

THE PROPOSED GWAING LANDFILL S24G, WESTERN CAPE PROVINCE, SOUTH AFRICA

Visual Impact Assessment

Final v_2

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Document prepared for UMD Environmental Services (Pty) Ltd
On behalf of George Local Municipality



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LIST OF ACRONYMS

<i>APHP</i>	Association of Professional Heritage Practitioners
<i>BLM</i>	Bureau of Land Management (United States)
<i>BPEO</i>	Best Practicable Environmental Option
<i>CALP</i>	Collaborative for Advanced Landscape Planning
<i>DEM</i>	Digital Elevation Model
<i>DoC</i>	Degree of Contrast
<i>EIA</i>	Environmental Impact Assessment
<i>EMPr</i>	Environmental Management Plan
<i>GIS</i>	Geographic Information System
<i>GLM</i>	George Local Municipality
<i>GPS</i>	Global Positioning System
<i>IDP</i>	Integrated Development Plan
<i>IEMA</i>	Institute of Environmental Management and Assessment (United Kingdom)
<i>KOP</i>	Key Observation Point
<i>LVIA</i>	Landscape and Visual Impact Assessment
<i>MAMSL</i>	Metres above mean sea level
<i>NELPAG</i>	New England Light Pollution Advisory Group
<i>PNR</i>	Private Nature Reserve
<i>SDF</i>	Spatial Development Framework
<i>SEA</i>	Strategic Environmental Assessment
<i>VAC</i>	Visual Absorption Capacity
<i>VIA</i>	Visual Impact Assessment
<i>VRM</i>	Visual Resource Management
<i>VRMA</i>	Visual Resource Management Africa
<i>ZVI</i>	Zone of Visual Influence

GLOSSARY OF TECHNICAL TERMS

Technical Terms	Definition (Oberholzer, 2005)
Degree of Contrast	The measure in terms of the form, line, colour and texture of the existing landscape in relation to the proposed landscape modification in relation to the defined visual resource management objectives.
Visual intrusion	Issues are concerns related to the proposed development, generally phrased as questions, taking the form of “what will the impact of some activity be on some element of the visual, aesthetic or scenic environment”.

Receptors	Individuals, groups or communities who would be subject to the visual influence of a particular project.
Sense of place	The unique quality or character of a place, whether natural, rural or urban.
Scenic corridor	A linear geographic area that contains scenic resources, usually, but not necessarily, defined by a route.
Viewshed	The outer boundary defining a view catchment area, usually along crests and ridgelines. Similar to a watershed. This reflects the area, or the extent thereof, where the landscape modification would probably be seen.
Visual Absorption Capacity	The potential of the landscape to conceal the proposed project.

Technical Term Definition (USDI., 2004)

Key Observation Point	Receptors refer to the people located in the most critical locations, or key observation points, surrounding the landscape modification, who make consistent use of the views associated with the site where the landscape modifications are proposed. KOPs can either be a single point of view that an observer/evaluator uses to rate an area or panorama, or a linear view along a roadway, trail, or river corridor.
Visual Resource Management	A map-based landscape and visual impact assessment method development by the Bureau of Land Management (USA).
Zone of Visual Influence	The ZVI is defined as 'the area within which a proposed development may have an influence or effect on visual amenity.'

1 DFFE SPECIALIST REPORTING REQUIREMENTS

1.1 Specialist declaration of independence

Table 1. Specialist declaration of independence.

All intellectual property rights and copyright associated with VRM Africa's services are reserved, and project deliverables, including electronic copies of reports, maps, data, shape files and photographs, may not be modified or incorporated into subsequent reports in any form, or by any means, without the written consent of the author. Reference must be made to this report, should the results, recommendations or conclusions in this report be used in subsequent documentation. Any comments on the draft copy of the Visual Impact Assessment (VIA) must be put in writing. Any recommendations, statements or conclusions drawn from, or based upon, this report, must make reference to it. This document was completed by Silver Solutions 887 cc trading as VRM Africa, a Visual Impact Study and Mapping organisation located in George, South Africa. VRM Africa cc was appointed as an independent professional visual impact practitioner to facilitate this VIA. I, Stephen Stead, hereby declare that VRM Africa, an independent consulting firm, has no interest or personal gains in this project whatsoever, except receiving fair payment for rendering an independent professional service. Stephen Stead APHP accredited VIA Specialist
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1.2 Specialist report requirements in terms of Appendix 6 of the EIA Regulations (2014), as amended in 2017

Table 2: Specialist report requirements table

A specialist report prepared in terms of the Environmental Impact Regulations of 2014 (as amended in 2017) must contain:	Relevant section in report
Details of the specialist who prepared the report	Stephen Stead, owner / director of Visual Resource Management Africa. steve@vrma.co.za Cell: 0835609911
The expertise of that person to compile a specialist report including a curriculum vitae	Registration with Association of Professional Heritage Practitioners
A declaration that the person is independent in a form as may be specified by the competent authority	Table 1

A specialist report prepared in terms of the Environmental Impact Regulations of 2014 (as amended in 2017) must contain:	Relevant section in report
An indication of the scope of, and the purpose for which, the report was prepared	Terms of Reference
A description of existing impacts on the site, cumulative impacts of the proposed development and levels of acceptable change	Baseline Assessment
The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment	4 November 2024
A description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of equipment and modelling used;	Methodology
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 alternative;	Baseline Visual Inventory
An identification of any areas to be avoided, including buffers	Visual Resource Management Classes
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;	Visual Resource Management Classes
A description of any assumptions made and any uncertainties or gaps in knowledge;	Assumptions and Limitations
A description of the findings and potential implications of such findings on the impact of the proposed activity or activities	Visual Impact Assessment
Any mitigation measures for inclusion in the EMPr	EMPr Section
Any conditions for inclusion in the environmental authorisation	EMPr Section
Any monitoring requirements for inclusion in the EMPr or environmental authorisation	None
A reasoned opinion as to whether the proposed activity or portions thereof should be authorised	Conclusion
Regarding the acceptability of the proposed activity or activities; and	Shaping and relocations of the landfill is suitable with mitigation. Due to the dynamic, growing nature of the landfill, the No-Go option would be a fatal flaw.

A specialist report prepared in terms of the Environmental Impact Regulations of 2014 (as amended in 2017) must contain:	Relevant section in report
If the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMP, and where applicable, the closure plan	EMP
A description of any consultation process that was undertaken during the course of carrying out the study	Pending comments from EIA phase
A summary and copies if any comments that were received during any consultation process	Incorporation of No-Go status quo impact. As there is no
Any other information requested by the competent authority.	Pending comments from EIA phase

1.3 DFFE Screening Tool Site Sensitivity Verification

In terms of Part A of the Assessment Protocols published in GN 320 on 20 March 2020, site sensitivity verification is required relevant to the DFFE Screening Tool. As the proposed development is not listed in terms of the DFFE screening tool, no specific issues were raised but DFFE. Visual and landscape impact was a requirement in terms of Provincial Planning.

As the area is located in the Garden Route where landscapes are being used as a visual resource including the N2 National Highway receptors, visual input into the proposed development was a requirement. **A site visit that was undertaken on the 31 October 2024 for the existing landfill site, with a follow up site survey on the 26 November 2025 to the proposed expanded landfill site.** During the survey, photographs and comments were recorded and can be viewed in Annexure A with associated landscape risk ratings per survey point.

2 EXECUTIVE SUMMARY

Visual Resource Management Africa CC (VRMA) was appointed by UMD Environmental Services (UMDES) to undertake a **Visual Impact Assessment** for the Section 24G (S24G) of the National Environmental Management Act (NEMA) assessment of the existing Gwaing Landfill that is under management of the George Local Municipality.

In terms of the non-compliance letter issued by the Western Cape Environmental Law Enforcement, Department of Environmental Affairs and Development Planning (DEA&DP) issued to George Municipality on the 9 June 2021, numerous non-compliances with the Waste Management Licence (WML) for the Gwaing Waste Disposal Facility have taken place on Erf 464, George.

As a component of the Environmental Impact Assessment (EIA) process, a full Landscape and Visual Impact Assessment is required to determine the suitability of the proposed plans for the closure of the existing waste dump, and the expansion of the waste dump to the south into portions of Erven 324 and 464 that are located adjacent to the existing landfill. As such, this expansion is solely to accommodate surplus waste that results from the reshaping, and is not seen as a development, nor as the creation of the space for the ongoing landfilling.

CONCLUSION

The proposed landfill closure, reshaping and associated development will result in predominantly negative visual impacts during the relocation of the waste etc..., largely due to the scale and prominence of activities, *but* within an already highly disturbed and visually degraded landscape. The extent of visual impact is confined to the local area, as the landfill is an existing and dominant feature within the receiving environment, with visual impacts that are certain and permanent in nature.

With mitigation measures, particularly landscape shaping, rehabilitation and dust suppression, are expected to substantially reduce visual intrusion during the closure phase, resulting in Medium to Low visual significance over the medium-term. In the post-closure phase, the implementation of effective rehabilitation and landscape restitution measures is anticipated to result in a Medium Positive visual outcome, significantly improving landscape character relative to the existing landfill condition. This includes reduced landform harshness, improved colour and texture integration, and a decrease in visual scarring currently associated with exposed landfill faces.

The receiving landscape is assessed as having low irreplaceability, given its degraded state and limited scenic sensitivity. Importantly, the proposed intervention is not expected to give rise to adverse cumulative visual impacts, as it seeks to correct and stabilise an existing source of landscape degradation rather than introduce new intrusive elements. From a strategic perspective, landfill reshaping presents opportunities to improve overall landscape quality, reduce environmental and fire risks, and with the improved landscape context and enhanced aesthetics, allow for better economic opportunities for the areas surrounding the site, especially the future mixed-use development proposed by the George Municipality. Conversely, the No-Go option would perpetuate visual degradation, increase instability

risks along the Gwaing River, and allow existing negative visual and environmental conditions to persist. This escalating, non-compliant trajectory is assessed in detail at Section 4.4, in response to a request from the competent authority's case officer that all specialist studies address the impacts of leaving the landfill as is, with no remedial work undertaken.

In terms of visual and landscape resources related to the DFFE minimum requirements of landfills (DFFE, 1998) that were raised in the Scoping Phase, the following is noted:

- Final shaping, landscaping and revegetation has been incorporated into the design process.
- Risks from soil erosion from surface water run-off will be alleviated.

The resultant shaping of the final landfill will be geometric, and with shaping and rehabilitation, will appear as an organic landform. **It is therefore concluded that the proposed reshaping and relocation of the existing landfill is acceptable from a landscape and visual perspective, provided that the recommended mitigation measures are implemented. Authorisation of the proposed reshaping and relocation with mitigation is supported. Due to the dynamic, growing nature of the landfill, the No-Go option would be a fatal flaw.**

STATUS QUO / NO-GO ALTERNATIVE ASSESSMENT

The No-Go option was not assessed against a fixed status quo baseline, as would be conventional practice, because the Gwaing Landfill site is not static. In the absence of the proposed remedial intervention, waste disposal would continue within the existing footprint, with the available disposal area diminishing and the landform height increasing progressively over time, as demonstrated by the one-year site-survey comparison presented in Figure 2. There is accordingly no defensible fixed condition against which the No-Go option can be compared; it was therefore assessed in Section 4.4 as a trajectory of progressive, non-compliant deterioration rather than a passive or neutral alternative to the proposed closure and reshaping.

This trajectory is corroborated by the EAS Infrastructure Engineers (2025) civil engineering assessment, which found that the airspace envisaged by the 2024 closure design had already been exceeded within a single year, and by the site's own recent operational history. On the impact rating criteria applied consistently throughout this report (Table 9), the No-Go scenario was rated Permanent and progressive in duration, High and increasing in intensity, Definite in probability, and of low and diminishing reversibility, with an overall significance of High Negative. Because this deterioration is ongoing and non-compliant rather than fixed, it was assessed as a fatal flaw rather than a residual, mitigable impact.

This conclusion is reinforced on legislative and policy grounds. The landfill's location adjacent to the Gwaing River, and the associated risk of slumping of the unprotected western wall — which already exceeds 20m in height and continues to rise — engages the fatal-flaw criterion for proximity to significant surface water bodies set out in the DFFE Minimum Requirements for Waste Disposal by Landfill (Second Edition, 1998), and continued, un-remediated disposal would represent an

escalating departure from the objectives of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008). The same walls present an ongoing risk to human safety, as noted by EAS Infrastructure Engineers (2025). From a visual perspective, the landfill's continuing, unplanned growth would further degrade the surrounding agricultural landscape and views from the George Airport access route, while setting a significant negative precedent for waste management practice in the Garden Route.

On this basis, the No-Go option is not assessed as a viable comparative alternative to the proposed closure and reshaping, but as a fatal flaw arising from the progressive, non-compliant deterioration of the site in the absence of remedial intervention (Section 4.4).

The following ratings pertain to the *proposed closure planning option only*.

PLANNING POLICY FIT:

Medium Positive

In terms of regional and local planning fit for landscape and visual themes, the anticipated policy fit of the proposed landfill closure is rated Medium Positive. The existing, degraded landfill sense of place is well established within an already degraded landscape context, and the proposed closure measures are expected to mitigate visual intrusion to a certain extent. The new proposed expansion to the south, is also clearly visually degraded, located adjacent to the existing landfill to the north, and the George Water Treatment ponds to the south.

The significant increase in recent waste volumes, as clearly illustrated by the one-year time-series photographs presented in the site survey section, highlights a critical constraint: the absence of a clearly defined, long-term waste management strategy for the George Municipality. Without such a strategy, continued reliance on short-term or ad hoc solutions has the potential to result in ongoing and escalating degradation of local landscape resources. This risk is clearly depicted in Figure 2, where the previous proposed design closure was reached in 2024, but was then exceeded in one year with the creation of an inappropriate landform that significantly increased the visual intrusion. This lack of planning is noted as an uncertainty, as without effective planning there is every likelihood that this S24G planned closure will also be exceeded.

In this context, the moderation of the planning policy fit does not primarily relate to the current zoning non-compliance—although this remains an issue requiring resolution—but rather to the lack of sufficient forward planning for the closure of the existing landfill, coupled with the absence of a defined policy framework or process to accommodate ongoing waste disposal at an appropriate, local facility that can meet the expected growth trajectory of the George Municipality. This planning gap presents a material risk to both landscape integrity and long-term municipal land-use sustainability.

ZONE OF VISUAL INFLUENCE:

Wide Area/ Moderate to High

The visible extent, or viewshed, is “the outer boundary defining a view catchment area, usually along crests and ridgelines” (Oberholzer, 2005). In order to define the extent of the possible influence of the proposed project, a viewshed analysis was undertaken from the proposed site at a specified height above ground level.

The extent of the Zone of Visual Influence is thus defined as Wide Area and rated Moderate to High. This is due to the height of the landfill that now exceeds the visual screening offered by the gum trees to the west, and open views to the south. The proposed expansion of the southern area is located on lower lying terrain, and expansion into this area, the ZVI of the existing landfill will not be exceeded as long as the height remains below the existing landfill height. Due to the undulating terrain, and the relatively moderate height of the landfill, the post closure landform zone of visual influence is likely to be contained to the local area. As such, **the Visual Extent is rated as Medium.**

VISUAL ABSORPTION CAPACITY Medium to Low

Land use is a crucial factor in determining landscape character, especially regarding the Visual Absorption Capacity (VAC) of the landscapes. Oberholzer defines VAC as the potential of the landscape to conceal the proposed project (Oberholzer, 2005). i.e.

- High VAC – e.g., effective screening by vegetation and structures.
- Moderate VAC - e.g., partial screening by vegetation and structures.
- Low VAC - e.g., little screening by vegetation or structures.

Of relevance to the project Visual Absorption Capacity is the fact that the natural vegetation within and surrounding the site, predominantly veld grasslands, offers very limited screening potential. While mature gum trees occur along the Gwaing River to the west of the landfill, the current landfill airspace exceeds the height of this vegetation, effectively rendering its screening function largely ineffective. In addition, as part of the rehabilitation of the Gwaing River, it is likely that these alien trees within the riparian corridor will be removed in accordance with ecological management objectives. Notwithstanding this, the existing tall gum trees currently provide partial screening of the lower portions of the landfill, particularly when viewed from the western rural agricultural areas.

To the east of the landfill, the presence of waste management facilities located within the broader landfill precinct, together with the Eskom powerline corridor, contributes to a semi-industrial sense of place. However, the increased landfill airspace, reaching heights in excess of 20 m, exceeds the visual absorption capacity typically afforded by adjacent structures and infrastructure associated with the industrial node. Consequently, the Visual Absorption Capacity associated with both vegetation and built structures is rated as Medium.

RECEPTORS AND KOPS: Multiple Urban Receptors and 3 KOPs

Key Observation Points (KOPs) are the people (receptors) located in strategic locations surrounding the property that make consistent use of the views associated with the site where the landscape modifications are proposed. The following KOP locations would need to be used to determine the suitability of the proposed landscape change.

Name	Theme	Exposure	Motivation
N2 Highway	Road View Corridor	High (1.8km)	The N2 Highway is listed in the Garden Route EMF as an important tourist view corridor.
R102 District Road	Road View Corridor	Very High	The R102, while having some landscape degradation due to the landfill site, is listed in George Local Municipality planning as an important tourist route and gateway into George.
Rural Agricultural Areas	Rural residential	Very High	The rural agricultural areas of the Garden Route are important in terms of maintaining the higher levels of scenic quality and, as such, landscape degradation due to the landfill should not jeopardise these areas or be the cause of forcing land use change.
Delville Park	Residential	High	Located 2.1km to the southeast of the site, the existing landfill is clearly visible from these urban receptors. While unlikely to change the local sense of place, the rehabilitation of the landfill will add value to the scenic quality.

Due to the close proximity of the R102 Road Receptors (less than 200m) **the Visual Exposure is rated as Very High.**

SCENIC QUALITY: Low

The scenic quality of the proposed development site is rated Low. The receiving landscape is characterised by gently undulating terrain, with the site and its immediate surroundings forming part of the broader Gwaing River Valley, with the Gwaing River located to the west of the site. All areas within the licensed landfill footprint display evidence of vegetation degradation associated with historical and ongoing waste disposal activities.

While the Gwaing River contributes a degree of intrinsic landscape value to the local context, its visual quality is limited by dense stands of invasive gum trees along the river corridor and the landfill site itself. The dominant visual characteristics of the site are defined by the large form, colours and textures of existing landfill related structures, exposed ground surfaces, and areas of visible solid waste, which collectively introduce strong visual contrast elements within the landscape.

As a landscape resource, the site does not represent a unique, rare, or intact scenic asset. In contrast, the rural agricultural landscapes to the west possess a higher scenic value as part of the broader Greater Garden Route landscape. However, these areas are also already visually compromised by landfill views, all of which reinforce its locally degraded scenic condition.

RECEPTOR SENSITIVITY: Medium

The site is located within the Garden Route, a nationally significant tourism destination, which results in a Medium rating for the type of users. The landfill is clearly visible from the R102, the N2 Highway, and the surrounding western rural agricultural areas. Due to the large scale and prominent form of the landfill, the amount of use is rated as High.

As the landfill becomes increasingly prominent within the local landscape, public interest and concern are expected to increase. This concern is further heightened by the site's proximity to the Gwaing River and the associated risk of slumping along the western slopes, which may raise apprehension regarding environmental stability and downstream impacts.

With the exception of areas adjacent to the Gwaing River that require exclusion and ecological rehabilitation, the site is located within the approved landfill licence area, where receptor sensitivity to landscape change is expected to be Low, given the existing degraded condition and established waste management land use.

LANDSCAPE & VISUAL IMPACT SIGNIFICANCE

A summary of the visual impacts assessed is located on the following page. The headings below refer to the identified impact assessment criteria.

Project	Phase	Mitig. Status	Significance	Cumulative
Landfill Site	Closure	Without	Med to Low -Ve	Low -Ve
		With	Low -Ve	Low -Ve
	Post-Closure	Without	Med to Low -Ve	Low -Ve
		With	Medium +Ve	Low -Ve
No-Go Option	Fatal Flaw			

The landfill site has already caused significant visual degradation to the surrounding landscape. This existing condition forms the baseline for the assessment and is the primary reason that the overall visual impact significance remains relatively low across all phases. During the **Closure Phase**, the visual impact is rated **Low to Medium Negative** without mitigation, reducing to **Low Negative** with mitigation. Edge shaping and landform grading will improve the visual appearance of the site, and natural re-vegetation of the slopes will progressively reduce the visual impact over time.

During the **Post-Closure Phase**, effective rehabilitation, including cover crop establishment and dust suppression, is expected to result in a **Medium Positive** visual outcome. This represents a meaningful improvement to the degraded landscape relative to current conditions.

Cumulative impacts are rated **Low Negative** across all phases as the local area is already landscape degraded and the proposed modifications are unlikely to extend the existing landfill site zone of visual influence. The rehabilitation of the site is unlikely to worsen the visual character of the surrounding area, and in fact represents a net visual improvement over the long term. Final shaping, with input from a qualified landscape architect, would be a requirement to ensure that this net positive outcome takes place.

3 INTRODUCTION

Visual Resource Management Africa CC (VRMA) was appointed by UMD Environmental Services (UMDES) to undertake the proposed Gwaing Land Fill S24G ***Landscape and Visual Impact Assessment*** on behalf of George Local Municipality (Proponent). The site visit was undertaken on the 31st of October 2024. The proposed development site is located in the Western Cape Province, Garden Route District Municipality and within the George Local Municipality (GLM).

Due to non-compliance (as listed below), the Western Cape Government required that the licence holder (GLM) apply to rectify the illegal disposal of waste outside the authorised footprint of the WDF under section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998), specifically:

- More than half the waste body is located outside the licensed footprint of the WDF. To relocate the waste outside the legal footprint to within the legal footprint is likely to be not practical due to the extent of the waste outside the legal footprint.
- The Department has brought the issue of the illegal expansion of the WDF to the attention of the George Municipality on previous occasions (see attached Departmental audit report dated 8 December 2021 and Departmental letter to George Municipality dated 19 November 2021, as examples).

A rehabilitation cost report was generated for the Gwaing Landfill by Delta Built Environmental Consultants (Pty) Ltd in 2021. According to the report titled George Local Municipality Gwaing Landfill Rehabilitation Cost, the following would need to be taken into account:

- Remedial design to address identified problem areas.
- Final shaping, landscaping and re-vegetation.
- Final landfill cover or capping design.
- Construct the capping layer to minimum quality and thickness.
- Permanent stormwater diversion measures, run-off control and anti-erosion measures; and
- Any infrastructure relating to the End-use Plan (Delta Built Environment Consultants (Pty) Ltd, 2021, p. 3)

As this 'airspace' planning exceeded the proposed closure design in 2025, an additional assessment report was commissioned by GLM. Based on the analysis, Option 5 was deemed the most feasible by George Municipality, and the area to the south of the existing dump was included in the scope of work for the S24G EIA process. This would require the establishment of a new landfill to accommodate surplus waste, as well as the closure of the existing landfill site. The Municipality has identified a potential site approximately 1 km south of the existing facility (portions of Erven 324 and 464 and adjacent land), which would still need to undergo detailed feasibility and environmental approval processes.

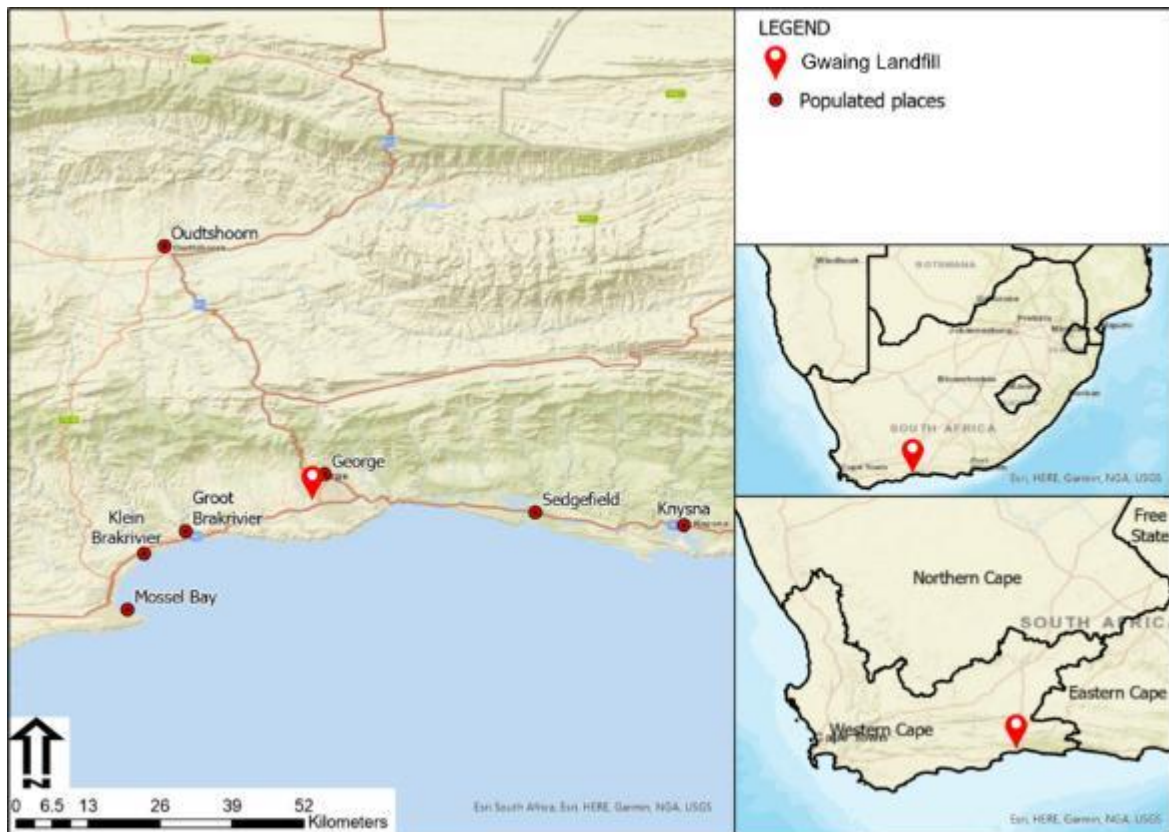


Figure 1: National and regional locality map.

3.1 Terms of Reference

The scope of this study is to cover the entire proposed project area. The broad terms of reference for the study are as follows:

- Collate and analyse all available secondary data relevant to the affected proposed project area. This includes a site visit of the full site extent, as well as of areas where potential impacts may occur beyond the site boundaries.
- Specific attention is to be given to the following:
 - Quantifying and assessing existing scenic resources/visual characteristics on, and around, the proposed site.
 - Evaluation and classification of the landscape in terms of sensitivity to a changing land use.
 - Determining viewsheds, view corridors and important viewpoints in order to assess the visual impacts of the proposed project.
 - Determining visual issues, including those identified in the public participation process.
 - Reviewing the legal framework that may have implications for visual/scenic resources.
 - Assessing the significance of potential visual impacts resulting from the proposed project for the construction, operation and decommissioning phases of the proposed project.
 - Assessing the potential cumulative impacts associated with the visual impact.
 - Generate photomontages of the proposed landscape modification.

- Identifying possible mitigation measures to reduce negative visual impacts for inclusion into the proposed project design, including input into the Environmental Management Programme report (EMPr).

3.2 Study Team

Contributors to this study are summarised in the table below.

Table 3: Authors and Contributors to this Report.

Aspect	Person	Organisation / Company	Qualifications
Landscape and Visual Assessment (author of this report)	Stephen Stead MSc Geography, 2023 (UKZN, Pietermaritzburg)	VRMA	• 20 years of experience in visual assessments including 230 large scale landscape changes in five sub-Saharan African countries. • Registered with the Association of Professional Heritage Practitioners since 2014.

3.3 Visual Assessment Approach

The full methodology used in the assessment can be found in Annexure D, with this section outlining the key elements of the assessment process. The process that VRM Africa follows when undertaking a VIA is based on the United States Bureau of Land Management's (BLM) Visual Resource Management method (USDI., 2004). This mapping and GIS-based method of assessing landscape modifications allows for increased objectivity and consistency by using standard assessment criteria.

- *“Different levels of scenic values require different levels of management. For example, management of an area with high scenic value might be focused on preserving the existing character of the landscape, and management of an area with little scenic value might allow for major modifications to the landscape. Determining how an area should be managed first requires an assessment of the area's scenic values”.*
- *“Assessing scenic values and determining visual impacts can be a subjective process. Objectivity and consistency can be greatly increased by using the basic design elements of form, line, colour, and texture, which have often been used to describe and evaluate landscapes, to also describe proposed projects. Projects that repeat these design elements are usually in harmony with their surroundings; those that don't create contrast. By adjusting project designs so the elements are repeated, visual impacts can be minimized” (USDI., 2004).*

Baseline Phase Summary

The VRM process involves the systematic classification of the broad-brush landscape types within the receiving environment into one of four VRM Classes. Each VRM Class is associated with management objectives that serve to guide the degree of modification of the proposed site. The Classes are derived by means of a simple matrix with the three variables being the scenic quality, the expected receptor sensitivity to landscape change, and the distance of the proposed landscape modification from key receptor points. The Classes are not prescriptive and are utilised as a guideline to determine visual carrying

capacity, where they represent the relative value of the visual resources of an area. Classes I and II are the most valued, Class III represents a moderate value; and Class IV is of least value. The VRM Classes are not prescriptive and are used as a guideline to determine the carrying capacity of a visually preferred landscape as a basis for assessing the suitability of the landscape change associated with the proposed project.

Table 4: VRM Class Matrix Table

		VISUAL SENSITIVITY LEVELS								
		High			Medium			Low		
SCENIC QUALITY	A (High)	II	II	II	II	II	II	II	II	II
	B (Medium)	II	III	III/IV *	III	IV	IV	IV	IV	IV
	C (Low)	III	IV	IV	IV	IV	IV	IV	IV	IV
DISTANCE ZONES		Fore/middle ground	Background	Seldom seen	Fore/middle ground	Background	Seldom seen	Fore/middle ground	Background	Seldom seen

* If adjacent areas are **Class III** or lower, assign **Class III**, if higher, assign **Class IV**

The visual objectives of each of the classes are listed below:

- The Class I objective is to preserve the existing character of the landscape and the level of change to the characteristic landscape should be very low and must not attract attention. Class I is assigned when a decision is made to maintain a natural landscape.
- The Class II objective is to retain the existing character of the landscape and the level of change to the characteristic landscape should be low. The proposed development may be seen but should not attract the attention of the casual observer, and should repeat the basic elements of form, line, colour and texture found in the predominant natural features of the characteristic landscape.
- The Class III objective is to partially retain the existing character of the landscape, where the level of change to the characteristic landscape should be moderate. The proposed development may attract attention, but should not dominate the view of the casual observer, and changes should repeat the basic elements found in the predominant natural features of the characteristic landscape; and
- The Class IV objective is to provide for management activities that require major modifications of the existing character of the landscape. The level of change to the landscape can be high, and the proposed development may dominate the view and be the major focus of the viewer's (s') attention without significantly degrading the local landscape character.

Impact Phase Summary

To determine impacts, a degree of contrast exercise is undertaken. This is an assessment of the expected change to the receiving environment in terms of the form, line, colour and texture, as seen from the surrounding Key Observation Points. This determines if the proposed project meets the visual objectives defined for each of the Classes. If the expected visual contrast is strong, mitigation recommendations are to be made to assist in

meeting the visual objectives. To assist in the understanding of the proposed landscape modifications, visual representation, such as photomontages or photos depicting the impacted areas, can be generated. There is an ethical obligation in the visualisation process, as visualisation can be misleading if not undertaken ethically.

3.4 VIA Process Outline

The following approach was used in understanding the landscape processes and informing the magnitude of the impacts of the proposed landscape modification. The table below lists a number of standardised procedures recommended as a component of best international practice.

Table 5: Methodology Summary Table

Action	Description
Site Survey	The identification of existing scenic resources and sensitive receptors in and around the study area to understand the context of the proposed development within its surroundings to ensure that the intactness of the landscape and the prevailing sense of place are taken into consideration.
Project Description	Provide a description of the expected project, and the components that will make up the landscape modification.
Reviewing the Legal Framework	The legal, policy and planning framework may have implications for visual aspects of the proposed development. The heritage legislation tends to be pertinent in relation to natural and cultural landscapes, while Strategic Environmental Assessments (SEAs) for renewable energy provide a guideline at the regional scale.
Determining the Zone of Visual Influence	This includes mapping of viewsheds and view corridors in relation to the proposed project elements, in order to assess the zone of visual influence of the proposed project. Based on the topography of the landscape as represented by a Digital Elevation Model, an approximate area is defined which provides an expected area where the landscape modification has the potential to influence landscapes (or landscape processes) or receptor viewpoints.
Identifying Visual Issues and Visual Resources	Visual issues are identified during the public participation process, which is being carried out by others. The visual, social or heritage specialists may also identify visual issues. The significance and proposed mitigation of the visual issues are addressed as part of the visual assessment.
Assessing Potential Visual Impacts	An assessment is made of the significance of potential visual impacts resulting from the proposed project for the construction, operational and decommissioning phases of the project. The rating of visual significance is based on the methodology provided by the Environmental Assessment Practitioner (EAP).
Formulating Mitigation Measures	Possible mitigation measures are identified to avoid or minimise negative visual impacts of the proposed project. The intention is that these would be included in the project design, the Environmental Management Programme report (EMPr) and the authorisation conditions.

3.5 Impact Assessment Methodology

The following impact criteria were used to assess visual impacts. The criteria were defined by the Western Cape *DEA&DP Guideline for involving Visual and Aesthetic Specialists in EIA Processes* (Oberholzer, 2005).

Table 6. DEA&DP Visual and Aesthetic Guideline Impact Assessment Criteria table

Criteria	Definition
<u>Extent</u>	The spatial or geographic area of influence of the visual impact, i.e.: • <i>site-related</i>: extending only as far as the activity. • <i>local</i>: limited to the immediate surroundings. • <i>regional</i>: affecting a larger metropolitan or regional area. • <i>national</i>: affecting large parts of the country. • <i>international</i>: affecting areas across international boundaries.
<u>Duration</u>	The predicted life-span of the visual impact: • <i>short term</i>, (e.g., duration of the construction phase). • <i>medium term</i>, (e.g., duration for screening vegetation to mature). • <i>long term</i>, (e.g., lifespan of the project). • <i>permanent</i>, where time will not mitigate the visual impact.
<u>Intensity</u>	The magnitude of the impact on views, scenic or cultural resources. • <i>low</i>, where visual and scenic resources are not affected. • <i>medium</i>, where visual and scenic resources are affected to a limited extent. • <i>high</i>, where scenic and cultural resources are significantly affected.
<u>Probability</u>	The degree of possibility of the visual impact occurring: • <i>improbable</i>, where the possibility of the impact occurring is very low. • <i>probable</i>, where there is a distinct possibility that the impact will occur. • <i>highly probable</i>, where it is most likely that the impact will occur. • <i>definite</i>, where the impact will occur regardless of any prevention measures.
<u>Significance</u>	The significance of impacts can be determined through a synthesis of the aspects produced in terms of their nature, duration, intensity, extent and probability, and be described as: • <i>low</i>, where it will not have an influence on the decision. • <i>medium</i>, where it should have an influence on the decision unless it is mitigated. • <i>high</i>, where it would influence the decision regardless of any possible mitigation.

3.6 Assumptions and Uncertainties

- Digital Elevation Models (DEM) and viewsheds were generated using ASTER elevation data (NASA, 2009). Although every effort to maintain accuracy was undertaken, as a result of the DEM being generated from satellite imagery and not being a true representation of the earth's surface, the viewshed mapping is approximate and may not represent an exact visibility incidence. Thus, specific features identified from the DEM and derive contours (such as peaks and conical hills) would need to be verified once a detailed survey of the project area has taken place.
- The use of open-source satellite imagery was utilised for base maps in the report.
- Some of the mapping in this document was created using Bing Maps, Open-Source Map, ArcGIS Online and Google Earth Satellite imagery.
- The project deliverables, including electronic copies of reports, maps, data, shape files and photographs are based on the author's professional knowledge, as well as available information.
- VRM Africa reserves the right to modify aspects of the project deliverables if and when new/additional information may become available from research or further work in the applicable field of practice or pertaining to this study.
- As access to farms and private property is often limited due to security reasons, limiting access to private property in order that photographs from specific locations are taken. 3D modelling is used to reflect the expected landscape change area where applicable.
- Mapping makes use of the SANBI BGIS webmap (SANBI, 2018)
- The slopes analysis is approximate and is subject to detailed survey and detailed slopes analysis.
- **The George Landfill is a highly dynamic landscape and is subject to ongoing development that is likely to change prior to the finalisation of this EIA process. While this is taken into consideration as much as possible, the unknown nature of the existing landfill growth would need to be noted as a limitation. The following photographs depict the rapid growth nature of the landfill site.**

Photo from Entrance to Landfill Area : November 2024



Photo from Entrance to Landfill Area : November 2025



Photo from Entrance to Landfill Area : August 2026



Figure 2: Dynamic Landscape Change Status Photographs.

4 PROJECT DESCRIPTION

The following table outlines the project information that was provided by the client that will be incorporated into the assessment and proposed infrastructure relating to the project.

Table 7: Project Information Table

PROPONENT SPECIFICATIONS	
Applicant Details	Description
Applicant Name:	George Local Municipality
Project Name:	Gwaing Landfill S24G

Due to non-compliance (as listed below), the Western Cape Government required that the licence holder (GLM) apply to rectify the illegal disposal of waste outside the authorised footprint of the WDF under section 24G of the National Environmental Management Act, 1998 (Act No. 107 of 1998).

4.1 Project Background

As per the Western Cape Government (Department) Compliance Audit Report of the Gwaing Waste Disposal Facility (WDF), Portion of the Remainder of Erf No. 464 George, a Waste Management Licence on 11 November 2014 to the GLM for the decommissioning of the Gwaing Garden Refuse and Builder's Rubble WDF in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), as amended (NEM:WA). On 16 April 2018, the Department updated and amended the licence and issued a new licence (Ref.: 19/2/5/4/D2/19/WL0031/18) to the Municipality. A further variation license (Ref.: 19/2/5/4/D2/19/WL0139/19) was also issued on 6 November 2019 to extend the validity of the Licence in order to facilitate the decommissioning of the Facility. Specification related to landscape and visual resources included in the above licencing pertain to the slope shape, stipulating a compacted waste body shaped to have a slope between 1v:4h (25%) and 1v:50h (2%). The survey map undertaken by G2 Surveys Mapping (Pty) Ltd identifies the areas falling outside of the licence area.

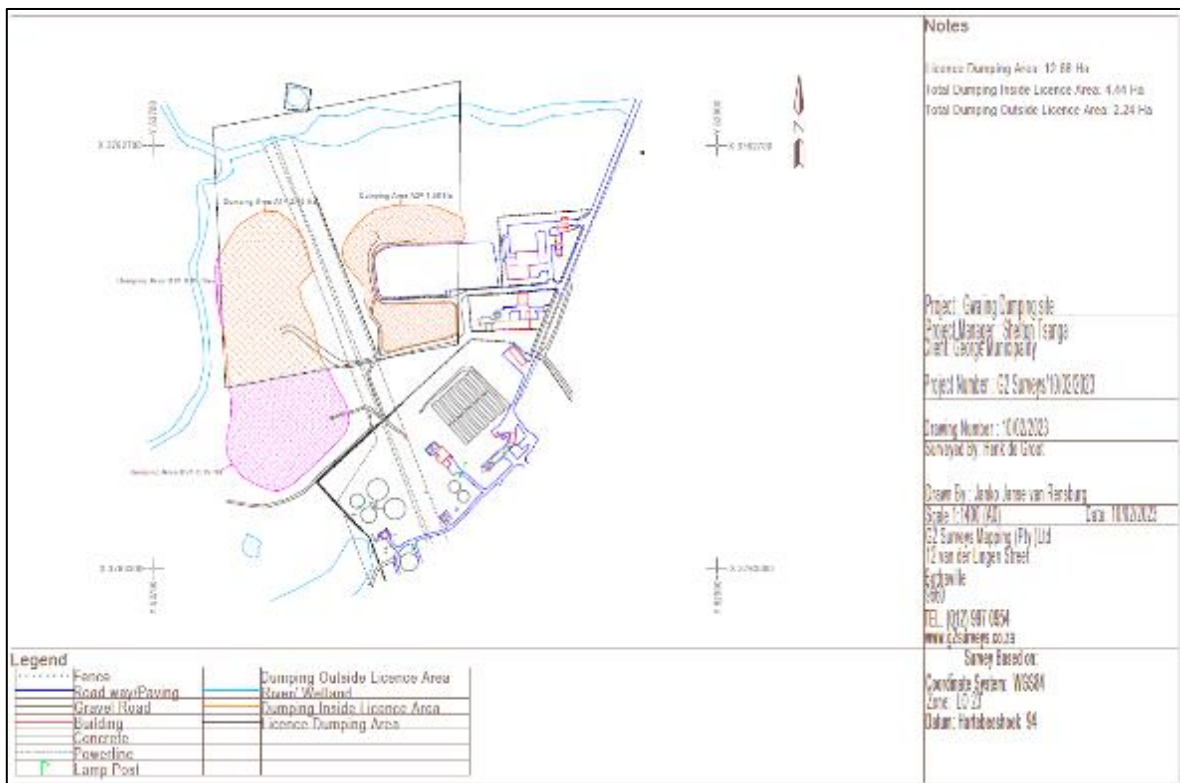


Figure 3: Survey of Gwaing Dumping Site pertaining to dumping areas within and outside by G2 Surveys Mapping (Pty) Ltd.

The licencing area also includes the proposed composting facility that is planned to be situated northwest of the main landfill site. The map in Figure 4 on the following page outlines that plan as per the Tuiniqua Consulting Engineers dated November 2010. This also includes the waste transfer station as well as the incinerator.



Figure 4: Proposed composting facility and builders' rubble dumping area generated by Tuiniqua Consulting Engineers dated November 2010.

4.2 Delta Built Environment Consultants Closure Planning

As a part of this closure process, a rehabilitation cost report was generated for the Gwaing Landfill by Delta Built Environmental Consultants (Pty) Ltd in 2021. According to the report titled George Local Municipality Gwaing Landfill Rehabilitation Cost, the following would need to be taken into account:

- Remedial design to address identified problem areas.
- Final shaping, landscaping and re-vegetation.
- Final landfill cover or capping design.
- Construct the capping layer to minimum quality and thickness.
- Permanent stormwater diversion measures, run-off control and anti-erosion measures; and
- Any infrastructure relating to the End-use Plan (Delta Built Environment Consultants (Pty) Ltd, 2021, p. 3)

In terms of landfill stability, the report highlights that slope failure can be disastrous, result in injury or death, and that a large portion of the waste body could end up in the Gwaing River that is located at the western toe of the landfill (Page 13). Based on the survey data generated during the topographical survey, cross sections across the landfill were generated and depict that the landfill is evidently unstable and at a risk of failure. The contours and the cross sections are shown in the following Figures with photographic evidence recorded during the site depicted on the following page.



Figure 5: Slumping evident on the steep western face of the landfill.



Figure 6: The steep angle created on the west face above the Gwaing River.



Figure 7: The steep angle of repose and the prominence as seen from the R102.

A stability analysis was undertaken to determine the slope to which the landfill is to be reinstated as part of the rehabilitation process with a finding that there exists a high risk of slope failure during flattening and stabilisation of the slope. The report states that “although the required slope for landfills in South Africa is 1:4, with that also being the standard set

for the Gwaing landfill in terms of its waste license 19/2/5/4/D2/19/WL003/18 issued on 16 April 2018, several practical constraints prevent the feasibility of such flat slopes being achieved on a 20-m high landfill where existing slopes are steeper than 1:0,5 and with the position of the landfill toe being limited by the presence of the Gwaing river. However, it is recognised that a slope steeper than 1:3 will impact negatively on the final landfill capping design that is to be constructed as the second phase of the rehabilitation process” (DFFE, 1998, p. 17).

The report stability analysis indicated that the average slope of the Gwaing landfill should not be steeper than 1:2 for areas up to 15 m in height for the western embankment to ensure an even gradient, with storm water run-off collection trenches to manage storm water. The proposal was that storm water trenches be positioned at intervals not more than 15 m apart, noting that wider berms would have been preferable and that the proposed berms should be at least 2 m wide.

A limitation of the report noted that “due to budget constraints, stabilisation and rehabilitation of the eastern, northern and southern embankments and remainder of the landfill falls outside of the scope of the first phase of the project” (Delta Built Environment Consultants (Pty) Ltd, 2021, p. 18). As such, no stabilisation or slope was proposed for these areas that also depict steep slope gradients. The report also notes that expansion to the east is also constrained due to the proximity of the landfill toe to the Eskom High Voltage Powerlines.

For the eastern slopes stabilisation, the report motivates for the use of Dynamic Compaction (DC) that involves repeatedly dropping a heavy weight on the ground in a grid pattern at regularly spaced intervals. Based on the findings from the stability analysis undertaken by Mr. Pieter Oosthuizen (Pr. Eng) from Southern Geotechnical Engineering, the following recommendations were made for stabilisation of the western embankment:

- “Due to practical considerations and as explained above, the **permanent** (i.e. long term) slope layout must not be steeper than 1:2 for vertical slope heights not exceeding 15m.
- As part of the long-term rehabilitation of the landfill site, the permanent 1:2 slope must be covered with a relatively thin veneer topsoil layer and vegetation established on the slope to minimize surface erosion.
- **Temporary slopes** to facilitate construction activities can be cut back as steep as 1:1 for vertical slope heights not exceeding 15m. The following chronological steps are recommended for the rehabilitation of the affected slopes (to be confirmed during the detailed design stage):
 - The existing overly steep slope must firstly be cut back over most of its full depth to a safe inclination not steeper than 1:1 for a vertical height/depth not exceeding 15m. Waste excavated during this initial step in the rehabilitation process must be temporarily stockpiled a sufficient distance from the affected slope so as not to further deteriorate the stability of the slope. It is the opinion of this office that this first step is crucial in ensuring an acceptably safe working environment for personnel and plant. As such it is NOT recommended that any dynamic compaction at any level be undertaken, prior to cutting the current overly steep slope back to at least a 1:1 inclination.

Dynamic compaction (DC) on top of, or even only near an already unstable slope is certainly not recommended.

- A bottom platform level must be established near the base of the existing slope and compacted by means of dynamic compaction operations. It may be required to import a layer of relatively 'inert' waste materials like bricks, concrete fragments and other relatively stable materials from other areas on site to construct a relatively 'stiff' base layer by DC methods.
- Subsequent DC platforms must be established at predetermined vertical intervals higher up the slope, roughly following the **recommended final 1:2 slope inclination**. Relatively 'inert' waste materials (and not general waste) must as far as possible be placed within the outer 5m wide 'zone' and general waste contained between this outer (structural) 'shell' and the main body of waste. It is the opinion of this office that the DC compaction operation must start near the base of the slope and progresses upwards (and not commence at the top and progress downwards).
- The 'stepped' slope can now be 'smoothed out' or 'flattened' to the recommended 1:2 slope inclination by localised cut to fill operations (cutting out the 'protruding' triangles above the 1:2 line and using this material to fill in the triangles of air below the 1:2 line).
- Following the construction of the slope, a veneer layer of topsoil can be placed and smoothed out to the required thickness with a bulldozer blading the stockpiled material down the slope (and then reversing back up the 1:2 slope inclination). (Delta Built Environment Consultants (Pty) Ltd, 2021, p. 43)

Based on the above constraints, the following closure drawing was generated by GIBB Engineers in 2021.

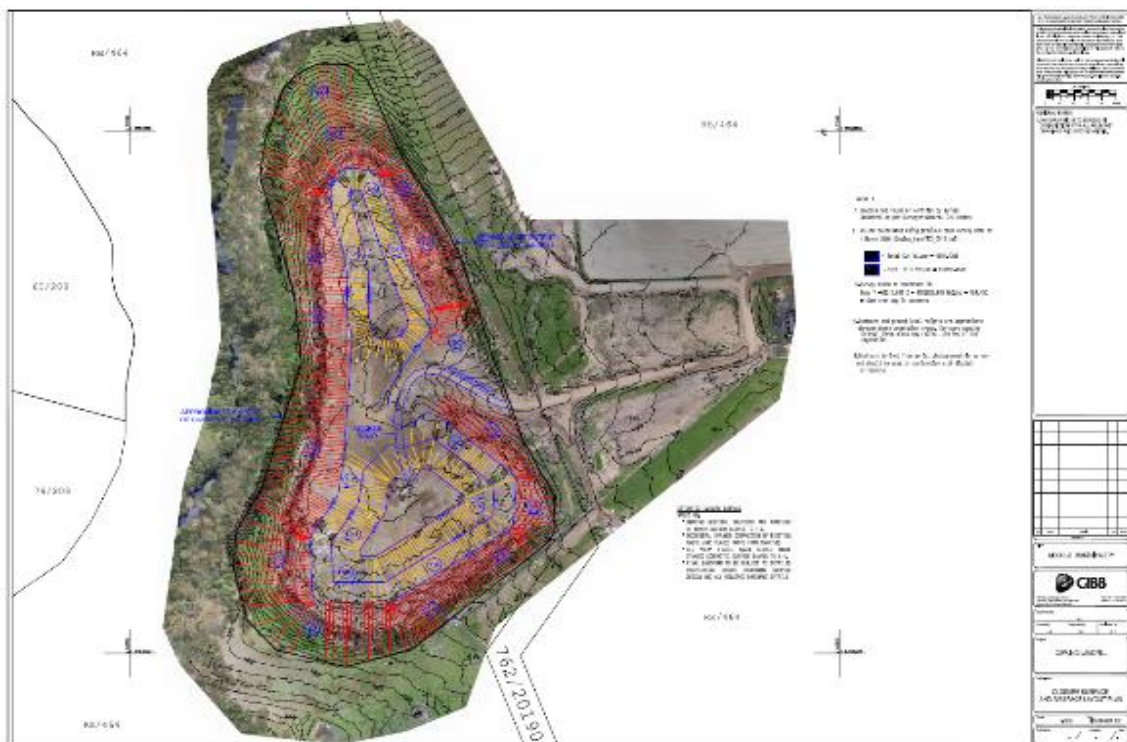


Figure 8: Proposed final closure drawings generated by GIBB dated November 2021.

The closure shaping proposal was for two raised sections to the north and south of the existing dump site, with an access road in the central area. However, due to increased intake of solid waste in 2024, the airspace for this closure plan was exceeded and the central area between the two raised areas was subsequently filled, and a further lift of the now flattened top section is currently taking place.

In terms of final land use, the report motivates the landfill be used as a food garden after the initial 5 year 'no use' period based on the following points:

- There are currently communities in the area without jobs and food.
- There is ample land available (Increased topsoil must however be provided for in the final capping design).
- The proposed composting facility is intended to manufacture compost on site for many years.
- The facility can negotiate with the sewerage plant to donate some sewage sludge to blend with the garden waste compost to enrich it – in a controlled manner.
- A pump system can be designed to feed water to the food gardens and composting facility from the attenuation pond, which is to be designed as part of the closure of the facility. (Page 12)

4.3 EAS Gwaing Waste Disposal Facility Closure Plan

Due to the above-mentioned airspace constraints in relation to the volumes of waste that was being generated by the George Municipality, a further engineering assessment was commissioned in May 2025. The report was compiled by EAS Infrastructure Engineers and titled Gwaing Waste Disposal Facility Civil Engineering Report (EAS Infrastructure Engineers, 2025). A similar appraisal of the risk to the eastern slumping of the dump was once again highlighted as a significant risk with the following terracing and reshaping of the current 1(V) to 1(H) slope to a 1(V) to 3(H) slope with two 3m wide benches.

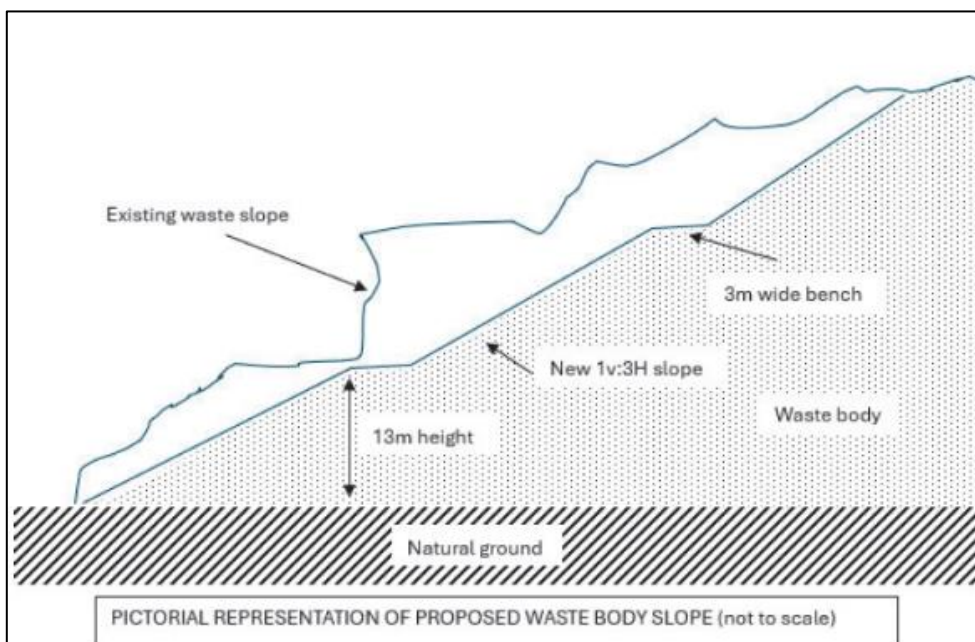


Figure 9: EAS Engineering Pictorial Representation Diagram (Figure 8). (EAS Infrastructure Engineers, 2025, p. 15)

Summary of Options Analysis was generated as summarised in the table below.

Table 8: EAS Engineering Option Analysis Summary Table.

Option	Heading	Motivation
Option 1	Do Nothing	This option was dismissed at the outset and not carried forward for further consideration.
Option 2	Remain Within the Licensed Boundary	Constraining the waste footprint to the existing licensed boundary would result in an extremely limited disposal area. This would accommodate very little waste and require the removal of a substantial volume of material off-site. As a result, this option was deemed unworkable.
Option 3	Formalise the Existing Waste Footprint (Preferred in principle)	This option allows the maximum amount of waste to remain in situ, with approximately 394 000 m ³ retained on site and 706 000 m ³ removed. The option is based on side slopes of 1V:3H, with the potential to accommodate additional waste if slopes were steepened to 1V:2H, subject to detailed design, slope stability analysis, and confirmation of capping feasibility. The licensed slope requirement of 1V:4H was found to be impractical. Any deviation from the licence conditions would require approval from the Department of Environmental Affairs and Development Planning.
Option 4	Use Adjacent Area for New Disposal	A small area to the east of the existing waste body could theoretically be used; however, its limited capacity ($\pm 30\,000\text{ m}^3$) and constrained footprint make it impractical for development and operation.
Option 5	Dispose of Surplus Waste at a New Landfill Nearby	Establishing a new landfill to accommodate surplus waste is technically possible but would be complex, time-consuming, and costly, requiring feasibility studies and full authorisation processes. The Municipality has identified a potential site approximately 1 km south of the existing facility (portions of Erven 324 and 464 and adjacent land), which would still need to undergo detailed feasibility and environmental approval processes.

(EAS Infrastructure Engineers, 2025, p. 18)

Based on the above analysis, Option 5 was deemed the most feasible by George Municipality, and the area to the south of the existing dump was included in the scope of work for the S24G EIA process. The following map identified the project study.

4.4 No-Go Option as an Alternative

Methodological Approach to the No-Go Option

A conventional No-Go option is typically assessed against a fixed status quo baseline, on the assumption that the site condition would remain materially unchanged if the project does not proceed. This assumption does not hold for the Gwaing Landfill. The site is not a static landscape: without the proposed remedial intervention, waste disposal would continue within the constrained footprint, with the available disposal area diminishing and the landform height increasing progressively over time, as illustrated by the one-year time-series comparison presented in Figure 2 (Section 3.6). There is therefore no defensible status quo against which to assess the No-Go option, as the baseline condition itself would continue to deteriorate.

Retaining the landfill in this ongoing, un-remediated state does not represent a neutral or passive alternative. It would constitute an escalating departure from acceptable landscape and visual conditions and would not comply with the requirements of national waste management legislation and norms and standards (see Legislative and Policy Non-Compliance, below). On this basis, a “do-nothing” No-Go scenario is assessed below as a trajectory of progressive, non-compliant deterioration, rather than presented as a fixed comparative condition. While the visual intrusion and degradation of the Gwaing River downstream of the site would constitute a significant risk should a major slumping event take place, this is not the only safety concern. The un-protected steep sided walls of the landfill, which already exceed 20m in height and continue to rise (Table 14; Figure 2), also present a risk to human safety, as noted by EAS Infrastructure Engineers (2025), and are listed as a further reason why the No-Go option is a fatal flaw.

Trajectory of Progressive Deterioration

Evidence gathered during this assessment confirms that the landfill footprint and airspace are actively expanding in the absence of remedial intervention. The site survey photographs presented in Figure 2 (Section 3.6) show a marked increase in waste volume and landform height between November 2024 and November 2025, over a period of only twelve months. This is corroborated by the EAS Infrastructure Engineers (2025) civil engineering assessment, which found that the airspace envisaged by the 2024 closure design had already been exceeded within a year. In the absence of a defined long-term waste management strategy for the George Municipality (see Executive Summary), there is every likelihood that this pattern of escalating, unplanned landform growth would continue indefinitely under a No-Go scenario, with a corresponding and cumulative increase in visual and landscape impact over time.

Assessment of Impacts under the No-Go Scenario

The following rating applies the impact assessment criteria used elsewhere in this report (Section 3.5) to the No-Go trajectory described above, in direct response to the case officer’s request for an assessment of the impacts of leaving the landfill site as is, with no remedial work.

Table 9: No-Go (Status Quo) Preliminary Impact Rating Table.

Criteria	Rating and Motivation
Nature	Negative. Continued, un-remediated waste disposal would progressively increase visual intrusion and landscape degradation.
Extent	Local Area, widening toward Regional over time as the landform height increases and the zone of visual influence expands beyond its current extent.
Duration	Permanent and progressive. Unlike the assessed project phases, which have defined start and end points, the No-Go trajectory has no closure point and would continue indefinitely.
Intensity	High, and increasing. Visual intrusion would escalate as the landform height and footprint continue to grow beyond the licensed and engineered design envelope.
Probability	Definite. Continued landfilling without remedial intervention, and the associated deterioration, is confirmed by the site's own recent operational history (Figure 2).
Reversibility	Low, and reducing over time. The longer remedial action is deferred, the greater the volume of misplaced waste and the more costly and technically difficult rehabilitation becomes.
Significance	High Negative, and not mitigable within the No-Go scenario itself. Because the trajectory is progressive and non-compliant rather than fixed, it is assessed as a fatal flaw rather than a residual, tolerable impact.

Legislative and Policy Non-Compliance

The DFFE Minimum Requirements for Waste Disposal by Landfill (Second Edition, 1998) identify areas in close proximity to significant surface water bodies as a fatal-flaw criterion (Section 5.2.1). The Gwaing Landfill's location adjacent to the Gwaing River, and the ongoing risk of slumping of the western wall into the river under a No-Go scenario, engages this criterion directly, and would worsen progressively for as long as remedial work is deferred. Continued disposal outside the terms of the current Waste Management Licence, including the licensed slope requirements referred to in the Project Background, would also represent an escalating departure from the objectives of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008), rather than a neutral holding position. This is corroborated by the EAS Infrastructure Engineers (2025) options analysis (Table 8), which dismissed a "Do Nothing" option (Option 1) at the outset of the engineering feasibility assessment. From a visual perspective, the continuing growth of the landfill that is already clearly becoming a prominent landform, will increasingly degrade local agricultural landscape to the west, access roads to George from the airport, as well as set a significantly negative precedent for waste management in the Garden Route.

On this basis, the No-Go option is not assessed as a viable comparative alternative to the proposed closure and reshaping, but as a fatal flaw arising from the progressive, non-compliant deterioration of the site in the absence of remedial intervention.

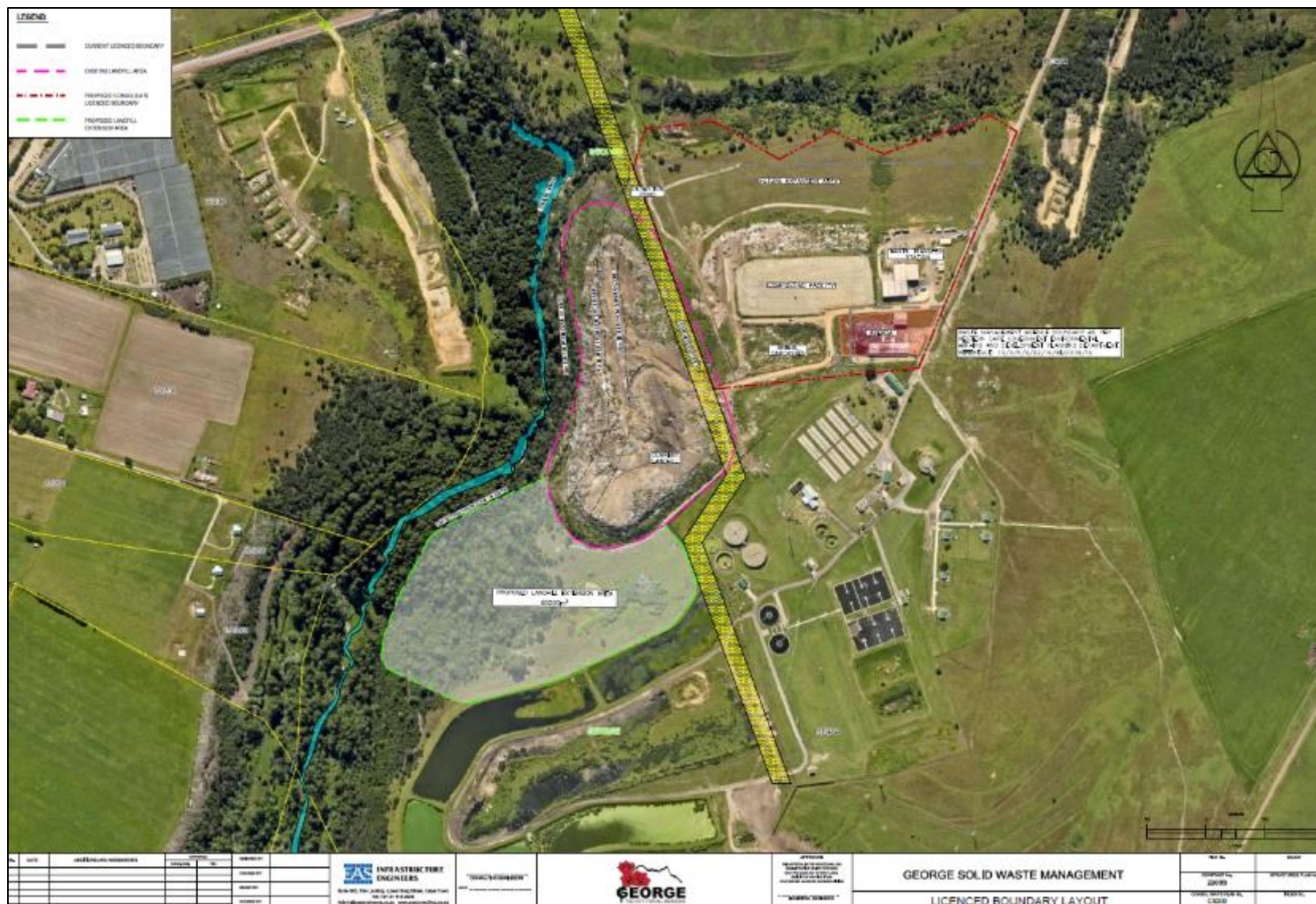


Figure 10: EAS Proposed Landfill Extension Areas for Option 5.

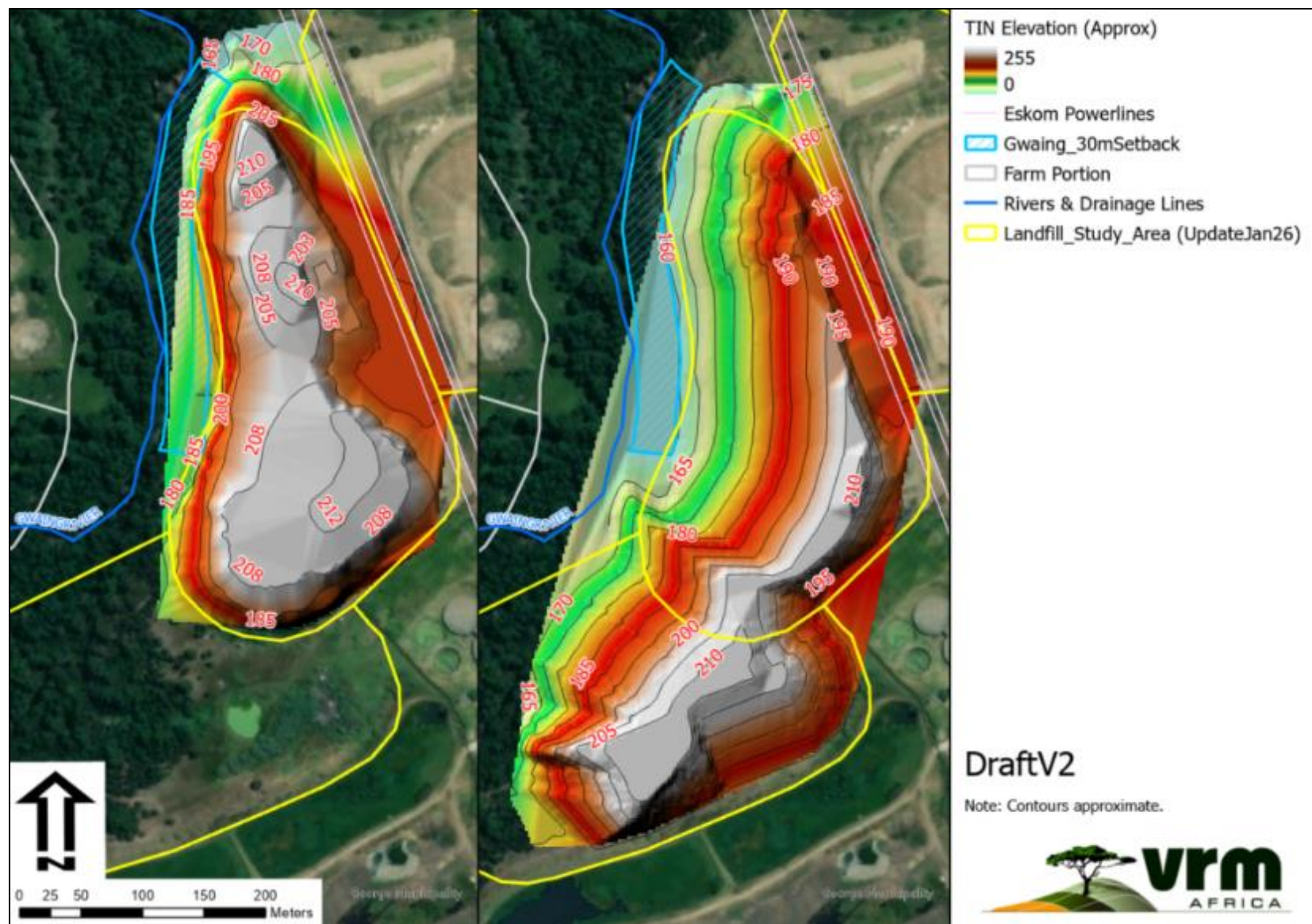


Figure 11: Terrain Model comparison of the EAS Proposed Landfill Extension Areas in relation to the existing landfill terrain as of 2024.

5 LEGAL FRAMEWORK

In order to comply with the Visual Resource Management requirements, it is necessary to relate the proposed landscape modification in terms of international best practice in understanding landscapes and landscape processes. The proposed project also needs to be evaluated in terms of 'policy fit'. This requires a review of International, National and Regional best practice, policy and planning for the area to ensure that the scale, density and nature of activities or developments are harmonious and in keeping with the planned sense of place and character of the area.

5.1 International Good Practice

For cultural landscapes, the following documentation provides good practice guidelines, specifically:

- Guidelines for Landscape and Visual Impact Assessment (GLVIA), Second Edition.
- International Finance Corporation (IFC).
- Millennium Ecosystem Assessment (MEA).
- United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Convention (WHC).

5.1.1 Guidelines for Landscape and Visual Impact Assessment, Second Edition

The Landscape Institute and the Institute of Environmental Management and Assessment (United Kingdom) have compiled a book outlining best practice in landscape and visual impact assessment. This has become a key guideline for LVIA in the United Kingdom. "The principal aim of the guideline is to encourage high standards for the scope and context of landscape and visual impact assessments, based on the collegiate opinion and practice of the members of the Landscape Institute and the Institute of Environmental Management and Assessment. The guidelines also seek to establish certain principles and will help to achieve consistency, credibility and effectiveness in landscape and visual impact assessment, when carried out as part of an EIA" (The Landscape Institute, 2003);

In the introduction, the guideline states that 'Landscape encompasses the whole of our external environment, whether within village, towns, cities or in the countryside. The nature and pattern of buildings, streets, open spaces and trees – and their interrelationships within the built environment – are an equally important part of our landscape heritage" (The Landscape Institute, 2003: Pg. 9). The guideline identifies the following reasons why landscape is important in both urban and rural contexts, in that it is:

- An essential part of our natural resource base.
- A reservoir of archaeological and historical evidence.
- An environment for plants and animals (including humans).
- A resource that evokes sensual, cultural and spiritual responses and contributes to our urban and rural quality of life; and
- Valuable recreation resources. (The Landscape Institute, 2003).

Due to the degraded nature of the existing landfill site, as well as the water treatment facility, none of the above landscape themes would be at risk.

5.2 National and Regional Legislation and Policies

In order 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 keeping with the sense of place and character of the area as mapped in Figure 12 below.

- DFFE Minimum Requirements for Waste Disposal by Landfill (Second Edition, 1998).
- DFFE Garden Route Environmental Management Framework
- DEA&DP Visual and Aesthetic Guidelines.
- Regional and Local Municipality Planning and Guidelines.

Table 10: List of key planning informants to the project.

Theme	Requirements
Country	South Africa
Province	Western Cape
District Municipality	Garden Route District Municipality (formally Eden)
Local Municipality	George Local Municipality

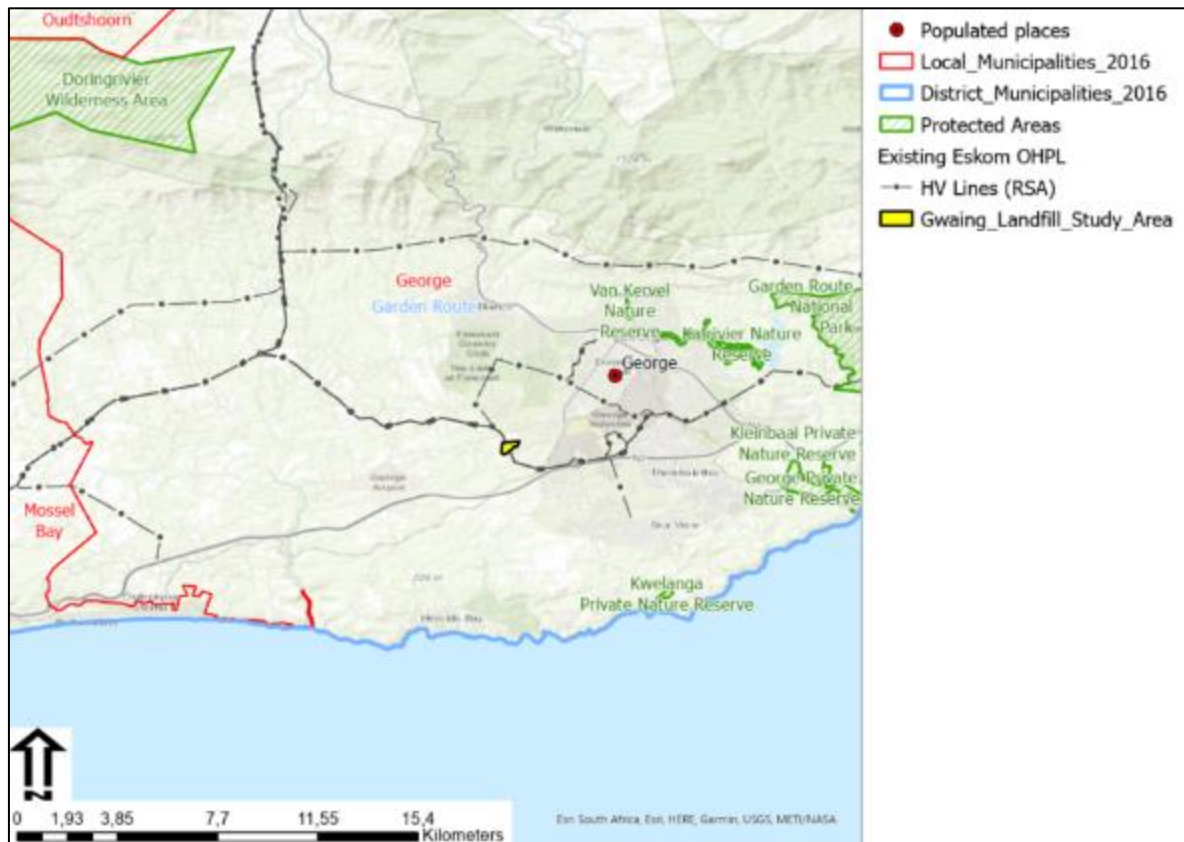


Figure 12: Planning locality map depicting the local, district and national planning zones.

5.2.1 DFFE Minimum Requirements for Waste Disposal by Landfill (Second Edition).

The Minimum Requirements for Waste Disposal by Landfill (DFFE, 1998) forms part of the Department of Water Affairs and Forestry's Waste Management Series to establish a reference framework for waste management standards in South Africa. The report also facilitates the enforcement of the landfill permitting system provided for in terms of Section

20(1) of the Environment Conservation Act, 1989 (Act 73 of 1989).

The objectives of setting Minimum Requirements are to:

- *Prevent water pollution and ensure sustained fitness for use of South Africa's water resources.*
- *Attain and maintain minimum waste management standards in South Africa, so as to protect human health and the environment from possible harmful effects caused by the handling, treatment, storage and disposal of waste.*
- *Effectively administer and provide a systematic and nationally uniform approach to the waste disposal process.*
- *Endeavour to make South African waste management practices internationally acceptable. (DFFE, 1998)*

In terms of specifications for Closing a Landfill, the following is listed:

- *Closure will involve, inter alia, the application of final cover, topsoiling, vegetating, drainage maintenance and leachate management. In instances of poor landfill siting, design and/or operation, remedial work will be required prior to closure as part of the closure process.*
- *Any remedial design and rehabilitation must be based on appropriate investigation.*
- *After closure, the landfill can then be utilised in terms of its designed end-use.*

In terms of issues related to **fatal flaws**, the following has relevance with regards to the site:

- *Areas below the 1 in 50 year flood line. This eliminates wetlands, vleis, pans and flood plains, where water pollution would result from waste disposal.*
- *Areas in close proximity to significant surface water bodies, e.g. water courses or dams. (4 -4)*

The Gwaing Landfill's location immediately adjacent to the Gwaing River, and the risk of slumping of the western wall into the watercourse under a No-Go scenario, engages this fatal-flaw criterion directly, and is assessed further at Section 4.4.

Related to stability of slopes and landfill profile:

- The stability of the outer slopes of landfills should also be checked, especially when the slopes are steep, or high, or both. Data on the slope design properties of solid waste is not readily available. A survey has shown that the following values are appropriate to slope stability calculations for potential shearing through the waste:
 - Cohesion = 25 kPa.
 - Angle of shearing resistance: 15 degrees.
 - Unit weight of refuse = 10kN/m³.
- Soil slopes can erode very severely through the action of both wind and water. The outer slopes of a landfill should be equipped with crest walls and stormwater channels to prevent water from cascading down the slopes from the next horizontal top surface. Outer slopes should be made as flat as possible and should not have an uninterrupted length along the slope exceeding 20m. Wherever possible, the length of an outer slope should be broken into shorter lengths by incorporating berms or step-backs.
- The final landfill profile should comprise gentle slopes as described in Section 8.5 and should be moulded unobtrusively into the surrounding topography.

- The final profile should facilitate the implementation of the End-use Plan. (Pg 8-12)

Relating to stormwater management to stop soil erosion:

- The stormwater channels to which surface water flow on slopes should be directed must be paved or armoured. The channels are laid on the completed surface of the landfill by grading the surface towards the drains. Berms on outer slopes should also be provided with collection drains where it is necessary to drain water down a slope, e.g. to drain the top surface of the landfill. The surface between drains should be stabilised by means of well-established vegetation, in order to avoid erosion. (Pg 8-12)

With regarding to landfill closer objectives, the following are listed:

- To ensure public acceptability of the implementation of the proposed End-use Plan.
- To rehabilitate the landfill so as to ensure that the site is environmentally and publicly acceptable and suited to the implementation of the proposed end-use. (12 – 1)
- The most common landfill end-use is open space, which may be used for sport and recreation. (12 – 3)
- Aspects addressed in the Closure Design would typically include the following:
 - Remedial design to address identified problem areas
 - Final shaping, landscaping and revegetation
 - Final landfill cover or capping design
 - Permanent storm water diversion measures, run-off control and anti-erosion measures
 - Any infrastructure relating to the End-use Plan. (12 – 4)
- In the case of a landfill that was not designed in accordance with the Minimum Requirements, it will be necessary to assess all the above features. If these are non-existent or inadequate, they must either be designed from the beginning or appropriate remedial measures must be designed which, when implemented, will ensure that the closed landfill complies with the Minimum Requirements for closure. (12 – 4)
- Security: It is essential to ensure that illegal access and dumping does not occur on the closed waste disposal facility. (12 – 6) (DFFE, 1998)

Note:

In terms of visual and landscape resources related to the minimum requirements of landfills, the following would need to be addressed in the LVIA:

- Final shaping, landscaping and revegetation.
- Ensuring that engineering is such that risks from soil erosion from surface water run-off are alleviated.
- Ensuring that the resultant profile of the landfill site post closure should comprise gentle slopes, not exceeding 15 degrees and should be moulded unobtrusively into the surrounding topography.
- Ensuring that there is suitable engineering to ensure that the water pollution and leachate from the landfill into the Gwaing River does not degrade the landscape resources of this river system that are used for tourism/ rural agrarian land use of higher scenic quality typical of the Garden Route.
- Providing inputs into the final land use plan such that conflicts do not arise with regard to long-term maintenance and stabilisation of the landfill post-closure.

5.2.2 Garden Route Environmental Management Framework (EMF)

The Garden Route EMF (Department of Forestry, Fisheries and the Environment, 2010) report was produced in conjunction with the Western Cape DEA&DP. The following extract from the report outlines the need for the report:

- This particular EMF has been developed as a direct response to a specific set of drivers and pressures. The National Lakes Area, commonly known and referred to as the Garden Route, is characterised as such due to its outstanding scenic quality and beauty. Similarly, the unique coastal lake systems, indigenous forests and rugged coastline comprise an extensive network of protected areas, South African National Parks and Provincial Natural Reserves, often interspersed by Urban Development (Department of Forestry, Fisheries and the Environment, 2010, p. 6).

In Chapter 3.2. that identified Topographical Sensitive Areas the following landscapes are listed:

- The greater topography. Topography constituting the Garden Route, especially the landscape surrounding scenic routes (N2), the gateway into high tourism areas illustrating higher viewer incidence.
- The Outeniqua Mountains as backdrop to the Garden Route.

5.2.3 DEA&DP Visual and Aesthetic Guidelines

Reference to the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) Guideline for involving visual and aesthetic specialists in Environmental Impact Assessment (EIA) processes is provided in terms of southern African best practice in Visual Impact Assessment. The report compiled by Oberholzer states that the Best Practicable Environmental Option (BPEO) should address the following:

- Ensure that the scale, density and nature of activities or developments are harmonious and in keeping with the sense of place and character of the area. The BPEO must also ensure that development must be located to prevent structures from being a visual intrusion (i.e., to retain open views and vistas).
- Long term protection of important scenic resources and heritage sites.
- Minimisation of visual intrusion in scenic areas.
- Retention of wilderness or special areas intact as far as possible.
- Responsiveness to the area's uniqueness, or sense of place." (Oberholzer, 2005)

Note:

While the site is landscape degraded, the surrounding areas of the western rural areas of George, the N2 Highway and the R102 District Road are related to the broader landscapes of the Garden Route, which in relation to the DFFE EMF, do have elements of visual and landscape significance. In terms of sense of place, the broader landscape of the George rural / peri-urban areas, as well as the N2 Highway will need to be taken into account.

5.2.4 Local and Regional Planning

The following tables list key regional and local planning that has relevance to the project pertaining to landscape-based tourism, and renewable energy projects.

Table 11: District Planning reference table relevant to the project.

Garden Route District Municipality		
Theme	Requirements	Page
Economic growth	Garden Route's future economic growth will not be determined by any single, dominating sector, but its competitive advantage lies in the relative strength of several niches of the key growth sectors, in other words, the diversification of its economic base. This remains a challenge and the driving force behind the regional economic development strategy which had been developed and has shaped the strategy document.	192
Tourism	The district's profound natural, scenic and landscape beauty contributes to its appeal as a popular tourism destination. Tourism plays a key role in the economy of the district, which is linked to the retail, wholesale, catering and accommodation sector.	117
Landscape	There is an urgent need to reverse the continuing degradation or loss of biodiversity and functioning ecosystems within the Garden Route district. 'Sustaining our ecosystems and using natural resources efficiently' is one of the strategic focus areas of the Garden Route DM.	120
Waste disposal sites	In terms of the Municipal Structures Act, the District must perform the following functions relevant to capital expenditure • Solid waste disposal sites	147
Objective A-5	Improve waste management	157
Sector Plan Alignment	Must align with the Integrated Waste Management Plan 2014 (Eden District Municipality. 2014. Eden District Municipality Integrated Waste Management Plan: 2nd Generation. Jan Palm Consulting Engineers. Cape Town)	163
Regional Waste Management	Inadequate waste management places an additional threat to critical water sources. This is exacerbated both by drought and high rainfall periods. A new regional waste facility has been identified adjacent to PetroSA. However, lack of agreement between local municipalities is delaying the process. High transport cost will limit access for municipalities located further from the facility. Hence, there is need to consider alternate forms of integrated waste management, such as recycling incentives and a waste-to-energy plant	120v
Sustainable Growth Management	Plans should also incorporate innovative regional waste and water solutions when considering the provision of new services.	128

(Garden Route District Municipality Draft Reviewed 2020-2021 IDP)

Table 12: George Local Municipality Spatial Development Framework (2023)

George Local Municipality		
Issue	Motivation	Page

Gateways	• At the scale of the George city area, its surrounding natural and rural environment provides a distinctive frame for the city which gives the city an identity by providing clear green edges and gateways supporting its attraction as a place to live and work. At the same time, there are “green fingers” or corridors linking the sea and the mountain, which pass through the urban area providing ecosystem services, amenity, and opportunities for positive connections between different communities of George • The spatial and land use integration between the urban areas and the natural/rural/agricultural areas requires careful management to protect this urban-rural interface. Specific management of gateways to the George city area is therefore important to this MSDF. Landscapes speak to the unique sense of place experienced as one approaches George from the east, west and north. • The eastern approach to the George City Area along the N2, the airport road (R102) and the R404 traverses a rural landscape with views of the mountain range. This landscape is a strong part of the identity of George and connects to a rural tourism sector that is central to George’s identity and has much potential. • Scenic routes provide public access to the enjoyment of these landscapes. The routes and the land use alongside these routes should be managed in such a way as to not compromise the views offered but to mark and celebrate the landscapes and the origins or nature of their significance. Significant scenic routes in the Greater George Area include: Gwaing River Pass.	59
5.2.4.2.7 Priority Investment Area: Priority Investment Area: Gwayang – Groeneweide Mixed Use Precincts/Nodes and development area	• The southern York Node and Gwayang precinct area (within the urban edge) present various development opportunities, including: • - Private initiative such as the Medi-clinic development and related private residential development (various typologies). • - Two of the prioritized social housing project sites fall within this nodal vicinity. • - Opportunity exists for energy intervention projects on municipal land. • - The clustering of municipal utility uses (wastewater works upgrading, various waste management	179

	initiatives, solar projects) can be coordinated within the proposed utility zone.	
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(George Municipality, 2023)

5.3 Landscape Planning Policy Fit

In terms of regional and local planning fit for landscape and visual themes, the anticipated policy fit of the proposed landfill closure is rated Medium Positive. The existing landfill sense of place is well established within an already degraded landscape context, and the proposed closure measures are expected to mitigate visual intrusion to a certain extent. The new proposed expansion to the south, is also clearly visually degraded, located adjacent to the existing landfill to the north, and the George Water Treatment ponds to the south.

While George Municipality is currently planning for the development of a Mixed-Use development to the east of the landfill site, cognisance should be taken of the long-term, costly, and complex process associated with identifying, acquiring, and establishing a new landfill site. Should a new, local landfill site be required, is likely to be highly contested and subject to a lengthy EIA process, with associated landscape and visual risks.

For this reason, it is recommended that maximum use be made of the existing degraded landfill site, including its immediate surrounds, prior to the consideration of any new greenfield landfill site. This approach would limit further landscape transformation and avoid the unnecessary loss of intact landscape resources.

The significant increase in recent waste volumes, as clearly illustrated by the one-year time-series photographs presented in the site survey section, highlights a critical constraint: the absence of a clearly defined, long-term waste management strategy for the George Municipality. Without such a strategy, continued reliance on short-term or ad hoc solutions has the potential to result in ongoing and escalating degradation of local landscape resources.

In this context, the moderation of the planning policy fit does not primarily relate to the current zoning non-compliance—although this remains an issue requiring resolution—but rather to the lack of sufficient forward planning for the closure of the existing landfill, coupled with the absence of a defined policy framework or process to accommodate ongoing waste disposal at an appropriate, local facility. This planning gap presents a material risk to both landscape integrity and long-term municipal land-use sustainability.

6 BASELINE VISUAL INVENTORY

Landscape character is defined by the U.K. Institute of Environmental Management and Assessment (IEMA) as the 'distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and how this is perceived by people. It reflects particular combinations of geology, landform, soils, vegetation, land use and human settlement'. It creates the specific sense of place or essential character and 'spirit of the place' (IEMA, 2002). This section of the VIA identified the main landscape features that define the landscape character, as well as the key receptors that make use of the visual resources created by the landscape.

6.1 Landscape Context

Land use is one of the key factors influencing the landscape character of a location in that general themes that become dominant features in the landscape, create a sense of place that influences perceptions of landscape value.

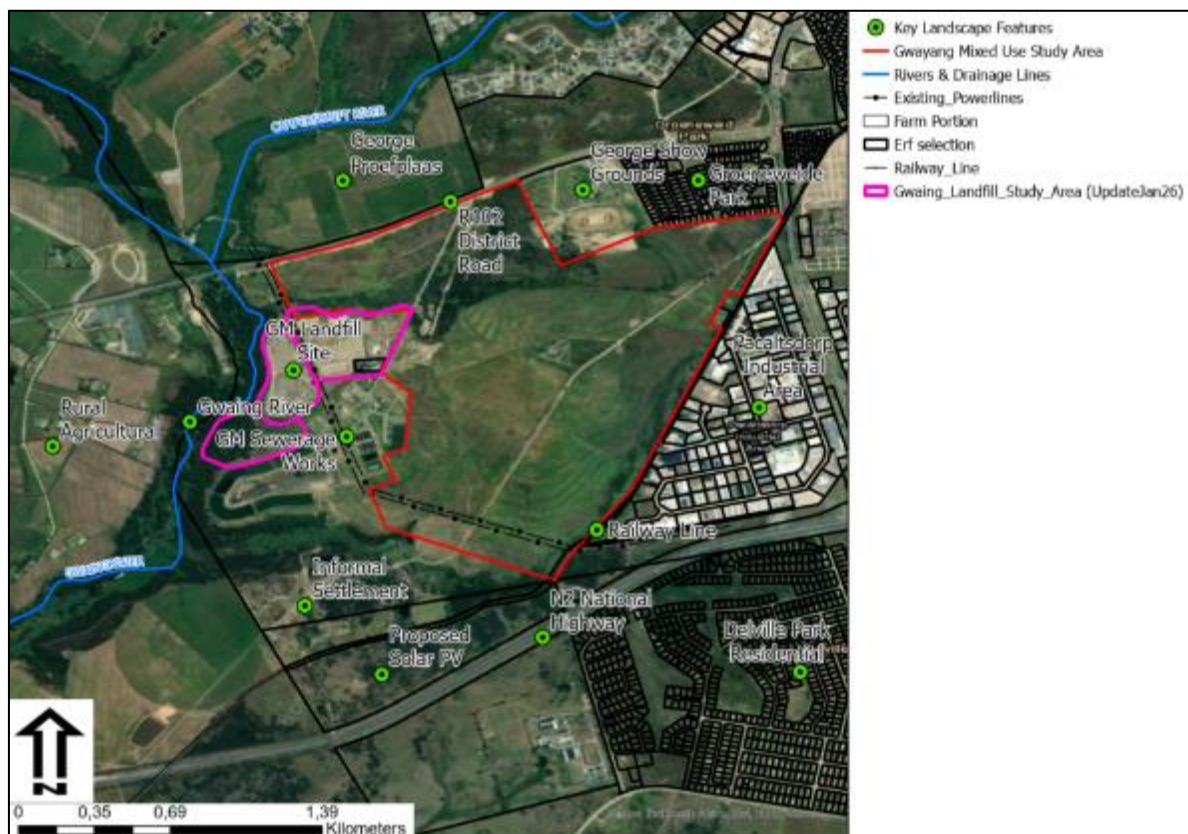


Figure 13. Local land use themes map.

The region where the project is proposed is in the city of George, east of the Gwaing River, south of the R102, west of York Street and north of the N2. As mapped in Figure 13 above, the key landscape themes within the Foreground / Middle Ground (6km) distance are tabled below with photographic reference to the site survey in Annexure A where relevant:

Table 13: Key Land Use Table.

Theme	Description
George LM Landfill	The existing George LM Landfill has been in use for many years and consequently is increased in scale and airspace such that it has become a dominating local landform, degrading local landscape resources to the west.
	
Pacaltsdorp Industrial Area	Location adjacent the site to the east, the Pacaltsdorp Industrial Area comprises of 51 Ha of industrial structures of a medium height (less than 10m approx.). There is still some development taking place to the southwestern corner that will further establish this as a large industrial node.
	
N2 National Highway	Located on the southern boundary of the project area, the N2 National Highway is an important tourist corridor through the Garden Route. The landfill is visible from the highway.
	

Proposed Gwayang Mixed Use development (refer to previous photograph)	Located to the east of the landfill is the proposed Gwayang Mixed Use development with EIA for the GLM currently in process. The planned vision for this area is to have a light industrial zone, as well as residential flats closer to the Groeneweide Park residential area. The photograph above also depicts the area proposed for industrial development that would visually block views of the landfill site as seen from the N2 Highway.
GM Sewerage Works	The GM Sewerage works is located to the south of the Landfill and has a low visual presence in the landscape with limited views from receptors due to vegetation and topographic screening.
	
Groeneweide Park	Located to the west of the project area is the residential suburb of Groeneweide Park which is the closest residential area. Views of the proposed site are limited by the built nature of the urban area as well as numerous shade trees planted around the dwellings.
	
Rural Agricultural & George Proefplaas	Located to the west on the opposite side of the Gwaing River are smaller agricultural farming areas. Also of agricultural importance is the George 'Proefplaas' located to the north of the study area. The research farm has been well established over many years.



Informal Settlement	Located on the property area in the southwest corner is a small but growing informal settlement. It is proposed by the municipality that the community be relocated closer to urban municipal services.
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6.2 Visual Absorption Capacity

Land use and vegetation are a crucial factor in determining landscape character, especially regarding the Visual Absorption Capacity (VAC) of the landscapes. Oberholzer defines VAC as the potential of the landscape to conceal the proposed project (Oberholzer, 2005). i.e.

- High VAC – e.g., effective screening by vegetation and structures.
- Moderate VAC - e.g., partial screening by vegetation and structures.
- Low VAC - e.g., little screening by vegetation or structures.

Vegetation type is a large factor in determining the scenic quality of the site in terms of colour and texture, as well as influencing the local ability of the landscape to absorb the landscape change if larger trees species or prolific vegetation is located on the site or within the local region. The map below outlines the vegetation type based on BGIS mapping (South African National Biodiversity Institute, 2018).

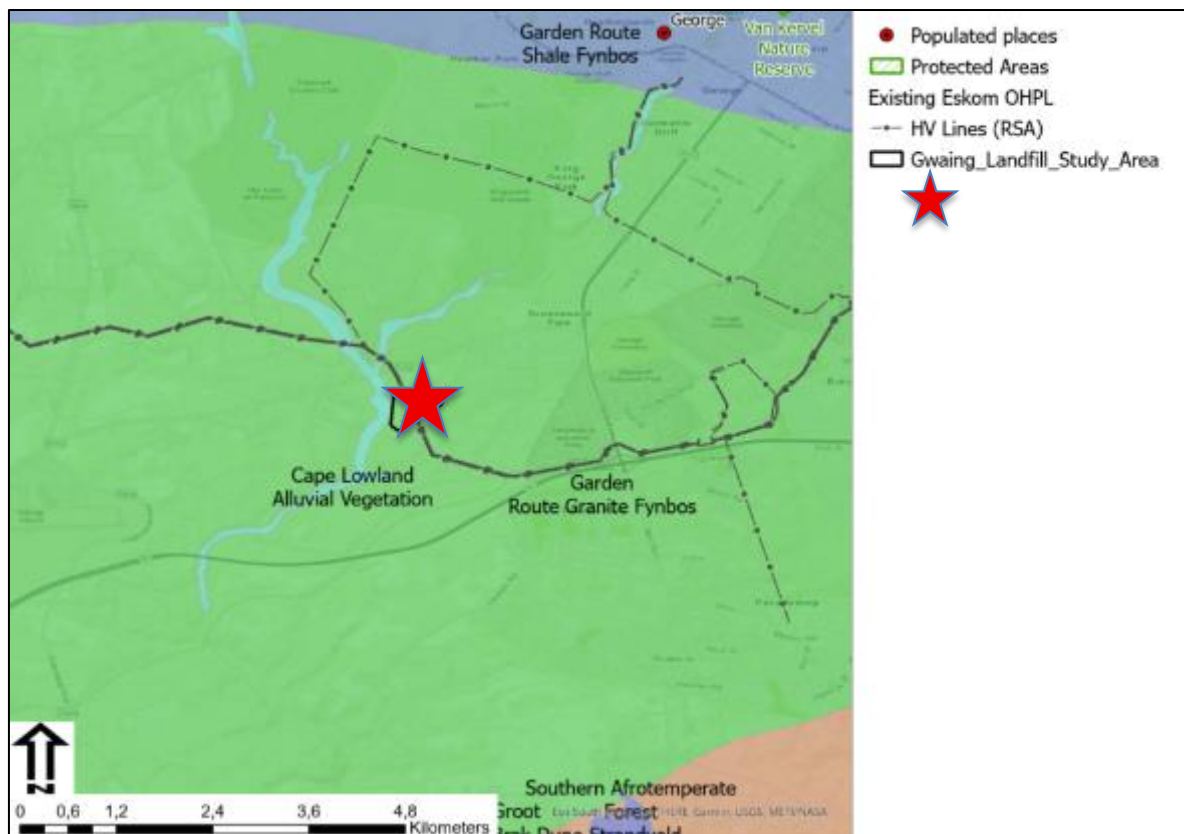


Figure 14. BGIS Biome and Vegetation Type Map (South African National Biodiversity Institute, 2018)

According to the South African National Biodiversity Institute (SANBI) 2012 Vegetation Map of South Africa, Lesotho and Swaziland (South African National Biodiversity Institute, 2012) the project area is located in the Fynbos Biome with the main vegetation types being Garden Route Granite Fynbos. As depicted in the photographs below, much of the vegetation of the area has been transformed by landfill management facilities, or agricultural land uses with very little intact fynbos vegetation remaining.



Figure 15. Photograph of the gum trees to the west of the site (mainly within the Gwaing River) as seen from the western peri-urban areas.

Of relevance to the project Visual Absorption Capacity is the fact that the natural vegetation within and surrounding the site, predominantly veld grasslands, offers very limited screening potential. While mature gum trees occur along the Gwaing River to the west of the landfill,

the current landfill airspace exceeds the height of this vegetation, effectively rendering its screening function largely ineffective. In addition, as part of the rehabilitation of the Gwaing River, it is likely that these alien trees within the riparian corridor will be removed in accordance with ecological management objectives. Notwithstanding this, the existing tall gum trees currently provide partial screening of the lower portions of the landfill, particularly when viewed from the western rural agricultural areas.

To the east of the landfill, the presence of waste management facilities located within the broader landfill precinct, together with the Eskom powerline corridor, contributes to a semi-industrial sense of place. However, the increased landfill airspace, reaching heights in excess of 20 m, exceeds the visual absorption capacity typically afforded by adjacent structures and infrastructure associated with the industrial node. Consequently, the Visual Absorption Capacity associated with both vegetation and built structures is rated as Medium.

6.3 Landscape Topography

Landform is a key variable informing the aesthetic nature of the landscape within the VRM methodology. The viewshed is strongly associated with the regional topography where topographic screening from undulating terrain would restrict views of the proposed landscape change. The site-specific characteristics are also analysed by gradient analysis to determine if any steep slopes are located on the proposed development site.

6.3.1 Regional Landscape Topography

Making use of the NASA STRM digital elevation model, profile lines were generated for the area within 12km on either side of the project area predominantly in the North to South and East to West compass reference points. The map depicting the regional elevation profile lines can be viewed on the following page. The general topography depicts no significant landform features, with the majority of the area characterised by undulating terrain that drains to the south via a number of incised river valleys that are small to medium in size and scale. The gradual decline in elevation from north to south is well depicted in the profile graph with the project area located in the centre between the Outeniqua Mountains in the north and the Indian Ocean in the south. The undulation of the terrain is also well depicted in the East to West Profile, with the number of steeper river valleys showing. Notably, the Gwaing River located to the west with hydrological drainage to the west. (NASA, 2009)

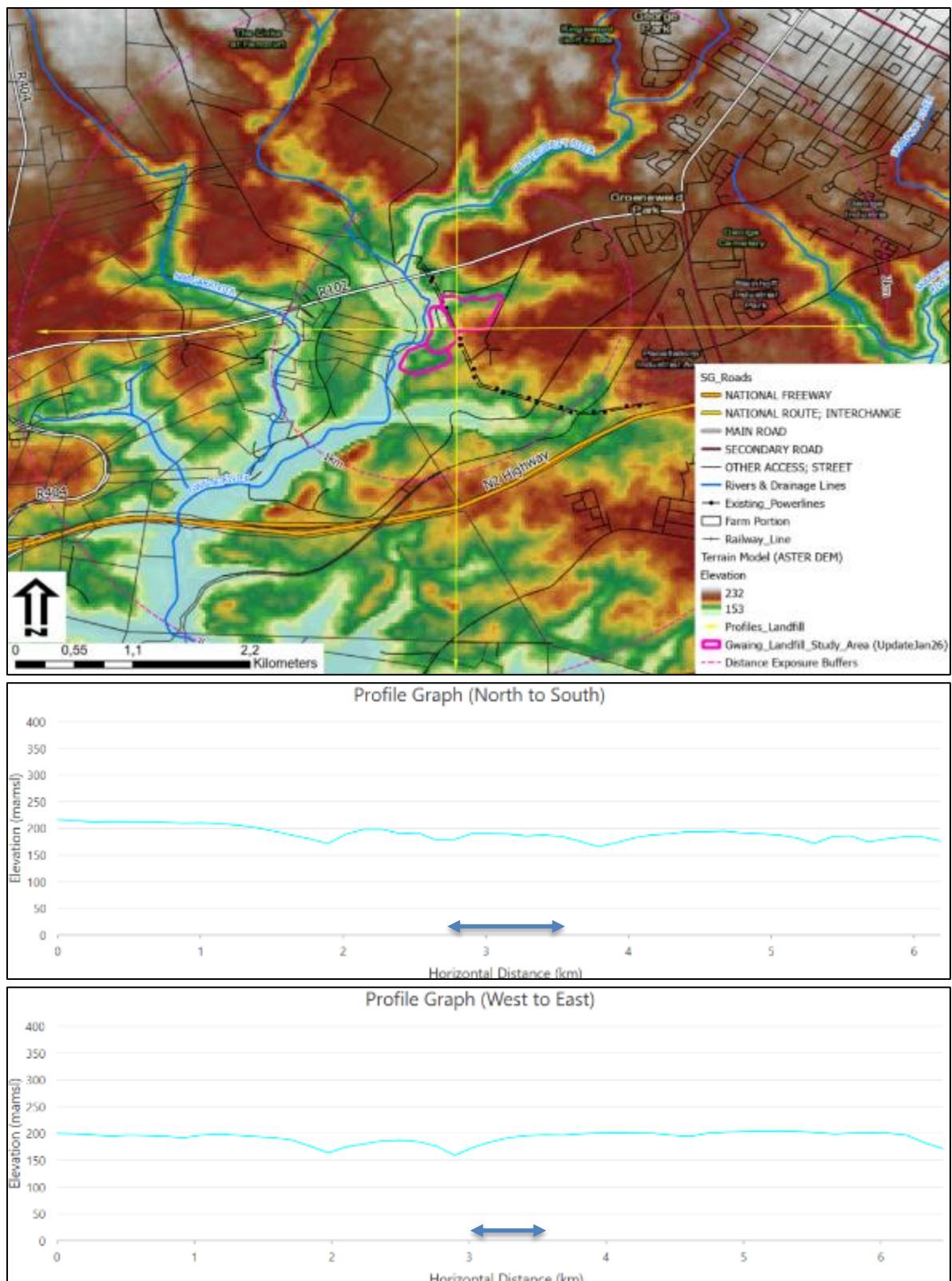


Figure 16: Regional Digital Elevation Mapping and Profiles Graphs with approximate development extent depicted.

6.3.2 Key local topographic features and site slopes analysis

To ensure that significant landforms related to steep slopes are not located on the site or surrounds, a slopes analysis was undertaken. The finding of the slopes analysis was that the majority of the site has a relatively flat gradient with the exception of the western areas against the Gwaing River. These areas depict the very steep gradient created by the landfill with western aspect. Also of relevance to the final closure of the composting facility to the north of the site are the moderate slopes areas with northern aspect.

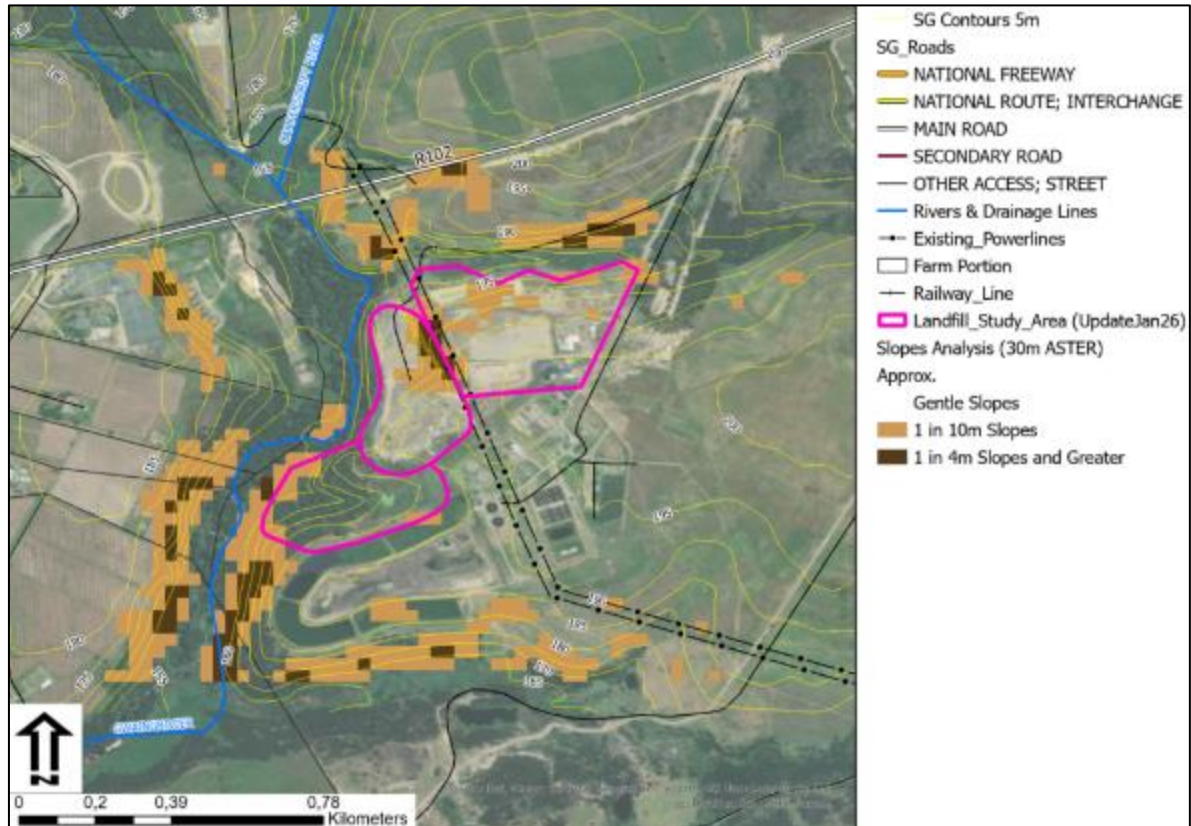


Figure 17: Key local topographic features map.

6.4 Project Zone of Visual Influence

The visible extent, or viewshed, is “the outer boundary defining a view catchment area, usually along crests and ridgelines” (Oberholzer, 2005). In order to define the extent of the possible influence of the proposed landscape change, a viewshed analysis was undertaken from the proposed site at a specified height above ground level. This is to assess the **theoretical extent** where the proposed landscape change could be visible from. This theoretical viewshed excludes vegetation, structural development as well as distance from the location where atmospheric influence would reduce visual clarity over increasing distance. The viewshed analysis makes use of open-source NASA ASTER Digital Elevation Model data (NASA, 2009).

Based on the theoretical viewshed and the site visit appraisal of the nature of the landscape, an assessment of the **Zone of Visual Influence (ZVI)** is made. The ZVI is the area where the proposed landscape change is most likely to be noticed by the casual observer, taking the site visit into account where vegetation, existing development and distance is taken into

consideration. This is a subjective appraisal but informed by the viewshed and the other factors mentioned.

6.4.1 Viewshed Analysis

A viewshed analysis was undertaken for the site making use of an Offset value representing the height of the proposed development as reflected in the table below. The model extent of the viewshed analysis was restricted to a defined distance from the site that represents the expected zone of visual influence (ZVI) of the proposed activities. This takes the scale, and size of the proposed projects into consideration in relation to the natural visual absorption capacity of the receiving environment. The maps are informative only as visibility tends to diminish exponentially with distance, which is well recognised in visual analysis literature (Hull & Bishop, 1988).

Table 14: Proposed Project Heights table

Proposed Activity	Height (m)	Model Extent	Motivation
Landfill	30m	12km	The landfill currently depicts a 20m plus elevation with proposed future maximum height of 210mamsl. However, this has been exceeded and as such, a 30m above ground level was used. As the landfill is raised above ground level and is a large landform, the visibility could extend to the background areas. For this reason the extent of the viewshed was capped at 12km to encompass background receptor areas.

The viewshed is mapped and can be viewed in Figure 18 below. This depicts the theoretical area where the proposed landscape change could be visible. The theoretical viewshed has the potential to be widespread within the local region, due to the prominence of the landfill landform. However, as depicted by the fragmented nature of the viewshed, the surrounding topography is undulating, with mainly higher elevation areas in the north and west having visual incidence potential. The extent of the potential visibility to the east is mainly restricted to within the 3km distance. Due to the built nature of much of the areas to the north and west, the visibility of the landform from these residential based areas is likely to be very limited. The main views of the landscape change would be local (within the 3km distance) or extend up to the 6km distance to the west in the rural agricultural areas where there is a relatively lower visual absorption capacity.

The extent of the Zone of Visual Influence is thus defined as Wide Area and rated Moderate to High. This is due to the height of the landfill that now exceeds the visual screening offered by the gum trees to the west, and open views to the south. The proposed expansion of the southern area is located on lower lying terrain, and expansion into this area, the ZVI of the existing landfill will not be exceeded as long as the height remains below the existing landfill height. Due to the undulating terrain, and the relatively moderate height of the landfill, the post closure landform zone of visual influence is likely to be contained to the local area. As such, **the Visual Extent is rated as Medium.**

The following receptors were located within the expected ZVI:

- Delville Park
- N2 Highway east and westbound.
- R102 District Road.
- Western rural agricultural areas.

Due to the close proximity of the R102 Road Receptors (less than 200m) **the Visual Exposure is rated as Very High.**

6.5 Receptors and Key Observation Points

As defined in the methodology, KOPs are defined by the Bureau of Land Management as the people (receptors) located in strategic locations surrounding the property that make consistent use of the views associated with the site where the landscape modifications are proposed. The following table identifies the receptors identified within the ZVI, as well as motivates if they have significance and should be defined as KOP. The receptors located within the ZVI, and KOPs view lines are indicated on the map on the following page. As motivated and mapped in Table 15 below and mapped in Figure 19 below, the following receptors have been identified as Key Observation Points and should be used as locations to assess the suitability of the landscape change.

Table 15: KOP Motivation table

Name	Theme	Exposure	Motivation
N2 Highway	Road View Corridor	High (1.8km)	The N2 Highway is listed in the Garden Route EMF as an important tourist view corridor.
R102 District Road	Road View Corridor	Very High	The R102, while having some landscape degradation due to the landfill site, is listed in George LM planning as an important tourist route and gateway into George.
Rural Agricultural Areas	Rural residential	Very High	The rural agricultural areas of the Garden Route are important in terms of maintaining the higher levels of scenic quality and, as such, landscape degradation due to the landfill should not jeopardise these areas or be the cause of forcing land use change.
Delville Park	Residential	High	Located 2.1km to the southeast of the site, the existing landfill is clearly visible from these urban receptors. While unlikely to change the local sense of place, the rehabilitation of the landfill will add value to the scenic quality.

Due to the higher VAC and buffering from the residential areas, Groeneweide and the other northern residential areas that fall within the viewshed have not been included as KOPs.

The photographs depicting the views from the defined KOPs are depicted in **Error! Reference source not found.** to **Error! Reference source not found.**



Figure 18: Viewshed analysis map of proposed project Offset 30m above ground.

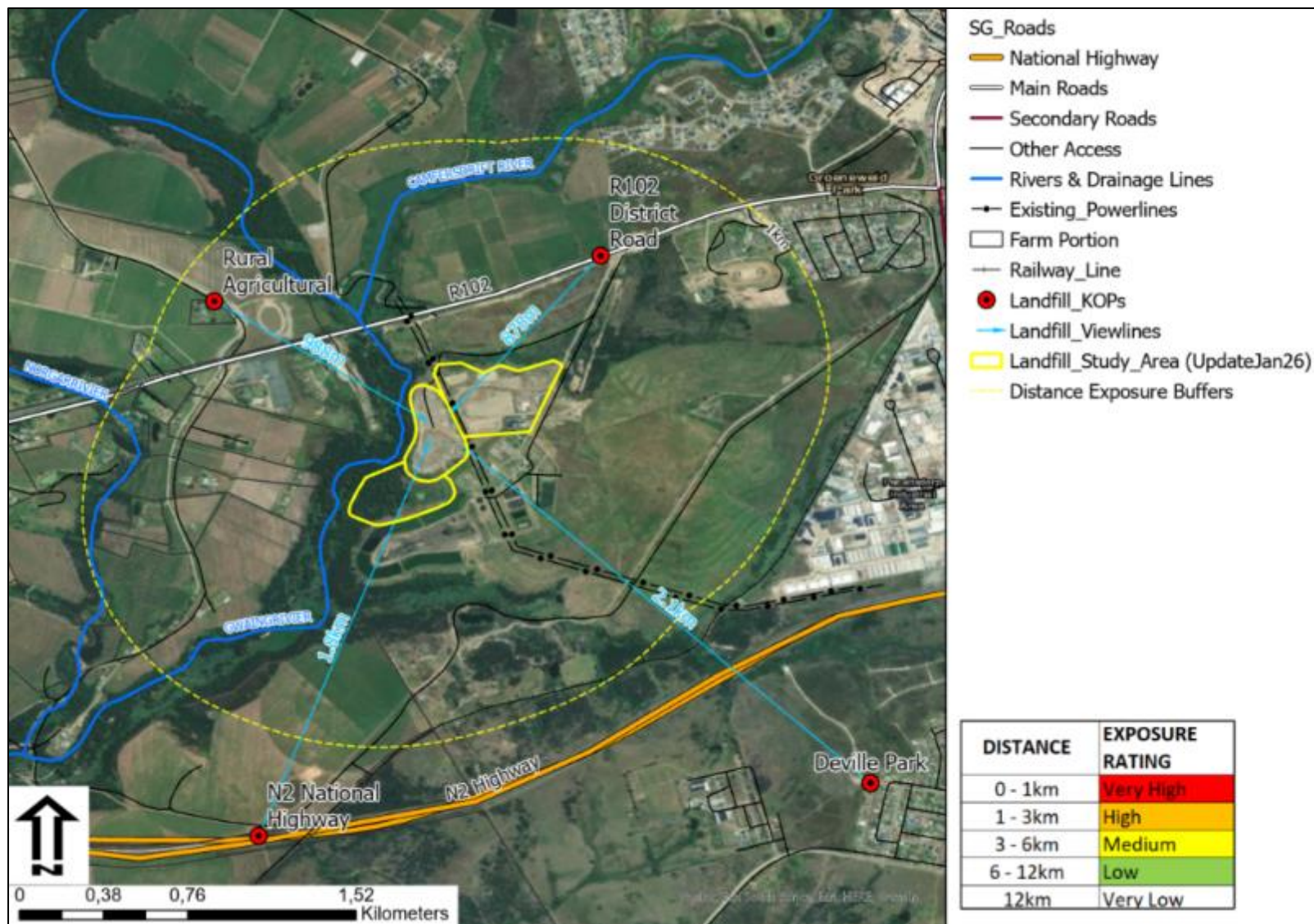


Figure 19: Receptor Key Observation Point and Visual Exposure Map that are used as photomontages locations.

7 VISUAL RESOURCE MANAGEMENT

In terms of the VRM methodology, landscape character is derived from a combination of scenic quality, receptor sensitivity to landscape change, and distance of the proposed landscape modification from key receptor points. Making use of the key landscape elements defined in the landscape contextualisation sections above, landscape units are defined which are then rated to derive their intrinsic scenic value, as well as how sensitive people living in the area would be to changes taking place in these landscapes.

7.1 Physiographic Rating Units

The Physiographic Rating Units are the areas within the proposed development area that reflect specific physical and graphic elements that define a particular landscape character. These unique landscapes within the project development areas are rated to assess the scenic quality and receptor sensitivity to landscape change, which is then used to define a Visual Resource Management Class for each of the site's unique landscape/s. The exception is Class I, which is determined based on national and international policy / best practice and landscape significance and as such are not rated for scenic quality and receptor sensitivity to landscape change. Based on the SANBI vegetation mapping and the site visit to define key landscape features, the following broad-brush areas were tabled and mapped in Figure 20 below.

Table 16: Physiographic Landscape Rating Units.

PRU	Description
Developed/ Transformed	There are existing buildings, structures and composting area that are developed/ significantly degraded in related to the management of solid waste for the George LM.
Wetland buffer exclusion	The area to the north of the proposed future expansion area (north of the current composting area), infringes into the drainage area. This area has been mapped as sensitive by Confluent Environmental Consultants as part of the larger Gwaing Mixed Used development proposal that is currently in EIA process.
Landfill Moderate Slopes	The upper crest of the landfill as well as the areas for the composting facility depict moderate slopes that are landscape degraded.
Landfill Steep slopes	The edges of the landfill depict steep slopes that are subject to failure. These areas are also landscape degraded.
Powerline corridor	Routed in a north-south alignment is an Eskom powerline corridor which would need to be retained as a No-Go area.

Alien Vegetation	Within the proposed southwestern expansion area, the area closer to the Gwaing River is invaded by alien tree species. This area is also landscape degraded.
Degraded grasslands	Also within this new southern expansion area, there is an area surrounding a small pond, characterised by veld grasslands. This area is also landscape degraded by the dump to the north, and the water treatment ponds to the south.
Small pond	There is a small pond area within this new southern expansion area. This area appears visually degraded but may have ecological value as a wetland. From a visual and landscape perspective, this area has limited visual appeal and could be developed. However, this area could be excluded from development should the ecology of the site have significance.

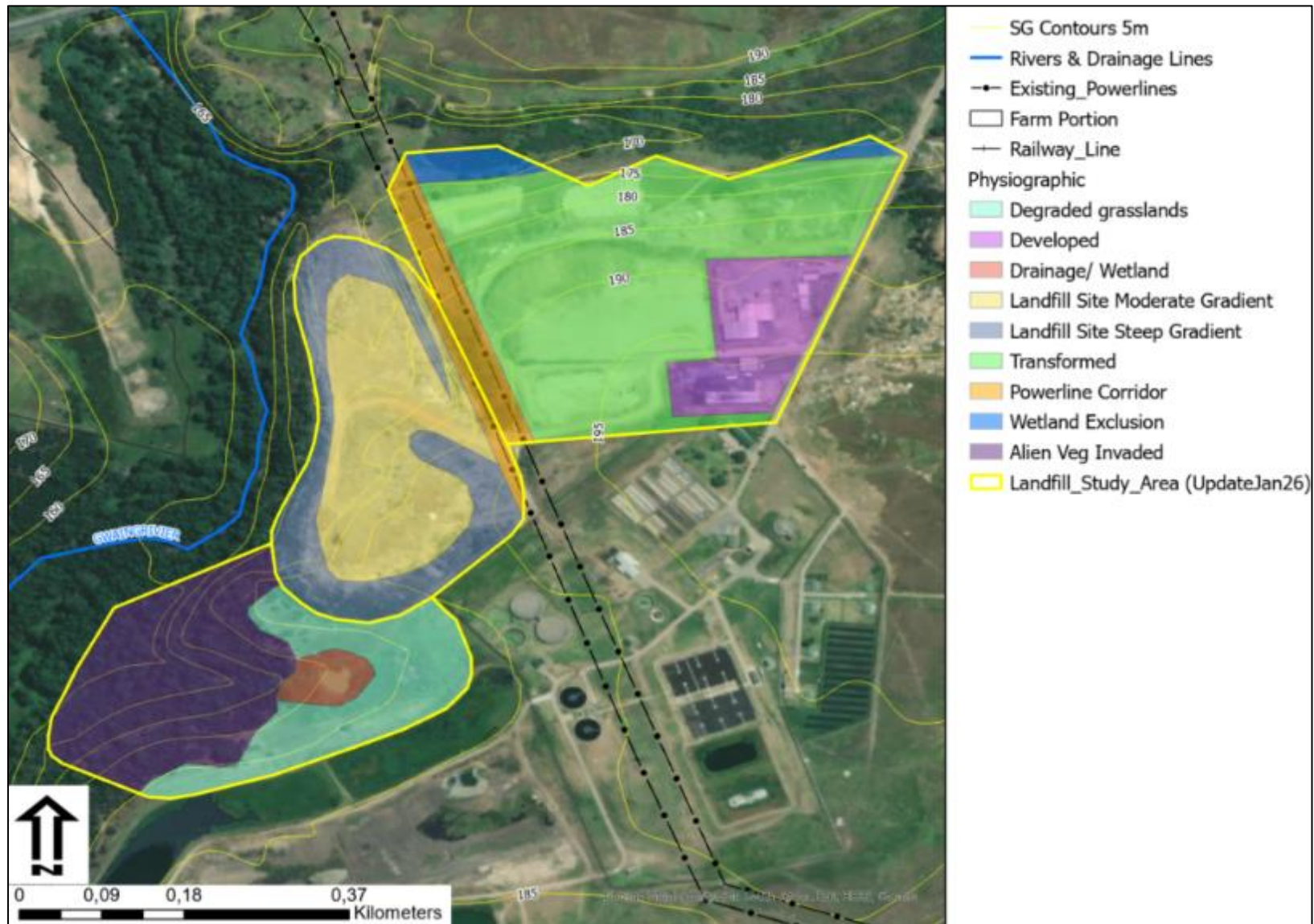


Figure 20: Physiographic Rating Units identified within the defined study area (approximate).

Table 17: Scenic Quality and Receptor Sensitivity Rating.

Landscape Rating Units	Scenic Quality									Receptor Sensitivity						VRM	
	A= scenic quality rating of ≥19; B = rating of 12 – 18, C= rating of ≤11									H = High; M = Medium; L = Low							
Attribute	Landform	Vegetation	Water	Colour	Scarcity	Adjacent Landscape	Cultural Modifications	Sum	Rating	Type of Users	Amount of Use	Public Interest	Adjacent Land Uses	Special Areas	Rating	Inventory Class	Management Class (Post Closure)
Gwaing River Setback/ Wetlands (Pending Surface Water Specialists findings)	(Class I is not rated)																I
Landfill related - Developed - Landfill (steep and moderate slopes) - Transformed - Alien plant invaded	1	1	0	1	1	2	-2	4	C	M	H	L	M	L	M	IV	III

Red colour indicates change in rating from Visual Inventory to Visual Resource Management Classes motivated in the following section.

The **Scenic Quality** scores are totalled and assigned an A (High scenic quality), B (Moderate scenic quality) or C (Low scenic quality) category based on the following split: A= scenic quality rating of ≥19; B = rating of 12 – 18, C= rating of ≤11 (USDI., 2004).

Receptor Sensitivity levels are a measure of public concern for scenic quality. Receptor sensitivity to landscape change is determined by rating the key factors relating to the perception of landscape change in terms of Low to High.

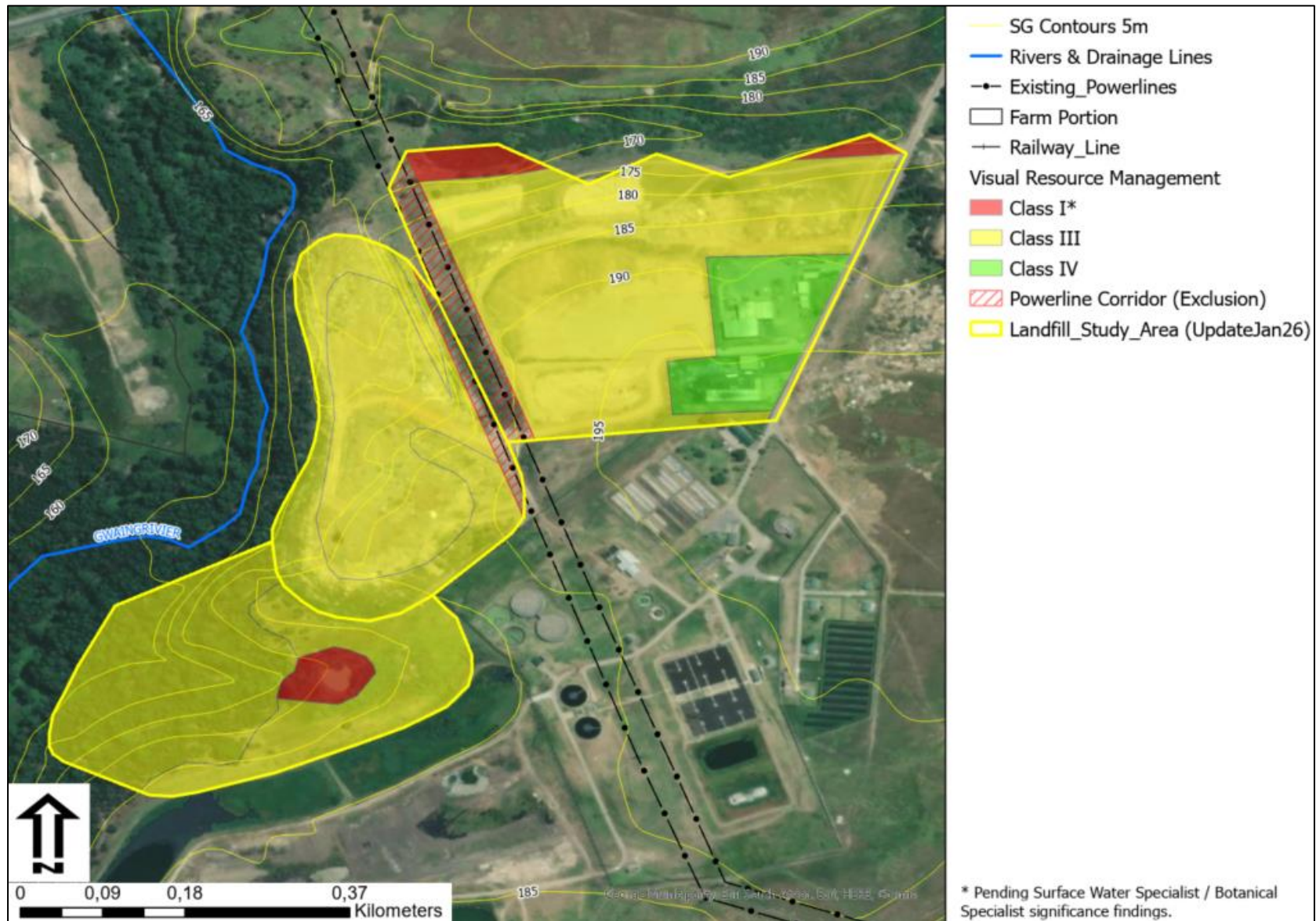


Figure 21: Visual Resource Management Classes map .

7.2 Scenic Quality Assessment

The scenic quality is determined making use of the VRM Scenic Quality Checklist that identifies seven scenic quality criteria which are rated with 1 (low) to 5 (high) scale. The scores are totalled and assigned an A (High), B (Moderate) or C (low) based on the following split:

A = scenic quality rating of ≥ 19 (High).

B = rating of 12 – 18 (Medium).

C = rating of ≤ 11 (Low).

Table 18: Scenic Quality Rating table

Landscapes	Rating	Motivation
Landform <i>Topography becomes more of a factor as it becomes steeper, or more severely sculptured.</i>	Low	The landform of the receiving landscape is undulating, with the site and immediate surrounds also depicting undulations strongly relating to the Gwaing River.
Vegetation Primary consideration given to the variety of patterns, forms, and textures created by plant life.	Low	All the sites located within the licence area depict degraded vegetation.
Water <i>That ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration.</i>	Medium	The Gwaing River is located within the licence area and as such, does add some landscape value to the local context. However, due to the growth of gum trees in the river, views of the water as a feature are limited.
Colour <i>The overall colour(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.) are considered as they appear during seasons or periods of high use.</i>	Low	The main colours from the site relate to the colours of the structures, as well as the ground covering, with uncovered solid waste also a colour element.
Scarcity <i>This factor provides an opportunity to give added importance to one, or all, of the scenic features that appear to be relatively unique or rare within one physiographic region.</i>	Low	As a landscape resource, the site is not a scarce resource.
Adjacent Landscapes <i>Degree to which scenery and distance enhance, or starts to influence, the overall impression of the scenery within the rating unit.</i>	Medium	The rural agricultural areas to the west do have landscape value as a component of the Greater Garden Route landscape.
Cultural Modifications <i>Cultural modifications should be considered and may detract from the scenery or complement or improve the scenic quality of an area.</i>	Degraded	The site is visibly degraded from the landfill, the earthworks as well as the Eskom powerline corridor.

Scenic Quality	Low
The scenic quality of the proposed development site is rated Low. The receiving landscape is characterised by gently undulating terrain, with the site and its immediate surroundings forming part of the broader Gwaing River Valley, with the Gwaing River located to the west of the site. All areas within the licensed landfill footprint display evidence of vegetation degradation associated with historical and ongoing waste disposal activities. While the Gwaing River contributes a degree of intrinsic landscape value to the local context, its visual quality is limited by dense stands of invasive gum trees along the river corridor and the landfill site itself. The dominant visual characteristics of the site are defined by the large form, colours and textures of existing landfill related structures, exposed ground surfaces, and areas of visible solid waste, which collectively introduce strong visual contrast elements within the landscape. As a landscape resource, the site does not represent a unique, rare, or intact scenic asset. In contrast, the rural agricultural landscapes to the west possess a higher scenic value as part of the broader Greater Garden Route landscape. However, these areas are also already visually compromised by landfill views, all of which reinforce its locally degraded scenic condition.	

7.3 Receptor Sensitivity Assessment

Different types of receptors are likely to have different responses to the landscape changes. The following table identified the different criteria used to evaluate a broad understanding of receptor sensitivity to landscape change.

Table 19: Receptor Sensitivity Rating table.

Landscapes	Rating	Motivation
Type of Users <i>Visual sensitivity will vary with the type of users, e.g., recreational sightseers may be highly sensitive to any changes in visual quality, whereas workers who pass through the area on a regular basis may not be as sensitive to change.</i>	Medium	As the site is located in the Garden Route that is an important tourist destination in South Africa, the Type of Users is rated as Medium.
Amount of use <i>Areas seen or used by large numbers of people are potentially more sensitive.</i>	High	The site is clearly visible from the R102, the N2 Highway as well as from the western rural agricultural areas and Amount of Use is rated High.
Public interest <i>The visual quality of an area may be of concern to local, or regional, groups. Indicators of this concern are usually expressed via public controversy created in response to proposed activities.</i>	Medium	As the landfill site is increasingly becoming prominent in the local landscape, it is likely that Public Interest is likely to increase. The close proximity of the site to the Gwaing River with possible slumping of the western slopes would also increase public concern over the landfill site.
Adjacent land Users <i>The interrelationship with land uses in adjacent lands. For example, an area within the viewshed of a residential</i>	Medium	

Landscapes	Rating	Motivation
<i>area may be very sensitive, whereas an area surrounded by commercially developed lands may not be as visually sensitive.</i>		
Special Areas Management <i>objectives for special areas such as Natural Areas, Wilderness Areas or Wilderness Study Areas, Wild and Scenic Rivers, Scenic Areas, Scenic Roads or Trails, and Critical Biodiversity Areas frequently require special consideration for the protection of their visual values.</i>	Medium	Other than the Gwaing River areas that need to be excluded and rehabilitated, the area falls within the landfill licence area.
Receptor Sensitivity	Medium	
The site is located within the Garden Route, a nationally significant tourism destination, which results in a Medium rating for the type of users. The landfill is clearly visible from the R102, the N2 Highway, and the surrounding western rural agricultural areas. Due to the large scale and prominent form of the landfill, the amount of use is rated as High. As the landfill becomes increasingly prominent within the local landscape, public interest and concern are expected to increase. This concern is further heightened by the site's proximity to the Gwaing River and the associated risk of slumping along the western slopes, which may raise apprehension regarding environmental stability and downstream impacts. With the exception of areas adjacent to the Gwaing River that require exclusion and ecological rehabilitation, the site is located within the approved landfill licence area, where receptor sensitivity to landscape change is expected to be Low given the existing degraded condition and established waste management land use.		

7.4 Visual Resource Management (VRM) Classes

The BLM has defined four Classes that represent the relative value of the visual resources of an area and are defined in terms of the VRM Matrix as follows:

- i. **Classes I and II** are the most valued
- ii. **Class III** represent a moderate value
- iii. **Class IV** is of least value

7.4.1 VRM Class I

Class I is assigned when legislation restricts development in certain areas. The visual objective is to preserve the existing character of the landscape. The level of change to the characteristic landscape should be very low and must not attract attention. A Class I visual objective was assigned to the following features within the proposed development area due to their protected status within the South African legislation:

General Areas pertaining to other specialist studies

- Any river / streams and associated flood lines buffers identified as significant in terms of the WULA process.
- Any wetlands identified as significant in terms of the WULA process.

- Any ecological areas (or plant species) identified as having a high significance.
- Any heritage area identified as having a high significance.
- Hydrological drainage lines and associated setback areas as defined by the Surface Water Specialist (not mapped).

Specific constraints pertaining to site Landscape and Visual

- **Wetland setback areas (Pending Surface Water Specialists findings).**

Due to the degraded state of the local landscape related to the George Local Municipality landfill and associated infrastructure, no significant landscape areas were identified that should be excluded from the development footprint. However, in terms of South Africa environmental legislation, wetland areas should be protected. **Should these areas be found to not have ecological significance, they could be developed as the majority of the locality is significantly landscape degraded.**

7.4.2 VRM Class II

The Class II objective is to retain the existing character of the landscape and the level of change to the characteristic landscape should be low. The proposed development may be seen but should not attract the attention of the casual observer, and should repeat the basic elements of form, line, colour and texture found in the predominant natural features of the characteristic landscape.

- **Not applicable**

Due to the degraded state of the local landscape related to the George Local Municipality landfill and associated infrastructure, no Class II areas were identified that should be excluded from the development footprint.

7.4.3 VRM Class III

The Class III objective is to partially retain the existing character of the landscape, where the level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer, and changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. The following landscape was defined as having Class III Visual Objectives where development would be most suitable:

- **Landfill related**
 - **Developed.**
 - **Landfill (steep and moderate slopes).**
 - **Moderate gradient slope, transformed areas.**
 - **Alien plant invaded areas.**

Due to the low levels of scenic quality of the site due to the existing landfill status for George LM, the areas currently depict Visual Inventory Class IV. However, as national legislation pertaining to landfill sites requires mitigation such that the final landscape blends with the surrounding areas to some degree, **a Visual Management Class III was assigned to all areas within the licence area for post-closure phase.** Although the composting facility and solid waste management and transportation hub will likely always be a feature in the landscape, the landfill and the builder's rubble areas would need to be closed. The final landscaping requirement for these areas is that the final landforms/ management activities may attract attention but should not dominate the view of the casual observer, and changes should

repeat the basic elements found in the predominant natural features of the characteristic landscape.

It is important to note that the Class III management objective is only applicable to the Post Closure Land Use (i.e. the post closure landfill would need to have mitigation take place). During Operational Phases, the Class IV management objectives would be suitable.

7.4.4 VRM Class IV

The Class IV objective is to provide for management activities that require major modifications of the existing character of the landscape. Due to the degraded sense of place, the following areas were rated Class IV:

- **Landfill site Operational Phase**

As the landfill site will need to be in operation for some time to implement the closure phase, the short-term operational components would need to take place within a Class IV visual management objective as per the George LM planning for the site.

8 VISUAL IMPACT ASSESSMENT

Impacts are defined in terms of the standardised impact assessment criteria provided by the environmental practitioner, or the generic DEA&DP impact significance criteria provided in the Visual & Aesthetic Guidelines (Oberholzer, 2005). For this assessment, the generic DEA&DP impact assessment criteria and the potential environmental impacts identified for the project were evaluated according to severity, duration, extent and significance of the impact. The potential occurrence and cumulative impact (as defined in the methodology) were also assessed. In order to better understand the nature of the severity of the visual impacts, a Contrast Rating exercise was undertaken from the Key Observation Points defined during the visual baseline. Due to the large scale of the landscape change, photomontages were also generated as seen from each of the defined KOPs.

8.1 Photomontages

Photomontages were created of the proposed landscape change, based on a 3D heights model that was generated for the project. The following methodology was used to generate the photomontages. It must be noted that the generated photomontages are not claiming to be 100% accurate, as there is some interpretation when matching the 3D model to the photograph. However, as a detailed model proof has been used that included 3D ArcGIS software, the validity of the generated photomontages can be defined as Near Accurate. As such, the photomontages are labelled as ***Scientifically Informed Approximation***.

- Making use of ArcGIS Pro 3D Scene, a 3D block model of the proposed landfill was generated from information provided by the EAS Engineers. This is to provide a scaling reference relative to the photograph viewpoint.
- The replica view from the KOP was rendered in the ArcGIS 3D Scene and then superimposed onto the photograph taken from the KOP in Affinity Photo using dominant landscape features in the vista for positioning.

- Using the 3D Block Model as reference, the detailed rendering from the 3D model reflecting the same viewpoint, was then photoshopped into the photograph making use of the 3D block model for positional accuracy and scaling.

The following best international practice guidelines were used to render the photomontages:

- Present important non-visual information at the same time as the visual presentation, using a neutral delivery.
- Avoid the use, or the appearance of, 'sales' techniques or special effects.
- Avoid seeking a particular response from the audience.
- Provide information describing how the visualisation process was conducted and how key decisions were taken (Sheppard, 2000).

Further details on the best practice guidelines are contained in Annexure C.

The following 3D model views depict the proposed landfill design, viewed as low oblique, perspective views to the west and east.



Figure 22: 3D model proof: Perspective View East.



Figure 23: 3D model proof: Perspective View West.

Existing View of Landfill



Proposed landscape change



Figure 24: KOP: Gwaing & R102 Road/ Rural Agricultural view South-East.

Existing View of Landfill



Proposed landscape change



Figure 25: KOP: R102 Road view South-West.

Existing View of Landfill



Proposed landscape change (With rehabilitation)



Figure 26: KOP: N2 Highway Westbound view North-East.

Existing View of Landfill



Proposed landscape change (With partial rehabilitation)



Figure 27: KOP: Delville Park/ N2 Highway Eastbound view North-West.

8.2 Contrast Rating and Photomontages

As indicated in the methodology, a contrast rating is undertaken to determine if the VRM Class Objectives are met. The suitability of a landscape modification is assessed by comparing and contrasting the existing receiving landscape to the expected contrast that the proposed landscape change will generate. This is done by evaluating the level of change to the existing landscape by assessing the line, colour, texture and form, in relation to the visual objectives defined for the area.

The following criteria are utilised in defining the degree of contrast (DoC) for the **proposed landscape change**:

- **None:** The element contrast is not visible or perceived.
- **Weak:** The element contrast can be seen but does not attract attention.
- **Moderate:** The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- **Strong:** The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

Due the planning and the fact that the landfill is currently active, the Operational Phase Visual Objective remains the same as the existing landfill in operation (Class IV) where visual contrast can be Strong. The following table assesses the contrast to the Post-Closure Phase that was assigned a Class III Visual Objective. The Class III objective is to partially retain the existing character of the landscape, where the level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer, and changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Table 20: Contrast Rating Key Observation points table.

Key Observation Point	Exposure		Mitigation	Landscape Elements					Visual Objectives Met?
	Distance	Exposure		Form	Line	Colour	Texture	Degree of Contrast	
Gwaing Road, R102 Eastbound	410m	Very High	W/Out	S	S	S	S	S	NO
			With	M	S	M	M	M	YES
R102 Westbound.	719m	High	W/Out	S	S	S	S	S	NO
			With	M	M	M	M	MS	YES
N2 Highway Eastbound	1.3km	Medium	W/Out	M	S	M	M	MS	NO
			With	L	ML	M	M	M	YES
Delville Park/ N2 Highway Westbound	1.4km	Medium	W/Out	S	M	S	S	S	NO
			With	S	S	L	L	M	YES

* S = Strong, M = Medium, W = Weak, N = None

8.2.1 Gwaing Road, R102 Eastbound and northwestern rural agricultural areas.

The view of the existing landfill site is strongly dominating as seen from these more proximate receptors. The form is long and wide that extends above the skyline creating a strong line contrast. Due to the proximity to the site, the grey/ brown colour and the mix of soil, ad-hoc vegetation growth and the rubbish, also increase colour and texture contrast.

With the implementation of the mitigated design of the existing landfill, the strong form and line contrast are significantly reduced as seen from these receptor locations. While the form is extended further to the south, the creation of an organic line does help reduce visual contrast. With mitigation by means of rehabilitation and restoration, the Class III Visual Objective would be met. Other than the design mitigation, the following mitigations are proposed:

- Rounding of crest edges post closure to ensure that the resultant forms and lines are not angular, and reflect a natural curvature as seen from these locations.

8.2.2 R102 Westbound.

As per the previous KOP, the views from the R102 Westbound are strongly dominated by the large, wide form that creates a long horizontal line creating skyline intrusion. The proposed mitigation layout significantly reduces the size of the form, due to the removal of much of the northern section of the dump and shifting it to the new proposed southern area. As a result of this southern area located behind the existing landfill form, much of this new area is not visible from this location. Form and line contrast are significantly reduced, and with rehabilitation and restitution, colour and texture will be moderated. With mitigation by means of rehabilitation and restoration, the Class III Visual Objective would be met, but would require the rounding of crest edges post closure to ensure that the resultant forms and lines are not angular.

8.2.3 N2 Highway Eastbound.

The landscape change as seen from the N2 Highway, travelling in an Eastbound direction, is similar to that of the R102 Westbound. Due to the location of the new landfill area in front of the old landfill (i.e. to the southwest), where the resultant form and line are effectively replicated and limited form and line contrast take place. Due to the moving of the material, a small hill appears to the right of the landfill. This is created by the top of the ridgeline created with the cutting back of the area adjacent to the Gwaing River. With mitigation by means of rehabilitation and restoration, the Class III Visual Objective would be met. However, the result top of the ridgeline should be rounded to allow for a more natural form in appearance.

Other than the design mitigation, the following mitigations are proposed:

- Rounding of ridgeline crest post closure to ensure that the resultant forms and lines are not angular, and reflect a natural curvature as seen from these locations.

8.2.4 Delville Park/ N2 High Westbound.

The largest form change is viewed from the areas to the southeast of the site. These include the N2 Highway (Westbound) as well as the residential area of Delville Park. Due to the expansion of the landfill to the southwest, at the same height as the existing landfill, the existing form is expanded to the south, creating a much longer form. Due to the other horizontal lines in the landscape, as well as the resultant curvature from the removal of the previous landfill material, the line contrast will be moderated. With rehabilitation and restoration, the resultant landscape change would meet the Class III visual objective.

8.3 Project Impact Ratings and Motivation

The following visual impacts could take place during the lifetime of the **proposed reshaping and relocation** of the proposed landfill project:

Operation Phase

This phase entails the current landfilling operations i.e. the existing business as usual operations.

- Continuation of the existing landfill operations until the new site is established.

Although this reflects current operations, it is not a static baseline: absent the proposed remedial intervention, disposal would continue within the constrained footprint, with the available airspace diminishing and the landform height increasing progressively over time. The impacts of this ongoing, un-remediated trajectory are therefore assessed under the No-Go Option (Section 4.4) as a progressive rather than a fixed condition, in response to the competent authority case officer's request that all specialist studies address the impacts of leaving the site as is. As this is deemed a fatal flaw, the No-Go Option is not subject to impact assessment.

Decommissioning Phase

The phase is a temporary/ interim stage where existing landfilling operations are ceased.

Due to the short-term nature of this phase, impacts are not undertaken for this Decommissioning Phase.

Closure Phase

This phase encompasses all of the construction work, relocation of waste, shaping, capping and revegetation. It is important to note that the vegetation will be the subject of a specialist study to determine, inter alia, appropriate plant types and variety, post-planting care, longer-term care.

Cumulative Impacts

The creation of a large-scale landform change that could set a precedent for future landfill design in the future, as well as, potential to negatively influence the proposed GM Mixed-Use Development land uses proposed to the west of the site.

Table 21: Closure Phase Impacts table

Project phase	Closure Phase	
Impact	Large scale landscape change to the existing George landfill	
Description of impact	• Reshaping of the existing and proposed landfill area to reduce intrusion into the Gwaing River buffer and reduce risk form steep slope failure. • Dust from the movement of vehicles and heavy machinery, as well as dust of wind.	
Mitigability	High	Mitigation can effectively reduce the visual impact.

Potential mitigation	Watering of the rehabilitated areas to allow for effective cover of crops on the sides and top of the closed landfill site.			
Assessment	Without mitigation		With mitigation	
Nature	Negative		Positive	
Duration	Permanent	The impact will be permanent.	Permanent	The impact will be permanent.
Extent	Medium	The visual extent would be local area contained.	Low	The visual extent would be site contained.
Intensity	Low	The visual intrusion is expected to be limited.	Low	The visual intrusion is expected to be limited.
Probability	Medium	There is a likely that the impact will be perceived.	Medium	There is a likely that the impact will be perceived.
Reversibility	Low	Once started, the landscape change will not be reversible.	Low	Once started, the landscape change will not be reversible.
Landscape Significance	Medium to Low		Medium Positive	
Motivation	Without mitigation, colour and texture contrast would remain, with the landfill site partially re-vegetated. With mitigation and effective management of rehabilitation and restitution to ensure effective growth of cover crops and dust suppression, the resultant landscape would be significantly improved from the existing landscape degradation that is currently reflected by the landfill site.			
Cumulative Effects	Low		Low	
Motivation	As the landscape is already visually degraded from the existing landfill, the correction of the landscape scarring is unlikely to result in cumulative effects from landscape degradation to surrounding land uses.			

9 PRELIMINARY ENVIRONMENTAL MANAGEMENT PLAN

A comprehensive EMP will be done as part of the closure/capping works. The EMP will cover in detail the river proximity, visible waste, sensitive plant species, if any, etc. Most importantly, along with the design, the EMP will speak to re-vegetation of slopes (grass types, planting, management/care while vegetation is establishing, handover etc.). It will also place a post-closure responsibility on the George, to care for the vegetation.

The following conceptual EMP should be reviewed and incorporated where applicable.

9.1.1 Closure Phase

- Appointment of a registered landscape architect to assist in the final shaping of the landforms to allow for a more natural landscape.
- Capping of the impact area with topsoil.

- Monthly inspection to ensure that soil erosion does not take place.

9.1.2 Decommissioning Phase

- Effective management planning to ensure that the rehabilitation and restoration by means of vegetation cover is effectively managed.
- Bi-annual inspection to ensure that soil erosion does not take place (for three years).

Table 22: Management Measures, Responsibilities and Monitoring.

Aspect	Management Action	Responsibility	Timing	Monitoring Compliance /
Landform Reshaping	Reshape landfill slopes to smooth, naturalised profiles; remove abrupt cut faces; feather edges into surrounding terrain.	Contractor under direction of Engineer	Closure Phase	Monthly inspections by Engineer and Environmental Control Officer (ECO)
Slope Stability & Edge Treatment	Stabilise steep slopes; contour edges to reduce visual prominence; avoid straight or geometric forms.	Engineer / Contractor	Closure Phase	Sign-off by Engineer; photographic record
Rehabilitation & Revegetation	Implement phased rehabilitation using locally appropriate grass and groundcover species; prioritise visually exposed slopes.	Contractor	Closure & Post-Closure	Quarterly audits by ECO; vegetation establishment reports
Dust Suppression	Apply dust suppression (watering, binding agents, temporary covers) on exposed surfaces and haul roads.	Contractor	Closure Phase	Daily site checks by Site Manager; complaints register
Progressive Closure	Undertake progressive closure and rehabilitation rather than leaving large exposed areas open simultaneously.	Contractor	Closure Phase	Weekly progress reports
Machinery & Stockpile Management	Limit stockpile heights; locate stockpiles away from visually sensitive edges; restrict unnecessary night lighting.	Contractor	Closure Phase	ECO inspections
Post-Closure Maintenance	Maintain rehabilitated areas; re-seed failed areas; control erosion and invasive species.	George Municipality	Post-Closure	Annual inspections (3 years)
Public Interface & Complaints	Maintain a complaints register and respond to visual-related complaints	George Municipality	All phases	Complaints log and response tracking

	within timeframes.	defined			
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10 SUMMARY OF VISUAL IMPACT FINDINGS

A summary of the visual impacts assessed in located on the following page. The headings below refer to the identified impact assessment criteria.

Table 23: Impact Significance Summary Table

Project	Phase	Mitig. Status	Significance	Cumulative
Landfill Site	Closure	Without	Med to Low -Ve	Low -Ve
		With	Low -Ve	Low -Ve
	Post-Closure	Without	Med to Low -Ve	Low -Ve
		With	Medium +Ve	Low -Ve

Nature of the Impact

The nature of the proposed development is rated **Negative for all phases, with the exception of Post-Closure where a Medium Positive outcome is expected.**

Extent of the Impact

The Extent of the project is rated **Local Area** with and without mitigation. This is due to the prominence of the site where the visual impact has already taken place.

Duration of the Impact

The Closure is rated as Medium Term as this phase is likely to be concluded within two years.

Magnitude of the Impact

The Magnitude of the proposed project during Closure is rated **Medium to Low Negative without and Low Negative with mitigation.** This is due to the existing landfill landscape degradation, where the magnitude of the proposed changes will appear as normal land use. With mitigation, the Magnitude of the Post-Closure phase without mitigation is likely to be **Medium to Low Negative. Due to the significant improvement of the landscape change to the existing landfill degradation, the Decommissioning Phase is rated Medium Positive with mitigation**

Probability of the Impact

Probability of the visual impacts taking place is defined as Sure. This is due to the large scale of the operation that is prominent in the location landscape.

Confidence of the Impact

The impact ratings were defined as Sure as sufficient information was provided regarding the nature of the landscape modification in relation to the main key observation points.

Reversibility of the Impact

The large scale and size of the operation, renders the landscape change permanent and would not be reversible.

Resource Irreplaceability of the Impact

The nature of the receiving landscape is rated Low in terms of irreplaceability. The site is landscape degraded and is a visual imposition to the local landscape character.

Visual Significance of the Impact

For the Closure Phase, without mitigation and shaping of the edges, the potential for a more natural and vegetated landform would be reduced. However, the form would be significantly improved from the existing landfill form and natural re-vegetation of the slopes would take place as per the existing precedent for the current landfill site.

In the post closure phase, without mitigation, colour and texture contrast would remain with the landfill site partially re-vegetated. With mitigation and effective management of rehabilitation and restitution to ensure effective growth of cover crops and dust suppression, the resultant landscape would be significantly improved from the existing landscape degradation that is currently reflected by the landfill site **where a Medium Positive outcome is expected.**

Cumulative Impact Assessment

As the landscape is already visually degraded from the existing landfill, the correction of the landscape scarring is unlikely to result in cumulative effects from landscape degradation to surrounding land uses.

11 PRELIMINARY OPPORTUNITIES AND CONSTRAINTS

11.1 Landfill Reshaping and Closure

Opportunities

- Improvement of landscape character.
- Increased opportunities for George Municipality to sell off adjacent lands for the planned Mixed-Use development.
- Reduced risk from fires from the burning of rubbish that is exposed on the top and on the sides of landfill.

Constraints

- Potential for visual impacts from dust and movement of heavy earth moving machinery.
- Possible increased Low Visual Impacts to Delville Park/ and the south-western rural agricultural areas.

11.2 No-Go Option

Opportunities

- Null

Constraints

- Slumping of the western wall into the Gwaing River.
- Continued visual and landscape degradation.
- Continuation of rubbish burning at the dump.

The methodological basis for this assessment, the projected trajectory of progressive deterioration, the formal impact rating, and the associated legislative non-compliance are set

out in full at Section 4.4 (No-Go Option as an Alternative), in response to the case officer's request that all specialist studies assess the impacts of leaving the landfill site as is, with no remedial work. On this basis, the No-Go option is assessed as a fatal flaw rather than a viable comparative alternative.

12 CONCLUSION

The proposed landfill closure, reshaping and associated development will result in predominantly negative visual impacts during the operational and closure phases, largely due to the scale and prominence of activities, *but* within an already highly disturbed and visually degraded landscape. The extent of visual impact is confined to the local area, as the landfill is an existing and dominant feature within the receiving environment, with visual impacts that are certain and permanent in nature.

In terms of visual and landscape resources related to the DFFE minimum requirements of landfills (DFFE, 1998) that were raised in the Scoping Phase, the following is noted:

- Final shaping, landscaping and revegetation has been incorporated into the design process.
- Risks from soil erosion from surface water run-off will be alleviated.
- The resultant shaping of the final landfill will be geometric, and with shaping and rehabilitation, will appear as an organic landform.

The receiving landscape is assessed as having low irreplaceability, given its degraded state and limited scenic sensitivity. Importantly, the proposed intervention is not expected to give rise to adverse cumulative visual impacts, as it seeks to correct and stabilise an existing source of landscape degradation rather than introduce new intrusive elements.

From a strategic perspective, landfill reshaping presents opportunities to improve overall landscape quality, reduce environmental and fire risks, and unlock future mixed-use development potential for the George Municipality. **Conversely, the No-Go option would perpetuate visual degradation, increase instability risks along the Gwaing River, and allow existing negative visual and environmental conditions to persist. This escalating, non-compliant trajectory is assessed in detail at Section 4.4, and from a landscape and visual perspective, represents a fatal flaw rather than a viable comparative alternative.**

It is therefore concluded that the proposed reshaping and relocation of the existing landfill is acceptable from a landscape and visual perspective, provided that the recommended mitigation measures are implemented. Authorisation of the proposed reshaping and relocation with mitigation is supported. The maintenance of the status quo is deemed a fatal flaw from a visual and landscape perspective.

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14 ANNEXURE A: SITE VISIT PHOTOGRAPHS AND COMMENTS

The following photographs were taken during the field survey as mapped below. The text below the photograph describes the landscape and visual issues of the locality.

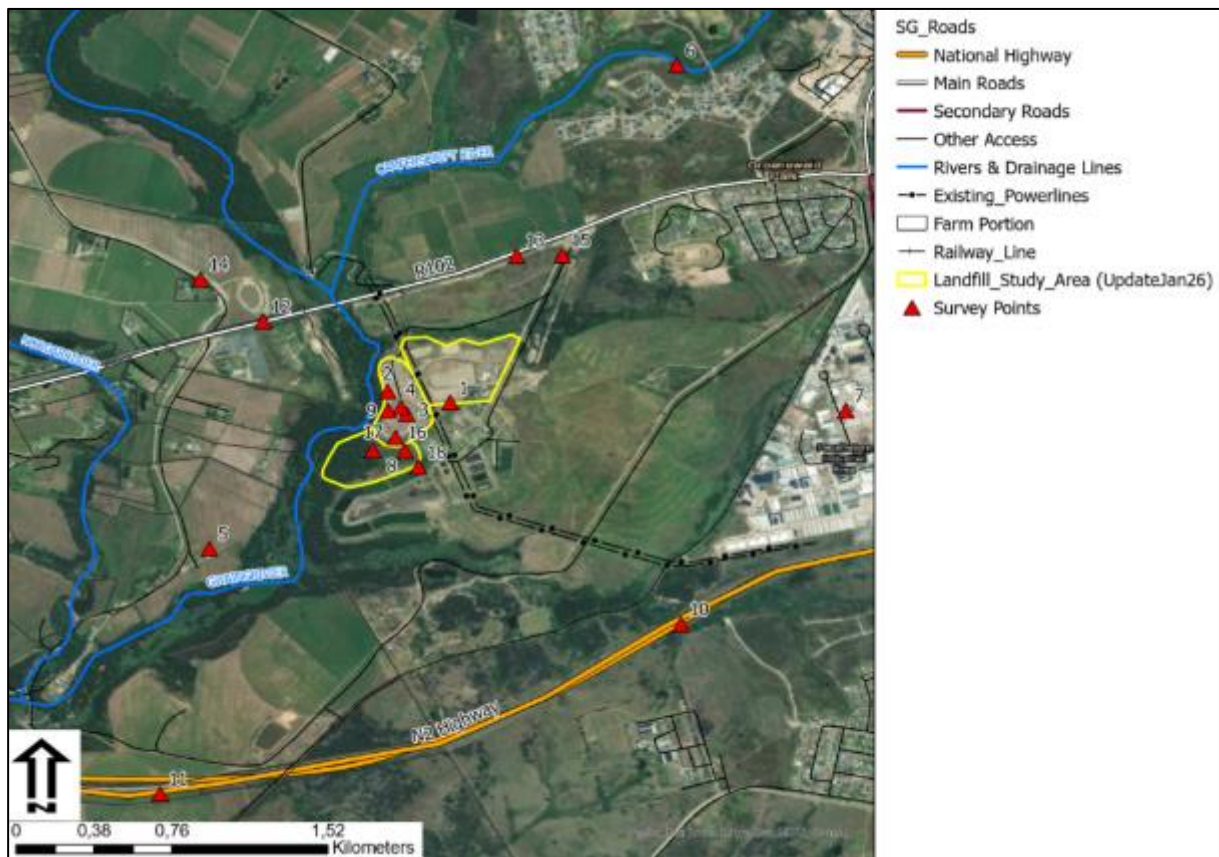


Figure 28: Site Survey Point Map.

ID	1
PHOTO	George dump site
RISK	Medium
DIRECTION	West
COMMENT	Landscape decay but with curved shaping that does allow some softening.
PHOTO	George Dump_20241031_103856047.jpg



2026 view of raised landfill with reference to the Eskom pylon



ID	2
PHOTO	Site west and east slopes
RISK	High
DIRECTION	North
COMMENT	Steep slopes prone to slumping. Gum trees add value.
PHOTO	George Dump_20251126_101801819



The Eskom power line corridor that has been intruded by the landfill site that will need to be removed.



ID	4
PHOTO	Site view from southern dump to lower northern dump in 2024
RISK	High
DIRECTION	North
COMMENT	Prominent in relation to the local areas that will increasingly become more visibly intrusive to residential receptors.
PHOTO	George Dump_20241031_105524666.jpg



Similar view in 2025 with the northern lower area now filled to the same height as the southern portion



ID	5
PHOTO	Receptors western peri-urban
RISK	High
DIRECTION	West
COMMENT	The agrarian sense of place of the western rural areas does add value as a regional Garden Route sense of place.
PHOTO	George Dump_20241031_105645960.jpg



ID	6
PHOTO	Receptors northern residential at Kingwood Golf Estate
RISK	Medium
DIRECTION	North
COMMENT	Some buffering from residential receptors that would reduce visual clarity depending on the final size of the land form.
PHOTO	George Dump_20241031_105745278.jpg



ID	7
PHOTO	Receptors eastern industrial Pacaltsdorp residential and N2 highway
RISK	Medium
DIRECTION	South East
COMMENT	Distance and higher visual absorption capacity from industrial developments
PHOTO	George Dump_20241031_110111339.jpg



ID	8
PHOTO	Informal settlement starting in 2024 that has subsequently been relocated by GM.
RISK	Low
DIRECTION	South
COMMENT	Landscape degradation can result in sterilisation of land uses, as well as toxic environments for human habitation if settlement is located in close proximity to the land fills sites.
PHOTO	George Dump_20241031_110409982.jpg



ID	9
PHOTO	Site Crest slumping form 2024 that is still a risk.
RISK	High
DIRECTION	North
COMMENT	Slumping into Gwaing river risk. Stabilisation required.
PHOTO	George Dump_20241031_110943130.jpg



ID	10
PHOTO	KOP N2 Westbound
RISK	High
DIRECTION	North West
COMMENT	Flat top dominates attention but will be structure screened with Gwaing development
PHOTO	George Dump_20241031_142859154.jpg



ID	11
PHOTO	KOP N2 Eastbound
RISK	Medium to High
DIRECTION	North East
COMMENT	Regrowth and rounded shaping of the landfill currently offering moderate levels of visual contrast. This effect should be reflected in the final shaping and rehabilitation.
PHOTO	George Dump_20260121_083907



ID	12
PHOTO	KOP R102 Eastbound
RISK	High
DIRECTION	South East
COMMENT	Skyline intrusion. Shaping and rehabilitation a requirement as the R102 is listed as a gate road and tourist view corridor in the George MSDF.
PHOTO	George Dump_20241031_145130692.jpg



2026 view with the horizontal line much more prominent, and the crest of the northern section of the landfill (left in photograph), much from pronounced and visually dominant.



ID	13
PHOTO	KOP R102 Westbound
RISK	Medium
DIRECTION	South West
COMMENT	Rounding of southern crest does assist in some reduction in visual contrast. However, shaping of edges required to allow a better alignment to the undulating landscapes of the rural agrarian landscapes.
PHOTO	George Dump_20241031_145640039.jpg



20260121 change in landscape with the lower lying areas between the two 'humps' now filled and the crest flattened resulting in a dominating horizontal line and sharper edge effects.



ID	14
PHOTO	KOP George rural from the recently upgraded Gwaing Road.
RISK	High
DIRECTION	South East
COMMENT	Shaping of northern crest required to allow a better alignment to the undulating landscapes of the rural agrarian landscapes.
PHOTO	George Dump_20241031_150116723.jpg



15 ANNEXURE B: SPECIALIST INFORMATION

15.1 Professional Registration Certificate



Association of Professional Heritage Practitioners



[Issued by the Association of Professional Heritage Practitioners Executive Committee]

Watermark image: Elevation drawing of three Doric columns of the Temple of Apollo at Delos, Athens from James Stuart & Nicholas Revett. The Antiquities of Athens measured and delineated by James Stuart F.R.S. and F.S.A. and Nicholas Revett Painters and Architects, London, John Nichols, 1794

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15.2 Curriculum Vitae (CV)

1. **Position:** Owner / Director
2. **Name of Firm:** Visual Resource Management Africa cc (www.vrma.co.za)
3. **Name of Staff:** Stephen Stead
4. **Date of Birth:** 9 June 1967
5. **Nationality:** South African
6. **Contact Details:** Cell: +27 (0) 83 560 9911
Email: steve@vrma.co.za
7. **Educational qualifications:**
 - University of Natal (Pietermaritzburg):
 - Bachelor of Arts: Psychology and Geography
 - Bachelor of Arts (Hons): Human Geography and Geographic Information Management Systems
 - MSc Geography, University of KwaZulu-Natal (2023)
8. **Professional Accreditation**
 - Association of Professional Heritage Practitioners (APHP) Western Cape
 - Accredited VIA practitioner member of the Association (2011)
9. **Association involvement:**
 - International Association of Impact Assessment (IAIA) South African Affiliate
 - Past President (2012 - 2013)
 - President (2012)
 - President-Elect (2011)
 - Conference Co-ordinator (2010)
 - National Executive Committee member (2009)
 - Southern Cape Chairperson (2008)
10. **Conferences Attended:**
 - International Geographical Congress, Lisbon (2017)
 - IAIAAsa 2012
 - IAIAAsa 2011
 - IAIA International 2011 (Mexico)
 - IAIAAsa 2010
 - IAIAAsa 2009
 - IAIAAsa 2007
11. **Continued Professional Development:**
 - Integrating Sustainability with Environment Assessment in South Africa (IAIAAsa Conference, 1 day)
 - Achieving the full potential of SIA (Mexico, IAIA Conference, 2 days 2011)

- Researching and Assessing Heritage Resources Course (University of Cape Town, 5 days, 2009)

12. Countries of Work Experience:

- South Africa, Mozambique, Malawi, Lesotho, Kenya and Namibia

13. Relevant Experience:

Stephen gained six years of experience in the field of Geographic Information Systems mapping and spatial analysis working as a consultant for the KwaZulu-Natal Department of Health and then with an Environmental Impact Assessment company based in the Western Cape. In 2004 he set up the company Visual Resource Management Africa that specializes in visual resource management and visual impact assessments in Africa. The company makes use of the well-documented Visual Resource Management methodology developed by the Bureau of Land Management (USA) for assessing the suitability of landscape modifications. Stephen has assessed of over 150 major landscape modifications throughout southern and eastern Africa. The business has been operating for eighteen years and has successfully established and retained a large client base throughout Southern Africa which include amongst other, Rio Tinto (Pty) Ltd, Bannerman (Pty) Ltd, Anglo Coal (Pty) Ltd, Eskom (Pty) Ltd, NamSolar and Vale (Pty) Ltd, Ariva (Pty) Ltd, Harmony Gold (Pty) Ltd, Millennium Challenge Account (USA), Pretoria Portland Cement (Pty) Ltd

14. Languages:

- English – First Language
- Afrikaans – fair in speaking, reading and writing.

15. Projects:

Table 24: VRM Africa Projects Assessments Table

DESCRIPTION	COUNT	DESCRIPTION	COUNT
Dam	1	UISP	8
Mari-culture	1	Structure	8
Port	1	OHPL	12
Railway	1	Industrial	12
Power Station	3	Wind Energy	22
Hydroelectric	4	Battery Storage	14
Resort	4	Mine	20
Golf/Residential	1	Residential	45
Road Infrastructure	5	Solar Energy	62
Substation	5	TOTAL	237

16 ANNEXURE C: METHODOLOGY DETAIL

16.1 Baseline Analysis Stage

In terms of VRM methodology, landscape character is derived from a combination of **scenic quality**, **receptor sensitivity** to landscape change and **distance** from the proposed landscape change. The objective of the analysis is to compile a mapped inventory of the visual resources found in the receiving landscape, and to derive a mapped Visual Resource sensitivity layer from which to evaluate the suitability of the landscape change.

16.1.1 Scenic Quality

The scenic quality is determined making use of the VRM Scenic Quality Checklist that identifies seven scenic quality criteria which are rated with 1 (low) to 5 (high) scale. The scores are totalled and assigned an A (High), B (Moderate) or C (low) based on the following split:

A = scenic quality rating of ≥ 19 ;

B = rating of 12 – 18,

C = rating of ≤ 11

The seven scenic quality criteria are defined below:

- **Land Form:** Topography becomes more of a factor as it becomes steeper, or more severely sculptured.
- **Vegetation:** Primary consideration given to the variety of patterns, forms, and textures created by plant life.
- **Water:** That ingredient which adds movement or serenity to a scene. The degree to which water dominates the scene is the primary consideration.
- **Colour:** The overall colour(s) of the basic components of the landscape (e.g., soil, rock, vegetation, etc.) are considered as they appear during seasons or periods of high use.
- **Scarcity:** This factor provides an opportunity to give added importance to one, or all, of the scenic features that appear to be relatively unique or rare within one physiographic region.
- **Adjacent Land Use:** Degree to which scenery and distance enhance, or start to influence, the overall impression of the scenery within the rating unit.
- **Cultural Modifications:** Cultural modifications should be considered and may detract from the scenery or complement or improve the scenic quality of an area.

16.1.2 Receptor Sensitivity

Receptor sensitivity to landscape change is determined by rating the following factors in terms of Low to High:

- **Type of Users:** Visual sensitivity will vary with the type of users, e.g. recreational sightseers may be highly sensitive to any changes in visual quality, whereas workers who pass through the area on a regular basis may not be as sensitive to change.
- **Amount of Use:** Areas seen or used by large numbers of people are potentially more sensitive.
- **Public Interest:** The visual quality of an area may be of concern to local, or regional, groups. Indicators of this concern are usually expressed via public controversy created in response to proposed activities.

- **Adjacent Land Uses:** The interrelationship with land uses in adjacent lands. For example, an area within the viewshed of a residential area may be very sensitive, whereas an area surrounded by commercially developed lands may not be as visually sensitive.
- **Special Areas:** Management objectives for special areas such as Natural Areas, Wilderness Areas or Wilderness Study Areas, Wild and Scenic Rivers, Scenic Areas, Scenic Roads or Trails, and Critical Biodiversity Areas frequently require special consideration for the protection of their visual values.
- **Other Factors:** Consider any other information such as research or studies that include indicators of visual sensitivity.

16.1.3 Exposure

The area where a landscape modification starts to influence the landscape character is termed the Zone of Visual Influence (ZVI) and is defined by the U.K. Institute of Environmental Management and Assessment's (IEMA) '*Guidelines for Landscape and Visual Impact Assessment*' as 'the area within which a proposed development may have an influence or effect on visual amenity (of the surrounding areas).'

The inverse relationship of distance and visual impact is well recognised in visual analysis literature (*Hull, R.B. and Bishop, I.E., 1988*). According to Hull and Bishop, exposure, or visual impact, tends to diminish exponentially with distance. The areas where most landscape modifications would be visible are located within 2 km from the site of the landscape modification. Thus, the potential visual impact of an object diminishes at an exponential rate as the distance between the observer and the object increases due to atmospheric conditions prevalent at a location, which causes the air to appear greyer, thereby diminishing detail. For example, viewed from 1000 m from a landscape modification, the impact would be 25% of the impact as viewed from 500 m from a landscape modification. At 2000m it would be 10% of the impact at 500 m.

Distance from a landscape modification influences the size and clarity of the landscape modification viewing. The Bureau of Land Management defines three distance categories:

- Foreground / Middle ground**, up to approximately 6km, which is where there is potential for the sense of place to change;
- Background areas**, from 6km to 24km, where there is some potential for change in the sense of place, but where change would only occur in the case of very large landscape modifications; and
- Seldom seen areas**, which fall within the Foreground / Middle ground area but, as a result of no receptors, are not viewed or are seldom viewed.

16.1.4 Key Observation Points

During the Baseline Inventory Stage, Key Observation Points (KOPs) are identified. KOPs are defined by the Bureau of Land Management as the people (receptors) located in strategic locations surrounding the property that make consistent use of the views associated with the site where the landscape modifications are proposed. These locations are important in terms of the VRM methodology, which requires that the Degree of Contrast (DoC) that the proposed landscape modifications will make to the existing landscape be measured from these most critical locations, or receptors, surrounding the property. To define the KOPs, potential receptor locations were identified in the viewshed analysis, and screened, based on the following criteria:

- Angle of observation.
- Number of viewers.
- Length of time the project is in view.
- Relative project size.
- Season of use.
- Critical viewpoints, e.g., views from communities, road crossings; and
- Distance from property.

16.2 Assessment and Impact Stage

The analysis stage involves determining whether the potential visual impacts from proposed surface-disturbing activities or developments will meet the management objectives established for the area, or whether design adjustments will be required. This requires a contrast rating to assess the expected DoC the proposed landscape modifications would generate within the receiving landscape in order to define the Magnitude of the impact.

16.2.1 Contrast Rating

The contrast rating is undertaken to determine if the VRM Class Objectives are met. The suitability of landscape modification is assessed by comparing and contrasting existing receiving landscape to the expected contrast that the proposed landscape change will generate. This is done by evaluating the level of change to the existing landscape by assessing the line, colour, texture and form, in relation to the visual objectives defined for the area. The following criteria are utilised in defining the DoC:

- **None:** The element contrast is not visible or perceived.
- **Weak:** The element contrast can be seen but does not attract attention.
- **Moderate:** The element contrast begins to attract attention and begins to dominate the characteristic landscape.
- **Strong:** The element contrast demands attention, will not be overlooked, and is dominant in the landscape.

As an example, in a Class I area, the visual objective is to preserve the existing character of the landscape, and the resultant contrast to the existing landscape should not be notable to the casual observer and cannot attract attention. In a Class IV area example, the objective is to provide for proposed landscape activities that allow for major modifications of the existing character of the landscape. Based on whether the VRM objectives are met, mitigations, if required, are defined to avoid, reduce or mitigate the proposed landscape modifications so that the visual impact does not detract from the surrounding landscape sense of place.

Based on the findings of the contrast rating, the Magnitude of the Landscape and Visual Impact Assessment is determined.

16.2.2 Photomontages

As a component in this contrast rating process, visual representation, such as photo montages are vital in large-scale modifications, as this serves to inform Interested & Affected Parties and decision-making authorities of the nature and extent of the impact associated with the proposed project/development. There is an ethical obligation in this process, as visualisation can be misleading if not undertaken ethically. In terms of adhering to standards for ethical representation of landscape modifications, VRMA subscribes to the Proposed Interim Code of

Ethics for Landscape Visualisation developed by the Collaborative for Advanced Landscape Planning (CALP) (Sheppard, 2000). This code states that professional presenters of realistic landscape visualisations are responsible for promoting full understanding of proposed landscape changes, providing an honest and neutral visual representation of the expected landscape, by seeking to avoid bias in responses and demonstrating the legitimacy of the visualisation process. Presenters of landscape visualisations should adhere to the principles of:

- Access to Information
- Accuracy
- Legitimacy
- Representativeness
- Visual Clarity and Interest

The Code of Ethical Conduct states that the presenter should:

- Demonstrate an appropriate level of qualification and experience.
- Use visualisation tools and media that are appropriate to the purpose.
- Choose the appropriate level of realism.
- Identify, collect and document supporting visual data available for, or used in, the visualisation process.
- Conduct an on-site visual analysis to determine important issues and views.
- Seek community input on viewpoints and landscape issues to address in the visualisations.
- Provide the viewer with a reasonable choice of viewpoints, view directions, view angles, viewing conditions and timeframes appropriate to the area being visualised.
- Estimate and disclose the expected degree of uncertainty, indicating areas and possible visual consequences of the uncertainties.
- Use more than one appropriate presentation mode and means of access for the affected public.
- Present important non-visual information at the same time as the visual presentation, using a neutral delivery.
- Avoid the use, or the appearance of, 'sales' techniques or special effects.
- Avoid seeking a particular response from the audience.
- Provide information describing how the visualisation process was conducted and how key decisions were taken (Sheppard, 2000).