



**DRAFT BASIC ASSESSMENT FOR PROPOSED GRIMBEEK TOWNSHIP
ESTABLISHMENT ON THE REMAINING EXTENT OF PORTION 46 AND
PORTION 58 & 59 OF THE FARM ELANDSHEUVEL 436 IQ IN THE
GRIMBEEK PARK AREA, WITHIN THE JURISDICTION OF JB MARKS
LOCAL MUNICIPALITY, NORTH-WEST PROVINCE**



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VERIFICATION PAGE			
TITTLE	DRAFT BASIC ASSESSMENT FOR PROPOSED GRIMBEEK TOWNSHIP ESTABLISHMENT ON THE REMAINING EXTENT OF PORTION 46 AND PORTION 58 & 59 OF THE FARM ELANDSHEUVEL 436 IQ IN THE GRIMBEEK PARK AREA, WITHIN THE JURISDICTION OF JB MARKS LOCAL MUNICIPALITY, NORTH-WEST PROVINCE		
DATE	November 2025	REPORT STATUS	Draft
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EAP DECLARATION:

I CAIPHUS MUKWEVHO; herewith undertake that:

- I act as an independent specialist consultant in the field of Environmental Sciences;
- Do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the Environmental Impact Assessment Regulations, 2014;
- Have and will not have any vested interest in the proposed activity proceeding;
- Have no, and will not engage in, conflicting interests in the undertaking of the activity;
- Undertake to disclose, to the competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report; and
- Will provide the competent authority with access to all information at my disposal regarding the application, whether such information is favorable to the applicant or not.



Signature of EAP:

November 2025

Date:

EXECUTIVE SUMMARY

The JB Marks Local Municipality (proponent) proposes to establish a township on the remaining extent of portion 46 and portion 58 & 59 of the farm Elandsheuvcl 436 IQ in the Grimbeek Park Area, within the jurisdiction of JB Marks Local Municipality, North-West province. The JB Marks Local Municipality is a Category B municipality situated within the Dr Kenneth Kaunda District in the North West Province. The Municipality is the largest by land mass within the district making up almost half its geographical area.

The Housing Development Agency (HDA) has the goal of fulfilling South Africa's spatial development objectives which includes Sustainable Human Settlement Development Initiatives. High unemployment levels increase in demand of rural development housing due to an increase in population are some of the challenges the proposed project intends to address. The HDA has highlighted that it as a priority of upgrading the standard of living of the marginalized communities in the jurisdiction by introducing better infrastructural services such as housing, businesses, and many other defined initiatives.

The proposed residential development site is strategically located near a Class 3 road network, a planned Neighbourhood Node and a Main Activity Corridor. This positioning enhances access to transport, amenities and services and supports the municipality's broader vision of compact, integrated and sustainable urban development.

The proposed development site achieved a high overall rating of 78.6%, indicating strong potential for a successful residential development. This high score is primarily due to the perceived quality of the residential environment, high SEM profile and the site's location within the current and future growth direction of the area. A rating above 70% is considered high, indicating that most of the important fundamentals for a successful residential development are in place.

From the outset of this development the variety of project elements will all offer excellent opportunities for accessing to housing and land. There must be literally multitude of jobs within the different aspects of the project, from laborers to

foremen, supervisors, guides, unskilled and skilled artisans including bricklayers, plasterers, painters, carpenters, plumbers, electricians, cabinetmakers and many more.

In terms of Section 24F of the National Environmental Management Act (Act 107 of 1998) the proponent cannot commence with the township establishment project without an Environmental Authorisation (EA). As such the Housing Development Agency (HDA) on behalf of the JB Marks Local Municipality has appointed Vhuluvhi Group (Pty) Ltd (Environmental Assessment Practitioner) to undertake an Environmental Impact Assessment Process in order to obtain an EA.

The proposed Township Establishment activities trigger Activity No: 27 and 28 of Listing Notice 1 of GN R. 327 (7 April 2017), Activity no 12 (h)(iv)(vi) of Listing notice 3 of GN R 324 (7 April 2017). The process to be followed for this application of EA a Basic Assessment (BA) of the Environmental Impact Assessment Process. The Basic Assessment Process follows a 4 (four) step process:

Step 1: Application.

Applicant must submit Application for Environmental Authorisation with the competent authority (North West Department of Economic Development, Environment, Conservation and Tourism).

Step 2: Identifying and notifying the Interested and affected parties (I&AP).

The Basic Assessment process will be advertised on an advert and on-site notices. The advert is to inform Interested and Affected Parties of the proposed project and send an invitation to register on the database for the process of Basic Assessment. Notification letters with the BID of the project, locality map and the comment form will be sent to the Interested and Affected Parties.

Step 3: Prepare a Draft Basic Assessment and release for I&AP review.

All issues raised will be investigated and responded to by the responsible EAPs, with findings provided in the Draft BAR. This report will include an issues trail and will be released for a 30-day comment period. All I&APs on the project database will be

notified in writing of the opportunity to comment on the reports and provided with a concise summary of the draft Basic Assessment Report.

Step 4: Compilation of a Basic Assessment Report and submit to authorities.

The Final Basic Assessment, Comments and Responses Report, will be compiled for submission to the authorities for decision making. All I&APs on the project database will be notified in writing of the outcome of the application, including reasons for the decision and the appeal process.

Environmental Impact Assessment is an effective planning and decision-making tool for the project developer as it allows for the identification and management of potential environmental impacts. The EIA process allows the opportunity for developer to be forewarned of potential environmental issues and allows for the resolution of issues reported on in the Scoping and EIA Reports as well as dialogue with interested and affected parties (IAPs).

Vhuluvhi Group (Pty) Ltd does not have any interests in secondary developments that may arise out of the authorisation of this project.

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ACRONYMS	
AIP	Alien Invasion Plant (s)
CARA	Conservation Agricultural Resources Act
CBA	Critical Biodiversity Area
CS	Cultural Sensitivity
CSR	Consultative Scoping Report
DFFE	Department of Forestry, Fisheries and Environment
DEDECT	Department of Economic Development, Environment, Conservation and Tourism
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
ESA	Ecological Support Area
EIA	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Programme
GNR	General Notice Regulation
HSE	Health, Safety and Environment
IAPs	Interested and Affected Parties
IPP	Independent Power Producers
IRP	Integrated Resource Plan
LED	Local Economic Development
NDP	National Development Plan
NEMA	National Environmental Management Act
NEMBA	National Environment Management: Biodiversity Act
NEMWA	National Environmental Management: Waste Act
NWA	National Water Act
PoS	Plan of Study
PPP	Public Participation Process
SAHRA	South African Heritage Resources Agency
SANS	South African National Standards

GLOSSARY OF TERMS

Development: means the building, erection, construction or establishment of a facility, structure or infrastructure, including associated earthworks or borrow pits, that are necessary for the undertaking of a listed or specified activity, [including any associated post development monitoring,] but excludes any modification, alteration or expansion of such a facility, structure or infrastructure, including associated earthworks or borrow pits, and excluding the redevelopment of the same facility in the same location, with the same capacity and footprint.

Development footprint: means any evidence of physical alteration as a result of the undertaking of any activity.

Earth works: this involves construction machinery, dampening and general preparation of the site for construction purposes.

Environmental assessment practitioner: is a consultant responsible for conducting environmental impact assessment.

Environmental impact assessment: a systematic process of identifying, assessing and reporting environmental impacts associated with an activity.

Indigenous vegetation: refers to vegetation consisting of indigenous plant species occurring naturally in an area, regardless of the level of alien infestation and where the topsoil has not been lawfully disturbed during the preceding ten years.

Interested & affected party: a person, group of people, an organisation (public or private), a business, or other party that has an interest or is affected in terms of their health, property rights, or economy by a proposed activity.

Listed activities: activities that have been recognised as having a detrimental impact on the environment.

Mitigation measures: all actions taken to eliminate, offset or reduce potentially adverse environmental impacts to acceptable levels (World Bank, 1999:1).

Township establishment: a process of converting an agricultural zoned land into residential, commercial or industrial properties.

Plan of study of environmental impact assessment: a study contemplated in regulation 22 which forms part of a scoping report and sets out how an environmental impact assessment will be conducted.

Proponent / applicant: a person intending to submit an application for environmental authorisation

Significant impact: means an impact that may have a notable effect on one or more aspects of the environment or may result in noncompliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence.

1. PROJECT INTRODUCTION AND BACKGROUND

1.1 Introduction

The JB Marks Local Municipality (proponent) proposes to establish a township at Grimbeek Park on the remaining extent of portion 46 and portion 58 & 59 of the farm Elandsheuvel 436 IQ in the Grimbeek Park Area, within the jurisdiction of JB Marks Local Municipality, North-West province.

The JB Marks Local Municipality is a Category B municipality situated within the Dr Kenneth Kaunda District in the North West Province. The Municipality is the largest by land mass within the district making up almost half its geographical area. The proposed township establishment covers a surface area of 85,2015 ha in extent.

The proposed project is required to obtain an Environmental Authorisation (EA) prior commencement in terms of National Environmental Management Act, (Act no 107 of 1998) and Environmental Impact Assessment (EIA) Regulations of 2014 as amended in 2022. As such the Housing Development Agency - North West Province on behalf of JB Marks Local Municipality has appointed Vhuluvhi Group (Pty) Ltd as an independent Environmental Assessment Practitioner (EAP) to undertake the EIA Process.

In terms of the EIA regulations of 2014 (as amended), activities associated with the proposed project are listed under Listing Notice 1 (GN R327) which requires a BA process to be undertaken. As such, a BA Process is being followed.

1.2 Details of Proponent

The Applicant for this project is JB Marks Local Municipality. The JB Marks Local Municipality is a Category B municipality situated within the Dr Kenneth Kaunda District in the North West Province. The Municipality is the largest by land mass within the district making up almost half its geographical area.

The Details of the applicant are provided in the table below;

Table 1: Details of Proponent

Details of Applicant	
Applicant	JB Marks Local Municipality
Contact Person	Mr Owageng Molomo
Address	Cnr Walter Sisulu & Wolmarans Dan Tloome Complex Potchefstroom 2520
Contact Number	072 723 9445
E-mail Address	owagengm@jbmarks.gov.za

1.3 Details of EAP and Expertise

Vhuluvhi Group (Pty) Ltd has been appointed by Housing Development Agency (HDA) on behalf of the proponent (JB Marks Local Municipality) as the independent EAP for the proposed project and meets the general requirements as stipulated in regulations 13(3) of the NEMA EIA 2014 Regulations as amended.

Vhuluvhi Group (Pty) Ltd does not have any interests in secondary developments that may arise out of the authorisation of this project. Neither the EAP nor any specialist are subsidiaries or are affiliated to the proponent. Table 2 below provide details and expertise of the EAP in carrying out the EIA process.

The Lead Environmental Assessment Practitioner for this project is Mr Caiphus Mukwevho:

Mr. Caiphus Mukwevho is a Senior Environmental Assessment and he holds a Bachelor of Environmental Sciences and an Honours of Environmental Sciences in the field of Ecology both at the University of Venda, his honours dissertation was aimed at “assessing the environmental compliance of a landfill site” the study was conducted at Makhado Vondeling landfill site.

Mr Mukwevho has attended various training courses to enhance his knowledge and understanding in the Environmental Field, the courses includes; Geographic Information System (GIS), Environmental Management Systems (ISO 14001:2004),

Environmental Law & Compliance. He is a registered Environmental Assessment Practitioner under the Environmental Assessment Practitioners Association of South Africa (EAPASA), and he has applied as Professional Natural Scientist under the South African Council of Natural Science Professions (SACNASP), he is a member of the International Association of Impact Assessment South Africa (IAIASA).

Below are the details of the EAP, For the expertise of the EAP, please refer to Appendix H for a CV.

Table 2: Details of EAP

Details of EAP	
Name of Company	Vhuluvhi Group (Pty) Ltd
Lead EAP	Mr Caiphus Mukwevho
Contact Number	0822694524
E-mail Address	caiphus@vhuluvhigroup.co.za
Office Address	11 Silwer-Eike Avenue, Hueweloord Ext 17, Tshwane, Gauteng, 0157
Qualifications	- B. Environmental Sciences - B. Honours Ecology and Resources Management
Professional Registration and Registration number	EAPASA (Registered EAP- 2019/618) SACNASP (124149) IAIASA (7147)
Years of Experience	8 Years

1.4 Details of Specialist Appointed for the BA Process

Based on the Environmental Screening undertaken, the EAP has recommended appointment of the following specialist (listed in table below). The specialist report are attached as appendix D of this Basic Assessment Report.

Table 3: List of Specialist

Specialist Field	Specialist Details	Contact Details
------------------	--------------------	-----------------

Aquatic Biodiversity Impact Assessment	Africa Ecological Services (Pty) Ltd	Mr HE Munzhelele 0839439232 africaresources18@gmail.com
Terrestrial Biodiversity Impact Assessment	Mr HE Munzhelele	
Palaeontological Impact Assessment	Ruins Archaeo-Heritage Consulting (Pty) Ltd Dr H.Fourie	Dr H Fourie 0795044659 heidicindy@yahoo.com
Heritage Impact Assessment	Ruins Archaeo-Heritage Consulting (Pty) Ltd Mr A. Nhundu	Mr A Nhundu 0783442671 nalvord@yahoo.com
Land Capability and Agriculture Impact Assessment	Great Warthog Geo Environmental (Pty) Ltd Mr P Mudau	Mr P Mudau 0739185121 petermudau4.0@gmail.com
Geotechnical Investigation	Vhuluvhi Group (Pty) Ltd	Mr O Luthada
Geohydrological Investigation	Mr O Luthada	0658555378 olympus@vhuluvhigro up.co.za
Engineering Services	Chrisen Consulting (Pty) Ltd	Mr Christopher E Nair
Flood line Determination	Mr Christopher E Nair	0788000369 chris@chrisen.com
Traffic Impact Assessment		

1.5 Purpose of this Report

In accordance with the National Environmental Management Act, No. 107 of 1998 (Act No. 107 of 1998) (NEMA) and the EIA Regulations of 4 December 2014 (Government Notice Regulation (GN R.982) (as amended), the issuing of an EA requires the undertaking of a BA process, with the associated Public Participation Process (PPP) and required the Specialist Studies. This will enable the Competent Authority (CA) to decide whether or not, to issue an EA for the proposed development.

The EIA Regulations of 2014 (as amended) allows for a BA process to be undertaken for activities with environmental impacts as listed in Listing Notice 1 (GN R.327) and Listing Notice 3 (GN R324).

A Basic Assessment (BA) process is the environmental assessment level used for activities outlined in Listing Notices 1. This assessment applies to activities deemed

less likely to cause significant environmental impacts and, therefore, typically do not require a comprehensive Environmental Impact Assessment (EIA). The Basic Assessment Report (BAR) provides a more streamlined analysis of the environmental impacts of the proposed activity or development compared to a Scoping and EIA Report. The BAR is designed to accomplish the following objectives:

- Determine the policy and legislative context within which the proposed activity is undertaken and how the activity complies with and responds to the policy and legislative context;
- Describe the need and desirability of the proposed project;
- Identify the alternatives considered, including the activity, location, and technology alternatives;
- Undertake an impact and risk assessment process inclusive of cumulative impacts (where applicable).

The primary focus is on assessing the geographical, physical, biological, social, economic, heritage, and cultural sensitivity of the project, as well as evaluating the potential risk of the proposed activity's impact on these factors. This assessment aims to determine the nature, significance, consequences, extent, duration, and likelihood of these impacts occurring, along with the degree to which they might affect the environment and surrounding areas:

- Can be reversed;
- May cause irreplaceable loss of resources; and
- Can be avoided, managed or mitigated.

This BAR has been compiled per the stipulated requirements in Appendix 1 of GNR 982 of the EIA Regulations 2014 (as amended in 2017), which outlines the legislative BA process and requirements for assessment of outcomes, impacts and residual risks of the proposed development.

An Environmental Management Programme (EMPr) has been compiled according to Appendix 4 of GNR the EIA Regulations 2014 (as amended in 2017) for the construction and operational phases of the project. The EMPr has been compiled as a stand-alone document from the BAR and will be submitted to the DFFE along with

the BAR. The EMPr provides the actions for the management of identified environmental impacts emanating from the project and a detailed outline of the implementation programme to minimise and/or eliminate any anticipated negative environmental impacts and to enhance positive impacts. The EMPr provides strategies to be used to address the roles and responsibilities of environmental management personnel on site, and a framework for environmental compliance and monitoring.

1.6 Structure of BA Report

A Basic Assessment Report (BAR) must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include; The table below provides the requirements for a Basic Assessment report in terms of the NEMA EIA Regulations (Appendix 1) with reference to the relevant sections of this report where these requirements are addressed.

Table 4: Structure of this BA Report in an accordance with Appendix 1 of (GN R326) EIA Regulations

Section	Content	Reference in the report
3 (1) (a)	details of- (i) the EAP who prepared the report; and (ii) the expertise of the EAP, including a curriculum vitae;	Section 1 and Appendix H
3 (1) (b)	the location of the activity, including: (i) the 21-digit Surveyor General code of each. cadastral land parcel; (ii) where available, the physical address and farm name; (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	Section 2
3 (1) (c)	a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; or, if it is- (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	Section 2
3 (1) (d)	a description of the scope of the proposed activity, including (i) all listed and specified activities triggered and being applied for; and (ii) a description of the activities to be undertaken including associated structures and infrastructure	Section 1
3 (1) (e)	a description of the policy and legislative context within which the development is proposed including-	Section 2

	(i) an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and (ii) how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments	
3 (1) (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 1
3 (1) (g)	a motivation for the preferred site, activity and technology alternative	Section 3
3 (1) (h)	a full description of the process followed to reach the proposed preferred alternative within the site, including: (i) details of all the alternatives considered; (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs; (iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them; (iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (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- (aa) can be reversed; (bb) may cause irreplaceable loss of resources; and (cc) can be avoided, managed or mitigated.	Section 3

	(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; (vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; (viii) the possible mitigation measures that could be applied and level of residual risk; (ix) the outcome of the site selection matrix; (x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity	
3 (1) (i)	(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including- (i) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and (ii) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures	Section 9
3 (1) (j)	(j) an assessment of each identified potentially significant impact and risk, including-	Section 8
	(i) cumulative impacts; (ii) the nature, significance and consequences of the impact and risk; (iii) the extent and duration of the impact and risk; (iv) the probability of the impact and risk occurring;	Section 8

	(v) the degree to which the impact and risk can be reversed; (vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and (vii) the degree to which the impact and risk can be avoided, managed or mitigated	
3 (1) (k)	where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report	Section 9
3 (1) (l)	an environmental impact statement which contains- (i) a summary of the key findings of the environmental impact assessment; (ii) a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and (iii) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives.	Section 8
3 (1) (m)	based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr	Appendix E
3 (1) (n)	any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation	Section 9
3 (1) (o)	a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed	Section 8
3 (1) (p)	a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation	Section 9

3 (1) (q)	where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised	Section 9
3 (1) (r)	an undertaking under oath or affirmation by the EAP in relation to: the correctness of the information provided in the reports; (ii) the inclusion of comments and inputs from stakeholders and I&APs; (iii) the inclusion of inputs and recommendations from the specialist reports where relevant; and (iv) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties.	Page iii
3 (1) (s)	where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts	Not applicable
3 (1) (t)	any specific information that may be required by the competent authority	-
3 (1) (u)	any other matters required in terms of section 24(4)(a) and (b) of the Act	-

2. PROJECT LOCATION AND DESSCRIPTION

2.1 Project Location

The table 5 below provides the details of the proposed township establishment on the remaining extent of portion 46 and portion 58 & 59 of the farm Elandsheuvel 436 IQ in the Grimbeek Park Area, within the jurisdiction of JB Marks Local Municipality, North-West province

Table 5: Details of project location

Property Details	
Farm Name	Farm Elandsheuvel 436 IQ
Portion Number	Portion 46
	Portion 58
	Portion 59
SG 21 Code	T0IQ00000000043600046
	T0IQ00000000043600058
	T0IQ00000000043600059
Site Central Coordinates	26° 44'0.49"S 27° 6'29.76"E
Nearest Town and Distance	Potchefstroom, 2,27 km away

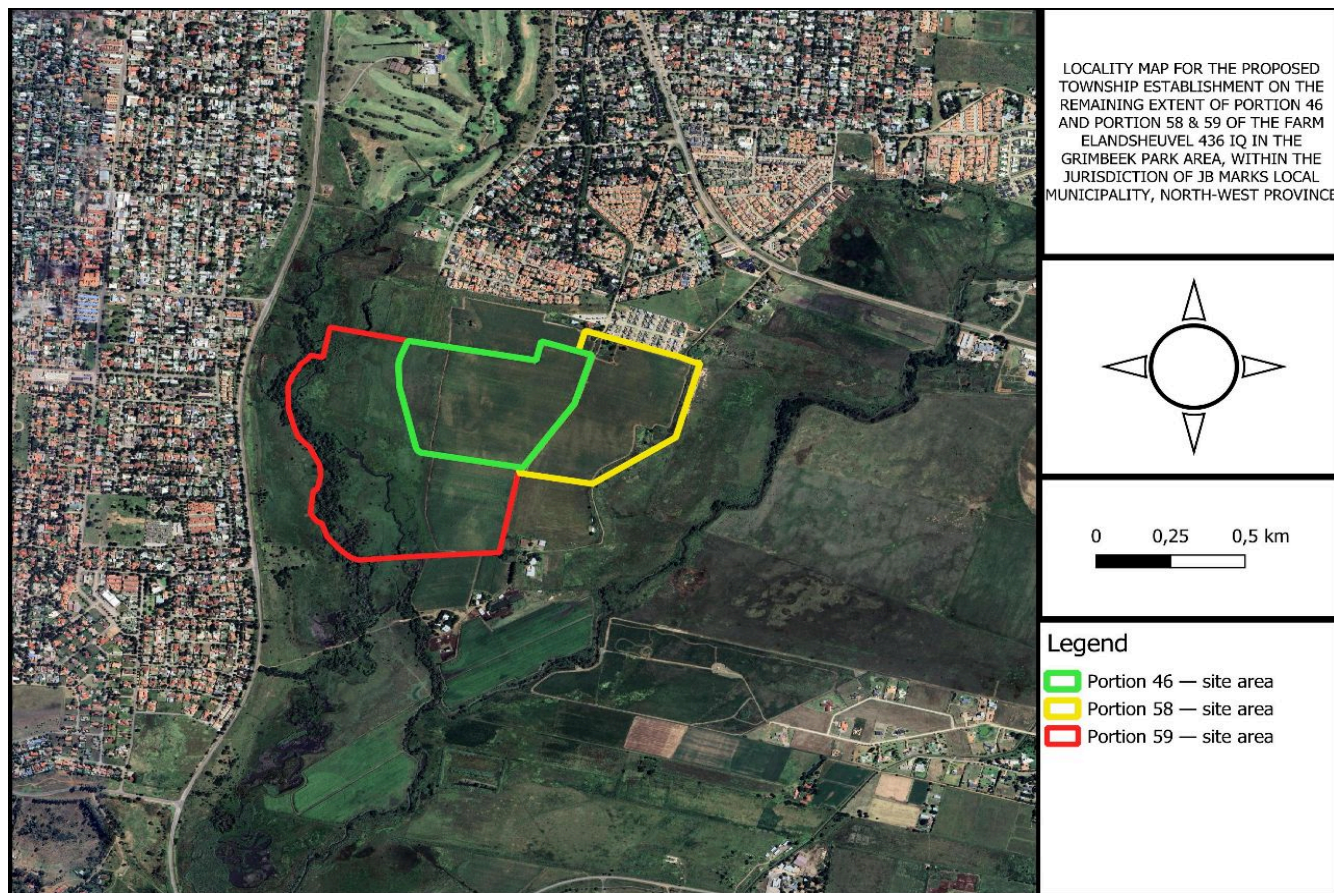


Figure 1: Locality Map

2.2 Project Description

JB Marks Local Municipality proposes township establishments which will consists of 520 stands of residential, business, public space and institutional areas in land covering 85,2015 hectors.

2.3 Proposed Access Road

The proposed development will have one access point off the external road network. The following access points will be provided:

Herman Street Access: the proposed development will take access off this road approximately 800 m west of the intersection of Herman Street and Erica Street.

2.4 Bulk Services for the project

2.4.1 Stormwater Details

There is no formal stormwater channels or pipes around the site but there are rivers on the east and west side of the development.

a) Design Standards

The basic principle which will be applied throughout the stormwater drainage design is that the natural flow direction of stormwater will not be unnecessarily altered. The use of stormwater channels will be utilised for on surface sheet flow of stormwater. The design will take cognisance of the following:

- Bulk drainage is achieved by a network of grid inlets, catchpits and reticulation pipework.
- The proposed roadways shall be drained by catchpit inlets (Type S2, D3) situated at road edge.
- Bulk stormwater pipes shall be Spigot and Socket Concrete Pipes with rolling rubber rings to ensure watertightness. The intercepted flows are reticulated to a nearby river and then the allowed flow is then discharged to the existing stormwater network. For ease of maintenance the minimum concrete pipe size is 300 mm dia. The concrete pipe sizes vary

from 300 mm dia. up to 600 mm dia. depending on the flow accumulation and the minimum requirements as set forth by the municipality.

b) Estimated Stormwater Runoff

In order to estimate the envisaged stormwater runoff from the development, a calculation was carried out using the Rational Method. The site as a whole was split into 2 catchments, as can be seen in Appendix B (*of the Engineering Report- Appendix D of the BAR*) and Peak flow rates were determined 20-year and 50-year storm return period. The table below shows the results of the calculations.

Table 6: Summary of Detention Required for Catchment A

Return Period	Detention Volume Required Summary		
	1:5 year	1:20 year	1:50 year
Volume	3 045,885m ³	4 090,870m ³	4 757,507m ³
Flow Rate	4,422m ³ /s	5,934m ³ /s	6,904m ³ /s

The following hydrograph contrasts the pre and post development runoffs.

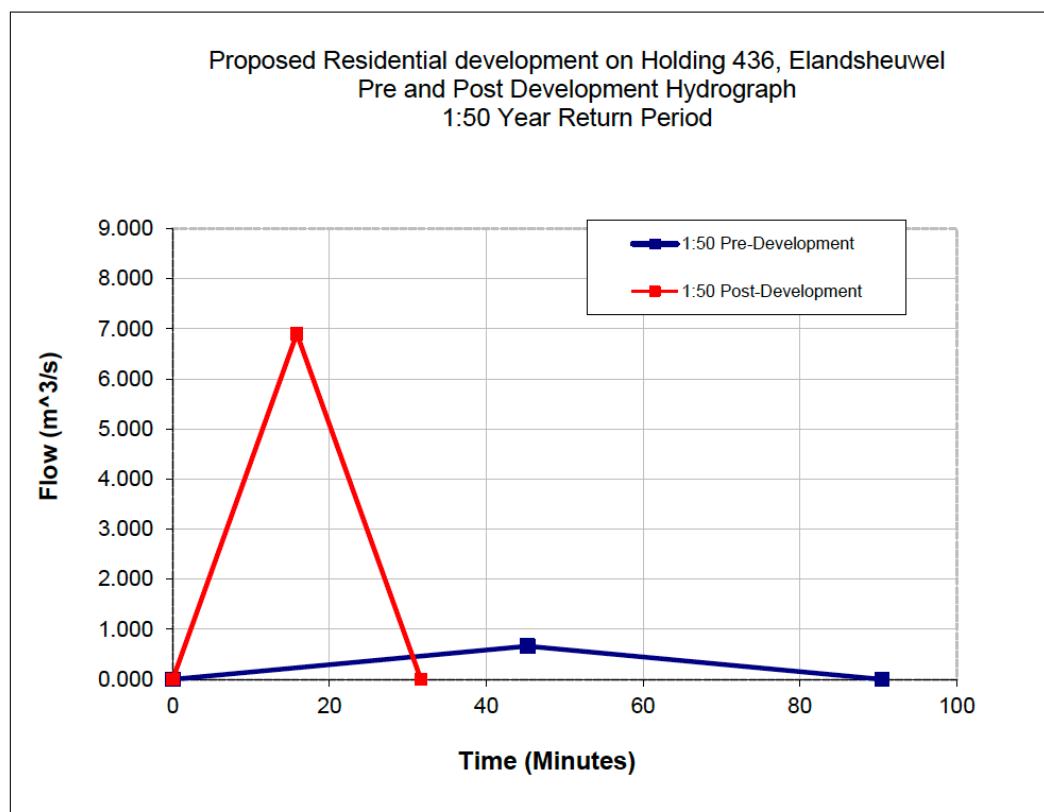


Figure 2: Flood Hydrograph for the 1:50 Year Return Period Storm for Catchment A.

The area by which the post development hydrograph exceeds the pre-development yields the attenuation volume required. From the above graph, in the 1:50 year rain event, the minimum stormwater attenuation volume required = 4 757,507m³.

Table 7: Summary of Detention Required for Catchment B

	Detention Volume Required Summary		
Return Period	1:5 year	1:20 year	1:50 year
Volume	4 139,651m ³	4 333,127m ³	3 128,927m ³
Flow Rate	6,877m ³ /s	9,221m ³ /s	10,738m ³ /s

The area by which the post development hydrograph exceeds the pre-development yields the attenuation volume required. From the above graph, in the 1:50 year rain event, the minimum stormwater attenuation volume required = 3 128,927m³.

The following hydrograph contrasts the pre and post development runoffs.

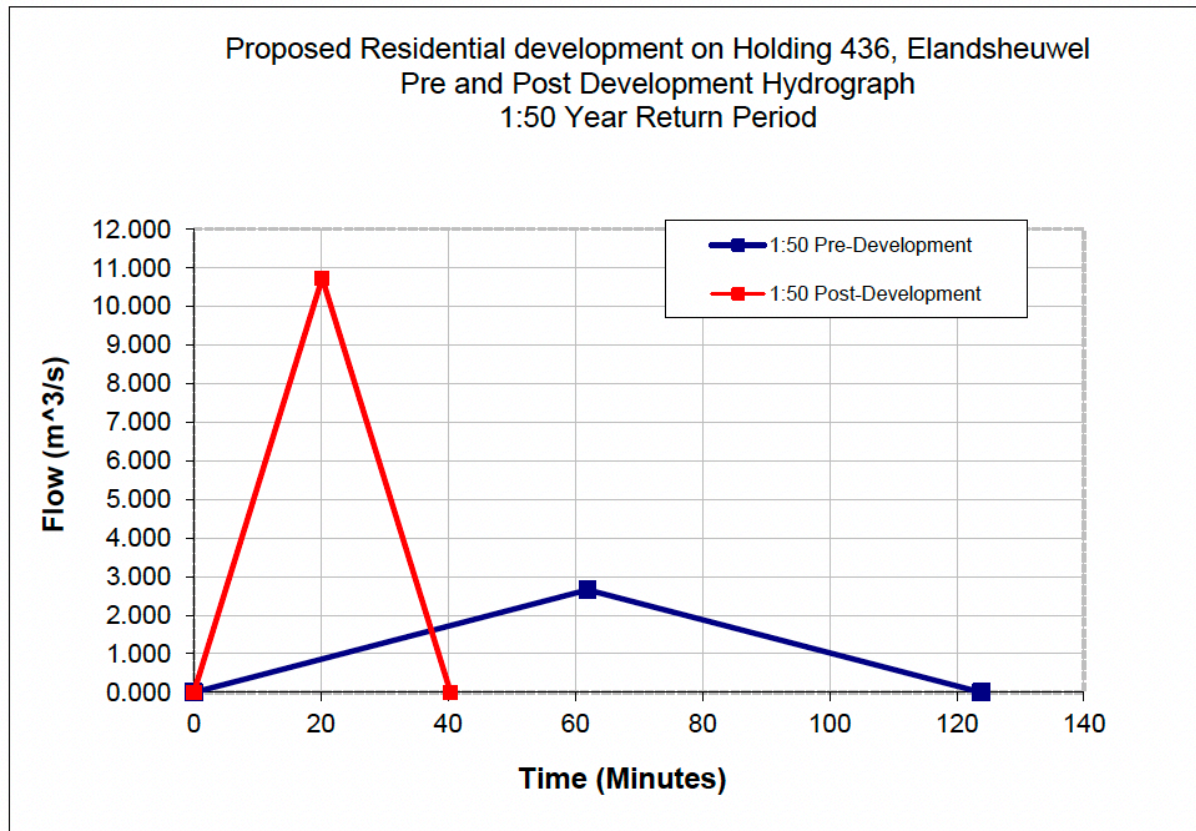


Figure 3: Flood Hydrograph for the 1:50 Year Return Period Storm Catchment B

2.4.1.1 Proposed Stormwater System

Preliminary investigation has determined that the development will not require an attenuation pond because there is a river on the east and west of the development. This will be designed in accordance to the relevant policies and appropriate local legislation. For the bigger plots, attenuation to be provided at the lowest point , position and final layout to be confirmed once final SDP is submitted.

2.4.2 Water Supply

There is no existing water and firefighting infrastructure in the vicinity of the site. The proposed development to be supplied via borehole.

a) Design Standards

The standards used in the design of the water, fire and sewer bulk services are the “Neighbourhood Planning and Design Guide (Red Book): Creating Sustainable Human Settlements, July 2019”. The following parameters will be used in the design:

Table 8: Water design Standards

Water Design Standards	
Average Annual Daily Demand (AADD) for Business/Commercial	10000 l/100 m ² /day
Gross Average Annual Daily Demand (GAADD)	Allow 10% losses
Maximum static Head	60 m
Minimum residual head under peak flow conditions	30 m
Maximum linear flow velocity under conditions of domestic peak flows	1.5 m/sec
Maximum linear flow velocity under conditions of domestic peak flows (Dia. ≤ 150mm)	1.0 – 1.5 m/sec
Pipe type (Refer to SANS 4427)	HDPE pipe
Minimum pipe class	PN 12,5
Hydrant Spacing	180m Maximum
Fire flow	100 l/sec
Minimum residual head (fire plus domestic peak flow)	15 m
Maximum linear flow velocity under conditions of fire fighting	2,2 m/sec
Minimum pipe diameter	75 mm
Minimum cover to pipes	0,6 m
On Side Walks	1,0 m
At Road Crossings	1,1 m

b) Estimated water demand

The estimated water demand for the development is as follows:

Table 9: Estimated water demand for Farm Elandsheuwel 436 IQ

Project No.: C1584-251124 2025/06/19 12:45 Prepared by: Ms. N Radise Proposed Rezoning/Formalization of Remaining Extent of Portion 46, Portion 58 And 59 Of the Farm Elandsheuwel 436. WATER DEMAND CALCULATIONS										
Land Use	Development	Unit	Size (m ²)	Unit of Measurement	The Neighbourhood Planning and Design Guide (Red Book): Creating Sustainable Human Settlements					
					RATE	WATER DEMAND		PEAK FACTOR	PEAK DEMAND	
					l/d	kl/day	l/sec		kl/day	l/sec
Residential Units 1	Free standing houses	519	322377.57	3.224 KL/100m ² GLA	1000.00	3223.78	37.31	1.9	6125.17	70.89
Residential Units 2	Townhouses / Cluster homes	52	50058.00	501 KL/100m ² GLA	1500.00	750.87	8.69	1.8	1351.57	15.64
Residential Units 3	Apartments and Flat	355	190207.29	1.902 KL/100m ² GLA	1500.00	2853.11	33.02	1.8	5135.60	59.44
Total:					6827.76	79.02			12612.34	145.98

C) Water Supply Demand

For the Proposed Residential units, Recreation facilities and a Garden of Remaining Extent of Portion 46, Portion 58 And 59 Of the Farm Elandsheuwel 436, potable water will be required to service the site. Water is obtained from an existing line that is running along the R53. Pipe size and materials to be confirmed on site.

The water pipe will need to be tested for pressure and flow to determine if the pipe has enough capacity to accommodate the proposed development.

2.4.3 Fire Services

The following Table indicates the Fire water demand of the proposed facilities.

Table 10: Fire Flow Demand for Farm Elandsheuwel 436 IQ

Fire Risk Category	Total Fire Flow (L/s)	Min. Flow for Each Hydrant (L/s)	Duration of Fire (Hours)	Minimum Residual Pressure (m)
Moderate Risk 1	50	25	4	15

a) Fire Hydrants

Ten (10 no.) fire hydrants are proposed which should have a maximum spacing of 180,0 m. The minimum pipe diameter to service the fire hydrants should be 110 mm.

b) Fire Hose Reels

It is proposed that each building be fitted with fire hose reels. The fire reticulation pipes to feed the hose reels should have a pipe diameter of 40 mm.

c) Fire pipes size and material

Fire pipe size to fire hydrant

- Use 110 mm dia. Cl16 uPVC

Fire pipe size to hose reels

- Use 40 mm dia. Cl16 uPVC

Construction shall be in accordance with the guidelines of the JB Marks Local Municipality and the relevant SANS1200 guidelines.

d) Fire flow storage

Fire Flow storage capacity to be specified later on during design stage.

2.4.4 Sewage

There is existing sewer infrastructure in the vicinity of the site. Line to be tested and municipality to specify the existing line can accommodate the proposed demand or the line will need to be upgraded to incorporate the additional discharge generated by the proposed development.

a) Design Standards

The standards used in the design of the water, fire and sewer bulk services are the “Neighbourhood Planning and Design Guide (Red Book): Creating Sustainable Human Settlements, July 2019”.

The following parameters will be used in the design:

Table 11: Sewer design standards

Sewer Design Standards	
Average Daily Demand (ADD)	80% of Water Demand
Peak Factor	1,7
Peak Dry Weather Flow (PDWF)	ADF X Peak Factor
Peak Wet Weather Flow (PWWF)	PDWF X 15% Stormwater Infiltration
Capacity of Sewer	To flow 80% full
Sewer pipe	HDPE PE 100, PN 10 SDR 17 (Refer to SANS 4427)
Minimum Velocity	0.7 m/s
Maximum Velocity	3 m/s
Minimum pipe diameter	160 mm diameter
Minimum gradient (for 160mm dia)	1 in 140
Minimum depth of cover	1.2 m
In trafficked areas	1.4 m
Other areas	1,0 m
Maximum manhole spacing	80 m
Manhole diameters	HDPE Manholes up to 3m – 1000 dia. Wall thickness not less than 65mm.
	HDPE Manholes deeper than 3m – 1500mm dia. Wall thickness not less than 85mm.
Manhole cover and frame	Concrete cover of 560mm / 750mm
	Medium duty elsewhere.
	Medium duty elsewhere.
Manhole step irons	Step irons shall be Calcamite steel-plastic-coated or Copolymer Polypropylene, fixed to structure with suitable epoxy adhesive.
Fall Through Manhole	For pipe diameters 150mm-300mm min. fall of 50mm through manhole
Pipe anchor blocks	Pipe at gradients between 1:6 and 1:12.
Junctions of sewer	Soffit to soffit.
Manhole step irons	Step irons shall be Calcamite steel-plastic-coated or Copolymer Polypropylene, fixed to structure with suitable epoxy adhesive.
Fall Through Manhole	For pipe diameters 150mm-300mm min. fall of 50mm through manhole

b) Estimated Sewer Demand

The estimated sewer demand for the development is as follows:

Table 12: Estimated sewer demand for Farm Elandsheuwel 436 IQ

Project No.: C1584-251124

2025/06/19 12:45

Prepared by:

Ms. N Radise

Proposed Rezoning/Formalization of Remaining Extent of Portion 46, Portion 58 And 59 Of the Farm Elandsheuwel 436.

SEWER DISCHARGE CALCULATIONS

Land Use	Development	Unit	Size (m²)	Unit of Measurement	The Neighbourhood Planning and Design Guide (Red Book): Creating Sustainable Human Settlements (VOLUME 2, CHAPTER 9)								
					RATE	WATER DEMAND		PEAK FACTOR	PEAK DEMAND		15% ALLOWANCE FOR INFILTRATION		
					l/d	kl/day	l/sec		kl/day	l/sec	kl/day	l/sec	
Residential Units 1	Free standing houses	519	322377.57	3 224	KL/100m² GLA	800.00	2579.02	29.85	2.1	5415.94	62.68	6228.33	72.09
Residential Units 2	Townhouses / Cluster homes	52	50058.00	501	KL/100m² GLA	1250.00	625.73	7.24	2.1	1314.02	15.21	1511.13	17.49
Residential Units 3	Apartments and Flat	355	190207.29	1 902	KL/100m² GLA	1250.00	2377.59	27.52	2.1	4992.94	57.79	5741.88	66.46
Total:						3204.75	64.61			6729.97	135.68	13481.34	156.03



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c) Sewer System

The required minimum pipe size is 160mm diameter with a capacity calculated at 67% of depth of flow. The minimum gradient is 1:140 with a minimum full flow velocity of 0.7m/s. For these constraints the following is applicable:

- Capacity of the 160mm dia. pipe = 12,1 l/s (greater than peak design sewer flow of 2,73 l/s)
- Velocity in pipe at capacity flow = 0,96 m/s (greater than minimum full flow velocity of 0,7m/s)

Hence it is recommended to use a 160mm diameter uPVC Heavy Duty Class 34 sewer pipe. Inside the property pipe sizes will vary from 160 mm to a maximum size being a 600 mm diameter uPVC Heavy Duty Class 34 sewer pipe

- Capacity of the 600mm dia. pipe = 161,1 l/s (greater than peak design sewer flow of 156,06 l/s)
- Velocity in pipe at capacity flow = 0,80 m/s (greater than minimum full flow velocity of 0,7m/s)

Sewer Connection to the new site is proposed to be obtained by the following:

- The sewer flow shall be reticulated to the existing services that are running along the R53 the municipality need to determine if the existing

sewer line is or to a Wastewater Package plant that will be designed to contain sewer discharge for at least 7 days before being emptied.

- Applications have been sent to relevant departments for water and sewer capacity examination to determine the most suitable connection that can accommodate the proposed development.

Construction shall be in accordance with the Neighbourhood Planning and Design Guide (Red Book): Creating Sustainable Human Settlements, July 2019 guidelines and the relevant SANS 1200 LD - Sewers guidelines.

2.5 Urban Edge

The Spatial Development Framework of the JB Marks is the result of a comprehensive investigation and analysis of the biophysical, socioeconomic and built environment of the municipal area.

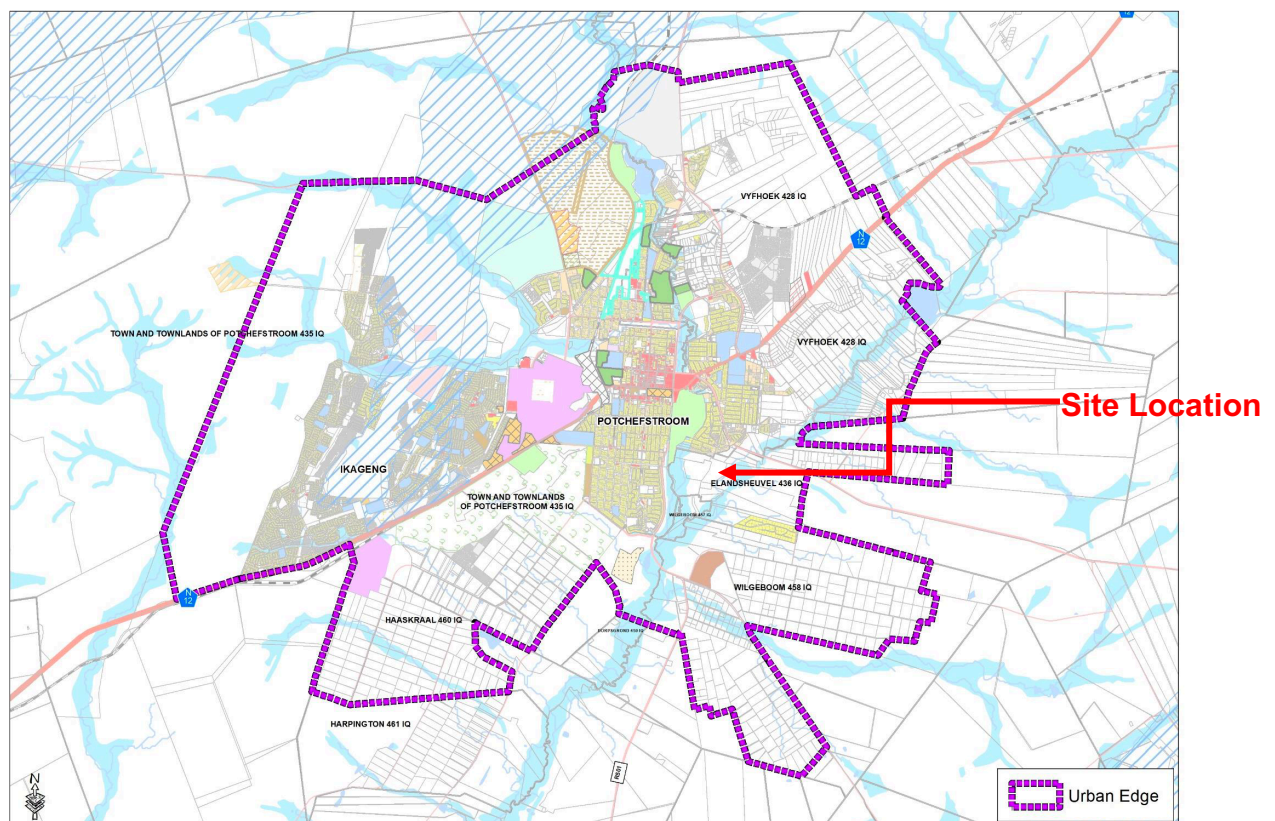


Figure 4: Map showing the Urban Edge for the JB Marks Local Municipality

In terms of the JB Marks Local Municipality SDF, the proposed Grimbeek Township is situated within the urban edge of the Local Municipality. Based on the location of

the project within urban edge, the project is therefore classified as development within an urban area. The bulk service infrastructure associated with the proposed project will therefore not trigger listed activities in terms EIA regulations.

3. POLICY AND LEGAL CONTEXT

This chapter provides an overview of the policy and legislative context within which the proposed project will be undertaken. Here we identify the environmental legislation, policies, plans, guidelines, spatial tools, municipal development plans/frameworks and instruments that are applicable to this project and are to be considered in the assessment process which may be applicable to or have bearing on this project.

3.1 APPLICABLE LEGISLATION

Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996)

The Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996) has significant 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 assistance in the effective implementation of the environmental management principles and structures of the Environment Conservation Act, 1989 (Act No. 73 of 1989) [ECA] and NEMA. Section 24 in the Bill of Rights of the Constitution specifically states: Everyone has the right-

- To an environment that is not harmful to their health or well-being; and
- To have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that;
 - ✓ Prevent pollution and ecological degradation;
 - ✓ Promote conservation; and
 - ✓ Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

National Environmental Management Act No. 107 of 1998

To provide for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.

National Environmental Management: Air Quality Act No. 39 of 2004

To reform the law regulating air quality in order to protect the environment by providing reasonable measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development while promoting justifiable economic and social development; to provide for national norms and standards regulating air quality monitoring, management and control by all spheres of government; for specific air quality measures; and for matters incidental thereto land; to provide for the national waste information system; to provide for compliance and enforcement; and to provide for matters connected therewith.

National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

The purpose of the Biodiversity Act is to provide for the management and conservation of South Africa's biodiversity within the framework of the NEMA and the protection of species and ecosystems that warrant national protection. As part of its implementation strategy, the National Spatial Biodiversity Assessment was developed. This Act is applicable to this application for environmental authorisation, in the sense that it requires the project applicant to consider the protection and management of local biodiversity. To this end, an ecological assessment is being undertaken to assess the flora and fauna on site.

National Water Act, 1998 (Act No. 36 of 1998).

The National Water Act, 1998 (Act No. 36 of 1998) (NWA) aims to provide management of the national water resources to achieve sustainable use of water for the benefit of all water users. This requires that the quality of water resources is protected as well as integrated management of water resources with the delegation of powers to institutions at the regional or catchment level. The purpose of the Act is to ensure that the nation's water resources are protected, used, developed,

conserved, managed and controlled in responsible ways. The Act aims to regulate the use of water and activities, which may impact on water resources through the categorisation of ‘listed water uses’ encompassing water extraction, flow attenuation within catchments as well as the potential contamination of water resources, where the Department of Water and Sanitation (DWS) is the administering body in this regard.

National Heritage Resources Act, 1999 (Act No. 25 of 1999).

This Act legislates the necessity for cultural and heritage impact assessment in areas earmarked for development, which exceed 0.5 hectares and where linear developments (including pipelines) exceed 300 metres in length. The Act makes provision for the potential destruction to existing sites, pending the archaeologist’s recommendations through permitting procedures. Permits are administered by the South African Heritage Resources Agency (SAHRA).

Promotion of Access to Information Act, 2000 (Act No. 2 of 2000).

The Promotion of Access to Information Act, 2000 (Act No. 2 of 2000) recognises that everyone has a Constitutional right of access to any information held by the state and by another person when that information is required to exercise or protect any rights. The purpose of the Act is to foster a culture of transparency and accountability in public and private bodies and to promote a society in which people have access to information that enables them to exercise and protect their rights.

Occupational Health and Safety Act, 1993 (Act No. 85 of 1993)

The OHS Act provides practical guidelines for the health and safety of workers as well as people in connection with plants and machinery. It also provides guidelines for the protection of people other than people at work against hazards that may arise out of a connection with the activities of persons at work. Together with the OHS Act, twenty-one other regulations have been published that outline specifications and requirements in different area which they govern. These regulations include health related regulations, general regulations, electrical regulations, machinery regulations, and specific regulations for certificates of

competency, diving, explosives, major hazard installation and hazard work by children.

3.2 GENERAL APPLICABLE STANDARDS

Integrated Environmental Management (IEM).

IEM is a procedure 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.

South African National Standards

Standards as published by the South African Bureau of Standards which focus on developing market relevant national standards that are harmonised with international standards. These standards exist principally to provide a reliable basis on which common expectations can be shared regarding specific characteristics of a product, service or process. South African National Standards (SANS) are voluntary in that there is no obligation to apply them or to comply with them, except in those cases where their application is directly demanded by regulatory instruments or contractual obligations. They do however in most cases form a good reference for best practise measures to be implemented.

National Spatial Biodiversity Assessment, 2011

The National Spatial Biodiversity Assessment (NSBA) classifies areas as worthy of protection based on its biophysical characteristics, which are ranked according to priority levels.

Protected species - Provincial Ordinances.

Provincial ordinances were developed to protect particular plant species within predetermined provinces. The protection of these species is enforced through permitting requirements associated with provincial lists of protected species.

Permits are administered by the provincial departments responsible for environmental affairs.

3.3 GENERAL GUIDELINES

The following measures provide guideline solutions to frequently anticipated issues on most development activities.

- ❖ The prevention of any site degradation due to non-compliance, administrative or financial problems, and inactivity during the construction phase, illegal activities, delays caused by archaeological finds, etc. is ultimately the responsibility of the applicant/developer. Section 28, National Environmental Management Act [NEMA] (Act No. 107 of 1998)
- ❖ The study area must be clearly defined, surveyed and fenced according to the project authorisation. All workforce members and other construction personnel are not to go beyond the fenced footprint
- ❖ Landowners are not comfortable when strangers come on to their properties. They will look for reasons to interfere with the construction process and may therefore cause delays in the process that can be very costly to the Contractor.
- ❖ The Contractors must adhere to agreed and approved access points and haul roads.
- ❖ No camping is allowed on any private property.
- ❖ Damage to private or public property such as fences, gates and other infrastructure may occur at any time. All damage to be repaired immediately and to the satisfaction of the relevant owner.
- ❖ Relevant landowners and businesses must be informed of the starting date of construction as well as the phases in which the construction shall take place.
- ❖ The Contractor must adhere to all conditions of contract including this EMP.
- ❖ Proper planning of the construction process must be undertaken to allow for disruptions due to rain and very wet conditions.

- ❖ Where existing private roads to be utilised as access are in a bad state of repair, such roads' condition must be well documented, including photographs, before they are used for construction purposes. If necessary some repairs must be done to prevent damage to equipment and plant.
- ❖ All private and public manmade structures (as well as those earmarked to be preserved) on or near the project site must be protected against damage at all times and any damage must be rectified immediately.
- ❖ Proper site management and regular monitoring of site works should be undertaken.
- ❖ Proper documentation and record keeping of all complaints and actions should be taken.
- ❖ Regular site inspections to ensue and good control over the construction process throughout the construction period.
- ❖ A positive attitude towards Environmental Management by all site personnel must be motivated through regular and effective awareness and training sessions.

Environmental Audits to be carried out during and upon completion of construction; as well as during the operational phase of the development

3.5 Listed and specified activities for the proposed Grimbeek Township Establishment

In terms of section 24(2) of NEMA, the Minister and or any MEC in concurrence with the Minister may identify activities that require authorisation as these activities may negatively affect the environment. Environmental Impact Assessment (EIA) Regulations were promulgated in December 2014 (as amended) in terms of Section 24(5) and Section 44 of the National Environmental Management Act (NEMA), Act 107 of 1998. In terms of the 2014, EIA Regulations the triggered listed activities fall under Listing Notices 1, 2 and 3 which are further discussed as follows:

- *Listing Notice 1 (Regulation GNR 327) define activities which will trigger the need for a **Basic Assessment process**;*
- *Listing Notice 2 (Regulation GNR 325) define activities which trigger a **Scoping and Environmental Impact Assessment (EIA) process**.*

- *Listing Notice 3 (Regulations GNR 324) refers to certain listed activities located in specifically defined geographical areas for which a **Basic Assessment process** would be required.*

The JB Marks Local Municipality is expected to apply for an Environmental Authorisation for the proposed project and the application for Environmental Authorisation will be lodged to the DEDECT. This project will require a Basic Assessment (BA) process in terms the National Environmental Management Act (NEMA No.107 of 1998) and EIA Regulations of 2014 (as amended).

The project triggers the following EIA Listed Activities:

- Listing Notice 1 of GN R. 327 (7 April 2017) :Activity No. 27: The proposed Township Establishment will involve clearance of indigenous vegetation covering an area of than 1 hectare on portion 59 of the farm Elandsheuvel 436 IQ.
- Listing Notice 1 of GN R. 327 (7 April 2017), Activity No. 28: The proposed Township Establishment is situated within the Urban Area of JB Marks and will require rezoning from agriculture to residential use.
- Listing Notice 3 of GN R.324 (7 April 2018), Activity No.12(h)(iv)(vi): The proposed project is situated within the Aquatic Critical Biodiversity Area in terms of the North West Biodiversity Sector Plan (2015) and will involve clearance of more than 300square meters of indigenous vegetation.

3.6 Environmental Management Principle

It is crucial for effective environmental management that the Applicant understands and incorporates the fundamental principles of sound environmental practices in all aspects of the prospecting operation. NEMA provides a general framework for environmental law, including national environmental management principles that must be considered when making decisions with potentially significant environmental impacts. A brief overview of these principles is provided in the following sections.

Holistic principle

The holistic principle in environmental management emphasizes the interconnectedness of all environmental components, recognizing that actions impacting one part of the environment can have wide-reaching effects on others. This principle advocates for a comprehensive approach that considers the entire ecosystem, including the interrelationships between air, water, land, flora, fauna, and human activities. By adopting a holistic perspective, environmental management seeks to maintain ecological balance, promote sustainability, and ensure that all environmental, social, and economic factors are integrated into decision-making processes.

The Holistic principle, as defined by NEMA (Section 2(4)(b)) requires that environmental management must be integrated, acknowledging that all elements of the environment are linked and inter-related and it must take into account the effect of decisions on all aspects of the environment and all people in the environment by pursuing the selection of the best practicable environmental option (defined below). Holistic evaluation does not mean that a project must be looked at as a whole. It rather means that it must be accepted that there is a whole into which a project introduced. If the indications are that the project could have major adverse effects, the project must be reconsidered and where appropriate replanned or relocated to avoid an adverse impact or to ensure a beneficial impact.

Best practicable environmental option

When undertaking any action with environmental impacts, it is essential to identify and define the different options available for consideration. The Best Practicable Environmental Option (BPEO) is described in NEMA as "the option that offers the most benefit or causes the least harm to the environment overall, at a cost that is acceptable to society in both the long term and short term." Additionally, other guidelines commonly used for environmental management under various legislation include BPM, which stands for Best Practicable Means, and BAT, which refers to Best Available Technology.

Preventative principles

The precautionary principle is crucial to sustainable development, requiring that disruptions to ecosystems, as well as pollution, environmental degradation, and other negative impacts, be avoided. If complete avoidance is not possible, these impacts should be minimized and addressed.

The precautionary principles

The precautionary principle dictates that when there is uncertainty about whether an impact could be harmful to the environment, it is assumed to be harmful as a precaution until proven otherwise. This principle requires that decisions made by the private sector, governments, institutions, and individuals take into account and recognize conditions of uncertainty, especially regarding potential environmental consequences. In South Africa, the Department of Water and Sanitation (DWA, previously DWAF, now DWS) adopted the Best Practicable Environmental Option (BPEO) guideline for water quality management in 1991 and included it in the 1994 Minimum Requirements document for waste management.

According to the 1994 DWAF Minimum Requirements for the Handling and Disposal of Hazardous Waste, the precautionary principle is defined as "assuming the worst-case scenario when a risk is unknown and making provisions for such a situation." In this context, the precautionary principle presumes that a waste or an identified contaminant is "highly hazardous and toxic until proven otherwise."

Within the EIA process in South Africa, the precautionary principle entails the need to supply sound, scientifically based information that enables the decision-making

authority to reasonably understand the potential environmental impacts, their scope, and how they might be mitigated. If the information provided is insufficient for this purpose, the authority cannot be satisfactorily informed and should then require the collection and submission of additional information.

Duty of care and cradle to grave principle

According to Section 28 of NEMA, "Any person who causes, has caused, or may cause significant pollution or environmental degradation must take reasonable steps to prevent such pollution or degradation from occurring, continuing, or recurring. If such harm to the environment is legally authorized or cannot be reasonably avoided or stopped, they must minimize and rectify the pollution or degradation."

For example, the "duty of care" principle in waste management underscores the responsibility to ensure that waste is properly stored and transported throughout the entire custody chain to its final disposal point. This means that waste must always be stored securely, and the company responsible for removing and disposing of it must hold the necessary licenses and ensure that the waste is transported with the required documentation. The "Cradle to Grave" concept refers to a company's responsibility for the entire life cycle of a product, service, or program, from design to disposal.

According to the 1994 DWAF Minimum Requirements for the Handling and Disposal of Hazardous Waste, "any person who generates, transports, treats, or disposes of waste must ensure that no unauthorized transfer or escape of waste occurs under their control. Such a person must retain documentation describing the waste and any related transactions." This places the responsibility for waste on the generator, following the "Cradle to Grave" principle, where a "manifest" must accompany each load of hazardous waste until it is legally and responsibly disposed of. This manifest is passed from one transporter to the next, if multiple transporters are involved, and once the waste is properly disposed of at a suitable, permitted facility, a copy of the manifest must be returned to the point of origin. The "duty of care" provides a strategy for implementing sustainable development.

Polluter pays principle

The "polluter pays principle" asserts that the individual or organization responsible for causing pollution is accountable for the costs of cleaning it up or rehabilitating the environment. However, the polluter is not always necessarily the waste generator, as the responsibility for the safe handling, treatment, or disposal of waste can be transferred from one competent party to another. Therefore, the polluter could be a disposal site operator or a transporter. Nevertheless, under the "duty of care" principle, the generator remains one of the parties held accountable for any pollution caused by the waste. As such, the generator must be able to demonstrate that the transfer of waste management was done responsibly. According to NEMA, the polluter pays principle dictates that "the cost of remedying pollution, environmental degradation, and any resulting adverse effects, as well as the cost of preventing, controlling, or minimizing further pollution, environmental damage, or adverse health effects, must be borne by those responsible for harming the environment."

Sustainable Development

The principle of Sustainable Development is enshrined in the Constitution of the Republic of South Africa (Act No. 108 of 1996) and is implemented through NEMA. According to Section 1(29) of NEMA, sustainable development involves integrating social, economic, and environmental factors into the planning, implementation, and decision-making processes to ensure that development benefits both present and future generations. Therefore, Sustainable Development requires that:

- Pollution and environmental degradation should be prevented, or if not entirely avoidable, minimized and addressed.
- Disruption to landscapes and sites of cultural heritage should be avoided, or if unavoidable, minimized and addressed.
- Waste generation should be avoided, or if not entirely avoidable, minimized, reused, or recycled where possible, and otherwise disposed of responsibly.
- Disturbance to ecosystems and loss of biological diversity should be avoided, or if not entirely avoidable, minimized and addressed.

3.7 Climate Change Consideration

The proposed project will incorporate energy-efficient technologies and adhere to international best practices in construction methods and resource management. Given the uncertainties and extreme weather conditions associated with climate change, ensuring the provision of essential human needs, such as a reliable housing and human settlement service is important.

4. PROJECT MOTIVATION, NEED AND DESIRABILITY

In terms of the 2014 EIA Regulations (as amended) the BA report must provide a description of the need and desirability of the proposed activity. The consideration of “need and desirability” in EIA decision-making requires the consideration of the strategic context of the development proposal along with the broader societal needs and the public interest.

While the concept of need and desirability relates to the type of development being proposed, essentially, the concept of need and desirability can be explained in terms of the general meaning of its two components in which need refers to time and desirability to place - i.e. is this the right time and is it the right place for locating the type of land-use/activity being proposed? Need and desirability can be equated to wise use of land - i.e. the question of what is the most sustainable use of land.

4.1 Project Need

A long-term residential development program, together with the commercial development section, will ensure the availability of property for residential purposes and the continuous promotion of the local economy of the Municipality. The development will also support and contribute to the following:

- Creating an environment which is conducive of creating employment opportunities
- Creating an environment which is conducive to economic development;
- Creating an environment that stimulates business development and growth to stimulate job creation and economic growth.

Because of the alarming unemployment figures in the area, aggravated by continued job losses and the rising potential for crime, it would be thoughtful for the proposed activity to consider any other action but to create an immediate and broad spectrum of employment opportunities, primarily for the benefit of the local previously disadvantaged community, including those currently living in less than acceptable conditions in the surrounding area.

5.2 PROJECT DESIRABILITY

From the outset of this development the variety of project elements will all offer excellent opportunities for employment. There must be literally multitude of jobs within the different aspects of the project, from labourers to foremen, supervisors, guides, and skilled artisans including bricklayers, plasterers, painters, carpenters, plumbers, electricians, cabinetmakers and many more. The unique nature of the development project under consideration, these employment opportunities are sustainable in the long term and offer everyone engaged in the jobs the chance of self-improvement, skills enhancement and training, higher levels of education and the ability to provide a safe and secure home environment for themselves and their families.

In keeping with both local and central government empowerment initiatives, the project offers an extended time frame in which to achieve the goals of large-scale employment generation and poverty alleviation within the proposed project. The proposed development aims to serve people from various places nearby with adequate residential sites and other rational sites. The Republic of South Africa is characterized by a great rate of population growth and expansion of development which as a result brings up a demand for residential sites, business and other facilities. There is a great need for the proposed development as it will help to ensure that the demands for the residents in the surrounding areas are met. The proposed development will benefit the people living in the area and its surrounding extensions as the development of this nature will bring about housing and economic boost for the local municipality.

The development is desirable due to its location in terms of:

- The proposed development site is strategically located within the urban edge of Potchefstroom Town.
- The site can be accessed through the existing internal roads (Lusern Street) and the site easily connect to the National Road (N12) which is in the north of the project area.
- The proposed development will not have a significant detrimental impact on the surrounding areas.

5. PROJECT ALTERNATIVES

According to the EIA Regulations 2014 (as amended in 2017), evaluating feasible alternatives is a necessary part of the environmental investigation process. This requirement is also stipulated by Section 24(4) of NEMA (Act No. 107 of 1998) (as amended). In the context of a proposed activity, an alternative refers to different methods of achieving the general objectives and requirements of the activity. This may include considering alternatives related to:

- The property or location where the activity is proposed;
- The type of activity to be undertaken;
- The design or layout of the activity;
- The technology to be used;
- The operational aspects of the activity; and
- The option of not carrying out the activity at all.

5.1 Site/Location Alternatives

There is no location or site alternative considered for the proposed demarcation of site for township establishment. The Municipality which in this instance is the landowner and project applicant has rights and ownership of the proposed location, as such no alternative location was assessed as the proposed location.

The adjacent properties to the proposed location are privately owned and in the east of site the properties are developed, in the south the properties is situated within the a floodline. As such the applicant does not have an alternative site to investigate the proposed Township Establishment within the Grimbeek Park area.

5.2 Design/Layout Alternatives

The layout of the erven has been carefully considered to avoid the areas within the flood line are as far as possible from the proposed development. The layout of the erven has been carefully considered to avoid the areas within the flood line are as far as possible from the proposed development. The development of these layouts was based on the following criteria:

- ❖ Layout relative to existing infrastructure, such as access roads; servitudes, etc. and
- ❖ Topographical constraints, including ecological sensitivities and hydrological systems.

The current layout plan is the product of the appointed urban planner. The full scope of traffic, biological, socio-economic and engineering studies have been done to finalise the layout.

5.3 Input Alternative

Various types of materials can be used for the construction of the facilities. These include different lighting systems and road surfaces (asphalt, pebbles, brick paving, etc.).

There are a variety of materials used for the construction of a township and its associated structures. This also includes different types of bricks, roofs, finishes (e.g. paint) and road surfacing, all of which require different materials depending on the type. The proposed development however should be aesthetically pleasing to adjacent landowners and should be blended with its surroundings.

The following recommendations are made regarding structural designs:

- The use of building materials that require excessive amounts of energy to manufacture should be minimised

- The use of building materials originating from scarce environmental resources should be limited
- Building materials should be legally obtained by the supplier e.g. sand from legal barrow pits
- Building materials that can be reused should be used rather than materials that cannot be recycled
- Use highly durable building material for parts of the building that are unlikely to be changed during the lifetime of the building (likely to change due to fashion or renovations)
- Make use of clay bricks for construction of buildings.

5.5 NO-GO Alternative

No-go alternative in accordance with GN R.982, consideration must be given to the option not to act. This option is usually considered when the proposed development is envisaged to have significant negative environmental impacts that mitigation measures cannot ameliorate the identified impacts effectively. The no-go alternative would be the option of not undertaking the development of the proposed project. It would imply that the current electricity supply network is not strengthened, industrial development in the area will be hindered and the integration of potential renewable energy in the area will not be possible. Should the no-go alternative be adopted, the grid will be deprived of a much needed essential service, particularly given the already existing energy supply challenge countrywide.

Advantages of no-go alternative

- ❖ There will be no loss of biodiversity
- ❖ No vegetation clearance or disturbances of ecosystems
- ❖ No waste generation
- ❖ No visual impacts associated with the development of permanent infrastructure related to the Development

- ❖ No risk of soil and underground water contamination through leakage
- ❖ Reduced risk of fire hazards associated with the with the handling of fuel.

Disadvantages of no-go alternative

- ❖ Potential to attract investors in the area will not be established
- ❖ There will be no indirect employment opportunities
- ❖ Approximately 180 temporary job opportunities will be not be achieved
- ❖ The land capability will not be fully realized as the land will remain vacant
- ❖ Associated benefits such as Municipal Rates for the Local Municipalities, District Municipalities and other state departments will be not be realized to assist in the upkeep and maintenance of the local and district area.

6. DESCRIPTION OF THE BASELINE ENVIRONMENT

6.1 Climate

The proposed township establishment falls within both the C23H and C23K quaternary catchment, with the regional Vaal Catchment. Potchefstroom, located in the North West Province of South Africa, experiences a temperate climate characterised by hot, wet summers and cool, dry winters.

According to the Köppen-Geiger climate classification, the region falls under the Cwa Category. This denotes a temperate climate (C), with dry winters (w), and hot summers (a). The area does not qualify as arid or semi-arid due to its moderate annual rainfall, making it suitable for agriculture and human settlement.

The average annual rainfall in Potchefstroom ranges from 566mm to 620mm, with the majority of precipitation occurring during the summer months , from October to March. Rainfall typically results from short-duration, high-intensity thunderstorms that are common in the region during this period. The wet season is therefore marked by high humidity, intense heat during the day, and frequent afternoon thunderstorms, often accompanied by lightning and localised flooding.

Winters, on the other hand, are cool and dry, with minimal rainfall between May and August. During this period, Potchefstroom experiences clear skies, low humidity, and crisp mornings, often accompanied by frost. Temperatures in winter can drop

close to freezing at night but generally remain mild during the day. This distinct seasonal rainfall pattern contributes to significant moisture fluctuations in the soil, which is a critical consideration for construction and agricultural activities in the area.

The region is also influenced by its inland position and elevation of approximately 1,350 meters above sea level, which moderates extreme heat and contributes to occasional temperature drops at night. Despite hot summers, extreme temperatures above 35°C are not sustained for long periods due to the elevation and regular storm activity.

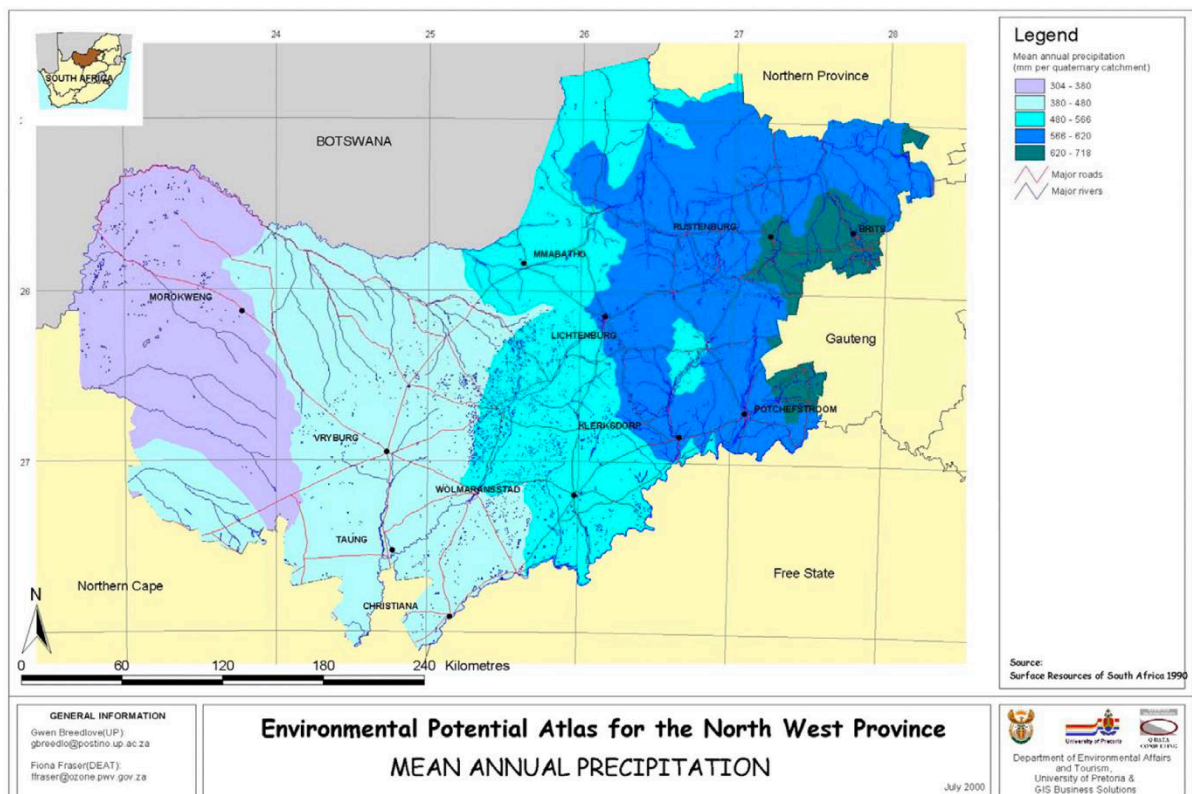


Figure 5: Mean Annual Precipitation

6.2 Topography and Drainage

The topography within the site is generally rolling with flat to gentle slopes separated by a perennial stream traversing the boundaries of the site. The proposed site is situated in a low-lying area, surrounded by permanently wet pans or surface water, particularly on Portion 59 of the site. Topographically, the site is located in a waterlogged area.

The investigated site is characterised by intermittent inland water bodies and streams that hold water during wet portions of the year. The elevations range between 1324 m and 1330 m above mean sea level (amsl).

The topography is characterised by an exceptionally gentle slope, with gradients varying between 0.35% and 0.48%, sloping generally towards the south and southwest.

6.3 Geology and Soils

6.3.1 Site Geology

The site is overlain by transported soil, which is alluvium in nature of Quaternary age, and underlain by shales interbedded with quartzites, hornfels and limestones. Although the regional geology includes dolerite and syenite dykes of varying ages that commonly crosscut the granite suite, no such intrusions were observed on site. Based on regional experience, the depth of weathering in the shale rocks is highly variable, often marked by the presence of cornerstone remnants. Patches of highly kaolinized residual soils are also known to occur.

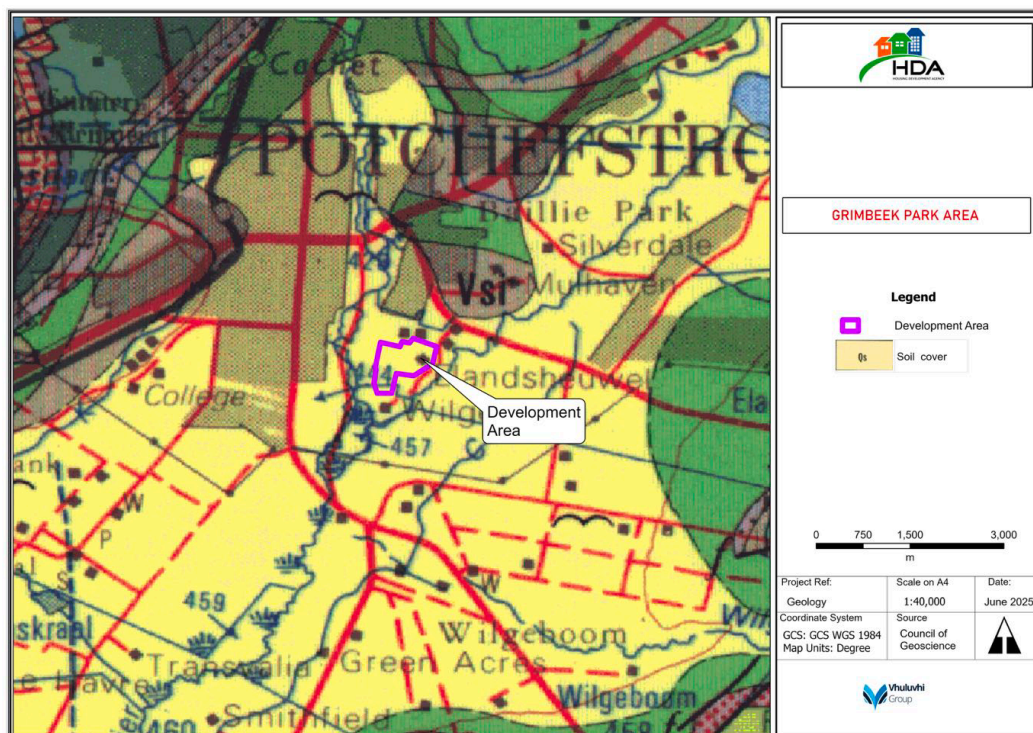


Figure 6: Geological Map

Field observations suggest that the in situ residual shales has been recently blanketed by a layer of transported soils, which is alluvium in nature.

6.3.2 Soils

The Study area is characterised by following soil types:

Glenrosa

The soil consists of horizons such as Orthic topsoil and Lithic subsoil. This soil form has a significant limiting layer (rock) that limit root development severely. The rock layer also limit water drainage and water tables can form. Waterlogging can develop under high rainfall conditions. With good effective depths of over 40cm and the construction of ridges, the soil can be used for crop production, especially vegetables. In this farm of interest, the soil had a gleylithic subsoil which was wet and reduced the soil effective depth.

Westleigh

The Orthic topsoil was 30 cm thick in all soils. The colour varies between dark brown to grey. The clay content of the soft plinthic subsoil was high (>25%). Hence the soil was easily waterlogged with poor drainage. The soft plinthic subsoil had a clay with multi- coloured red, yellow, and black spots and concretions in some cases. These colours develop through fluctuating water tables in the sub-soil. It is literally a process in which the iron in the soil rusts and changes colour. The soft plinthic horizon can store large amounts of water. These soils are therefore of high yielding potential if they are deep enough. When these soils are shallow, they are prone to waterlogging. Westleigh soil is mostly found in lower laying areas, and they receive water from higher up in the land. This soil should not be cultivated deeply.

Tukulu

The Orthic had 30cm thick topsoil with dark brown colour. The neocutanic horizon is characterized by slight (very) polychromatic, pressure level and cutanic features such as dark root canals etc. These soils are formed through wind or water deposition or because of young erosive soils. They are often well drained, and the prevention layers imply that water can be stored efficiently. With shallow layers that are

saturated with water, these soils can be waterlogged, and its agricultural potential is reduced. Depending on the effective depth (80 cm), these soils are suitable for irrigation and is also good as fallow soils. Usually, these soils have good clay content, and it is accompanied by the effective degree of structure that sometimes occur, which implies that these soils are less prone to compaction. It is better to plough these soils deep because unstable neocutanic horizons to the ground surface cause quenching and crusting. Tukulu grounds generally have a better N transferring ability as for example Apedal soils with the same clay content.

Sepane

The soil consists of horizons such as Orthic topsoil, Pedocutanic and Gleyic subsoil. It is known by its loose brittle block structures. The pedocutanic B horizon consists of medium to strong developed clay block structures. Cracks on the surface of these soils. are typical when they dry out. The high clay content implies a slow infiltration tempo. A lot of water can be lost through runoff on these soils. The soils are suitable for minimum or no-tillage systems. The pedocutanic is unstable and great damage can occur when it is wrongfully ploughed. (Erosion and crust formation). Sepane soils are better suited for sunflower and sorghum than for maize production because of the stronger root systems of these crops. The soils are normally fertile. When being irrigated care should be taken that drainage is sufficient on these soils.

Katspruit

The Orthic topsoil in this soil mostly 10-40 cm thick and frequently light grey with a bleached looked. In this farm th topsoil was 20 cm thick_ very shallow. The Gleyic horizon is grey in colour, high clay density with blue/green colours as mottles, that's an indication of extreme waterlogging and absence of oxygen in the soil. The soil was found at the lower lying area of the farm towards floodplains. With over-fertilizer and poor management of agricultural inputs, the impact can damage water bodies nor cause eutrophications. Katspruit soils have poor drainage and are saturated with a high salinity tendency. Even though it is low potential soils, crops like Sunflower is better suited than Maize or Soya, external drainage will probably be required. These soils are not suited for irrigation.

6.4 Biodiversity

6.4.1 Vegetation

The Study area falls within Rand Highveld grassland. The site has the dominance of invasive species such as grey poplar, gum trees; seringa; weeping willow and wild asparagus. Indigenous few trees that exist are sweet thorn trees and sericea lancea occurring in very small, scattered numbers along the riparian zones. Plant species composition is very low because the land is transformed.

6.4.2 Reptile and amphibian survey.

The area is a highly transformed habitat and cannot fully support the habitat requirements for both reptiles and amphibians. None of these were identified or sighted during the field survey. Hence this does not mean that they do not exist as they tend to be located at very scarce sites and in limited populations.

6.4.3 Bird survey (Avifauna)

Birds are known to move from one area to another across the habitat foraging on various plants and grass. Those which were sighted are listed on the table below.

Table 13: List of bird species identified in the study site.

Scientific name	Common name	Favorable habitat
<i>Bostrychia hagedash</i>	hadada ibis	Wooded, riparian, habitats. Residential areas in fruit trees and parks.
<i>Pycnonotus tricolor</i>	Dark capped bulbul, black eyed.	Wooded, riparian, habitats. Residential areas in fruit trees and parks.
<i>Halcyon albiventris</i>	Brown hooded king fisher	Woodland and riparian margins
<i>Corvus albus</i>	Pied crow	Settlements
<i>Corvus albicollis</i>	White necked raven	Along roads
<i>Ploceus velatus</i>	Southern masked weaver	Wooded, riparian, habitats. Residential areas in fruit trees
<i>Streptopelia semitorquata</i>	Red-eyed Dove	Woodland and riparian margins

An assessment was also undertaken using the biodiversity sector plan to verify the possibility of breeding and nesting sites that might be existing within the study area and none was found to be in existence except that they are existing within the high lying areas that are far from the study area.

6.5 Social Demographics

6.5.1 Demographics

Population statistics is important when analysing an economy, as the population growth directly and indirectly impacts employment and unemployment, as well as other economic indicators such as economic growth and per capita income.

According to South African census 2022, the JB Marks Local Municipality has a total population of 212 670 people, of the population 102 652 are males and 110 018 are females.

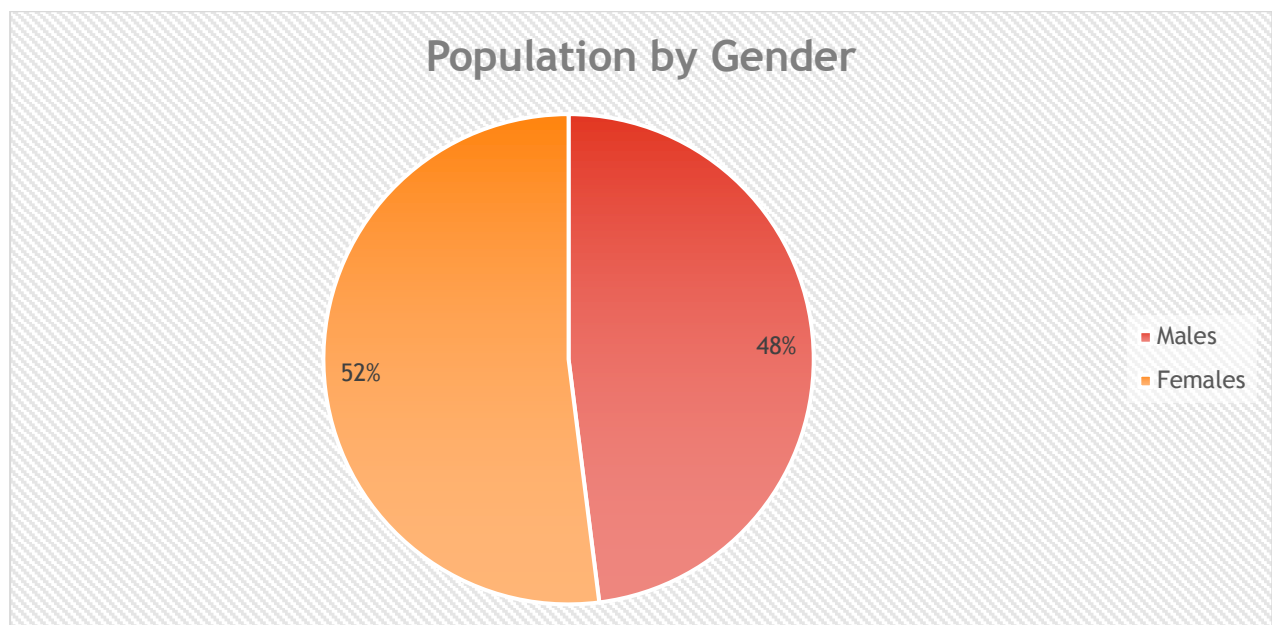


Figure 7: Population by gender for JB Marks Local Municipality (Census 2022)

According to South African census 2022, the JB Marks Local Municipality has a population of 84% people, 5% of people are coloured, 11% of people are white and other remaining people are unspecified.

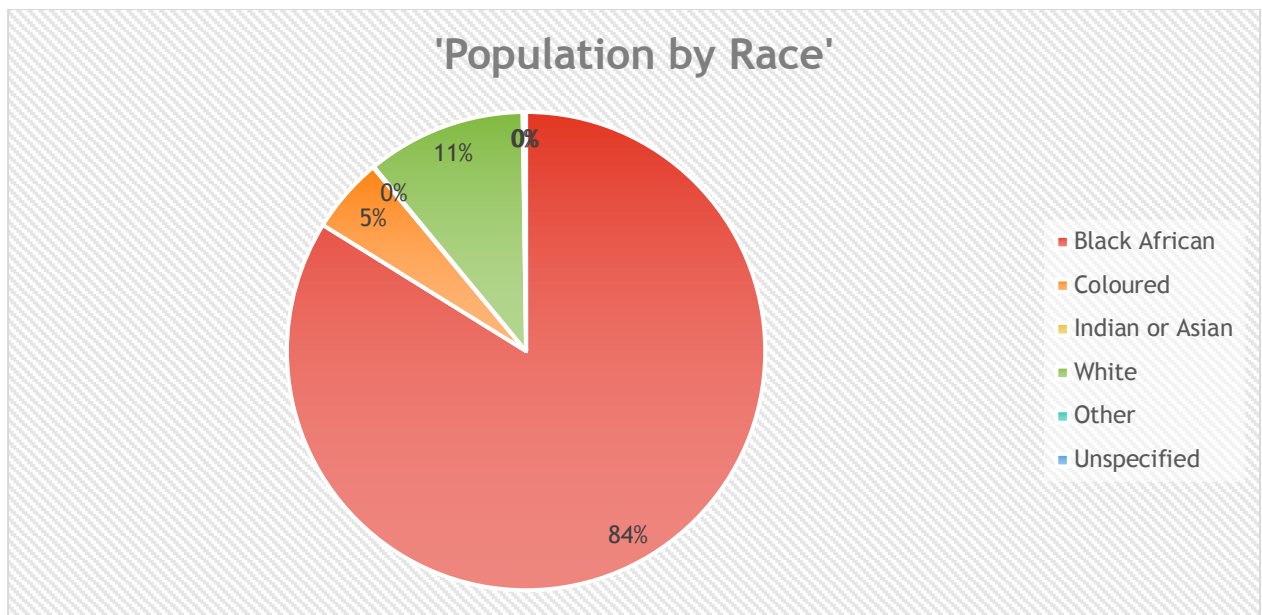


Figure 8: Population by Race for JB Marks Local Municipality (Census 2022)

6.5.2 Education

Educating is important to the economic growth in a country and the development of its industries, providing a trained workforce and skilled professionals required. The education measure represents the highest level of education of an individual, using the 15 years and older age category.

Table 14: Attendance at an ECD Institution

Creche/educare centre	7333
Pre-school/nursery school/Grade 00/Grade 000/Grade R	1062
Day mother/Gogo/Child minder	1733
Home/community play group	1025
Other (Specify)	101
None	8170
Do not know	137

(According to the United Nations definition of education, one is an adult when 15 years or older. IHS uses this cut-off point to allow for cross-country comparisons. Furthermore, the age of 15 is also the legal age at which children may leave school in South Africa).

Table 15: Highest Level of Education

Level of Education	No. of people
No Schooling	8244
Some primary	11574
Completed primary	5326
Some secondary	47030
Grade 12/ Standard 10	45782
Higher education	12198
Other	929

According to the 2022 SA Census, the JB Marks Local Municipality has majority of people who have attended education to secondary level and those who have completed secondary level education, although there is a significant number of people without schooling a total of 8244 people.

6.5.3 Household by population group

A household is either a group of people who live together and provide themselves jointly with food and/or other essentials for living, or it is a single person living on his/her own. An individual is considered part of a household if he/she spends at least four nights a week within the household.

The JB Marks Local Municipality has a total of 73328 household, within the municipality. There are different types of dwellings within the municipality, the different types of dwellings are defined as follows:

Using the StatsSA definition of a household and a dwelling unit, households can be categorised according to type of dwelling. The categories are:

- ❖ **Very formal dwellings** - structures built according to approved plans, e.g. houses on a separate stand, flats or apartments, townhouses, rooms in backyards that also have running water and flush toilets within the dwelling.
- ❖ **Formal dwellings** - structures built according to approved plans, i.e. house on a separate stand, flat or apartment, townhouse, room in backyard, rooms

or flatlet elsewhere etc, but without running water or without a flush toilet within the dwelling.

- ❖ **Informal dwellings** - shacks or shanties in informal settlements, serviced stands, or proclaimed townships, as well as shacks in the backyards of other dwelling types.
- ❖ **Traditional dwellings** - structures made of clay, mud, reeds, or other locally available material.
- ❖ **Other dwelling units** - tents, ships, caravans, etc.

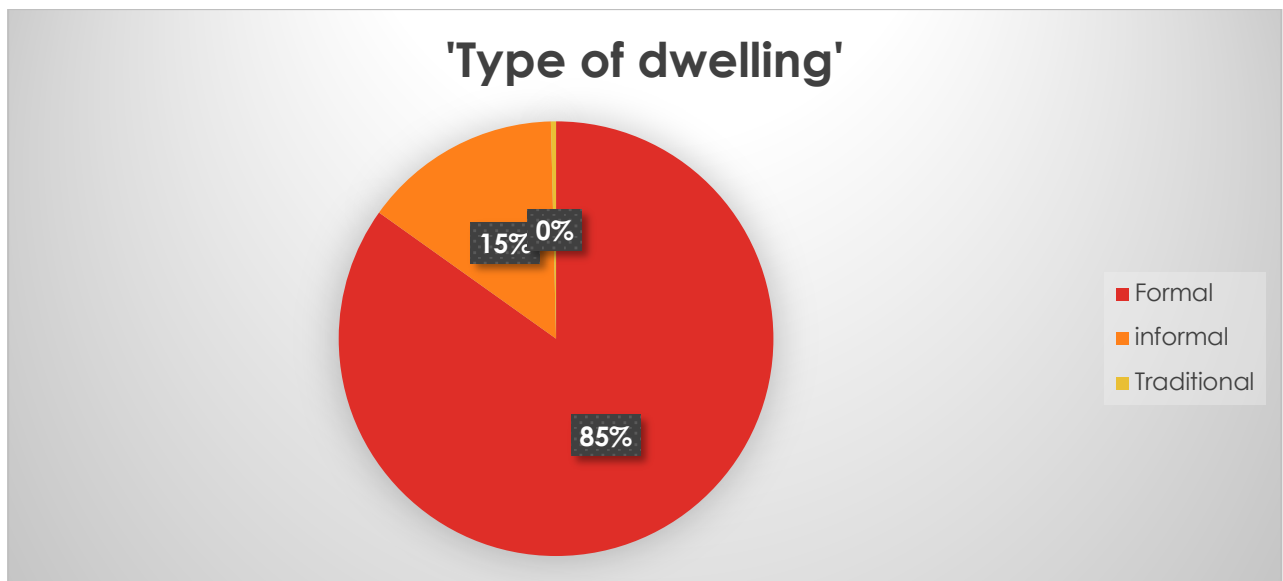


Figure 9: Types of dwelling with JB Marks Local Municipality

The population of the municipality largely uses the formal dwelling units with 56306 (85%) and a very small margin uses the traditional dwelling with 252 (0.01%), the remainder of the population at 9799 (15%) uses informal dwellings.

7. PUBLIC PARTICIPATION PROCESS

Public Participation Process (PPP) is being undertaken in terms of regulation 41 of the EIA 2014 Regulations, as amended, for the project triggering listed activity under the NEMA. Vhuluvhi Group (Pty) Ltd on behalf of the JB Marks Local Municipality took into account all relevant guidelines applicable to public participation as contemplated in section 24J of the NEMA. Vhuluvhi Group will be giving notices to all potential I&APs to participate in the proposed project by undertaking the following PPP:

7.1 Legal requirements of the PPP as required by Section 41 of the NEMA

41 (1) This regulation only applies in instances where adherence to the provisions of this regulation is specifically required.

(2) The person conducting a PPP must take into account any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential I&APs of an application or the 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.

(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 and 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 and to any alternative site where the activity is to be undertaken;

(iii) the municipal councillor of the ward in which the site and 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;

(c) placing an advertisement in:

(i) one local newspaper; or

(ii) any official that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official referred to in paragraph (c)(ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to (i) illiteracy; (ii) disability; or (iii) any other disadvantage.

(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) state (i) whether a BA or S&EIR procedures are being applied to the application; (ii) the nature and location of the activity to which the application relates; (iii) where further information on the application or proposed application can be obtained; and (iv) the manner in which and the person to whom representations in respect of the application or proposed application may be made.

(4) A notice board referred to in sub regulation (2) must (a) be of a size of 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.

7.2 Announcement of the project and the draft basic assessment report availability

The project was announced to the public, by means of the placement of a newspaper advertisement and site notices. Background Information Documents (BIDs) are being

distributed to I&APs to create awareness of the project. Vhuluvhi Group have announced the availability of the Draft BAR.

The report will be subjected to a PPP of at least 30 days and the Final BAR will reflect the incorporation of comments received, including any comments from the competent and commenting authorities.

The following processes are being undertaken to announce the project and the Draft Basic Assessment Report:

- An I&AP database has been opened and is being maintained, and includes all potential I&APs in respect of the application in accordance with Regulation 42.
- Letters are being sent to all I&APs, written in any of the manners provided for in section 47D of the NEMA, announcing the project and the availability of the Draft BAR, containing project information and a locality map to the municipal councillor of the ward in which the site is situated and any organisation of ratepayers that represent the community in the area, the municipality which has jurisdiction in the area, any organ of state having jurisdiction in respect of any aspect of the activity; and any other party as required by the competent authority.
- Site notice boards were plugged at a place conspicuous to and accessible by the public at the boundary of the site where the activity to which the application relates to.
- A newspaper advertisement was published on the *Potchefstroom Herald Newspaper*, the advert was published on 17th July 2025.

Subsequent to the 30 days' period, all comments and representations received from I&APs will be considered and recorded in the Comments and Responses Report (CRR). All I&APs who would have participated in the PPP will be thanked, and their comments acknowledged.

The Draft Basic Assessment Report is made available for public comment for 30 days from the day they received it.

7.4 Authority Consultation

The DEDECT is the Competent Authority for this application. A record of all authority consultation undertaken, is included within this BAR. Consultation with the Competent Authorities (i.e. DEDECT) will be done throughout the BA Process. On-going consultation included the following:

- Notification and Consultation with Organs of State that may have jurisdiction over the project, including: Provincial departments and Local Municipality
- The draft BAR will be submitted to the DFFE for review between July and August 2025 for comments, simultaneously with public review of the Draft BAR.
- Similarly, the draft BAR will be submitted to the organs of state during the public review of the draft BAR.

7.5 Announcement of the decision

Vhuluvhi Group will ensure that all registered I&APs are provided with access to the decision and the reasons for such decision. I&APs will be drawn to the fact that appeals may be lodged against the decision in terms of the National Appeals Regulations of 2014 (GNR. 993), if such appeals are available in the circumstances of the decision. The decision will be advertised through the following methods:

- Distribution of notification letters to the stakeholder database via emails; and
- Placement of a newspaper advert in the same local newspaper where the project and the availability of the Draft BAR was announced.

8. ENVIRONMENTAL IMPACTS ASSESSMENT

8.1 Impacts and risks identified

The table below presents the impacts and risk that have been identified associated with the proposed Township Establishment, the impact identified we assessed in their **Nature, Significance, Consequence, Extent, Duration and Probability.**

Table 16: Potential Environmental Impact Identified

Environmental Aspect	Impacts
Construction Phase	
Vegetation	- Potential loss of indigenous vegetation units - Potential increase in alien vegetation - Potential loss of floral species of conservation importance - Loss of catchment area and decreased water inputs - Contamination of the area by petrochemical spillages - Contamination of the area by construction and domestic waste - Contamination of the area as a result of leaking portable toilet facilities.
Water Quality	- Increase in water turbidity due to sediment inputs and/or erosion - Physio-chemical water pollution related to potential spillages of cement and fuels.
Wildlife	- Potential loss of faunal species of conservation importance - Contamination of the area by petrochemical spillages - Contamination of the area by construction and domestic waste - Contamination of the area as a result of leaking portable toilet facilities. - Road Mortalities
Soils, Land Capability and Land Use	- Soil Contamination - Soil loss / Soil erosion - Loss of agricultural potential - Temporary change in land use from open veld to construction

Environmental Aspect	Impacts
Noise	- Noise disturbance from the movement of construction vehicles - Noise disturbance from the operation of machinery
Traffic	- Increase in traffic - Increase of incidents with pedestrians and livestock - Increase in dust from gravel roads - Increase in road maintenance - Additional abnormal loads - Increase in dust from gravel roads - New / larger access points

8.2 Impact Assessment Methodology

The potential environmental impacts associated with the project will be evaluated according to its nature, extent, duration, intensity, probability and significance of the impacts, whereby:

- **Nature:** A brief written statement of the environmental aspect being impacted upon by particular action or activity.
- **Extent:** The area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment phase of a project in terms of further defining the determined significance or intensity of an impact. For example, high at a local scale, but low at a regional scale;
- **Duration:** Indicates what the lifetime of the impact will be;
- **Intensity:** Describes whether an impact is destructive or benign;
- **Probability:** Describes the likelihood of an impact actually occurring; and
- **Cumulative:** In relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the

existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Table 17: Criteria for evaluating potential environmental impacts

CRITERIA	DESCRIPTION			
Extent	National (4) : The whole of South Africa	Regional (3): Provincial and parts of neighbouring provinces	Local (2): Within a radius of 2 km of the site	Site (1): Within the site
Duration	Permanent (4): Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient	Long-term (3): The impact will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter. The only class of impact which will be non-transitory	Medium-term (2): The impact will last for the period of the site establishment phase, where after it will be entirely negated	Short-term (1): The impact will either disappear with mitigation or will be mitigated through natural process in a span shorter than the site establishment phase
Intensity	Very High (4): Natural, cultural and social functions and processes are altered to extent that they permanently cease	High (3): Natural, cultural and social functions and processes are altered to extent that they temporarily cease	Moderate (2): Affected environment is altered, but natural, cultural and social functions and processes continue albeit in a modified way	Low (1): Impact affects the environment in such a way that natural, cultural and social functions and processes are not affected

CRITERIA	DESCRIPTION			
Probability of Occurrence	Definite (4): Impact will certainly occur	Highly Probable (3): Most likely that the impact will occur	Possible (2): The impact may occur	Improbable (1): Likelihood of the impact materialising is very low
Impact Reversal	Highly Impossible (4): Impact reversal will certainly be impossible	Moderate (3): Impact can be reversed to some extent with loss of natural resources	Possible (2): High possibility of impact reversal	Definite (1): Impact can be totally reversed
Loss of irreplaceable resources	Definite (4): Resources definitely be lost	Highly Probable (3): Most likely that resources will be lost	Possible (2): Resources may be lost	Improbable (1): Loss of resources is highly unlikely

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

Significance=Extent+ Duration +Intensity x Probability

Table 18: Criteria for classifying impacts

Low impact/ Minor (3 -10 points)	A low impact has no permanent impact of significance. Mitigation measures are feasible and are readily instituted as part of a standing design, construction or operating procedure.
Medium impact/ Moderate (11 -20 points)	Mitigation is possible with additional design and construction inputs.
High impact (21 -30 points)	The design of the site may be affected. Mitigation and possible remediation are needed during the construction and/or operational phases. The effects of the impact may affect the broader environment.
Very high impact/ Major (31 or more points)	Permanent and important impacts. The design of the site may be affected. Intensive remediation is needed during construction and/or operational phases. Any activity which results in a “very high impact” is likely to be a fatal flaw.
Status	Denotes the perceived effect of the impact on the affected area.
Positive (+)	Beneficial impact.
Negative (-)	Deleterious or adverse impact.
Neutral (/)	Impact is neither beneficial nor adverse.
It is important to note that the status of an impact is assigned based on the status quo - i.e. should the project not proceed. Therefore not all negative impacts are equally significant.	

The suitability and feasibility of all proposed mitigation measures is included in the assessment of significant impacts. This was achieved through the comparison of the

significance of the impact before and after the proposed mitigation measure is implemented.

8.3 The positive and negative impacts that the proposed activity

At this moment there is no alternative layout, should the comments from IAPs and other relevant stakeholders warrants that we change the layout or have alternative, those comments will be addressed accordingly.

8.4 Assessment of impacts

Potential impact of each main activity in each phase, and corresponding significance assessment. The significance of each activity in each phase of the proposed mining activity associated with the borrow pit is discussed in the tables below.

NB: SR= Significance rating; E=Extent; D=Duration; I=Intensity; P=Probability

Table 19: Impact assessment for the planning and construction phase

CONSTRUCTION PHASE IMPACT ASSESSMENT													
Activity	Receptor	Impact Description	Significance before mitigation measure				Significance level	Residual Risk	Significance after mitigation measure				Significance level
			E	D	I	P			E	D	I	P	
Site clearance and preparations	Loss of terrestrial vegetation and faunal habitat	Direct Impact: The site clearance of approximately 49.7188 hectares and preparations of site will lead to loss of indigenous vegetation, faunal habitat and permanent loss of important plant species.	Site (1)	Permanent (4)	Very High (4)	Definite (4)	36 (-ve)	High	Site (1)	Medium Term (3)	Very High (4)	Definite (4)	32 (-ve)

		Indirect Impacts: The loss of vegetation in the proposed location will indirectly affect the current land use where livestock graze within the proposed site.											
Mitigation Measures: Restrict all clearing of vegetation and disturbance of habitat from construction activities to the final infrastructure footprint. Only areas demarcated for development must be cleared and where plant species listed as protected trees are identified they must not be cleared. Maintain the viability of the indigenous seed bank in excavated soil so that it can be used for subsequent re-vegetation of any disturbed areas. Highlight all prohibited activities to workers through training and notices, and briefly and effectively stockpile topsoil (preferably 1-1.5m in height) to maintain the viability of the indigenous seed bank for subsequent re-vegetation of any disturbed areas.													
Site clearance and preparations	Alien plant invasion	Introduction & proliferation of alien species, from the influx of vehicles, people and materials, site disturbance and lack of alien species control.	Site (1)	Medium term (3)	High (3)	Highly probable (3)	21 (-ve)	Medium	Site (1)	Medium Term (3)	Moderate (2)	Highly probable (3)	18 (-ve)

Mitigation Measures: Removal of alien invasive species should preferably commence during the pre-construction phase and continue throughout the construction and operational phases. Before any vegetation clearing activities start, AIPs should be removed from the research area to prevent the spread of AIP propagules and soil contaminated with AIP seeds during the construction phase. An AIP Management/Control Plan should be implemented by a qualified professional. No chemical control of AIPs to occur without a certified professional.

NB: Treatment with a registered weed killer specific for each identified invasive plant in accordance with the Agricultural Pests Act, 1983 (Act No. 36 of 1983) and Environmental Conservation Act, 1989 (Act No. 73 of 1989), this task should be carried out with the supervision of a relevant specialist i.e. a botanist.

Site clearance and preparations	Noise	The site clearance and preparations will generate excessive noise around the local area and site with movement of vehicles and construction machines.	Local (2)	Long term (3)	Very High (4)	Definite (4)	36 (-ve)	Medium	Local (2)	Long Term (3)	High (3)	Highly Probable (3)	24 (-ve)
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Mitigation Measures: All construction machinery to be used must be well maintained to ensure they do not produce excessive noise. All the neighbours must be informed before the activities start and no work must be done during the night the contractors must work from 7:00 to 17:00.

Site clearance and preparations	Air Quality	Direct Impact: The site clearance activities will generate dust that will contaminate the air quality. Dust will also be generated by the movement of the construction vehicles to and within the site as the access road is gravel.	Local (2)	Medium term (3)	High (3)	Definite (4)	32 (-ve)	Medium	Site (1)	Medium Term (3)	Moderate (2)	Highly probable (3)	18 (-ve)
Mitigation Measures: All construction vehicles must be monitored their speed to ensure they do not over speed to and within the speed where dust will be generated. All workers within the site must put on dust mask to avoid inhaling dust from clearing activities. Dust suppression must be employed to ensure the movement of vehicles dust not generate excessive dust.													
Site clearance and preparations	Visual aspect	Direct Impact: The site clearance and preparations will change and presence of construction vehicles will change visual aspect of the site leading to loss of sense of place.	Local (2)	Permanent (4)	Very High (4)	Definite (4)	40 (-ve)	High	Local (2)	Long Term (3)	High (3)	Definite (4)	36 (-ve)

Mitigation Measures: Construction materials stored on the site prior to their use and waste stored on the site prior to removal should be kept in neat, separate piles to ensure good housekeeping at all times. Should any lighting be required by the contractor, it should be aimed at the area to be lit on site and the over spillage must be kept to a minimum.

Site clearance and preparations	Soil	Direct Impact: The site clearance activities will increase the erosion of topsoil within the site. The site is predominately covered by vegetation which play a role in protecting topsoil from erosion. The site clearance activities will also have potential impact on soil with spillages from construction vehicles.	Site (1)	Medium term (2)	High (3)	Definite (4)	24 (-ve)	Medium	Site (1)	Medium Term (2)	Moderate (2)	Highly probable (3)	15 (-ve)
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Mitigation Measures: Implement an effective system of storm water run-off control using bunds and ditches, where it is required that is at points where water accumulation might occur. The system must effectively collect and safely disseminate any run-off water from all hardened surfaces and it must prevent any potential down slope erosion. Maintain where possible all vegetation cover and facilitate re-vegetation of denuded areas throughout the site, to stabilize the soil against wind erosion. If an activity will mechanically disturb the soil below surface in any way, then any available topsoil should first be stripped from the entire

surface to be disturbed and stockpiled for respreading during rehabilitation. During rehabilitation, the stockpiled topsoil must be evenly spread over the entire disturbed surface.													
Site clearance and preparations	Heritage Aspects	Direct Impact: During the site clearance activities aspects of heritage and paleontological importance may be discovered from underground damaged or uncovered.	Site (1)	Medium Term (3)	Very High (4)	Definite (4)	32 (-ve)	High	Site (1)	Medium Term (3)	High (3)	Highly probable (3)	21 (-ve)
Mitigation Measures: In terms of paleontological and archaeological resources, no mitigation measures are required and there are no areas that need to be avoided by development. A chance finds procedure should be implemented if any isolated fossils or archaeological sites (or graves) are found during construction to allow for reporting, documentation and rescue as appropriate. In terms of cultural resources, there are no feasible mitigation measures to screen such large developments during the construction phase but one measure that should be applied is to use paint colours that will help built elements of the facility to recede into the background. After implementation of the visual specialist's recommendations, the impacts are expected to be of low significance. During the operation phase, there are no feasible mitigation measures since it is not possible to screen such large developments. The after mitigation significance thus remains medium													
Site clearance	Water quality	Direct Impact: The site clearance and preparations may contaminate the	Local (2)	Medium	High (3)	Highly probable	24 (-ve)	Medium	Site (1)	Medium	Moderate	Highly	18 (-ve)

and preparations		surface/ground water. Water quality may be contaminated by potential spills, waste and soil erosion.											
Mitigation Measures: The proper storage, handling and disposal of hazardous substances (e.g. fuel, oil, cement, etc.) must be undertaken. All hazardous substances must be stored in appropriate containment structures free from the ingress and egress of stormwater runoff. Hazardous storage and re-fuelling areas must be bunded prior to their use on site during the construction period. The bund wall should be high enough to contain at least 110% of any stored volume. Mixing and/or decanting of all chemicals and hazardous substances must take place on a tray, shutter boards or on an impermeable surface and must be protected from the ingress and egress of stormwater. Cement/concrete batching is to be located in an area to be hardened and must first be approved by the ECO. No batching activities shall occur directly on the ground. Provide drip-trays beneath standing machinery/plant that are prone to leaks. Control of waste discharges and do not allow dirty water from operational activities to enter the watercourse. Ensure that no operational activities impact on the watercourse or buffer area. This includes edge effects, failure of infrastructure such as sewage pipes. Implement litter traps at all watercourse crossings. The development footprint must be fenced off from the watercourses and no related impacts may be allowed into the watercourse e.g. water runoff from cleaning of equipment, vehicle access etc.													
Construction Activities	Social and economic	Direct Impact: The construction activities will create employment opportunities and contract	Regional (3)	Medium term	Very High (4)	Definite (4)	36 (+ve)	High	Regional (3)	Long term (3)	Very High (4)	Definite (4)	40 (+ve)

		for local supplies with potential local economy improvement. The need for supply of the items will go as far as regional suppliers. Indirect impacts: The employment opportunities will not cater for everyone as such there can be tensions amongst.											
Mitigation Measures: The impact is considered a positive and therefore no mitigation measures are required. The proponent and contractors must ensure that locals are considered and involved in all activities of the project to avoid tensions and uprisings.													
Construction Activities	Work force health and safety	Direct Impact: The construction activities may cause injuries during the activities and safety of the construction items from theft.	Site (1)	Medium term (3)	High (3)	Highly probable (3)	21 (-ve)	Medium	Site (1)	Medium Term (3)	Moderate (2)	Highly probable (3)	18 (-ve)

Mitigation Measures: Ensure that a skilled and competent Contractor is appointed during the construction phase. The Contractor must be evaluated during the tender/appointment process in terms of safety standards. The Contractor must ensure that all construction personnel are provided with adequate PPE for use where appropriate. The Contractor must undertake a Construction Phase Risk Assessment. A Construction Site Manager or Safety Supervisor should be appointed, in conjunction with the project manager, to monitor all safety aspects during the construction phase. This could be the same person that is assigned to co-ordinate the construction traffic. Ensure that roads are not closed during construction, which may restrict access for emergency services.

Table 20: Impacts associated with the operation phase

OPERATIONAL PHASE IMPACT ASSESSMENT													
Activity	Receptor	Impact Description	Significance before mitigation measure				Significance level	Residual Risk	Significance after mitigation measure				Significance level
			E	D	I	P			E	D	I	P	

The township established and its associated land uses present on site	Visual Aspect	Direct Impact: The township and its associated land use will change the visual aspect of the area. Since the site is currently vacant and covered by vegetation, the permanent structures will change the sense of place and lights during night from houses and potential built up structures.	Local (2)	Permanent (4)	Very High (4)	Definite (4)	40 (-ve)	High	Local (2)	Long term (3)	Very High (4)	Definite (4)	36 (-ve)
Mitigation Measures: Architectural guidelines (including aspects of roof and wall finishes, colours, heights of buildings, and lighting), as well as Landscape Architectural guidelines (screening, buffering, functioning, aesthetics etc) for the development will be developed to promote the enhancement of this urban area and therefore creating new and valuable places with a modified and positive urban mixed-use sense of place that is vibrant and diverse.													
Increased volume of traffic moving to the township	Traffic	Direct Impact: The vehicles accessing the township will increase leading to an increasing traffic along the roads connecting to the proposed site	Local (2)	Long term (3)	High (3)	Definite (4)	32 (-ve)	Medium	Local (2)	Long Term (3)	Moderate (2)	Highly probable (3)	21 (-ve)

Mitigation Measures: Should there be any abnormal traffic loads as a consequence of the operation phase activities, the local municipality and relevant traffic authorities should be notified. Relevant traffic signage must be erected on and off the site to control traffic speeds and movements. Within the township allowable speed limit must be adhered and road signage must be erected.

Infrastructural development	Bulk Contributions	Direct Impact: Increased service provision, minimisation of traffic congestion.	Local (2)	Permanent (4)	Very High (4)	Definite (4)	40 (+ve)	High	Local (2)	Permanent (4)	Very High (4)	Definite (4)	40 (+ve)
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Mitigation Measures: All infrastructures should be well planned and strategically implemented in coordination with the JB Marks local municipality and Dr KK District Municipality Plans.

Service Delivery	Social	Direct Impact: Increase in service delivery and number of erven	Local (2)	Long term (3)	High (3)	Definite (4)	32 (+ve)	Medium	Local (2)	Long Term (3)	High (3)	Definite (4)	32(+ve)
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Mitigation Measures: The municipality must ensure the township is prioritised in terms of service delivery and maintained of infrastructures

8.5 Cumulative Impacts

Section 2 of the NEMA requires the consideration of cumulative impacts as part of the environmental assessment process. EIAs have traditionally, however, failed to come to terms with such impacts, largely as a result of the following considerations:

- Cumulative effects may be local, regional or global in scale and dealing with such impacts requires co-ordinated institutional arrangements; and
- EIA's are typically carried out on specific developments, whereas cumulative impacts result from broader biophysical, social and economic considerations, which typically cannot be addressed at the project level.

Cumulative impacts associated with this type of development could lead to initial, incremental or augmentation of existing types of environmental degradation, including impacts on the air, soil and water present within the available habitat. Pollution of these elements might not always be immediately visible or readily quantifiable, but incremental or fractional increases might rise to levels where biological attributes could be affected adversely on a local or regional scale. In most cases, these effects are not bound and are dispersed or diluted over an area that is much larger than the actual footprint of the causal factor. These impacts are usually most prevalent in areas where continuous and long-term impacts have been experienced.

Cumulative effects are caused by the accumulation and interaction of multiple stresses affecting the parts and the functions of ecosystems. Of particular concern is the knowledge that ecological systems sometimes change abruptly and unexpectedly in response to apparently small incremental stresses. For purposes of this report, cumulative impacts have been defined as “the changes to the environment caused by an activity in combination with other past, present, and reasonably foreseeable human activities”. The construction of the proposed Project infrastructure will add to the existing illegal sand extraction, agriculture and light industrial activities in the area and will contribute to the degradation of the sense-of place of the cultural landscape.

Considering the greater development landscape, the effects from the various proposed developments will interact to produce a total greater effect on the cultural landscape and degradation thereof. The in-situ conservation of some or all of the identified heritage resources will conserve tangible markers of the historical landscape. This will be a positive cumulative impact on the cultural landscape and may counter some of the degradation of the sense-of place as described above.

All positive impacts, that is, employment during construction and operations, as well as growth and diversification of the local economy.

There is no other development which was observed that is negatively contributing towards the change in a sense of place in the project area at site level. This potential negative impact from the proposed development will therefore not contribute towards intensifying such an impact at these geographical levels.

8.6 Summary of Identified Impacts

During the construction phase, site clearing and the establishment of infrastructure will result in the exposure of soils which may result in wind and water erosion. This impact may consequently lead to loss of soil resources, sedimentation of nearby surface water resources, unless mitigation measures are implemented, resulting in a deterioration of these freshwater systems and associated aquatic biota. In addition, the use of vehicles and machinery during construction may result in soil compaction which in turn could result in sheet run-off and reduced water infiltration capability.

Even though the proposed development area is not largely covered by natural vegetation; there will be loss of natural habitat and biodiversity due to site clearing for the structures and infrastructures to be developed. Related impacts include the potential infestation of AIPs as a result of habitat fragmentation. The establishment of AIPs is also expected within the disturbed area. With respect to faunal species, the construction of the structures and infrastructures will likely to result in the disturbance of faunal species due to the loss of natural habitat. It is however noted that given the availability of habitats within the surrounding, displaced floral species

are expected to remain consistent to the surrounds and faunal species are expected to adapt accordingly by migrating to neighbouring undisturbed habitat.

During the operational phase, some impacts are expected to persist as a result of the operation of the Township and the required maintenance activities. These impacts include soil erosion and compaction of bare surfaces as well as infestation of AIPs. In addition, the construction of the access the access roads will result in upstream and downstream impacts in terms of loss of terrestrial due to the disruption of the seasonal flood regime which will likely destroy riparian macro- and microhabitats as well as alteration of channel geometry and a reduction of flow which will impact aquatic biodiversity and water availability for downstream wetland systems and water users.

9. ENVIRONMENTAL IMPACT STATEMENT

Assuming all phases of the project comply with the conditions outlined in the EMPr, it is anticipated that the construction will not have any significant negative environmental impact on the surrounding area. The construction and operation phases are expected to yield positive impacts, such as providing services to the local community, creating job opportunities, and enhancing skill development. However, the construction phase may also result in the degradation or destruction of wetland habitats, a reduction in the diversity of indigenous fauna and flora, loss of habitat, and potential harm to Species of Special Concern (SCC). During the operational phase, anticipated impacts include sedimentation and soil erosion, pollution of water resources and soil, the spread of invasive alien species, and ongoing habitat loss.

Taking into consideration the findings of the environmental impact assessment, the recommendations of the specialists and based on the national and provincial/regional goals in terms of renewable energy and socio-economic development, it is the opinion of the EAP that :

- the overall positive impacts of the proposed project would outweigh negative impacts identified in this Basic Assessment and specialist studies;

- the significance of any residual impacts can be reduced to low through the implementation of the proposed mitigation measures and management actions, which will effectively avoid or mitigate direct or indirect impact on biological, social, economic, heritage and cultural aspects of the proposed site;
- it is unlikely that any significant residual impacts will remain after mitigation;
- with the implementation of the proposed mitigation measures and management actions, the proposed project will result in no direct loss of significant species and/or habitat, and no significant loss of ecosystem function.

Provided that the recommended mitigation measures and EMP are applied effectively, it is opinion of the EAP that the project receive an Environmental Authorisation in terms of the 2014 EIA Regulations (as amended on 7 April 2017) promulgated under the National Environmental Management Act (NEMA).

10. ENVIRONMENTAL AUTHORISATION

10.1 Motivation for Environmental Authorisation

The majority of the proposed developments are planned over land which is characterised as previously cultivated / disturbed land. The impact assessment has shown that the project will have some Major Negative and Moderate Negative impacts on the receiving environment, namely: soil erosion, the permanent loss of natural habitat associated and alteration of ecological services thereof as well as reduced ecological integrity of terrestrial and freshwater systems caused by habitat fragmentations.

The project will also have positive implications including job creation, skills development and improvement of the local socioeconomic profile through purchasing goods and services from local suppliers. Mitigation and management measures have been prescribed accordingly for all identified impacts to avoid adverse environmental impacts. Where unavoidable, the mitigation and management measures will be aimed to reduce the significance of adverse impacts so as to avoid long-term / irreversible damage. Based on the assessment of the

potential negative and positive impacts associated with the project, it is concluded that the proposed project should be authorised. No long-term negative impacts are expected to arise from the project-specific activities should the proposed mitigation measures be correctly implemented. Furthermore, direct environmental and induced social impacts that are positive can be realised.

10.2 Conditions that must be included in the EA

The following specific conditions are proposed:

- All mitigation measures proposed in the EMPr and attached specialist reports should be implemented;
- An Environmental Control Officer (ECO) must be appointed for the construction phase to monitor key environmental impacts;
- avoidance of highly sensitive ecological area as demarcated in the EIA report and spatial data;
- if any palaeontological or archaeological material or human burials are uncovered during the course of development then work in the immediate area should be halted. The find would need to be reported to the heritage authorities and may require inspection by an appropriate professional. Such heritage is the property of the state and may require excavation and curation in an approved institution; and where technically feasible, pale recessive colours should be used on the built elements of the project.
- A Water Use License (WUL) must be obtained prior to operations for any activities that trigger water uses in terms of the NWA such as abstraction of water, including an approved IWWMP;
- A recruitment policy must be developed that aims at ensuring that workforce, contractors and suppliers of other goods and services from the local area are prioritised to maximise socio-economic benefits to the local area;
- A Stakeholder Engagement Plan must be developed to ensure that effective communication and contribution is made to enhance socioeconomic benefits

There are no further conditions resulting from this assessment that need to be included in the Environmental Authorisation.

10.3 Validity of the Environmental Authorisation

The demarcation of the sites for the proposed township will be undertaken over a two to five-year period while the operational phase is long-term over an unspecified period. It is therefore recommended that the Environmental Authorisation be valid for at least 10 Years, subject to renewal and updated EMPr.

10.4 Environmental Management Programme

In order to ensure the effective implementation of the mitigation measures and recommendations made in this EIA report, an EMPr has been compiled and is included in Appendix F of this EIA Report. The management outcomes included in the EMPr aim to ensure that the project is planned, constructed, operated and decommissioned in an environmentally responsible manner. mitigation measures necessary to ensure that are listed in this EMPr. This EMPr is a dynamic document and the management actions contained in the EMPr should be updated during the lifecycle of the proposed development, under the supervision of an Environmental Control Officer. The mitigation measures included in the EMPr were compiled based on specialist assessments and in consultation with the relevant organ of state and conservation bodies to ensure applicability and feasibility of the proposed development

10.5 Other environmental authorisations, licences and permits.

According to the National Water Act (NWA), 1998 (Act No.36 of 1998), the proposed development requires a General Authorisation application as per the following regulations:

- Section 21(c): Impeding or diverting the flow of water in a watercourse; and
- Section 21 (i): Altering the bed, banks, course or characteristics of a watercourse.

The Municipality must ensure that prior construction phase of the project a Water Use License is applied for.

11. CONCLUSIONS AND RECOMMENDATIONS

The Basic Assessment Process for the proposed project has been undertaken per EIA Regulations published in Government Notice 324-327 of 4 as amended in 2017, in terms of the National Environmental Management Act (NEMA; No107 of 1998). The Basic Assessment Process is aimed at ensuring informed decision-making and environmental accountability, and to assist in achieving environmentally sound and sustainable development. In terms of NEMA (No 107 of 1998), the commitment to sustainable development is evident in the provision that “development must be socially, environmentally and economically sustainable and requires the consideration of all relevant factors”.

NEMA also imposes a duty of care, which places a positive obligation on any person who has caused, is causing, or is likely to cause damage to the environment to take reasonable steps to prevent such damage. In terms of NEMA’s preventative principle, potentially negative impacts on the environment and people’s environmental rights (in terms of the Constitution of the Republic of South Africa, Act 108 of 1996) should be anticipated and prevented, and where they cannot be altogether prevented, they must be minimised and remedied in terms of “reasonable measures”.

Should the proposed mitigation measures and specialist recommendations be correctly implemented any long-term detrimental impacts will be minimised. Furthermore, the project is in line with strategic development plans for the area/region, namely the JB Marks Local Municipality and the Dr Kenneth Kaunda District Municipality (SDF and IDP).

Should this project be authorised it is deemed necessary to conduct further detailed studies prior to construction once more information becomes available. This mainly pertains to the availability of surface and groundwater resources as well as the impact thereof on surrounding water users once the project is developed.

The construction and long-term operation of the Township must be continuously monitored and managed as adverse environmental implications are possible.