



SCOPING AND PLAN OF STUDY

FOR THE

PROPOSED NODAL DEVELOPMENT SITUATED ON DWARSLOOP
TOWNSHIP WITHIN THE BUSHBUCKRIDGE LOCAL MUNICIPALITY IN
MPUMALANGA PROVINCE

DRAFT

DEPT REF NO: TO BE ADVISED



ENVIRONMENTAL ASSESSMENT PRACTITIONER

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EXECUTIVE SUMMARY

GKM Consulting Services PTY LTD was appointed by AMCE Engineers to undertake Environmental Impact Assessment and Water Use License on behalf of Bushbuckridge Local Municipality. The proposed activity triggers the National Environmental Management Act and National Water Act, Act 36 of 1998. Relevant listed activities are described in detail under section 2, of this application.

The subject property is located at in the existing Dwarsloop Township close to Bushbuckridge Local Municipality. Central coordinates are 24°47'49.55"S, 31° 5'6.95"E. refer to Figure 1 below indicates the location of the subject property.

Two (2) possible alternatives where considered, these are:

Layout Alternative

Preferred	The route that avoids the wetland as identified by the wetland specialist.
Alternative	The route that avoids the wetland will be more expensive compared to a route that cuts through the wetland.

Technology Alternative

Preferred	The proposed use of HDPE pipelines for water, sewer, and storm water reticulation.
Alternative	The use of uPVC pipeline for water and sewer and concrete for storm water reticulation.

Specialist opinions were included in this assessment and the specialist assessments included in this report are aquatic and wetland delineation, Terrestrial Biodiversity, and Heritage Impact Assessment. Recommendations and opinions of the specialist are detailed in this report, refer to section 9.

Public participation undertaken thus far include:

- Posting Site Notices – notices in English were posted in ten (10) different areas on the 19th of March 2022,
- Newspaper Advertisement – newspaper advertisement was posted in the government gazette and published on the 1st of April 2022,
- Stakeholder engagement – the ward councillor, Mr. Mashego, requested that we give him all the written notices which in turn he would distribute to all the residences adjacent to the proposed development.

Possible risks identified in this scoping report will be addressed in the Environmental Impact Report(EIR) and Environmental Management Plan (EMPr).

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Report Structure

Report content requirements in terms of Regulation 21 of GN 982 (Appendix 2)

Regulatory Requirements	Section of Report
a) Details of:	
i. The EAP who prepared the report	Section 1.4
ii. The expertise of the EAP who prepared the report; CV	Appendix H
b) The location of the activity, including:	
i. The 21-digit surveyor general code of the cadastral land parcel	Section 1.2
ii. Where available physical address and farm name	Section 1.2
iii. Where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties	Section 1.2
c) A plan which located the proposed activity or activities applied for at an appropriate scale, or, if it is –	
i. A linear development, a description and coordinated of the corridor in which the proposed activity or activities is to be undertaken	N/A
ii. On land where the property has been defined, the coordinates within which the activity is to be undertaken	Appendix A
d) A description of the scope of the proposed activity, including	
i. All listed and specified activities triggered	Section 2
ii. A description of the activities to be undertaken, including associated structures and infrastructure.	Section 1.1
e) A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	Section 2
f) A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location	Section 4.4
g) full description of the process followed to reach the proposed preferred activity, site, and location within the site, including –	
i. details of all the alternatives considered:	Section 4.1
ii. details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs	Section 4.5
iii. a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them	Section 4.5

iv.	the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	Section 3
v.	the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration, and probability of the impacts, including the degree to which these impacts – <ul style="list-style-type: none"> - can be reserved - may cause irreplaceable loss of resources - can be avoided, managed, or mitigated 	Section 5
vi.	the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives	Section 5
vii.	the possible mitigation measures that could be applied and level of residual risk	Section 5
viii.	the outcome of the site selection matrix	Section 4.2
ix.	if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such	Section 4.1
x.	a concluding statement indicating the preferred alternatives, including preferred location of the activity.	Section 4.3
h)	a plan of study for undertaking the environmental impact assessment process to be undertaken, including	Appendix F
i.	a description of the alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity	Appendix F
ii.	a description of the aspects to be assessed as part of the environmental impact assessment process	Appendix F
iii.	aspects to be assessed by specialists	Appendix F
iv.	a description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists	Appendix F
v.	a description of the proposed method of assessing duration and significance	Appendix F
vi.	an indication of the stages at which the competent authority will be consulted	Appendix F
vii.	particulars of the public participation process that will be conducted during the environmental impact assessment process	Appendix F

viii.	a description of the tasks that will be undertaken as part of the environmental impact assessment process	Appendix F
ix.	identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored	Appendix F
i)	an undertaking under oath or affirmation by the EAP in relation	
i.	the correctness of the information provided in the report	Section 7
ii.	the inclusion of comments and inputs from stakeholders and interested and affected parties	Section 7
iii.	any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties	Section 7
j)	an undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment	Section 7
k)	where applicable, any specific information required by the competent authority	N/A

SECTION 1 - INTRODUCTION

1.1 Background Information

GKM Consulting PTY LTD was appointed by AMCE Engineers on behalf of Bushbuckridge to undertake an Environmental Impact Assessment and Water Use License. The primary objective of this proposed development is identified as:

- The design, construction and supervision of sewer, roads, and storm water management system to service the sites in Dwarsloop.

Before the applicant can proceed with the proposed development permits have to be obtained from the Department of Water and Sanitation and the Mpumalanga Agricultural, Rural Development and Environmental Affairs.

1.2 Locality Description

The subject property is in Dwarsloop within the Bushbuckridge Local Municipality. The property is 15 hectares in size and the coordinates for this property boundary are as follows:

- 24°48'0.71"S ; 31° 5'1.07"E
- 24°47'36.74"S; 31° 4'56.75"E
- 24°47'37.14"S; 31° 5'6.21"E
- 24°47'35.96"S; 31° 5'16.13"E
- 24°47'42.93"S ; 31° 5'19.45"E
- 24°47'59.35"S ; 31° 5'13.34"E

The project is under the following jurisdiction:

Table 1 - Jurisdiction

Competent Authority	Mpumalanga Agricultural, Rural Development and Environmental affairs
District Municipality	Ehlanzeni District Municipality
Locality Municipality	Bushbuckridge Local Municipality
Farm Details	Dwarsloop Farm No 248KU, Portion 1
SG Codes	T0KU00000000024800001
Province	Mpumalanga
Town	Dwarsloop

Figure 1 – Access Road

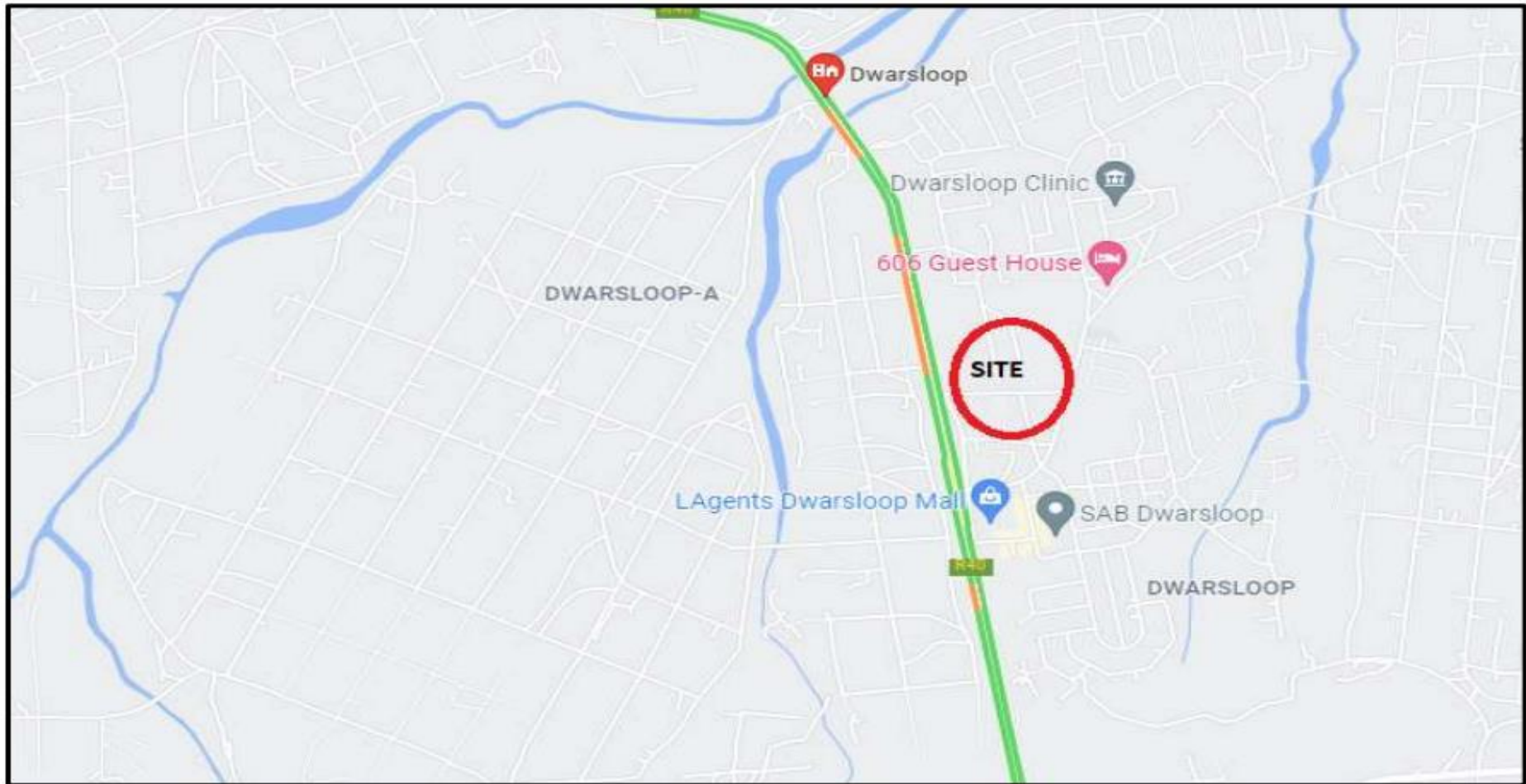
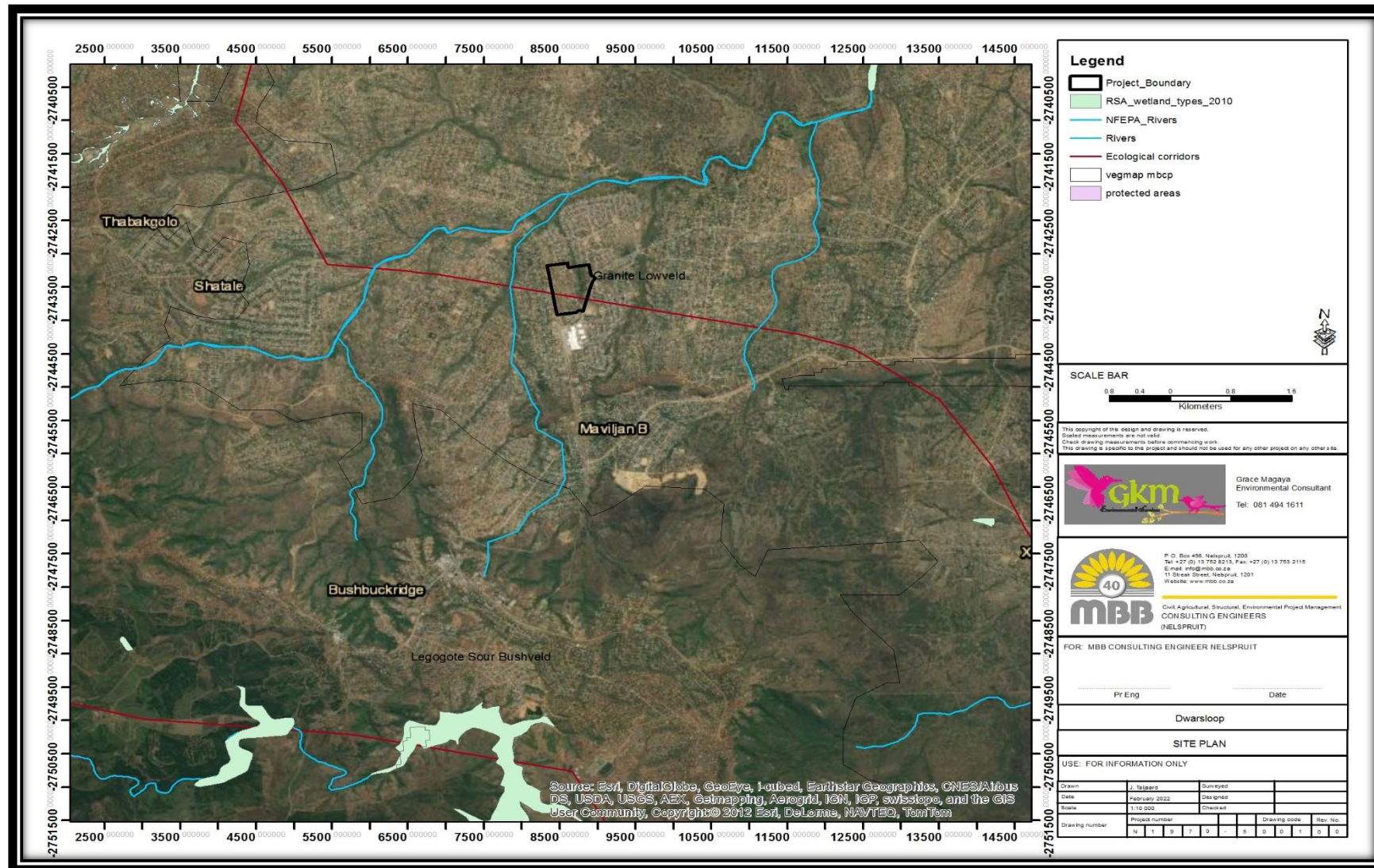


Figure 2 – Locality Map



1.3 Purpose of the Scoping Report

Scoping is an important part of the EIA process, as it helps to ensure that the impact assessment is appropriately focused. The focus of the Scoping is:

- To engage with stakeholders at an early stage of the proposed development so that they may contribute their views with regards to the proposed project.
- To identify potential issues and impacts associated with the proposed development.
- To identify the relevant policies and legislation relevant to the activity.
- Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location.
- To define the scope of the Environment Impact Assessment.
- To define the methodology that is required for the EIA, and
- To describe the plan of study for the EIA.

In terms of NEMA, the Scoping report is submitted to the competent authority as part of the decision-making process about the proposed township development. The Scoping is also intended to provide sufficient background information to other Organs of State, non-statutory bodies, the public, organisation, and local communities to obtain their commentary and input on the proposed development. The Scoping Phase of the EIA process identifies and describes the potential issues associated with the proposed project and defines the extent of the studies required within EIA Phase of the project. The EIA will assess those identified potential environmental impacts and benefits associated with all phases of the project including design, construction, operation, and decommissioning, and will recommend appropriate measures for potentially significant environment impacts.

1.4 Details of the EAP and Specialist Studies

1.4.1 Environmental Consultant

Mrs Grace Magaya the author of this report is a Registered Environmental Assessment Practitioner with EAPASA (Reg No 2018/129) she obtained her bachelor's degree in environmental management at the University of South Africa in 2014. She has been practising and conducting environmental impact assessment and other related license application since 2012 and has been engaged with both large and small corporation which has exposed her to projects both large and small. For detailed experience, reference is made to Appendix G1.

1.4.2 Wetland and Aquatic Specialist

Rob is an aquatic ecologist with PhD in Zoology from Rhodes University, South Africa. He has over 30 years' experience as an independent consultant. He has specialist knowledge of the biodiversity of African rivers and wetlands, including aquatic flora, invertebrates, and fish. He has participated in numerous EIAs throughout Africa, many to environmental standards required by the IFC or World Bank. He has been a team leader for various mining and water resource development projects and environmental impact assessments involving coordinate of multi-disciplinary teams. He is a member for the Natural Scientific Professions and accredited SASS5 biomonitoring practitioner.

1.4.3 Heritage Impact Specialist

Ms Leoni Marais is an accredited member of the SA Cultural History. She holds two degrees i.e., cultural history and archaeology and cultural history obtained at the University of Pretoria. Reference is made to Appendix G3.

1.4.4 Terrestrial Biodiversity

Mr. Duncan Robert McKenzie holds a diploma in nature conservation and nature bird guiding. He has over 15 years' experience in specialist species identification, conducting baseline surveys, data analysis and report writing in various biomes in southern Africa, particularly savanna, forest, and grassland biomes.

SECTION 2 – LEGISLATIVE REQUIREMENTS

A scoping report must contain the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process, and must include:

2(e) a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process.

This section provides an overview of the governing legislation identified which may relate to the proposed project. In addition, there are numerous other pieces of legislation governed by many acts, regulations, standards, guidelines, and treaties on an international, national, provincial, and local level, which should be considered to assess the potential applicability of these for the proposed activity.

2.1 National Environmental Management Act

NEMA is the national legislation that provides for the authorisation of “listed activities”. In terms of Section 24 (1) of NEMA, the potential impact on the environment associated with these activities must be considered, investigated, assessed, and reported on to the competent authority that has been charged by NEMA with the responsibility of granting environmental authorisations. The competent authority for this application is GDARD and other stakeholders such as the Department of Water and Sanitation, SAHRIS, City of Tshwane Development will be considered for commenting. An application for Environmental Authorisation was submitted while this draft Scoping was handed in for comments, therefore reference number will be in the Final Scoping Report.

In terms of Section 24 and 24D of NEMA as read with Government Notices R543 and R546, a Scoping and EIA process is required for the proposed project. a table with listed activities and applicability is shown below:

Table 2 – NEMA Relevant Listed Activity

Regulation	Activity	Description	Relevance
	Number		
GNR Listing No 1	19	The infilling or depositing of any material of more than 10 cubic metres into or dredging,	Some of the storm water outlets will fall into the wetland buffer, thus

		excavation, removal or moving of soils, shells, shell grit, pebbles, or rock of more than 10 cubic metres from (i) a watercourse	resulting in depositing of storm water of approximately 10 cubic meters per day during the rainy season.
GNR Listing No 2	15	The clearance of an area of 20 hectares or more of indigenous vegetation.	Site development is 34 hectares and the area that has not been cleared yet is 15 hectares of dominated by indigenous grass.

2.2 National Water Act

Project must also be subjected to Water Use License in terms of the National Water Act because there are 2 depressions within the proposed development that will be altered during implementation if the project is approved. The competent authority is Department of Water and Sanitation. Relevant sections of the NWA Act are as follows:

Table 3 – NWA Listed Activity

Relevance Notice	Activity	Description	Applicability to Project
21	C	Altering of the banks of the watercourse	Banks of the wetland within site
21	I	Impending of watercourse	Watercourse is already cut by the establishment of informal settlement in the area.

2.3 National Heritage Resources Act 25 of 1999

The National Heritage Resources Act 25 of 1999 was introduced to ensure protection of South Africa's important heritage features. Section 38 of the Act requires that: *any person who intends to undertake a development categorised as: The construction of a road, wall, road, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length; must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature, and extent of the proposed development.*

Table 4 – National Heritage Resources Act, 1999 (No 25 of 1999)

Section	Description	Relevance
38 (c)	(c) any development or other activity which will change the character of a site— (i) exceeding 5 000 m2 in extent	Proposed development will alter 75 hectares of virgin land

2.4 Constitution of the Republic of South Africa

The Constitution of the Republic of South Africa, 1996 has major implications for environmental management. The main effects are the protection of environmental and property rights, the drastic 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 aspects provide general and overarching support and are of major significance in the effective implementation of the environmental management principles and structures of the Environment Conservation Act and NEMA.

Section 24 of the Constitution therefore places a duty on all spheres of government to take reasonable steps, including making laws, preventing pollution, promoting conservation, and ensuring sustainable development.

Table 5 – Application to the South African Constitution

Bushbuckridge Local Municipality as the applicant will be expected to ensure that the proposed development does not infringe on the rights of neighbouring citizens and for those that will take occupancy

2.5 The National Environmental Management: Air Quality Act 39 of 2004

The National Environmental Management: Air Quality Act 39 of 2004 provides for the setting of national norms and standards for regulating air quality monitoring, management and control and describes specific air quality measures to protect the environment and human health or well-being by: preventing pollution and ecological degradation; and promoting sustainable development through reasonable resource use. It also includes reference to the control of offensive odours whereby reasonable steps to prevent the emission of any offensive odours caused by activities on a premises are required.

Table 5 – NEMA : Air Quality

The proposed activity does not trigger need for license, however, at operational level, dust is expected. Applicant should ensure that levels of dust are kept to a minimum during construction through consistent use of dust suppressions measures.

2.6 The Conservation of Agricultural Resources Act 43 of 1983

The Act provides for control over the utilization of the natural agricultural resources of the Republic to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants; and for matters connected therewith.

2.7 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 encouraging a pro-active 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.

2.8 National Environmental Management: Waste Act 59 of 2008

The National Environmental Management: Waste Act was promulgated in 2008 with to protect health, well-being, and the environment by providing reasonable measures.

Table 6 – NEMA: Waste

Conditions will be included in the Environmental Management Plan on how the contractor will practice sustainable waste management. At operational level the municipal will have to enforce environmentally friendly waste management technical e.g., recycling

2.9 Land Use Planning Legislation

Legislation that regulates Land Use Planning has led to “spatial planning tools” that are contained in Municipal and District Strategic Management Frameworks (SMFs), Strategic Development Initiatives (SDIs) and Municipal By-laws.

2.10 The Development Facilitation Act

Contains development facilitation regulations under the Regulations under Development facilitation Act 3. The Act is directed at provincial and local spheres of government; and serves to re-address the imbalances of the past and to ensure that there is equity in the application of spatial development planning and land use management systems.

2.11 Other

2.11.1 Ehlanzeni District Municipality IDP

2.11.2 Bushbuckridge Local Municipality IDP 2020/21

2.11.3 Bushbuckridge Local Municipality SDP 2020/21

SECTION 3 – DESCRIPTION OF THE RECEIVING ENVIRONMENT

3.1 Climate

Summer rainfall with very dry winters. Effectively three seasons, namely a cool dry season from May to mid-August, a hot dry season from mid-August to about October and a hot wet season from about November to April. MAP ranges between 500 mm to 700 mm. Mean monthly maximum and minimum temperatures for Goedehoop (in the northern part of this vegetation unit) 35.3°C and –3.1°C for November and June, respectively.

7.1 Geology and Soils

The large southern and eastern parts of this area are underlain by granite of the Lebowa Granite Suite and some granophyre of the Rashoop Granophyre Suite (both Bushveld Complex, Vaalian). In the north, the sedimentary rocks of the Waterberg Group (Mokolian Erathem) are most important. Specifically, sandstone, conglomerate and siltstone of the Alma Formation and sandstone, siltstone, and shale of the Vaalwater Formation. Well-drained, deep Hutton or Clovelly soils often with a catenary sequence from Hutton at the top to Clovelly on the lower slopes; shallow, skeletal Glenrosa soils also occur. Land types of mainly Bb, Fa, Ba, Bd and Ac.

7.2 Vegetation and Landscape Features

Meandering transects covering as much of the natural habitat within the study area was chosen to sample the flora. All plant species located within each vegetation community encountered were recorded, with cover abundance assessed according to four categories, namely dominant, frequent, uncommon, or rare. Specific attention in each locality was given to habitats that potentially host SCC.

These include species listed under SANBI's Red List of South African Plants, as well as the website of the International Union for the Conservation of Nature (IUCN). Within the context of this study, SCC also include range-restricted and endemic species as well as those protected under the following legislation:

- Mpumalanga Nature Conservation Act (No. 10 of 1998) (MNCA)

- National Forests Act (No. 30 of 1998) (NFA)
- National Environmental Management: Biodiversity Act (No. 10 of 2004) Threatened,
- Protected Species Lists (GG Notice 256, 2015) (NEMBA ToPS)

Photographs of all restricted endemics and SCC were taken as evidence of occurrence and these have been submitted to the online sightings database iNaturalist, which links all research grade observations to the Global Biodiversity Information Facility (GBIF).

7.3 Threatened or Protected ecosystem

The proposed prospection project does not overlap with any threatened ecosystems and/or protected areas.

7.4 Faunal Species

Birds were identified audially and visually using Nikon 10x42 binoculars. Observations were made incidentally during the time that the vegetation survey was conducted and limited to birds seen and heard within the application site and immediate surrounds. Mammals, reptiles, and frogs were recorded incidentally as they were encountered during the survey through direct evidence (sightings) and indirect evidence (spoor, dung etc.).

Specific attention was given to habitats that potentially host SCC6. These include species listed under SANBI's Red List of South African Species, as well as the website of the IUCN. Within the context of this study, SCC also include range-restricted and endemic species as well as those protected under the following legislation:

- Mpumalanga Nature Conservation Act (No. 10 of 1998) (MNCA),
- National Environmental Management: Biodiversity Act (No. 10 of 2004) Threatened,
- Protected Species Lists (GG Notice 256, 2015) (NEMBA ToPS).

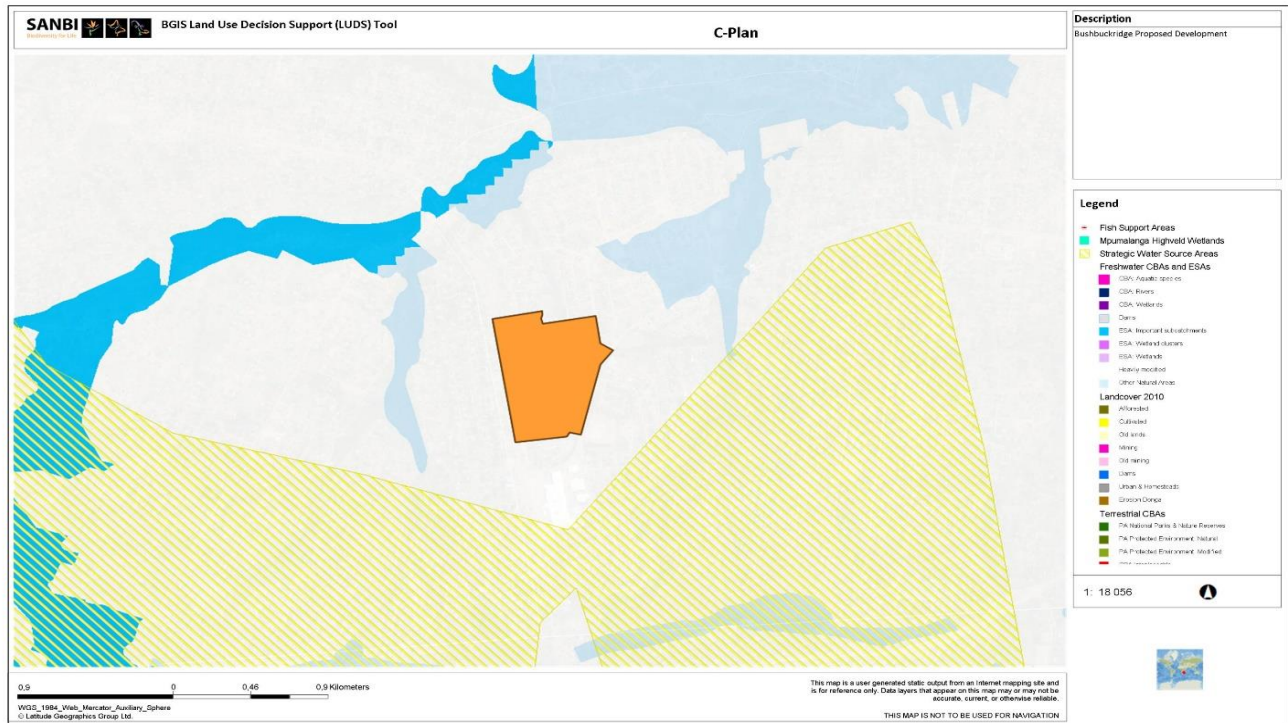
7.5 Important Bird Species

The proposed prospection project does not fall within/close to any Important Bird Areas.

7.6 Critical Biodiversity Area

According to the Critical Biodiversity Areas datasets provided by SANBI (2022); the subject property is outside the CBA area.

Figure 3 – CBA Map



2.12 Bulk Services

2.12.1 Sewer

The proposed Sewerage Reticulation will be connected to the existing Municipal sewer mainline which runs on the Northern boundary of the development along Shingumula street. It should be noted that the depths of the sewer manholes are not known. This will be determined once the land surveyor has been appointed.

2.12.2 Storm Water

Dwarsloop development has no formal stormwater management system, and the existing development access is the gravel road that has no drainage structures.

2.12.3 Water

Water for this development can be supplied from the Municipal water line running parallel Shingumula street on the Eastern boundary of the development. The existing Municipal water line is a 75mmø uPVC pipe.

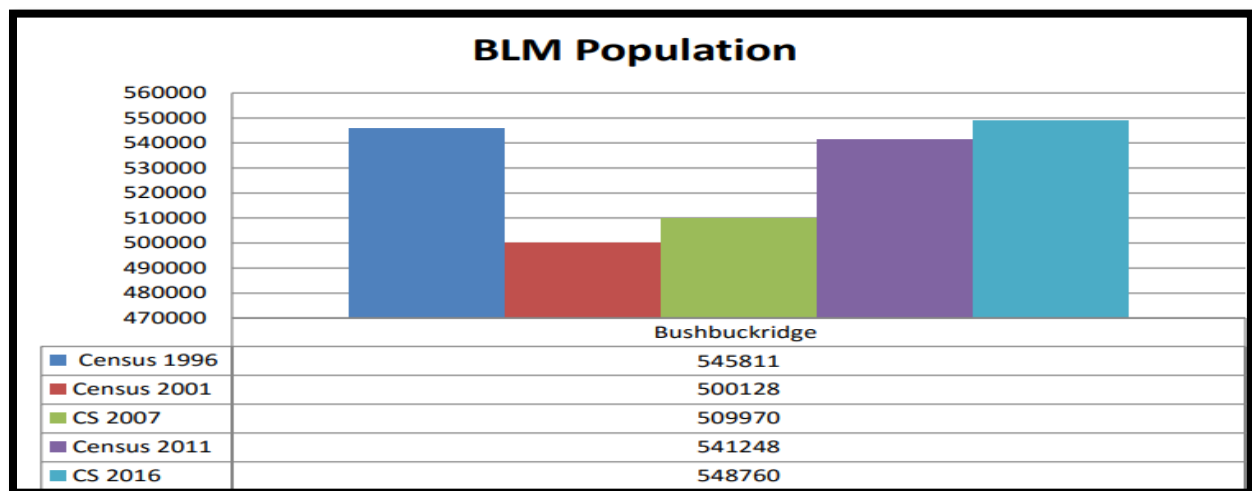
2.13 Social Economic Status

The purpose of this section is to provide a good understanding of the key social, economic, physical, and environmental features of the municipal area and their impact on spatial and sustainable development.

2.13.1 Population size, age, and gender

The population of Bushbuckridge Local municipality was 545 811 according to the Statistics South Africa 1996 Census, then the 2001 census shows that there was decrease to 500 128 in population. There was an increase in population in the 2011 census as the number rose to 541 248. Community surveys are conducted by STATSSA in between censuses, the first community survey was conducted in 2007 where it was found that we had 509 970 and in 2016 the latest one it shows that there are 548 760 people in the municipal area. Contributing factors might be the fertility & mortality rates, migration, and influx to increase residential and business development in the municipality because of neighbouring countries such as Mozambique and Zimbabwe.

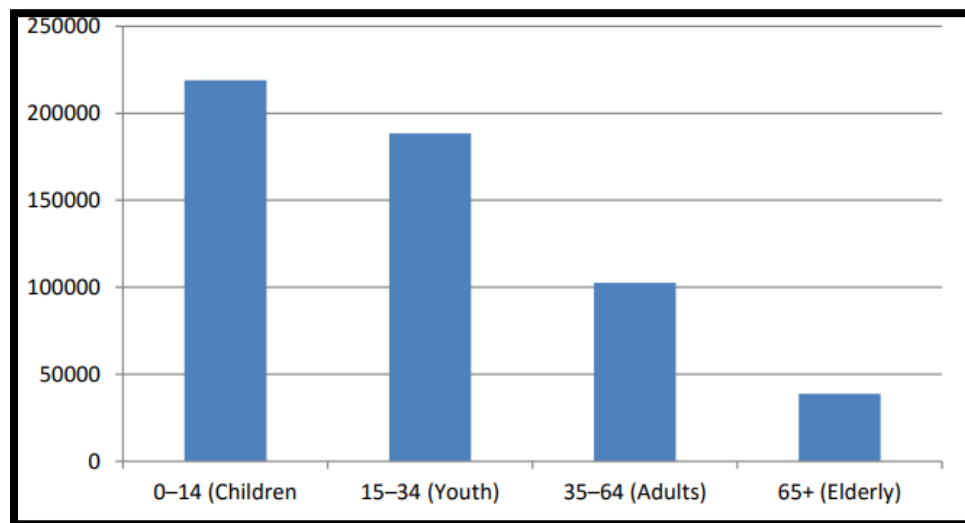
Figure 4 – Population according to Statistics SA



2.13.2 Age Analysis

The highest population in the Bushbuckridge Local Municipality is the children residents aged 0 to 14 and below contributing to 218 954 residents, children from 15 to 34 age group of 188 500 equals, the adults from 35 to 65 are 102 465 and the elderly from 66 to 120 are 38 841.

Figure 5 – Age Groups



2.13.3 Sex ratio

In sex ratio any number less than hundred (100) means that there are more females than males. In the municipality the population's sex ratio on the 1996 census it was on 83%, the over a five (5) year period to 2001 census it was on 81.94% which is a slight decrease. While between 2001 and 2011 the sex ratio is 83.33 annually over a ten (10) year period.

2.13.4 Population Groups

The population of Bushbuckridge municipality is largely black Africans with 99.55% followed by whites on 0.19%. Coloured and Indian/Asian groups are at 0.10%.

2.13.5 Poverty Rate

Poverty rate was at 56.8% 2014 then increased to 63.5% in 2017 which is an increase in poverty levels which is a result of government being the main employer in the municipality which will be unsustainable in the long run. In Bushbuckridge Local municipality's households' income is relatively low in the province as its ranked number 13 as per department of finance 2011 report. An income of R9601 – R19 600 has the most households surviving on it followed income from R19 601 – R38 200 with 29927. The average households' income is R36 569.

2.13.6 Unemployment rate

There has been a decrease in unemployment rate which was at 52.1% as per 2011 census to 46.4% (HIS Global Insight) which is an improvement.

SECTION 4 – MOTIVATION FOR PROPOSED OVER THE PREFERRED

4.1 Details of alternatives considered

A scoping report must contain the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process, and must include-details of all the alternatives considered:

(h) a full description of the process followed to reach the proposed preferred activity, site, and location within the site, including:

(i) details of all the alternatives considered.

The identification of alternatives is a key aspect of the success of the EIA process. All reasonable and feasible alternatives must be identified and screened to determine the most suitable alternatives to consider and assess in the EIA phase. There are, however, some significant constraints that must be considered when identifying alternatives for a project of this scope. Such constraints include social, financial, and environmental issues, which will be discussed in the evaluation of the alternatives.

Alternatives can typically be identified according to:

- property on which or location where the activity is proposed to be undertaken.
- type of activity to be undertaken.
- design or layout of the activity.
- technology to be used in the activity.
- operational aspects of the activity; and
- the option of not implementing the activity.

4.1.1 Location

Definition is as provided in the Integrated Environmental Series – Criteria for determining Alternatives in EIA

Location alternatives could be considered for the entire proposal or for a component of a proposal, for example the location of a processing plant. The latter is sometimes considered under site layout alternatives. A distinction should also be drawn between alternative locations that are geographically quite separate, and alternative locations that are in proximity. In the case of the latter, alternative locations in the same geographic area are often referred to as alternative sites. This tends to be the more common application.

The option of a different location could not be considered with this proposed development because the proposed development is part of the Bushbuckridge municipal plan.

4.1.2 Type of activity to be undertaken

Definition is as provided in the Integrated Environmental Series – Criteria for determining Alternatives in EIA

These are sometimes referred to as project alternatives, although the term activity can be used in a broad sense to embrace policies, plans and programmes as well as projects. Consideration of such alternatives requires a change in the nature of the proposed activity. An example is incineration of waste rather than disposal in a landfill, or the provision of public transport rather than increasing the capacity of roads. In view of the substantive differences in the nature of the proposed activities, it is likely that this category is most appropriate at a strategic decision-making level, such as in a Strategic Environmental Assessment (SEA).

A strategic decision was made by the municipality to fill in the area with residential units because of the strategic location to existing services.

4.1.3 Design or Layout alternative

Definition is as provided in the Integrated Environmental Series – Criteria for determining Alternatives in EIA

Consideration of different designs for aesthetic purposes or different construction materials to optimise local benefits and sustainability would constitute design alternatives. Appropriate applications of design alternatives are communication towers. In such cases, all designs are assumed to have different impacts. Generally, the design alternatives could be incorporated into the project proposal and so be part of the project description and need not be evaluated as separate alternatives. Site layout alternatives permit consideration of different spatial configurations of an activity on a particular site. This may include components of a proposed development or may include the entire activity. For example, siting of a noisy plant away from residences; and secondly, siting of a particular structure either prominently to attract attention or screened from view to minimize aesthetic impacts (Glasson et al., 1999).

Alternative layouts were considered for this proposed development. The alternative entails the avoidance of the wetland area and ensuring there is minimal impact to the wetland. Draft drawings are in progress and will be shared.

4.1.4 Technology to be used in the activity

The purpose of considering such alternatives is to include the option of achieving the same goal by using a different method or process. An industrial process could be changed, or an alternative technology could be used. For example, 1000 megawatt of energy could be generated using a coal-fired power station or an array of wind turbines. At a smaller scale, usually at the scale of a single plant, process alternatives could include the recycling of process water or the minimization of wastes. In the case of the smaller scale examples, it is possible for these to be incorporated into the project description and not necessarily evaluated as separate alternatives.

The purpose of considering such alternatives is to include the option of achieving the same goal by using a different method or process. the following table outlines the alternatives that were considered for this application:

Table 7 – Alternatives considered

Alternative	Description	Reason
Preferred	Two technologies' will be employed in the installation of bulk services. These options are: 1. The use of HDPE pipes for water, sewer, and storm water reticulation	HDPE pipes are flexible and easy to install. You can bend them according to the gradient and allow the effluent to flow without backflows. Compared to uPVC, there are more expensive. HDPE for storm water is aesthetically pleasing and can work in all areas including dolomitic areas.
Alternative	Two technologies' will be employed in the installation of bulk services. These options are: 1. uPVC pipes to be used for water mPVC will be used for sewer reticulation. 2. Concrete channels will be used for storm water	uPVC has a much higher strength and is stronger than HDPE but is not flexible. You cannot bend them or install them where there is need to follow the slope for the effluent to flow. This will be cheaper but requires regular clean-up because there is open to littering and can be a safety risk.

4.1.5 Operational aspects of the activity

The purpose of this alternative is to include the option for a different use of the different proposed development. For example, instead of using a block of flats, could the same facility be used as a school to benefit the community

The usage of this activity is tired in with the municipal plan that is to provide low-cost housing with administration offices on this subject property. This option could not be considered because it will contradict the strategic decision made by the municipality.

4.1.6 The option of not implementing the activity

The no-go option assumes that the project will not take place. This option will result is no environmental impact on site and surrounding areas. The option will also consider the negative impact that comes because of not proceeding with the proposed development.

If the applicant decides not to pursue the strategic goal of proving residential units within on this subject property, this will result in no environmental impacts on site and

surrounding areas. However, if the applicant persists and the application is approved the following will be realised:

- There is no guarantee that the currently open land will remain unoccupied. From the current activity assessment, the 200 hectares will be cleared illegally in an unsustainable manner
- Job opportunities that will arise at construction level, will not be realised
- The lack of sewer and water means the informal settlers are currently living in unsanitary condition
- The need for electricity will remain and the residence will continue with illegal connection that does not result with any financial benefit to the formal sector.

4.2 Site Selection Matrix

g) Full description of the process followed to reach the proposed preferred activity, site, and location within the site, including (viii) the outcome of the site selection matrix

This was not done because the applicant according to the Spatial Development Framework plans to infill all open spaces within the municipality and this proposed project forms part of that objective.

4.3A concluding statement indicating the preferred alternatives, including preferred location of the activity

(x) a concluding statement indicating the preferred alternatives, including preferred location of the activity.

The preferred alternatives entail the use of HDPE materials. HDPE material can work in all environments i.e., whether the area is dolomitic or not. It is also a flexible material that can be used in all topography without causing backflows. Other factors that were taken into consideration are:

1. Safety of potable water and long-term reliability,
2. Resistance to corrosion, tuberculation, and deposits,
3. Flexibility to speed installations,
4. Freeze break resistance, and
5. lightweight, easy to transport.

4.4 Need and Desirability of the proposed development

A scoping report must contain the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process, and must include:

- 2(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location.

(As per notice 792 of 2012, or the updated version of this guideline)

Table 7 - Need

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
Is the land use considered within the timeframe intended by the existing spatial development framework (SDF) agreed to by the relevant environmental authority?	Yes
Should development, or if applicable, expansion of the town / area concerned in terms of this land use occurs here at this point time?	Yes
Does the community / area need the activity and associated land use concerned	Yes
Are necessary services with adequate capacity currently available or must additional capacity be created to cater for the development	Bulk service is being prepared and will be submitted to the local municipality for approval.
Is this development provided for in the infrastructure planning of the municipality, and if not what will the implications be on the infrastructure planning of the municipality	Yes
Is this project part of a national program to address an issue of national concern or importance?	Yes

Table 8 - Desirability

QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
Is the project the best practicable environmental option for this land / site?	Yes
Will the approval of this application compromise the integrity of the existing approved and credible municipal IDP, and SDF as agreed to by the relevant authorities?	No
Would this approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can be justified in terms of sustainability considerations?	No
Do locations factors favour this land use at this place?	yes
How will the activity or land use have associated with the activity applied for, impact on sensitive natural and cultural areas?	The wetland and graves within the subject property will be avoided.
How will this development impact on people's health and wellbeing	Improve the quality of lives for people close to the proposed development
Will the proposed activity or land use associated with the activity applied for, result in unacceptable opportunity costs?	No
Will the proposed land use result in unacceptable cumulative impacts?	No

Table 9 – Detailed responses for the need and desirability

	QUESTIONS AS PER GUIDELINE	EAP'S RESPONSE
	Securing ecological sustainable development and use of natural resources	
1. How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?		The proposed development considers the ecological aspects of the study area in the form of a wetland and vegetation impact assessment. There is a wetland within the subject property. The wetland specialist recommended a buffer, and the engineers must avoid this buffer.
1.1. How were the following ecological integrity considerations considered?	1.1.1. Threatened ecosystems.	1.1.1. The site assessment contains a wetland and may contain some sensitive fauna species. Information was sourced from the SANBI site. Wetland specialist recommended a buffer.
	1.1.2. Sensitive, vulnerable, highly dynamic, or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.	1.1.2. The site contains a wetland and information was obtained from the SANBI site. Wetland specialist recommended a buffer. For detailed report reference is made to Appendix G2.
	1.1.3. Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs")	1.1.3. reference is made to the attached map, the proposed development is outside the CBA area.

	1.1.4. Conservation targets	1.1.4. An ecological assessment and wetland assessment were undertaken to comply with NEM:BA. Buffers have been put around the wetland and graves within the proposed development.
	1.1.5. Ecological drivers of the ecosystem	1.1.5. ecological drivers include alien species invasive, habitat change, pollution, etc. reference is made to Appendix G1 for the detailed report on how to mitigate these conditions.
	1.1.6. Environmental Management Framework	1.1.6. We could not find an EMF for the relevant local municipality.
	1.1.7. Spatial Development Framework	1.1.7. Dwarsloop is identified as one of those areas with nodes that require infilling. In the Spatial Development Framework 2020/2021. Section 9.1.2 indicates that one of the municipal objectives will be to infill these areas. This project is one of the projects that seeks to address this objective.
	1.1.8. Global and international responsibilities relating to the environment	1.1.8. the subject property does not fall in any of the areas that are regulated by international laws.
1.2. How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and		The proposed development will result in the loss of vegetation, disturbance of the wetland fringes. An EMPr will be developed as part of the EIR process to mitigate the identified impact.

where these negative impacts could not be avoided altogether, what measures were explored to minimize and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?		
<p>1.3. How will this development pollute and/or degrade the biophysical environment?</p> <p>What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</p>		Reference is made to the detailed report included to this application as Appendix G1.
1.4. What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise reuse and/or		Waste generated by construction activities will be utilised around the site for levelling. Domestic waste will be collected in waste receptacles and disposed of at the nearest landfill site. Induction training of contractors' employees, demarcation of the site, beaming the development site and collection of hazardous

recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?		waste by a certified waste contractor is some mitigation measures prescribed.
1.5. How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?		Reference is made to detailed report from the Heritage Specialist included to this report as Appendix G3
1.6. How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable		Development will only take place within the proposed development footprint, thus limiting unnecessary removal of flora species A buffer is being implemented around the wetland area and all protected species During the rehabilitation phase, the applicant will landscape the area with indigenous plants only.

<p>natural resources been considered?</p> <p>What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts?</p> <p>What measures were explored to enhance positive impacts?</p>		
<p>1.7. How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part?</p> <p>Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system considering carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is</p>	<p>1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e., de-materialised growth)? (Note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate,</p>	<p>Recycling will be implemented at operational phase. This will be recommended in the EMPr</p>

not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?	without compromising their quest to improve their quality of life)	
	1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e., what are the opportunity costs of using these resources this the proposed development alternative?	HDPE will address the need for bulk services in the area. HDPE work in all environments, whether dolomitic or not.
	1.7.3. Do the proposed location, type and scale of development promote a reduced dependency on resources?	Yes
1.8. How was a risk-averse and cautious approach applied in terms of ecological impacts?	1.8.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?	Reference is made to the specialist reports

	1.8.2. What is the level of risk associated with the limits of current knowledge?	Low
	1.8.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	Buffer will be adhered to from construction to operational phase
1.9. How will the ecological impacts result from this development impact on people's environmental right in terms following:	1.9.1. Negative impacts: e.g., access to resources, opportunity costs, loss of amenity (e.g., open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	Mitigation measures will be provided in the Environmental Management Plan.
	1.9.2. Positive impacts: e.g., improved access to resources, improved amenity, improved air, or water quality, etc. What measures	Mitigation measures will be provided in the Environmental Management Plan.

	were taken to enhance positive impacts?	
1.10. Describe the linkages and dependencies between human wellbeing, livelihoods, and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g., on livelihoods, loss of heritage site, opportunity costs, etc.)?		Wetlands are useful for many things such as, as a research tool, attracting specific aquatic species. Buffer zones for flooding.
1.11. Based on all the above, how will this development positively or negatively impact on ecological integrity objectives / targets/considerations of the area?		Wetland specialist recommendations are included in the aquatic study
1.12. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in		The subject property is slowly being taken over by illegal settlement in the form of businesses. The proposed development will provide a buffer reduce the impact of the illegal developments into ecological important areas.

the selection of the “best practicable environmental option” in terms of ecological considerations?		
1.13. Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope, and nature of the project in relation to its location and existing and other planned developments in the area?		Cumulative impacts will be covered in the draft and final EIR report
2.1. What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?	2.1.1. The IDP (and its sector plan’s vision, objectives, strategies, indicators, and targets) and any other strategic plans, frameworks of policies applicable to the area.	Refer to Section 2.13
	2.1.2. Spatial priorities and desired spatial patterns (for example need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.)	Not applicable

	2.1.3. Spatial characteristics (for example existing land uses, planned land uses, cultural landscapes, etc.)	The land is currently zoned agricultural, the agricultural importance has been lost. Reference is made to the agricultural study
	2.1.4. Municipal Economic Development Strategy (LED Strategy).	Municipal strategic plans include the need for this subject location to be utilised well.
2.2. Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?	2.2.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	Yes, according to the 2020/21 SDP, only 15% of employable people are employed.
2.3. How will this development address the specific physical, psychological, developmental, cultural, and social needs and interests of the relevant communities?		The proposed development will result in: <ul style="list-style-type: none"> • Employment during construction, • Business opportunities during construction • Revenue to the government through taxes and levies.
2.4. Will the development result in equitable (intra and inter-generational) impact distribution, in the short and long-term? Will the impact be socially and economically sustainable in the short and long-term?		Yes, both short term and long term. Improved living residents and services.

2.5. In terms of location, describe how the placement of the proposed development will:	2.5.1. Result in the creation of residential and employment opportunities near or integrated with each other.	Proposed subject is close to an existing established residence.
	2.5.2. Reduce the need for transport of people and goods	There will be improved road systems. One of these projects objectives is improved roads.
	2.5.3. Result in access to public transport or enable non-motorised and pedestrian transport (e.g., will the development result in densification and the achievement of thresholds in terms public transport)	Development includes improved road systems
	2.5.4. Compliment other uses in the area	Proposed development in in the middle of existing township. Proposed services will complement existing services.
	2.5.5. Be in line with the planning for the area	Development is in line with the municipal SDP
	2.5.6. For urban related development, make use of underutilised land available with the urban edge	Yes, this development entails nodes developments.
	2.5.7. Optimise the use of existing resources and infrastructure	There is no need to build new access road, this development will use existing road network.

	2.5.8. Opportunity costs in terms of bulk infrastructure expansions in non-priority areas (for example not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement)	No
	2.5.9. Discourage urban sprawl and contribute to compaction/densification	Yes, currently there are informal shelters within this space, if this project is approved, it will take away the informal settlement currently taking place.
	2.5.10. Contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure more than current needs	Yes, refer to SDP, you will notice that DWARSLOOP was identified as one of those areas where development did not take place according to plan. This development will fill in the open spaces.
	2.5.11. Encourage environmentally sustainable land development practices and processes	Yes
	2.5.12. Consider special locational factors that might favour the specific location (for example the location of a strategic mineral resource, access to the port, access to rail, etc.)	Subject property is close to shopping malls and regional roads and educational facilities.

	2.5.13. The investment in the settlement or area in question will generate the highest socio-economic returns (i.e., an area with high economic potential),	Yes
	2.5.14. Impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area	Sense of place will be enhanced because currently there is illegal business facilities slowly taking over the business.
	2.5.15. In terms of the nature, scale, and location of the development, promote or act as a catalyst to create a more integrated settlement?	No
2.6. How were a risk-averse and cautious approach applied in terms of socio-economic impacts?	2.6.1. What are the limits of current knowledge (note: the gaps, uncertainties, and assumptions must be clearly stated)?	Each specialist discussed limitations in their report
	2.6.2. What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability, and sustainability)	Very low

	associated with the limits of current knowledge?	
	2.6.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	Buffers must be always adhered to
2.7. How will the socio-economic impacts result from this development impact on people's environmental right in terms following:	2.7.1. Negative impacts: e.g., health (e.g., HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimize, manage and remedy negative impacts?	Environmental management plan discussed in detail how these risks will be mitigated
	2.7.2 Positive impacts. What measures were taken to enhance positive impacts?	Environmental management plan discussed in detail how these risks will be mitigated
2.9 What measures were taken to pursue the selection of the best practicable environmental option in terms of socio-economic considerations?		Environmental management plan discussed in detail how these risks will be mitigated

<p>2.10 What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the best practicable environmental option to be selected, or is there a need for other alternatives to be considered?</p>		<p>Environmental management plan discussed in detail how these risks will be mitigated</p>
<p>2.11 What measures were taken to pursue equitable access to environmental resources, benefits, and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?</p>		<p>Environmental management plan discussed in detail how these risks will be mitigated</p>

2.12 What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?		Environmental management plan discussed in detail how these risks will be mitigated
2.13 What measures were taken to:	<p>2.13.1 Ensure the participation of all interested and affected parties</p> <p>2.13.2 Provide all people with an opportunity to develop the understanding, skills, and capacity necessary for achieving equitable and effective participation</p> <p>2.13.3 Ensure participation by vulnerable and disadvantaged persons</p> <p>2.13.4 Promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means</p>	Reference is made to section 4.5 of this report

	<p>2.13.5 Ensure openness and transparency, and access to information in terms of the process</p> <p>2.13.6 Ensure that the interests, needs and values of all interested and affected parties were considered, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge</p> <p>2.13.7 Ensure that the vital role of women and youth in environmental management and development were recognized and their full participation therein was promoted?</p>	
2.14 Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g., a mixture of low-, middle-, and high-income housing opportunities) that is consistent with		Environmental management plan discussed in detail how these risks will be mitigated

the priority needs of the local area (or that is proportional to the needs of an area)?		
2.15 What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?		Environmental management plan discussed in detail how these risks will be mitigated
2.16 Describe how the development will impact on job creation in terms of, amongst other aspects:	2.16.1 The number of temporary versus permanent jobs that will be created	Approximately 500 temporary jobs will be created during construction and about 50 jobs will be permanent
	2.16.2 Whether the labour available in the area will be able to take up the job opportunities (i.e., do the required skills match the skills available in the area)	Where possible the contractor will hire from the locals with the assistance of the ward councillor.

	2.16.3 The distance from where labourers will have to travel	The travel distance is short
	2.16.4 The location of job opportunities versus the location of impacts (i.e., equitable distribution of costs and benefits)	The location is easily accessible on foot
	2.16.5 The opportunity costs in terms of job creation (e.g., a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.)?	The value of agriculture is low
2.17 What measures were taken to ensure:	2.17.1. That there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment	Reference is made to section 2 above
	2.17.2. That actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?	Yes, there are currently no conflicts
2.18. What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental		Public participation Process was undertaken in accordance with the law

resources will serve the public interest, and that the environment will be protected as the people's common heritage?		
2.19. Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?		Mitigation measures are realistic, refer to the EIR and EMPr
2.20. What measures were taken to ensure that the costs of remedying pollution, environmental degradation, and consequent adverse health effects and of preventing, controlling, or minimising further pollution, environmental damage or adverse health effects would be paid for by those responsible for harming the environment?		Reference is made to EIR and EMP
2.21. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the		Environmental Management Plan goes into detail on this subject

development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?		
2.22. Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope, and nature of the project in relation to its location and other planned developments in the area?		Environmental Management Plan goes into detail on this subject

4.5 Public Participation

A scoping report must contain the information that is necessary for a proper understanding of the process, informing all preferred alternatives, including location alternatives, the scope of the assessment, and the consultation process to be undertaken through the environmental impact assessment process, and must include:

- *2(h)(ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs.*
- *2(h)(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them.*

4.5.1 Approach

Public Participation is the cornerstone of any EIA. The principles of NEMA as well as the EIA Regulations govern the EIA process, including public participation. These include provision of sufficient and transparent information on an on-going basis to stakeholders to allow them to comment, and ensuring the participation of previously disadvantaged people, women, and the youth.

The public participation process is primarily based on two factors; firstly, on-going interaction with the environmental specialists and the technical teams to achieve integration of technical assessment and public participation throughout. Secondly, to obtain the bulk of the issues to be addressed early in the process, with the latter half of the process designed to provide environmental and technical evaluation of these issues. These findings are presented to stakeholders for verification that their issues have been captured and for further comment. Input into the public participation process by members of the public and stakeholders can be given at various stages of the EIA process. Registration on the project can take place at any time during the EIA process up until the final EIA report is submitted to Department of Environmental Affairs (DEA). There are however set periods in which comments are required from Interested and / or Affected Parties (I&APs) to ensure that these are captured in time for the submission of the various reports. The comment periods during the Scoping phase were implemented according to NEMA EIA Regulations.

4.5.1.1 Aims of the Public Participation Process (PPP)

The primary aims of the PPP are:

- To inform interested and affected parties (I&APs) and key stakeholders of the proposed development.

- To initiate meaningful and timeous participation of I&APs.
- To identify issues and concerns of key stakeholders and I&APs with regards to the proposed development
- To promote transparency and an understanding of the proposed project and its potential environmental impacts.
- To provide information used for decision-making.
- To provide a structure for liaison and communication with I&APs and key stakeholders.
- To assist in identifying potential environmental impacts associated with the proposed development.
- To ensure inclusivity (the views, needs, interests and values of I&APs must be considered in the decision-making process).
- To focus on issues relevant to the project and issues considered important by I&APs and key stakeholders.
- To provide responses to I&AP queries.
- To encourage co-regulation, shared responsibility, and a sense of ownership.

In addition to the guidance of the PPP in the EIA Regulations, every effort was also made to conform to the requirements of the Promotion of Administrative Justice Act 2000 (Act 3 of 2000), which ensures that the client acts in the best interests of the public to make sure that the public has free access to information regarding developments that may have an impact on I&APs.

4.5.1.2 The Role of Registered Interested and Affected Parties

The EIA regulations emphasise the importance of public participation. In terms of the EIA regulations, registered interested and/or affected parties:

- May participate in the application process.
- May comment on any written communication submitted to the competent authority by the applicant or environmental consultant.
- Must comment within the timeframes as stipulated by the EIA Regulations.
- Must send a copy of any comments to the applicant or Environmental Assessment Practitioner (EAP) if the comments were submitted directly to the competent authority, and

- Must disclose any direct business, financial, personal, or other interests that the person has in the application being granted or refused.

4.5.1.3 The Role of the EAP

In terms of the EIA regulations, the EAP is responsible for:

- Managing the public participation process,
- Remain independent from the process, this means, the Reg. EAP must undertake the work objectively even if this results in views and findings that are not favourable to the applicant.
- Must disclose material information that may influence the decision; and

The following actions will be taken upon receiving comments/queries/issues:

- The contact details provided will be entered into the project database for use in future notifications.
- Confirmation of receipt of comments will be done by email, text, letter, or any method that will ensure the registered interested and affected party receives a confirmation.
- Issues raised will be addressed comments in the Issues & Response Report.

4.5.2 Overview of the Public Participation Process to Date

4.5.2.1 Authority Consultation

To date, no consultation with authority has been undertaken. It is our view that the process to date does not require a pre-application meeting. Should that become necessary as the process continues, all consultation will be on record and minutes. Records of such meetings will be included to this report as Appendix E.

4.5.2.2 Site Notifications

Chapter 6 of the NEMA Act

41(2)The person conducting a public participation process must consider any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by-

- (a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of-

- (i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and
- (ii) any alternative site.

41(3) A notice, notice board or advertisement referred to in sub regulation (2) must:

- a. give details of the application or proposed application, which is subjected to public participation, and
- b. (b) state-
 - a. whether basic assessment or S&EIR procedures are being applied to the application.
 - b. the nature and location of the activity to which the application relates.
 - c. where further information on the application or proposed application can be obtained; and
 - d. the way and the person to whom representations in respect of the application or proposed application may be made.

41(4) A notice board referred to in sub regulation (2) must:

- a) be of a size at least 60cm by 42cm; and
- b) display the required information in lettering and in a format as may be determined by the competent authority.

Ten notices were posted on residence fences, public shops, and posts in and around the Lethlabile informal settlement. There is no alternative notice, so all the notices were posted in the preferred location. The site notices clearly state that the application is for a scoping and environmental impact report. Site notices are in colour and A2 in size clearly stating the subject property location and to whom residence should direct their comments. Reference is made to Appendix E1, for photographic evidence of the site notices that were posted on the 19th of March 2022.

4.5.2.3 Newspaper Advertisement

Chapter 6 of the NEMA Act, 41(c) placing an advertisement in:

- i. one local newspaper, or
- ii. any official Gazette that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these regulations.

In line with Regulation 41, a legal notice was placed in the **government gazette** and was published on the **1st of April 2022**. A copy of this notice is included to this application as Appendix E3.

4.5.2.4 Background Information Document

Chapter 6 of the NEMA Act

The person conducting a public participation process must consider any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by-

41(2)(b) giving written notice, in any of the manners provided for in section 47D of the Act, to:

- i. the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken.
- ii. owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site where the activity is to be undertaken.
- iii. the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area.
- iv. the municipality which has jurisdiction in the area.
- v. any organ of state having jurisdiction in respect of any aspect of the activity; and
- vi. any other party as required by the competent authority;

The purpose of a written notification is to break the project details down for all interested and affected members to understand the scope of work. Further, a written notice includes the process of how the public participation will be undertaken. To address the requirements stipulated in NEMA Act, the following activities were undertaken:

- a. There was no need to notify the owner of the land because the land is managed by the applicant i.e., Bushbuckridge Local Municipality.
- b. The Local councillor offered to do door to door service delivery of the written notification to all those occupying land adjacent to the subject project. Acknowledgement of this written notice is included to this application as Appendix E4.
- c. The subject property falls under ward 8 within the Bushbuckridge Local Municipality. The ward councillor is Mr. Eddy Mashego. He was contacted on

the 19th of March 2022 via a telephone call. He acknowledged our presence and gave us consent to post site notices on and around the subject property.

- d. A written notice was emailed to the local and district municipality on the 29th of March 2022 and the ward councillor distributed the notices to property owners adjacent to the proposed development.
- e. A notification was sent to the Mpumalanga Provincial Authority on the 25th of March 2022.
- f. Should there be other stakeholders as required by the authority, these will be notified too and given an opportunity to comment.

4.5.2.5 Summary of Issues raised by IAPs

Chapter 6 of the NEMA Act

Section 44(1) The applicant must ensure that the comments of interested and affected parties are recorded in reports and plans and that such written comments, including responses to such comments and records of meetings, are attached to the reports and plans that are submitted to the competent authority in terms of these Regulations.

Comments and Response Sheet will be included in the Final Scoping Report. This draft scoping and plan of study forms the first report to be subjected to a commenting period of 30 days and thus allow competent authority, stakeholders and all registered and interested members to provide comments. A summary of comments will be made available in the Final Scoping Report as Appendix E6.

4.5.2.6 Registration of Interested and Affected Members

Chapter 6 of the NEMA Act

A proponent or applicant must ensure the opening and maintenance of a register of interested and affected parties and submit such a register to the competent authority, which register must contain the names, contact details, and addresses of:

all persons who, because of the public participation process conducted in respect of that application, have submitted written comments, or attended meetings with the proponent, applicant, or EAP.

all persons who have requested the proponent or applicant, in writing, for their names to be placed on the register. And all organs of state which have authority in respect of the activity to which the application relates.

All persons who will request to participate in the process will be entered on a register. The register will not be limited to those that have expressed interest only, it will also automatically include all organs of state with jurisdiction of the subject property. A Copy of the register is included to this application as Appendix E9 - IAP Register.

SECTION 5 – POSSIBLE RISK, IMPACTS AND PROPOSED MITIGATION MEASURES

5.1 Potential Risk and Impacts

Possible risks associated with preferred, and alternative includes the following:

1. Possible sedimentation and erosion,
2. Impact on water quality and quantity
3. Loss of indigenous vegetation
4. Disturbance of faunal species
5. Potential impact on cultural and archaeological items
6. Socio and economic impact
7. Potential dust and noise pollution
8. Impact on sense of place

5.2 Methodology

As a means of determining the significance of the various impacts that can occur or may be associated with the proposed development, a series of assessment criteria were used for each impact. The assessment of impact has been done according to a synthesis of the following assessment criteria in terms of the EIA Regulations Guideline Document, April 1998:

5.2.1 Nature of the impact

This is an appraisal of the type of effect the activity would have on the affected environment. This description includes what is being affected and how.

5.2.2 Extent

The extent refers to whether the impact will be:

- Site – 1
- Local – 2
- Regional – 3
- National – 4
- International – 5

5.2.3 Probability

This describes the likelihood of the impact occurring indicated as:

- Improbable, chances of this impact are 0 - 1
- Improbable: low likelihood, the chance of this impact occurring is between 0 and 25%. However, mitigation measures might be needed in the event of this impact occurring - 2
- Probable: a distinct possibility, the chance of this impact occurring is approximately 50% and therefore it needs to be mitigated - 3
- Highly probable: the impact is most likely to occur, and the planning phase must address the relevant mitigation measures to limit the impact - 4
- Definite: this impact will occur regardless of any prevention measures or is currently occurring. Mitigation measures or contingency plans must be implemented to contain the impact - 5.

5.2.4 Intensity

This indicates the degree to which the impact changes or could change the conditions or quality of the environment. This was qualified as:

- No impact - 2
- Low: the impact alters the affected environment in such a way that the natural processes or functions are not affected - 4
- Medium: the affected environment is altered, but functions and processes continue, albeit in a modified way - 6
- High: function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases - 8; and
- Very high: process will cease - 10.

5.2.5 Duration

This indicates whether the lifetime of the impact will be:

- Short term: the impact will disappear with mitigation or will be mitigated through a natural process in a period shorter than that of the construction phase, rating of 1.
- Short to Medium: the impact will be relevant to the end of a construction phase, rating of 2.
- Medium term: the impact will last up to the end of the development phases, where after it will be entirely negated, rating of 3.

- Long term: the impact will continue or last for the entire operational lifetime of the development but will be mitigated by direct human action or by natural processes thereafter, rating of 4.
- Permanent: this impact is not reversible and human intervention e.g., rehabilitation, is unlikely to negate the impact sufficiently (e.g., acid mine drainage), rating of 5.

5.2.6 Significance

As a means of determining the significance of the various impacts that can occur or may be associated with the proposed development, a series of assessment criteria were used for each impact. The assessment of impact has been done according to a synthesis of the following assessment criteria in terms of the EIA Regulations Guideline Document, April 1998:

The significance will establish whether the impact is destructive is indicated as:

- Low, where the impact affects the environment in such a way that natural, cultural, and social functions and processes are not affected.
- Medium, where the affected environment is altered but natural, cultural, and social functions and processes continue albeit in a modified way.
- High, where natural, cultural, or social functions or processes are altered to the extent that it will permanently cease.

The significance impact is indicated per Construction Phase (C) and Operational Phase (O)

Table 11: Positive / Negative Significance Rating

Significance Rating	Value	Definition	Positive Impact Management Recommendation
High	101-150	Critically consider the viability of proposed projects. Improve current management of existing projects significantly and immediately	Maintain current management
Medium	51-100	Comprehensively consider the viability of proposed projects. Improve current management of existing projects significantly	Maintain current management
Low	0-50	Consider the viability of proposed projects. Improve current management of existing projects	Maintain current management

5.3 Proposed Mitigation Measures

Mitigation measures will be provided in the Environmental Impact Report.

SECTION 6 – RECOMMENDATION BY EAP AND SPECIALIST OPINION

6.1 EAP

The project can be authorised, the following recommendations must be taken into consideration:

- Application for water use license must be lodged. Applicant cannot commence with work without authorisation from the Department of Water and Sanitation.
- An EMP must be binding, and recommendations followed through by means of an Environmental Control Officer.
- Applicant must not move the boundary meant to protect the wetland and the graves that are within the subject property.
- Opinion of an agricultural specialist must be included in the Environmental Impact Report.
- Comments from a heritage authority must be obtained and implemented during the construction phase.

6.2 Aquatic Specialist

The project can be authorised, measures to ensure that the applicant adheres to the following mitigation measures must be put in place:

- **Buffer Zone.** A buffer zone of no development within 30 m from the outer edge of the Seepage Wetland is recommended, as shown in Figure 5-2. The aim of the buffer zone is to maintain the ecological integrity and functioning of the wetland by 1) avoiding direct impacts, and 2) minimising indirect impacts. A buffer zone of 30 m is recommended because:
 - soils in and around the wetland are highly permeable because of their sandy nature, so a wide buffer zone is appropriate.
 - the slope of the wetland and surrounding topography is flat to gentle, which means that small changes in water level could have significant spatial consequences, so a wide buffer zone is appropriate.
 - the wetland remains functionally intact and provides several important ecological goods and services, including biodiversity support, grazing for cattle, and

nutrient assimilation, so a wide buffer is appropriate to protect these services; and

- vegetation cover around the wetland is sparse, presumably because of sandy soils and heavy grazing pressure, so a wide buffer zone is appropriate.
- **Sewage and Wastewater Reticulation.** The proposed development must ensure that all sewage and wastewater streams that could be generated during the operational phase must be connected to the existing wastewater treatment system using High Density Polyethylene Pipe (HDPE). Furthermore, all such inspection chambers must be sealed to prevent ingress of stormwater.
- **Stormwater Management Plan.** A detailed Stormwater Management Plan must be developed for the proposed development and the associated road network. The design of the stormwater system must aim to reduce risks of sediment transport and water quality deterioration by:
 - separation of clean and dirty stormwater runoff.
 - recycling of dirty stormwater, where feasible.
 - connection of dirty stormwater into the Wastewater Treatment reticulation, or otherwise on-site treatment to appropriate discharge standards.
 - use of multiple smaller discharges rather than a few large discharges.
 - retention ponds, where appropriate, to reduce the magnitude of stormwater flows.
 - swales, where appropriate, to improve the quality of seepage water; and
 - permeable paving, where feasible, to reduce the magnitude of stormwater flows.

6.3 Heritage specialist

Grave sites one & three are situated within existing fenced erven, whilst grave sites two & four are situated in non-enclosed or formalized areas. Grave site two appears to consist of three graves, but according to local residents interviewed there are eight graves; and Grave site four consist of one isolated grave. The possibility of graves not visible to the human eye always exists and this should be taken into consideration in the Environmental Management Plan.

It is important to note that all graves and cemeteries are of high significance and are protected by various laws. Legislation regarding graves includes the National Heritage Resources Act (Act 25 of 1999) whenever graves are 60 years and older. Other legislation regarding graves includes those when graves are exhumed and relocated, namely the Ordinance on Exhumations (no 12 of 1980) and the Human Tissues Act (Act 65 of 1983 as amended).

6.4 Terrestrial biodiversity

Provided the recommendations suggested in this report are followed, and the developer complies with all relevant legislation pertaining to the development activities (such as the NEMA and NEMBA), there is no objection to the proposed development in terms of the terrestrial ecosystems of the study area. However, if the development were to proceed without the implementation of the recommendations given above then we would object to the development application, due to the potential negative impact on the Wetland community and important wetland functioning.

SECTION 7 - OATH / AFFIRMATION BY EAP

7.1 The correctness of the information provided in the report

I **Grace Magaya** herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with Interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP : 
Date : 20 May 2022

7.2 The inclusion of comments and inputs from stakeholders and interested and affected parties

I **Grace Magaya** herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with Interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP : 
Date : 20 May 2022

7.3 Any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties

I **Grace Magaya** herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with Interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP : 
Date : 20 May 2022

7.4 An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment

I **Grace Magaya** herewith undertake that the information provided in the foregoing report is correct, and that the level of agreement with Interested and Affected Parties and stakeholders has been correctly recorded and reported herein.

Signature of the EAP : _____

Date : _____