impact.	
Mitigation: Action/control	**Responsibility**	**Timeframe**
Use of Natural Colours and Materials: Use materials and colours that blend with the natural grassland landscape for any temporary structures or construction materials. Mimic the texture and colours of the natural environment, where possible.	Project proponent/contractor	Early in the construction phase.
Vegetative Screens: At key points of sensitivity, indigenous vegetation around the	Project	Early in the construction

construction site's perimeter may be planted to act as a natural screen, reducing the visual impact.	proponent/contractor	phase.
Localised Construction: Focus construction activities in smaller, localised areas rather than spreading out across the entire site simultaneously. This phased approach can reduce the overall visual disturbance at any given time.	Project proponent/design consultant	Early in the construction phase.
Revegetation: Post-construction, prioritise revegetation efforts, especially in areas where native grasslands were disturbed. This can help in restoring the site's original visual character.	Project proponent/consultant	Early in the construction phase.
Community Engagement: Engage with the local communities, to keep them informed about construction progress and the measures being taken to reduce visual impacts.	Project proponent/consultant	Early in the construction phase.
Minimise Night-time Activities: Limit construction activities during the night to reduce light pollution, especially given the proximity to residential areas like Tergniet.	Project proponent/consultant	Early in the construction phase.
Visual Simulations: Before starting construction, provide visual simulations to stakeholders, showcasing the expected changes to the landscape, if feasible.	Project proponent/design consultant	Early in the construction phase.
Performance Indicator	Well maintained and neat facility with intact vegetation on and in the vicinity of the facility.	
Monitoring	Monitoring of the entire site on an ongoing basis (by operator).	

Project Component/s	**Construction site and activities**
Potential Impact	**Visibility of the Facility to Residents during Construction**
Activity/Risk Source	Given the undulating terrain, construction activities can stand out prominently against the backdrop of the landscape. For residents, up to 1 km away, they would be watching a new urban development rise. The horizon might now be dotted with cranes, construction equipment, and the beginnings of the Tergniet Mixed-Use Development infrastructure.

Mitigation: Target/Objective	Optimal construction of infrastructure to minimise the visual impact.	
Mitigation: Action/control	**Responsibility**	**Timeframe**
Site Screening: Use natural topography, existing vegetation, or temporary screens to shield construction activities from viewers. Situate construction activities in lower-lying areas or behind hills. Use screens made of materials that blend with the natural environment.	Project proponent/design contractor	Early in the construction phase.
Minimise Structure Heights: Keep temporary structure heights to a minimum to reduce their visibility. Use materials and colours that blend with the surrounding landscape.	Project proponent/design consultant	Early in the construction phase.
Lighting Control: Minimize light pollution by directing lights downwards, using shields to prevent light spill, and turning off lights when not in use.	Project proponent/design contractor	Early in the construction phase.
Strategic Placement: Where possible, prioritise the placement of taller construction equipment and initial construction materials in areas less visible to the majority of residents.	Project proponent/design contractor	Early in the construction phase.
Vegetative Barriers: Enhance and fast-track the planting of native vegetation barriers, especially in areas facing major residential zones, to provide a natural screen.	Project proponent/design consultant	Early in the construction phase.
Informational Signage: Erect informational signboards around the construction site, explaining the project's benefits and duration, to keep residents informed and manage perceptions.	Project proponent/ consultant	Early in the construction phase.
Visual Mock-ups: Share visual mock-ups or simulations with the community, showcasing the expected landscape changes during and post-construction, if feasible.	Project proponent/design consultant	Early in the construction phase.
Performance Indicator	Well maintained and neat facility with intact vegetation on and in the vicinity of the facility.	
Monitoring	Monitoring of the entire site on an ongoing basis (by operator).	

Project Component/s	**Construction site and activities**		
Potential Impact	**Dust and Noise Impact during Construction**		
Activity/Risk Source	The construction activities for the Tergniet Mixed-Use Development will inevitably disturb the soil, leading to potential dust generation. This dust can be carried by winds, affecting the immediate surroundings. Residents nearby might experience a temporary increase in dust levels. This could affect their daily activities, health, and overall quality of life. Additionally, the movement of construction vehicles, machinery operations, and groundwork can cause noise and vibrations, further adding to the disturbances experienced by nearby residents.		
Mitigation: Target/Objective	Optimal construction of infrastructure to minimise the visual impact.		
Mitigation: Action/control		**Responsibility**	**Timeframe**
Dust Suppression: Regularly water down the construction site, especially during dry and windy conditions, to minimise dust generation.		Project proponent/contractor	During the construction phase.
Windbreaks: Install temporary windbreaks or barriers around the construction site to reduce the spread of dust.		Project proponent/design consultant	Early in the construction phase.
Vehicle Speed Limits: Implement strict speed limits for construction vehicles within the site to reduce dust kick-up.		Project proponent/consultant	Early in the construction phase.
Construction Scheduling: Schedule dust-generating activities for times when wind speeds are low or when wind direction is away from sensitive receptors, where possible.		Project proponent/contractor	During the construction phase.
Use of Dust Screens: Install dust screens or barriers around the construction site, particularly in areas close to sensitive receptors, to contain dust within the site.		Project proponent/contractor	During the construction phase.
Rehabilitation of Disturbed Areas: Promptly rehabilitate areas where construction activities have ceased. Re-vegetate with native species or suitable ground cover to stabilize the soil and reduce dust generation.		Project proponent/consultant	Early in the construction phase.

Regular Monitoring: Implement a monitoring program to assess the effectiveness of dust control measures.	Project proponent/consultant	Early in the construction phase.
Machinery Maintenance: Ensure construction machinery is well-maintained to minimise excessive noise and vibrations.	Project proponent/consultant	During the construction phase.
Work Hours: Restrict the noisiest construction activities to daytime hours and avoid work during early mornings, late evenings, or weekends when residents are more likely to be at home.	Project proponent/consultant	During the construction phase.
Community Communication: Keep the local community informed about construction schedules, especially during particularly disruptive activities. This allows residents to prepare or adjust their schedules accordingly.	Project proponent/design consultant	Early and during the construction phase.
Performance Indicator	Well maintained and neat facility with intact vegetation on and in the vicinity of the facility.	
Monitoring	Monitoring of the entire site on an ongoing basis (by operator).	

Table 9: Management Programme during the Operational Phase

Project Component/s	**Operational activities**	
Potential Impact	**Altered Landscape and Sense of Place during Operation**	
Activity/Risk Source	The operational phase of the Tergniet Mixed-Use Development will introduce a new visual element to the landscape. The presence of this mixed-use infrastructure can alter the visual harmony and the intrinsic sense of place that residents and visitors associate with the area. The facility will become a permanent feature in the landscape, potentially influencing how the area is perceived and experienced.	
Mitigation: Target/Objective	Optimal construction of infrastructure to minimise the visual impact.	
Mitigation: Action/control	**Responsibility**	**Timeframe**
Vegetative Screening: Plant indigenous trees and shrubs along site boundaries, especially near major roads, to create natural visual buffers and blend the development into the	Project proponent/design contractor	Early in the construction phase.

surrounding landscape.		
Landscape Integration: Use materials, textures, and colours that reflect the local architectural styles to harmonise with the surrounding environment and maintain a sense of place.	Project proponent/consultant	Early in the construction phase.
Lighting Control: Employ downward-facing, low-glare lighting systems with motion sensors to minimise light pollution and preserve the area's nighttime character.	Project proponent/consultant	During the construction and operational phase.
Seasonal Landscaping Maintenance: Implement an ongoing maintenance program to ensure that the landscaped areas remain in good condition, reflecting seasonal changes and preventing visual degradation.	Project proponent/design consultant	During the operational phase.
Performance Indicator	Well-maintained and neat facility with intact vegetation on and in the vicinity of the facility.	
Monitoring	Monitoring of the entire site on an ongoing basis (by operator).	

Project Component/s	**Operational activities**	
Potential Impact	**Visibility of the Facility to Residents during Operation**	
Activity/Risk Source	During the operational phase, the Tergniet Mixed-Use Development will become a prominent feature in the landscape. Residents of nearby areas will have varying degrees of visibility of the development. This increased visibility can influence residents' daily visual experience, potentially altering their sense of place and connection to the landscape.	
Mitigation: Target/Objective	Optimal construction of infrastructure to minimise the visual impact.	
Mitigation: Action/control	**Responsibility**	**Timeframe**
Vegetative Buffers: Plant indigenous vegetation along site boundaries adjacent to residential areas to reduce direct visibility of infrastructure and enhance visual screening.	Project proponent/design contractor	Early in the construction phase.
Architectural Integration: Utilise materials and colours that complement the local landscape, minimising visual contrast and promoting	Project proponent/consultant	Early in the construction phase.

architectural harmony.		
Lighting Control: Employ downward-facing, low-glare lighting systems with motion sensors to minimise light pollution and preserve the area's nighttime character.	Project proponent/design consultant	During the operational phase.
Performance Indicator	Well maintained and neat facility with intact vegetation on and in the vicinity of the facility.	
Monitoring	Monitoring of the entire site on an ongoing basis (by operator).	

Project Component/s	**Operational activities**	
Potential Impact	**Potential Visual Impact of Operational, Safety, and Security Lighting during Operation**	
Activity/Risk Source	Operational lighting is essential for the Tergniet Mixed-Use Development to ensure safe and efficient operations, especially during nighttime hours. However, this lighting can introduce a new source of light in the area, potentially causing light pollution.	
Mitigation: Target/Objective	Optimal lighting installation and operation to minimise the visual impact.	
Mitigation: Action/control	**Responsibility**	**Timeframe**
Downward-facing Lights: Use fixtures that direct light downwards to minimise upward light spill, preserving the night sky.	Project proponent/design consultant	Early in the construction phase.
Motion Sensors: Install motion sensors so that lights are only activated when necessary, reducing the duration of light emissions.	Project proponent/design consultant	Early and during in the construction phase.
Low-intensity Lighting: Opt for low-intensity lighting that provides sufficient illumination for safety without being overly bright.	Project proponent/design consultant	During the construction phase.
Shielding: Use shields on lights to direct illumination to the intended areas and prevent light spill into unintended areas	Project proponent/design consultant	During the construction phase.
Educate Staff: Ensure that staff are aware of the importance of minimizing light pollution and are trained to use lighting efficiently.	Project proponent/consultant	During the construction phase.
Periodic Reviews: Conduct periodic reviews of lighting practices to identify and rectify any	Project proponent/consultant	During the construction phase.

unnecessary light emissions.		
Performance Indicator	Light spill from the development is kept low	
Monitoring	Monitoring of the entire site on an ongoing basis (by operator).	

9 Environmental Impact Statement and Conclusion

The VIA for the proposed Tergniet Mixed-Use Development has been conducted with a comprehensive analysis of the potential visual impacts across all phases of the project, including construction, operation, and decommissioning. This assessment considers the project's visibility from key viewpoints, the potential impact on residents and scenic corridors, and the effectiveness of proposed mitigation measures.

Based on the findings, the project site demonstrates a moderate capacity to absorb the visual changes due to the existing semi-urban and agricultural landscape, as well as its proximity to transport routes like the N2 and R102. The operational phase introduces new structures and activities that will alter the landscape and potentially affect the sense of place for nearby residents. However, with the implementation of key mitigation measures—such as vegetative screening, landscape integration, and lighting management—the visual impacts can be reduced to an acceptable level.

The visual impact of the development is not anticipated to result in significant or irreversible visual disruption. Furthermore, the mitigation strategies outlined align with industry best practices and are deemed practical and achievable within the project’s scope. The overall landscape character, which consists of mixed residential, agricultural, and open spaces, can accommodate the proposed development without compromising the visual integrity of the area.

In addition to site-specific impacts, cumulative visual impacts were evaluated considering other developments along the N2 and R102 corridors. The introduction of the Tergniet Mixed-Use Development will contribute to the evolving landscape character, but it aligns with the region's broader development trends. Given the existing infrastructure and semi-urban context, the project is unlikely to result in significant cumulative visual disruption. However, continued collaboration with local authorities and neighbouring developments is recommended to maintain visual coherence in the area.

The VIA concludes that the proposed Tergniet Mixed-Use Development does not present any fatal flaws from a visual perspective. The project is supported from a visual perspective and can be authorised, provided that the recommended mitigation measures are implemented and maintained throughout the construction and operational phases. Continuous monitoring and adaptive management are advised to address any unforeseen visual impacts that may arise.

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Appendix A: Specialist CV

Appendix B: VIA Best Practice Guideline