



ENVIRONMENTAL IMPACT ASSESSMENT FOR

THE PROPOSED DEMARCATION OF SITES ON THE REMAINDER OF THE
FARM PARADILE No. 724-MS, MAKHADO LOCAL MUNICIPALITY,
LIMPOPO PROVINCE.

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ACRONYMS AND ABBREVIATIONS

CA	Competent Authority
DEFF	Department of Environment, Forestry, and Fisheries
dSR	Draft Scoping Report
EA	Environmental Authorization
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMC	Environmental Management Committee
EMP	Environmental Management Plan
EMPr	Environmental Management Programme
ESR	Environmental Scoping Report
I&AP	Interested and Affected Party
IAR	Impact Assessment Report
IDP	Integrated Development Plan
LEDET	Limpopo Department of Economic Development, Environment, and Tourism
NCRs	National Noise Control Regulations
NEMA	National Environmental Management Act of 1998 as amended
NHRA	National Heritage Resources Act of 1999
NWA	National Water Act of 1998
PPP	Public Participation Process
ROD	Record of Decision
SANRAL	South African National Roads Agency Limited
SDF	Spatial Development Framework
SR	Scoping Report
TBA	To Be Announced

EAP'S CURRICULUM VITAE AND CONTACT DETAILS

EAP's Qualifications (Ms Daniëlle Potgieter):

- BSc (Hons) Environmental Monitoring and Modelling), University of South Africa
- BSc Geology, University of Pretoria
- Course completed in Geotechnical Core Logging, Soil Profiling and Chip Logging from SAIEG - South African Institute for Engineering and Environmental Geologists

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PROJECT INFORMATION

District	Greater Vhembe District
Local Municipality	Makhado Local Municipality
Property description	The remainder of the farm Paradile No. 724-MS
Surveyor-General code	TOMS00000000072400000
Nearest town	Tshikuwi
Coordinates (Centre point)	22°55'15.33"S, 29°56'28.42"E
Current land use	Agricultural
Surrounding land use	Agricultural and residential

EXECUTIVE SUMMARY

Global Geo Enviro Specialists was appointed as the Environmental Assessment Practitioner (EAP) by Mahlori Development Consultants on behalf of Makhado Local Municipality (the applicant) to assist with undertaking the required Environmental Authorization (EA) application processes (including the statutory public participation) for the proposed demarcation of 350 sites on the remainder of the farm Paradile No. 724-MS in Limpopo Province.

The applicant is proposing the demarcation of 350 sites covering an area of approximately 37.6 hectares in Tshikuwi within the Greater Vhembe District of the Limpopo Province. The geographical coordinates of the centre of the site are 22°55'16.93" S, 29°56'31.47" E.

The proposed demarcation of sites will include the following under the jurisdiction of Makhado Local Municipality: **REFER TO THE LAYOUT PLAN (APPENDIX B)**

- 343 residential use,
- 2 public open spaces,
- 2 business sites,
- 1 Institutional (Community Facility),
- 1 Educational (Creche),
- 1 Place of Worship (Church) and
- Streets

ENVIRONMENTAL IMPACT ASSESSMENT (EIA) PROCESS

The environmental studies can be summarized in two phases:

- Phase 1: Environmental Scoping Study (ESS)
- Phase 2: Environmental Impact Assessment (EIA) and Environmental Management Programme (EMPr) **(APPENDIX G)**

The scope of the entire EIA process is to provide an assessment of all impacts related to the proposed project in compliance with the EIA Regulations of 2010.

The Environmental Impact Assessment (EIA) is a comprehensive evaluation and study phase that addresses all environmental consequences raised in the Scoping Phase. The EIA phase is significant and consists of six key objectives:

1. Description of the biophysical and socio-economic environment that is likely to be affected by the proposed demarcation of sites through the use of specialist studies.
2. Continue with the public participation process.
3. Assess the significance of impacts that may occur from the proposed demarcation of sites.
4. Assess the alternatives proposed during the Scoping Phase.

5. Provide details of mitigation measures and management recommendations to reduce the significance of impacts.
6. Provide a framework for the development of the Environmental Management Programme (EMPr).

Specialist studies

Specialist studies are undertaken to thoroughly examine key issues and environmental impacts. Appointed specialists gather relevant data to identify and assess environmental impacts that might occur on the specific component of the environment that they are studying (for instance waste management, air quality, noise, vegetation, water quality, pollution, and waste management). Once completed, these studies are combined and presented in full as appendices to the Environmental Impact Assessment (EIA).

The Public Participation Process

The public participation process (PPP) initiated at the beginning of the Scoping Phase continues into the EIA Phase aiding I&APs to voice their concerns and raise issues regarding the project. All comments and issues raised by the I&APs and stakeholders on the Final Scoping Report will be considered and addressed in the final EIA.

Assessment of the Significance of Impacts

It is necessary to determine the significance rating of impacts on the natural or social environment. A significance rating scale that determines the spatial and temporal extent, and the significance and probability of any impact occurring, including impacts relating to any project alternatives if available. This allows the overall significance of a positive or negative impact to be determined. The overall intent of undertaking a significance assessment is to provide the competent authority with information on the potential environmental impacts allowing them to make an informed, balanced and fair decision.

Mitigation Measures and Recommendations

Critical to any EIA is the recommendation of practical and reasonable mitigation measures and recommendations. These recommendations relate to the actions that are needed to avoid, minimise or offset any negative impacts from the demarcation of sites.

Planning input

An effective EIA process should actively engage and contribute to the project planning process to mitigate environmental impacts through improved design and layout.

Environmental Impact Report

The above-mentioned tasks are combined in the EIR. This will allow the assessment of the relationship of environmental impacts to project actions, and assess the overall significance of these impacts. The EIR will also provide sufficient information to allow the competent authority to make an informed decision concerning the environmental authorisation.

The Environmental Impact Assessment (EIA) Regulations, 2010 (Regulation 543) determine that an environmental authorisation is required for certain listed activities, which might have detrimental effects on the environment. The following activities have been identified with special reference to the proposed

development and are listed in the EIA Regulations: **Activity 15 of the Listed Notice 2 GNR 325 7 April 2017 stating:** The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for (i) the undertaking of linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Requirements for the contents of an Environmental Impact Assessment Report as specified in the NEMA Regulations 982 (2014) as amended	
a	<ul style="list-style-type: none"> ▪ Details of the EAP who prepared the document ▪ The expertise of the EAP, including a curriculum vitae;
b	<p>The location of the activity, including:</p> <ul style="list-style-type: none"> i. the 21-digit Surveyor General code of each cadastral land parcel ii. where available, the physical address and farm name iii. where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties on which the activity is to be undertaken;
c	<p>A plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is -</p> <ul style="list-style-type: none"> i. a linear activity, a description and coordinates of the corridor in which the proposed activity or activities are to be undertaken ii. on land where the property has not been defined, the coordinates within which the activity is to be undertaken;
d	<p>A description of the scope of the proposed activity, including</p> <ul style="list-style-type: none"> i. all listed and specified activities triggered and being applied for; and ii. a description of the associated structures and infrastructure related to the proposed development;
e	<p>Motivation for the need and desirability for the proposed project, including the need and desirability of the activity in the context of the preferred location</p>
f	<p>Motivation for the preferred development footprint within the recommended site;</p>
g	<p>A full description of the process followed to reach the proposed development footprint within the proposed site, including:</p> <ul style="list-style-type: none"> i. details of the proposed project footprint alternatives that were considered ii. details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs iii. a summary of the issues raised by interested and affected parties, and an indication of how the issues were incorporated, or the reasons for not including them iv. the environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects

	<ul style="list-style-type: none"> v. the impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts Any other matters required in terms of section 24(4)(a) and (b) of the Act can be reversed bb. may cause irreplaceable loss of resources; and cc. can be avoided, managed or mitigated vi. the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks vii. positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects viii. the possible mitigation measures that could be applied and the level of residual risk ix. if no alternative development locations for the activity were investigated, the motivation for not considering such; and x. a concluding statement indicating the preferred alternative development located within the approved site;
h	<p>A full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity, including</p> <ul style="list-style-type: none"> i. a description of all environmental issues and risks that were identified during the environmental impact assessment process; and ii. an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;
	<p>An assessment of each identified potentially significant impact and risk, including</p> <ul style="list-style-type: none"> i. cumulative impacts; ii. the nature, significance and consequences of the impact and risk; iii. the extent and duration of the impact and risk; iv. the probability of the impact and risk occurring; v. the degree to which the impact and risk can be reversed; vi. the degree to which the impact and risk may cause irreplaceable loss of resources; and vii. the degree to which the impact and risk can be mitigated;
	<p>Where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;</p>

	An environmental impact statement which contains <ul style="list-style-type: none"> i. a summary of the key findings of the environmental impact assessment; ii. a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and iii. a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;
	Based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;
i	The final proposed alternatives respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;
j	Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;
k	Description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;
l	A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;
m	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post-construction monitoring requirements finalised;
	An indication of any deviation from the approved scoping report, including the plan of study, including i. any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and ii. a motivation for the deviation;
n	Any specific information that may be required by the competent authority; and
	Any other matters required in terms of sections 24(4)(a) and (b) of the Act

DECLARATION OF INTEREST

I, Daniëlle Lianri Potgieter, as an authorized representative of Global Geo Enviro Specialists hereby confirm my independence as an Environmental Assessment Practitioner and declare that neither I nor Global Geo Enviro Services has any interest, be it business, financial, personal or other, in any proposed activity, application or appeal in respect of which Global Geo Enviro Specialists was appointed as Environmental Assessment Practitioner in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), other than fair remuneration for work performed, specifically in connection with the Environmental Authorisation process for the proposed demarcation of sites.

1. INTRODUCTION

Global Geo Enviro Specialists was appointed by Mahlari Development Consultants on behalf of Makhado Local Municipality to conduct an Environmental Impact Assessment for the proposed demarcation of 350 sites covering an area of approximately 37.6 hectares in Tshikuwi on the remainder of the farm Paradile No. 724-MS in the Greater Vhembe District of the Limpopo Province. The geographical coordinates of the centre of the proposed site are 22°55'16.93" S, 29°56'31.47" E, and the proposed development site is approximately 37.6 hectares.

The proposed demarcation of sites will include the following under the jurisdiction of Makhado Local Municipality: **REFER TO THE LAYOUT PLAN**

- 343 residential use,
- 2 public open spaces,
- 2 business sites,
- 1 Institutional (Community Facility),
- 1 Educational (Creche),
- 1 Place of Worship (Church) and
- Streets

This Environmental Scoping Report (ESR) was compiled following the scoping-phase investigations and Public Participation Process (PPP), and is currently available for public review and comment, from 28 January 2022 to 28 February 2022, resulting in 30 days consultation period.

Following the lapsing of the commenting period, all comments received from the registered Interested and Affected Parties (I&APs) will be incorporated into the final ESR, which will then be submitted to the Limpopo Department of Economic Development and Environmental Tourism (LEDET).

2. PROJECT NEED AND DESIRABILITY

To assess the “need and desirability” of the proposed project, the following relevant documents were consulted (1): Makhado Local Municipality: Integrated Development Plan (IDP), (2) Makhado Local Economic Development Strategy (2013), and (3) A draft guideline on the information requirements to describe need and desirability in the EIA process (DEAT, 2008).

- The existing community of Tshikuwi Village identified the need to expand their existing village. The need for housing is especially evident in lower-income groups.
- There will be a new crèche, a church site as well as possible business opportunities, for the residents in the surrounding area.

In the following sections, this EAP attempts to make an objective assessment of the “need and desirability” of the project and makes a recommendation based on the available documents and information.

3. SITE LOCALITY

The proposed demarcation site is located in Tshikuwi, in the Greater Vhembe District of the Limpopo Province. The geographical coordinates of the centre of the proposed site are 22°55′16.93” S, 29°56′31.47” E, and the proposed demarcation site is approximately 37.6 hectares.

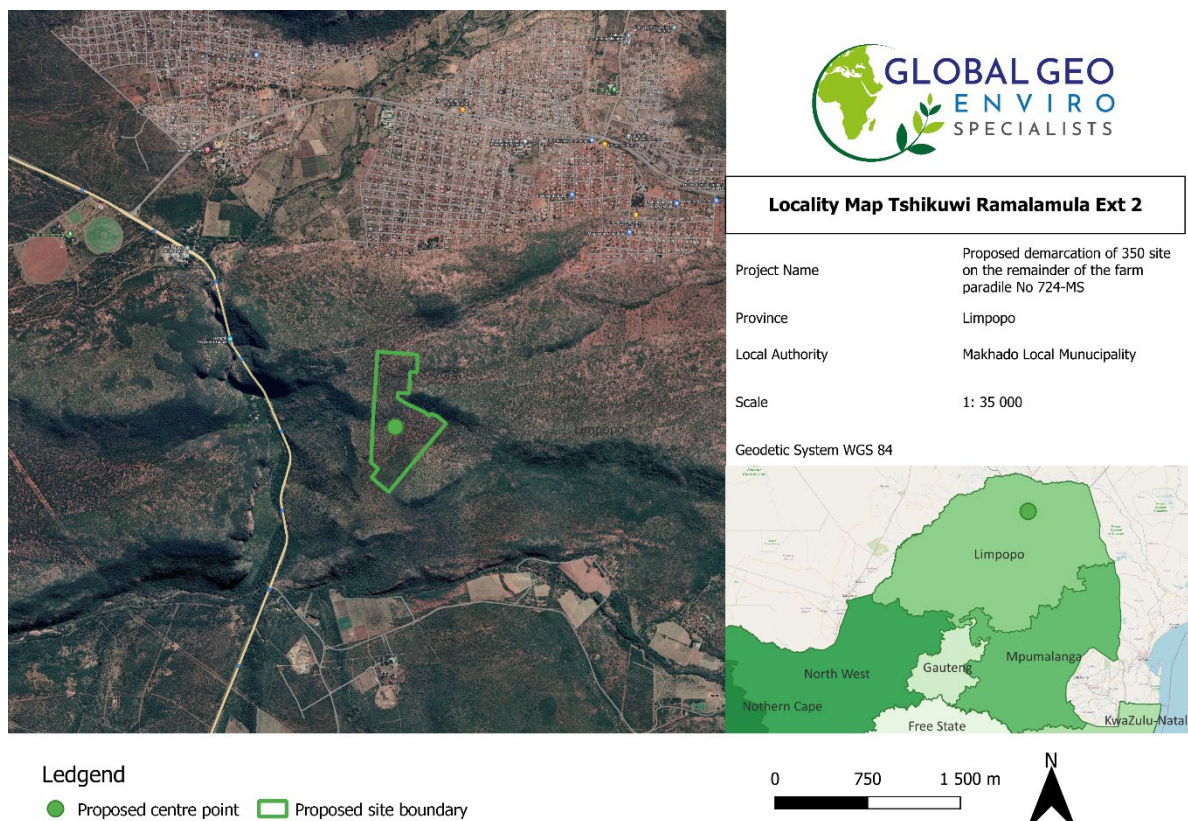


Figure 1 - Locality map of the proposed demarcation area in Tshikuwi



Figure 2- Proposed Layout Plan for the proposed demarcation of sites in Tshukuwi

4. PROPERTY DESCRIPTION

4.1. Topography

The area is characterised by an undulating landscape with associated moderate slopes with an approximate East-West dipping gradient of 7.1 % on average.

The approximate altitudes above the mean sea level of the site are as follows Maximum: 1138m, Minimum: 1080m, and Average: 1096m.

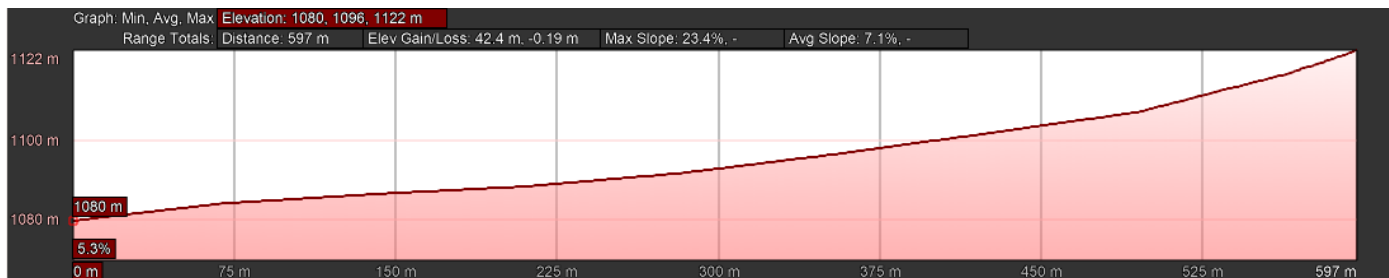


Figure 3- Elevation Profile of Site (measured from the West to the East through the centre of the site)

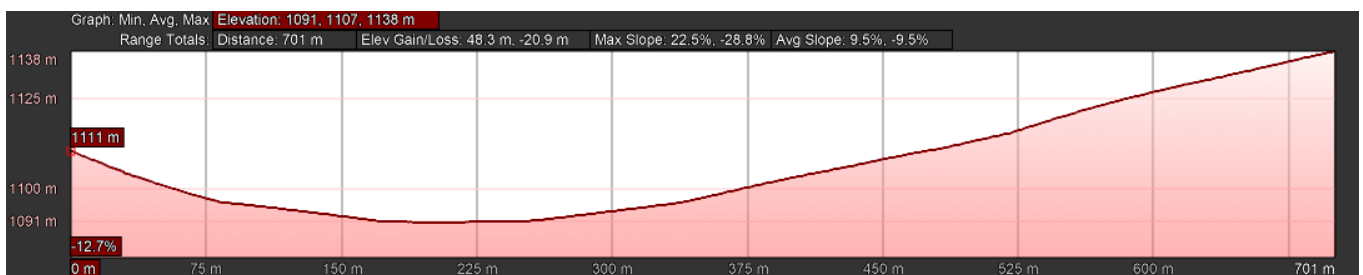


Figure 4 - Elevation profile of the Site (measured from North-East to South-West)

4.2. Geology and Soils

The Geology surrounding the area consists of the Soutpansberg mountain range that contains Karroo Sequence sediments. The main rock formations include Sandstones, Quartzite, Basalts, Tuffs, and some conglomerate rocks, the soil types will be confirmed following a geotechnical investigation.

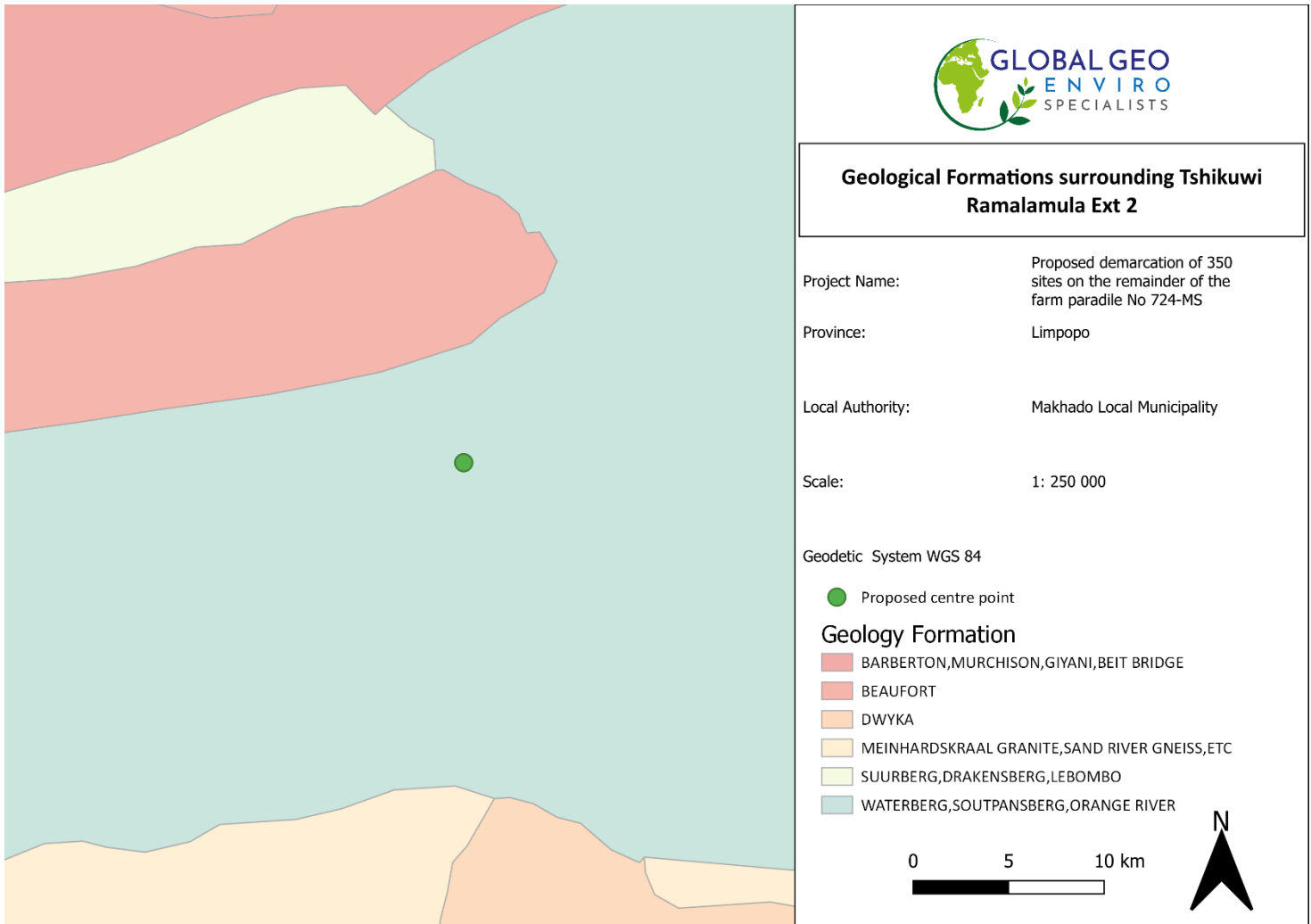


Figure 5 - Description of Geological formation surrounding the proposed demarcation site in Tshikuwi Village

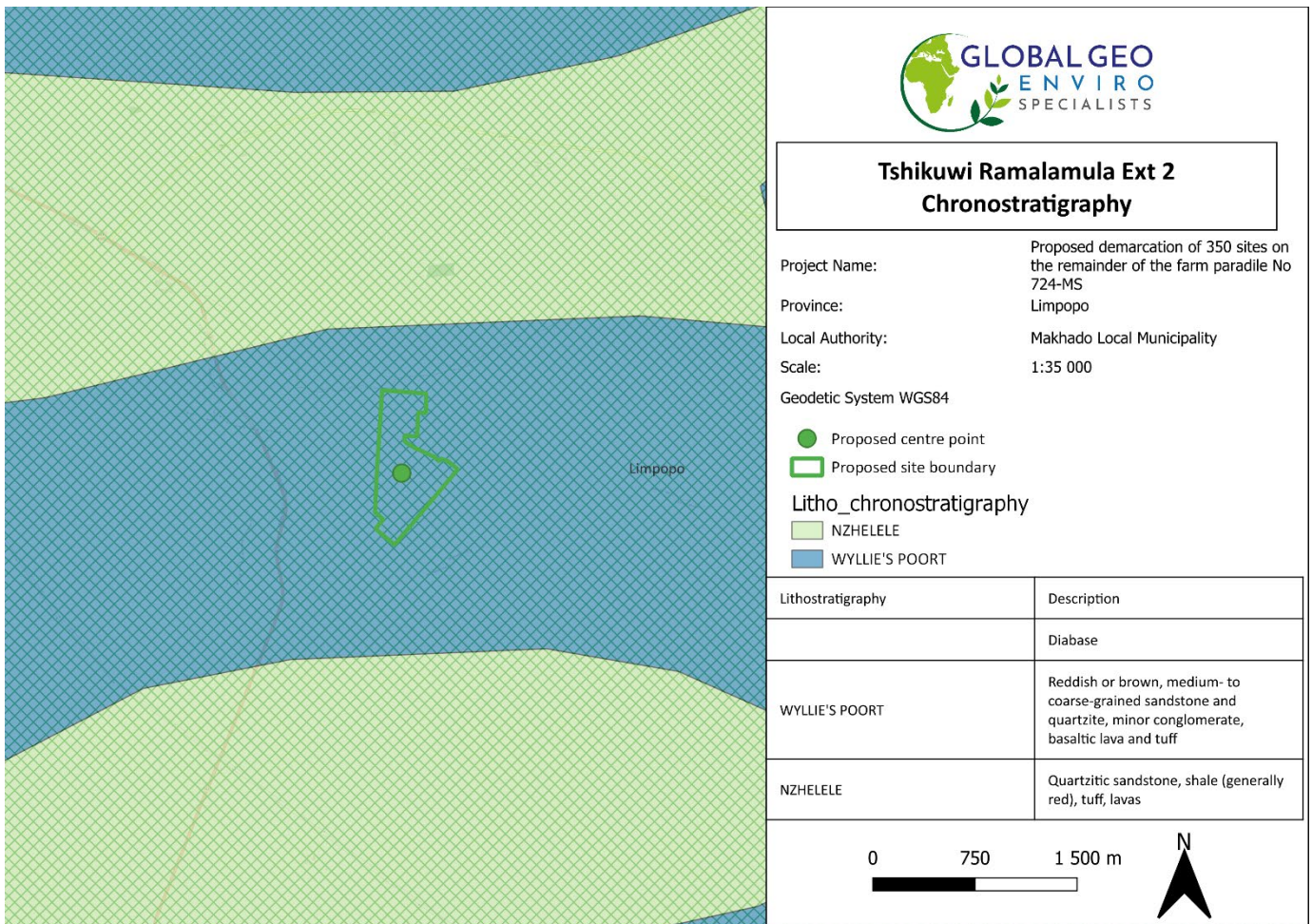


Figure 6 - Description of Lithostratigraphy at the proposed demarcation site in Tshikuwi Village

4.3. Climate

The climate for the Makhado Municipal area ranges from 18 degrees Celsius in the mountainous areas to 28 degrees Celsius in the rest of the area, with an average of 25, 5 degrees Celsius. The area's maximum temperature occurs during January (midday temperatures of 30.5°C) while the Minimum temperatures occur in July (midday temperatures of 23.2°C). The area is a summer rainfall district with the main period of rainfall in the area taking place between January and February. The average annual rainfall in the low-lying areas is 450mm and 2300mm in the higher-lying Soutpansberg.

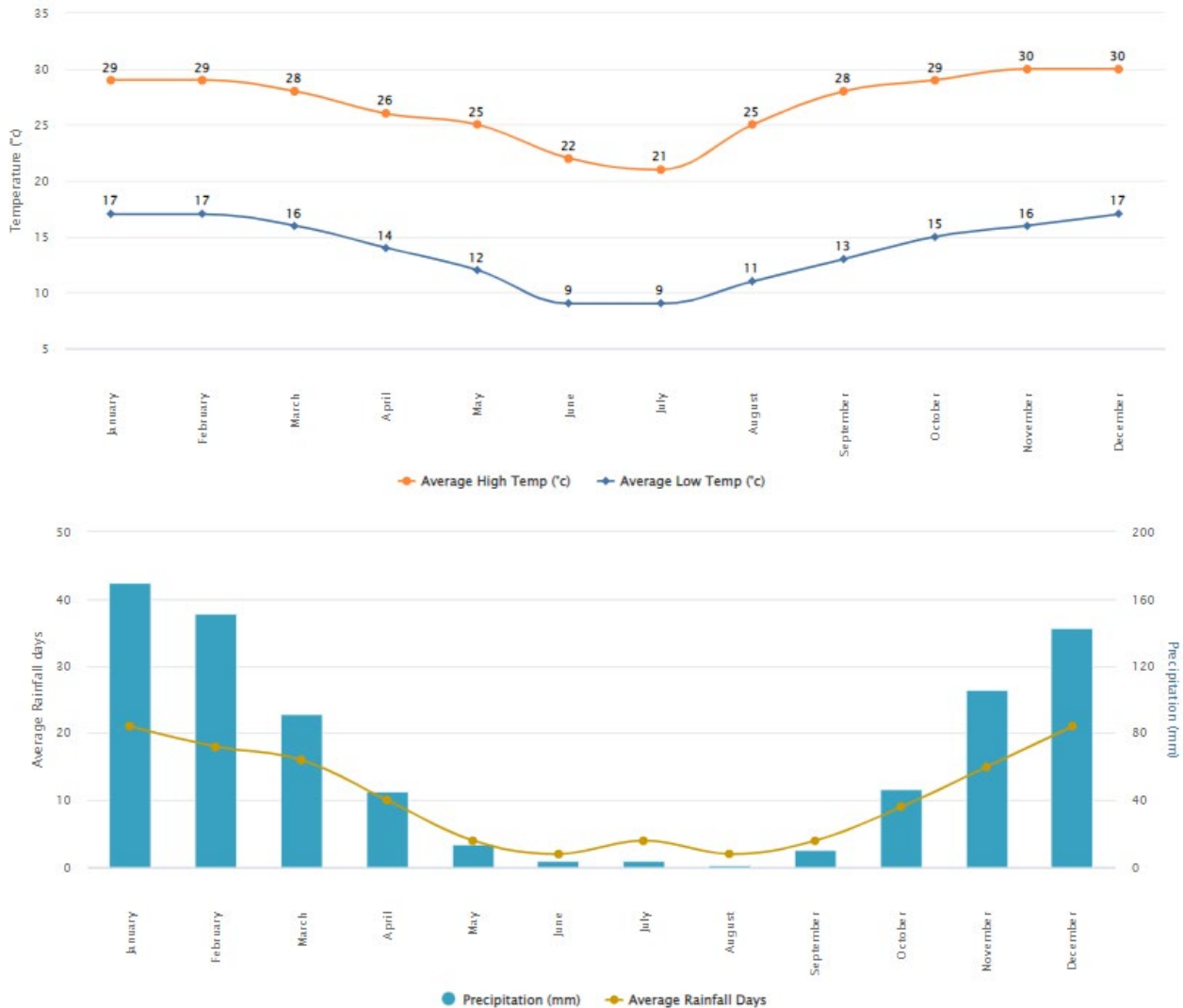


Figure 7 -Yearly average monthly temperatures and rainfall of nearby town Waterpoort (World Weather Online, 2021)

4.4. Vegetation

Upon conducting a desktop study of the area using the 2018 National Vegetation map as seen on the Biodiversity Advisor of the South African National Biodiversity Institute (SANBI) the area surrounding the proposed site consists of predominately Soutpansberg Mountain Bushveld with small areas of Ironwood Dry Forest as shown in figure 6 below. It should be noted that some *Sclerocarya birrea*, commonly known as the marula trees also found on the site and should be considered in the demarcation of sites. A biodiversity study should be conducted to further investigate the vegetation of the proposed site and will be reviewed in full in the EIR.

Broad Terrestrial Vegetation for Tshikuwi proposed demarcation of sites

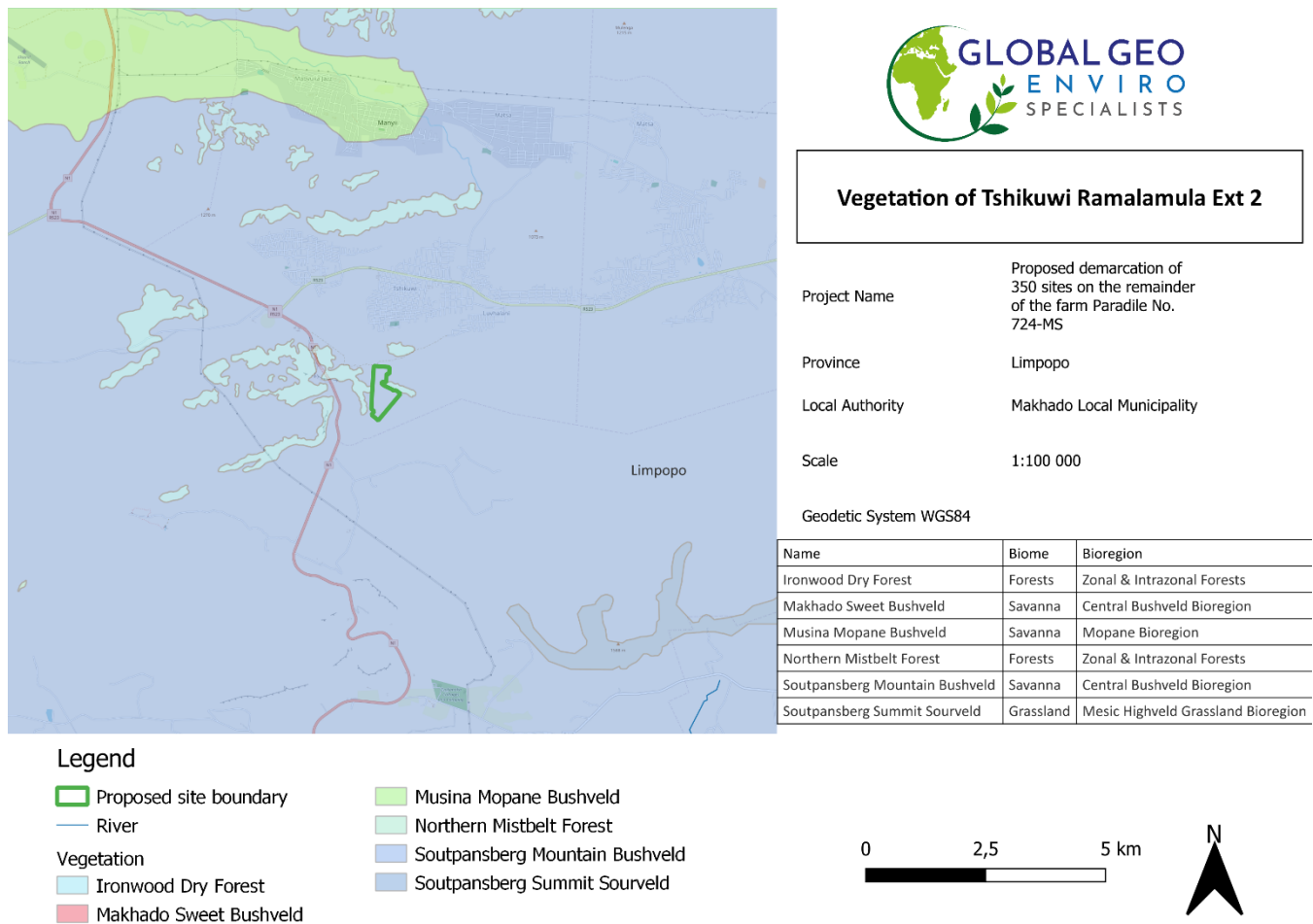


Figure 8 - Broad Terrestrial Vegetation for Tshikuwi proposed demarcation of sites

4.5. Environmental Sensitivity

The Sensitivity of the area is discussed in full in the Screening Report for an Environmental Authorisation as required by the 2014 EIA regulations and can be found in **APPENDIX E**. The screening report is generated by the National Screening Tool from the Department of Forestry, Fisheries, and the Environment.

Table 1 below indicated the relative sensitivities as generated by the National Screening Tool, only the highest sensitivity in each theme is indicated. These sensitivities are indicative and should be verified on-site by a suitably qualified person.

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
Agriculture			X	
Animal Species			X	
Aquatic Biodiversity	X			
Archaeological and Cultural Heritage				X
Civil Aviation		X		
Defence			X	
Palaeontology			X	
Plant Species	X			
Terrestrial Biodiversity	X			

Table 1 - Summary of Area Sensitivities - generated by the National Screening Tool from the Department of Forestry, Fisheries and the Environment

5. PROJECT ALTERNATIVES

In terms of Environmental Impact Assessment (EIA) regulation, the Environmental Assessment Practitioner (EAP) should investigate feasible and reasonable alternatives for the proposed project. In other words, different means of meeting the requirements for the activity.

According to the requirements listed within Appendix 2 (2) (g) (ix) of the 2014 amended EIA Regulations, a site selection matrix should be provided indicating how the preferred site was determined through a site selection process. On a site-specific level, the site was deemed suitable due to all the site selection factors being favourable. The site selection criteria considered by the Applicant are discussed in the table below.

FACTOR	SUITABILITY OF THE PREFERRED SITE
Land Availability	The remainder of Farm Paradile No. 724-MS is a suitable size for the proposed project. The land is state-owned and available for development.
Site Accessibility	The proposed project site can be accessed via an existing gravel road. The existing gravel road can be accessed from the N1 National Road. Internal gravel roads will be constructed as part of the proposed project.
Topography	The area is characterised by an undulating landscape with associated moderate slopes with an approximate East-West dipping gradient of 7.1 % on average. The approximate altitudes above the mean sea level of the site are as follows: Maximum: 1138m, Minimum: 1080m and Average: 1096m
Current Zone of Area	Agriculture
Landowner Willingness	The land is owned by the state and signed consent for the use of the land for the proposed project. This is considered an important aspect of the proposed project in terms of its viability (i.e. this will limit potential appeals during the decision-making process, as the landowner is willing and supportive of the proposed projects being undertaken on the remainder of the farm).

Table 2 -Site selection criteria

In the EIA process, the consideration of alternatives is always important, should the proposed site not fit into the parameters of the EIA framework. The alternatives can be categorised as follows.

- Location alternatives

- Site Layout Alternatives
- Activity alternatives
- No-Go alternative

5.1. LOCATION ALTERNATIVE

The specific location has been chosen because it is adjacent to the existing Tshikuwi Village.

- The community of Tshikuwi identified a need for expansion, therefore, residential and other new developments in the area, currently developing at a fast rate, are a suitable option.
- The site is currently zoned as Agricultural.

There is no location alternative – the layout plan can only be moved around on the remainder of the farm Paradile No. 724-MS.

A Biodiversity study, Geotechnical study and Heritage assessment will be undertaken before the proposed activity will take place to thoroughly assess the plausibility of the proposed location.

5.2. SITE LAYOUT ALTERNATIVE

- A geotechnical study will be conducted before development, and the positioning of certain parts of the layout of the development can be altered based on the ideal or most suitable soil conditions.
- By carrying out a Heritage assessment before development, the re-positioning of certain parts of the development can be based on the occurrence of heritage aspects. Areas can also be avoided if necessary due to the presence of heritage characteristics.

There is currently no layout alternative for the proposed development, however, there is a possibility of a layout alternative that will still meet the objective of the project scope.

5.3. ACTIVITY ALTERNATIVE

The purpose of the proposed activity is the demarcation of stands on State-owned land, the demarcation includes public open spaces, and residential, educational, business and institutional sites. The proposed site is surrounded by residential developments, schooling as well as local businesses making the proposed activity preferably situated.

Based on the above, at this stage, there is no reason to suggest that any activity alternatives are investigated as these would not meet the general purpose and need of the proposed activity.

Therefore, no activity alternatives were investigated for this Scoping Report.

5.4. THE NO-GO ALTERNATIVE

The no-go alternative is the option not to go ahead with the proposed project. The no-go alternative will only be considered as an alternative if it is concluded that the preferred alternative will have significant negative impacts on the environment which cannot be reduced or managed to an acceptable level. As there have already been indicated that there is a need and desirability for the proposed demarcation it is anticipated that this demarcation will relieve the demand for housing and basic services in the region. It is anticipated that the no-go alternative will constrain the development planning of the Local Municipality.

6. LEGISLATIVE GUIDELINES

National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended The National Environmental Management Act (NEMA) provides the legislative framework for Integrated Environmental Management (IEM) in South Africa. Section 24 provides that all activities that may significantly affect the environment and require authorization by law must be assessed before approval. NEMA also provides for cooperative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote cooperative governance and procedures for coordinating environmental functions exercised by organs of the State and to provide for matters connected therewith. Section 2 of NEMA establishes a set of principles that apply to the activities of all organs of state that may significantly affect the environment. These include the following:

- Development must be sustainable,
- Pollution must be avoided or minimized and remedied,
- Waste must be avoided or minimized, reused or recycled,
- Negative impacts must be minimized, and
- Responsibility for the environmental health and safety consequences of a policy, project, product or service exists throughout its life cycle.

These principles are taken into consideration when a government department exercises its powers, for example during the granting of permits and the enforcement of existing legislation or conditions of approval. Section 28(1) of NEMA states that “every person who causes, has caused or may cause significant pollution or degradation of the environment must take reasonable measures to prevent such pollution or degradation from occurring, continuing or recurring”. If such pollution cannot be prevented, then appropriate measures must be taken to minimize or rectify such pollution.

These measures may include:

- Assessing the impact on the environment,
- Informing and educating employees about the environmental risks of their work and ways of minimising these risks,
 - Ceasing, modifying or controlling actions that cause pollution/degradation,
 - Containing pollutants or preventing movement of pollutants,
 - Eliminating the source of pollution, and

- Remedying the impacts of the pollution,
- The authorities may direct industry to rectify or remedy a potential or actual pollution problem,
- If such a directive is not complied with, the authorities may undertake the work and recover the costs from the responsible industry.

LISTED ACTIVITY	ACTIVITY Number	DESCRIPTION
GNR 325 of 7 April 2017	Activity 15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for (i) the undertaking of linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.

Table 3: Listed activities triggered by the proposed demarcation in terms of the NEMA EIA regulations (2014) as amended.

7. OTHER GUIDELINES AND DOCUMENTATION CONSIDERED IN THE DRAFTING OF THE SCOPING REPORT INCLUDE:

7.1. CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA

The Constitution of the Republic of South Africa has major implications for environmental management. The main effects are the protection of environmental and property rights, the change brought about by the sections dealing with administrative law, such as access to information, just administrative action and broadening of the locus standi of litigants. These 15 aspects provide general and overarching support and are of major assistance in the effective implementation of the environmental management principles and structures of the NEMA. Section 24 in the Bill of Rights of the Constitution specifically states that: Everyone has the right –

To an environment that is not harmful to their health or well-being, and,

To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –

- Prevent pollution and ecological degradation,
- Promote conservation, and
- Secure ecologically sustainable development and use of natural resources while promoting,
- Justifiable economic and social development.

7.2. NOISE CONTROL REGULATIONS, 1992 (GN R.154)

In terms of section 25 of the ECA, the National Noise Control Regulations (GN R. 154 – NCRs) published in Government Gazette No. 13717 dated 10 January 1992, were promulgated. The NCRs were revised under GN R. 55 of 14 January 1994 to make it obligatory for all authorities to apply the regulations. The NCRs will

need to be considered concerning the potential noise that may be generated mainly during the construction and decommissioning phases of the proposed project. The two key aspects of the NCRs relate to disturbing noise and noise nuisance. Section 4 of the Regulations prohibits a person from making, producing or causing a disturbing noise, or allowing it to be made produced or caused by any person, machine, device or apparatus or any combination thereof. Disturbing noises are defined in the Regulations as “a noise level which exceeds the zone sound level or if no zone sound level has been designated, a noise level which exceeds the ambient sound level at the same measuring point by 7 dBA or more.” Section 5 of the NCRs in essence prohibits the creation of a noise nuisance. A noise nuisance is defined as “any sound which disturbs or impairs or may disturb or impair the convenience or peace of any person.” Noise nuisance is not anticipated as part of the proposed farming activities as there are no nearby noise receptors.

7.3. NATIONAL ENVIRONMENTAL MANAGEMENT: BIODIVERSITY ACT, 2004 (ACT NO. 10 OF 2004)

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa’s biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed. This Act applies to this application for environmental authorisation, in the sense that it requires the project applicant to consider the protection and management of local biodiversity.

7.4. INTEGRATED ENVIRONMENTAL MANAGEMENT (IEM)

IEM is a philosophy for ensuring that environmental considerations are fully integrated into all stages of the development process. This philosophy aims to achieve a desirable balance between conservation and development (DEAT, 1992). The IEM guidelines intend to encourage a proactive approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels. The DEA Integrated Environmental Management Information Series guidelines are also considered during this S&EIR application process. 17 EIA Regulations promulgated under the National Environmental Management Act, Act 107 of 1998, as amended (NEMA EIA Regulations, 2014) New EIA Regulations were promulgated under Section 24 of NEMA and came into effect on 04 December 2014. These EIA Regulations prescribe two different authorisation processes as follows:

- The Basic Assessment Process; and
- The Scoping and EIA process.

Irrespective of which process applies, the Regulations make provision for the following:

- Public Participation must be undertaken at various stages during the assessment process.
- Assessments must be conducted by an Independent Environmental Assessment Practitioner (EAP).
- The authority delegated with deciding on environmental applications responds to applications and submissions within stipulated timeframes.
- Decisions taken by the authorities can be appealed by the proponent or any other interested and affected party (IAP).

7.5. NATIONAL HERITAGE RESOURCES ACT, 1999 (ACT NO. 25 OF 1999)

The National Heritage Resources Act (NHRA) (Act 25 of 1999) stipulates that cultural heritage resources may not be disturbed without authorization from the relevant heritage authority. Section 34(1) of the NHRA states that “No person may alter or demolish any structure or part of a structure which is older than 60 years without a permit issued by the relevant provincial heritage resources authority...”. The last few years have seen a significant change toward the inclusion of heritage assessments as a major component of the Environmental Impacts Processes required by NEMA. This change requires us to evaluate the Section of these Acts relevant to heritage. The NEMA 23(2)(b) states that an integrated environmental management plan should, “...identify, predict and evaluate the actual and potential impact on the environment, socio-economic conditions and cultural heritage”. A study of subsections (23)(2)(d), (29)(1)(d), (32)(2)(d) and (34)(b) and their requirements reveals the compulsory inclusion of the identification of cultural resources, the evaluation of the impacts of the proposed activity on these resources, the identification of alternatives and the management procedures for such cultural resources for each of the documents noted in the Environmental Regulations.

7.6. AUTHORITY CONSULTATION

The competent authority to approve the proposed demarcation of sites Limpopo Department of Economic Development, Environment and Tourism. The site does not have implications for international environmental commitments or relations; and will not take place within an area protected by employing an international environmental instrument, or the site is not a conservancy; a protected natural environment; a proclaimed private nature reserve; a natural heritage site; the buffer zone or transitional area of a biosphere reserve; or the buffer zone or transitional area of a world heritage site. Therefore, the competent authority has been correctly identified, based on the above reasons.

8. SPECIALIST STUDIES

In terms of section 24(5)(h) of the NEMA, 1998 (Act No 107 of 1998) and regulation 16(1)(b)(v) of the EIA regulations, 2014, as amended, the required DEFF Screening Report is provided as part of Appendix E. After running the DEFF screening tool, specialist studies that were deemed necessary after performing a desktop study as well as a site visit included:

- Archaeological / Heritage Assessment
- Ecological/ Biodiversity Study
- Geotechnical study
- Engineering Services Report
- Flood line Report

Relevant Specialists will be appointed to conduct the above-mentioned studies. These studies will be used to identify possible impacts during a scoping study phase and the mitigation of impacts during the EIA phase of the project.

9. ENVIRONMENTAL AUTHORISATION PROCESS

Global Geo Enviro Specialists, as independent environmental consultants, will facilitate the implementation of the Integrated Environmental Management (IEM) process as per the approved EIA Guideline as seen in Figure 4 below:

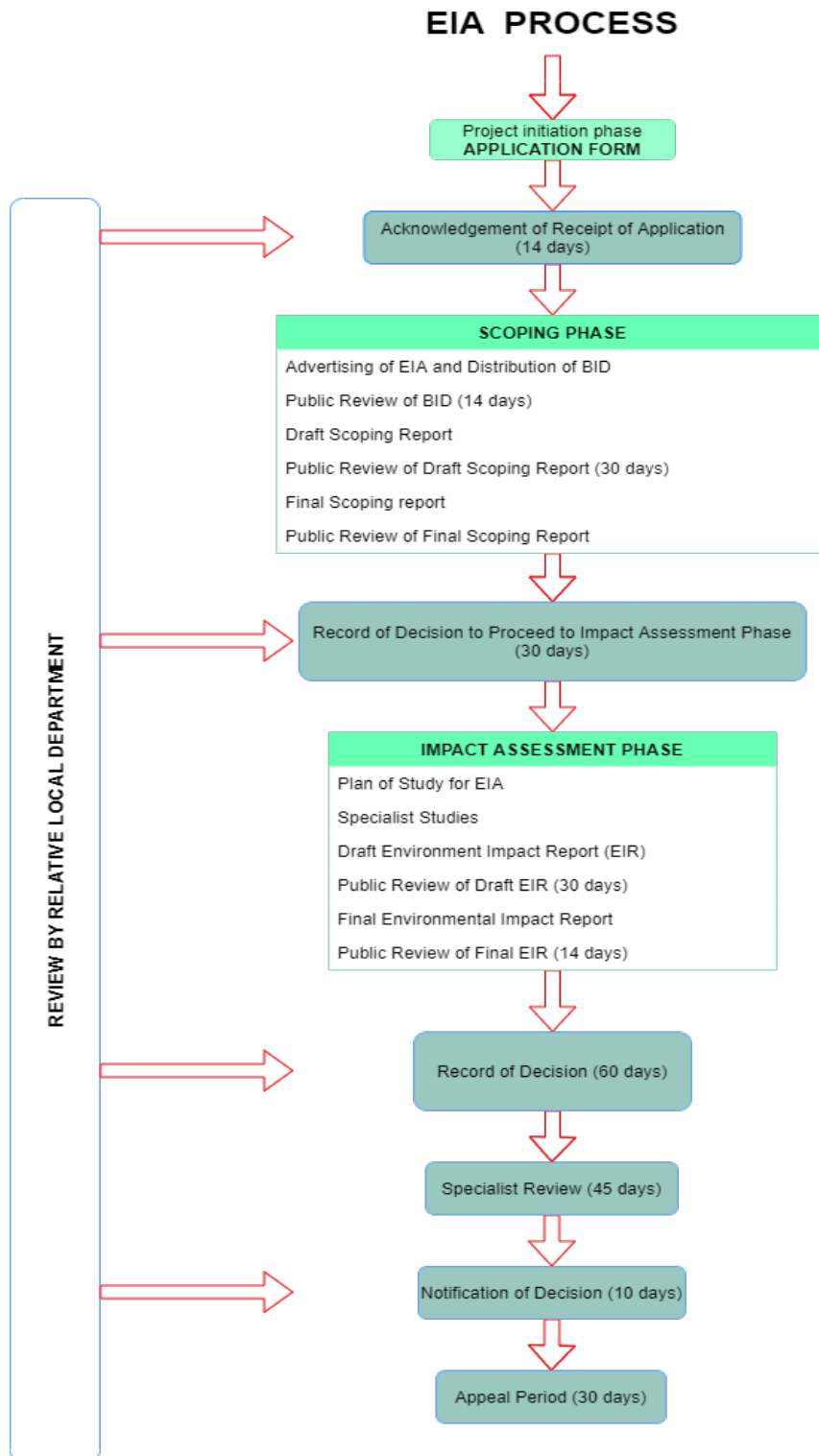


Figure 9 - EIA process flow diagram

10.SUMMARY OF SPECIALIST STUDIES

In terms of section 24(5)(h) of the NEMA, 1998 (Act No 107 of 1998) and regulation 16(1)(b)(v) of the EIA regulations, 2014, as amended, the required DEFF Screening Report is provided as part of Appendix E. After running the DEFF screening tool, specialist studies that were deemed necessary after performing a desktop study as well as a site visit included:

- Archaeological / Heritage Assessment
- Ecological/ Biodiversity Study
- Geotechnical study
- Engineering Services Report
- Flood line Report

10.1. PHASE 1 HERITAGE IMPACT ASSESSMENT

The following information has been extracted from the Phase 1 Heritage Impact report undertaken by Anton Pelser of APelser Archaeological Consulting (APAC) in July 2022.

SUMMARY OF RESULTS FOR HERITAGE IMPACT ASSESSMENT	
Built Environment Findings Burial Grounds & Graves Findings Artefacts and Other Cultural Material	During the field-based survey, no sites, features or materials of cultural heritage (archaeological and/or historical) origin or significance were recorded in the study and development footprint area. This included graves or burial grounds. It is therefore concluded that there should be no negative impacts on any visible cultural heritage resources as a result of the proposed development.

Table 4 - Summary of results for Phase 1 Heritage Impact Assessment

The following recommendations relating to the Heritage impact assessment were made by APAC based on the field survey as well as the significance rating for the cultural resources. These recommended mitigation measures should be implemented before the development of the proposed site.

RECOMMENDATIONS:

According to APAC from a Cultural Heritage perspective, it is advised that the proposed site demarcation and associated township development be permitted to proceed while taking into account the following suggestions:

1. 1. The implementation and adherence to a "Chance discoveries Protocol" should any significant cultural heritage structures, items, materials, features, or graves be discovered during earth-moving operations in the project's initial clearing and construction phase.
2. 2. Before using any earth-moving equipment on the job site during the first project construction, construction teams must be trained to identify cultural heritage locations, features, or materials.
3. Always keep in mind the subterranean character of historical and/or archaeological treasures, especially low, stone-packed or unmarked burials. If any previously hidden or unknown places,

features, or materials are discovered during any development activities, a specialist should be consulted to conduct an investigation and offer suggestions for the future.

10.2. BIODIVERSITY (FAUNA AND FLORA) STUDY

The following information has been extracted from the draft Biodiversity study report undertaken by Mr Munzhelele ED of Africa Ecological and Development Services.

The Biodiversity study was undertaken on 13 February 2022, which falls within a month of the growing season to maximise the identification of vegetation.

SUMMARY OF RESULTS FOR BIODIVERSITY IMPACT ASSESSMENT	
Fauna Findings	<p><u>Reptiles and Amphibians:</u> During the field trip, no reptiles were found, although the following are expected to be present: different snakes, moles, and chameleons. The area is favourable for snakes like pythons and green mambas. All the possible faunal species are mentioned in the biodiversity study. The vicinity of the site to the main dam catchment makes it very likely for amphibians to be found there.</p> <p><u>Birds:</u> During the site visit doves and cattle egrets were the most dominant species found. Other bird callings were also observed but none were spotted. Noteworthy bird species include the Verreaux’s Eagle, Lanner falcon, African Grass Owl, Half-Collared Kingfisher, Barred Wren-Warbler, White-bellied Sunbird, Kurrichane Thrush, and White-throated Robin-chat although these species have a very slim probability of appearing in the area</p> <p><u>Mammals:</u> Except for one rabbit and some cattle no mammals were spotted during the site survey. The vegetation types make it highly likely for some larger mammals to be present on the site although no droppings or mammals were observed.</p> <p><u>Insects:</u> No protected species of insects were identified during the site visit. There were various beetles and locusts identified during the site visit as well as some butterflies. Even though no dragonflies were spotted during the investigation they are highly likely to occur especially during wet seasons.</p>

<p>Flora Findings</p>	<p>Trees: According to the Biodiversity study the site is located in the Soutpansberg mountain range. The site at the time of the investigation was covered with mature trees consisting of top canopy composition, shrubs, and sporadic medium to large trees. During the habitat survey, it was found to be an area with a high value of vegetation and high species composition. Dominated by <i>Burkea Africana</i> (wild seringa/mufhulu) community followed by <i>Terminalia sericea</i> Burch (silver cluster leaf/mususu).</p> <p>During the vegetation survey, the composition of vegetation was found to be high. A full list of the vegetation findings can be found in the biodiversity study under (APPENDIX F). It can be seen from this table that two vegetation species from fall under the protected tree species as per National Forest Act 84 of 1998 are present. These include the <i>Sclerocaryabirrea</i> (Marula Tree) at 0.1% of the dominancy cover and the <i>Pterocarpus angolensis</i> (Kiaat Tree) at 4.6% of the dominancy cover. At approximately 60% the <i>Burkea Africana</i> (Wild seringa) has the highest coverage on the site and is considered to be an Endangered Species. This is followed by the <i>Terminalia sericea</i> (Silver leaf) at approximately 55% which has a conservation status of least concern.</p> <p>Grass: Various species of grass are also found on the site. The grass is an essential part of biomes as they are a source of food and shelter as well as preventing soil erosion through their root systems.</p> <p>Alien plants: Exotic plants on the site are of least concern as the vegetation of the area is in a good condition with few exotic plant species.</p>
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Table 5- Summary of results for the Biodiversity Impact Assessment

RECOMMENDATIONS AND MITIGATION:

1. The proposed construction will be situated in a bushveld habitat called the savannah, which has a high species composition of trees and shrubs. Grazing is the area's primary land use. The location is determined to be appropriate for residential use assuming all precautions are taken.
2. As per the impact assessment, a specialist (environmental officer) must be recruited to handle any environmental concerns. This will help with the implementation of green development.
3. Following the National Forest Act of 1998, a licence from the Department of Agriculture, Forestry, and Fisheries is required to damage or cut protected trees as well as indigenous trees (Act No. 84 of 1998) For all measures to be based on this legislation and its regulations, it is also necessary to take into account the National Environmental Management Biodiversity Act of 2004 (Act No. 10 of 2004), or NEMA when dealing with invasive alien plants.
4. An environmental management plan must be created to account for specific mitigations during all development phases as well as for potential indirect impacts on a catchment.
5. Wherever possible, people should refrain from felling large indigenous trees while also making sure that those that are protected are preserved.
6. Care must be taken during material movement to reduce the spread of alien plant seeds from one location to another.
7. To assist in the preservation of vegetation, people must be urged to incorporate large trees into their plans. This will support the preservation of most of the few less damaged tree species in their natural habitat.

8. The municipality must encourage the planting of more trees to protect the region's sparse surviving greenery.
9. A rehabilitation plan needs to be created to stop dongas and sheet erosion.

10.3. ENGINEERING SERVICES REPORT

The following information has been extracted from the Engineering services report undertaken by W. Kasilembo of Dalimede Projects (PTY) LTD.

The purpose of the engineering services report is to address the requirements of Makhado Local Municipality regarding the provision of municipal services. The report is attached in (APPENDIX F). summarized the level and extent of services to be provided, as well as the estimated cost. All known existing services are evaluated to determine the preliminary extent and possible connection opportunities.

SUMMARY OF EXISTING ENGINEERING SERVICES		DESIGN CRITERIA
Water	<p>Water source: The proposed demarcation site fall under the Nzhelele Regional Water Supply Scheme.</p> <p>Storage Reservoirs/Tanks: Tshikuwi concrete reservoir, GPS 22°54'34.63"S 29°56'28.48"E. Luvhalani concrete reservoir, GPS 22°54'38.30"S 29°57'22.57"E. The reservoirs' capacity has not yet been determined. These reservoirs are barren and unable to serve the intended community.</p> <p>Water reticulation: The proposed site has no existing bulk pipelines or water reticulation infrastructure.</p>	A detailed table of the water design criteria can be viewed on page 17 of the engineering services report in (APPENDIX F)
Sewer	<p>There is no existing wastewater treatment works for the proposed site or surrounding area.</p> <p>There are no existing bulk sewer pipelines to service the proposed site.</p>	There are no municipal sewer connections nearby the property that might be used as a sewer connection. From a functional and aesthetic standpoint, on-site dry sanitation systems like Enviroloops and VIP latrines are seen as ideal for the development.
Roads	<p>The site is accessed from the R523 road through the internal streets of Luvhalani village.</p> <p>The access road is a 3-meter-wide earth road. The proposed development location will require an access road to be built from the R523. The length of this access road is 4 kilometres.</p>	<ul style="list-style-type: none"> •The pavement design was done according to Draft TRH4:1996 "Structural Design of Flexible Pavements for Interurban and Rural Roads". •A structural design period of 20 years was considered most appropriate as this is expected to provide a more optimal life cycle strategy when considering initial construction costs and long-term maintenance costs. •A detailed pavement analysis will be done as soon as the geotechnical investigation report has been received.

Electricity	There is existing electricity supply infrastructure in the neighbouring Luvhalani and Tshikuwi villages.	With said power authority's authorization, the development could be powered by the current electrical supply.
Stormwater	On-site storm water can be redirected to follow the ground's natural slope to its lowest point. Storm-water flow from the site will be managed using Sustainable Urban Drainage Systems (SuDS). Before construction can begin, a storm-water management plan must be filed with the municipality. Over the property, excess stormwater from above will be accommodated.	On-site stormwater runoff will be managed by a stormwater system that will be supplied to safely and effectively drain the site. Before being discharged into the natural water courses, stormwater runoff is to be managed using SuDS. The nearby waterways can receive the stormwater discharge. Controls for stormwater discharge will be used to lessen the detrimental effects of the runoff increase brought on by densification.
Solid Waste Management	To dispose of solid refuse, the nearest regional and registered dump to the location should be used. The refuse must be connected to and disposed of by the local municipality. The development owners will need to appoint a private company to offer this service if the municipality is unable to do so. According to the local health ordinances, a garbage area with bins will be installed on-site, and solid waste will be dumped at the municipal dump site.	The solid waste management plan should follow the Neighbourhood Planning and Design Guide, Creating Sustainable Human Settlements, developed by, the Department of Human Settlements, Published by the South African Government, Version 1.1.

Table 6 - Summary of Engineering services and proposed design criteria

10.4. GEOTECHNICAL INVESTIGATION

The following information has been extracted from the draft Geotechnical Investigation report undertaken by Nduna Mabasa of Ntamu Engineers.

The aim of the geotechnical investigation was aimed at defining founding materials and the establishment of broader geotechnical conditions and their suitability for the proposed demarcation of sites.

The site investigation took place on January 27, 2022. Using a TLB, a total of thirty-four (34) experimental pits were progressed to depths ranging from 0 to 2.5 metres beneath the surface (mbgl).

The geotechnical investigation yielded two main Zones in the proposed area i.e. Zone A: Quartzite and Zone B: Sands. The following table indicates a summary of the key findings for Zones A and B.

Finding	Zone A: Quartzite	Zone B: Sand
Topsoil	The colluvium sands found on site are loose, unbroken, dark, clayey, dry to slightly damp, and occasionally include roots in them. This material was found between 0 and 0.1 mbgl deep. At trial	The colluvium sands found on-site are loose, intact, brown, and clayey. They are dry to slightly damp. This substance was found between 0 and 2.5 mbgl deep. Thirteen (13) trial pits at TP12, TP14, TP5, TP16, TP7, TP21, TP25,

	pit TP23, this horizon was found in one (1) location.	TP28, TP30, TP31, TP32, TP33, and TP34 encountered this horizon.
Water seepage	No water seepage present	No water seepage present
Dolomite	Non-dolomitic area	Non-dolomitic area
Foundation recommendations	<p>According to the NHBRC Standards and Guidelines of 1999, the majority of the proposed development is classified as an NHBRC Site Class "2/R," and given the moderate horizon of potentially stable soils that cover this soil zone (aside from areas that may be affected by a flood line), one of the following foundation types should be used. The following systems could be taken into account for rigid, one-story, residential masonry structures:</p> <ul style="list-style-type: none"> - Excavate material to expose basalt bedrock; - Foundations to be erected on bedrock made of basalt; - Normal construction; SABS 0400 Part H reinforcing in masonry foundations. - Use of an authorised damp proof membrane beneath the floor slabs 	<p>According to the NHBRC Standards and Guidelines of 1999, zone B of the proposed development is classified as an NHBRC Site Class 2/C1 and given the moderate horizon of potentially stable and expansive soils that blanket this soil zone (aside from areas that may be affected by a flood line), one of the following foundation systems may be taken into consideration for single-story, rigid, residential masonry structures:</p> <p>Compaction of in situ soils below individual footings</p> <ul style="list-style-type: none"> - Remove existing materials from below foundations to a depth and width that is 1.5 times the width of the foundation or to a competent horizon, and replace them with new materials that have been compacted to a Mod AASHTO density of 93% and have an optimal moisture content of -1 to +2%. - Standard construction with modest strip footing reinforcement. - Modest masonry reinforcing. - Precautions to be made regarding site drainage and plumbing/service. <p>Compaction of in situ soils below individual footings</p> <ul style="list-style-type: none"> - Remove existing materials from below foundations to a depth and width that is 1.5 times the width of the foundation or to a competent horizon, and replace them with new materials that have been compacted to a Mod AASHTO density of 93% and have an optimal moisture content of -1 to +2%. - Standard construction with modest strip footing reinforcement. - Modest masonry reinforcing. - Precautions to be made regarding site drainage and plumbing/service. <p>Soil Raft</p> <p>Replace the existing material with new material that has been compacted to a</p>

		<p>Mod AASHTO density of 93% and has a moisture content between -1 and +2% over the ideal range, up to 1 m beyond the building's perimeter or a competent horizon.</p> <ul style="list-style-type: none"> - Standard construction with modest strip footing reinforcement. - Modest masonry reinforcing. - Precautions to be made regarding site drainage and plumbing/service. - Use of an authorised damp-proof membrane beneath the floor slabs
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Table 7 - Zones A and B's key geotechnical findings

11. ENVIRONMENTAL IMPACT ASSESSMENT

During the Scoping Process, a range of potential impacts that may have a significant impact on the environment have been identified and will be subject to further investigation as part of the Impact Assessment Phase. A summary of the potential environmental impacts that were identified is provided below; further details of the impacts that require further investigation are described in the section below:

11.1. PROCEDURE

The impact significance rating methodology is presented herein in tables 3, 4 and 5, which is guided by the requirements of the NEMA EIA Regulations 2014 (as amended). The methodology addresses possible impacts that can be predicted in the planning, construction and operational phases of the proposed activity. A broad approach to the significance rating methodology is used to determine the environmental risk (ER) by considering the consequence of each impact in terms of Extent, Duration, Intensity, Probability and Significance of the impact occurring. The ER is determined for the pre-and post-mitigation scenarios. In addition, cumulative impacts are taken into account when determining the environmental impact assessment. The impact assessment will be applied to all identified alternatives.

11.2. Description of Potential Impacts to be further investigated.

The following Potential Impacts must be further investigated using the Methodology described below in Tables 3, 4 and 5.

11.2.1. Geology and Soil

During the demarcation of sites, the clearing of vegetation may lead to some soil erosion depending on the soil properties, ground slope, vegetation, and rainfall amount and intensity. During construction, a disturbance in surface geology may occur as a result of laying foundations. The potential impacts relating to geology and soil will be evaluated by a specialist geotechnical report that will elaborate on the underlying geology and the soil composition and texture of the site.

11.2.2. Topography

Erosion during the clearing and construction phases of the project may lead to an impact on the topography. Building material may also alter the topography of the area.

11.2.3. Topsoil and Land use

During the clearing and construction phase of the project, soil recourses including essential topsoil may be impacted. Erosion of topsoil may occur as well as the compaction of the soil.

11.2.4. Fauna

Impact on Fauna may occur as a result of the disruption of habitats during the construction phase and clearing phase of the project.

11.2.5. Flora

A loss in vegetation may occur during the demarcation phase when clearing the area as well as the removal of vegetation before construction activities take place. The site is located within an area marked with a high potential for terrestrial impact.

11.2.6. Air Quality

CO² Emissions from construction vehicles and machinery, as well as dust during the construction phase, will have an impact on air quality.

11.2.7. Archaeology and Palaeontology

The possibility occurs that the construction activity may lead to an impact on Archaeology and Palaeontology aspects.

11.2.8. Visual Impacts

The visual perspective of the property will be changed.

11.2.9. Socio-Economic

Socio-Economic can be divided into the following two categories:

a) Positive Socio-Economic Impacts:

The proposed development will result in job creation during the construction phase of the project and community improvement during the operational phase with the services to be provided.

b) Negative Socio-Economic Impacts:

An increase in criminal activities in the local regions of the proposed activity. Safety impacts may occur as a result of improper safety management on site.

11.2.10. Cumulative Impacts

Cumulative Impacts include a potential change in surface and groundwater source quality. This impact will be investigated further in the Impact Assessment Report.

12. PROPOSED METHODOLOGY FOR ASSESSING ENVIRONMENTAL IMPACTS

Nature	Classification of whether the impact is positive or negative, direct or indirect.
Extent	<p>Spatial scale of impact and classified as:</p> <p>Site: The impacted area is the whole site or a significant portion of the site.</p> <p>Local: Within a radius of 2 km of the construction site.</p> <p>Regional: The impacted area extends to the immediate, surrounding and neighbouring properties.</p> <p>National: The impact can be considered to be of national significance.</p>
Duration:	<p>Indicates the lifetime of the impact and is classified as:</p> <p>Short term: The impact will either disappear with mitigation or will be mitigated through natural processes in a span shorter than the relevant project phase.</p> <p>Medium-term: The impact will last for the period of the relevant project phase in which it takes place, whereafter it will be entirely negated.</p> <p>Long-term: The impact will continue or last for the entire operational life of the development but will be mitigated by direct human action or by natural processes thereafter. The only class of impact will be non-transitory.</p> <p>Permanent: Mitigation either by man or natural process will not occur in such a way or in such a time that the impact can be considered transient.</p>
Intensity:	<p>Describes whether an impact is destructive or benign;</p> <p>Low: Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.</p> <p>Moderate: The affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way.</p> <p>High: Natural, cultural and social functions and processes are altered to extent that they temporarily cease.</p> <p>Very High: Natural, cultural and social functions and processes are altered to extent that they permanently cease.</p>
Probability:	<p>Describes the likelihood of an impact occurring:</p> <p>Improbable: The likelihood of the impact materializing is very low.</p> <p>Possible: The impact may occur.</p> <p>Highly Probable: Most likely that the impact will occur.</p> <p>Definite: Impact will occur.</p>
Significance:	<p>Based on the above criteria the significance of issues was determined. The total number of points scored for each impact indicates the level of significance of the impact and is rated as follows:</p> <p>Low: The impacts are less important.</p> <p>Medium: The impacts are important and require attention; mitigation is required to reduce the negative impacts.</p> <p>High: The impacts are of great importance. Mitigation is therefore crucial.</p>
Cumulative:	In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.
Mitigation:	Where negative impacts are identified, mitigation measures (ways of reducing impacts) have been identified. An indication of the degree of success of the potential mitigation measures is given per impact.

Table 8 - Description of the nature of the possible environmental Impacts.

Criteria for the rating of impacts				
Criteria	Description			
Extent	National	Regional	Local	Site
Duration	Permanent	Long-term	Medium-term	Short-term
Intensity	Very high	High	Moderate	Low
Probability	Definite	Highly probable	Possible	Improbable
Points allocation	4	3	2	1

Table 9 Point Allocation for the rating of Impacts.

Significance of Rating classified impacts		
Impact	Points	Description
Low	4-6	A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure.
Medium	7-9	Mitigation is possible with additional design and construction inputs.
High	10 -12	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.
Very high	13-16	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.
Status	Perceived effect of the impact	
Positive (+)	Beneficial impact	
Negative (-)	Adverse impact	
Negative impacts are shown with a (-) while positive ones are indicated as (+)		

Table 10 The significance of the ratings on proposed impacts.

Project Phase	Environmental aspect: Air quality							Significance		Possible mitigation
	Activity that causes impact	Specific impact	Intensity	Duration	Extent	Probability	Before mitigation	After mitigation		
Construction	Earthworks and vegetation clearance	Air Pollution by excessive dust formation	Before mitigation				Medium	Low	<ul style="list-style-type: none"> • Construction sites should be wet to limit dust formation. The internal gravel roads must be maintained regularly through grading or watering. • As the construction advances, areas should be cleared in stages. The cleaned topsoil should be stacked so that wind and rain can't transport it. This can be accomplished by limiting stockpile height to 1.2 m, covering it, and/or sandbagging it. 	
			1	2	2	3				
			After mitigation							
			1	1	1	1				
	Movement of construction vehicles	Air Pollution by excessive fumes/CO ₂ emissions (smoke and dust)	Before mitigation				Medium	Low	<ul style="list-style-type: none"> • Construction staff must adhere to a speed restriction of 30-40 km/h within the site borders as well as on the access road. • To avoid producing excessive smoke, construction vehicles and machinery must be serviced sufficiently • Construction should be limited to the hours between sunrise and sunset on weekdays. 	
			1	2	2	3				
			After mitigation							
			1	2	1	2				
	Burning of cleared vegetation	Air pollution by excessive smoke	Before mitigation				Medium	Low	<ul style="list-style-type: none"> • The construction teams' solid waste or any cleared vegetation may not be burned on-site or in the nearby areas, but rather disposed of at designated waste removal sites. 	
			2	1	2	2				
			After mitigation							
			1	1	1	1				
Accidental fires	Air pollution by excessive smoke	Before mitigation				Low	Low	<ul style="list-style-type: none"> • According to the National Veld and Forest Fire Act, veld fires should be avoided whenever feasible by using fire breaks. Vegetation removal should be limited to construction sites. 		
		2	1	2	1					
		After mitigation								

Operation			1	1	1	1			
	The use of fires for cooking	Air pollution by excessive smoke	Before mitigation				Low	Low	<ul style="list-style-type: none"> No open fires for cooking or other possible uses are permitted on the construction site to prevent unnecessary veld fires to take place.
			1	2	1	2			
			After mitigation						
			1	1	1	1			
	Burning of fossil fuels and waste	Air pollution by excessive smoke	Before mitigation				Medium	Low	<ul style="list-style-type: none"> Individuals are not permitted to burn solid waste or vegetation on their property and should rather be disposed of at approved municipal disposal sites.
			2	2	2	3			
			After mitigation						
			1	1	1	1			
	Veld fires	Air pollution caused by smoke	Before mitigation				Medium	Low	<ul style="list-style-type: none"> Make sure your firebreaks are in place and that they are wide and long enough to stop a fire. Provide adequate emergency vehicle access and water supply.
			3	1	3	2			
			After mitigation						
		1	1	1	1				
Increased movement of private and public vehicles	Air pollution due to an increase in fumes from vehicles and dust from the roads	Before mitigation				High	Medium	<ul style="list-style-type: none"> The developer does not influence over this period, but each household is responsible for ensuring that the environment is not harmed. 	
		2	3	2	4				
		After mitigation							
		2	2	1	2				

Table 11-Air Quality: Environmental Impact Significance and Possible mitigation measures

Project Phase	Environmental aspect: Noise							Significance		Possible mitigation
	Activity that causes impact	Specific impact	Intensity	Duration	Extent	Probability	Before mitigation	After mitigation		
Construction	Presence of the construction camp as well as the construction workers	Increased noise level, nuisance & disturbance to the surrounding public	Before mitigation				Medium	Low	<ul style="list-style-type: none"> • Building/construction should only be done during daylight hours. No construction on Sundays and public holidays. • Contractors are required to follow provincial noise rules. 	
			1	2	1	3				
	After mitigation				Medium	Low				
	1	1	1	1						
Construction	Operation of construction vehicles and equipment	Disturbance & nuisance to surrounding landowners or residents.	Before mitigation				Medium	Low	<ul style="list-style-type: none"> • Construction vehicles, machinery, and equipment must be properly maintained to avoid excessive noise. • To prevent noise generation, construction staff must adhere to speed limits of 30-40 km/h within the site borders and on the access road. • Construction equipment must be furnished with noise mufflers; the equipment and its exhaust systems must be properly maintained. 	
			1	2	2	3				
	After mitigation				Medium	Low				
	1	1	1	2						
Operation	Increased vehicle movement	Disturbance and nuisance to the surrounding landowners or residents	Before mitigation				Medium	Low	<ul style="list-style-type: none"> • The developer does not influence over this period, but each home is responsible for ensuring that the environment is not harmed. • Municipal by-laws regulate the amount of noise in a township. • Speed limits are strictly enforced by law. 	
			2	2	2	3				
	After mitigation				Medium	Low				
1	1	1	1							

Table 12 - Noise: Environmental Impact Significance and Possible mitigation measures

Project Phase	Environmental aspect: Geology and Soil							Significance		Possible mitigation
	Activity that causes impact	Specific impact	Intensity	Duration	Extent	Probability	Before mitigation	After mitigation		
Construction	Construction vehicle leaks or spills and spills from temporary fuel/oil/chemical storage areas	Contamination/pollution of soil.	Before mitigation				Medium	Low	<ul style="list-style-type: none"> To prevent leaks and spills, construction vehicles must be well-maintained and serviced. Spill sorbs should be used if spills occur. When refuelling and servicing construction vehicles or equipment, drip pans should be used as well as parking them under stationary construction vehicles and equipment. Vehicle and equipment refuelling and servicing should ideally take place at the building contractor's workshop rather than on-site. Used or spilt oil must be recycled at a nearby oil refinery or recycling plant. The temporary vehicle maintenance yard and storage area should be gated and at least 100 meters away from wetlands, sponges, and surface streams. 	
			2	3	1	2				
			After mitigation							
			1	1	1	1				
	Spillage Caused by a temporary sanitation system	Contamination/pollution of soil.	Before mitigation				Medium	Low		
			2	1	1	3				
			After mitigation							
			1	1	1	1				
	On-site storage and disposal of construction debris, household waste, and litter are unsatisfactory	Soil pollution + nuisance to the public.	Before mitigation				Medium	Low		
2			2	1	3					
After mitigation										
1			1	1	1					

	Stormwater runoff is excessive particularly on slopes, roads, and cleared areas	Soil degradation/erosion along roads and steep slopes.	Before mitigation 3 2 2 3	High	Medium	<ul style="list-style-type: none"> • Vegetation removal must be limited to the proposed location; excessive vegetation clearing must be avoided to minimize soil erosion. • To prevent erosion, cleared areas should be re-vegetated preferably with indigenous vegetation or paved as quickly as possible. Erosion will be limited by berms that restrict the passage of water across cleared areas. • Stormwater diversion channels must be built into the gravel roads utilized during construction to decrease the flow of water over the road surface. This will help to decrease erosion on steep slopes and water catchment
			After mitigation 2 1 1 2			
	Structural changes to the geology and soil during the excavation of service trenches and foundations	Soil degradation / Erosion	Before mitigation 2 2 1 4	Medium	Low	<ul style="list-style-type: none"> • Trenches must be restored as soon as possible after construction to prevent further topsoil loss due to wind or runoff floods. • Wherever possible, trenches should be dug alongside roads to minimize their impact. Trenches from engineering services should be filled, compacted, and slightly raised above the nearby grounds. • A site-specific Geotechnical investigation should be conducted before construction starts to determine and evaluate the structure and characteristics of the underlying soils and geology in terms of foundation design and access roads, as well as the suitability of the underlying soil material as construction materials • Temporary erosion control: silt fencing, temporary silt trap basins, short-term seeding or mulching of exposed soil areas, restrictions on heavy machinery access and material storage to prevent soil compaction • Permanent erosion control: Minimize the amount of bare soil by staggered earthworks and leaving as much ground cover as achievable throughout construction. Protect erosion-prone regions and ensure that activities within and next to the construction camp and work zones do not result in excessive soil erosion. For adequate rehabilitation growth, repair all erosion damage promptly, no later than six months before the maintenance period ends. Limit the concentration of surface or stormwater and the flow down of water through or fill
			After mitigation 1 1 1 2			

			After mitigation			runoff and put less strain on the water system.
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Table 13 - Geology and Soil: Environmental Impact Significance and Possible mitigation measures

Project Phase	Environmental aspect: Ecology – Fauna and Flora							Possible mitigation	
	Activity that causes impact	Specific impact	Intensity	Duration	Extent	Probability	Significance		
							Before mitigation		After mitigation
Construction	Negligent clearing of vegetation and earthworks	Plant and animal species native to the area are lost. Disturbance of a sensitive ecosystem	Before mitigation				Medium	Low	<ul style="list-style-type: none"> • Areas with a high sensitivity must be avoided • Vegetation removal should be limited to building zones. • It's important to avoid clearing vegetation that isn't necessary. Wherever possible, natural vegetation should be preserved; huge trees should not be removed but rather incorporated into the design plan. • Wherever possible cleared vegetation should be composted to preserve the soil fertility. • Cleared vegetation, especially of alien species, should be heaped up and transported to the nearest landfill site.
			3	3	1	2			
	After mitigation								
	1	1	1	1					
On-site of veld fires	Destruction of ecosystems and the destruction of indigenous flora and fauna.	Before mitigation				Medium	Low		
		3	1	2	2				
After mitigation									
1	1	1	1						
Spillage caused by a temporary sanitation system	Contamination of the water and ground can lead to the destruction of fauna and flora as well as being a public nuisance	Before mitigation				Medium	Low		
		3	1	1	2				
After mitigation									
1	1	1	1						
Littering on the side of the road and construction sites	A public annoyance as well as loss of native fauna and flora	Before mitigation				Medium	Low	<ul style="list-style-type: none"> • At the construction camp and sites, there should be an appropriate amount of animal-proof waste bins to avoid littering. • To reduce the impact of littering generated by construction 	
		2	3	2	2				

Operation			After mitigation			operations, regular clean-up programs will be implemented along the access road and throughout the grounds. • Construction debris and household rubbish should be hauled to the nearest landfill regularly.
			1 1 1 1			
	Construction of Fencing around the site	Disturbance of accessible habitats small mammals, reptiles, and amphibians may be restricted from moving	Before mitigation	High	Medium	• Where possible use natural barriers or fences such as plants or trees. • Use fencing rather than walls where possible to ensure that some movement of small animals and amphibians is still possible.
			2 3 2 3			
			After mitigation			
			1 2 2 2			
	The killing of animals for food or through the use of poisonous pesticides or herbicides	Direct and indirect loss of species as a result of killing animals for food or a disturbance in the cycle of life	Before mitigation	Medium	Low	• Construction employees are not allowed to kill, capture, or hunt animals on site. • Poisonous pesticides and herbicides should never be used to control animals without consulting an ecologist or zoologist beforehand, non-toxic and environmentally friendly alternatives should be considered.
			3 1 1 2			
			After mitigation			
			1 1 1 1			
Planting indigenous vegetation in gardens	Improve native biodiversity	Before mitigation	Medium Positive Impact	N/A		
		2 3 1 3				
		After mitigation				
Cleared areas are being restored using indigenous vegetation.	Improve the native biodiversity and provide habitat for indigenous species.	Before mitigation	High Positive Impact	N/A		
		3 4 2 3				
		After mitigation				
Cleared regions are being restored not using indigenous flora	Exotic invasive plant species will spread causing a	Before mitigation	Medium	Low	• Residents should be encouraged to plant indigenous vegetation around their homes and in their yards.	
		2 3 1 2				

	loss in habitat and indigenous plants.	After mitigation			
		1 2 1 1			
Leaks from the Sanitation System	Destruction and pollution to ecosystems as well as being a public annoyance.	Before mitigation	Medium	Low	<ul style="list-style-type: none"> The sewage treatment system should be inspected regularly to ensure that no spills or leaks from the sanitation system reach groundwater or surface water.
		3 3 1 2			
		After mitigation			
		1 1 1 1			
Veld fires are caused by open fires or the burning of vegetation	The loss of indigenous fauna & flora	Before mitigation	Medium	Low	<ul style="list-style-type: none"> Fires should only be permitted in approved areas, using caution to avoid veld fires. The National Veld and Forest Fire Act of 1998 should be followed while building firebreaks.
		3 1 2 2			
		After mitigation			
		1 1 1 1			
Controlling pests and vermin in an unsafe way. Such as using poisonous herbicides or pesticides	Poisoning and killing of wildlife that feeds on poisoned insects or pests	Before mitigation	Medium	Medium - Low	<ul style="list-style-type: none"> Poisonous pesticides and herbicides should never be used to control animals without consulting an ecologist or zoologist beforehand, non-toxic and environmentally friendly alternatives should be considered.
		2 3 2 2			
		After mitigation			
		1 2 1 1			
The construction of barriers such as walls or fences.	Disturbance of accessible habitats small mammals, reptiles, and amphibians may be restricted from moving	Before mitigation	High	Medium	<ul style="list-style-type: none"> Where possible use natural barriers or fencings such as plants or trees. Use fencing rather than walls where possible to ensure that some movement of small animals and amphibians is still possible
		3 3 2 3			
		After mitigation			
		2 2 1 2			
The killing of animals for food	Direct and indirect loss of species as a result of killing animals for food or	Before mitigation	Medium	Low	<ul style="list-style-type: none"> Construction employees are not allowed to kill, capture, or hunt animals on site. Poisonous pesticides and herbicides should never be used to control animals without consulting an ecologist or zoologist
		3 1 1 2			
		After mitigation			

Project Phase	Environmental aspect: Socio-economic and Heritage							Significance		Possible mitigation
	Activity that causes impact	Specific impact	Intensity	Duration	Extent	Probability	Before mitigation	After mitigation		
Construction	Negligent earth-moving and soil-clearing practices	Archaeological and heritage sites are being desecrated.	Before mitigation				Medium	Low	<ul style="list-style-type: none"> During the construction process, anything of historical significance that is uncovered must be noted and reported to the Heritage Specialist or SAHRA, construction at the area where the feature was uncovered must cease until the heritage specialist gave the go-ahead. 	
			3	2	1	2				
	After mitigation									
	1	1	1	1						
Construction	Job creation temporarily	Job creation causes an improvement in Socioeconomic aspects of the community	Before mitigation				High Positive Impact	N/A		
			3	2	3	3				
	After mitigation									
Operation	Improper or incorrect running of activities	Archaeological and heritage sites are being desecrated.	Before mitigation				Medium	Low	<ul style="list-style-type: none"> During the operational phase, anything of historical significance that is uncovered must be noted and reported to the and the Heritage Specialist or SAHRA, construction at the area where the feature was uncovered must cease until the heritage specialist gave the go-ahead. 	
			3	3	1	1				
	After mitigation									
	1	1	1	1						
Operation	Job creation permanently	Job creation causes an improvement in Socioeconomic aspects of the community	Before mitigation				High Positive Impact	N/A		
			3	3	3	3				
	After mitigation									

Table 15 - Socio-economic and Heritage: Environmental Impact Significance and Possible mitigation measures

Project Phase	Environmental aspect: Visual							Possible mitigation	
	Activity that causes impact	Specific impact	Intensity	Duration	Extent	Probability	Significance		
							Before mitigation		After mitigation
Construction	Construction errors, temporary camp, and vegetation removal	Visual Disturbances	Before mitigation				Medium	Low	<ul style="list-style-type: none"> To minimize the visual impact, cleared areas should be re-vegetated with indigenous vegetation as soon as possible following construction.
			2	2	1	3			
			After mitigation						
	The installation of security lights	Visual disturbance and annoyance	Before mitigation				Medium	Low	
			1	2	2	2			
			After mitigation						
Littering by the construction crew	Visual disturbance and annoyance	Before mitigation				Medium	Low		
		1	2	2	3				
		After mitigation							
1	1	1	1						
Operation	The addition of buildings and infrastructure as a result of the projected development is present.	Visual disturbance	Before mitigation				High	Medium	<ul style="list-style-type: none"> As much as possible, electricity should be distributed via subterranean cables from existing power lines to various development zones. As little as possible bright colours should be used in the buildings and infrastructure (excluding boards) to blend in with neighbouring residential areas and to minimize the visual effect.
			2	4	2	4			
			After mitigation						
	Brightness as a result of lights in the infrastructure	Residents are bothered by the increased brightness	Before mitigation				High	Low -Medium	
			1	3	3	3			
			After mitigation						
1	2	1	1						

Table 16 - Visual: Environmental Impact Significance and Possible mitigation measures

Project Phase	Environmental aspect: Water quality and quantity							Possible mitigation	
	Activity that causes impact	Specific impact	Intensity	Duration	Extent	Probability	Significance		
							Before mitigation		After mitigation
Construction	Fuel and grease spillage from construction vehicles and temporary fuel, oil, and chemical storage	Pollution of water resources by chemicals, human health and biodiversity are both affected	Before mitigation				Medium	Low	<ul style="list-style-type: none"> All vehicles on the site should be serviced regularly at a place preferably away from the site to avoid or reduce the danger of water contamination from spills or leaks. Drip pans should be used during the refuelling of vehicles on-site and during necessary servicing that can't take place off-site. The drip pans should also be placed underneath stationary site vehicles and equipment. Used parts (such as filters) should be contained and disposed of at a place licensed for dumping waste products. Oil that has been used or spilt should be transferred to a nearby oil refinery or recycling plant to be recycled.
			2	2	1	3			
	After mitigation								
	1	1	1	1					
On-site storage and disposal of construction debris, solid waste, and litter	Pollution of water resources, human health and biodiversity are both affected	Before mitigation				Medium	Low		
		2	2	2	3				
After mitigation		1	1	1	1				
Over-use of water during Construction activities and dust abatement along internal roads and at construction sites	Depletion of water resources used for construction purposes	Before mitigation				Medium	Low		
		1	2	2	2				
After mitigation		1	1	1	1				
Leaks and spills from temporary sanitation stations	Pollution of water resources, human health and biodiversity are both affected	Before mitigation				Medium	Low	<ul style="list-style-type: none"> Temporary sanitary facilities should not be located on steep slopes or within 100 meters of surface water, and a ratio of one toilet for every 15 workers on site should be maintained. A licensed operator must maintain and service temporary sanitation systems. 	
		2	2	1	2				
After mitigation		1	1	1	1				

	Runoff from stormwater over cleared areas, roads, and trenches	The turbidity of the water increases causing the quality of the water to deteriorate	Before mitigation 1 2 2 2 After mitigation 1 1 1 1	Medium	Low	<ul style="list-style-type: none"> Cleared areas should be restored as quickly as possible by reinstalling indigenous plants or paving to avoid erosion and water quality degradation. Only necessary vegetation removal should take place at the building zones to avoid soil barren land.
	Stockpiles from Construction and clearing materials, wind and rain are used to transport accumulated material	The turbidity of the water increases causing the quality of the water to deteriorate as well as pollution of water resources	Before mitigation 2 1 2 2 After mitigation 1 1 1 1	Medium	Low	<ul style="list-style-type: none"> Stockpile heaps should not exceed 2.0 meters in height and should ideally be covered with mulch and remain weed-free. Stockpiles should not be compacted, and no objects should be placed or heaped on top of it. Stockpile topsoil for the shortest possible time, i.e., strip immediately before the required activity begins and refill as soon as it is finished.
	Spillages and leaks caused by construction work (e.g. bitumen, mixing of concrete, cement, paints etc.)	Pollution of water resources	Before mitigation 2 2 1 2 After mitigation 1 1 1 1	Medium	Low	<ul style="list-style-type: none"> Cement, concrete, paints, and other similar materials must be mixed in authorized locations within concrete aprons or on protective plastic linings to prevent spillages into surface or groundwater resources.
Operation	Pollution of water resources due to the discharge and storage of household waste	The pollution will impact both human health and biodiversity	Before mitigation 2 3 1 3 After mitigation 1 1 1 1	Medium	Low - Medium	<ul style="list-style-type: none"> No solid waste or garden waste may be burned on the premises. Solid garbage should be disposed of in waste bins at a permitted disposal location.

	Excessive use by invasive species	Water use by exotic plant species	Depletion of surface and groundwater water resources	Before mitigation				Medium	Low	<ul style="list-style-type: none"> Promote the use of indigenous plants to be planted in gardens to minimize the use of water. If applicable, any exotic weed/plant species should be eradicated. They increase water absorption of the surface and groundwater resources.
				1	3	2	3			
	After mitigation				Medium	Low				
	1	2	1	1						
	Water use for domestic purposes	Overuse and possible depletion of available water sources	Before mitigation				High	Medium	<ul style="list-style-type: none"> Water consumption for building and home use is unavoidable, but wastewater must be avoided. 	
			2	2	3	4				
	After mitigation				High	Medium				
	1	1	1	2						
	Leaks from sanitation systems	Biological pollution impacts human health and the biodiversity	Before mitigation				Medium	Low	<ul style="list-style-type: none"> Any leaks or malfunctions in the sanitation system must be recorded and fixed as soon as possible. 	
			2	3	2	2				
	After mitigation				Medium	Low				
	1	1	1	1						
Contaminated surface run-off	Water pollution and destruction of aquatic ecosystems	Before mitigation				Medium	Low	<ul style="list-style-type: none"> Stormwater capacity should be well-designed to minimize surface pollution through contaminated surface runoff. 		
		2	3	2	2					
After mitigation				Medium	Low					
1	1	1	1							

Table 17- Water quality and quantity: Environmental Impact Significance and Possible mitigation measures

13.PUBLIC PARTICIPATION

The public participation process was undertaken following regulations as set in Regulation 54 of the EIA regulations. The process followed to conduct public participation is presented in figure 2 below.

Public Participation Process

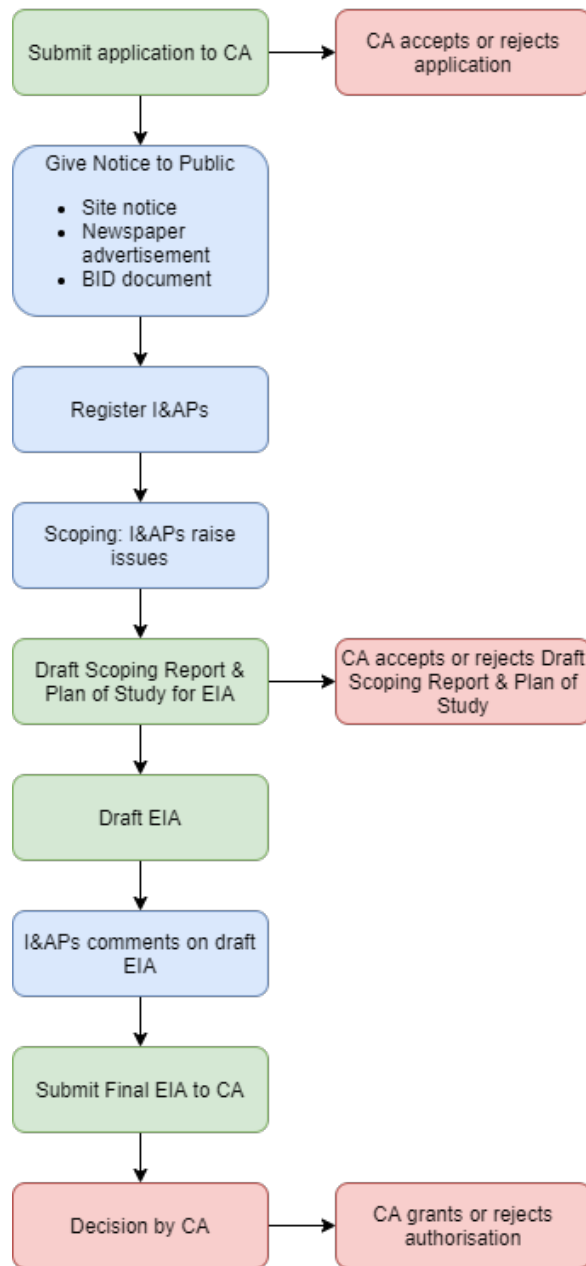


Figure 10 - Public Participation Process

13.1. NOTICE TO THE PUBLIC / I&AP REGISTRATION PERIOD

The commencement of the EIA process / I&AP registration period is to be advertised for 30 days through the use of a newspaper advertisement in the **Limpopo Mirror** on **25/02/2022**, site notices and the list of stakeholders who will be directly notified:

- Publication of a notice in English will be posted in the local newspaper (The Limpopo Mirror).
- Site notices in English and Venda describing the proposed development and location, as well as contact details for where more information is needed will be placed near the site as well as in communal areas close to the proposed site; see
- Direct notification of identified Interested and/or Affected Parties (I&APs).
- The public will be informed following a meeting with the Chief of the area. Background Information Documents (BID) presented in English and Venda will be handed out in the areas surrounding the proposed site as well as explaining the proposed project to the public. The sole purpose thereof is to allow members of the public and stakeholders to communicate with the project team to obtain information about the proposed project and to have their comments, queries and/or concerns addressed.

13.2. AVAILABILITY OF CONSULTATIVE ENVIRONMENTAL IMPACT ASSESSMENT REPORT FOR REVIEW AND COMMENT

This consultative Environmental Impact Assessment Report is currently available for public review and comment for a period from 27 JULY 2022 to 29 AUGUST 2022. All registered Interested and Affected Parties are welcomed to request electronic copies through an email, and such will be provided accordingly.

14. PLAN OF STUDY FOR ENVIRONMENTAL IMPACT ASSESSMENT

The following Plan of Study for EIA sets out the proposed approach to the Environmental Impact Assessment phase of the application. Description of the tasks to be undertaken during the Scoping and Environmental Impact Assessment Process as well as the tasks that have been undertaken are summarized below, with details of the tasks to be undertaken provided in more detail. Please see the full Plan of Study attached in **Appendix D**.

15. CONCLUSION AND RECOMMENDATIONS

The purpose of this report is to provide the relevant authority (LEDET) with sufficient information regarding the potential impacts of the proposed demarcation of sites to make an informed decision regarding the approval of the Environmental Impact Assessment report. Potential impacts were identified in consultation with I&APs and technical specialists (where applicable) and were assessed using a matrix and by applying professional knowledge.

An EIA was undertaken to identify all the potential risks and impacts associated with each phase of the proposed demarcation of sites activities as well as potentially feasible alternatives. The identification of probable consequences was guided by background information on the surrounding areas, biodiversity, cultural heritage, geotechnical and bulk engineering specialist assessment reports, as well as the National Web-based Environmental Screening Tool Report. During the various project phases, all of the identified risks and implications were evaluated. The extent, duration, intensity, probability, significance, and cumulative impact of the potential impacts were among the assessment criteria.

The potentially significant negative and positive impacts that have been identified should be mitigated through the implementation of the mitigation measures contained in Section 12 of this report.

Impacts with a rating of High are impacts that are regarded as potentially significant, rated without any mitigation measures. In this impact assessment, the following impacts were regarded as potentially significant impacts:

- i. Increased movement of private and public vehicles
- ii. Stormwater runoff is excessive on-site, particularly along slopes, roads, and cleared areas.
- iii. Improper disposal, storage and littering of solid waste
- iv. Construction of Fencing around the site
- v. The construction of barriers such as walls or fences.
- vi. The addition of buildings and infrastructure as a result of the projected development is present.
- vii. Brightness as a result of lights in the infrastructure
- viii. Water use for domestic purposes
- ix. Job creation temporarily (POSITIVE)
- x. Job creation permanently (POSITIVE)
- xi. v. Cleared areas are being restored using indigenous vegetation (POSITIVE).

It is submitted that the proposed mitigation measures, will effectively diminish the impacts to acceptable levels. Given the socio-economic requirements of the development, the residual impacts are not of sufficient importance to prevent the development.

It is the professional opinion of GLOBAL GEO ENVIRO SPECIALISTS that the proposed development does not present any fatal flaws in terms of negative impacts on the environment and therefore will not have any significant detrimental impacts to render the project unfeasible.

The Department is therefore respectfully requested to evaluate this Impact Assessment Report, as part of an application that has been lodged in terms of Chapter 5 of the National Environment Management Act, 1998(Act no 107 of 1998), in respect of the activities identified in Government Notices R545.

15.1. RECOMMENDATIONS AND CONDITIONS

It is proposed that the following conditions must be included in the Environmental Authorisation if the project is authorised:

- Throughout the entire project, the EMPr should be followed.
- An independent environmental control officer (ECO) has been recommended for this project and will be in charge of ensuring adherence to the EA and EMPr. Should non-compliance occur, this representative will be held accountable.
- Before saving, relocating, or destroying any protected species, permission under the National Forest Act or a permit for threatened or protected species must be obtained. Moreover, clearance must be restricted to the proposed layout that is proposed in the EIA report.
- Surface water features nearby cannot be impacted without the Department of Water and Sanitation's consent (DWS).
- Invasive and alien species need to be properly managed and eliminated (where relevant).

16. APPENDICES