24G Rectification Process for the commencement of the expansion of Ximuwu Lodge, Klaserie Private Reserve, Bushbuckridge Local Municipality, Mpumalanga Province

Draft Section 24G Report

24 March 2023

CORE Environmental Services
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EXECUTIVE SUMMARY

Mr. Patrick Suverein is applying for Environmental Authorisation by means of a Section 24G application process, for commencing with the expansion of Ximuwu Lodge, prior to obtaining Environmental Authorisation (EA) from the DARDLEA. As the expansion of Ximuwu Lodge already commenced without obtaining the required approval from the DARDLEA, a Section 24G Environmental Authorisation Application is being applied for in accordance with the National Environmental Management Act 107, 1998.

Mr. Patrick Suverein subsequently appointed Core Environmental Services to apply for the EA by means of conducting a Section 24G Environmental Authorisation Process

The operation of the expansion of Ximuwu Lodge is likely to result in environmental and socio-economic impacts. The identified impact areas are listed below and discussed thereafter:

- *Impact on biodiversity*
- *Impact on soil;*
- *Waste generation and disposal*
- *Impact on water resources;*
- *Socio-economic*

The table below summarises the impacts identified and assessed for the operational of the project:

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Operational Impacts		
Alien invasives	Medium	Low
Loss of flora SCC	Very low	Very low
Loss of fauna SCC	Very low	Very low
Dispersal of flora and fauna	Medium	Low
Erosion	Very low	Very low
Waste Generation and disposal	Medium	Low
Groundwater contamination	Low	Very low
Socio-economic impact	High (+)	High (+)

The assessment of the possible impacts associated with the operational activities, concluded that the impact on the surrounding environment is of **medium to low significance**. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment. It is recommended that proactive measures are taken to minimise the spread of alien invasive vegetation. Recommendations for the mitigation of impact are included within Section 6 and also the Draft Environmental Management Plan attached.

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation.

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ABBREVIATIONS

BAR	Basic Assessment Report
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association South Africa
I&AP	Interested and Affected Party
MDARDLEA	Mpumalanga Department of Agriculture, Rural Development, Land and Administration
MTPA	Mpumalanga Tourism and Parks Agency
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
PPP	Public Participation Process
SACNASP	South African Council for Natural Scientific Professions

1. OVERVIEW OF THE PROJECT

1.1 Introduction

Mr. Patrick Suverein is applying for Environmental Authorisation by means of a Section 24G Environmental Authorisation application process, for commencing with the construction of the expansion of Ximuwu Lodge, within the Klaserie Private Reserve, prior to obtaining Environmental Authorisation (EA) from the Department of Agriculture Rural Development Land and Environmental Affairs (DARDLEA). As the construction activities for the expansion of Ximuwu Lodge already commenced without obtaining the required approval from the DARDLEA, a Section 24G Environmental Authorisation Application is being applied for in accordance with the National Environmental Management Act 107, 1998.

Mr. Suverein commenced construction activities in September 2021 and completed all construction activities in 2022. Mr. Suverein received a Pre-Compliance Notice from the Department of DARLDEA on 6 December 2022. Following receipt of the Pre-Compliance Notice, Mr. Patrick Suverein appointed Core Environmental Services to apply for the EA by means of conducting a Section 24G Environmental Authorisation Process.

1.2 Location

The site is located on Portion 2 of Farm Hull 92 KU within Klaserie Private Nature Reserve, located within the Ehlanzeni District, Mpumalanga Province, South Africa.

Coordinates:
24°18'.10.18" S
31°5'12.42" E

Surveyor General Code: T0JU00000000009200002

Please refer to the locality map below, Figure 1.

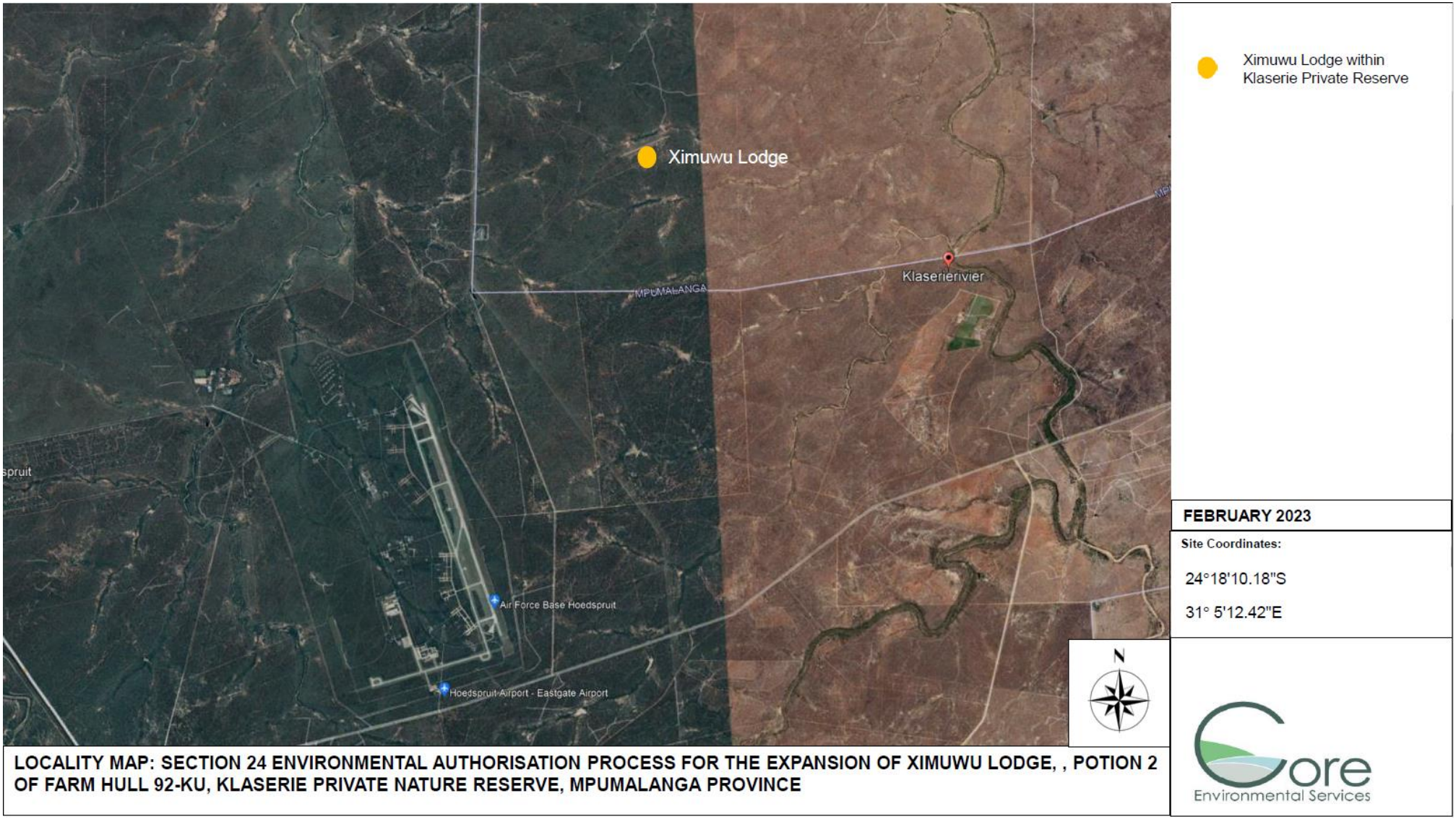

FIGURE 1: LOCALITY MAP – XIMUWU LODGE ON PORTION 2 OF THE FARM HULL 92-KU, KLASERIE PRIVATE NATURE RESERVE

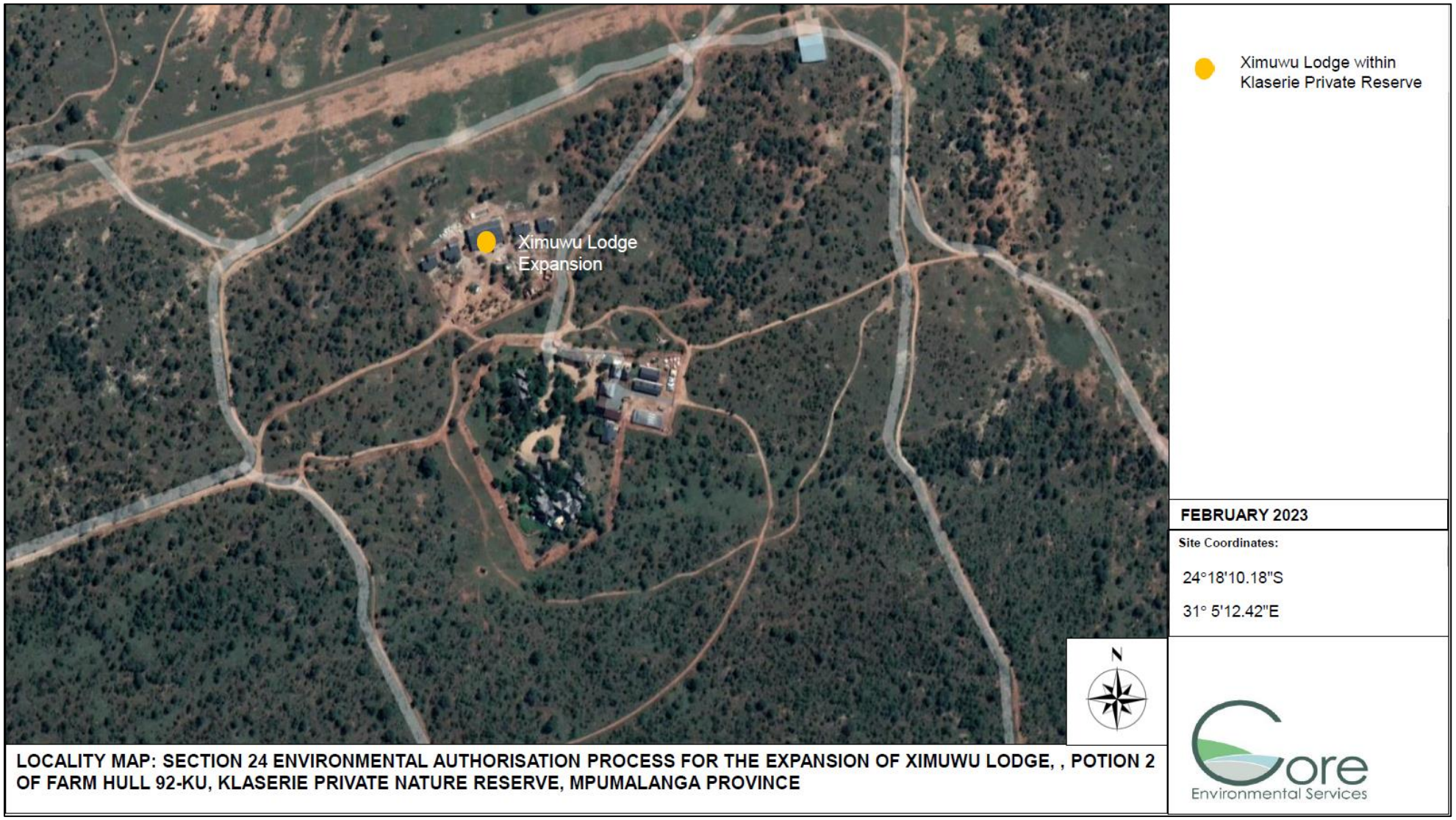

FIGURE 2: LARGE SCALE MAP OF THE AREA OF EXPANSION – XIMUWU LODGE, KLASERIE PRIVATE NATURE RESERVE

1.3 Details of the EAP

Ms. Anne-Mari White is an Environmental Specialist, who started her studies at the North-West University (NWU) and completed her Bachelor of Science: Environmental Management at the University of South Africa (UNISA) in 2007. Ms. White is registered with the Environmental Assessment Practitioners Association of South Africa (EAPASA Reg No: 2020/602) as well as the South African Council for Natural Scientific Professionals as a Certificated Natural Scientist (Reg. No 300067/15). In addition to her qualification, she completed short courses in soil classification and wetland delineations (Terrasoil Science), Geographic Information Systems (University of KwaZulu-Natal), and Environmental Impact Assessments (NWU).

1.4 Policy Legal and Administrative Framework

1.4.1 National Environmental Management Act 107, 1998

In accordance with the National Environmental Management Act 107, 1998, GNR985, 2014 (as amended in 2017), the following listed activities apply for the project and therefore requires Environmental Authorisation:

GNR985, 2014 (as amended in 2017), Activity 5:

The development of resorts, lodges, hotels, tourism or hospitality facilities that sleep less than 15 people within Mpumalanga, within a Protected Area.

GNR985, 2014 (as amended in 2017), Activity 12:

The clearance of an area of 300 square meters or more of indigenous vegetation within Mpumalanga, within a Protected Area.

As the above activities have already commenced and been completed, Environmental Authorisation is applied for by means of conducting a Section 24G Environmental Authorisation application process in accordance with GNR982, of 2014 (as amended).

Other national, provincial or local legislation applicable to the proposed project, is indicated in Table 1, below.

TABLE 1: LEGISLATION APPLICABLE TO THE PROJECT

Applicable legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments considered	Project application and type (permit / licence / authorisation / comment)
The Constitution of South Africa, Act No. 108 of 1996	Mr. Patrick Suverein will be required to adhere to the Environmental Management Programme (EMPr) requirements to ensure that social and environmental management considerations are considered and implemented. As per Section 25 the Constitution, a public participation process (PPP) was and will continue to be undertaken, as this is considered to be an essential mechanism for informing stakeholders of their rights and obligations in terms of the project.
National Environmental Management Act, 1998 (Act No. 107 of 1998)	Environmental Authorisation was however not applied for prior to the construction of a bunded area to store fuel which will exceed 80 000 litres carrying capacity and therefore a Section 24G rectification process is undertaken to obtain Environmental Authorisation for the above listed activity.
National Water Act, 1998 (Act No. 36 of 1998)	Water is a scarce resource and must subsequently be managed in accordance with the National Water Act 36 of 1998.
Conservation of Agricultural Resources Act, 1983 (Act No. 43 of 1983)	The Act provides for the control over the utilisation of the natural agricultural resources of the Republic in order to promote the conservation of soil, water, and vegetation and the combatting of weeds and invader plant species. Mr. Patrick Suverein must comply with the regulations included within the CARA 43 of 1983, to ensure the preservation of soil, water resources, and vegetation and prevent the spreading of invader plant species.
National Heritage Resources Act, 1999 (Act No 25 of 1999)	This legislation aims to promote good management of the national estate, and to enable and encourage communities to nurture and conserve their legacy so that it may be bequeathed to future generations.

Mpumalanga Spatial Development Framework (MSDF) Draft (2013)	The MSDF has a vision to provide: *"a sustainable urban and rural spatial development pattern focused on a modern, ecologically sustainable economy, supported by a suitably skilled labour force and providing for quality of living* [emphasis added]*."* The underlined portions of the Vision address those aspects which are applicable to this project: ● Mr. Patrick Suverein will provide permanent job opportunities to employees. ● The implementation of the Environmental Management Programme (EMPr) associated with this application will ensure that the quality of the environment directly and indirectly affected by the operations of the tourism facility does not deteriorate or is limited as far as reasonably possible.
Bushbuckridge Local Municipality Integrated Development Plan (IDP) (2022/2023 – 2026/2027)	The primary objective of the Bushbuckridge Economic Growth and Development Path is to prioritise job creation and sustainable livelihood development as one of the outcomes for 2018-2022. Job opportunities was and is created by the expansion of Ximuwu Lodge. The livelihood of individuals is therefore impacted positively.
National Biodiversity Act 10 of 2004	This Act states that biodiversity must be managed and conserved in the manner indicated in the National Environmental management Act, 1998. It emphasises the protection of species and ecosystems, sustainable use of natural resources and the equitable sharing of benefits concerned with the bioprospecting of natural resources. Due to the sensitive and protected surrounding environment, Mr. Patrick Suverein ensure compliance with the National Biodiversity Act.

1.5 Description of the project

The expansion of the lodge entailed the construction of the following:

- A main area (400m²)
  - Lounge, Toilet, TV Room and Library,
  - Dining room, and
  - Kitchen.
- 4 Ensuite Bedrooms (100m² each);
- Two buildings for staff accommodation and a laundry (60m^2 each);
- Swimming Pool (64m²) and,
- A photographic hide overlooking a waterhole.

As mentioned, all construction activities were completed in 2022 and subsequently the Ximuwu Lodge is currently operational.

1.6 Need and Desirability

Ximuwu lodge was in need of expansion due to recurring instances of fully booked units. In order to increase the accommodation capacity of Ximuwu lodge, to avoid further instances where there is a higher demand for space than what is available, Mr. Suverein decided to increase the accommodation capacity of the lodge by expanding the facility to meet the demand.

Ximuwu lodge expansion not only benefits the owner of the lodge, but also holds a wide variety of possible benefits towards other areas of the region and the community members involved. The expansion will enhance the benefit towards Mr. Suverein, members of the local community, as well as Klaserie Private Nature reserve itself as the expansion holds financial benefits, creates job opportunities, enhances economic growth, aids in community upliftment and also hold conservation benefits with the increase in tourism levies to be paid.

Additional staff members are required to ensure the continued functionality of the lodge after expansion. These job opportunities result in financial gain towards the local community as well as skill upliftment. Due to the increased size and higher upkeep requirements of the lodge, a higher demand for products and services from local suppliers will follow and this holds financial benefits for local suppliers and their businesses.

Another benefit that arises is the increased flow of money towards the conservation of Klaserie Private Nature Reserve. Mr. Patrick Suverein will be required to pay a conservation levy, and this will hold financial benefit and ecological benefit for the Klaserie Nature Reserve. Klaserie Nature reserve will be able to channel the money towards further conservation and management efforts.

2 PUBLIC PARTICIPATION PROCESS

The purpose of this chapter is to provide an outline of the public participation process (PPP) to date and the way forward with respect to the Section 24G Environmental process.

Consultation with the public forms an integral component of the EA process. This process enables Interested and Affected Parties (I&APs) (e.g. directly affected landowners, national-, provincial- and local authorities, and local communities etc.) to raise their issues and concerns regarding the proposed activities, which they feel should be addressed in the BA process. The PPP has thus been structured such as to provide I&APs with an opportunity to gain more knowledge about the proposed project, to provide input through the review of documents/reports, and to voice any issues or concerns at various stages throughout the 24G Environmental Authorisation process.

I&APs were identified during the public participation phase of the project. All the parties identified as an I&AP (surrounding landowners, relevant departments, stakeholders, local and district authorities) have automatically been registered in the I&APs database for the project. The registered I&AP list is attached as **Annexure C.1.**

In effort to engage potential stakeholders, different communication methods were used to inform them about the project and how to get involved in the BA process. These methods include:

- Distributing English Background Information Documents (BIDs) to all registered I&APs, proof of which is attached in **Annexure C.2**;
- Placement of media advert in a local newspaper (The Middelburg Observer) on **9 February 2023** (see **Annexure C.3**).
- Placing of a notice at the proposed site took place on **3 February 2023** (see **Annexure C.4**);

The draft Section 24G Report will be made available for public review during March and April 2023.

To date, no comments have been received from identified and registered I&AP's.

3 CONSIDERATION OF ALTERNATIVES

The EIA process requires the developer to identify and investigate/assess feasible and reasonable alternatives. The project alternatives range from the location where the activity is proposed, type of activity to be undertaken, design of the activity, technology to be used in the activity to the option of not implementing the activity (No-Go Alternative).

The assessment of the alternatives is a complicated and multi-faceted issue, which is essential to the success of this application and ultimately to the proper, responsible and sustainable operation of the proposed project.

3.1 Alternative Selection

3.1.1 Location alternatives

No other locality alternatives could be investigated as the application is for a S24G Environmental Authorisation application of which construction for the expansion of Ximuwu Lodge, have already been completed.

3.1.2 No-Go alternative

The no-go alternative would be to not authorise the application for expanding Ximuwu Lodge. Should this alternative be favourable, the current expanded area must be removed, and rehabilitation of the area will have to be undertaken. The impacts associated with the proposed expansion were not found to be so severe for the no-go alternative to be further investigated.

4 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The description of the affected environment below draws on existing knowledge from published data, previous studies, specialist investigations, and site visits to the area.

4.1 Topography

The topography of Mpumalanga region is a varied one, comprising of the Highveld (high lying) and the Lowveld (low lying) regions. Mpumalanga is mainly situated on the high plateau grassland known as Highveld. The Highveld stretches for hundreds of kilometres eastwards, until it rises towards mountain peaks and deep valleys of the Escarpment in the north-east. From the escarpment, it plunges hundreds of meters down to the low-lying area known as the Lowveld. The Lowveld region is mostly flat with some rocky outcrops.

The topography of the area where Ximuwu Lodge is located is relatively flat to undulating. The site itself is relatively flat with shallow drainage lines located across the area.

Its elevation of the area ranges from 407 to 410 m above mean sea level.

4.2 Climate

Mpumalanga has a sub-tropical climate characterised by hot summers and mild to cool winters shifting to cold and frosty conditions in the Highveld regions. World Climate Data presented in the province's Vulnerability Assessment Report shows that the current mean annual temperatures are highest in the north-west and northeast regions of the province, while mean annual precipitation tends to increase towards the eastern regions of the province. The province is characterised by summer rainfall and thunderstorms, except the escarpment area which receives fair levels of precipitation throughout the year (MCCVA, 2015).

Mpumalanga has an average temperature of 20℃. According to The Köppen Climate Classification system, the area of Klaserie lodge is characterized as “Arid Hot Steppe”. Arid hot steppe is an intermediate between desert climates and humid climates and have a mean annual temperature of at least 18℃. It has hot summers and winters that tend to be warm to cool, with low precipitation. Klaserie experiences summer rain and has a summer in the months of October to March and a winter from April to August. Figure 3 below shows that the average temperature for the Bushbuckridge Local Municipality is between 20.9 ºC and 23.7 ºC.

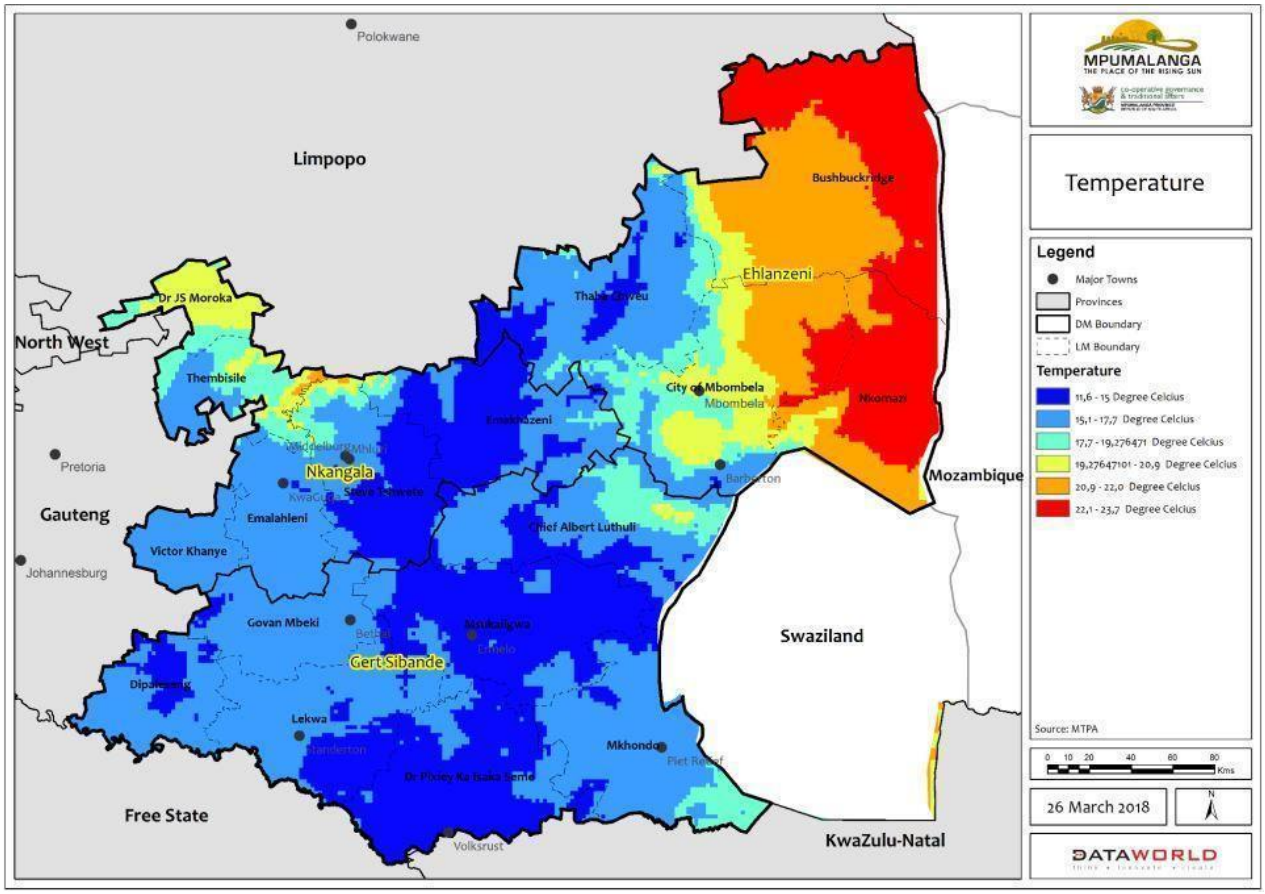

FIGURE 3: TEMPERATURE IN MPUMALANGA (MPUMALANGA DEVELOPMENT SPATIAL FRAMEWORK, 2018)

In the dry months of April to August, Klaserie Private Nature reserve on average receives less than 15 mm precipitation monthly, this average increases to between 23 mm and 100 mm precipitation as it enters the wetter months of October to March. Figure 4 below shows the average monthly precipitation per year in Klaserie Private Nature Reserve.

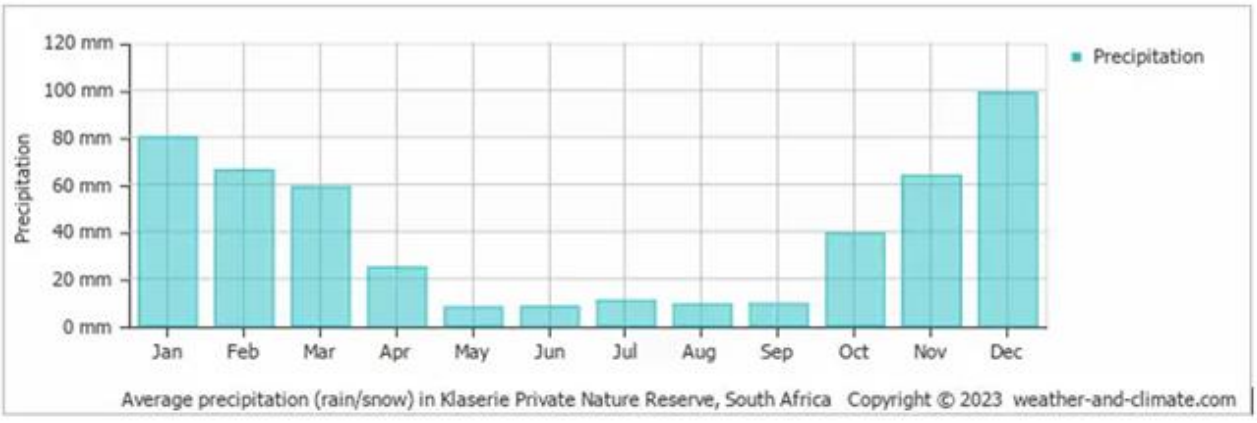

FIGURE 4: AVERAGE PRECIPITATION FOR KLASERIE PRIVATE NATURE RESERVE

(link:https://weather-and-climate.com/average-monthly-Rainfall-Temperature-Sunshine,klaserie-private-nature-reserve-mpumalanga-za,South-Africa)

4.3 Terrestrial Ecology

The Klaserie Private nature reserve forms part of the Associated Private Nature Reserves and Greater Kruger National Park. According to the Mpumalanga Biodiversity Sector Plan of 2014, the area affected by the expansion of the lodge, falls within a Protected Area.

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The Klaserie Private Nature Reserve is situated within the savannah biome and the majority of the savannah biome consists of untransformed vegetation, with 15% being transformed by cultivation or settlements. (Lotter, et al, 2014).

The reserve is classified as a protected area with threatened and near threatened species found within the area. Examples being the African Elephant (VU), Bateleur (EN) and Elaeodendron transvaalense (NT). The study area falls within the Granite Lowveld (SVIS3) vegetation type which Lotter et al, 2014, listed as least threatened. (Mucina & Rutherford. 2006) The area is dominated by granite and gneisses which become sandy soils upland and high sodium level clayey soils lowland. The area consists of tall shrubland, with trees ranging from few trees to dense low woodlands. These woodlands can be found upland within the sandy soils.

Prior to the clearance of vegetation, an Ecological Assessment was undertaken by Matthew Altenkirk *(Terrestrial Ecological Assessment, Ximuwu Camp, June 2021).* The study found that the site area had a low to moderate density ground cover plant species. The area consisted of scattered, small dense patches of plants. There was a moderate diversity of dominant species. Trees of low species diversity were scattered in the area and community of short open woodland species namely *Combretum apiculatum – Aristida spp* were observed within the site area. There were no alien invasive species identified in the site area.

Evidence of wildlife movement through the site was also observed. The biodiversity rating is high and there are healthy populations of species that are able to move freely over the large area. Nine mammal species of conservation importance were observed, with seven being species of conservation concern (SCC) and two being near threatened species. Some of these species that are of conservation importance include the leopard, the black rhinoceros and the African wild dog. Eight SCC bird species were identified and have a preference towards the specific habitat type of the areas surrounding the site. The White-backed Vulture was observed over the study site.

The overall effect of Ximuwu lodge on the biodiversity of the area is classified as **moderate.**

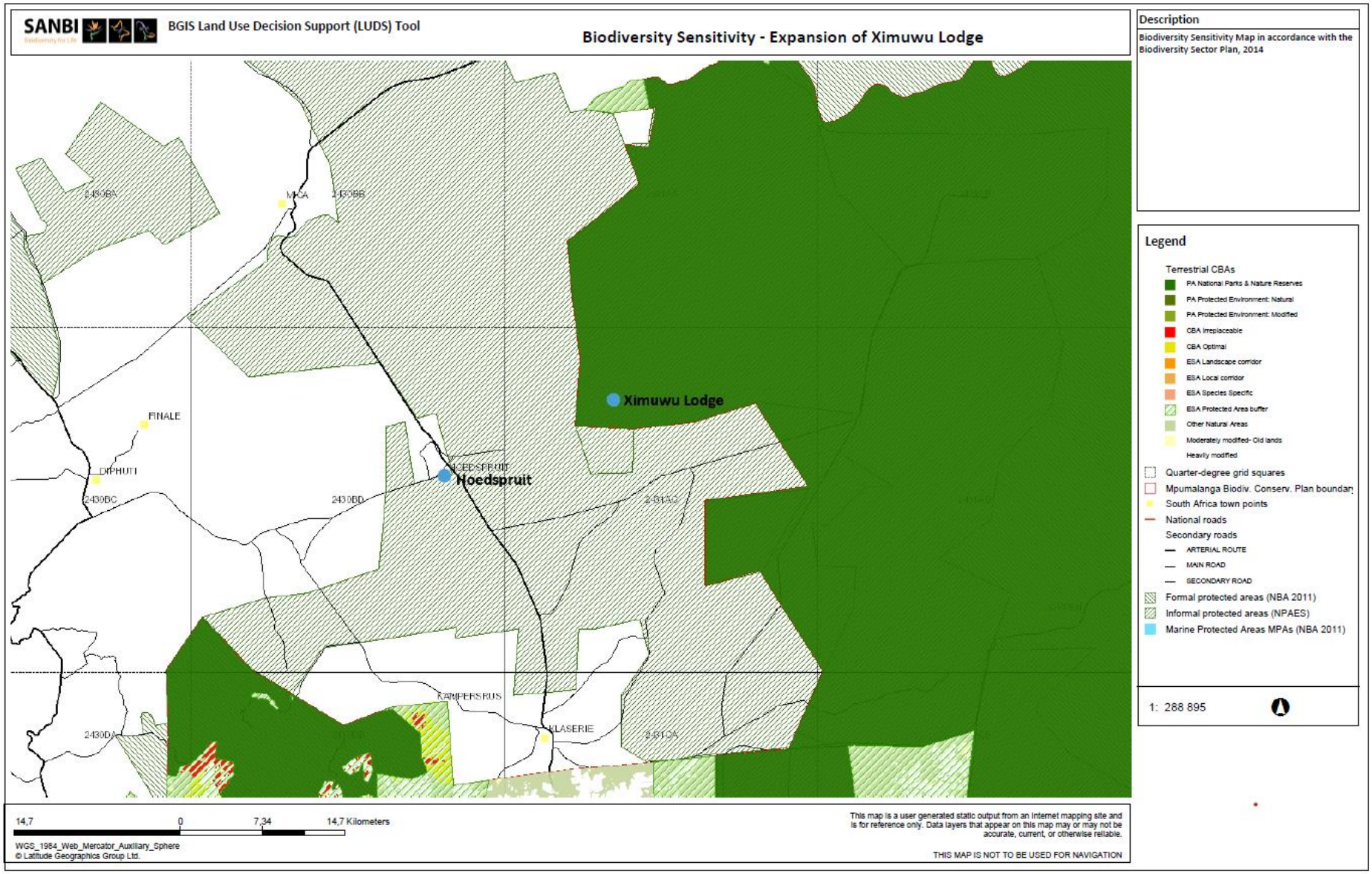

FIGURE 5: TERRESTRIAL ECOLOGICAL SENSITIVITY OF THE PROJECT AREA ACCORDING TO THE MPUMALANGA BIODIVERSITY SECTOR PLAN, 2014

4.4 Surface and Groundwater

The nearest large river toward the project site is the Klaserie river. The Klaserie river is approximately 5.5 km East of Ximuwu lodge. The Klaserie river has a high Environmental Importance, and its Environmental Significance (ES) is described as B or B/C, which is characterised as largely natural with a few modifications.

The distance of Ximuwu lodge from the Klaserie river is notable which indicates that the activities of Ximuwu Lodge will not directly have an impact on the characteristics or quality of the Klaserie river. However, two non-perennial watercourses are located approximately 250m north and 600m south of the Ximuwu Lodge and these non-perennial streams flows to the Klaserie River. Thes watercourses are however also outside the regulated area of the water resource and will therefore not be impacted by the operational activities.

The only impact on water resources during the operational phase could be the use of septic tanks, which could lead to possible groundwater contamination. Septic tanks are used for sanitation purposes, and therefore, special care must be taken to ensure that groundwater quality is not affected. However, given the sandy nature of the soil within Klaserie Private Nature Reserve, as well as the how far it is located from the Klaserie River, which is the nearest major water source, it is unlikely that the septic tanks coupled to soakaways/french drains for wastewater treatment would have an impact on water resources if appropriately managed.

Therefore, due to the proximity of the water resources from the project area, no surface and/or groundwater assessment was required.

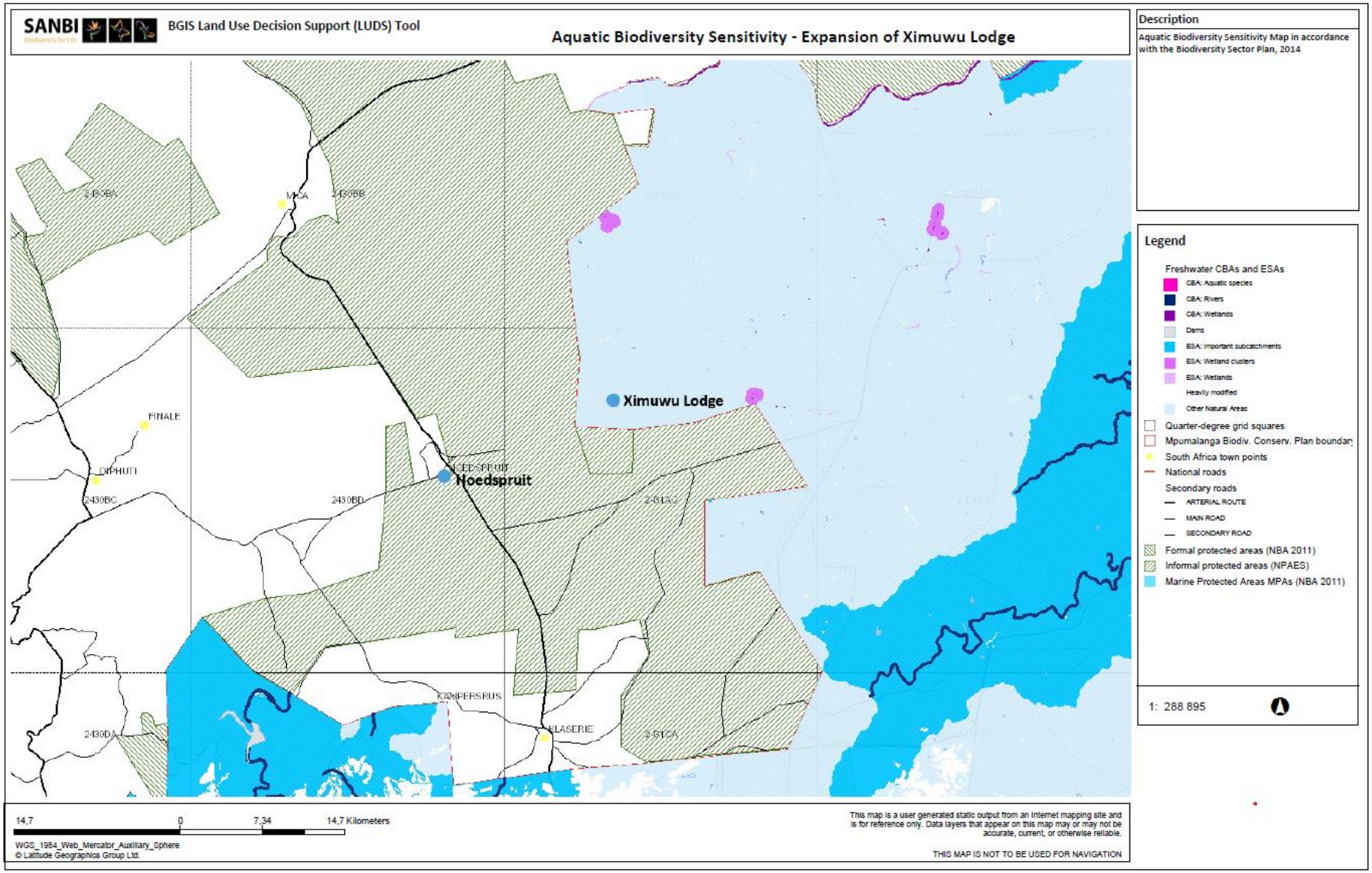

FIGURE 6: FRESHWATER SENSITIVITY OF THE PROJECT AREA ACCORDING TO THE MPUMALANGA BIODIVERSITY SECTOR PLAN, 2014

4.5 Land use

Ximuwu Lodge is located within Klaserie Private Nature Reserve. This reserve is surrounded by natural, protected areas with untransformed vegetation. However, there are also other reserves in the surrounding area besides Klaserie Private Nature reserve, for instance the Timbavati Private nature reserve which is connected to the Timbavati river.

The land use of the area, besides being a protected conservation area, is also centred around the tourism industry. These areas are utilized by reserve owners as tourism locations where tourists can enjoy the untransformed environment and its rare species within lodges and guest houses. Several reserves and lodges occur within the area and rely on the expectation of a pristine, and natural environment.

4.6 Geology and Soils

In Klaserie Private Nature Reserve, felsic, intermediate rocks and Granite Gneiss are the main substrates covering the land. Granite Gneiss, covering 1290.02 km^2 of the area, is the main substrate with Felsic, intermediate rocks following at 1050.55 km^2 coverage.

It has numerous dolerite intrusions and areas covered by gabbro. The geology of these areas comprises of trondhjemite and tonalite gneiss and is Palaeo-archaean in age, ca 3228 million years old. (Guenther et al. 2006).

The soils within this are mostly well-developed soils and are classified as mature soils. The geology of this area is known to have deep sandy to sandy loam soils in the uplands that are contrasted by clayey soils with strong structure and high sodium content to be found in the lowlands.

4.7 Heritage

Heritage assessments test whether the proposed changes are appropriate for the selected region by evaluating the historical value and the significance of the impact it would have if the area were to be changed. Heritage specialists are used to conduct these heritage assessments in order to play a positive role in the development process. This is because heritage assessments enrich the understanding of what occurred in the past and what value the past brings to current situations. It ensures that historically important areas are sustained or enhanced during changes to areas.

However, no area of significant cultural importance and historical value was impacted during the recent clearance and construction activities and therefore there was no need for a heritage impact assessment. The size of the area physically transformed is also smaller than 0.5ha which means that no Heritage Impact Assessment was required.

4.8 Socio-Economic Environment

During the census undertaken in 2016, it was noted that the population of the local municipality is approximately 550 000 people with the majority of the population concentrated in younger age groups. The population consists mostly of black Africans (99.55%). The poverty rate within the local municipality is high (47.7%), however this percentage has decreased since the previous census undertaken in 2011 which noted the poverty rate to be 67.9%.

Almost 50% of the population within the municipality rely on child support grants which are issued by the Government. This implies that the education for the youth residents is low and are mostly unemployable.

Although the project area falls within the Bushbuckridge Local Municipality, it must be noted that the project area is closer to Hoedspruit which falls within the Maruleng Local Municipality. According to the last census undertaken in 2011, the population consists of approximately 95 000 people of which the larger section of the area is under the delegation of the Tribal/Traditional Authority. Approximately 16% of the people residing within this municipality have no source of income while 37% of the employed earns below the minimum wage.

The socio-economic context of the surrounding environment can therefore be described as a community with a low percentage of education and high unemployment rate or low-income rate for those having an income source.

5 METHODOLOGY OF ASSESSING THE SIGNIFICANCE OF IMPACTS

This section outlines the method used for assessing the significance of the potential environmental impacts.

For each impact, the EXTENT (spatial scale), MAGNITUDE and DURATION (time scale) would be described, as shown in **Table 2**. These criteria are then used to determine the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The mitigation described in the Report represents the full range of plausible and pragmatic measures but does not necessarily imply that they would be implemented.

The following tables show the scale used to assess these variables and defines each of the rating categories.

TABLE 2: ASSESSMENT CRITERIA FOR THE EVALUATION OF IMPACTS

Criteria	Category	Description
Extent or spatial influence of impact	**Regional**	Beyond a 30km radius of the candidate site.
	Local	Within a 30km radius of the candidate site.
	Site-specific	On site or within 100 m of the candidate site.
Magnitude of impact (at the indicated spatial scale)	**High**	Natural and/ or social functions and/ or processes are *severely* altered
	Medium	Natural and/ or social functions and/ or processes are *notably* altered
	Low	Natural and/ or social functions and/ or processes are *slightly* altered
	Very low	Natural and/ or social functions and/ or processes are *negligibly* altered
	Zero	Natural and/ or social functions and/ or processes remain *unaltered*
Duration of impact	**Long-term**	More than 10 years after construction
	Medium-term	Up to 5 years after construction
	Construction-term	Up to 3 years

The SIGNIFICANCE of an impact is derived by taking into account magnitude, duration and extent of each impact. The criteria employed in arriving at the different significance ratings is shown in Table 3.

TABLE 3: DEFINITION OF SIGNIFICANCE RATINGS

Significance ratings	Level of criteria required
High	• High magnitude with a regional extent and long-term duration • High magnitude with either a regional extent and medium-term duration or a local extent and long-term duration • Medium magnitude with a regional extent and long-term duration
Medium	• High magnitude with a local extent and medium-term duration • High magnitude with a regional extent and construction period or a site-specific extent and long-term duration • High magnitude with either a local extent and construction period duration or a site-specific extent and medium-term duration • Medium magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Low magnitude with a regional extent and long-term duration
Low	• High magnitude with a site-specific extent and construction period duration • Medium magnitude with a site-specific extent and construction period duration • Low magnitude with any combination of extent and duration except site specific and construction period or regional and long term • Very low magnitude with a regional extent and long-term duration
Very low	• Low magnitude with a site-specific extent and construction period duration • Very low magnitude with any combination of extent and duration except regional and long term
Neutral	• Zero magnitude with any combination of extent and duration

Once the significance of an impact has been determined, the **PROBABILITY** and **CONFIDENCE** of this impact are determined using the rating systems outlined in **Table 4** and **Table** 5**.** The significance of an impact should always be considered in concert with the probability of that impact occurring. Lastly, the **REVERSIBILITY** of the impact is estimated using the rating system outlined in **Table 6.**

TABLE 4: DEFINITION OF PROBABILITY RATINGS

Probability ratings	Criteria
Definite	Estimated greater than 95 % chance of the impact occurring.
Probable	Estimated 5 to 95 % chance of the impact occurring.
Unlikely	Estimated less than 5 % chance of the impact occurring.

TABLE 5: DEFINITION OF CONFIDENCE RATINGS

Confidence ratings	Criteria
Certain	Wealth of information on and sound understanding of the environmental factors potentially influencing the impact.
Sure	Reasonable amount of useful information on and relatively sound understanding of the environmental factors potentially influencing the impact.
Unsure	Limited useful information on and understanding of the environmental factors potentially influencing this impact.

TABLE 6: DEFINITION OF REVERSIBILITY RATINGS

Reversibility ratings	Criteria
Irreversible	The activity will lead to an impact that is in all practical terms permanent.
Reversible	The impact is reversible within 2 years after the cause of the impact is removed.

6 OPERATIONAL PHASE IMPACTS

Seeing that the construction of Ximuwu Lodge has already taken place, operational impacts are the only impacts to be assessed and mitigated.

6.1 Operational Phase Impacts

During operation, the activities associated with Ximuwu Lodge are likely to result in the following environmental and socio-economic impacts:

- *Impact on biodiversity;*
- *Impact on soil;*
- *Waste generation and disposal*
- *Impact on water resources;*
- *Socio-economic*

6.2.1. Biodiversity Impact (Fauna and Flora)

Description of the potential impacts

- Loss of flora SCC

A total of 73 plant species were recorded during the field survey (Appendix 1), none of which are regarded as threatened (i.e., Vulnerable, Endangered or Critically Endangered), or as Near Threatened by the IUCN (Raimondo *et al,* 2009).

- Habitat loss of fauna SCC

In the area, vulnerable species such as African elephants, leopards and lions occur. There are also a number of critically endangered species such as the White-backed vulture, the Hooded vulture, the Bateleur eagle and more. The lodge is small in size, and since these animals are very mobile animals, they are not negatively affected by the lodge.

- Dispersal of fauna and flora

Due to the small size of the lodge, and the fact that the extension of the lodge is directly adjacent to the existing lodge, thoroughfare and movement of fauna will not be heavily impacted.

- Invasion of alien species

Introduction of alien species is possible through seeds being dispersed into the area by workers or guests, however no alien species has been noted as a concern and following the construction activities, no alien invasive species were noted on site.

Significance of the impacts

Loss of flora SCC

As no species of conservation concern were found within the project site, the impact on flora is rated to be of very low significance.

Loss of fauna SCC

Various mammals including bird-species of conservation importance are known to have the potential of occurring in the general area surrounding the study site. However, due to the small footprint of the expanded facility, it is not expected that there will be a significant impact on fauna. No operational activities are expected to impact any faunal species and for this reason the impact is also rated to be of very low significance during the operational phase.

Dispersal of flora and fauna

As noted above, the project footprint is relatively small and directly adjacent to the existing lodge. The lodge is surrounded by a small electric fence specifically designed to only keep larger animals off the property. The barriers may still have a medium effect on dispersal if not mitigated. If mitigated, the impact can be reduced to low.

Invasion of alien invasive species and use of pesticides and herbicides:

When natural vegetation is removed and activities are undertaken, the opportunity for invasive plant species within the perimeter of the site increases and will be problematic if not adequately removed or managed. Alien vegetation is normally removed mechanically or chemically. Using harmful chemicals would kill all pest and alien vegetation but also affect other insects and mammals which must be protected. Mechanical removal or removal of alien vegetation by hand is therefore preferred above the chemical treatment thereof. The impact of alien vegetation and the control thereof is therefore of medium significance prior to the implementation of mitigation measures.

TABLE 7: SIGNIFICANCE OF BIODIVERSITY IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Loss of Flora SCC	**Very Low**	**Local**	**Long-term**	**Unlikely**	**Very Low**	**Very Low**
Loss of Fauna SCC	**Very Low**	**Local**	**Long-term**	**Unlikely**	**Very Low**	**Very Low**
Dispersal of Fauna and Flora	**Medium**	**Local**	**Long-term**	**Unlikely**	**Medium**	**Low**
Alien Invasive Species and use of pesticides and herbicides	**Medium**	**Site-Specific**	**Long-term**	**Probable**	**Medium**	**Low**

Mitigation measures

- Existing indigenous vegetation should be protected and further enhanced.
- Wildlife within the area and travelling through the area must not be exposed to unfit behaviour by lodge members.
- Where possible, areas must be altered or kept in place to promote wildlife movement through the lodge.

- Instructions indicated in the Klaserie Natural Private Reserve Management document should be followed.
- Hand removal of alien invasives must be favoured during operation of the lodge.
- The owner must make use of indigenous vegetation during further landscaping or incorporate it in current landscaping.

6.2.2 Impact on soil

Description of the potential impact

A potential operational impact caused by the establishment of Ximuwu lodge is soil erosion. Areas that were previously cleared as well as paved surfaces may increase the possibility of soil erosion on site. When a surface is smooth and cleared of natural vegetation, stormwater reaches a higher velocity which increases the effect of erosion. Soil erosion decreases the quality of soil and the ability of soil to support natural vegetation.

Significance of the impact

During operation, soil could be impacted by means of the following:

- Erosion and stormwater;

Ximuwu lodge is surrounded by untransformed landscapes. The untransformed areas surrounding the expanded lodge facility acts as a natural buffer in the form of natural vegetation, reducing the velocity of stormwater. The natural vegetation therefore reduces the flow of water during storm events and lessens the effect of erosion.

The impact of soil erosion is therefore of **very low significance** following the implementation of mitigation measures.

TABLE 8: IMPACT ON SOIL

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Soil Erosion **[NEGATIVE]**	**Very Low**	**Site Specific**	**ong term**	**Probable**	**Very Low**	**Very Low**

Mitigation measures

- Permanent measures must be taken on areas prone to erosion. These measures can include gabions or revegetation with indigenous plant species as discussed above.
- All areas that are susceptible to erosion must be protected by introducing drainage systems to prevent runoff water from concentrating. These include:

- Using indigenous plants to cover areas with bare ground.
- Using gabions in areas of higher risk (steep slopes)

- Implementing storm water drainage systems to control runoff.
- Compliance with Klaserie Private Nature Reserve's Environmental Management Plan is essential.

6.2.3 Impact on water resources

Description of the potential impact.

Although no activities are planned within any watercourse or wetland area, water resources could be impacted by the following:

- Contamination of groundwater resources caused by the use of septic tanks.

Significance of the impacts

If septic tanks are found to be working ineffectively, it could have an impact on groundwater resources.

However, as noted, no water resources were found within a close proximity to the site and due to the site-specific extent, and the unlikelihood of the impact occurring, the impact has been rated to be of low significance prior to the implementation of mitigation measures.

TABLE 9: IMPACT ON SURFACE AND GROUNDWATER

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Contamination of groundwater resources caused by septic tank. **[NEGATIVE]**	**Low**	**Site specific**	**Long term**	**Probable**	**Low**	**Very Low**

Mitigation measures

- Stipulations of the Environmental Management Program (EMPr) should be adhered to during the operational phase of the project.
- The septic tank and grey water systems should be inspected on a regular basis to prevent pollutants from entering the ground water through leakage.
- Compliance with Klaserie Private Nature Reserve's Environmental Management Plan is essential.

6.2.4 Waste Generation and disposal

Description of the potential impact

During the operational phase of Ximuwu lodge, domestic waste will be generated. Improper storage and disposal of such waste could have an impact on the surrounding fauna within the Klaserie Private Nature Reserve by creating hazardous environments.

Wildlife becomes exposed to harmful materials when they come in contact with waste sites. Wildlife may ingest harmful waste, become entangled by materials and they can spread the waste further than the specific site by transporting it. Vermin are known to be harmful to wildlife. They carry diseases that can become a serious problem especially if a waste site has not been cleared for a period of time. Waste materials can release toxins and pollute the surrounding area, creating a hazardous environment.

Significance of the impacts

Due to the surrounding sensitivity of the environment and the fact that the Klaserie Private Nature Reserve is not serviced with waste removal, the impact is of medium magnitude. Improper waste storage and disposal will impact a larger area which goes beyond the site boundaries and has a long-term effect on the environment. For this reason, it was concluded that waste storage and disposal is of medium significance prior to the implementation of mitigation measures.

TABLE 10: IMPACT ON WASTE GENERATION AND DISPOSAL

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Waste generation and disposal **[NEGATIVE]**	**Medium**	**Local**	**Long Term**	**Probable**	**Low**	**Very Low**

Mitigation measures

- Generated waste needs to be removed and stored in an enclosed area. The waste must then be removed from the storage site and disposed of at a registered landfill site. A proper waste area must be dedicated and enclosed to prevent contact of waste with any animal species.
- The applicant must ensure that waste is removed from the property on a regular basis and transported to a registered landfill site, and not be left to accumulate, causing hazardous environments and bad odour.
- Compliance with Klaserie Private Nature Reserve's Environmental Management Plan is essential.

6.2.5 Socio-economic Impact

Description of the potential impact

Ximuwu lodge creates job opportunities and uplifts skills of locals due to the hiring of staff for maintenance and daily lodge functions as well as having a positive impact on local suppliers.

Significance of the impacts

Additional staff members are required to ensure the continued functionality of the lodge after expansion. These job opportunities result in financial gain towards the local community as well as skill upliftment. Due to the increased size and higher upkeep requirements of the lodge, a higher demand for products and services from local suppliers will follow and this holds financial benefits for local suppliers and their businesses.

Another benefit that arises is the increased flow of money towards the conservation of Klaserie Private Nature Reserve. Mr. Patrick Suverein will be required to pay a conservation levy, and this will hold financial benefit and ecological benefit for the Klaserie Nature Reserve. Klaserie Nature reserve will be able to channel the money towards further conservation and management efforts. The following ratings have been assigned to the 'employment opportunities' impact before and after mitigation. The impact is of medium (+) significance if employment remains with the local residents.

TABLE 11: SIGNIFICANT IMPACT OF THE 'EMPLOYMENT OPPORTUNITIES' IMPACT

IMPACT	BEFORE MITIGATION					AFTER MITIGATION
	Magnitude	Extent	Duration	Probability	Impact Rating	Impact Rating
Socio-economic impact **[POSITIVE]**	**High (+)**	**Local**	**Long term**	**Probable**	**High (+)**	**High (+)**

Mitigation measures

- Mr. Suverein must make use of local suppliers as far as reasonably possible.
- Mr. Suverein must ensure that local residents receive preference for job opportunities.
- Compliance with Klaserie Private Nature Reserve's Environmental Management Plan is essential.

6.3 Environmental Impact Statement

The table below summarises the impacts identified and assessed for the operational phases of the project:

TABLE 12: ENVIRONMENTAL IMPACT STATEMENT

IMPACT	SIGNIFICANCE BEFORE MITIGATION MEASURES	SIGNIFICANCE AFTER MITIGATION MEASURES
Operational Impacts		
Alien invasives	Medium	Low
Loss of flora SCC	Very low	Very low
Loss of fauna SCC	Very low	Very low
Dispersal of flora and fauna	Medium	Low
Erosion	Very low	Very low
Waste Generation and disposal	Medium	Low
Groundwater contamination	Low	Very low
Socio-economic impact	High (+)	High (+)

7 CONCLUSION AND WAY FORWARD

7.1 Assumptions and Limitations

In undertaking this investigation and compiling the Section 24G Report, the following has been assumed:

- The information provided by the proponent is accurate and unbiased, and that no information that could change the outcome of the Environmental Authorisation process has been withheld.
- As the area has already been cleared and impacted, no specialist investigation was conducted.
- The scope of this investigation is limited to assessing the environmental impacts associated with the operational phases of the project.
- The conclusion and recommendations proposed are based solely on the information, scope of works as agreed with the proponent.

7.2 Conclusion

The essence of all environmental assessment processes is aimed at ensuring informed decision-making and environmental accountability. Furthermore, it assists in achieving environmentally sound and sustainable development. The impact assessment for this project has been undertaken in line with the requirements prescribed in the NEMA regulations.

The assessment of the possible impacts associated with the establishment and operational activities, concluded that the impact on the surrounding environment is of **low to very low significance**. Recommendations have however been made to address the impacts which could affect the biophysical and socio-economic environment. Recommendations for the mitigation of impacts are included within Section 6 and also the Draft Environmental Management Plan attached. The significance of the potential environmental (biophysical and social) impacts associated with the proposed project are discussed in detail under **Section 6.**

It is the opinion of the EAP that the EA for this project should be granted, and the proposed mitigation included as the conditions of the authorisation.

7.3 Way Forward

The next steps of the Section 24G process will be to distribute the Draft Section 24G Report and make it available to the public (including the registered I&APs) for 30 days to comment, during which the competent authority will also provide comments on the report. After the 30-day comment period, all comments will be addressed by the EAP and incorporated within the Final Section 24G Report to be submitted to the MDARDLEA for decision making. All registered I&APs will be notified of the decision and will be given an opportunity to appeal as per the NEMA requirements.

8 REFERENCES

National Environmental Management Act 107 of 1998 (NEMA 107, 1998)

General Notice Regulation 982, 983, 984 and 985 of 2014 (as amended in 2017)

Mpumalanga Biodiversity Conservation Plan, 2014

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