SAROVIC INVESTMENTS CC

TOWNSHIP ESTABLISHMENT – SCOPING REPORT

Locality: Witbank

Departmental Ref No: 17/2/3N-419

Date: April 2015

SHANGONI
Management Services (Pty) Ltd

SCOPING REPORT

SAROVIC INVESTMENTS CC

Township establishment – Scoping Report

Locality: Witbank

Departmental Ref No: 17/2/3N-419

April 2015

Unit C8

Block @ Nature

472 Botterklapper Street

Pretoria

Office: + 27 (0)12 807 7036

Fax: +27 (0)12 807 1014

SHANGONI

Management Services (Pty) Ltd

PROJECT DETAILS

Department of Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA)

Reference No.: 17/2/3N-419

Project Title: Township Establishment on Remaining Extent of Portion 79 of the farm Blesboklaagte 296 JS and Portion 0 (remaining extent) of the farm Leeuwpoort 283 JS, Mpumalanga

Project Number: KOR-EMA-13-12-02

Compiled by: Lee-Anne Fellowes

Date: April 2015

Location: Witbank

Technical Reviewer: Lourens de Villiers

Signature

Undertaking by the EAP

I, Lee-Anne Fellowes working as an EAP at Shangoni Management Services declare that:

- All work undertaken relating to the proposed project were done as an independent consultant;
- I have the necessary expertise to conduct EIA's including the required knowledge and understanding of any guidelines or policies that are relevant to the proposed activity;
- I have undertaken all the work and associated studies in an objective manner, even if the findings of these studies were not favourable to the project proponent;
- I have no vested interest, financial or otherwise, in the proposed project or the outcome thereof, apart from remuneration for the work undertaken;
- I have no vested interest, including any conflicts of interest, in either the proposed project or the studies conducted in respect of the proposed project, other than complying with the relevant required regulations;
- I have disclosed all material information in my possession that may have the potential to influence the competent authority's decision and/or objectivity in terms of any reports, plans or documents related to the proposed project as required by the regulations.

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DEFINITIONS

Environment

The surroundings (biophysical, social and economic) within which humans exist and that are made up of

- the land, water and atmosphere of the earth;
- micro-organisms, plant and animal life;
- any part or combination of (i) and (ii) and the interrelationships among and between them; and
- the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental Aspects

Elements of an organization's activities, products or services that can interact with the environment.

Environmental Degradation

Refers to pollution, disturbance, resource depletion, loss of biodiversity, and other kinds of environmental damage; usually refers to damage occurring accidentally or intentionally as a result of human activities.

Environmental Impacts

Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

Environmental Impact Assessment

A study of the environmental consequences of a proposed course of action.

Environmental Impact Report

A report assessing the potential significant impacts as identified during the environmental impact assessment.

Environmental impact

An environmental change caused by some human act.

Land use

The various ways in which land may be employed or occupied. Planners compile, classify, study and analyse land use data for many purposes, including the identification of trends, the forecasting of space and infrastructure requirements, the provision of adequate land area for necessary types of land use, and the development or revision of comprehensive plans and land use regulations.

Pollution Prevention

Any activity that reduces or eliminates pollutants prior to recycling, treatment, control or disposal.

Public Participation Process

A process of involving the public in order to identify needs, address concerns, in order to contribute to more informed decision making relating to a proposed project, programme or development.

Registered Interested and Affected Party

In relation to an application, means an interested and affected party whose name is recorded in the register opened for that application.

Topography

Topography, a term in geography, refers to the "lay of the land" or the physio-geographic characteristics of land in terms of elevation, slope and orientation.

Vegetation

All of the plants growing in and characterizing a specific area or region; the combination of different plant communities found there.

Waste

As per the definition of the National Environmental Management Waste Act, Act 59 of 2008 - means any substance, whether or not that substance can be reduced, re-used, recycled and recovered—
(a) that is surplus, unwanted, rejected, discarded, abandoned or disposed of; 3(b) which the generator has no further use of for the purposes of production; (c) that must be treated or disposed of; or (d) that is identified as a waste by the Minister by notice in the Gazette, and includes waste generated by the mining, medical or other sector, but— (i) a by-product is not considered waste; and 3(ii) any portion of waste, once re-used, recycled and recovered, ceases to be waste.

ABBREVIATIONS

BID	-	Background Information Document
CRR	-	Comments Response Report
DARDLEA	-	Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs
DWR	-	Department of Water Resources
EAP	-	Environmental Assessment Practitioner
ECA	-	Environmental Conservation Act of 1989
EIA	-	Environmental Impact Assessment
EIR	-	Environmental Impact Report
EMF	-	Environmental Management Framework
EMP	-	Environmental Management Programme
GN	-	Government Notice
I&AP	-	Interested and Affected Party
NEMA	-	National Environmental Management Act, Act 107 of 1998 as amended
R	-	Regulation
S&EIR	-	Scoping and Environmental Impact Reporting

EXECUTIVE SUMMARY

The Applicant

Sarovic Investments CC is a Private Company in South Africa and its company number is 1997-021718-07. Sarovic Investments was registered on 12/12/1997. The company's core business is in establishing residential developments.

Background description

The site of the proposed development is currently zoned for agricultural use and a change of land use is required. Sarovic Investments CC appointed Korsmans and Associates who are town planners for this process.

Project description

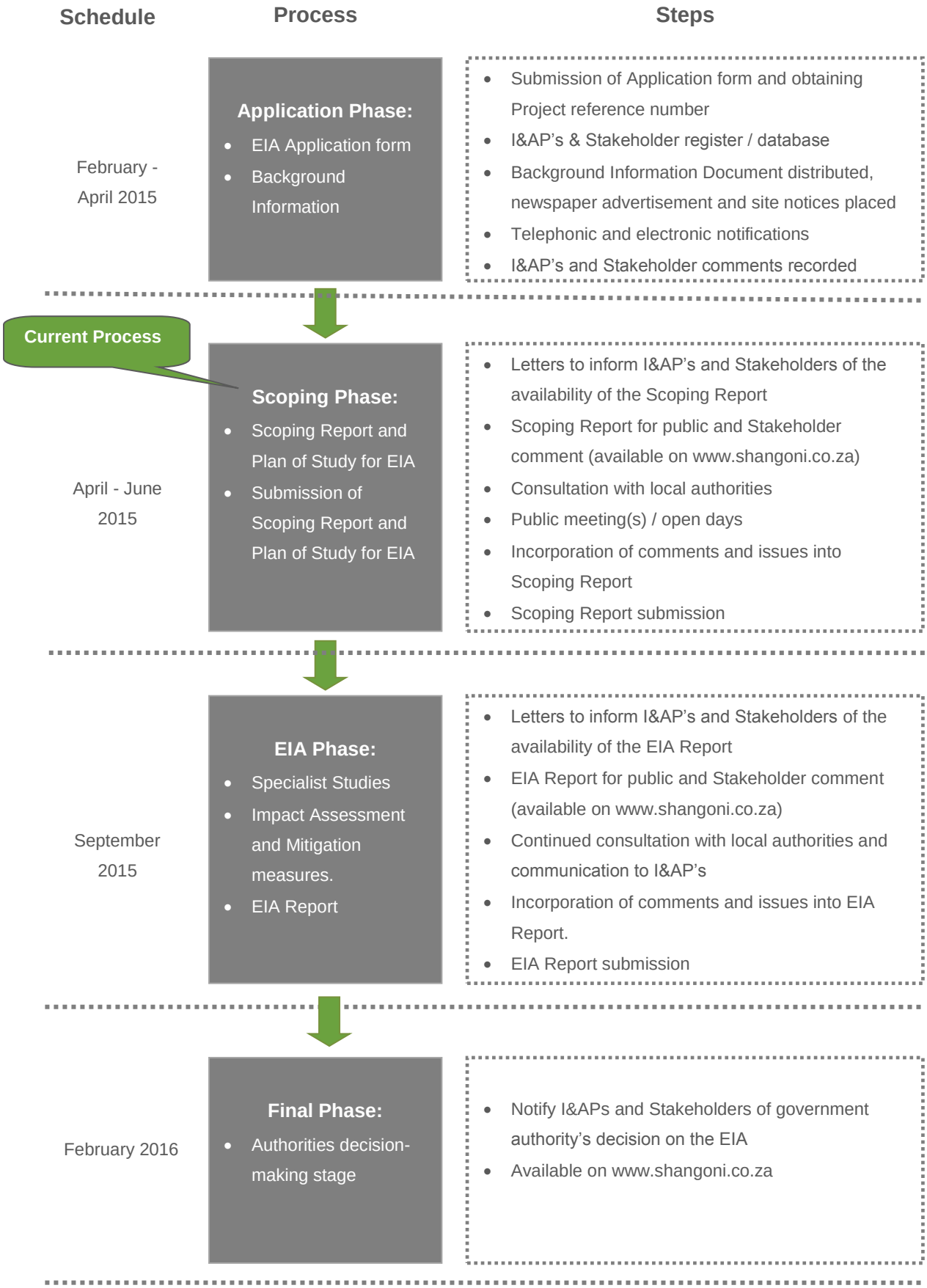
The project involves the establishment of a Mixed Residential Township across two properties. The proposed development will commence on the remaining extent of Portion 79 of the farm Blesboklaagte 296 JS and Portion 0 (remaining extent) of the farm Leeuwpoort 283 JS. The development on Portion 79 of Blesboklaagte is expected to commence in four phases while the development of Portion 0 of Leeuwfontein will commence in ten phases. The development will include the construction of roads as well as the provision of bulk services such as electricity, water, stormwater and sewage systems.

Legal requirements and legislative process

As part of the proposed Mixed Residential Township establishment project, listed activities defined under the National Environmental Management Act, Act 107 of 1998 (NEMA) will be conducted. To obtain the required environmental authorisations for these activities, the procedure, as prescribed in the Environmental Impact Assessment regulations of 2014 (GNR 982 of 4 December 2014) (hereafter 2014 EIA Regulations), will be followed. Relevant listed activities triggered by the proposed activities are described further in this Scoping Report (refer to Part 3.4).

It is the intention of this Scoping Report to provide the necessary information pertaining to the proposed activities associated with the project, as required in terms of the 2014 EIA Regulations under the NEMA. This Scoping Report intends to highlight all information relevant to the proposed Mixed Residential Township project.

The diagram below provides a visual representation of the Scoping- and EIA approach followed in terms of NEMA and the 2014 EIA Regulations.


Schedule
Process
Steps
February - April 2015
Application Phase:
EIA Application form
Background Information
Submission of Application form and obtaining Project reference number
I&AP's & Stakeholder register / database
Background Information Document distributed, newspaper advertisement and site notices placed
Telephonic and electronic notifications
I&AP's and Stakeholder comments recorded
Current Process
April - June 2015
Scoping Phase:
Scoping Report and Plan of Study for EIA
Submission of Scoping Report and Plan of Study for EIA
Letters to inform I&AP's and Stakeholders of the availability of the Scoping Report
Scoping Report for public and Stakeholder comment (available on www.shangoni.co.za)
Consultation with local authorities
Public meeting(s) / open days
Incorporation of comments and issues into Scoping Report
Scoping Report submission
September 2015
EIA Phase:
Specialist Studies
Impact Assessment and Mitigation measures.
EIA Report
Letters to inform I&AP's and Stakeholders of the availability of the EIA Report
EIA Report for public and Stakeholder comment (available on www.shangoni.co.za)
Continued consultation with local authorities and communication to I&AP's
Incorporation of comments and issues into EIA Report.
EIA Report submission
February 2016
Final Phase:
Authorities decision-making stage
Notify I&APs and Stakeholders of government authority's decision on the EIA
Available on www.shangoni.co.za

Anticipated impacts

For the purpose of the Scoping report it is required by Appendix 2 paragraph (1)(d) of the 2014 EIA Regulations that the major potential impacts that the activities, processes and actions may have on the surrounding environment be identified.

Appendix 3 paragraph (1)(1) & (2) of the 2014 EIA Regulations require that the Environmental Impact Assessment process must be undertaken in line with the approved plan of study for Environmental Impact Assessment. The Environmental impacts, mitigation and closure outcomes as well as the residual risks of the proposed activity must be set out in the Environmental Impact Assessment report.

A baseline identification of the major potential impacts has therefore only been included in this Scoping Report. The prediction of the nature of each impact, the evaluation of each impact by rating its significance and the management and mitigation measures adopted to address each impact, will be assessed during the EIR.

The activities associated with the proposed project are described in full in Part 3 and the anticipated impacts of the proposed project are described in Part 8.

Potential significant impacts that have been identified during the scoping process are:
Construction phase:

- Land capability - The current arable, grazing or wilderness land capability will cease completely.
- Surface and groundwater - Runoff water from the construction activities into the Blesbok Spruit tributaries or directly into the Blesbok Spruit itself causing impacts downstream where the increase in flow is concentrated will lead to: An increase in the risk of erosion and sedimentation; potential negative impact on riparian vegetation; and destabilise watercourses; Cause a decrease in infiltration and also reduce natural recharge to the shallow and groundwater zones and subsequently may impact on the natural watercourses nearby.
- Wetland - Changing the quantity and fluctuation properties of the watercourse.
- Floodlines - Proposed township development at risk of being flooded (possibility of occurring within the 1:100 floodline).
- Fauna - Loss/displacement of threatened or protected fauna
- Vegetation - Destruction of natural rocky vegetation, in particular the rocky ridge; and deterioration of rocky grassland.
- Heritage - Possible destruction of a highly significant grave site.
- Socio-economic - Potential increase of crime due to influx of potential workers.

Operational phase:

- Surface and groundwater - Raw sewerage can have a severe impact upon the water quality if it enters a river. The sewerage contains elevated levels of nutrients (nitrates and phosphates), disease causing bacteria (in particular E. coli) and large volumes of waste matter (Rand Water 2011). The elevated levels of nutrients will provide food for the bacteria to thrive and spread in the water.
- Biodiversity loss - Possible increase in exotic and invasive vegetation.
- Wetland - Changing the quantity and fluctuation properties of the watercourse by material draining into wetland and damage to vegetated areas.
- Traffic - The possible impact of the additional development traffic on road D1126.

Decommissioning phase:

- Surface and groundwater - Potential seepage of affected water into the saturated aquifer (loss in catchment yield).
- Biodiversity loss - Polluted surface runoff could potentially pollute sensitive vegetation, Ineffective rehabilitation activities will result in the establishment of alien invasive species and disturb natural vegetation, potential ineffective re-introduction of flora species.
- Land capability - Ineffective rehabilitation could result in permanent changes to land use and land capability.

Additional potentially significant impacts may be highlighted at a later stage during the process. The extent of the identified potentially significant impacts will be quantified, and will be reported on as part of the EIR.

Knowledge gaps

The following knowledge gaps and uncertainties have been identified during the scoping process of the proposed project and require further investigations that will be carried out comprehensively as part of the EIA process for the proposed project:

- All relevant specialist studies need to be conducted for the area associated with the proposed Mixed Residential Township. The studies identified during the Scoping Phase include an Aquatic, Fauna, Flora, Flood line, Geological, Heritage, Soil & land use capability, Traffic, and Wetland study.
- While impacts have been identified as part of the scoping process, it is required as part of the EIA Phase to fully quantify impacts to all aspects of the environment.
- Designs and layout plans are being developed for the proposed Mixed Residential Township and the associated infrastructure; these designs will be presented as part of the EIR.

1. INTRODUCTION

This Scoping Report forms part of an application for environmental authorisation for the Mixed Residential Township project at Witbank. The application is made in terms of the 2014 EIA Regulations under the National Environmental Management Act 107 of 1998 (NEMA).

The application process is undertaken on behalf of the applicant, Sarovic Investments CC, by Shangoni Management Services (Pty) Ltd (hereafter Shangoni). Shangoni was appointed as independent environmental practitioner, to assist the applicant in undertaking the process as prescribed in the mentioned environmental legislation.

An application to undertake an Environmental Impact Assessment (Scoping and Environmental Impact Reporting) process was submitted to the identified competent authority Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA). The Department subsequently registered the project and the formal process was thereby initiated. All the findings from the scoping process are included in this report.

This Scoping Report is divided into the following parts:

- Part 1: Introduction
- Part 2: Applicable legislation and guidelines
- Part 3: Project Description
- Part 4: Nature and extent of the environment affected by activity
- Part 5: Public Participation Process
- Part 6: Identified Alternatives
- Part 7: Need and desirability for the project
- Part 8: Identification of anticipated environmental Impacts (positive and negative) and possible mitigation measures
- Part 9: Plan of study for EIA
- Part 10: Conclusion

1.1 Process followed

1.1.1 Objectives of the scoping process and the Scoping Report

Scoping is the procedure that is undertaken during the initial stages of the Planning Phase of a project, and is used to determine the extent of, and approach to an EIA (i.e. terms of reference). This process is required for the proposed project in terms of the NEMA and the 2014 EIA Regulations.

The objective of the scoping process is to, through a consultative process-

- identify the relevant policies and legislation relevant to the activity;

- motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
- identify and confirm the preferred activity and technology alternative through an impact and risk assessment and ranking process;
- identify and confirm the preferred site, through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
- identify the key issues to be addressed in the assessment phase;
- agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and
- identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

1.1.2 Methodology applied to conducting the scoping process

The figure below indicates the methodology that was applied in conducting the scoping process.

Application- and Scoping Phases	**Public Participation and Stakeholder Consultation**
• EIA Application form • Project Reference number • Scoping Report and EIA Plan of Study • Finalisation of Scoping Report and Plan of Study for EIA	• Initial communication with applicant and desktop assessment. • Submission of Application form to responsible Government Authority DARDLEA • Registration of project by responsible Government Authority 17/2/3N-419 • Development and maintenance of I&AP's and Stakeholder register / database • Background Information Document distributed, newspaper advertisement and site notices placed • Telephonic and electronic notifications • I&AP's and Stakeholder comments recorded • Letters to inform I&AP's and Stakeholders of the availability of the Scoping Report • Scoping Report for public and Stakeholder comment (available on www.shangoni.co.za) • Consultation with local authorities • Public meeting(s) / open days • Incorporation of comments and issues into Scoping Report

Figure 1: Methodology applied to conducting the scoping process

1.1.3 The Scoping Report in terms of the requirements of NEMA

Appendix 2 of the 2014 EIA Regulations indicates aspects that must be included in Scoping Reports. Table 1 below indicates the parts where information has been provided as part of this Scoping Report:

Table 1: The Scoping Report in terms of the EIA Regulations, 2014, under the NEMA

Regulation No:		Description	Scoping Report Part
GNR982 Appendix 2 paragraph (a)	(i)	The Environmental Assessment Practitioner (EAP) who prepared the report	Part 3 & Appendix C
	(ii)	the expertise of the EAP including a curriculum vitae	
GNR982 Appendix 2 paragraph (b)	(i)	The location of the activity including the 21 digit Survey General code of each cadastral land parcel	Part 3
	(ii)	Where available, the physical address and farm name	
	(iii)	Where the required information in items (i) & (ii) is not available, the coordinates of the boundary of the property or properties.	
GNR982 Appendix 2 paragraph (c)		A plan which locates the proposed activity or activities applied for at an appropriate scale	Part 3
	(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	
GNR982 Appendix 2 paragraph (d)		A description of the scope of the proposed activity including -	Part 3
	(i)	All listed and specified activities triggered;	
	(ii)	A description of the activities to be undertaken, including associated structures and infrastructure;	
GNR982 Appendix 2 paragraph (e)		A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessments process;	Part 2
GNR982 Appendix 2 paragraph (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;	Part 7

Regulation No:		Description	Scoping Report Part
GNR982 Appendix 2 paragraph (h)		A full description of the process followed to reach the proposed preferred activity, site and location within the site, including -	Part 4, 5 & Part 6
	(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 -	Part 8
	(aa)	Can be reversed;	
	(bb)	May cause irreplaceable loss of resources; and	
	(cc)	Can be avoided, managed or mitigated;	
	(vi)	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks 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;	Part 6
	(x)	If no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such and	Part 6
	(xi)	A concluding statement indicating the preferred alternative, including preferred location of the activity;	Part 6.5 & 10
GNR982 Appendix 2 paragraph (i)		A plan of study for undertaking the environmental impact assessment process to be undertaken	Part 9

Regulation No:		Description	Scoping Report Part
		including -	
	(i)	A description of the alternatives to be considered an and assessed within the preferred site, including the option of not proceeding with the activity;	
	(ii)	A description of the aspects to be assessed as part of the environmental impact assessment process;	
	(iii)	Aspects to be assessed by specialists;	
	(iv)	A description of the proposed method of assessing the environmental aspects, including a description of the proposed method of assessing the environmental aspects including aspects to be assessed by specialists;	
	(v)	A description of the proposed method of assessing duration and significance;	
	(vi)	An indication of the stages at which the competent authority will be consulted;	
	(vii)	Particulars of the public participation process that will be conducted during the environmental impacts assessment process and ;	
	(viii)	A description of the task that will be undertaken as part of the environmental impact assessment process;	
	(ix)	Identify suitable measures to avoid, reverse, mitigate or mange identified impacts and to determine the extent of the residual risks that need to be managed and monitored.	
GNR982 Appendix 2 paragraph (j)		An undertaking under oath or affirmation by the EAP in relation to	Page 4
	(i)	The correctness of the information provided in the report;	
	(ii)	The inclusion of comments and inputs from stakeholders and interested and affected parties and;	
	(iii)	And information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties	
GNR982 Appendix 2 paragraph (k)		An undertaking under oath or affirmation by the EAP in relation to level of agreement between the EAP and interested and affected parties on the plan of study for undertaking the environmental impact assessment;	Page 4

Regulation No:	Description	Scoping Report Part
GNR982 Appendix 2 paragraph (l)	Where applicable, any specific information required by the competent authority , and	Part 1
GNR982 Appendix 2 paragraph (m)	Any other matter required in terms of section 24(4) (a) and (b) of the Act.	

** No specific requests have been received from the competent authorities to date.*

The EIA process will be undertaken subsequent to the scoping process and the environmental impact report (EIR) will be compiled in accordance with Appendix 3 of the 2014 EIA Regulations. The EIA report for the proposed project will include detailed information pertaining to anticipated or potential impacts that may be associated with the proposed project, as well as mitigation and closure outcomes.

2. APPLICABLE LEGISLATION AND GUIDELINES

Table 2 below provides an indication of the main legislation, policies and / or guidelines applicable to the Mixed Residential Township project.

Table 2: Applicable legislation, policies and / or guidelines

Title of legislation, policy or guideline	Administering authority	Aim of legislation, policy or guideline	Reference where in the document it is applied
Laws of General Application			
The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996)	-	To establish a Constitution with a Bill of Rights for the RSA.	Part 5
National Environmental Management Act, 1998 (Act 107 of 1998) EIA Regulations 2014	National Department of Environmental Affairs	To provide for the integrated management of the environment, and to regulate the 'Duty of Care' Principle.	Executive Summary, Part 1, Part 3
Promotion of Access to Information Act, 2000 (Act 2 of 2000 as amended)	-	To give effect to the constitutional right of access to any information held by the State and any information that is held by another person and that is required for the exercise or protection of any rights.	Part 5.2
Air Quality and Noise			
National Environmental Management: Air Quality Act (Act No 39 of 2004)	National Department of Environmental Affairs	To reform the law regulating air quality to protect the environment by providing reasonable measures for the prevention of pollution. To provide for national norms and standards regulating air quality monitoring, management and control.	Part 4.12
Water Management			
National Water Act (NWA), 1998 (Act No 36 of 1998)	Department of Water Resources	To provide for fundamental reform of the law relating to water resources.	Part 4
National Freshwater	The project is a multi-	The project responds to the	Part 4.8

Title of legislation, policy or guideline	Administering authority	Aim of legislation, policy or guideline	Reference where in the document it is applied
Ecosystem Priority Areas ("NFEPA")	partner project between the CSIR, the Water Research Commission, the South African National Biodiversity Institute, the Department of Environmental Affairs, the South African Institute of Aquatic Biodiversity and South African National Parks.	reported degradation of freshwater ecosystem condition and associated biodiversity, both globally and in South Africa. It uses systematic conservation planning to provide strategic spatial priorities for conserving South Africa's freshwater biodiversity, within the context of equitable social and economic development. The project has three inter-related components: A technical component to identify a national network of freshwater conservation areas; A national governance component to align DEA and DWA policies and approaches for conserving freshwater ecosystems; and A sub-national governance and management component that conducts case studies to demonstrate how NFEPA outcomes can be implemented (CSIR 2010).	
Waste Management			
National Environmental Management: Waste Act (Act No 59 of 2008)	National Department of Environmental Affairs	To reform the law regulating waste management in order to protect health and the environment by providing reasonable measures for the prevention of pollution and ecological degradation.	Part 3
Biodiversity			
National Environmental	South African National	To provide for the	Part 4

Title of legislation, policy or guideline	Administering authority	Aim of legislation, policy or guideline	Reference where in the document it is applied
Management Biodiversity Act, 2004 (Act No 10 of 2004)	Biodiversity Institute	management and conservation of South Africa's biodiversity within the framework of the National Environmental Management Act, 1998.	
Conservation of Agricultural Resources Act, 1983 (Act No 43 of 1983)	Department of Agriculture	To provide for control over the utilisation of the natural agricultural resources of South Africa in order to promote the conservation of the soil, the water sources and the vegetation and the combating of weeds and invader plants.	Part 4
National Veld and Forest Fire Act, 1998 (Act No 101 of 1998)	Department of Agriculture	To reform the law on veldt and forest fires.	Part 4
Mpumalanga Biodiversity Conservation Plan	Mpumalanga Department of Conservation	The Mpumalanga Biodiversity Conservation Plan ("MBCP") maps the distribution of the province's known aquatic biodiversity sub-catchments into five categories. These are ranked according to ecological and biodiversity importance and their contribution to meeting the quantitative targets set for each biodiversity feature (Ferrar and Lötter 2007). The categories are: • Protected areas – already protected and managed for conservation; • Irreplaceable areas – protection crucial, no other options available to meet targets; • Highly Significant areas –	Part 4.6

Title of legislation, policy or guideline	Administering authority	Aim of legislation, policy or guideline	Reference where in the document it is applied
		protection needed, very limited choice for meeting targets; • Important and Necessary areas – protection needed, greater choice in meeting targets; • Ecosystem Maintenance – transformed/modified areas.	
Soil and Land Management			
National Environmental Management Act, 1998 (Act 107 of 1998). National Environmental Management Amendment Act, 2008 (Act 62 of 2008).	Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA).	To provide for the integrated management of the environment and to regulate the 'Duty of Care' Principle.	Part 4
Environment Conservation Act, 1989 (Act 73 of 1989 as amended)	Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA).	To control environmental conservation.	Part 4
Heritage and Archaeological Resources			
National Heritage Resources Act No 25 of 1999 (Act No 25 of 1999 as amended)	South African Heritage Resources Agency	To introduce an integrated and interactive system for the management of the national heritage resources; to promote good government at all levels, and empower civil society to nurture and conserve their heritage resources so that they may be bequeathed to future generations	Part 4.11
Protected Areas			
National Environmental Management: Protected Areas Act, 2003 (Act No 57 of 2003 as amended)	South African National Biodiversity Institute	To provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and its natural landscapes.	Part 4.10

Title of legislation, policy or guideline	Administering authority	Aim of legislation, policy or guideline	Reference where in the document it is applied
Planning of New Activities			
National Environmental Management Act, 1998 (Act 107 of 1998)	Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA).	To provide for the integrated management of the environment and to regulate the 'Duty of Care' Principle.	Part 3
EIA Regulations R 983, R 984, R 985, dated December 2014) under the NEMA, 1998	Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA).	To regulate and control the authorisation of certain listed activities.	Part 3.4
Government Notice (GN) 718: "*List of waste management activities that have, or are likely to have a detrimental effect on the environment*", dated 2009.	National Department of Environmental Affairs	To regulate and control the authorisation of certain waste-related listed activities.	Part 3

3. PROJECT DESCRIPTION

The project involves the establishment of a Mixed Residential Township across two properties. The proposed development will commence on the remaining extent of Portion 79 of the farm Blesboklaagte 296 JS and Portion 0 (remaining extent) of the farm Leeuwpoort 283 JS. The development on Portion 79 of Blesboklaagte is expected to commence in four phases while the development of Portion 0 of Leeuwfontein will commence in ten phases. The development will include the construction of roads as well as the provision of bulk services such as electricity, water, stormwater and sewage systems.

It is the intention of the developer to accommodate a residential development on the proposed property. The land use differentiation can be summarised in table 3:

Table 3: Land use Differentiation of Pine Ridge Extension 1 – 4

Proposed uses	Erf/Erven* No	Ave. Size m²	Height	Only for
Residential 1	779	1 dwelling unit per 300	2 storeys	Dwelling House
Residential 3	4	2 056	3 storeys	Residential Buildings
Residential 4	9	1 714	5 Storeys	Residential Buildings
Community Facility	7	390	3 storeys	Crèche, clinic, place of instruction & sport and recreation
Industrial 1	12	1718	3 Storeys	Agricultural Buildings, Builders Yard, Filling Station, Industrial Purposes, Mechanical Workshop, Medical & Veterinary Consulting Rooms, Municipal, Parking Garage, Public Garage, Scrap Yard, Service Industry, Transport Yard, Warehouse, Wholesale Trade, Workshop
Business 3	9	1 628	2 storeys	Business purposes,

				club, government, hotel, institution, medical & veterinary consulting rooms, motor dealer, municipal, offices, parking garage, place of instruction, place of refreshment, place of worship, residential buildings, shops & social hall.
Park	5	4 087	n/a	Park and Sport & Recreation
Commercial	3	1 515	3 storeys	Agricultural Buildings, Institution, Medical & Veterinary Consulting Rooms, Motor Dealer, Municipal, Parking Garage, Social Hall, Transport Yard, Warehouse, Wholesale Trade
Private Road	4	n/a	2 storeys	Road

	Density Units per ha				
	Erf/Erven* No	**Coverage**	**FAR**	**Height**	**Only for**
Residential 1	779	50 %	0.7	2 storeys	Dwelling House
Residential 3	4	30 %	0.7	3 storeys	Residential Buildings
Residential 4	9	40%	0.4	5 storeys	Residential Buildings
Community Facility	7	50%	0.7	3 storeys	Crèche, clinic, place of instruction & sport and recreation
Industrial 1	12	70%	0.7	3 storeys	Agricultural Buildings, Builders Yard, Filling Station, Industrial

					Purposes, Mechanical Workshop, Medical & Veterinary Consulting Rooms, Municipal, Parking Garage, Public Garage, Scrap Yard,
Business 3	9	40%	0.4	2 storeys	Business purposes, club, government, hotel, institution, medical & veterinary consulting rooms, motor dealer, municipal, offices, parking garage, place of instruction, place of refreshment, place of worship, residential buildings, shops & social hall.
Park	5	n/a	n/a	n/a	Park and Sport & Recreation
Commercial	3	70%	0.7	3 storeys	Agricultural Buildings, Institution, Medical & Veterinary Consulting Rooms, Motor Dealer, Municipal, Parking Garage, Social Hall,

					Transport Yard, Warehouse, Wholesale Trade
Private Road	4	n/a	n/a	2 storeys	Road
As required by the Emalahleni Land Use Management Scheme, 2010					

3.1 Details of the project applicant

Name of Applicant	Sarovic Investments CC
Postal Address	P.O. Box 3762, Witbank 1035
Telephone No.	013 656 6789
Fax No.	013 656 5512
Farm name and portion on which the activities take place	Portion 79 of the farm Blesboklaagte 296 JS and Portion 0 (remaining extent) of the farm Leeuwpoort 283, JS
Title Deed Number and 21 Digit Code	T0JS00000000029600079 T0JS00000000028300000
Co-ordinates of operation	25°48'27.22" S, 29°12'17.76" E

3.2 Appointed Environmental Assessment Practitioner

Name of firm	Shangoni Management Services (Pty) Ltd	
Postal address	P.O. Box 74726 Lynnwood Ridge Pretoria 0040	
Telephone No.	012 807 7036	
Fax	086 639 7956	
E-mail	leeanne@shangoni.co.za	
Team of Environmental Assessment Practitioners on project		
Name	Qualifications & experience to conduct the EIA	Responsibility
Mr. H.L. de Villiers	• Bsc. (Hons) (PU for CHE) MSc.(UP) • More than 10 years' experience conducting Environmental Impact	EIA Project Leader and Co-ordinator

	Assessments and Waste Management License Applications	
Mrs. Lee-Anne Fellowes	• B-tech in Nature Conservation from the University of Technology • 9 years' experience conducting Environmental Impact Assessments and Waste Management License Applications	EAP
Ms Karien du Plessis	• B.Sc. (Hons) Environmental Management • Less than 1 years' experience conducting Environmental Impact Assessments and Waste Management License Applications.	EAP

** Detailed CV's for the project team are attached (Appendix C).*

Lourens de Villiers – Project Director

Lourens holds a M.Sc. Water Resource Management degree from the University of Pretoria and has ten years' experience in the environmental field. He specializes in compilation and management of Environmental Impact Assessments (EIA's) for commercial, industrial, agri-industrial, mining and residential developments. Lourens is also actively involved in third party ISO 14001 certification audits in the mining and industrial sectors.

Lee-Anne Fellowes – Environmental Practitioner

Lee-Anne has a B-tech degree in Nature Conservation from the Tshwane University of Technology and holds a National Diploma in Nature Conservation. She gained valuable experience in the conservation and the environmental field through her employment at Gauteng's Department of Agriculture, Conservation and Environment. Her areas of expertise include alien invasive surveys & conservation plans, Environmental Impact Assessments (EIA), Environmental Management Programmes (EMP), Section 24G Rectification Applications, Basic Assessments and Project Management. Lee-Anne has 9 years' experience at Shangoni Management Services as project lead to EIA's and EMP's.

Karien du Plessis – Environmental Practitioner

Karien obtained a B.Sc. degree in Biological Science with Zoology and Physiology as majors. She went on to complete her B.Sc. Honors degree in Environmental Science at the North-West University

majoring in Aquatic Ecosystem Health. She is currently assisting in Waste management License Applications and Environmental Impact Assessments (EIAs) at Shangoni.

3.3 Current situation

The property is vacant at present and has been used for grazing previously. As far as the land uses of the surrounding properties are concerned, the Remaining Extent of Portion 79 (a portion of Portion 4) of the farm Blesboklaagte 296-JS, province of Mpumalanga is situated in an area earmarked for residential expansion and within the urban edge as approved by Emalahleni local Municipality.

The proposed township Pine Ridge Extension 1 - 4 is situated within the jurisdiction of the Emalahleni Municipality, which will be responsible for the provision of water, electricity, and sewerage and refuse removal services.

Refer to table 4 for the surface rights holder relevant to the current operations.

Table 4: Surface rights holders relevant to the current operation(s)

Farm Name	Title deed	Owner
Portion 0 (remaining extent) of the farm Leeuwpoort 283 JS.	T0JS00000000028300000	Sarovic Investments Close Corporation Registration No: 2006/085393/23
Remaining extent of Portion 79 of the farm Blesboklaagte 296 JS	T0JS00000000029600079	Sarovic Investments Close Corporation Registration No: 2006/085393/23

3.4 Proposed EIA listed activity(ies)

The following listed activities in terms of GNR 983, 984 and 985 of 4 December 2014 are being applied for refer to table 5:

Table 5: Listed activities in terms of GNR 983, 984 and 985 of 4 December 2014

Number and date of the relevant notice	Activity No	Description
GNR 983 Listing Notice 1 4 December 2014	11	Facilities, such as substations, voltage cables, switchgears, distribution kiosks and service (house) connections, will be constructed for the transmission and distribution of electricity within the proposed residential township with a capacity of 275 kilovolts or more inside urban areas.

	13	It is possible that a bulk water reservoir will have to be constructed on the property. The reservoir will likely have a capacity of more than 50000 cubic metres. The reservoir will supply to the estimated total daily water demand of 3.0Mℓ/day.
	14	Possible storage and handling of fuel of more than 80 cubic metres or more but less than 500 cubic metres
	22	Application for a closure certificate for existing sand mines and related mining activities present on the property.
	25	It is possible that a sewage treatment plant will have to be constructed on the property to treat the estimated average daily production of dry weather sewage flow of 20.5 Mℓ/day.
	26	Residential development inside an urban area, on land previously used for mining activities. The total area of the development will be 506.8074 ha.
	28	Residential development inside an urban area, on land currently used for agricultural activities. The total area of the development will be 506.8074 ha.
GNR 984 Listing Notice 2 4 December 2014	6	A water use license will be required for this project should a waste water treatment plant be constructed.
	15	The transformation of 506.8074 ha of undeveloped land for the establishment of a residential township. The vegetation type of the land is Rand Highveld Grassland which is listed as “Endangered” in terms of section 52 of the NEMBA. The site also lies within an “Important and necessary” Critical Biodiversity Area in terms of the Mpumalanga Biodiversity Conservation Plan.
	27	It is possible that roads will have to be constructed within the development.
GNR 985 Listing Notice 3 4 December 2014	12	The transformation of 506.8074 ha of undeveloped land for the establishment of a residential township. The vegetation type of the land is Rand Highveld Grassland which is listed as “Endangered” in terms of section 52 of the NEMBA. The site also lies within an “Important and necessary” Critical Biodiversity Area in terms of the Mpumalanga Biodiversity Conservation Plan.

1.5.1 Proposed locality

The proposed site for the township establishment is located on the portion 79 of the farm Blesboklaagte 296 JS and Portion 0 (remaining extent) of the farm Leeuwpoort 283 JS, situated in close proximity to Witbank, in the Mpumalanga Province.

The proposed site is situated within the Emalahleni Local Municipalities' jurisdiction. This local municipality forms part of the Nkangala District Municipality, located within the Mpumalanga province. Refer to table 6 for the administrative and management boundaries.

Table 6: Administrative and water management boundaries

Province	Mpumalanga
District Municipality	Nkangala District Municipality
Local Municipality	Emalahleni Local Municipality
Ward	Ward 12 and 15 of Emalahleni Local Municipality.
Department of Mineral Resources (DMR) Local Office	Mpumalanga
Department of Water Affairs (DWS) Local Office	Bronkhorstspruit
Catchment Zone	B11K catchment area
Water Management Area (if applicable)	Olifants Water Management Area

The proposed township is located approximatley 6km north of the Emalahleni CBD and directly east of Pine Ridge, with the provincial district road forming the eastern boundary of the development site. Refer to table 7 for the direction and distance to the nearest towns.

Table 7: Direction & distance to the nearest town(s)

Direction	Distance from site	Closest town
North	6km	Emalahleni CBD

The site locality map is given below as Figure 2 and is attached in Appendix A. Site photographs are also provided below.

1.5.2 Land tenure and use of immediately adjacent land

Near and directly adjacent to the property, are the following land uses:

- North: Agricultural Land that also belongs to the developer, the proposed land will also be utilized for Township Establishment.
- East : Provincial District Road & Agricultural Land
- South : Klarinet Extension 6
- West : Pine Ridge Township

The surface owners of the farm portions immediately adjacent to the proposed Mixed Residential Township site are listed in Table 8 below. Refer also to Part 5 for more detail regarding the Public Participation Process. Refer to figure 3 indicating the farm portions directly adjacent to the site.

Table 8: Surface rights holders of properties adjacent to the proposed site

Farm Name	Title deed	Owner
Portion 76 of the farm Leeuwpoort 283 JS	TOJS00000000028300076	Malo Selo (Pty) Ltd Mr Boris Benic
Portion 13 of the farm Leeuwpoort 283 JS	TOJS00000000028300013	Masinga Hendrik Mothaisa
Portion 1 of Leeuwpoort 283 JS Portion 0 of 377	TOJS00000000028300001 TOJS00000000037700000	Smith Broers Trust
Portion 1 of the farm 414	TOJS00000000041400001	Tunalengana Property Developers CC
Portion 7 of the farm Leeuwpoort 283 JS	TOJS00000000028300007	Government land
Portion 26 of the farm Leeuwpoort 283 JS	TOJS00000000028300026	Pine Ridge
RE 153 of the farm Blesboklaagte 296 JS	TOJS00000000029600153	ABSA Property Developers
Portion 167 of the farm Blesboklaagte 296 JS	TOJS00000000029600167	Hendrika Paterson
Portion 197 of the farm 296	TOJS00000000029600152	Marabe Erustus Mogorosi
Portion 197 of the farm 296 belongs to the Emahlaleni Local Municipality	TOJS00000000029600197	Witbank Municipality Cllr Salome Sithole
Portion 75 of the farm 283	TOJS00000000028300075	Jacobus Frederick van Dyk
Portion 11 of the farm 283	TOJS00000000028300011	Deiner Alexander Charles Wolf (Charles Deiner)
Portion 84 of the farm 283	TOJS00000000028300084	Louw Family Trust
Portion 15 of the farm 283	TOJS00000000028300015	Paul Simela

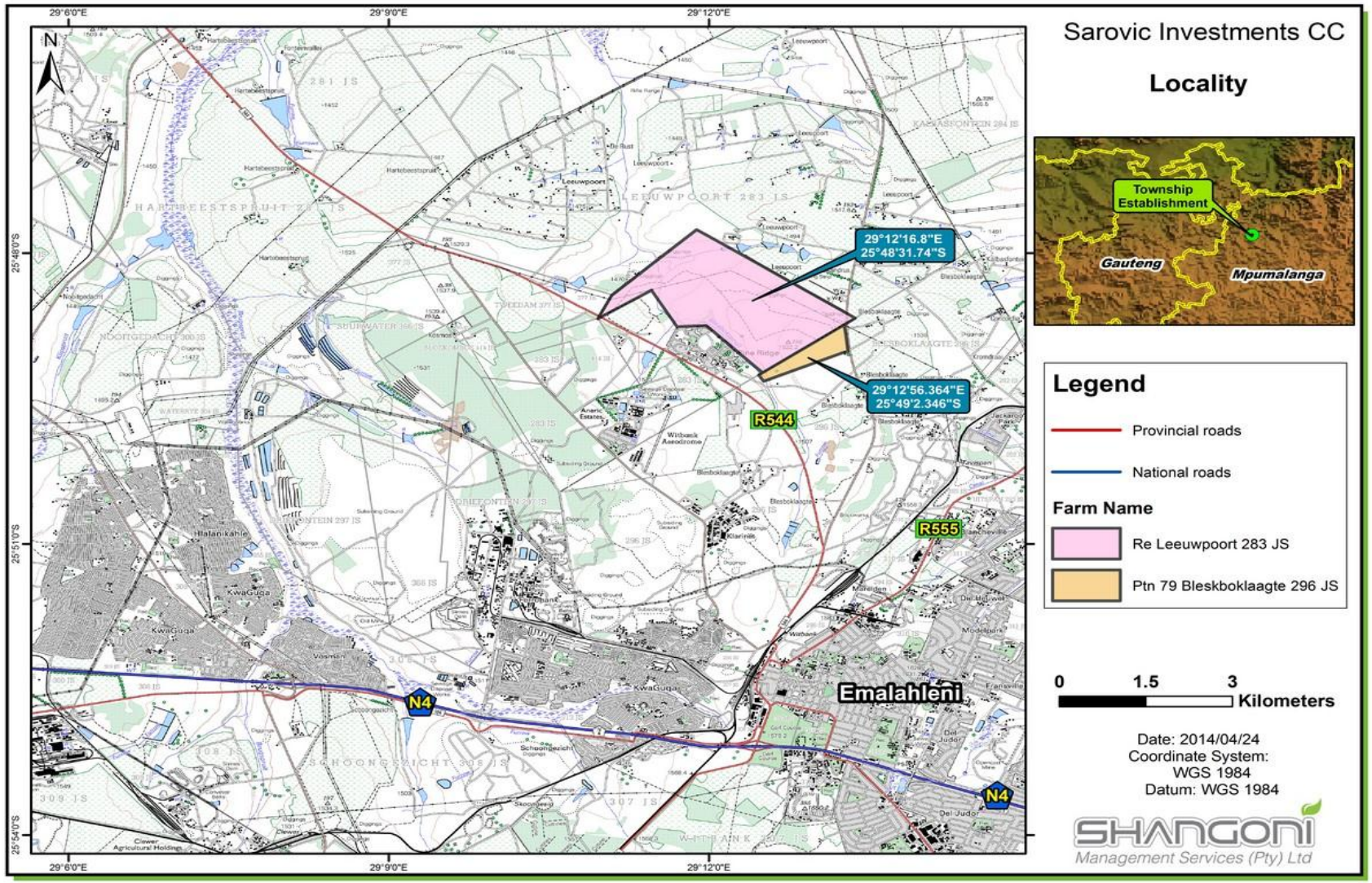


Figure 2: Locality map

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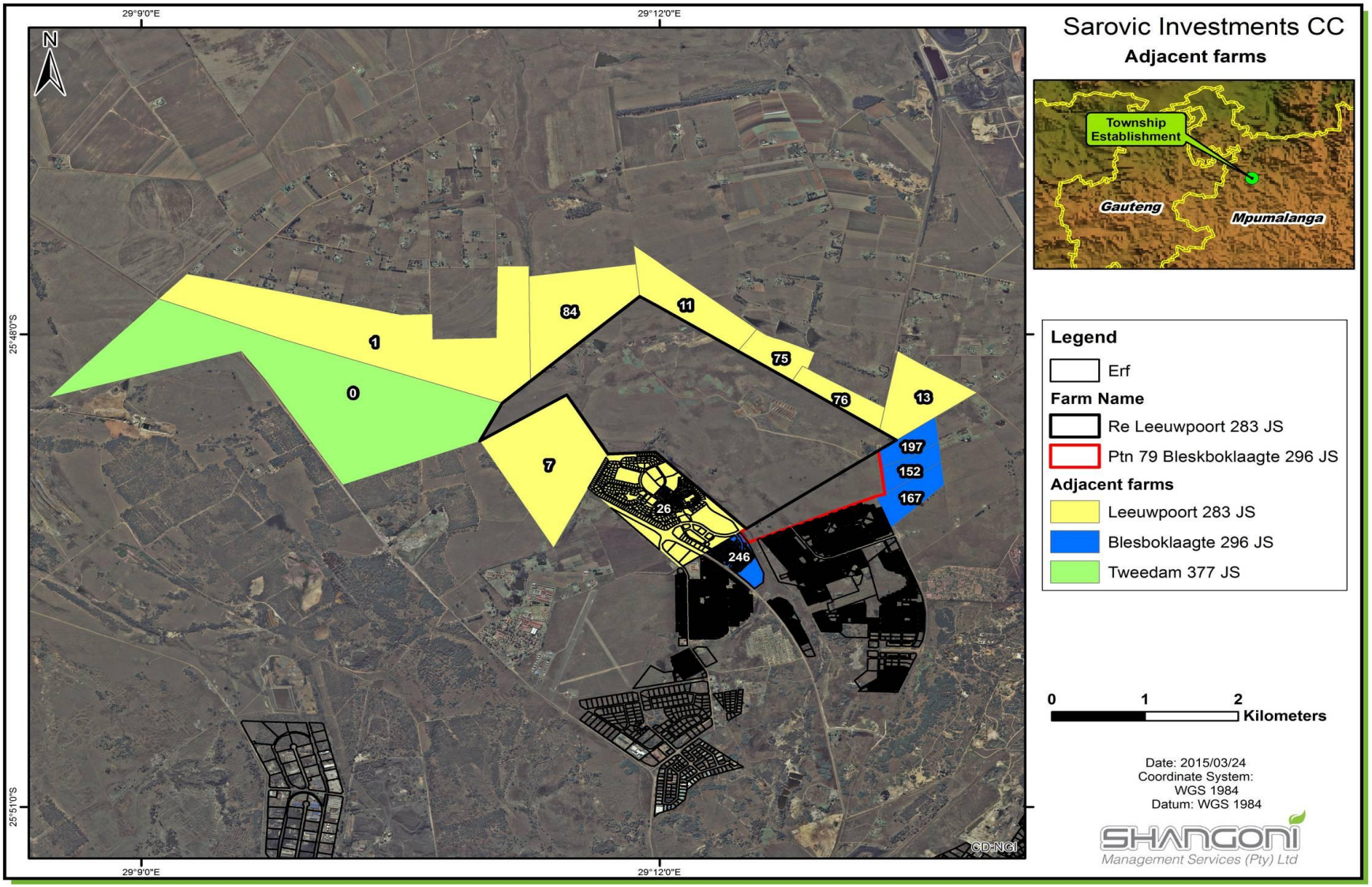


Figure 3: Map depicting the proposed locality of the Mixed Residential Township in relation to adjacent landowners

1.5.3 Design

The following information was extracted from the Korsmans & Associates. Application For Township Establishment In Terms Of Section 96 Of The Town Planning And Townships Ordinance, 1986 (Ordinance 15 Of 1986). The Remaining Extent of Portion 79 (A Portion of Portion 4) Of the Farm Blesboklaagte 296 Registration Division J.S., Province Of Mpumalanga. May 2014.

Access

The proposed development will primarily have direct access from the Saaihoek Road as planned by WSP Consulting Engineers. Secondary access from the Verena road and Pineridge Township will be provided during later phases of the development. Sufficient capacity will be available from Saaihoek Road for the phase 1 of the development.

Surface Drainage

The road layout of the township leans itself to a good free drainage scheme. Stormwater, as excess surface runoff during extreme events, can drain freely to kerb inlets that will be provided on all internal roads and spaced according to topography and therefore catchment size. Releasing stormwater from this township to the nearby stream can be easily managed through minor outlet and energy dissipating structures located higher within the 1:100 floodline area. Roads with sufficient reserve width for stormwater pipes have been provided along internal roads and existing stormwater from higher lying areas will be accommodated within and through this development. It is not foreseen that any problems will be encountered to accommodate the 1:2 (residential) and 1:5 (business) return period storms on the roads and in sub-surface conduits.

Stormwater Routing

The safe routing of stormwater within municipal areas is very important. Retention ponds may be considered at bulk stands depending on the density that will eventually be provided here. The requirement for retention ponds shall be in accordance with the bylaws of the Local Authority and shall be provided at detail design phase.

Water Services - Bulk Water Availability

The proposed land use will require an estimated water demand of 406 kilo litres per day as shown in table 9.

Table 9: The proposed land use will require and estimated water demand

Technical Parameter	Estimated value
Estimated total daily demand	406 kℓ/d
Estimated peak flow rate based on a peak factor of 5	40 ℓ/s
Peak flow rate – fire flow	100ℓ/s

The main water supply internally will likely be designed for fire water requirements and pipe sizes will likely vary from 110 mm diameter to 315 mm.

The area is located relatively low compared to low level reservoirs at Point A and it is expected that sufficient pressure will be available for this development. The development of the greater Western area, together with the recently established Klarinet x 6 will necessitate the building of a new reservoir group in the area.

The upgrading of bulk lines to this development will have to be provided and should be done in accordance with the Klarinet Integrated Housing Project currently implemented by Bigen Africa and ABSA's Development Company.

Bulk Sewer Availability

The development is generally situated topographically higher than the outfall sewer draining to the Pineridge Sewege Pumpstation. The outfall sewer line and pumping line from the Pineridge Sewage Pumpstation is sufficient for most of the phase 1 Klarinet Integrated Housing Development. A services agreement was signed whereby one can assume that no spare capacity is available on the pumpline for the Sarovic Development.

The further phases of the Klarinet Integrated Housing Development will require a new outfall sewer line that will in theory serve the Sarovic Development from a topographical point of view. Thus, the requirement for a new outfall gravity sewer to the Klipspruit Works is in the town planner's opinion (Korsmans & Associates, 30 May 2014) the only feasible solution to drain the area with a sewage service. Such a line should be done in accordance with the Klarinet Integrated Housing Development and Bulk Services Contribution Policy of ELM. Refer to table 10 for the estimated sewerage that will be created for the project.

Table 10: Estimated sewerage

Technical parameter	Estimated value
Estimated average daily dry weather flow	290 kℓ/d
Estimated peak wet weather flow rate	400 kℓ/d

Internal sewer lines will likely vary from 160 mm to 250 mm diameter lines that will drain toward a bulk outfall sewer line to be implemented by ELM in the next 3 – 6 years. Certain pipes will be sized with the future development in mind.

Electricity

The proposed township land measures approximately 47, 1090 Ha and will consist of mixed zoning. Based on the aforesaid zoning, the estimated bulk power required for the proposed rezoning development has been calculated as per electricity requirements in table 11.

Table 11: Electricity requirements

Proposed use	Area	Units	Loading
Residential 1	254 798 m2	779	2 700 kVA
Residential 3	8 227 m2		100 kVA
Residential 4	15 420 m2	571	1 400 kVA
Community Facility	12 516 m2	450 kVA	Community Facility
Industrial 1	15 491 m2	550 kVA	Industrial 1
Business 3	14 648 m2	500 kVA	Business 3
Park	20 435 m2	600 kVA	Park
Road	129 555 m2	200 kVA	Road
TOTAL	**471 090 m2**	**6 500 kVA**	**TOTAL**

Available Electricity Capacity

Preliminary electricity input requests were lodged with the Emalahleni Municipality during October of 2011. Due to the magnitude of the capacities required (approximately 6, 5 MVA) an application for an electricity supply input has not yet been submitted. Meetings were held with representatives of the Electrical Department of Emalahleni Municipality on 26 March 2014 and again on 15 April 2014. During these meetings Buro Tech were informed that capacities are not yet available. This is due to the fact that only one supply overhead line has been constructed from Eskom's Hlalanikahle Substation to Klarinet substation which feeds the Blesboklaagte Development Areas. This capacity is already reserved for, and consumed by, the adjacent Absa Housing Development. A second line will also be constructed in the near future with a capacity of 16-18MVA, but is also be reserved for the second Phase of the Absa Development.

The new Empumelelweni Development will consume all spare capacity that may be still available at Eskom's Hlalanikahle Substation. In view of the above circumstances Emalahleni Municipality will not able to supply the required capacity for Blesboklaagte (and or Leeuwpoort) presently, or in the near future. Buro Tech was advised to inform the Developer that Eskom must be approached for the electrical supply required for the development.

A discussion was held on site with the Eskom representative for the Area. It could not be firmly concluded that Eskom will be able to fulfill the supply requirements. The process is now initiated to obtain a Letter from the Emalahleni Municipality, providing official permission to Eskom to supply electricity in their area of Jurisdiction and Supply License.

Thus, to conclude, it is not a certainty that power is available at this stage in the short term. If and when it becomes available, it will have to be applied for in Phases, to limit the magnitude and to prevent putting the existing (and future) networks under pressure. Adequate power should be available with the new primary substation to be built by Eskom. Buro Tech Consulting Engineers CC, May 2014.

4. NATURE AND EXTENT OF THE ENVIRONMENT AFFECTED BY ACTIVITY

4.1 Geology

4.1.1 Geology of the site

A Geological Assessment was conducted by Geoset CC in May, 2014. The assessment was done in order to determine the potential for Township Development on the remaining extent of the farm Leeuwpoort 283 JS, Witbank, Mpumalanga. The assessment was conducted by means of a desktop study, field survey and laboratory testing. Refer to figure 4 for the geology of the site.

The site is underlain by shale and tillite of the Dwyka Formation, Karoo Supergroup, and sandstone, quartzitic sandstone and conglomerate of the Wilge River Formation, Waterberg Group.

41 test pits were excavated to determine the soil profile of the site. It was found that dry to slightly moist, yellow or dark reddish brown, loose to very loose open textured, clayey silty sand covered the area at depths ranging between 0 to 0.4m and at 1.0m below the surface. Moist, reddish brown, loose to very loose, open textured, clayey silty sand and gravel of ferricrete nodules were found at depths of 0.4 to 1.0m below the surface. The excavation was difficult and TLB refusal occurred at depths between 0.7 and 1.3m on a Pebble Marker with sandstone pebbles or medium hard rock purple sandstone.

Laboratory results showed that the samples analysed had a very low linear shrinkage percentage. Due to the fact that the soil was non plastic sandy material the plasticity index and therefore the liquid limits were not determined.

The colluvium had a clay percentage of 3 to 15%. The linear shrinkage ranged from 0 to 2% and non-plastic material with no plasticity to a low plasticity index of 6. The pebble marker had a clay percentage ranging between 3 and 14%. The linear shrinkage percentage was 0 to 7% with non-plastic material with no plasticity to a low plasticity index of 5 to 8.

Strong seepage and the presence of perennial fluctuations of ground water were encountered on site. A seasonal perched water table exists on top of the bedrock or within the pedogenetic layer comprising nodular ferricrete and the pebble marker. The excess moisture should be removed by a proper drainage system.

The site contains low and low to medium expansive soil. The expansive potential of the soil along sith a medium compressible and a high collapse potential, the foundations of the development will need special precautionary measures.

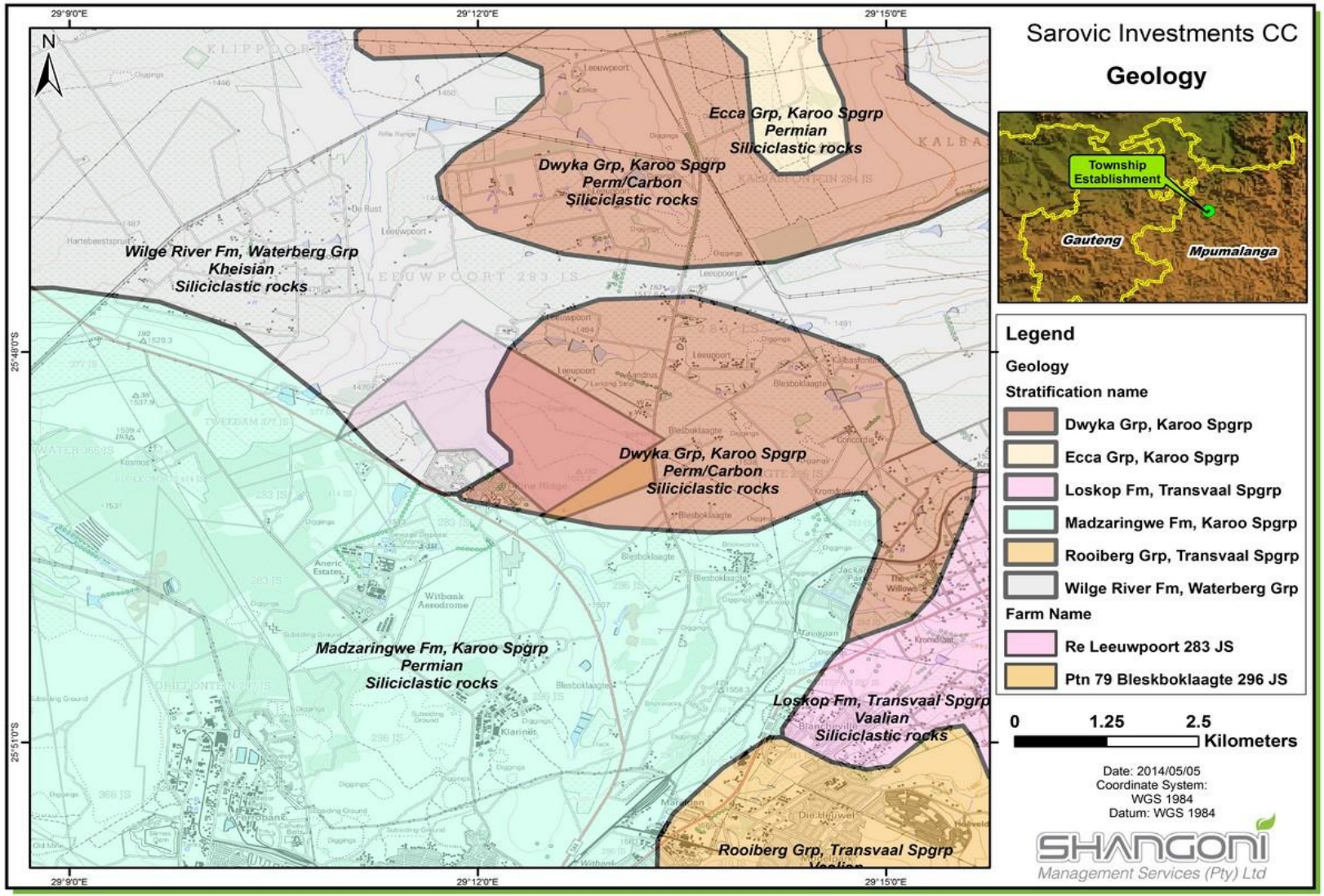


Figure 4: Geology of the site

4.2 Regional climate

4.2.1 Rainfall

The site is located in a summer rainfall area. According to the AGIS Comprehensive Atlas (2007), the mean annual rainfall at the site area is 601-800 mm. The figure below shows the annual monthly rainfall at the site for 2013.

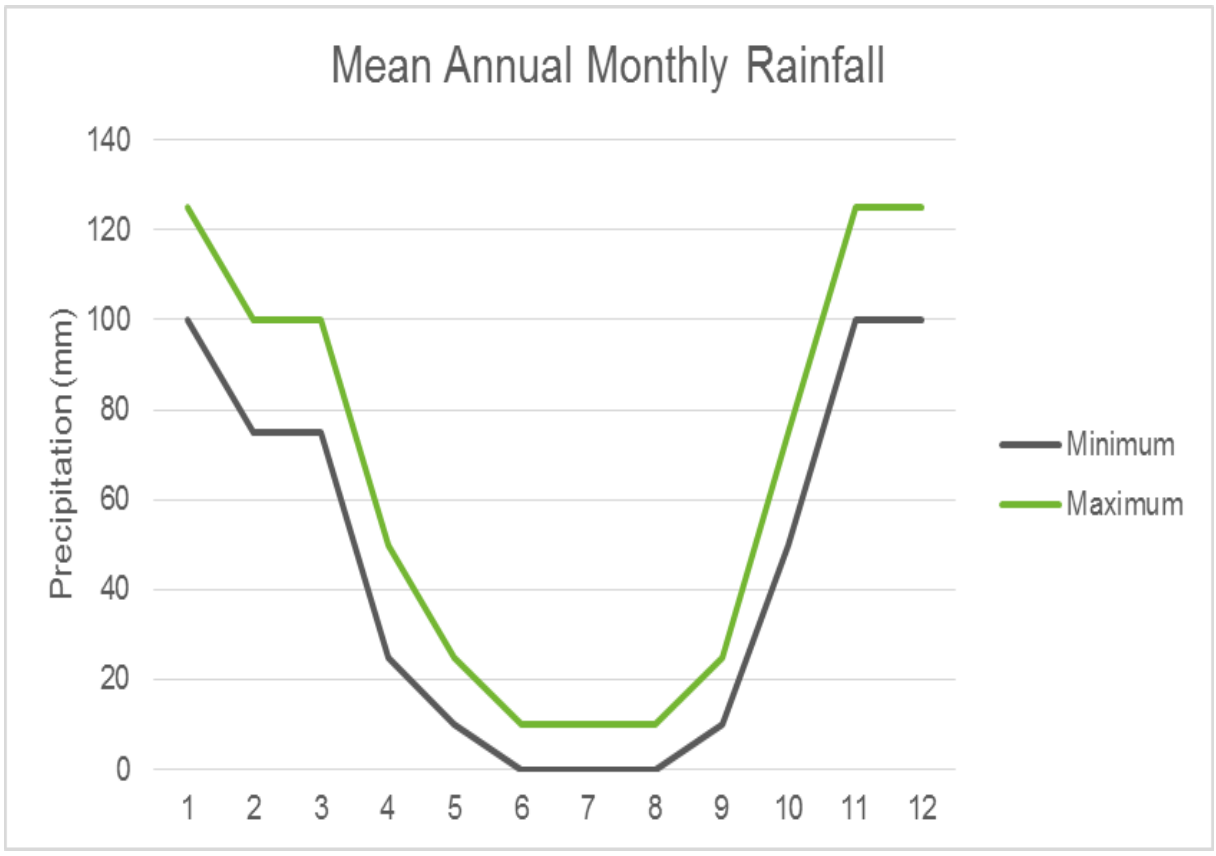


Figure 5: Annual Monthly Average Rainfall at the Site

4.2.2 Temperature

The maximum mean annual temperature for the site is between 25.1°C and 29°C and the minimum mean annual temperature for the site area is between 0.1°C and 4°C (AGIS, 2007). The figure below shows the annual monthly average temperature at the site for 2013.

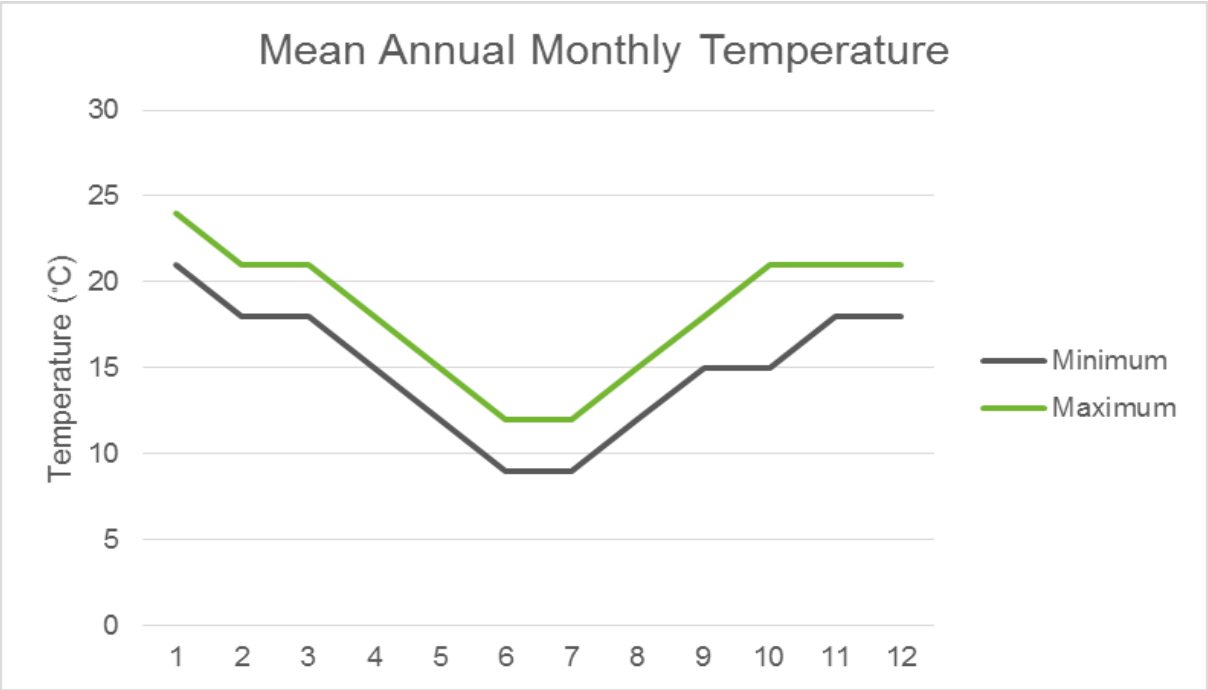


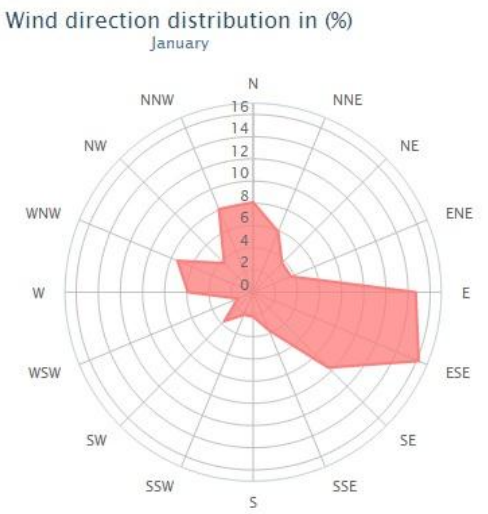
Figure 6: Annual Monthly Average Temperature at the Site

4.2.3 Evaporation

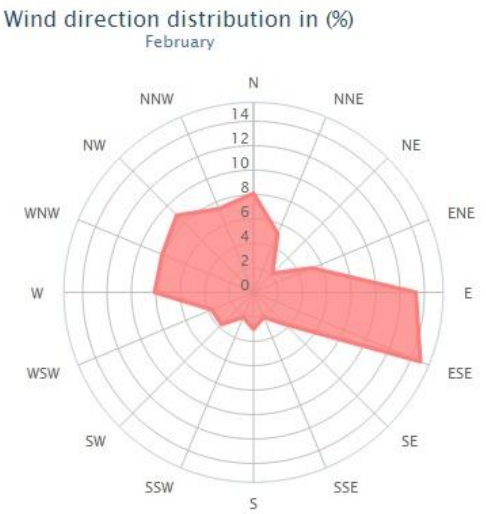
The evaporation at the site ranges between 1601-2000 mm per annum (AGIS, 2007).

4.2.4 Wind

The figures below show the monthly wind direction at the site for 2013, as compiled from www.windfinder.com.


Wind direction distribution in (%)
January
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
16
14
12
10
8
6
4
2
0

a


Wind direction distribution in (%)
February
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
14
12
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8
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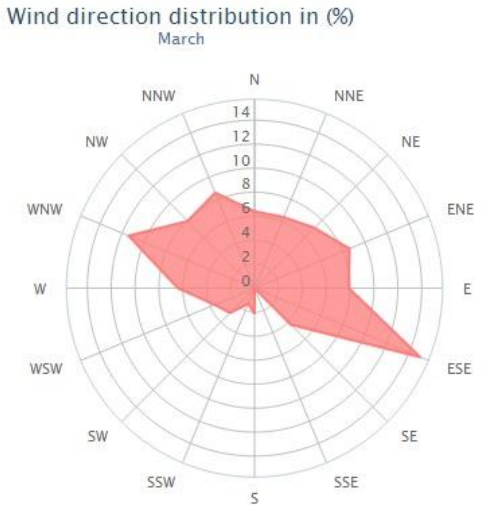
4
2
0

b


Wind direction distribution in (%)
March
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
14
12
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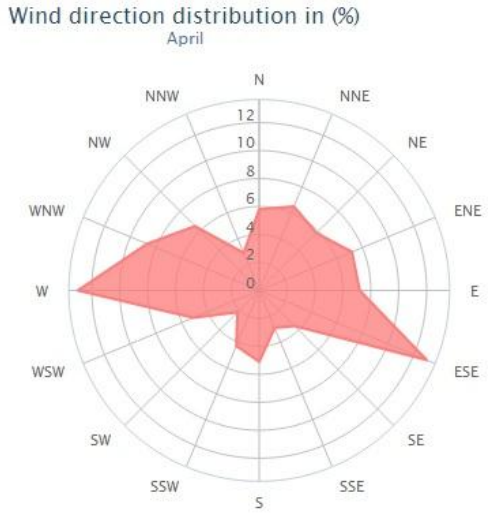
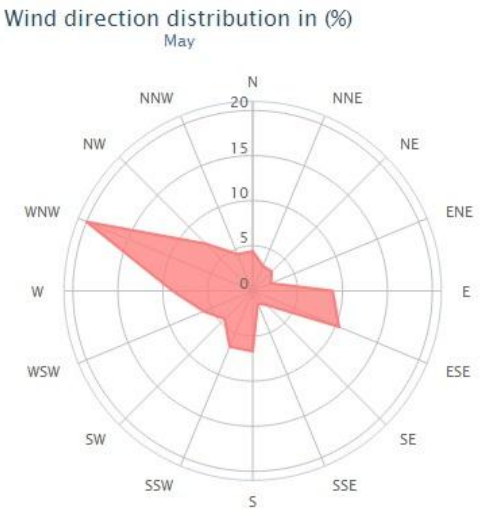
c


Wind direction distribution in (%)
April
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
12
10
8
6
4
2
0

d


Wind direction distribution in (%)
May
N
NNE
NE
ENE
E
ESE
SE
SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
20
15
10
5
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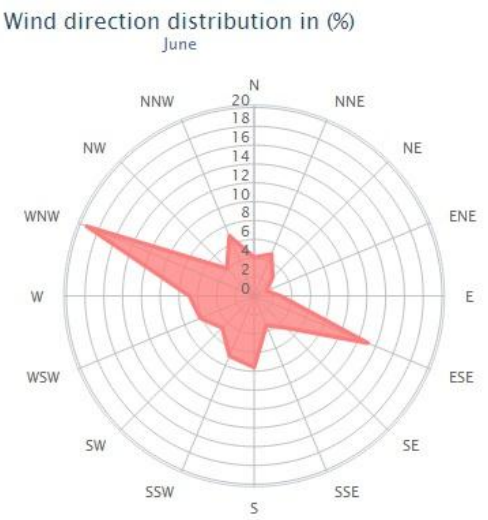
Wind direction distribution in (%)
June
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NNE
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ENE
E
ESE
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SSE
S
SSW
SW
WSW
W
WNW
NW
NNW
20
18
16
14
12
10
8
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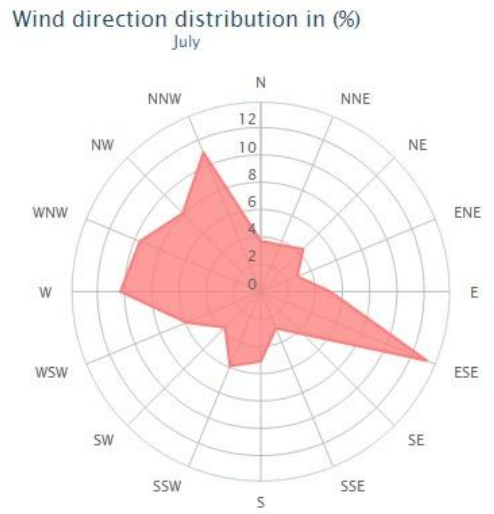

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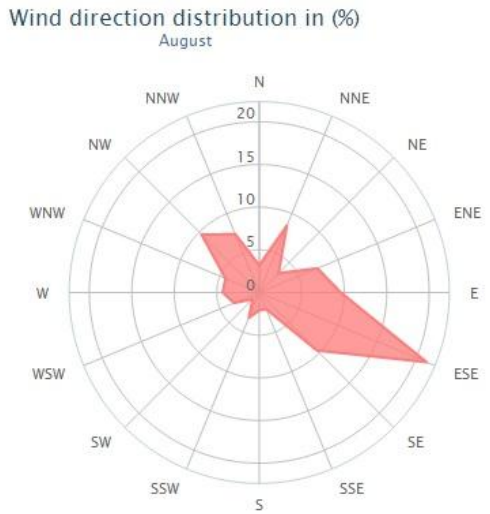

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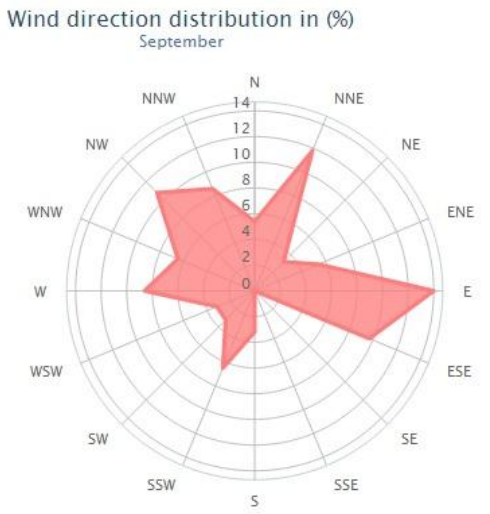

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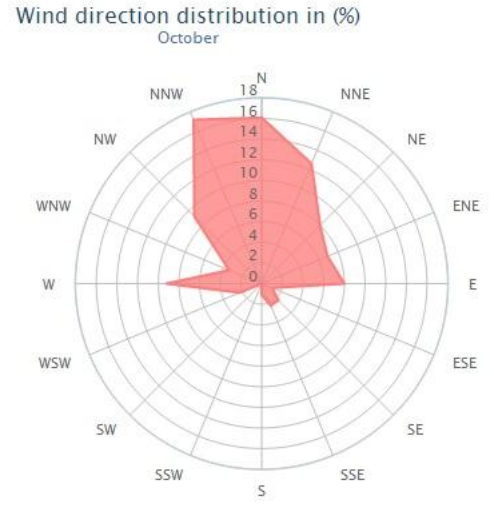
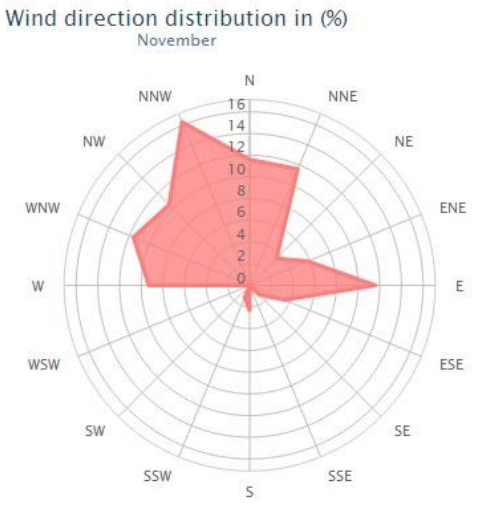




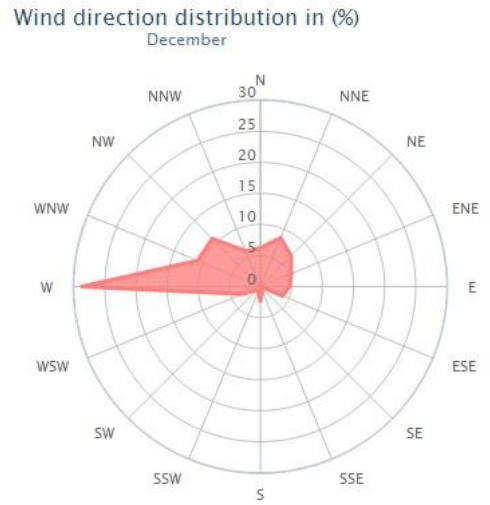


Figure 7: Monthly Wind Direction at the Site

4.3 Topography

As can be seen in the figure 8, the site is located at elevations ranging between 1250 and 1570 masl (metres above sea level).

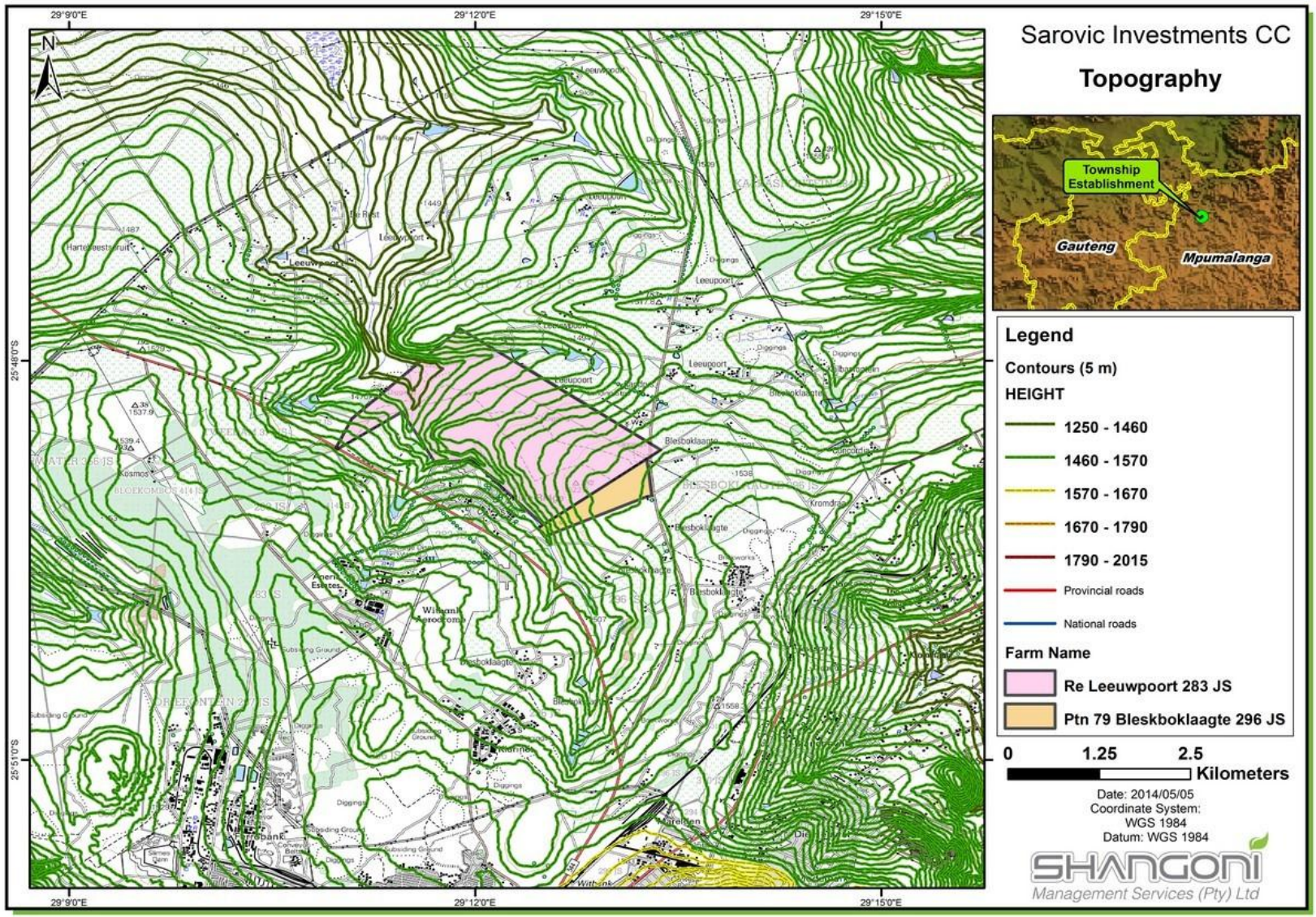


Figure 8: Topography of the site

4.4 Soils

Figure 9 below shows that the soil at the site consists of two soil types, namely S17 and S2 soils. S17 soils are associated with classes 1 to 4 and are undifferentiated structureless soils. These soils have favourable physical properties but are limited by low base statuses, restricted soil depth, high erodibility and excessive or imperfect drainage.

S2 soils are characterised as freely drained, structureless soils which may is prone to restricted soil depths, excessive drainage, high erodibility and low natural fertility.

The site occurs on generally loam soil with a profile described as “Red, yellow and/ or greyish soils with low to medium dase status”. The water-holding capacity of the soils on the site, is in the range of 61 -80mm while the soil drainage of the site is classified as being “Somewhat Impeded”. The soils occurring on the site hold a certain degree of beneficial physical attributes which could be favorable to both agriculture and structural development. These attributes include the “Beneficial water-retaining characteristics without risk of water-logging” and therefore pose no danger to structural damage or agricultural uses as illustrated on Map 8. The soils on the site are also characteristic “Soils with structure favoring arable landuse if climate permits” (Environmental Overview Report Sarovic Development Witbank, Mpumalanga Province - South Africa Remainder of the Farm Leeupoort No 283 JS and portion 79 of the Farm Blesboklaagte No. 296 JS, November 2011).

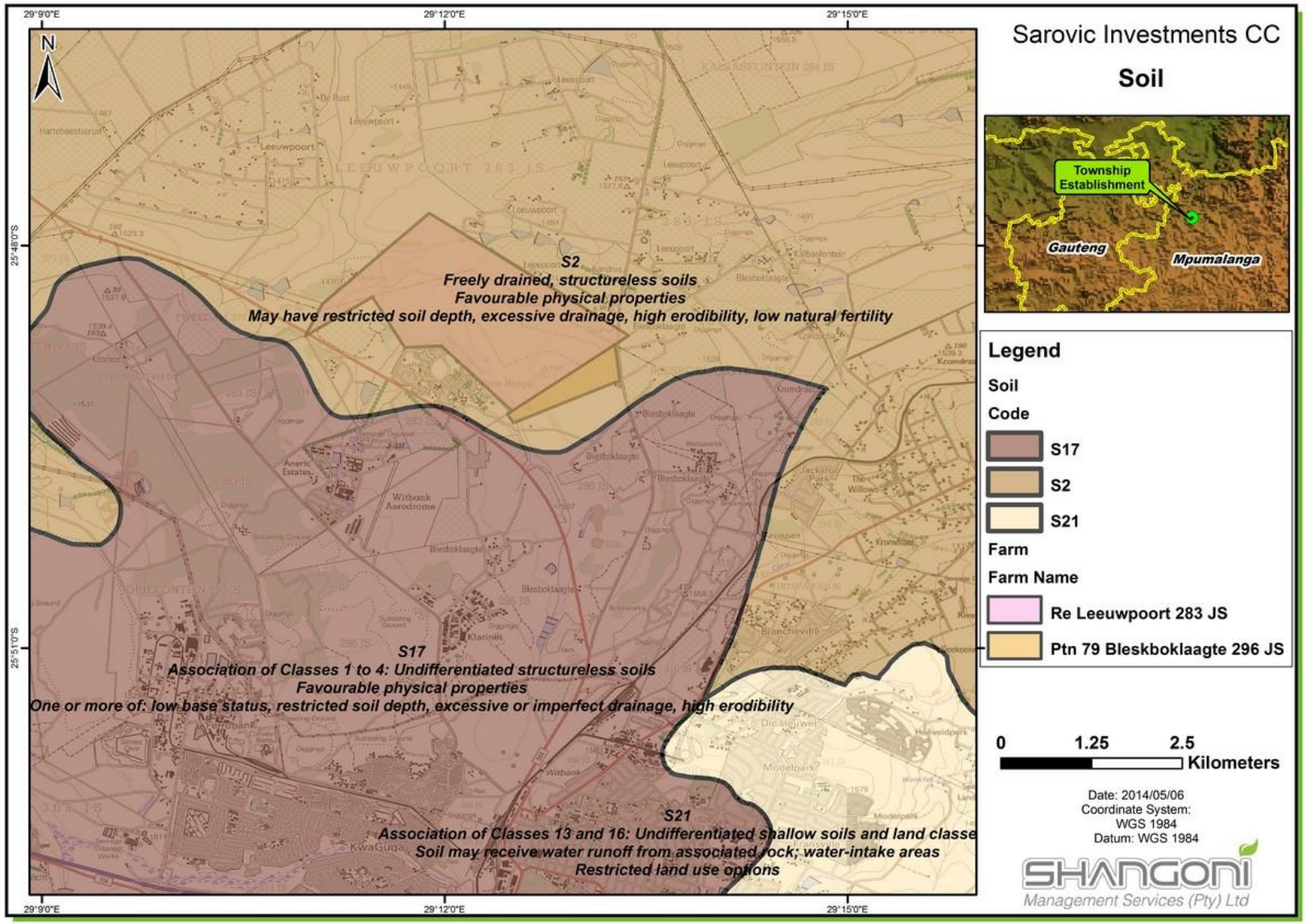


Figure 9: Soil at the site

4.5 Land use and land capability

4.5.1 Current land use

According to the Soil, land capability and land use assessment of portion 79 of the farm Blesboklaagte 296 JS and the remaining extent of the farm Leeuwpoort 283 JS, situated north of eMalahleni, Mpumalanga Province dated 26 September 2014. Land capability was assessed according to the definitions outlined in the guidelines for the rehabilitation of mined land by the Chamber of Mines of South Africa and Coaltech Research Association (2007). Soil types were classified into the following categories for areas that exclude wetlands:

- Arable land;
- Grazing land; and
- Wilderness.

4.5.2 Dry land crop production potential

The classification of dry land crop production potential of soils was based on physical soil properties noted during auger observations, such as effective soil depth, texture, terrain unit, slope, soil wetness and disturbances. The effective soil depth and texture class are the main soil characteristics that determined the dry land crop production potential. The criteria applied for the classification of the crop production potential of soils are as follows:

- High – well-drained and moderately well-drained loamy sand to sandy clay loam soils with an effective depth deeper than 900 mm.
- Moderate - well-drained and moderately well-drained loamy sand to sandy clay loam soils with an effective depth of 600- 900 mm.
- Low - well-drained and moderately well-drained sandy or clay soils.
- Very low – Imperfectly to poorly drained, grey, sandy soils showing evidence of periodic percolating water tables, or black and grey clay soils showing evidence of poor internal drainage, shallow rocky areas and eroded areas.

4.5.3 Evidence of misuse

Currently sand mining, a quarry and landfill are located on Leeuwpoort 283 JS. There is evidence of extensive sand mining that took place previously along the southern edge of the northern tributary of the Blesbokspruit.

4.6 Vegetation

A vegetation assessment was conducted by Dimela Eco Consulting in May 2014. The following is an extract from their report.

4.6.1 Vegetation type(s)

The proposed site is situated within the Grassland Biome of South Africa. This biome is dominated by grasses and plants with underground storage organs, such as tubers and bulbs. Most of the plant species are non-grassy herbs (forbs) of which the growth is stimulated by fire. Trees are scarce within this biome as the dry winters, high summer rainfall and veld fires crease unfavourable conditions for the growth of indigenous tree species. Refer to figure 10 for the vegetation of the site.

The grassland biome is further divided into smaller units known as vegetation types. The vegetation type that is expected to occur at the study site is Rand Highveld Grasslands (also shown in Figure 9 below). Rand Highveld Grassland is a species rich grassland that vary from sour grassland to low shrubland on rocky outcrops and steeper slopes. The landscape is typically variable with sloping plains, ridges and undulating plains at elevations ranging between 1520-1780 masl (Mucina & Rutherford, 2006). The most common grasses that occur in the Rand Highveld Grassland vegetation type are *Themedia*, *Eragrostis*, *Elionorus* and *Heteropogon* species. Sparse woodland can occur on the rocky outcrops (*Protea caffra* and *P. welwitchii*) while *Acacia caffra* and *Celtis africana* can inhabit the undulating landscape with low hills and pan depressions.

This vegetation type is listed as “Endangered” with a conservation target of 24%. It is however poorly conserved (1%) with small patched protected in statutory reserves (Kwaggavoetpad, Van Riebeeck Park, Bronkhorstspruit and Boskop Dam Nature Reserves) and in private conservation areas (Doornkop, Zemvelo, Rhenosterpoort and Mpopomeni) (Mucina & Rutherford, 2006). Almost half of the Rand Highveld Grasslands have been transformed by cultivation, plantations, urbanisation or dam-building.

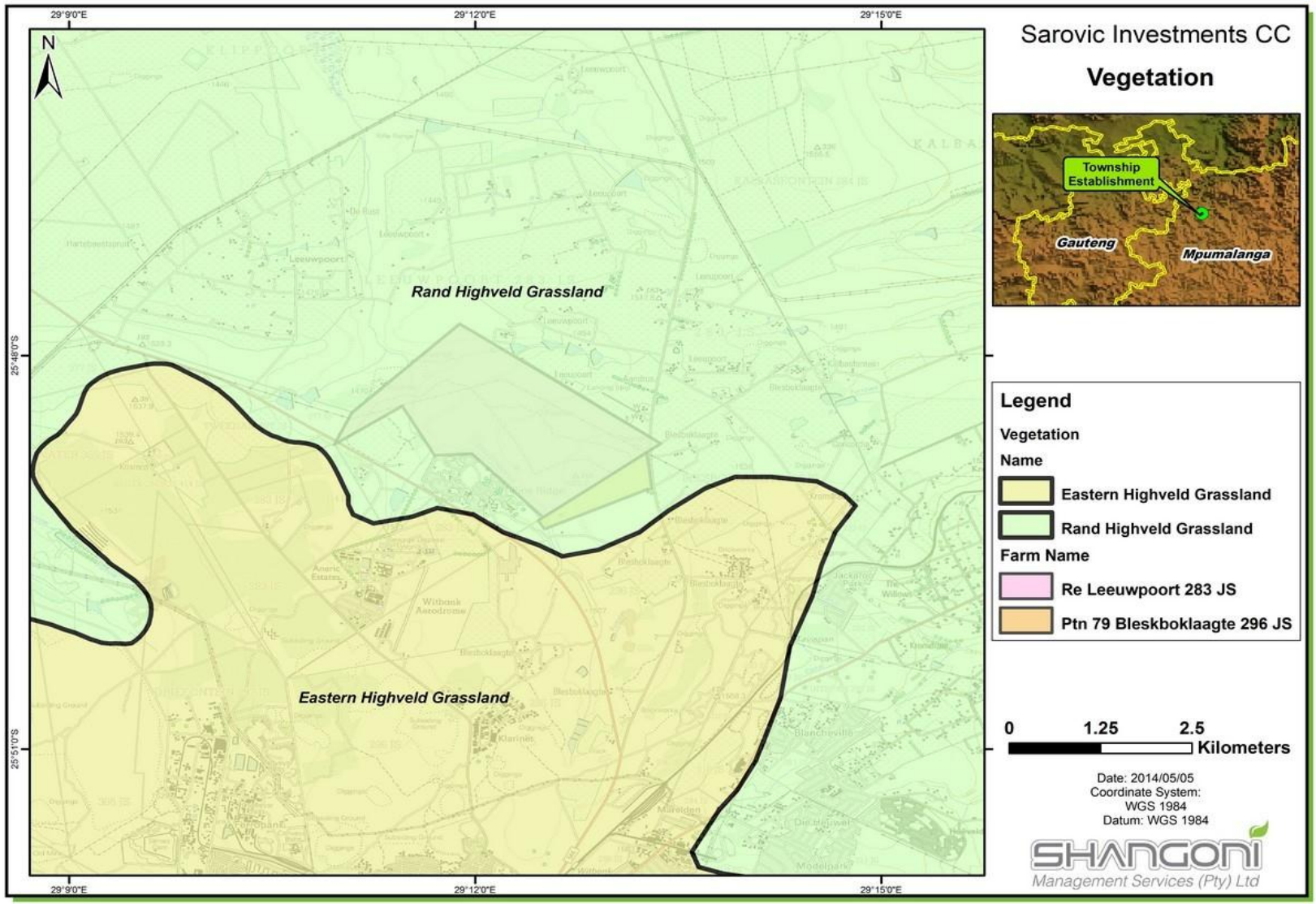


Figure 10: Vegetation at the Site

In terms of the Mpumalanga Biodiversity Conservation Plan, the site comprises mainly of areas classified as having “No Natural Habitat Remaining” and “Least Concern”. There is however a portion classified as “Important and Necessary” on the northern boundary of the site.

Each conservation category (Protected Areas, Irreplaceable Areas, Highly Significant Areas, Important and Necessary Areas, Areas of Least Concern, or Areas with No Natural Habitat Remaining) in terms of the Mpumalanga Biodiversity Conservation Plan has a broad land-use guideline assigned to it. The table below indicates the suitability of the biodiversity categories present on site to the proposed township development. “Urban and business development” is not permitted in “Important and Necessary” areas, while the remainder of the site could be suitable for development. Refer to table 12.

Table 12: Types of land-use suited to each biodiversity conservation category present at the study site (Dimela Eco Consulting, 2014)

Types of Land Use	Important and Necessary	Least Concern/ No Natural Habitat
Urban and Business Development	N	Y

Y – Yes, permitted and actively encouraged activity

N – No, not permitted, actively discouraged activity

R – Restricted by compulsory, site-specific conditions and controls when unavoidable, not usually permitted

The figure 11 below illustrates the location of the various critical biodiversity areas in relation to the proposed development site.

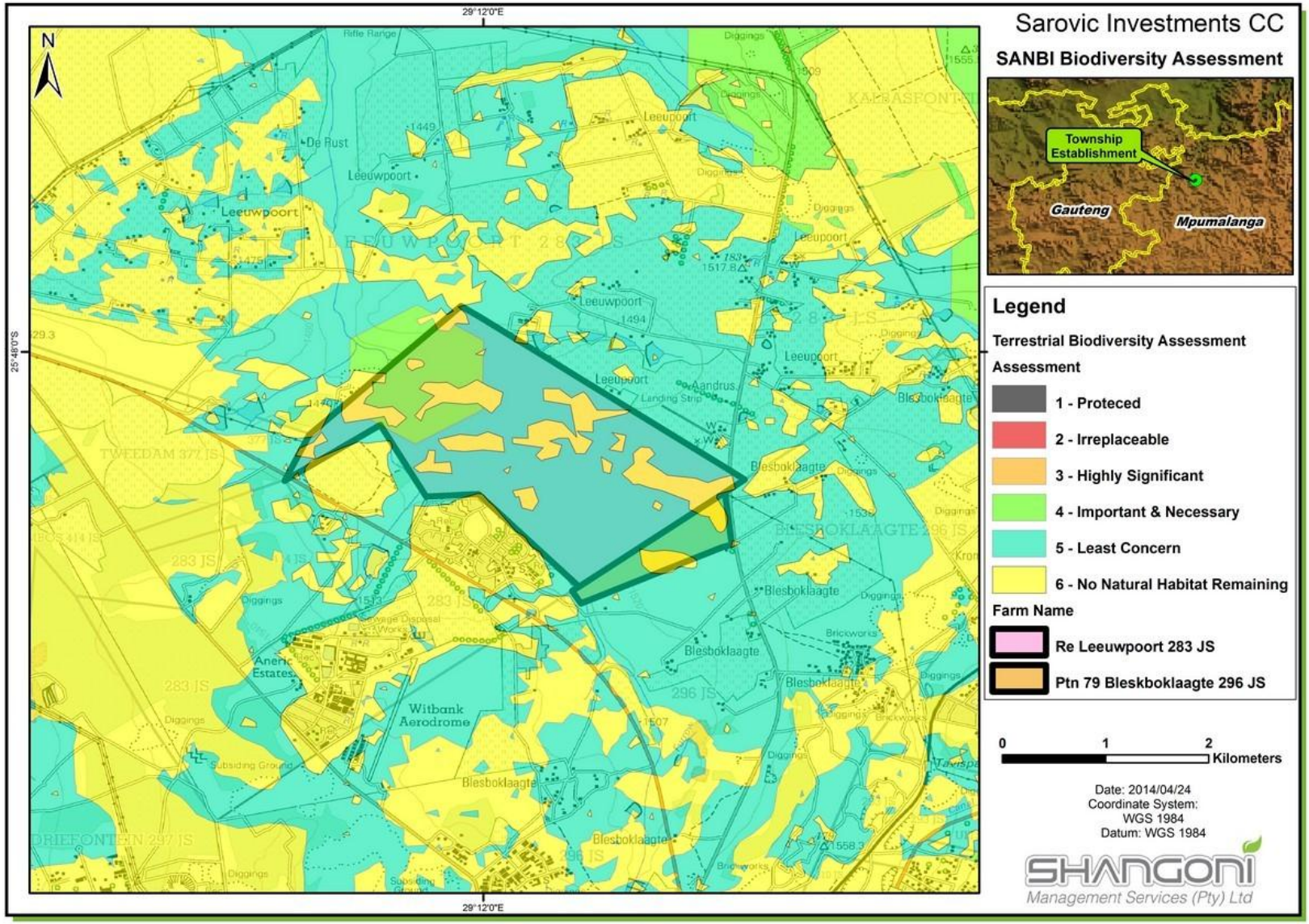


Figure 11: Critical Biodiversity Areas within and adjacent to the Proposed Site

4.6.2 Dominant species

All plant species observed during the field survey are summarised in the different vegetation groups observed during the study: refer to figure 12 for the vegetation categories of the site.

2.6.2.1 Transformed Land

No plants of conservation concern was observed in the transformed areas. The high degree of transformation and invasive species lowers the ecological function and conservation value of these areas.

Alien Invasive Tree Clumps

The transformed land was dominated by alien invasive tree species including *Acacia mearsnii*, *A. dealbata* and *Eucalyptus camaludensis*.

Areas Disturbed by Mining and Cattle Kraals

A large quarry area was situated on the north-eastern portion of the site and the area was highly degraded. Areas that were rehabilitated around the quarry included a number of indigenous pioneer grass species such as *Hyparrhenia hirta*, *Cynodon dactylon* and *Eragrostis gummiflua*. The herbaceous layer comprised of weedy species such as *Richardia brassiliensis* and *Solanum sisymbrifolium*.

The site was furthermore grazed by a large herd of cattle. Overgrazed and trampled patches were colonised by weedy and pioneer species, as well as the exotic grass Pennisetum clandestinum.

2.6.2.2 Grasslands

Grassland vegetation present on the site was characterised by the dominance of grass and herbaceous species with a limited number of tree and shrub species. The various patches of grassland varied in species composition depending on the land use, past and present, as well as the position of the landscape. Lower lying areas contained plant species that adapted to temporary or permanently wet soils, while other grassland areas contain rocky substrate and a higher plant species composition. Other portions were degraded due to grazing or in a secondary condition due to historic cultivation.

Secondary Grassland

Some grasslands were in a secondary state due to past cultivation which removed the vegetation layer and disturbed the soils. Prolonged cultivation reduced the seed bank in the soils as well as the likelihood of geophytes surviving. Even though indigenous grass and some herbaceous species colonised the disturbed land, the species diversity remained low compared to intact, primary Rand Highveld Grassland (Mucina & Rutherford, 2006).

Degraded Grassland

Continuous grazing pressure and the invasion alien invasive plant species (*Pennisetum clandestinum* and *Solanum* species) degraded grassland areas on the site. Overgrazing and over utilization of the grassland resulted in the colonisation of Increaser II and III grasses as well as the shrub *Seripheum plumosum*. Even though the areas were not cultivated recently, the species composition is lower than what is expected in natural Rand Highveld Grassland (Mucina & Rutherford, 2006).

Rocky Grassland and Near-natural Grassland

These areas were never cultivated nor severely trampled and overgrazed. The species composition had a higher diversity of species. There was however and increased number of Increaser II and III grasses.

These ridges contained a number of plants of conservation concern including the declining bulb, *Boophone distichia* and the rare *Pavetta zeyheri* were observed (individual plants). The Provincially Protected *Protea welwitchii* grew abundantly on the ridge and an unidentified *Crinum* species was also observed. The alien invasive species, *Richardia brasiliensis* was also observed.

Moist Grassland

Moist areas and seepage were observed along the Blesbokspruit and the tributary on the northern of the site. Plant species adapted to growing in temporary saturated conditions occurred in this area. Much of these areas were overgrazed due to the availability of moisture for longer periods during the year.

Although sand mining historically impacted on the tributary and grazing and invasive tree species are currently impacting on the moist grassland, the moist grasslands were well vegetated and play a role in the functionality of the wetlands on site and subsequently the hydrology of the area.

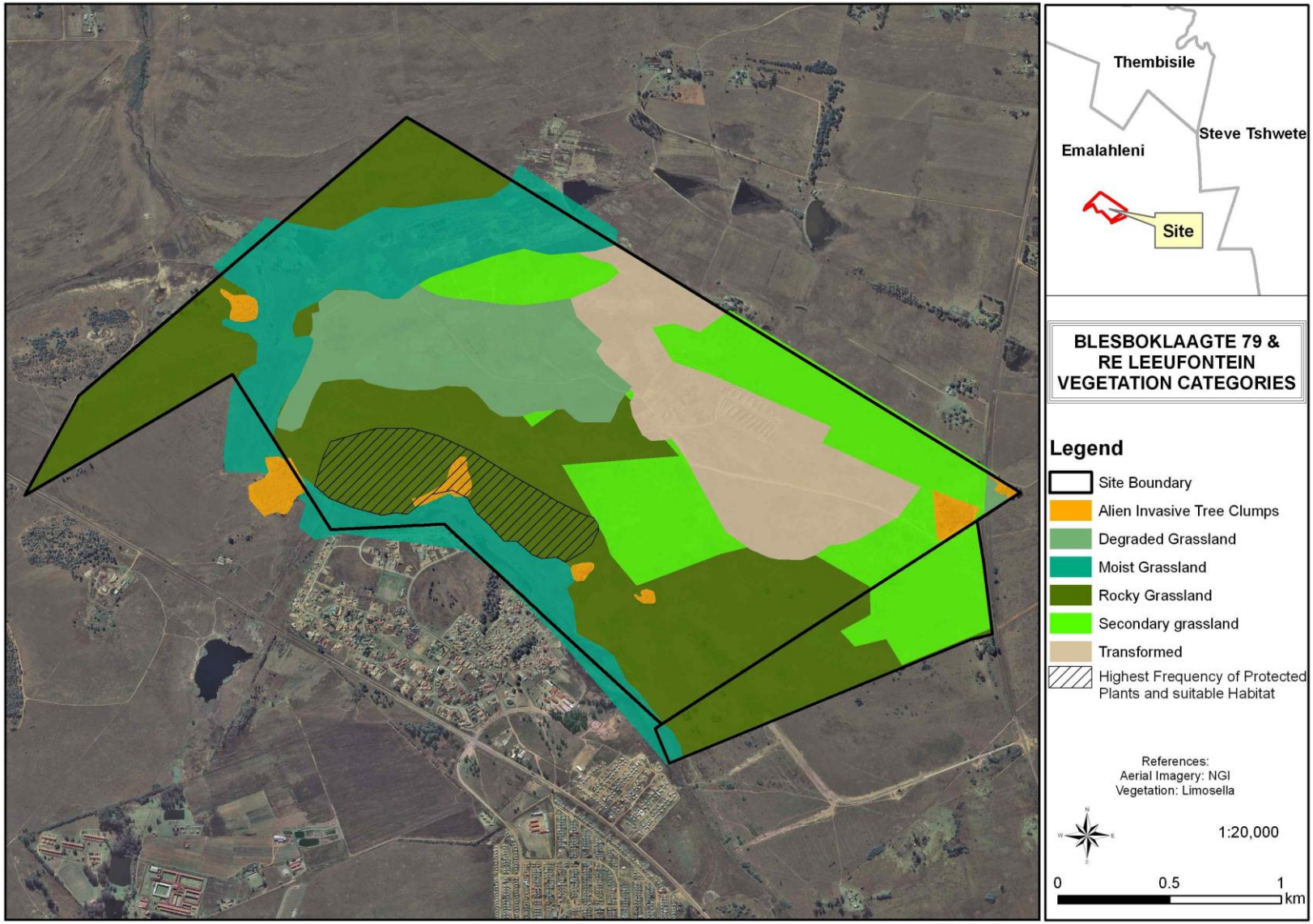


Figure 12: Vegetation Categories at the Site

4.6.3 Endangered or rare species

A list of twelve species of conservation concern likely to occur in the area was compiled through a desktop study. During the field survey it was found that suitable habitat for four species occurred on the site while two were confirmed to occur. The species of conservation concern are summarised in the table 13 below.

Table 13: Plant Species of Conservation Concern (species printed in bold were confirmed to occur)

Species	Status	Typical Habitat	Occurrence on Site
Anacampseros subnuda subsp. *lubbersii*	Vulnerable	Occurs in the Emalahleni (Witbank) and Middelburg area in grassland on rhyolite boulders.	Not observed on the rocky areas on the site. The geology of the site comprised tillite and arenite and therefore the plants are not likely to occur on the site.
Eucomis vandermerwei	Vulnerable	Short sour montane grassland on low pH sandy soils derived from quartzitic rocky outcrops. In rock crevices or under overhanging rocks, confined to outcrops on slopes and plateaus of higher peaks, predominantly on northfacing slopes. 2200-2500 m. Dullstroom to Steenkampsberg and Middelburg.	No suitable habitat.
Frithia humulis	Endangered	Rocky sheets. Only occur in a small band from Ogies to Loskop Dam.	According to available records, this plant was recorded in the quarter degree that the site was situated in. Suitable habitat such as rocky sheets on the site were surveyed but the plant was not observed in walked transects at the time of this (April) survey. This plant historically occurred about 4km north east of the site on the Inyanda Colliery (Exxaro) property and was translocated (Kruger & Sibert, 2012). Although likelihood that this plant occur on site should not be ruled out, the rocky areas lacked the typical gravelly quartz nature that the author has observed this plant in before. Also note that these plants can draw

<table>
<tr><th>Species</th><th>Status</th><th>Typical Habitat</th><th>Occurrence on Site</th></tr>
<tr><td></td><td></td><td></td><td>themselves deeper into the soil to avoid desiccation during the dry winter months – this makes these small plants even more difficult to observe.</td></tr>
<tr><td>Argyrolobium megarrhizum</td><td>Near threatened</td><td>Mixed Bushveld mainly from Pretoria to Bronkhorstspruit.</td><td>This plant was not noted at the time of the field survey and it is thought to be unlikely to occur on the site. However this site visit was undertaken outside of the flowering period of this plant and therefore the possibility of the plant occurring cannot be ruled out completely.</td></tr>
<tr><td>Brachystelma chlorozonum</td><td>Near threatened</td><td>On rocky hills -confirmed to occur in the Middelburg area.</td><td>Likely to occur on the rocky outcrops area, but not observed at the time of the visit.</td></tr>
<tr><td>Boophane disticha</td><td>Declining</td><td>Rocky grasslands on the site, but particularly in proximity or on rocky outcrops.</td><td>Confirmed to occur. Suitable habitat exists within rocky grassland. Only one individual was noted within walked transects. However, it is likely that more individuals occur, or that the plants were harvested for their medicinal properties.
Minimum localities:<table><tr><td>Lat</td><td>Long</td></tr><tr><td>25°48'46.70"S</td><td>29°12'17.56"E</td></tr></table></td></tr>
<tr><td>Callilepis leptophylla</td><td>Declining</td><td>Grassland or open woodland, often on rocky outcrops or rocky hill slopes.</td><td>Not observed at the time of the field survey. However, it likely occurs within the rocky grassland and was not noted due to the late season of the survey (April).</td></tr>
<tr><td>Disa extinctoria</td><td>Near threatened</td><td>Crest of the escarpment in damp grassland and swamps. 1000-1300 m. Historic records indicated that the plant occured about 20km north-east of the site.</td><td>Moist grasslands on site was degraded by grazing and some areas were invaded by alien invasive plants. This plant was not recorded at the time of the survey.</td></tr>
<tr><td>Eucomis autumnalis</td><td>Declining</td><td>Usually occurs in proximity or on rocky outcrops, sometimes also in seepage areas on</td><td>This plant was not observed at the time of the field survey. However, suitable habitat are present in</td></tr>
</table>

Species	Status	Typical Habitat	Occurrence on Site
		rocky slopes.	seepage areas and the rocky grasslands.
Pavetta zeyheri* subsp. *middelburgensis	**Rare**	This plant occurs in the Middelburg area on outcrops of rocks and boulders or rocky sheets.	A *Pavetta zeyheri* was observed on site. The plants resembles subsp *middelburgensis* in its growth form and habitat. Although the plants was not recorded in this quarter degree before, but in close proximity thereto, the author is of the opinion that the two individuals found within the rocky ridge area are indeed subsp *middelburgensis*.
Aspidoglossum validum	Data deficient-D	Poorly known species. It has been collected only a few times, however it may also be overlooked. It is potentially threatened in some areas by expanding forestry plantations and human settlements, however, the exact habitat of this species is not known, and threats are therefore difficult to determine.	Not observed and highly unlikely to occur. More likely to occur in the Lydenburg-Baberton area.

A number of plants likely to occur on the site are provincially protected by the Mpumalanga Nature Conservation Act, 1998 (Act No. 10 of 1998) Refer to table 14. Four of these species were confirmed to occur on the site. Figure 13 refers to the Sensitivity of the various Vegetation Groups at the Site.

Table 14: Provincially Protected Plant Species with Potential to Occur in the Area

<table>
<tr><th>Species</th><th>Protection</th><th>Occurrence</th></tr>
<tr><td>*Crinum* species</td><td>All species</td><td>A *Crinum* species was confirmed to occur in the rocky grassland. The species is likely *C. graminicola.*
Minimum localities:<table><tr><th>Lat</th><th>Long</th></tr><tr><td>25°48'16.77"S</td><td>29°11'36.90"E</td></tr><tr><td>25°48'31.81"S</td><td>29°11'53.32"E</td></tr></table></td></tr>
<tr><td>*Protea welwitchii*</td><td>All species</td><td>Confirmed to occur in rocky grassland on the hill directly east of</td></tr>
</table>

<table>
<tr><td></td><td></td><td>the Belsbokspruit.</td></tr>
<tr><td>Gladiolus species</td><td>All species</td><td>Confirmed sporadic occurrence of at least two species in rocky and secondary grassland as below. Note that the individuals noted were dry and becoming dormant which hampered positive identification. However, all species that occur naturally in Mpumalanga are provincially protected.
Minimum localities:<table><tr><th>Lat</th><th>Long</th></tr><tr><td>25°48'37.01"S</td><td>29°11'47.04"E</td></tr><tr><td>25°48'32.82"S</td><td>29°11'7.21"E</td></tr><tr><td>25°48'58.95"S</td><td>29°12'59.48"E</td></tr></table></td></tr>
<tr><td>Pellaea calomelanos</td><td>Species</td><td>Confirmed sporadic occurrence in rocky grassland, wedged between rocks.
Minimum localities:<table><tr><th>Lat</th><th>Long</th></tr><tr><td>25°48'17.46"S</td><td>29°11'35.35"E</td></tr><tr><td>25°47'53.28"S</td><td>29°11'53.85"E</td></tr></table></td></tr>
<tr><td>Eucomis species (Pineapple plant)</td><td>All species</td><td>E. autumnalis likely to occur in moist- and rocky grassland.</td></tr>
<tr><td>E. autumnalis likely to occur in moist- and rocky grassland.</td><td>Whole family:
Orchidaceae</td><td>Possible occurrence in moist grasslands. Can be overlooked when not in flower (Flowers from Feb-April)</td></tr>
</table>

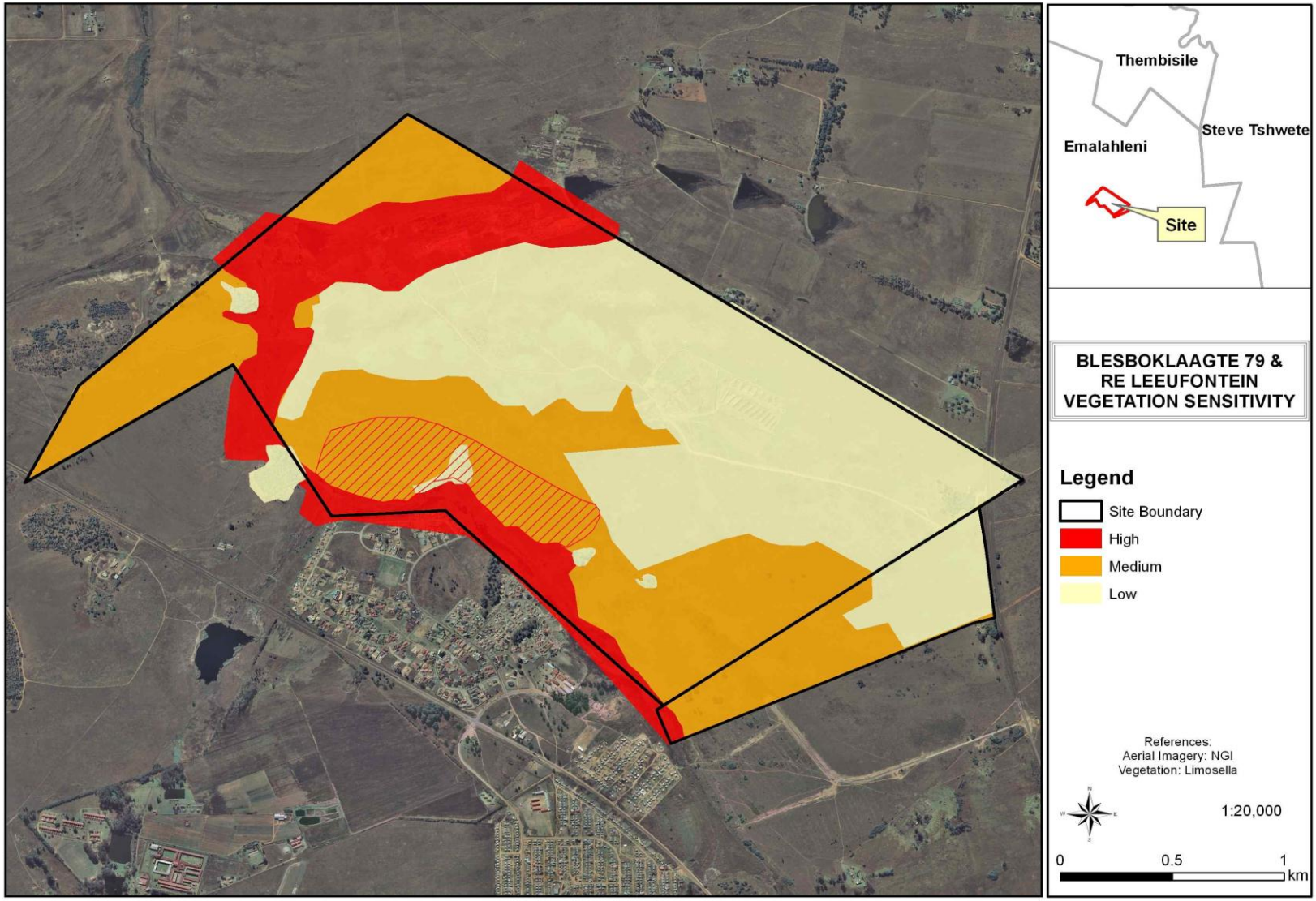


Figure 13: Sensitivity of the various Vegetation Groups at the Site

4.6.4 Alien invasive species

Declared weeds and invader plant species have a tendency to dominate or replace the canopy or herbaceous layer of natural ecosystems, thereby transforming the structure, composition and functioning of natural ecosystems. It is therefore important that these plants are controlled and eradicated by means of an eradication and monitoring programme. Some invader plants may also degrade ecosystems through superior competitive capabilities that exclude native plant species (Henderson, 2001).

Eleven alien invasive plant species were identified during the field survey. These species are listed and described in the table15 below.

Table 15: Alien invasive plant species identified

Species	Category	Occurrence
Acacia dealbata	Category 2	Transformed land
Acacia mearnsii	Category 2	Transformed land
Cirsium vulgare	Category 1b	Transformed land + Secondary Grassland
Eucalyptus camaldulensis	Category 1b	Transformed land + Moist Grassland
Hibiscus trionum	Invasive weed	Transformed land + Secondary Grassland
Hibiscus cannabinus	Invasive weed	Secondary Grassland
Pennisetum clandestinum	Proposed declared invader	Transformed land + Secondary Grassland + Moist Grassland
Persicaria lapathifolia	Invasive weed	Secondary Grassland
Richardia brasilliensis		Transformed land + Rocky Grassland + Secondary Grassland
Solanum sisymbrifolium	Category 1b	Transformed land + Secondary Grassland
Tagetes minuta		Transformed land + Secondary Grassland + Moist Grassland

Category 1b invasive species require compulsory control as part of an invasive species control programme. The plants must be removed and destroyed. They are deemed to have such a high invasive potential that infestations can qualify to be placed under a government sponsored invasive species management programme. No permits will be issued for these plants.

Category 2 invasive species are regulated by area. A demarcation permit is required to import, possess, grow, breed, move, sell, buy or accept as a gift any plants listed as Category 2 plants. No permits will be issued for Category 2 plants to exist in riparian zones.

4.7 Animal life

A faunal assessment was conducted by Rautenbach et al. in 2014 on the proposed site for the residential development. The following is an extract from their report.

The assessment was conducted by field survey as well as a desktop study. Due to the fact that the majority of mammal, reptile and amphibian species are nocturnal, secretive, hibernators or seasonal and bird species are highly mobile, the presence of suitable habitat was used to determine the status of the species based on authoritative tomes, scientific literature, field guides, atlases and data bases. During the field survey, animals were also identified by visual sightings. No trapping or mist netting was conducted. Mammals were also identified by means of spoor, droppings, burrows and roosting sites.

Faunal Habitats Present on Site

The local occurrence of mammals are closely dependent on the presence of suitable habitat types. The potential presence or absence of mammal species were determined by evaluation of the habitat types present on the site. The habitat types present on the site include terrestrial, rupicolous and wetland habitats.

Grassland

The terrestrial habitat has the greatest extent, but have been over-utilized and has a “Very Low” to “Low” conservation condition. There are little to no natural grasslands remaining on the site while most of the area are secondary grassland. The secondary grasslands can be lush and can therefore serve as good cover for terrestrial mammals and avifauna.

Rupicolous

The rupicolous habitat along the slopes is poorly developed and contains a dearth of refuges in the form of nooks and crannies amongst the rocks. The rocky areas appear as scattered large rocks of various sizes. The basal cover of the slopes seems to be degraded by grazing and is therefore in and “Average” ecological state.

Wetland

The Blesbokspruit, running mainly olong the south-western side of the site as well as its tributaries and dams are the main wetland features on the site. The vegetation along the drainage lines and around the dams varies from tall dense stands of bulrushes and/or reeds to dense moist grasslands as well as bare sandy and rocky shores around excavations. The reed beds and stands of bulrushes

and other semi-aquatic vegetation are not utilized by cattle and therefor has a “Good” conservation status. This habitat type serves as a good habitat for a variety of species. Refer to figure 14.

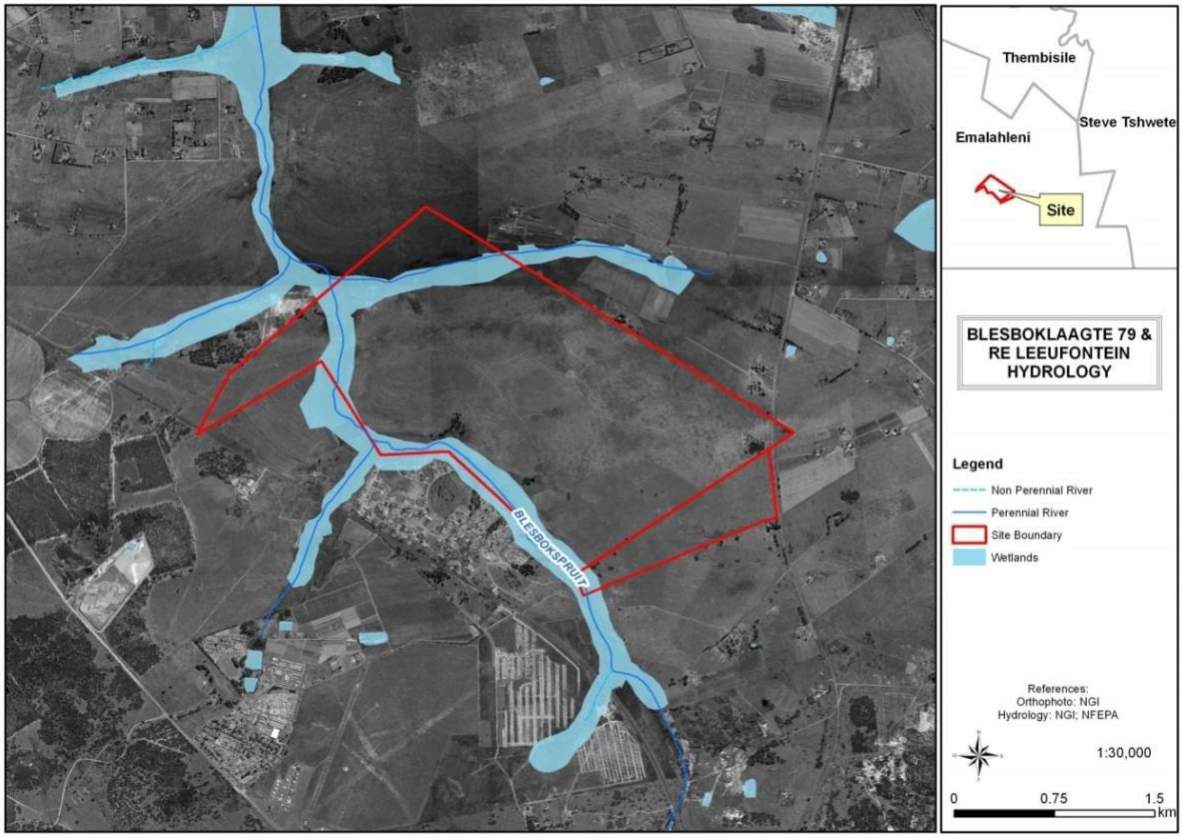


Figure 14: The hydrological properties of the study site. The vegetation along the stream banks offers rank habitat for wetland animals

4.7.2 Commonly occurring species

The following animals are likely to occur on the study site and surrounding areas.

Mammals

A list of 40 species that could potentially occur on the site and the surrounding areas were compiled Refer to table 16. The occurrence of three species was confirmed.

Table 16: Mammal Species Likely to Occur on the Site (Species printed in bold was confirmed by observation)

Species	Probability of Occurrence	Conservation Status
Elephantulus myurus	High probability	Least Concern
Orycteropus afer	**Low probability**	Least Concern
Lepus saxatilis	High probability	Least Concern
Pronolagus randensis	**High probability**	Least Concern
Cryptomys hottentotus	High probability	Least Concern
Hystrix africaeaustralis	Low probability	Least Concern

Thryonomys swinderianus	Medium probability	Least Concern
Pedetes capensis	Low probability	Least Concern
Rhabdomys pumilio	High probability	Least Concern
Dasymys incomtus	Low probability	Near Threatened
Mus minutoides	High probability	Least Concern
Mastomys natalensis	High probability	Least Concern
Mastomys coucha	High probability	Least Concern
Aethomys ineptus	Medium probability	Least Concern
Aethomys namaquensis	High probability	Least Concern
Otomys angoniensis	High probability	Least Concern
Otomys irroratus	High probability	Least Concern
Gerbilliscus brantsii	**High probability**	Least Concern
Dendromus melanotis	Low probability	Least Concern
Dendromus mesomelas	Low probability	Least Concern
Dendromus mystacalis	Low probability	Least Concern
Myosorex varius	Medium probability	Data Deficient
Suncus lixus	Medium probability	Data Deficient
Crocidura cyanea	Medium probability	Data Deficient
Crocidura hirta	High probability	Data Deficient
Atelerix frontalis	Low probability	Near Threatened
Tadarida aegyptiaca	Medium probability	Least Concern
Neoromicia capensis	High probability	Least Concern
Scotophilus dinganii	High probability	Least Concern
Scotophilus viridis	High probability	Least Concern
Felis silvestris	Medium probability	Least Concern
Genetta tigrina	High probability	Least Concern
Cynictis penicillata	High probability	Least Concern
Galerella sanguinea	High probability	Least Concern
Atilax paludinosus	Medium probability	Least Concern
Canis mesomelas	Medium probability	Least Concern
Poecilogale albinucha	Low probability	Data Deficient
Ictonyx striatus	Medium probability	Least Concern
Sylcicapra grimmia	High probability	Least Concern
Raphicerus campestris	High probability	Least Concern

Avifauna

A total of 180 bird species are expected to occur on the site. Of the expected species 45% have a high probability of occurrence, 31% have a medium probability of occurrence and 24% have a low probability of occurrence. These number indicate the relatively poor condition of the site.

Of the species expected to occur on the site, 32 species were observed during the field study. Refer to table 17.

Table 17: Avifaunal Species Observed on the Site

Species
Pternistis swainsonii
Numida meleagris
Alopochen aegyptiaca
Plectropterus gambensis
Anas undulata
Columba guinea
Streptopelia senegalensis
Streptopelia capicola
Gallinula chloropus
Fulica cristata
Gallinago nigripennis
Vanellus armatus
Vanellus coronatus
Tachybaptus ruficollis
Phalacrocorax africanus
Bubulcus ibis
Bostrychia hagedash
Corvus capensis
Corvus albus
Lanius collaris
Hirundo rustica
Hirundo albigularis
Cecropis cucullata
Acrocephalus baeticatus
Prinia flavicans
Mirafra fasciolata
Saxicola torquatus
Myrmecocichla formicivora
Ploceus velatus
Euplectes progne
Macronyx capensis
Crithagra atrogularis

Herpetofauna

A list of species with the potential to occur on the site was compile. This list included 45 reptile species and 19 amphibian species. During the field survey 3 reptilian and 3 amphibian species were

observed and are listed in the table below. Most of the observed species are robust generalists with the ability to capitalise on disturbed environments. Refer to table 18.

Table 18: Herpetofaunal Species Observed on the Site

Species	Conservation Status
Pedioplanis lineoocellata	Least Concern
Trachylepis striata	Least Concern
Pachydactylus affinis	Least Concern
Xenopus laevis	Least Concern
Amietia angolensis	Least Concern
Strongylopus fasciatusi	Least Concern

4.7.3 Endangered species

No animals of conservation concern was observed on the site. There is however a possibility that animals of conservation concern can occur on or visit the site.

4.8 Surface water

4.8.1 Catchment areas

The site is situated within the B11K quaternary catchment. Refer to figure 15 which is located within the Olifants Water Management Area (WMA). The Olifants WMA corresponds with the South African portion of the Olifants River catchment. Most surface runoff originates from the southern and mountainous areas with higher rainfall and is controlled by several large dams. Large quantities of groundwater are abstracted for irrigation in the north-west of the WMA and for rural water supplies throughout most of the area.

The Blesbokpruit is situated to the west of the site. There are two unnamed tributaries of the Blesbokpruit:

- One originates in the south west;
- One originates to the north east of the site.

4.8.2 Mean annual runoff (MAR)

The total Mean Annual Runoff for the Upper Vaal Water Management Area is 2 040 million m^3/annum and the Ecological Reserve is 460 million m^3/annum (DWAF, 2004).

4.8.3 Water authority

The water authority is the Department of Water Resources (DWS), and the regional offices are situated in Bronkhorspruit.

4.8.4 Floodline

A floodline assessment was conducted by SCIP Engineering Group in November, 2001, in order to calculate the 1:100 year flood lines for all the streams in the vicinity of the site.

The calculation of the flood lines was done by the following steps:

- Gathering of topographical information for the catchment/s and river reach/es.
- Hydrological modelling of the catchment/s according to historical rainfall data.
- Hydraulic modelling of the river reach as well as hydraulic modelling of structures contained in the river channel or floodplain.

The calculated 1:100 year floodline shows that some residences of Pine Ridge (south of the river reach) are at risk of being flooded. The proposed development is affected by the 1:100 year floodline, but not to a great extent. These flood lines can be used as a guideline for Town Planners to determine a land use layout for further discussion and evaluation.

It is recommended that a suitable buffer zone should be provided on either side of the 1:100 year floodline. Any alterations to the stream channel or floodplain will invalidate the calculated flood lines. It is therefore recommended that no alterations should take place.

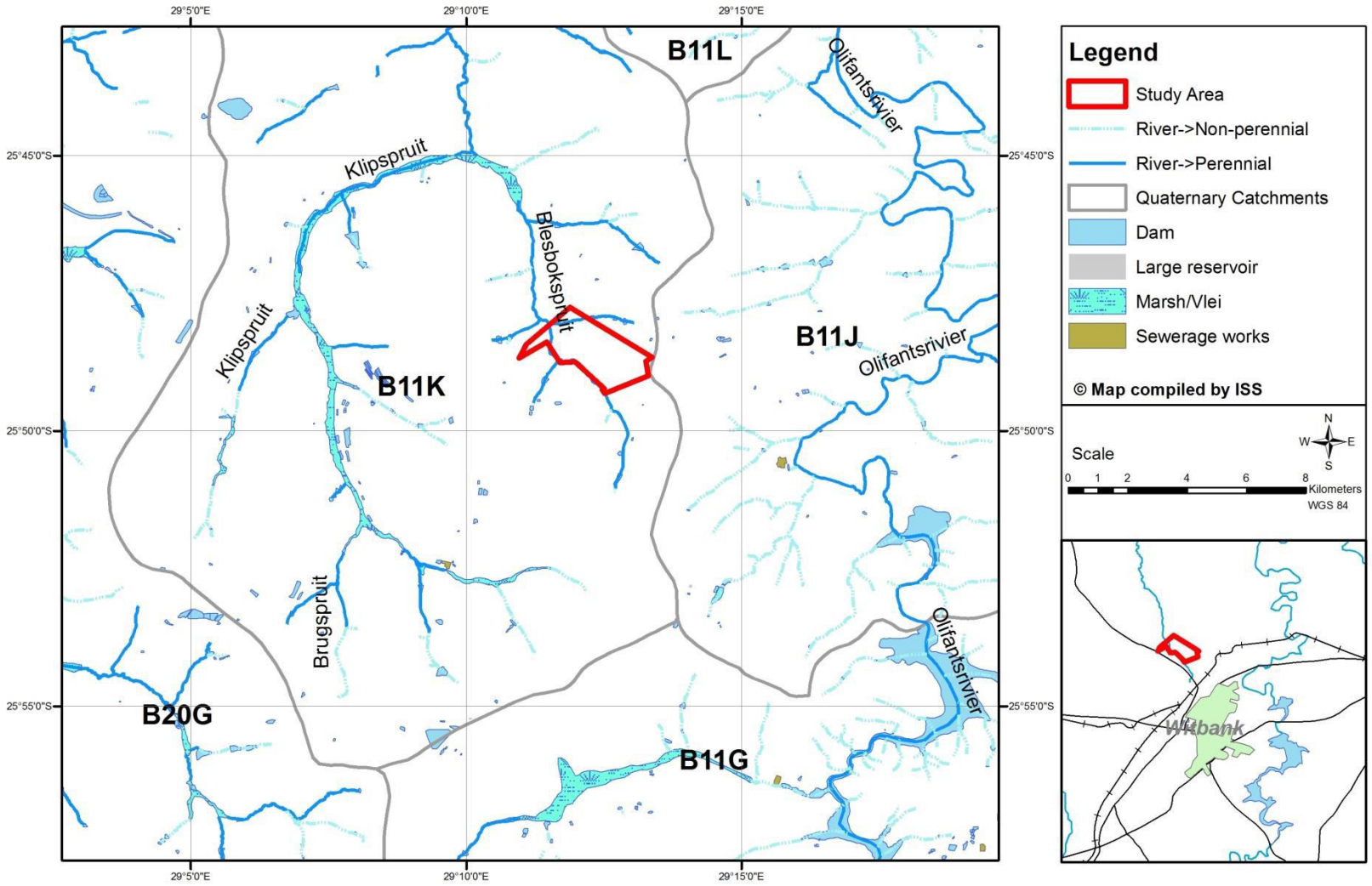


Figure 15: Regional Drainage of the area

4.9 Groundwater

Both portions, 79 Blesboklaagte 296 and Leeuwpoort 283 are located on the Wilge River Formation of the Waterberg Group (Mw) and the Dwyka Group (Pd) belonging to the Karoo Supergroup of rocks.

The Wilge River Formation is mainly composed of reddish-brown to purple sandstone, grit and quartzitic sandstone with intercalations of conglomerate and shale. These rock types are to a large extent intruded by diabase sills and dykes that play a major role in the occurrence of groundwater. Groundwater occurrence is also commonly associated with fault and fracture zxones and with bedding planes. The groundwarter potential generally is classed as low to moderate on the basis that 80% of the boreholes on record yield less than 2 l/s. The depth to groundwater level commonly occurs between 10 and 40 m below surface.

The Dwyka group comprises glacial deposits (tillite). The permeability of fresh tillite is generally and widely regarded as being very low. Some however may be sufficiently weathered in upper portions so that borehols yield sufficient water for household supply. The groundwater yield potential is classed as low on the basis that 76% of the boreholes on record produce less than 2 l/s. The highest recorded yield is 4.4 l/s which rsupports the view that this formation represents a poor aquifer. Both portions are located within a minor aquifer region. Barnard, 2000.

4.10 Sensitive landscapes

A Wetland Delineation and Functional Assessment was conducted by Limosella Consulting in May, 2014. The following is and extract form their report.

Wetlands are defined as “land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil” (National Water Act, 1998).

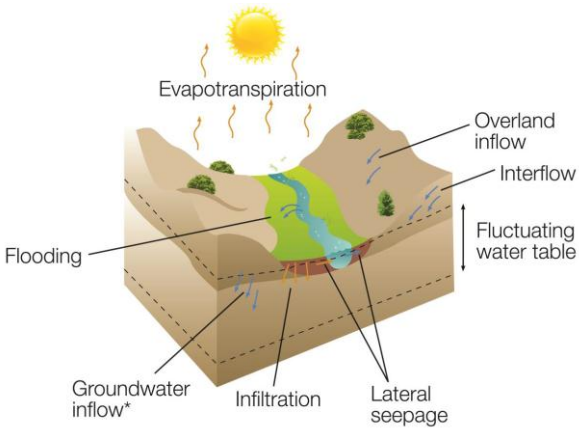
According to Regulation 1199 of the National Water Act, 1998 (Act No. 36 of 1998), any wetlands situated within a 500m radius from a proposed activity should be regarded as sensitive features that may be affected by said activity or development. The wetlands should therefore be delineated prior to any development.

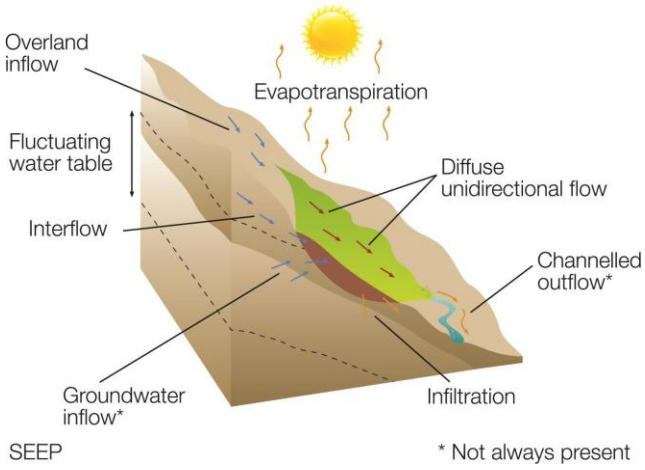
Four wetland areas were recorded on the study site refer to figure 16. The wetland areas were classified as a Channelled Valley Bottom wetland, and seepage wetlands. All the wetlands recorded on the study site form part of the same wetland system.

Wetland Classification

The table 19 provides a summary of the features pertaining to the classification of the wetlands on the study site.

Table 19: Classification of Wetland and Riparian Areas

Hydro-geomorphic Types	Description
Channelled Valley Bottom Wetland  CHANNELLED VALEY-BOTTOM WETLAND * Not always present	Linear fluvial, net depositional valley bottom surfaces which have a straight channel with flow on a permanent or seasonal basis. Episodic flow is thought to be unlikely in this wetland setting. The straight channel tends to flow parallel with the direction of the valley (i.e. there is no meandering), and no ox-bows or cut-off meanders are present in these wetland systems. The valley floor is, however, a depositional environment such that the channel flows through fluvially-deposited sediment. These systems tend to be found in the upper catchment areas.

Seepage Wetlands  	Seepage wetlands are the most common type of wetland (in number), but probably also the most overlooked. These wetlands can be located on the mid- and footslopes of hillsides; either as isolated systems or connected to downslope valley bottom wetlands. Seepage wetlands are the most common type of wetland (in number), but probably also the most overlooked. These wetlands can be located on the mid- and footslopes of hillsides; either as isolated systems or connected to downslope valley bottom wetlands.

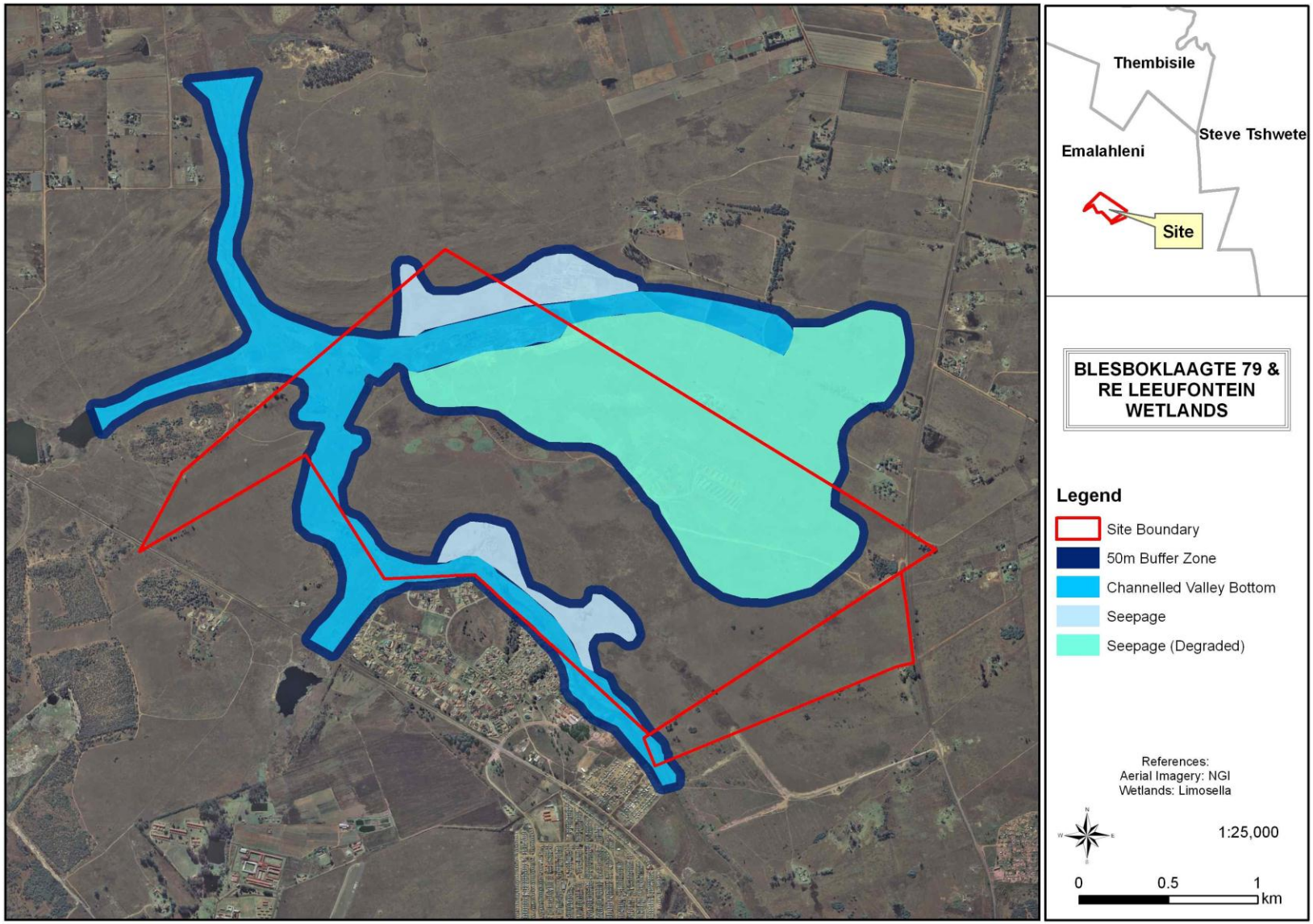


Figure 16: Wetlands and Associated Buffer Zones at the Site

4.11 Sites of archaeological and cultural interest

A Phase 1 Heritage Impact Assessment (HIA) was conducted by A. Pelser Archaeological Consulting on the proposed site for the residential development in June, 2014. The following is an extract from their report.

The assessment was conducted through a desktop study, field survey as well as interviews with local communities. During the HIA four sites of archaeological and cultural interest were found. Of these site only one was found to have High Significance. The site contained at least 10 graves. Mitigation measures were proposed which include the formal protection or exhumation and relocation of the graves.

It is likely that any other features or sites of archaeological or cultural interest, if present, would likely have been disturbed or destroyed as a result of agricultural activities and other human actions (surrounding residential development, quarrying).

In the event that any other unknown objects, sites or features of archaeological nature were uncovered, the development should be halted immediately for inspection and further recommendations.

4.12 Air Quality

The following information was extracted from Highveld Priority Area Air Quality Management Plan 2001 (in terms of the National Environmental Management: Air Quality Act, 2004 (Act no 39 of 2004). The site is located within the Highveld priority area which is associated with poor air quality, and elevated concentrations of criteria pollutants due to concentration of industrial and non-industrial sources (Held *et al, 1996* DEAT, 2006).

The site is located on agricultural land which is associated with agricultural dust.

4.13 Noise

The proposed Mixed Residential Township will likely generate noise during the construction phase. The noise levels will be further evaluated during the Environmental Impact Assessment Phase of the project, when the significance of the noise and potential nuisance generated by the proposed Mixed Residential Township, will be rated.

The proposed Mixed Residential Township will be located within an area that has been identified as Strategic Development Areas (Residential Expansion) as per the Spatial Development Framework of Emalahleni Local Municipality, 2011.

4.14 Visual aspects

The proposed site is situated between the split of the R544, Carmen Street to Verena to the west and D1126 to the east, north of Klarinet extension 6. Refer to figure 17. The site is visible from Carmen street to the west and D1126 to the east.

The proposed access into the development is located approximately 510 m north of the existing Flamingo Street intersection on road D1126 and a short separate right-turn lane from the north (road widening will be required on road D1126).

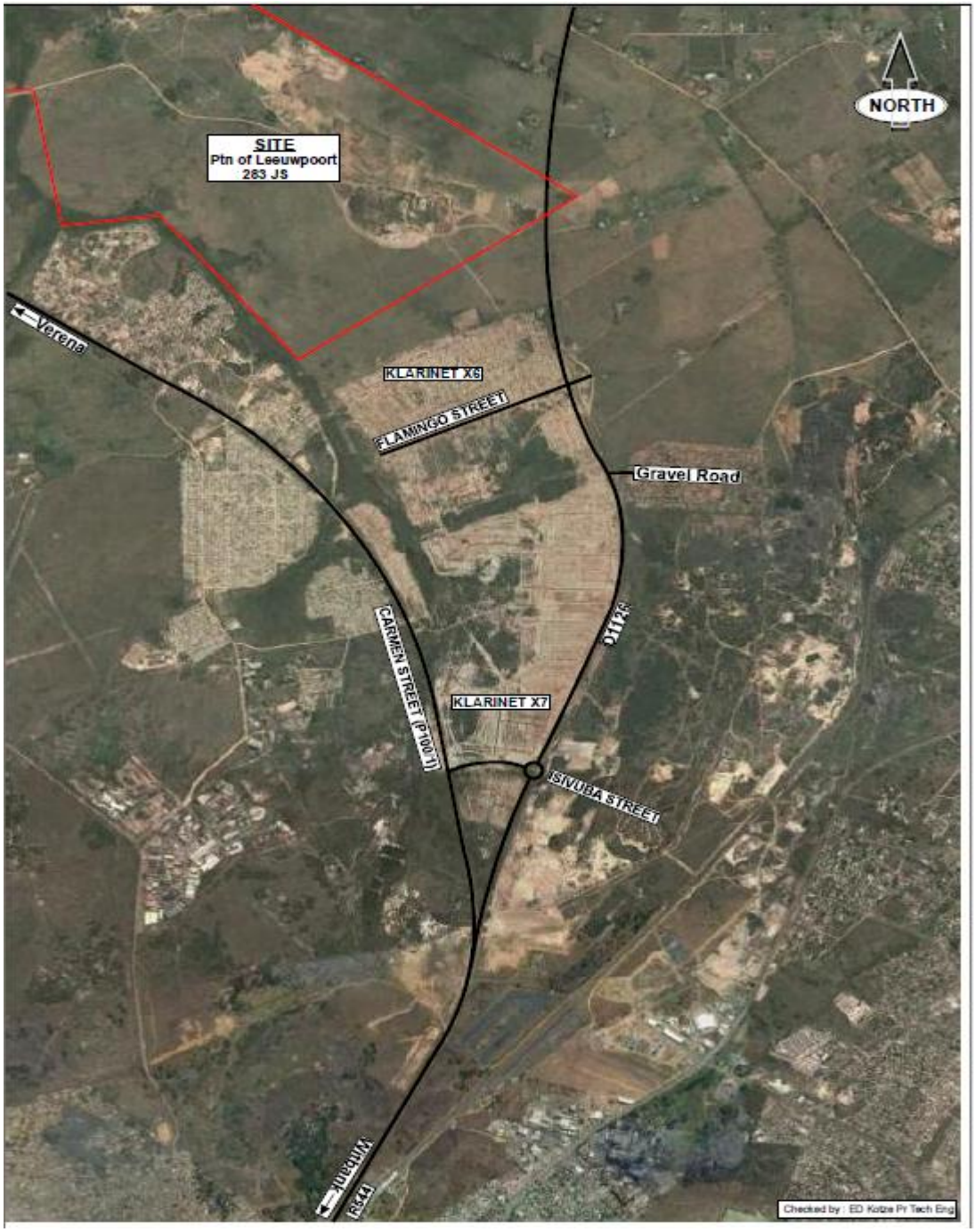


Figure 17: Road network leading to the site

4.15 Socio-economic aspects

4.15.1 Demography

According to the 2011 census, 395 466 people formed part of the 119 874 households in the Emalahleni Local Municipality. The average household size is 3.3 people per household. The growth rate in the municipality is 3.58% per annum. There are 111.8 men for every 100 women in the municipality (Statistics South Africa, 2011). Table 20 shows the age structure of the municipality.

Table 20: Demographic Profile of the Albert Luthuli Municipality

Age Group	Percentage of Population (%)
Under 15 years of age	25.2
15 to 64 years of age	71.2
Over 65 years of age	3.6
Total	**100**

4.15.2 Major Economic Activities

Mining in Emalaheni is the highest contributor to both economic growth and job creation. Given the abundance of coal reserves in Mpumalanga (and being the key mineral within Emalahleni); the local space is likely to benefit from the resources abundantly found within the locality; at the expense of agriculture, Emalahleni Municipality Integrated Development Plan 2014/15.

4.15.3 Unemployment and employment

The 2011 census found that the official unemployment rate was 27.3% and the youth unemployment rate (15 to 34 years of age) was 36.0%. The dependency ratio was 40.4 per 100 people between the ages of 15 and 64 years (Statistics South Africa, 2011).

5. PUBLIC PARTICIPATION PROCESS

5.1 Objectives of the Public Participation Process (PPP)

Section 24 of the Constitution of the Republic of South Africa, 1996 guarantees everyone the right to an environment that is not harmful to their health and well-being and to have the environment protected for the benefit of present and future generations. In order to give effect to this right, NEMA came into effect.

In terms of Section 24(4) of NEMA, procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment must, *inter alia*, ensure, with respect to every application:

- Coordination and cooperation between organs of state in the consideration of assessments where an activity falls under the jurisdiction of more than one organ of state.
- That the findings and recommendations flowing from an investigation, the general objective of integrated management laid down in NEMA and the principles of environmental management set out in Section 2 of NEMA are taken into account in any decision made by the organ state in relation to any proposed policy, programme, process, plan or projects, consequences or impacts.
- Public information and participation procedures which provide all integrated and affected parties, including all organs of state in all spheres of government that may have jurisdiction over any aspect of the activity, with a reasonable opportunity to participate in those information and participation procedures.

One of the general objectives of integrated environmental management laid down in Section 23(2) (d) of NEMA is to: “ensure adequate and appropriate opportunity for public participation in decisions that may affect the environment.”

The National Environmental Management Principles as stipulated in NEMA say;

- “Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.
- The participation of all interested and affected parties in environmental governance must be promoted, and all people must have an opportunity to develop the understanding, skills and capacity necessary to achieve equitable and effective participation, and participation by vulnerable and disadvantage persons must be ensured”.

5.2 Legislation and guidelines followed for the PPP

The public participation process for this project was conducted by Shangoni Management Services in terms of:

- The procedures and provisions in terms of the NEMA;
- Chapter 6 of the 2014 EIA Regulations;
- GN 807 of 2012; Public Participation Guideline; and
- Other relevant legislation such as the Promotion of Access to Information Act (PAIA), 2000.

5.3 Public Participation Process followed

5.3.1 Identification and registration of I&APs and key stakeholders

Table 21 below lists the landowners and adjacent landowners identified and notified (by means of e-mail, telephone, fax and/or post) of the proposed project. Copies of the notifications to the I&APs have been included in Appendix D1 & D7.

Table 21: List of landowners and adjacent landowners identified and notified

Farm Name	Title deed	Owner	Method of notification
Portion 76 of the farm Leeuwpoort 283 JS	TOJS00000000028300076	Malo Selo (Pty) Ltd Mr Boris Benic	E-mail
Portion 13 of the farm Leeuwpoort 283 JS	TOJS00000000028300013	Masinga Hendrik Mothaisa	Registered post
Portion 1 of Leeuwpoort 283 JS Portion 0 of 377	TOJS00000000028300001 TOJS00000000037700000	Smith Broers Trust	E-mail
Portion 7 of the farm Leeuwpoort 283 JS	TOJS00000000028300007	Government land	E-mail
Portion 26 of the farm Leeuwpoort 283 JS	TOJS00000000028300026	Pine Ridge	Hand deliveries
RE 153 of the farm Blesboklaagte 296 JS	TOJS00000000029600153	ABSA Property Developers	E-mail
Portion 167 of the farm Blesboklaagte 296 JS	TOJS00000000029600167	Hendrika Paterson	Hand delivery
Portion 197 of the farm 296	TOJS00000000029600152	Marabe Erustus Mogorosi	Hand delivery
Portion 197 of the farm 296 belongs to the	TOJS00000000029600197	Witbank Municipality Cllr Salome Sithole	E-mail

Farm Name	Title deed	Owner	Method of notification
Emahlaleni Local Municipality			
Portion 75 of the farm 283	TOJS00000000028300075	Jacobus Frederick van Dyk	E-mail
Portion 11 of the farm 283	TOJS00000000028300011	Deiner Alexander Charles Wolf (Charles Deiner)	E-mail
Portion 84 of the farm 283	TOJS00000000028300084	Louw Family Trust	Hand delivery
Portion 15 of the farm 283	TOJS00000000028300015	Paul Simela	E-mail

All organs of state which may have jurisdiction in respect of the proposed project is considered to be registered I&APs.

The following organs of state were notified of the proposed project:

- Nkangala District Municipality
- Emahlaleni Local Municipality
- Emahlaleni Local Municipality - Ward 12 Councillor
- Emahlaleni Local Municipality - Ward 15 Councillor
- Mpumalanga Department of Agriculture, Rural Development and Land Administration
- Mpumalanga Department of Co-operative Governance and Traditional Affairs
- Mpumalanga Department of Community Safety, Security and Liaison
- Mpumalanga Department of Human Settlements
- Mpumalanga Department of Public Works, Roads and Transport
- Department of Water Resources – B11K
- South African Heritage Resources Agency
- SANRAL Northern Region
- Department of Health and Social Development
- Department of Health
- Department of Human Settlements
- Department of Mineral Resources

Copies of the notifications to the Interested and Affected Parties & Organs of State have been included in Appendix D1, and examples are included in Figures 18 and 19 below. Refer to figure 20 for a copy of the registered letter sent to SAHRA and figure 21 for a copy of the registered letter sent to an adjacent landowner.

5.3.2 Methods of notification

5.3.2.1 Advertisement(s)

The proposed project was advertised in a local newspaper, Beeld, on 6 March 2015. The Beeld was found to be the most appropriate newspaper in terms of its accessibility to the I&APs. A copy of the advertisement and proof of the placement thereof is attached in Appendix D2. Refer also to Figure 22 & 23 below.

5.3.2.2 Placement of site- and public notices

Notice was also given to Interested and Affected Parties (I&APs) by notice boards. Notice boards were placed at four (4) different, noticeable and conspicuous places on 6 March 2015 refer to table 22. A copy of the site notice and photographs of the site notices are attached in Appendix D3. Refer also to Figures 25 – 28 & figure 29 for location of site notices.

Table 22: Placement of site notices

Notice	Location	GPS co-ordinates
Site notice 1	545	S25° 48’ 41.6’’ E29° 11’ 03.8’’
Site notice 2	545	S 25°48'53.20" E29° 11’ 23.9’’
Site notice 3	D1126	S25° 48’ 42.2’’ E29° 13’ 16.3’’
Site notice 4	D1126	S25° 48’ 55.6’’ E29° 13’ 17.4’’

5.3.2.3 Background Information Document

The Background Information Document (BID) developed for the proposed project provides background information pertaining to the project and is intended to inform I&APs of the proposed project. The BID also includes a registration form which I&APs, stakeholders and organs of state are encouraged to complete in order to register as an I&AP for the proposed project.

The BID was made available on 6 March 2015 to all landowners within and surrounding the site on which the proposed project will be undertaken, as well as to all organs of state that may have jurisdiction over any aspect of the activity. The BID was also made available to other persons who became involved in the on-going Public Participation Process refer to figure 21 for proof of hand deliveries.

Copies of the BID and proof of distribution of the BID to the adjacent landowners and organs of state have been attached as Appendix D4.

SHANGONI
Management Services (Pty) Ltd

Shangoni Management Services Pty (Ltd)
Reg: 2002/000002/07 VAT: 4910191060

Tel +27(0)12 807 7036 Fax +27(0)12 807 1014
E-mail info@shangoni.co.za www.shangoni.co.za
Block C8, Block@Nature 472 Botterklapper Street The Willows 0081
PO Box 74726 Lynnwood Ridge 0040

26 February 2015

Ref Nr: 17/2/3N-419; SMS REF: KOR-EMA-13-12-02

Email: borisabenic@gmail.com

Dear Mr Boris Benic,

NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION FOR THE PROPOSED TOWNSHIP DEVELOPMENT PROJECT FOR SAROVIC INVESTMENTS CC

You are hereby notified that an application for environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 Of 1998) Environmental Impact Assessment Regulations, 2014 (EIA) Regulations of 2014 (regulations in terms of section 44 of the National Environmental Management, 1998 (Act No. 107 of 1998), as amended (NEMA), has been lodged with the Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA) and an application for a water use license (WULA) in terms of Section 21 of the National Water Act no. 36 of 1998 (NWA) will be lodged with the Department of Water Affairs (DWA).

Applicant: Sarovic Investments CC
Project Name: Township Establishment on Remaining Extent of Portion 79 of the farm Blesbokkiaagte 296 JS and Portion 0 (remaining extent) of the farm Leeuwpoort 283 JS, Mpumalanga
Project Location: Portion 79 of the farm Blesbokkiaagte 296 JS and Portion 0 of the farm Leeuwpoort 283 JS, Mpumalanga
Environmental Authorisation Application Process Reference Number: 17/2/3N-419

Project Description:
The site is located on the remaining extent of Portion 79 of the farm Blesbokkiaagte 296 JS as well as the remaining extent of Portion 0 of the farm Leeuwpoort 283 JS in the Mpumalanga Province. This land is currently zoned for agricultural use.

The project involves the establishment of a Mixed Residential Township across two properties. The project will commence in different phases. The development on the remaining extent of Portion 79 of the farm Blesbokkiaagte 196 JS will occur in four phases, while the development of Portion 0 (remaining extent) of the farm Leeuwpoort 283 JS will occur in ten phases. The development will include the provision of bulk services including electricity, water, stormwater and sewage systems and the construction of roads.

A Background Information Document (BID) and Registration Form are also attached to this letter in order to provide more detail with regards to the proposed project and so that persons may register as I&AP's for the proposed project, should they so wish.

Invitation to participate: Should you wish to be registered as an Interested and Affected Party (I&AP) or comment on the above-mentioned project and application process, please submit a completed Registration Form (attached to this letter) or your name, contact information, and interest in the matter, in writing, to the contact person below, by no later than 9 April 2015.

Where to obtain more information: To obtain additional information please contact the Environmental Assessment Practitioner at the details provided below.

Environmental Assessment Practitioner:
Shangoni Management Services (Pty) Ltd
PO Box 74726, Lynnwood Ridge, Pretoria, 0040
Contact Person: **Lee-Anne Fellowes**
Tel: 012 807 7036, Cell: 082 456 3208, Fax: 012 807 1014/086 639 7956, E-mail: leeanne@shangoni.co.za
For online participation go to www.shangoni.co.za and click on the "Public Documents" link.

Regards,

Lee-Anne Fellowes
Shangoni Management Services

Figure 18: Example of letter sent to I&AP's

SHANGONI
Management Services (Pty) Ltd

Shangoni Management Services Pty (Ltd)
Reg: 2002/030002/07 VAT: 4891019 1060
Tel +27(0)12 807 7036 Fax +27(0)12 807 1014
E-mail info@shangoni.co.za www.shangoni.co.za
Block C8, Block@Nature 472 Botterklapper Street The Willows 0081
PO Box 74726 Lynnwood Ridge 0040

26 February 2015

Ref Nr: 17/2/3N-419; SMS REF: KOR-EMA-13-12-02

Department of Mineral Resources
Private Bag X7279
Emalahleni
1035

Email: Aubrey.Tshivhandekano@dmr.gov.za / Lydia.Maphopha@dmr.gov.za

Dear Mr A Tshivhandekano

NOTICE OF APPLICATION FOR ENVIRONMENTAL AUTHORISATION FOR THE PROPOSED TOWNSHIP DEVELOPMENT PROJECT FOR SAROVIC INVESTMENTS CC

You are hereby notified that an application for environmental authorisation in terms of the National Environmental Management Act, 1998 (Act No. 107 Of 1998) Environmental Impact Assessment Regulations, 2014 (EIA) Regulations of 2014 (regulations in terms of section 44 of the National Environmental Management, 1998 (Act No. 107 of 1998), as amended (NEMA), has been lodged with the Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA) and an application for a water use license (WULA) in terms of Section 21 of the National Water Act no. 36 of 1998 (NWA) will be lodged with the Department of Water Affairs (DWA).

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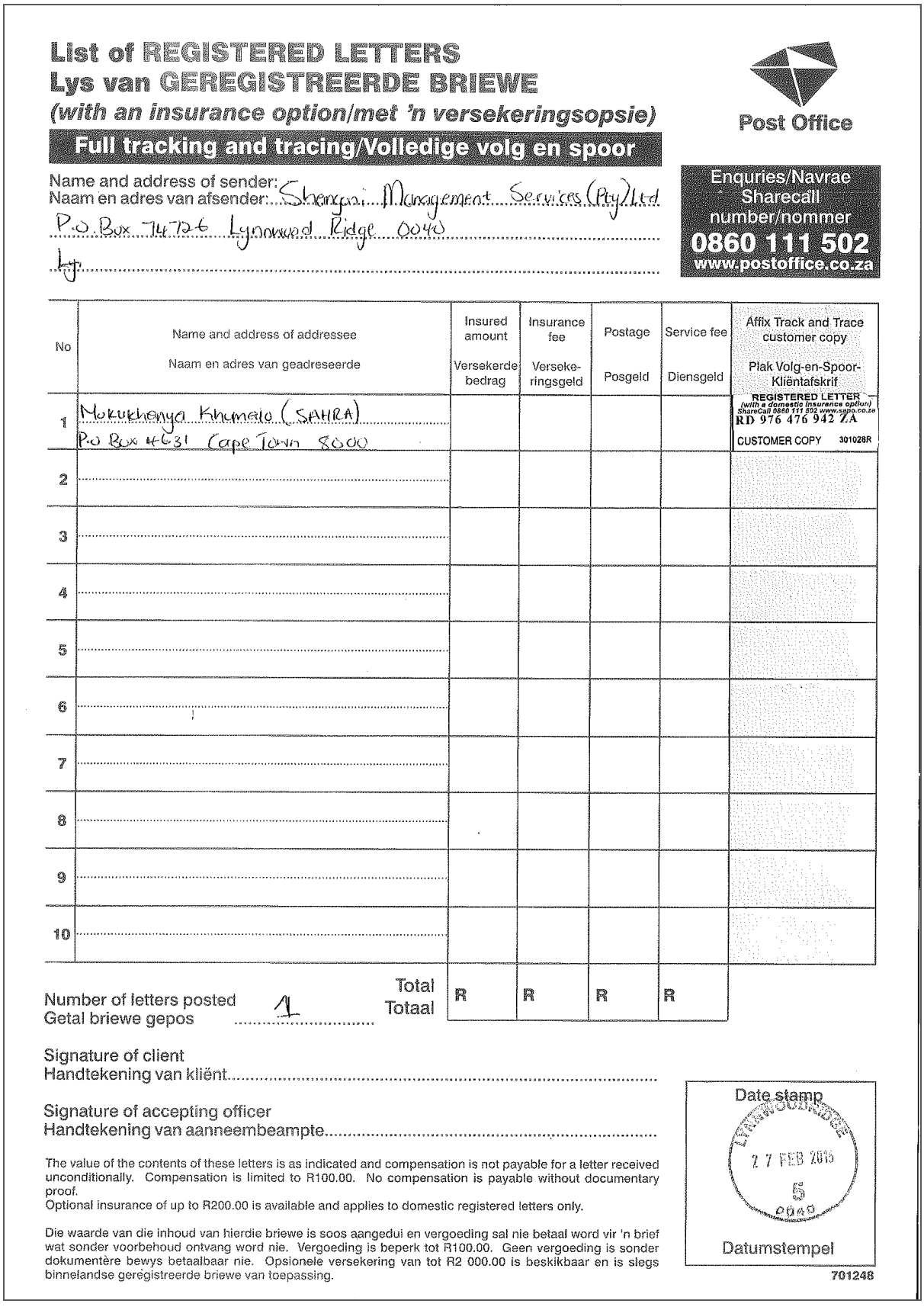
Environmental Assessment Practitioner:
Shangoni Management Services (Pty) Ltd
PO Box 74726, Lynnwood Ridge, Pretoria, 0040
Contact Person: **Lee-Anne Fellowes**
Tel: 012 807 7036, Cell: 082 456 3208, Fax: 012 807 1014/086 639 7956, E-mail: leeanne@shangoni.co.za
For online participation go to www.shangoni.co.za and click on the "Public Documents" link.

Regards,

Lee-Anne Fellowes
Shangoni Management Services

Figure 19: Example of letter sent to Organs of State



List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
(with an insurance option/met 'n versekeringsopsie)

Full tracking and tracing/Volledige volg en spoor

Post Office

Name and address of sender:
Naam en adres van afsender: Shangoni Management Services (Pty) Ltd
P.O Box 74726 Lynnwood Ridge 0040
Lg

Enquiries/Navrae Sharecall number/nommer
0860 111 502
www.postoffice.co.za

No	Name and address of addressee / Naam en adres van geadreseerde	Insured amount / Versekerde bedrag	Insurance fee / Versekeringsgeld	Postage / Posgeld	Service fee / Diensgeld	Affix Track and Trace customer copy / Plak Volg-en-Spoor-Kliëntafskrif
1	Mokukhanya Khumalo (SAHRA) P.O Box 4631 Cape Town 8000					REGISTERED LETTER (with a domestic insurance option) ShareCall 0860 111 502 www.sapo.co.za RD 976 476 942 ZA CUSTOMER COPY 301028R
2						
3						
4						
5						
6						
7						
8						
9						
10						
	Total / Totaal	R	R	R	R	

Number of letters posted / Getal briewe gepos: 1

Signature of client
Handtekening van kliënt.....

Signature of accepting officer
Handtekening van aanneembeampte.....

Date stamp
LYNNWOODRIDGE
27 FEB 2015
5
0040
Datumstempel

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100.00. No compensation is payable without documentary proof.
Optional insurance of up to R200.00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100.00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000.00 is beskikbaar en is slegs binnelandse geregistreerde briewe van toepassing.

701248

Figure 20: Proof of registered post – Organs of State

List of REGISTERED LETTERS
Lys van GEREGISTREERDE BRIEWE
(with an insurance option/met 'n versekeringsopsie)
Full tracking and tracing/Volledige volg en spoor

Post Office

Name and address of sender:
Naam en adres van afsender: Lee-Anne Fellows
472 Botterklapper Street, The Willows 0051

Enquiries/Navrae
Sharecall number/nommer
0860 111 502
www.postoffice.co.za

No	Name and address of addressee / Naam en adres van geadreseerde	Insured amount / Versekerde bedrag	Insurance fee / Versekeringsgeld	Postage / Posgeld	Service fee / Diensgeld	Affix Track and Trace customer copy / Plak Volg-en-Spoor-Kliëntafskrif
1	MR MASINGA HENDRIK MOTHANA 5605 MPANDE STREET WITBANK/1034					REGISTERED LETTER (with a domestic insurance option) RD 976 477 801 ZA A BOOK COPY
2						
3						
4						
5						
6						
7						
8						
9						
10						
	Total / Totaal	R	R	R	R	

Number of letters posted / Getal briewe gepos: x 1

Signature of client / Handtekening van kliënt:

Signature of accepting officer / Handtekening van aanneembeampte:

LYNNWOODRIF Date stamp 20 MAR 2015 2 0040

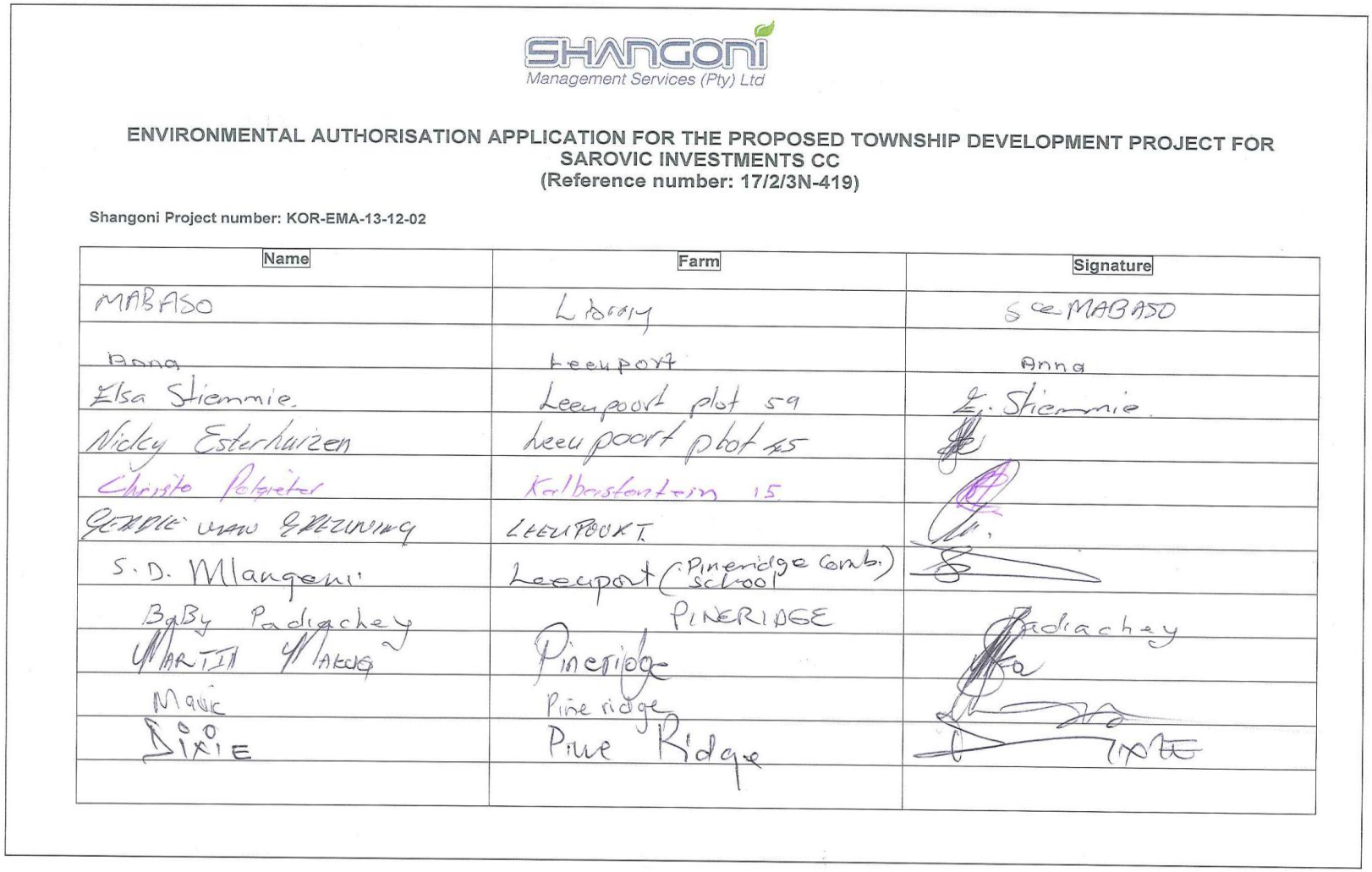
Datumstempel

The value of the contents of these letters is as indicated and compensation is not payable for a letter received unconditionally. Compensation is limited to R100.00. No compensation is payable without documentary proof.
Optional insurance of up to R200.00 is available and applies to domestic registered letters only.

Die waarde van die inhoud van hierdie briewe is soos aangedui en vergoeding sal nie betaal word vir 'n brief wat sonder voorbehoud ontvang word nie. Vergoeding is beperk tot R100.00. Geen vergoeding is sonder dokumentêre bewys betaalbaar nie. Opsionele versekering van tot R2 000.00 is beskikbaar en is slegs binnelandse geregistreerde briewe van toepassing.

701248

Figure 21: Registered postage – adjacent landowners



SHANGONI
Management Services (Pty) Ltd

ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE PROPOSED TOWNSHIP DEVELOPMENT PROJECT FOR SAROVIC INVESTMENTS CC
(Reference number: 17/2/3N-419)

Shangoni Project number: KOR-EMA-13-12-02

Name	Farm	Signature
MABASO	Leeuport	S e-MABASO
Anna	Leeuport	Anna
Elsa Stiemmie	Leeupoort plot 59	E. Stiemmie
Nicky Esterhuizen	leeupoort plot 45	
Christo Potgieter	Kalbasfontein 15	
GEORGE VAN ERKOM	LEEUPOORT	
S. D. Mlangeni	Leeuport (Pineridge Comb. School	
BaBy Padiachey	PINERIDGE	Padiachey
MARTIN MAKUS	Pineridge	
Mavic	Pine ridge	
DIXIE	Pine Ridge	

Figure 22: Proof of Hand delivery letters


Vrydag 6 Maart 2015 **Beeld** Veilings 1

Regskennisgewings

REGSKENNISGEWINGS & TENDERS

BE ACTIVE FINANCIAL SERVICES CC/VIPER SECURITY CC

EGSKEIDING/ HUWELIKSKONTRAKTE/ MOSIES

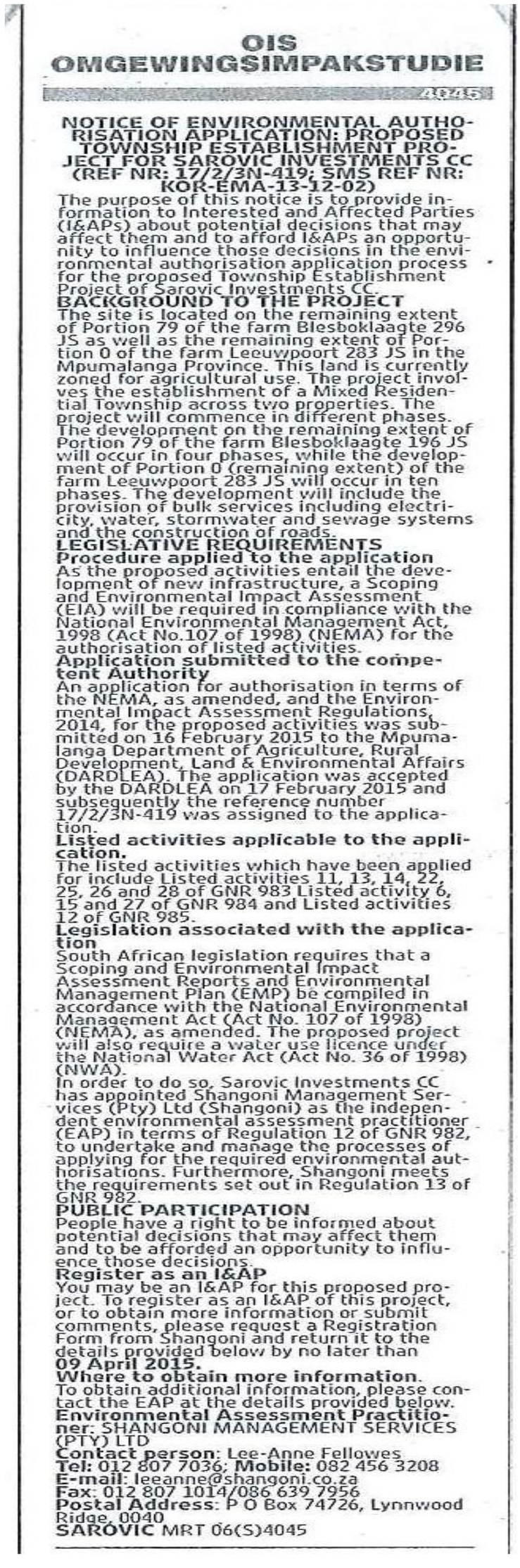
KUNGA GRANITE/HILTON ROCK PROPERTY

OIS OMGEWINGSIMPAKSTUDIE

DORPS-BEPLANNING

DRANKLISENSIES

Figure 23: Proof of placement of advert in the Beeld Newspaper



OIS
OMGEWINGSIMPAKSTUDIE

NOTICE OF ENVIRONMENTAL AUTHORISATION APPLICATION: PROPOSED TOWNSHIP ESTABLISHMENT PROJECT FOR SAROVIC INVESTMENTS CC (REF NR: 17/2/3N-419; SMS REF NR: KOR-EMA-13-12-02)

The purpose of this notice is to provide information to Interested and Affected Parties (I&APs) about potential decisions that may affect them and to afford I&APs an opportunity to influence those decisions in the environmental authorisation application process for the proposed Township Establishment Project of Sarovic Investments CC.

BACKGROUND TO THE PROJECT

The site is located on the remaining extent of Portion 79 of the farm Blesboklaagte 296 JS as well as the remaining extent of Portion 0 of the farm Leeuwpoort 283 JS in the Mpumalanga Province. This land is currently zoned for agricultural use. The project involves the establishment of a Mixed Residential Township across two properties. The project will commence in different phases. The development on the remaining extent of Portion 79 of the farm Blesboklaagte 196 JS will occur in four phases, while the development of Portion 0 (remaining extent) of the farm Leeuwpoort 283 JS will occur in ten phases. The development will include the provision of bulk services including electricity, water, stormwater and sewage systems and the construction of roads.

LEGISLATIVE REQUIREMENTS

Procedure applied to the application

As the proposed activities entail the development of new infrastructure, a Scoping and Environmental Impact Assessment (EIA) will be required in compliance with the National Environmental Management Act, 1998 (Act No.107 of 1998) (NEMA) for the authorisation of listed activities.

Application submitted to the competent Authority

An application for authorisation in terms of the NEMA, as amended, and the Environmental Impact Assessment Regulations, 2014, for the proposed activities was submitted on 16 February 2015 to the Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA). The application was accepted by the DARDLEA on 17 February 2015 and subsequently the reference number 17/2/3N-419 was assigned to the application.

Listed activities applicable to the application.

The listed activities which have been applied for include Listed activities 11, 13, 14, 22, 25, 26 and 28 of GNR 983 Listed activity 6, 15 and 27 of GNR 984 and Listed activities 12 of GNR 985.

Legislation associated with the application

South African legislation requires that a Scoping and Environmental Impact Assessment Reports and Environmental Management Plan (EMP) be compiled in accordance with the National Environmental Management Act (Act No. 107 of 1998) (NEMA), as amended. The proposed project will also require a water use licence under the National Water Act (Act No. 36 of 1998) (NWA).

In order to do so, Sarovic Investments CC has appointed Shangoni Management Services (Pty) Ltd (Shangoni) as the independent environmental assessment practitioner (EAP) in terms of Regulation 12 of GNR 982, to undertake and manage the processes of applying for the required environmental authorisations. Furthermore, Shangoni meets the requirements set out in Regulation 13 of GNR 982.

PUBLIC PARTICIPATION

People have a right to be informed about potential decisions that may affect them and to be afforded an opportunity to influence those decisions.

Register as an I&AP

You may be an I&AP for this proposed project. To register as an I&AP of this project, or to obtain more information or submit comments, please request a Registration Form from Shangoni and return it to the details provided below by no later than **09 April 2015.**

Where to obtain more information.

To obtain additional information, please contact the EAP at the details provided below.

Environmental Assessment Practitioner: SHANGONI MANAGEMENT SERVICES (PTY) LTD
Contact person: Lee-Anne Fellowes
Tel: 012 807 7036; **Mobile:** 082 456 3208
E-mail: leeanne@shangoni.co.za
Fax: 012 807 1014/086 639 7956
Postal Address: P O Box 74726, Lynnwood Ridge, 0040
SAROVIC MRT 06(S)4045

Figure 24: Enlarged advert from the Beeld

Figure 25: Site notice 1

Figure 26: Site notice 2

Figure 27: Site notice 3

Figure 28: Site notice 4

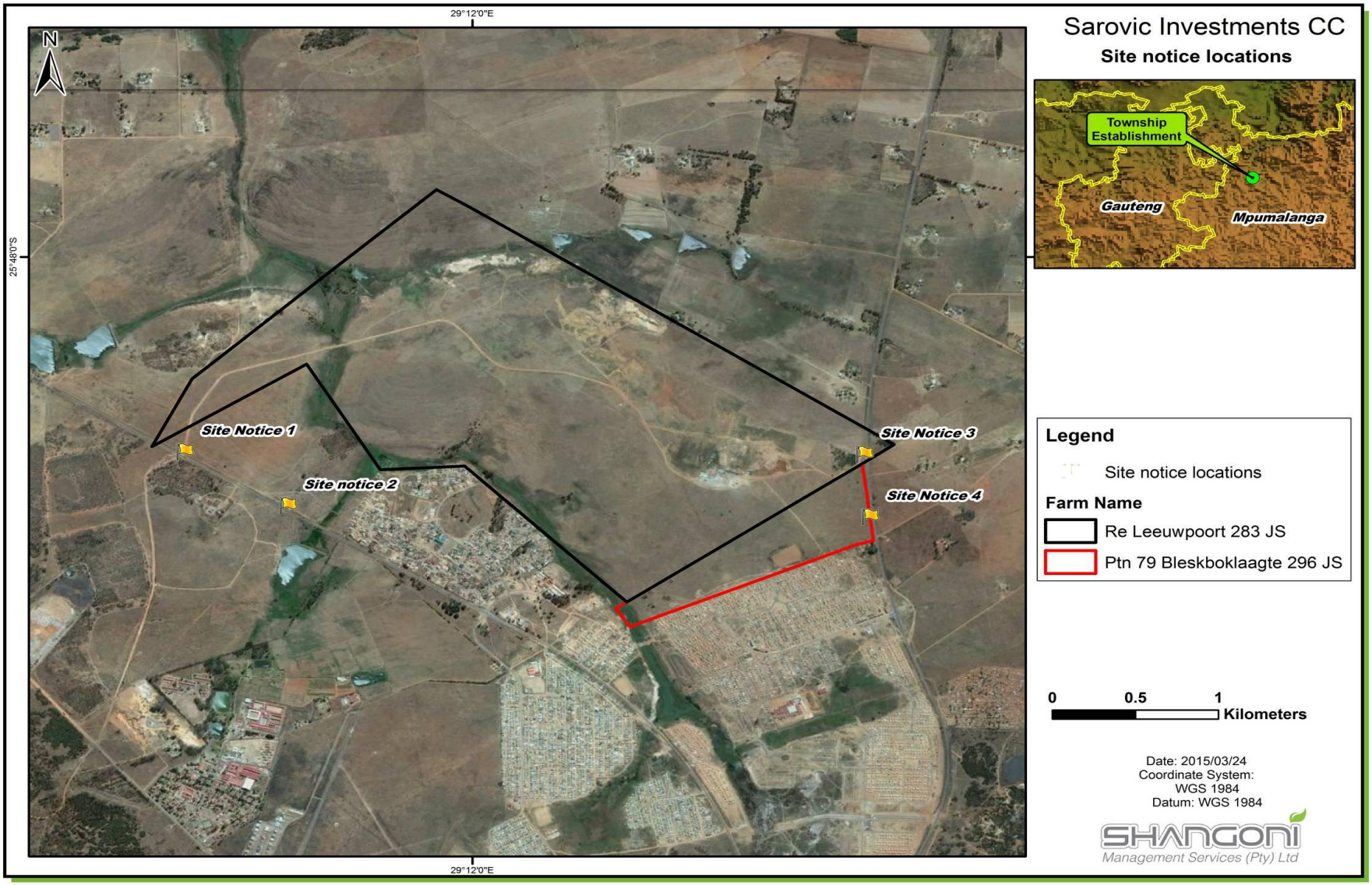


Figure 29: Location of site notices

5.3.3 I&AP's register

Once all landowners, adjacent landowners, organs of state and the public were notified of the proposed project, and I&AP's register (as provided in Appendix D5) was compiled. Table 23 below provides an extract of the I&AP's Register indicating the organs of state and other I&AP's that have been registered.

Table 23: Registered I&AP's

No	Name	Farm/Association	Postal Address	Physical Address	Contact Details	Contact
1.	Mr Mathe Boetie	Nkangala District Municipality	PO Box 437 Middelburg 1050	2A Walter Sisulu Street Middelburg 1050	Tel: 013 249 2134 Cell: 082 072 9790 Email:matheb@nkangaladm.org.za	Organ of State
2.	Cllr Salome Sithole	Emahlaleni Local Municipality	PO Box 3 eMalahleni 1035	Civic Centre Cnr Mandela & Arras Streets eMalahleni 1035	Municipal Building, President Street eMalahleni 1035 Tel: +27 13 690 6208 Fax: +27 13 690 6479 E-mail: gumedesh@emalahleni.gov.za	Organ of State
3.	Cllr. T Pookgoadi Ward 12 Councillor	Emahlaleni Local Municipality	PO Box 3 eMalahleni 1035	Civic Centre Cnr Mandela & Arras Streets eMalahleni 1035	Municipal Building, President Street eMalahleni 1035 Tel: +27 13 690 6208 Fax: +27 13 690 6479 E-mail:	Organ of State
4.	Cllr. P Mashiane Ward 15	Emahlaleni Local Municipality	PO Box 3 eMalahleni 1035	Civic Centre Cnr Mandela & Arras Streets	Municipal Building, President Street eMalahleni	Organ of State

No	Name	Farm/Association	Postal Address	Physical Address	Contact Details	Contact
	Councillor			eMalahleni 1035	1035 Tel: +27 13 690 6208 Fax: +27 13 690 6479 E-mail:	
5.	Mr C.H.P. Kleynhans	Mpumalanga Department of Agriculture, Rural Development and Land Administration	Private Bag X11219 Nelspruit 1200		Tel: 013 759 4000 Fax: Email: tkleynhans@mpg.gov.za	Organ of State
6.	Mr Jan Venter	Mpumalanga Department of Agriculture, Rural Development and Land Administration	Private Bag X11219 Nelspruit 1200		Email: jv16@telkomsa.net jventer@mpg.gov.za	Organ of State
7.	Cain Mfana Chunda	Mpumalanga Department of Co-operative Governance and Traditional Affairs	Private Bag X11304 Nelspruit 1200		Tel: 013 766 6087/6675 Cell: 082 338 9881 Fax: 013 766 8441/2 Email: Chundacm@mpg.gov.za	Organ of State
8.	Mr. William	Mpumalanga	Private Bag		Tel: 013 766 4600	Organ of State

No	Name	Farm/Association	Postal Address	Physical Address	Contact Details	Contact
	Mthombothi	Department of Community Safety, Security and Liaison	X11269 Nelspruit 1200		Fax: 013 766 8422 Email: williamm@mpg.gov.za	
9.	Mr. Masange Kebone	Mpumalanga Department of Human Settlements	Private Bag X11328 Nelspruit 1200		Tel: 013 766 6806 Fax: 013 766 8430 Email:ntzulu@mpg.gov.za	Organ of State
10.	Mr Kgopana Mathew Mohlasedi	Mpumalanga Department of Public Works, Roads and Transport	Private Bag X11310 Nelspruit 1200		Tel: 013 766 6696 Fax: 013 766 8449 Email: kmohlasedi@mpg.gov.za	Organ of State
11.	Ms Adivhaho Rambuda	Department of Water Resources – B11K	Private Bag X10580 Bronkhorstspruit 1020	22 Rooth Street Bronkhorstspruit 1020 (can also be used for postage)	Tel: 013 932 2061 Email: rambudaa@dwa.gov.za	Organ of State
12.	Nokukhanya Khumalo	South African Heritage Resources Agency	PO Box 4637 Cape Town 8000		Tel: 021 462 4502 Fax: 021 462 4509	Organ of State

No	Name	Farm/Association	Postal Address	Physical Address	Contact Details	Contact
13.	Mr Jan Olivier	SANRAL Northern Region	Private Bag X17 Lynnwood Ridge 0040		Tel: 012 426 6200 Fax: 012 348 1512 E-mail: info@nra.co.za	Organ of State
14.	Mr M.R. Mnisi	Department of Health and Social Development	Private Bag X11285 Nelspruit 1200		Tel: 013 766 3429/30/28 Fax: 013 766 3458 Email:florencekh@social.mpu.gov.za	Organ of State
15.	Mrs. C. Swart	Department of Health	Private Bag X11285 Nelspruit 1200		Tel: 013 766 3448 Fax: 013 766 3473 Cell: 082 820 7950 Email: CareenS@social.mpu.gov.za	Organ of State
16.	Mr Kebone Masange	Department of Human Settlements	Private Bag X11328 Nelspruit 1200		Tel: 013 766 6233 Fax: 013 766 8430 Email: masangek@mpg.gov.za	Organ of State
17.	Mr A Tshivhandekano (Secretary: Ms L Maphopha)	Department of Mineral Resources	Private Bag X7279 Emalahleni 1035		Tel: 013 653 0500 Fax: 013 690 3288 Email: Aubrey.tshivhandekano@dmr.gov.za (Secretary: lydia.maphopha@dmr.gov.za)	Organ of State
18.	Mr Boris Benic	Portion 76 of the farm 283			082 338 3054 Borisabenic@gmail.com	Landowner

No	Name	Farm/Association	Postal Address	Physical Address	Contact Details	Contact
		Malo Selo (Pty) Ltd				
19.	Masinga Hendrik Mothaisa	Portion 13 of 283		5605 Mpande St, Lynnville, Witbank 1034		Landowner
20.	Molokomme and associates Joseph Maluleke	Leeuwpoort 283 JS (prospecting right granted)	P.O. Box 72313 Lynwood Ridge 0040	25B Gold Circle Lytellton Manor ext 11 Centurion 0046	082 804 0579 076 5074200 Josephm@roothwessels.co.za nadiap@roothwessels.co.za **Send all correspondence to info@ferretmining.co.za**	Landowner
21.	Smith Broers Trust	Portion 1 of 283 Portion 0 of 377			Vian Lambrecht (son in law) 082 388 3389 (Gert Smith) 082 388 3387 office@smithfarm.co.za	Landowner
22.	Tunalengana Property Developers CC	Portion 1 of the farm 414				Landowner
23.	Government land	Portion 7 of the farm 283				Landowner
24.	Pine Ridge	Portion 26 of the				Landowner

No	Name	Farm/Association	Postal Address	Physical Address	Contact Details	Contact
		farm 283				
25.	ABSA Property Developers	RE 153 of the farm 296 RE 153 of the farm 296			Pottie Potgieter 012 842 8700 083 675 1338	Landowner
26.	Hendrika Paterson	Portion 167 of the farm 296				Landowner
27.	Marabe Erustus	Portion 197 of the farm 296				Landowner
28.	Witbank Municipality Cllr Salome Sithole	Portion 197 of the farm 296 belongs to the Emahlaleni Local Municipality	PO Box 3 eMalahleni 1035	Civic Centre Cnr Mandela & Arras Streets eMalahleni 1035	Municipal Building, President Street eMalahleni 1035 Tel: +27 13 690 6208 Fax: +27 13 690 6479 E-mail: langaam@emalahleni.gov.za	Landowner
29.	Jacobus Frederick van Dyk	Portion 75 of the farm 283			076 375 4912 himo@mweb.co.za info@komakietievenues.co.za	Landowner
30.	Deiner Alexander Charles Wolf	Portion 11 of the farm 283			0836255167 acdeiner@mweb.co.za	Landowner

No	Name	Farm/Association	Postal Address	Physical Address	Contact Details	Contact
	(Charles Deiner)					
31.	Louw Family Trust	Portion 84 of the farm 283				Landowner
32.	Jan Louw	Portions 1, 7, 13, 14 Klippoort 277			klippoort@mweb.co.za 0824607054	Landowner
33.	Paul Simela	Portion 15 of the farm 283			0767219428 Email: p.simelafarming@gmail.com	Landowner

5.3.4 Access and opportunity to comment on written submissions

The Scoping Report was made available to the public for review for a period of thirty (30) days, from 13 April – 14 May 2015 (excluding public holidays). Hard copies of the mentioned document have been made available at the Klarinet Library for the I&APs to view and a copy of the document was also submitted to DMR and DWA for review.

A register and comment sheet accompanied the hard copies at the public viewing station. An electronic copy of the Scoping Report was also posted on the Shangoni Management Services' website (www.shangoni.co.za) for public comment for the same period of 30 days.

All the registered I&APs were notified of the availability of the Scoping Report for public review by 10 April 2015. The I&APs were also informed to complete the register subsequent to reviewing the Scoping Report and also to submit any comments to Shangoni Management Services to the contact person below by no later than 15 May 2015.

EAP contact details: Lee-Anne Fellowes, Shangoni Management Services, P.O. Box 74726, Lynnwood Ridge, 0040, Cell: 082 456 3208 Tel: 012 807 7036 Fax 012 807 1014, e-mail: leeanne@shangoni.co.za.

5.3.5 Consultation with the relevant Authorities

5.3.5.1 Application form in terms of the NEMA

The applicable Environmental Authorisation application form under NEMA was submitted to the Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs (DARDLEA) on 16 February 2015. A reference number **17/2/3N-419** was issued by 25 February 2015 which referred to the 2010 EIA Regulations. The Department rectified the mistake and sent a second reference number **1/3/1/16/1N-3** also dated 25 February 2015. The letters of acknowledgement indicating the above mentioned reference numbers are attached as Appendix B.

5.3.6 Comments and responses

All issues, comments and questions received from the I&APs up to date have been summarised in Table 24 below. Copies of the comments received have also been included in Appendix D6.

Table 24: Comments and responses

Name of contact person	Company	Date	Method of comment	Issue raised	Response
Jan Oliver	The South African National Road Agency SOC Limited Northern Regional Office 38 Ida Street, Menlo Park, Pretoria	9 March 2015	E-mail	No national roads will be affected by the establishment of the proposed township. SANRAL therefore has no comments nor objection to the approval of the Environmental Authorization Application by the Mpumalanga Department of Agriculture, Rural Development, Land & Environmental Affairs. No further communication to SANRAL regarding the Environmental Authorization Applications is necessary. Please remove SANRAL from your list of Interested and Affected Parties.	Dear Jan, We hereby acknowledge receipt of your comments. We take cognisance that you want to be removed from the I&AP's list, however we cannot remove you from the I&AP's list as SANRAL is part of the EIA process but will limit any future correspondence to your Department. Regards
Charles Deiner	Adjacent landowner Portion 11 of the farm Leeuwpoort	11 March 2015	E-mail	Agricultural land draining into townships (dams and flooding potential), Access to property, Wetland areas what protection, sand quarries what will be done? Will they get bigger? I WOULD LIKE TO BE NOTIFIED OF	Dear Charles, We hereby acknowledge receipt of your comments and will be included in the Scoping Report. Regards

Name of contact person	Company	Date	Method of comment	Issue raised	Response
				MEETINGS FOR PUBLIC BENEFIT AND ANY PERSONS ENTERING MY PROPERTY.	

5.3.7 Conclusions of the PPP

In conclusion, the Public Participation exercise has provided adequate information to enable an understanding of what the proposed Mixed Residential Township activities would entail and to address the concerns and comments received during the scoping process.

6. IDENTIFIED ALTERNATIVES

The following definition of “alternatives” is given in the 2014 EIA Regulations:
"alternatives", in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the-
(a) property on which or location where the activity is proposed to be undertaken;
(b) type of activity to be undertaken;
(c) design or layout of the activity;
(d) technology to be used in the activity; or
(e) operational aspects of the activity;
and includes the option of not implementing the activity;

Typically, alternative assessments are conducted to assist in comparing various projects or attributes of projects that will occur. The most critical comparison is evaluating any proposed project against the No-Go option. The alternatives assessment then considers alternatives to project site selection for the proposed development; alternatives to layout of the development; and alternatives to construction methodologies and/or materials used for the development.

The alternatives assessment was conducted using a simple cost-benefit analysis of each proposed alternative, through assessing various environmental attributes. These attributes can include physical (geology and soils, surface water quality and quantity, groundwater quality and quantity); biophysical (flora and fauna, sensitive environments); and social attributes (site of archaeological or cultural importance, land use issues, social health and welfare).

The impact of the each alternative was then evaluated in terms of whether it has a positive, negative, or no impact. In this instance, the impact is not evaluated in terms of significance but rather whether or not it will arise. Positive impacts are assigned a value of 1; no impact a value of 0; and a negative impact a value of -1.

By adding all of the attribute scores for each alternative, a suitability score is derived that indicates the preferred alternative. A total positive score indicates the project benefits outweigh the potential negative impacts, while a total negative score indicates the project environmental costs outweigh the potential benefits. Essentially, the highest scoring alternative is then carried forward for full impact evaluation.

6.1 Alternatives considered

The Spatial Development Framework of Emalahleni, 2011 has earmarked the proposed property for Residential Expansion. Therefore there are no land use alternatives for the property.

However a potential technology alternative have been identified for the project in terms of sewerage:

a) Option 1: Gravity feed to Pine Ridge pump station
b) Option 2: New outfall sewer line to Klipspruit Water Works
c) The option of not implementing the activity (No-go).

6.2 Methodology Applied In Assessing Alternatives

6.2.1 Categories for Site Selection

Four categories have been selected for review of each selected option, which include Environmental, Technical/Engineering, Economical and Social. Criteria as used for the various categories are reflected in Table 25.

6.2.2 Criteria

Under the 4 selected categories, a number of criteria have been identified for assessment, as contained within Table 25.

Table 25: Site Selection Criteria

CRITERIA	CATEGORY			
	ENVIRONMENTAL /LEGAL	TECHNICAL /ENGINEERING	ECONOMICAL	SOCIAL
AIR QUALITY	X			
AQUATIC AND SURFACE WATER	X			
CULTURAL HERITAGE	X			
FAUNA	X			
FLORA	X			
GEOHYDROLOGY	X			
GEOLOGY	X			
NOISE	X			
SOIL	X			
TRAFFIC	X			
VIBRATION AND AIR BLAST	X			
VISUAL	X			
OTHER LEGAL REQUIREMENTS (E.G. WATER USE ACTIVITIES, EIA REQUIREMENTS ETC.)	X			
SENSE OF PLACE				X

SOCIAL LICENSE TO OPERATE				X
SOCIO-ECONOMIC				X
HAZARDS TO COMMUNITY, THEFT, HEALTH RISKS, ETC.				X
EASE OF INTEGRATION WITH PLANNED INFRASTRUCTURE		X		
SITE ACCESS		X		
CONSTRAINTS TO SITE LAYOUT		X		
CONSTRUCTION DURATION		X		
CONSTRUCTION RISKS		X		
OPERATIONAL RISKS		X		
CAPITAL COST (INCLUDING SITE ESTABLISHMENT/PREPARATION)			X	
OPERATING COST			X	
SITE REHABILITATION			X	

6.2.3 Assigning score

Under each of the four categories, by assessing the identified criteria, a score is assigned to each of the identified options (Between 1 and 3, with 3 being most favourable). The final score obtained for each of the option support decision on the most suitable for the proposed development.

6.2.4 Category Weighting

Table 26 contains the weighting as assigned to each category. The higher the weighting, the more important the category.

Table 26: Category Weighting

CATEGORY	Technology of sewer pipeline
ENVIRONMENTAL/LEGAL	0.50
SOCIAL	0.10
TECHNICAL/ENGINEERING	0.50
ECONOMICAL	0.10

6.2.5 Criteria Weighting

The following table contains the weighting as assigned to each criteria. The higher the weighting, the more significant the criteria.

Table 27: Criteria Weighting[1]

MAJOR CRITERIA	Technology of sewer pipeline
AIR QUALITY	2
AQUATIC AND SURFACE WATER	4
CULTURAL HERITAGE	2
FAUNA	4
FLORA	4
GEOHYDROLOGY	3
GEOLOGY	3
NOISE	2
SOIL	3
TRAFFIC	2
VIBRATION AND AIR BLAST	1
VISUAL	3
OTHER LEGAL REQUIREMENTS (E.G. WATER USE ACTIVITIES, EIA REQUIREMENTS ETC.)	3
SENSE OF PLACE	3
SOCIAL LICENSE TO OPERATE	2
SOCIO-ECONOMIC	2
HAZARDS TO COMMUNITY, THEFT, HEALTH RISKS	2
EASE OF INTEGRATION WITH PLANNED INFRASTRUCTURE	3
SITE ACCESS	3
CONSTRAINTS TO SITE LAYOUT	3
CONSTRUCTION DURATION	2
CONSTRUCTION RISKS	2
OPERATIONAL RISKS	3
CAPITAL COST (INCLUDING SITE ESTABLISHMENT/ PREPARATION)	3
OPERATING COST	3
SITE REHABILITATION	2

[1] Assigning a criteria weighting should not be viewed as the overall importance or significance placed on such criteria, but how strongly such criteria may influence a specific alternative assessment in context to other criteria.

6.2.6 Calculating Score

6.2.6.1 Initial score

An initial score is assigned to each of the options, for each of the criteria identified. As this is a comparative analysis, a score of 1, 2 and 3 is assigned, where 1 is least favourable, and 3 being most favourable. In event where all options have similar favourability, a score of 3 is assigned to all sites. Where only two alternatives are assed a score of either 1 (least favourable) or 2 (most favourable) is assigned.

6.2.6.2 Assigning weighting

The weighting value of the assessed criteria is multiplied with the initial score allocated to each option for every criteria assessed, which is added to obtain a final score to be reflected under the four categories. Final values to be reflected as percentage of maximum score.

6.2.6.3 Final score

The final score for each of the options is obtained by multiplying the % score for each category by the assigned weighting and adding the respective scores (as obtained for each category) to reach a final value for each option. The higher the % value, the more favourable the option.

6.3 Outcome of the Site Selection Matrix

6.3.1 Alternatives in terms of the Mixed Residential Township sewerage disposal

The comparative assessment of the various options have been assessed in terms of four categories which include Environmental, Technical/Engineering, Economical and Social and the outcome of the assessment is reflected in Table 28.

Table 28: Comparative review – Alternatives in terms of sewerage disposal

	Option 1: Gravity feed to Pine Ridge pump station	Option 2: New outfall sewer line to Klipspruit Works
Environmental	36.11%	53.70%
Social	33.33%	51.85%
Technical	37.50%	60.42%
Economic	33.33%	58.33%
Final Score	**43.47%**	**68.08%**

Based on the comparative assessment in terms of the Environmental, Technical/Engineering, Economical and Social categories, option 2 - New outfall sewer line to Klipspruit Works has received the highest comparative Score at 68.08%. Technically and economically this site will be the most suitable for the project.

6.4 No-go option

No-Go option

The potential impact of the preferred project option on environmental and socio-economic attributes identified during the assessment phase is evaluated against the potential impact of the No-Go option on the same attributes. The summary of this assessment is provided in Table 29 below.

Table 29: **Development vs. No-Go option**

Attribute	Development Option	No-go Option
Physical environment		
Air Pollution	Negative impact	No impact
Noise Pollution	Negative impact	No impact
Water Quality	Negative impact	No impact
Visual Aesthetics	Negative impact	No impact
Biophysical environment		
Fauna and Flora	Negative impact	No impact
Wetlands	Negative impact	No impact
Social environment		
Traffic	Negative impact	No impact
Safety and security	Positive impact	No impact
National and regional economy	Positive impact	Negative impact
Infrastructure development	Positive impact	Negative impact

From the information presented in Table 29 it can be seen that the development option will result in more negative impacts than the no-go option. It must once again be stated that this is not a weighted assessment but an indication of the potential impacts based on the activities identified for the project.

The No-Go versus Development alternative will be further investigated during the EIA Phase.

6.5 Concluding statement

The preferred technological alternative is option 2 a new outfall sewer line to the existing Klipspruit Works.

7. NEED AND DESIRABILITY FOR THE ACTIVITY

The need for and desirability of an proposed activity must specifically and explicitly be addressed throughout the EIA process (screening, "scoping", and assessment) when dealing with individual impacts and specifically in the overall impact summary by taking into account the answers to inter alia the following questions as per the GN 891 of 2014 integrated environmental management guideline series 9 guideline on need and desirability in terms of the 2014 EIA regulations as published on the 20th of October 2014.

Table 30 is an extract from the Need and desirability of the activity as per the Basic Assessment application form dated 8 December 2014. Relevant project information was filled in pertaining to the proposed Mixed Residential Township.

Table 30: Need and desirability of the activity as per the Basic Assessment form dated 8 December 2014

1. Is the activity permitted in terms of the property's existing land use rights?	NO	
The property is vacant at present and has been used for grazing previously and currently zoned as Agriculture. Korsmans & Associates has commenced with an application for the establishment of a proposed township in terms of Section 96(3) read with Section 69(6) of the Town Planning and Townships Ordinance, 1986 (Ordinance 15 of 1986), on the Remaining Extent of Portion 79 (a portion of Portion 4) of the Farm Blesboklaagte 296, JS province of Mpumalanga. The proposed township will be known as PINE RIDGE EXTENSION 1 - 4,		
2. Will the activity be in line with the following?		
(a) Provincial Spatial Development Framework (PSDF)	YES	
The site is located in an area that has been identified as Strategic Development Areas (Residential Expansion) SDF of Emalahleni Local Municipality 2011		
(b) Urban edge / Edge of Built environment for the area	YES	
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	

According to the **IDP of Emalahleni 2013/2014** there is a high number of informal settlements and housing backlog. In order to improve the current housing situation we are faced with the following actions need to be taken:

1. Resuscitate the application process for accreditation;
2. Construction of low cost housing (RDP) / Social housing;
3. Upgrading of hostels;
4. Develop a housing needs register.

Seven areas within Emalahleni have been identified as major functional areas for the development of housing and will cater for the informal settlements. This is the first step in the Informal Settlement Formalization Program.

"These areas are:

- *Lynnville;*
- *Kwa-Ququa/Hlalanikahle;*
- ***Pineridge / Klarinet;***
- *South Eastern Suburbs;*
- *Phola;*
- *Ga-Nala / Rietspruit;*
- *Van Dyksdrift / Emagalasini.*

The basic principle is that each of these areas should, as far as possible, cater locally for the local housing needs – either by way of in-situ upgrading and/or local relocations" (IDP Emalahleni: Informal settlements. 2013/2014: 139).

Final Draft 2014/2015 IDP for Emalahleni

"The Pine Ridge and Klarinet areas are not affected that extensively by undermining, but have poorlinkages to the rest of the eMalahleni urban area. Residential expansions of approximately 7 000 erven around Klarinet are currently being planned, with an average erf size of approximately 300 m2. The planning is done by way of a framework plan for the Klarinet, Pine Ridge and Blesboklaagte area. Lynnville, Kwa-Guqa, Pine Ridge and Phola all serve as dormitory residential areas and are completely reliant on Emalahleni for the purchase of goods and services, and necessitate high levels of commuting to and from Emalahleni.

(d) Approved Structure Plan of the Municipality	YES	
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	

(f) Any other Plans (e.g. Guide Plan)		NO	
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES		
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES		
According to the IDP of Emalahleni 2013/2014 there is a high number of informal settlements and housing backlog. This development will assist with the backlog.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? *A copy of this report will be sent to the Emalahleni Local Municipality for their inputs.*	YES		

Yes, except in terms of electricity. Approximately 6500kVA is required for Blesboklaagte. Preliminary electricity input requests were lodged with the Emalahleni Municipality during October of 2011. Due to the magnitude of the capacities required (approximately 6, 5 MVA) an application for an electricity supply input has not yet been submitted. Meetings were held with representatives of the Electrical Department of Emalahleni Municipality on 26 March 2014 and again on 15 April 2014. During these meetings Buro Tech were informed that capacities are not yet available. This is due to the fact that only one supply overhead line has been constructed from Eskom's Hlalanikahle Substation to Klarinet substation which feeds the Blesboklaagte Development Areas. This capacity is already reserved for, and consumed by, the adjacent Absa Housing Development. A second line will also be constructed in the near future with a capacity of 16-18MVA, but is also be reserved for the second Phase of the Absa Development. The new Empumelelweni Development will consume all spare capacity that may be still available at Eskom's Hlalanikahle Substation. In view of the above circumstances Emalahleni Municipality will not able to supply the required capacity for Blesboklaagte (and or Leeuwpoort) presently, or in the near future. Buro Tech was advised to inform the Developer that Eskom must be approached for the electrical supply required for the development. A discussion was held on site with the Eskom representative for the Area. It could not be firmly concluded that Eskom will be able to fulfill the supply requirements. The process is now initiated to obtain a Letter from the Emalahleni Municipality, providing official permission to Eskom to supply electricity in their area of Jurisdiction and Supply License. Thus, to conclude, it is not a certainty that power is available at this stage in the short term. If and when it becomes available, it will have to be applied for in Phases, to limit the magnitude and to prevent putting the existing (and future) networks under pressure. Adequate power should be available with the new primary substation to be built by Eskom (CESA Proposed Township Development Of Pine Ridge X 1 To 4 On Portion 79 Of The Farm Blesboklaagte, 296-Js Electricity Bulk Supply – Basic Outline Services Report Date: 2014-05 08, Version 1).		
6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? *A copy of this report will be sent to the Emalahleni Local Municipality for their inputs.*	YES	
7. Is this project part of a national programme to address an issue of national concern or importance?	YES	

8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES		
9. Is the development the best practicable environmental option for this land/site?	YES		
The land is currently been used for grazing and sand mining and has no other uses besides residential township establishment.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES		
Refer to part 8 where the impacts are identified.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES		
Pine Ridge is located west of the proposed development. This development is an extension of Pine Ridge.			
12. Will any person's rights be negatively affected by the proposed activity/ies?		NO	
No person's rights will be negatively affected by the proposed activities. In fact jobs will be created in the construction phase which will benefit them.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?		NO	
14. Will the proposed activity/ies contribute to any of the 17 Strategic Integrated Projects (SIPS)?	YES		
The proposed activities are in line with Mpumalanga (SIP 4) such as the Klarinet integrated housing project & SIP 18 Sanitation and Water.			
15. What will the benefits be to society in general and to the local communities?	Please explain		
In general the benefits to society will be additional housing and job creation.			
16. Any other need and desirability considerations related to the proposed activity?	Please explain		
Refer to 7.1 – 7.3 of part 7 of this report. Reference is made to the developer, local community, and district and provincial benefit.			
17. How does the project fit into the National Development Plan for 2030?	Please explain		
The project fits into the National Development Plan (NDP) as the NDP aims to eliminate poverty and reduce inequality by 2030. According to the plan, South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society.			
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.			

Refer to part 8 for the identified impacts and proposed mitigation measures, and part 5 for the public participation process followed.
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
This Scoping Report is divided into the following parts and covers all the principles in section 2 of the NEMA: • Part 1: Introduction • Part 2: Applicable legislation and guidelines • Part 3: Project Description • Part 4: Nature and extent of the environment affected by activity • Part 5: Public Participation Process • Part 6: Identified Alternatives • Part 7: Need and desirability for the project • Part 8: Identification of anticipated environmental Impacts (positive and negative) and possible mitigation measures • Part 9: Plan of study for EIA • Part 10: Conclusion

A need and desirability for this project is evident from the following perspectives:

7.1 Developer

Sarovic Investments CC is a Private Company in South Africa and its company number is 1997-021718-07. SAROVIC INVESTMENTS was registered on 12/12/1997. The company's core business is in establishing residential developments in the Mpumalanga region.

7.2 Local community

The following information was extracted from the Korsmans & Associates. Application For Township Establishment In Terms Of Section 96 Of The Town Planning And Townships Ordinance, 1986 (Ordinance 15 Of 1986). The Remaining Extent of Portion 79 (A Portion of Portion 4) Of the Farm Blesboklaagte 296 Registration Division J.S., Province Of Mpumalanga. May 2014.

According to the Emalahleni Local Municipality municipal profile as conducted by The Housing Development Agency (HDA) there is a growing need for proper residential or housing provision with the estimated housing backlog in 2011 at approximately 23 954 units and growing (Housing Development Agency. Emalahleni Local Municipality: Municipal profile. 2013:9). Refer to figure 30.

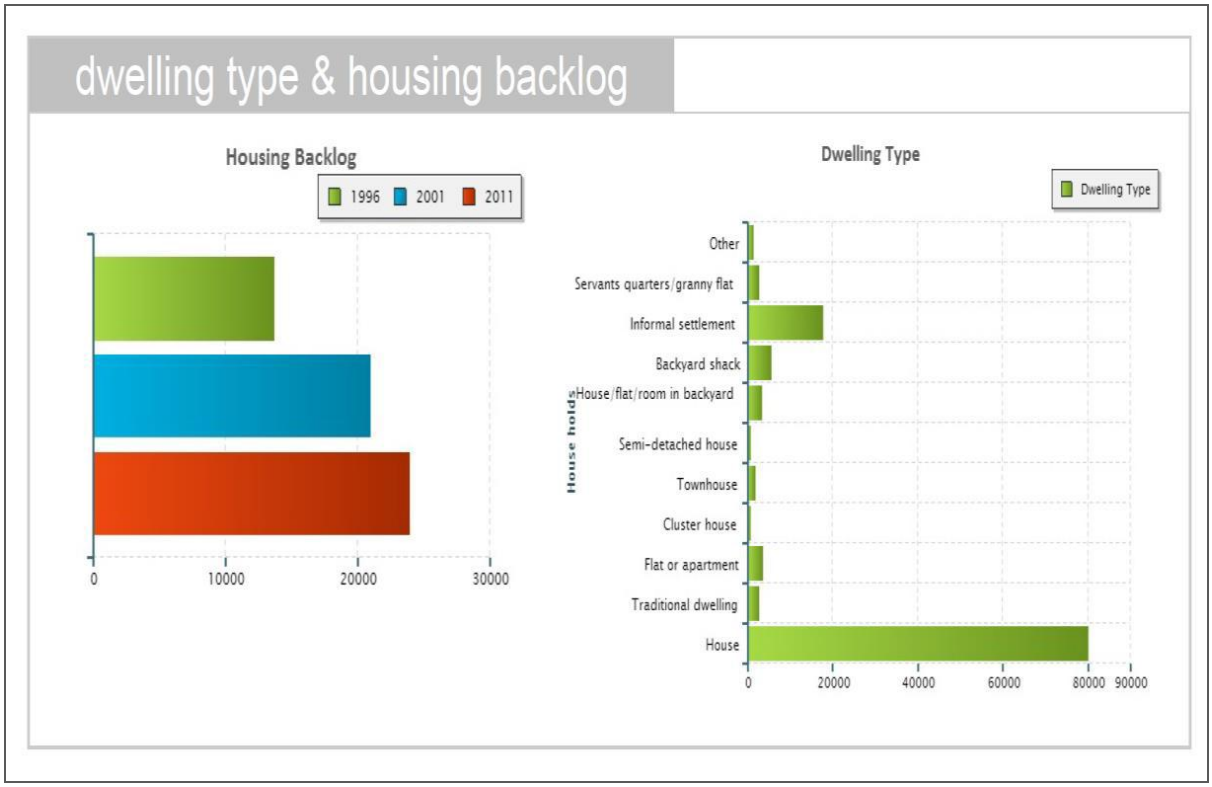


Figure 30: Dwelling type and Housing backlog

According to the **IDP of Emalahleni 2013/2014** there is a high number of informal settlements and housing backlog. In order to improve the current housing situation we are faced with the following actions need to be taken:

1. Resuscitate the application process for accreditation;

2. Construction of low cost housing (RDP) / Social housing;

3. Upgrading of hostels;

4. Develop a housing needs register.

Seven areas within Emalahleni have been identified as major functional areas for the development of housing and will cater for the informal settlements. This is the first step in the Informal Settlement Formalization Program.

These areas are:

- Lynnville;
- Kwa-Ququa/Hlalanikahle;
- Pineridge / Klarinet;
- South Eastern Suburbs;

- Phola;
- Ga-Nala / Rietspruit;
- Van Dyksdrift / Emagalasini.

The basic principle is that each of these areas should, as far as possible, cater locally for the local housing needs – either by way of in-situ upgrading and/or local relocations" (IDP Emalahleni: Informal settlements. 2013/2014: 139).

Final Draft 2014/2015 IDP for Emalahleni

"The Pine Ridge and Klarinet areas are not affected that extensively by undermining, but have poor linkages to the rest of the eMalahleni urban area. Residential expansions of approximately 7 000 erven around Klarinet are currently being planned, with an average erf size of approximately 300 m². The planning is done by way of a framework plan for the Klarinet, Pine Ridge and Blesboklaagte area." Lynnville, Kwa-Guqa, Pine Ridge and Phola all serve as dormitory residential areas and are completely reliant on Emalahleni for the purchase of goods and services, and necessitate high levels of commuting to and from Emalahleni.

"The development of nodes in these areas should be actively promoted and encouraged, by means of the following incentives:

- Detailed design, including aspects such as taxi ranks, informal trade, public space, public conveniences, street lights etc.;
- Rezoning of land, if required and advertising land by means of a tender process for alienation / lease agreement;
- Offering incentives such as low rates and taxes, long term leases at low rent to attract developments; and
- Promoting the development of MPSDCs to attract private investment through pro-active public investment. "

SDF of Emalahleni Local Municipality 2011

The property is located in an area that has been identified as Strategic Development Areas (Residential Expansion). Refer to figure 31.

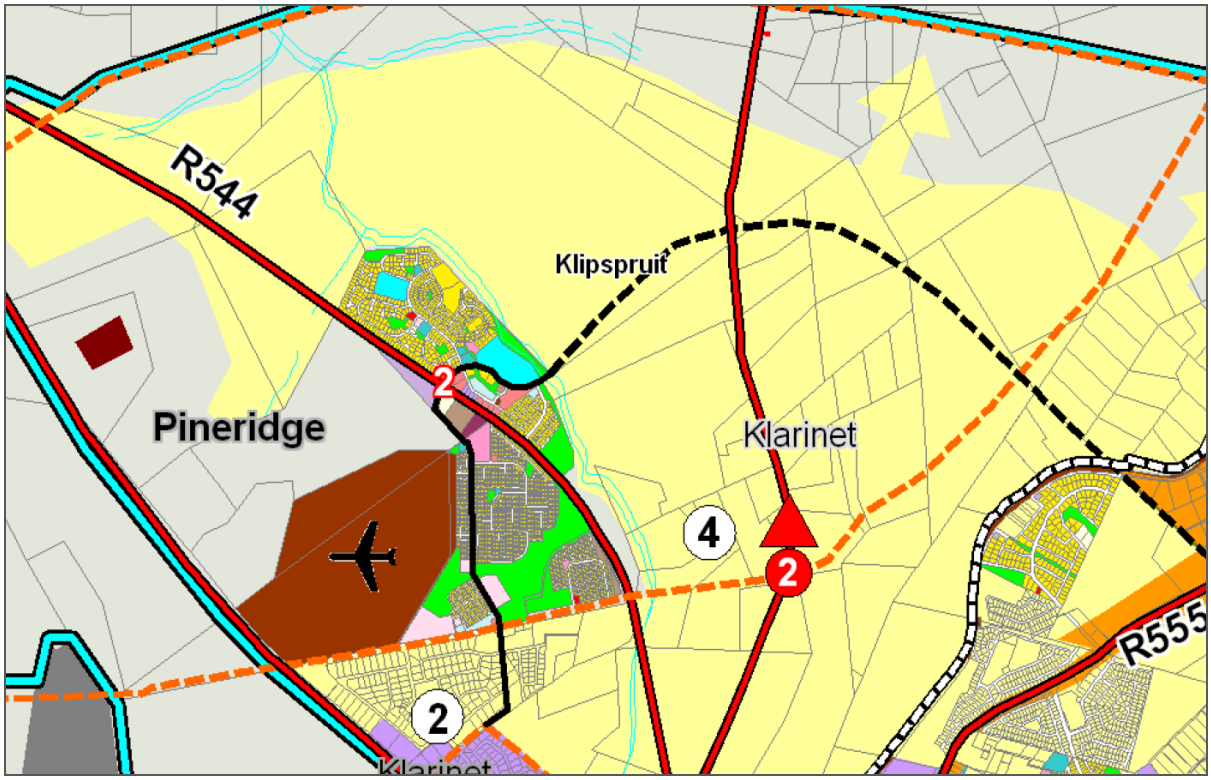


Figure 31: Clip form Emalahleni Local Spatial Development Framework

7.3 District and provincial benefit

With the constant growth in the property market over the past few years, more and more residential developments are taking place in Witbank. A shortage of subsequent land uses became evident with more and more property developers paying astronomical prices for vacant land. The recent increases in the interest rates do not yet show a change in the current market.

The Emalahleni region is not only experiencing growth in the residential markets but also in the most important sector viz the mining and industrial sector. The mining and industrial developments will create numerous new employment opportunities in the short, medium and long term, which will have direct influence on the demand for housing as well as vacant industrial sites in Witbank.

Referring to the need for the establishment of this specific Land Development Area, it is submitted that it was argued that the subject property is strategically located in relation to the existing townships, Pine Ridge that is located to the west of the development and Klarinet Extension 6 to the south, thus the proposed development can be seen as a infill development.

The Spatial Development Framework of Emalahleni, 2011 has earmarked the proposed property for Residential Expansion.

The Development Facilitation Act, 1995 (DFA) and the Integrated Development Plans for Emalahleni Local Municipality emphasize the need for infill development, in order to:

- Discourage the phenomenon of urban sprawl in urban areas,
- Contribute to the optimum use on undeveloped land;
- Infill development on vacant land within the municipal boundary
- Contribute to the optimum use of infrastructure, engineering services and social facilities; and

The proposed development is also considered desirable for the following reasons:

- The site is easy accessible via local and provincial roads, access to the development will be via the existing townships Klarinet Extension 6 and Pine Ridge Proper as well as from the provincial road on the eastern boundary of the development.
- The proposed density of 1 dwelling unit per 300m² is compatible with other housing developments in and around the area. The nature and scale of the proposed development will therefore fit in with the general character of the area.
- The proposed development will diversify the residential structure of the area by providing an alternative and affordable form of housing.
- The proposed industrial area will answer to the increasing need and availability of industrial stands.
- Due to undermining, which is a constraint for expansion and development in Emalahleni, this site is ideal for mixed use development.
- The proposed development will be subject to a site development plan. This will enable the Municipality to consider aspects such as the siting of buildings, landscaping, the impact of the development on surrounding properties, etc. before the approval of building plans.

The proposed high-rise residential buildings will create a buffer between the industrial area and the existing residential developments to the north-eastern side of development.

8. IDENTIFICATION OF ANTICIPATED ENVIRONMENTAL IMPACTS (POSITIVE AND NEGATIVE) AND MITIGATION MEASURES

This part of the document focuses on the identification of the major potential impacts including positive and negative, the activities, processes and actions may have on the surrounding environment. It indicates the major impacts that these activities may have on the environmental components associated with the site, as required in terms of Appendix 2 paragraph (h) of the 2014 EIA Regulations.

8.1 Project phases and activities to be undertaken

For the purposes of this impact assessment, the project timeframe will be subdivided into the following four phases:

- Construction Phase.
- Operational Phase.
- Decommissioning Phase.
- Residual Impacts.

Potential cumulative impacts were also identified, where applicable.

8.1.1 Construction Phase

The following activities will be undertaken as part of the construction phase:

- Construction of township development,
- Construction of roads, including internal roads, and access roads,
- Construction of bulk water supply (pipelines),
- Construction of stormwater drainage infrastructure
- Construction of bulk sewage services (pipelines, pump station, and or sewerage treatment facility),
- Installation of electrical services,
- Use of chemical toilets,
- Clearance of vegetation as part of the construction activities on site,
- Temporary storage and stockpiling of topsoil from the construction areas,

8.1.2 Operational Phase

The following activities will be undertaken as part of the operational phase:

- Stormwater management on site,
- Sewage management,

- Traffic management within the township,

8.1.3 Decommissioning Phase

The following activities will be undertaken as part of the decommissioning phase:

- Dismantling of infrastructure, and
- Rehabilitation activities that will include:
  - Ripping of haul roads, internal roads and compacted areas,
  - Topsoil replacement,
  - Re-vegetation of rehabilitated areas,
  - Control of invader plants species,

8.1.4 Residual Impacts

As the proposed Mixed Residential Township project will be permanent there will be no residual impacts.

8.2 Impacts identified

The main impacts identified for the Mixed Residential Township project are listed below. The environmental impact assessment report will include a full risk assessment of all environmental impacts. The Environmental Management Programme report (EMPr) will set out mitigation measures to be implemented during the Construction, Operational and Decommissioning Phases. Refer to Part 9 of this Scoping Report for the Impact Assessment methodology that will be followed as part of the EIA process.

8.2.1 Construction Phase

Refer to table 31 below for a list of potential impacts identified during the Construction Phase.

Table 31: Table 31 below lists the potential impacts during the Construction Phase.

Impact: Soil Pollution		**Possible mitigation measures**
Contributing aspects	Use of heavy machinery and concrete Foundations can lead to compacted ground and increase in hardened surfaces	All areas, not directly within the footprint of the development, where soil has been compacted should be ripped to break up the compacted soil surface. This will aid infiltration and decrease runoff.
Impact: Soil Compaction		
Contributing aspects	The construction of structures that cover the soil surface by means of	Contain construction footprint as far as possible. Prevent removal of the

	concrete, tar or paving. 1. Compaction of the soil surface for building foundations, parking areas etc. will alter the soil's physical properties negatively. 2. Covering the soil surface with concrete, tar or paving will cause productive functioning of the soil to cease completely.	natural vegetation cover where possible.
Impact: Soil erosion		
Contributing aspects	Possible soil erosion due to clearance of vegetation for the proposed township establishment.	• Initiate catchment management to control and reduce erosive runoff containing suspended sediment. • Minimise the potential sources of sediment (small particles) from the outset. This means limiting the extent (area) and duration (time period) of land and vegetation disturbance to the minimum needed, and protecting surfaces once they are exposed. • Where site disturbance is significant and unavoidable, undertake proper storm water management planning in accordance with the DWA's Best Practice Guideline documents.
Impact: Land capability		
Contributing aspects	The current arable, grazing or wilderness land capability will cease completely.	All mitigation measures applied on soils will mitigate land capability as far as possible.
Impact: Air pollution (Generation of dust)		
Contributing aspects	Construction vehicles not adhering to speed limits on the mine.	Implement strict speed limit of 40 km/h on all construction vehicles.
	Additional dust release due to additional vehicles on the internal gravel roads of the project site.	• Implement dust suppression measures on internal gravel roads within the project site during construction phase. • A complaints register must be kept

		On site. The register must record the following: Date when complaint was received, name of person who reported the complaint, details of the complaint and when and how concern was addressed.
Impact: Air pollution (Generation of air emissions)		
Contributing aspects	Additional vehicle emissions released from the additional construction vehicles and equipment used during the construction and clearance of vegetation for the proposed township development.	Ensure regular maintenance of all construction vehicles on site to reduce emissions.
Impact: Environmental Noise		
Contributing aspects	Noise generated by additional construction vehicles and equipment during the construction activities.	• Schedule activities that will generate the most noise during times of the day that will result in least disturbance to neighbours. • Site workers and contractors will adhere to the requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) regarding hearing protection and noise control measures. • Regular maintenance of vehicles and equipment.
Impact: Surface and/or groundwater pollution		
Contributing aspects	Runoff water from the construction activities into the Blesbok Spruit tributaries or directly into the Blesbok Spruit itself causing impacts downstream where the increase in flow is concentrated will lead to: • An increase in the risk of erosion and sedimentation; • Potential negative impact on riparian vegetation • Cause a decrease in	• Re-vegetation should take place immediately according to the re-vegetation plan. The species utilised for re-vegetation should be endemic to the area and not include any alien or invasive species. These areas should be monitored to ensure the successful re-establishment of vegetation and to ensure that no erosion gullies form.

	infiltration and also reduce natural recharge to the shallow and groundwater zones and subsequently may impact on the natural watercourses nearby.	• All water systems should be sited, designed and operated to restrict the possibility of damage to the riparian or in-stream habitat.
Impact: Wetland		
Contributing aspects	Changing the quantity and fluctuation properties of the watercourse.	No activities should take place in the watercourses and associated buffer zone.
Impact: Floodlines		
Contributing aspects	Proposed township development at risk of being flooded (possibility of occurring within the 1:100 floodline).	• Introduce a suitable buffer zone on either side of the 1:100 year floodline.
Impact: Injury or possible death		
Contributing aspects	Inadequate training of employees/construction personnel on risks associated with construction phase (ensure good health and safety).	Ensure that adequate training is given to all employees and construction personnel on the risks associated with construction phase.
	If employees do not receive the correct PPE for their specific responsibilities.	Supply all employees and construction personnel with the correct PPE for the tasks assigned to them.
Impact: Biodiversity loss		
Contributing aspects	Destruction of natural rocky vegetation, in particular the rocky ridge; and deterioration of rocky grassland	• An independent Ecological Control Officer (ECO) should be appointed to oversee construction. • The construction footprint should incorporate as much rocky grassland as possible into open space planning • A permanent fence or demarcation must be erected around the construction area to prevent access or edge effects to

		surrounding environs that will not be developed.
	Destruction of plant species that are 'Declining' 'Rare' or provincially protected	• It is recommended that the rocky ridge area be regarded as sensitive due to the concentration of plants of conservation concern in this area. • Implement a Plant Rescue Plan: Where the plants of conservation concern or provincially protected plants are deemed to be under threat from the construction activity, the plants should be removed by a suitably qualified specialist and replanted into suitable open spaces (this can also be undertaken in collaboration with Operation Wildflower, or the Custodians of Rare and Endangered Wildflowers (CREW)). These plants may only be removed with the permission of the provincial authority.
	Destruction of moist grassland ; and Deterioration of the vegetation associated with moist grasslands	• Implement a minimum buffer zone, around the moist grassland and this must be regarded as No-
Impact: Fauna		
Contributing aspects	Loss/displacement of threatened or protected fauna	• All areas designated as sensitive in a sensitivity mapping exercise should be incorporated into an open space system.
Impact: Heritage		
Contributing aspects	Possible destruction of a highly significant grave site	• If any sites, features or objects are found during site clearance, all activities must cease and a heritage expert must be

		contacted to investigate the site. • No sites, features or objects may be disturbed (e.g. picked up) by employees.
Impact: Socio-economic		
Contributing aspects	Potential increase of crime due to influx of potential workers.	Develop and implement an Influx Management Strategy as per International Finance Corporation Guidelines on Influx Management.
	Increase in people to the area may put pressure on existing resources and local infrastructure.	
	Job creation during the construction phase	

8.2.2 Operational Phase

Refer to table 32 below for a list of potential impacts identified during the Operational Phase.

Table 32: Potential impacts during Operational Phase

Impact: Soil erosion		
Contributing aspects	All impacts on soils during the construction phase in terms of compaction will remain during the operational phase. The productive functioning of soil at areas covered by concrete, tar or paving will remain ceased	Evaluation of the runoff control system and structures. Rectification where structures are inadequate. Frequent maintenance where necessary and prompt reparation after damages caused by any nature.
Impact: Surface and/or groundwater pollution		
Contributing aspects	A potential spill of raw sewerage (eutrophication) may have a severe impact upon the water quality if it enters a river. The sewerage contains elevated levels of nutrients (nitrates and phosphates), disease causing bacteria (in particular E. coli) and large volumes of waste matter (Rand Water 2011). The elevated levels of nutrients will provide food for the bacteria to thrive and spread in the water.	• Prevention is better than cure, hence proper planning and design should take place prior to construction. • The development if any should also always be constructed outside of the 1:100 year flood line of the Blesbok Spruit or outside of the buffer indicated by the wetland specialist whichever is larger. This will ensure through proper planning and hence proper precautionary measures

		are in place.
Impact: Biodiversity loss		
Contributing aspects	Possible increase in exotic and invasive vegetation	• Alien invasive species, especially category 1b invaders that were identified within the study area should be removed. By removing these species, the spread of seeds will be prevented into disturbed soils which could thus have a positive impact on the surrounding natural vegetation.
Impact: Wetland		
Contributing aspects	Changing the quantity and fluctuation properties of the watercourse by • Material draining into wetland. • Damage to vegetated areas	• Management of on-site water use and prevent stormwater or contaminated water directly entering the watercourse • Management of point discharges
Impact: Traffic		
Contributing aspects	The possible impact of the additional development traffic on road D1126.	Upgrading at all four (4) key intersections from a capacity viewpoint, according to the SIDRA analysis.

8.2.3 Decommissioning Phase

Refer to table 33 below for a list of potential impacts identified during the Decommissioning Phase.

Table 33: Potential impacts during Decommissioning Phase

Impact: Soil Pollution		**Possible mitigation measures**
Contributing aspects	Spillages of fuel and oil during removal of all structures and foundations on site.	• During the decommissioning phase the footprint will be thoroughly cleaned. • All building rubble will be removed to a suitable disposal facility. • The footprint will be ripped to alleviate compaction. • The footprint will be graded to a smooth surface

		• The topsoil will be ameliorated according to soil chemical analysis. • The footprint will be re-vegetated with a grass seed mixture.
Impact: Air pollution (Generation of dust)		
Contributing aspects	The ripping of compacted areas during rehabilitation will result in dust generation.	• Implement dust suppression measures on internal gravel roads within the project site during construction phase. • A complaints register must be kept on site. The register must record the following: Date when complaint was received, name of person who reported the complaint, details of the complaint and when and how concern was addressed.
Impact: Environmental Noise		
Contributing aspects	Noise generated by additional construction vehicles and equipment during the decommissioning activities.	• Schedule activities that will generate the most noise during times of the day that will result in least disturbance to neighbours. • Site workers and contractors will adhere to the requirements of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993) regarding hearing protection and noise control measures. • Regular maintenance of vehicles and equipment.
Impact: Surface and/or groundwater pollution		
Contributing aspects	Potential seepage of affected water into the saturated aquifer (loss in catchment yield).	Initiate catchment management to control and reduce erosive runoff containing suspended sediment.
Impact: Soil (topsoil loss)		
Contributing aspects	Compacting and erosion of rehabilitated areas.	• The footprint will be ripped to alleviate compaction.

	Potential inadequate replacement of topsoil due to ineffective measures and / or unavailability of topsoil.	• The footprint will be graded to a smooth surface • The topsoil will be ameliorated according to soil chemical analysis. • The footprint will be re-vegetated with a grass seed mixture.
Impact: Biodiversity loss		
Contributing aspects	Polluted surface runoff could potentially pollute sensitive vegetation. Ineffective rehabilitation activities will result in the establishment of alien invasive species and disturb natural vegetation. Potential ineffective re-introduction of flora species.	• Alien invasive species that were identified within the study area should be removed. By removing these species, the spread of seeds will be prevented into disturbed soils which could thus have a positive impact on the surrounding natural vegetation. • Landscaping in the development must make use of indigenous vegetation and no alien invasive plant species should be allowed within home gardens.
Impact: Land capability		
Contributing aspects	Ineffective rehabilitation could result in permanent changes to land use and land capability.	All mitigation measures applied on soils will mitigate land capability as far as possible.

8.2.4 Residual impacts

As the proposed Mixed Residential Township project will be permanent there will be no residual impacts.

8.2.5 Cumulative Impacts

The following potential cumulative impacts have been identified in table 34 and will be investigated further during the EIA phase:

Table 34: Cumulative impacts

Impact: Biodiversity loss	Possible Mitigation Measures

Contributing aspects	Invader plants establishing on disturbed areas.	Alien invasive species that were identified within the study area should be removed. By removing these species, the spread of seeds will be prevented into disturbed soils which could thus have a positive impact on the surrounding natural vegetation.
Impact: Surface and ground water pollution		
Contributing aspects	Potential seepage of affected water into the saturated aquifer (loss in catchment yield).	Initiate catchment management to control and reduce erosive runoff containing suspended sediment.
Impact: Noise pollution		
Contributing aspects	Noise generation from increased traffic volumes from the proposed township on surrounding areas and roads.	Implementation of a traffic management plan.

8.3 Conclusion on impacts identified

In general the expected environmental impacts from the construction and operation of the proposed Mixed Residential Township project do not indicate that the proposed activities would have irreversible detrimental effects on the receiving environment.

However, further specialist studies and investigations will be carried out during the EIA phase and will thus be taken into consideration when conducting the risk (impact) assessment for the proposed Mixed Residential Township project. Information obtained during the mentioned phase will be included in the EIR. Refer to Part 9 of this Scoping Report for further information.

Part 6 of this SR contains a detailed investigation and assessment of the alternative options for the Mixed Residential Township project. The positive and negative implications of each alternative are also described in Table 35 below. A comparison is done below to assess the positive and negative implications of the proposed activities compared with the no-go alternative. This should provide a fundamental consideration of the feasibility of the project.

Table 35: Comparison of the proposed preferred activities and the no-go option

	Option 1: Gravity feed to Pine Ridge pump station	Option 2: New outfall sewer line to Klipspruit Works	No-go option

Positive impacts	Less costs involved as Pine Ridge is closer than Klipspruit Works.	The further phases of the Klarinet Integrated Housing Development will require a new outfall sewer line that will in theory serve the Sarovic Development from a topographical point of view. Thus, the requirement for a new outfall gravity sewer to the Klipspruit Works is in the town planner's opinion (Korsmans & Associates, 30 May 2014) the only feasible solution to drain the area with a sewage service. Such a line should be done in accordance with the Klarinet Integrated Housing Development and Bulk Services Contribution Policy of ELM.	No destruction of the land use, vegetation and wetland areas will take place.
Negative impacts	The outfall sewer line and pumping line from the Pineridge Sewage Pumpstation is sufficient for most of the phase 1 Klarinet Integrated Housing Development. A services agreement was signed whereby one can assume that no spare capacity is available on the pumpline for the Sarovic Development.	A new outfall line is required from the site to Klipspruit Works.	No additional housing will be built and no jobs will be created.

As shown in the table above, preferred technological alternative is option 2 a new outfall sewer line to the existing Klipspruit Works.

The No-Go Option will not have any environmental impacts, there will be no extension of Pine Ridge. Therefore no additional housing will be built, and no jobs will be created.

8.4 Processes to be undertaken to ensure that impacts are mitigated

Mitigation measures need to be identified to ensure that impacts from the proposed activity are reduced as far as possible. The following mitigation measures objectives will be kept in mind while mitigation measures are identified:

- To find more environmentally sound ways of undertaking specific activities;
- To enhance any environmental and social benefits of a proposed activity;
- To avoid, minimise or remedy negative environmental impacts; and
- To ensure that any residual negative environmental impacts are environmentally acceptable.

Identifying appropriate mitigation measures will be conducted in a hierarchal manner:

1. Preventative measures will be identified to avoid, where possible, negative impacts that may arise as a result of the proposed activity;
2. Measures will be identified to minimise and/or reduce the negative impacts to “as low as practicable” levels; and
3. Measures will be identified to compensate or remedy residual negative impacts that are unavoidable and cannot be minimised or reduced any further (Department of Environmental Affairs, 2006).

Proposed mitigation measures will be communicated to the applicant for review as part of the Environmental Management Programme report (EMPr). The applicant will comment on the feasibility and practicality of implementing the mitigation measures. The mitigation measures may be adjusted based on the applicant’s comments.

9. PLAN OF STUDY FOR EIA

The objectives of the EIA process, as per the NEMA EIA Regulations 2014 are to, through a consultative process:

a) determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
b) describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
c) identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
d) determine the a. nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and degree to which these impacts
   i. can be reversed;
   ii. may cause irreplaceable loss of resources, and
   iii. can be avoided, managed or mitigated;
h) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
i) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;
j) identify suitable measures to avoid, manage or mitigate identified impacts; and
k) identify residual risks that need to be managed and monitored.

In accordance with Appendix 2 paragraph (i) of the 2014 EIA Regulations the plan of study for the undertaking the environmental impact assessment process to be undertaken will include the following:

9.1 Description of the alternatives to be considered and assessed within the preferred site

Alternatives have and will continue to be investigated and the “No-Go Option” will be included in the assessment. The EIA document will discuss the alternatives identified and investigated for the proposed project as well as the advantages and disadvantages of each.

9.2 Description of the aspects to be assessed as part of the EIA assessment process

The following aspects will be assessed as part of the EIA assessment process:

- Geology,
- Soils,

- Land use and land capability,
- Vegetation,
- Animal life,
- Flood line,
- Wetland,
- Aquatic,
- Sites of archaeological and cultural interest.
- Traffic.

9.3 Aspects to be assessed by specialists

The impact assessment component of the EIA is subdivided into several environmental aspects to be studied as shown in Table 36. The significance of the impacts will be assessed in terms of the methodology described in Section 9.4. Note the Plan of Study for the EIA may be updated should the public participation process result in issues raised during the Scoping process that require additional studies.

Table 36: Aspects to be assessed by specialists

Environmental Aspect	Aspect to be assessed as part of the environmental impact assessment process and professional specialist opinion given	Aspect to assessed by a Specialist
Geology	Yes	Yes
Regional Climate	No	No
Topography	No	No
Soils	Yes	Yes
Land use and land capability	Yes	Yes
Vegetation	Yes	Yes
Animal life	Yes	Yes
Flood line	Yes	Yes
Ground water	No	No
Wetland	Yes	Yes
Aquatic	Yes	Yes
Sites of archaeological and cultural interest	Yes	Yes
Air Quality	No	No
Noise	No	No
Visual aspects	No	No

Traffic	Yes	Yes
Socio-economic aspects	No	No

The terms of reference for the specialist investigations to be conducted during the impact assessment phase are drafted in terms of the NEMA EIA Regulations 2014 Appendix 6 Specialist Reports and are set out below. The description is presented in fairly general terms, but all the issues that need to be addressed by the studies are captured. Maps relevant to the study will be developed using GIS for the various disciplines.

9.3.1 Geology

Currently the Geology study includes only the Remainder of the farm Leeuwpoort 283 JS. The scope of work for the Geology study will be extended to include an engineering geological investigation for the proposed residential development on the property in Witbank for Portion 79 of Blesboklaagte. The aim of this investigation was to identify and evaluate any possible engineering geological problems before commencement of proper township proclamation.

9.3.2 Soils

Currently the Soil study includes only the Remainder of the farm Leeuwpoort 283 JS. The scope of work for the Soil study will be extended to include a detailed soil profile for Portion 79 of Blesboklaagte which includes the soil depth in meters, sample number, and a Description of soil and its properties.

9.3.3 Land use and land capability

The scope of work for the land use and land capability study are to:

- Conduct a detailed soil assessment of the remaining extent of the farm Leeuwpoort 283 JS and portion 79 of the farm Blesboklaagte 296 JS;
- Classify and map soil forms according to the South African Taxonomic Soil Classification System, 1991;
- Derive and map land capability based on soil properties;
- Identify soil properties related to wetness to enable the delineation of wetland or riparian zones based on guidelines of the Department of Water Affairs;
- Map all pre-mining and current land uses; and
- Determine all possible impacts by the proposed activities and provide associated mitigation measures.

9.3.4 Vegetation

The scope of work for the Vegetation study will be as follows:

- Review of relevant literature;

- Undertake a field survey and assessment of the biophysical environment and current status of natural features on the proposed site and compare the findings to the expected natural state as listed in the national vegetation map (Mucina & Rutherford, 2006);
- Field survey with specific reference to plants of conservation concern ("red data" and provincially protected species) that could occur within the study site or immediate surroundings;
- Sensitivity mapping, including possible or confirmed localities of plants of conservation concern; and
- Report on the potential impacts that the proposed township could have on vegetation and recommend mitigation measures to limit or negate the potential negative impacts where possible.

9.3.5 Animal life

The scope of work for Animal life study is as follows:

- To define and describe vertebrate habitat types identified on the site;
- To qualitatively and quantitatively assess
- To identify and comment on ecological sensitive areas;
- To comment on connectivity;
- To provide a list of mammals, birds, reptiles and frogs that occur or might occur, and to identify species of conservation importance;
- To highlight potential impacts of the proposed development on the vertebrate species richness of the study site, and
- To provide management recommendations to mitigate negative and enhance positive impacts should the proposed development be approved

9.3.6 Flood line

The scope of work for the flood line study and the methodology for the calculations of flood lines in general will include the following:

- The gathering of topographical information for the catchment/s and river reach/es. The procedure provides slopes, shapes and catchment parameters of the catchment/s,
- Hydrological modeling of the catchment/s according to historical rainfall data of weather stations situated close to the catchment or within the catchment. This procedure provides the peak flow rates needed for the hydraulic model,
- Hydraulic modeling of the river reach as well as hydraulic modeling of structures contained in the river channel or floodplain. This procedure entails the routing of peak flow rates through the different river reaches to determine water levels at different points along the river.

9.3.7 Wetland

The scope of work for the Wetland study will be as follows:

- Delineate the wetland areas;

- Classify the watercourse according to the system proposed in the national wetlands inventory if relevant,
- Undertake the functional assessment of wetlands areas within the area assessed;
- Recommend suitable buffer zones; and
- Discuss potential impacts, mitigation and management procedures relevant to the conserving wetland areas on the site.

9.3.8 Aquatic

The scope of work for the Aquatic study will include the following:

- Provide a literature review of the principles, methods, guidelines and criteria that are applicable to biomonitoring at Blesboklaagte and Leeuwfontein (Study Area);
- Determine the current aquatic health of the rivers in the vicinity of the study area using SASS5, IHAS, VEGRAI and FRAI methods at identified sampling points;
- Report on the findings of the baseline biomonitoring survey conducted on the 8th of April 2014 at these sampling points.

9.3.9 Site of archaeological and cultural interest

The scope of work for the Sites of archaeological and cultural interest will include the following:

- Identify all objects, sites, occurrences and structures of a historical & archaeological nature located in the area of proposed development;
- Assess the significance of any possible cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- Describe the possible impact of the proposed development on these archaeological remains, according to a standard set of conventions;
- Propose suitable mitigation measures to minimize possible negative impacts on the archaeological resources;
- Review applicable legislative requirements;

9.3.10 Traffic

The scope of work for the Traffic study is to quantify the expected traffic from the mixed used development and to determine the impact of the traffic generated by the proposed development on the immediate surrounding road network, with a view to quantify and propose road or intersection upgrades if necessary. An evaluation will be done for access configuration(s) to the proposed development site and does an evaluation on the public transport services/facilities for the proposed development.

9.4 Methodology of assessing the environmental impacts

It is required by Appendix 2 paragraph (1)(f) of the 2014 EIA Regulations that impacts and risks on the surrounding environment, as a result of the proposed activity, are identified during the Scoping Phase.

Appendix 3 of the 2014 EIA Regulations requires that an EIR includes an assessment of the status, extent, duration, probability, reversibility, replaceability of resources and mitigatory potential of the major potential environmental impacts of the proposed activity.

A baseline identification of the major potential impacts has therefore only been included in this Scoping Report. The prediction of the nature of each impact, the evaluation of each impact by rating its significance and the management and mitigation measures adopted to address each impact, will be assessed during the EIR.

Impact assessments should be conducted based on a methodology that includes the following:

- Clear processes for impact identification, predication and evaluation;
- Specification of the impact identification techniques;
- Criteria to evaluate the significance of impacts;
- Design of mitigation measures to lessen impacts;
- Definition of the different types of impacts (indirect, direct or cumulative); and
- Specification of uncertainties.

In broad terms, the impact assessment for this project will include the following:

- All potential impacts of the proposed activity will be identified and assessed;
- The nature, significance, consequence, extent, duration and probability of all impacts will be predicted; degree to which these impacts can be reversed, may cause irreplaceable loss of resources and can be avoided, managed or mitigated.
- Identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity.
- Identify suitable measures to avoid, manage or mitigate identified impacts,
- Identity residual risks that need to be managed and monitored.

The construction, operational and decommissioning phases of the project will be considered whilst identifying impacts. A detailed understanding of the proposed activity will be obtained to ensure that all the potential impacts are identified. The following process will be followed to identify and assess the potential impacts of the proposed activity:

- The current environmental conditions will be determined in detail. This will act as a baseline against which impacts can be identified and measured;

- The changes that will occur in future, should the proposed activity not occur, will be identified;
- A detailed understanding of the activity will be obtained in order to fully understand its consequences; and
- The significant impacts that will occur as a result of the proposed activity will be identified (should the activity be authorised).

After all impacts have been identified, the nature of each impact can be predicted. The impact prediction will take into account physical, biological, socio-economic and cultural information and will then estimate the likely parameters and characteristics of the impacts. The impact prediction will aim to provide a basis from which the significance of each impact can be determined and appropriate mitigation measures can be developed.

The risk assessment methodology is based on defining and understanding the three basic components of the risk, i.e. the source of the risk, the pathway and the target that experiences the risk (receptor). Refer to Figure 32 below for a model representing the above principle (as contained in the Department of Water Resources' Best Practice Guideline: G4 – *Impact Prediction.*

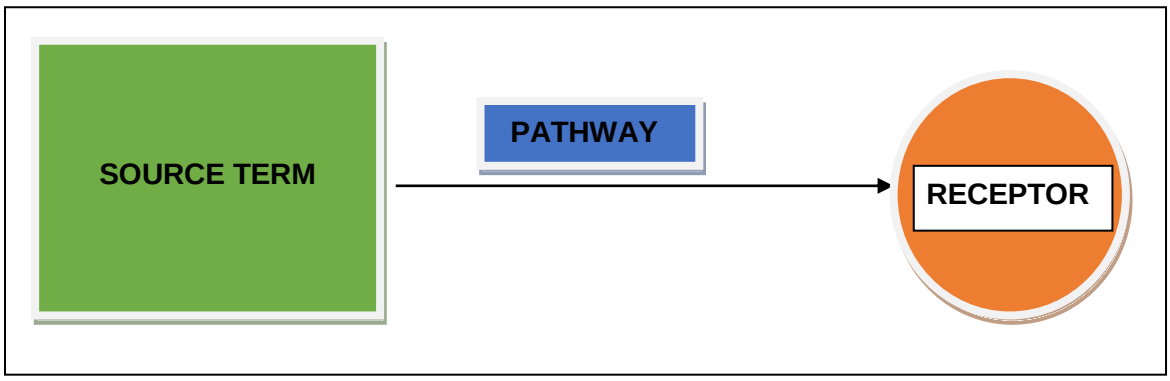


Figure 32: DWR's model for impact prediction (risk assessments)

Tables 37 and 38 below indicate the methodology to be used in order to assess the Probability and Magnitude of the impact, respectively, and Table 39 provides the Risk Matrix that will be used to plot the Probability against the Magnitude in order to determine the Severity of the impact.

Table 37: Determination of Probability of impact

FREQUENCY OF ASPECT / UNWANTED EVENT	SCORE	AVAILABILITY OF PATHWAY FROM THE SOURCE TO THE RECEPTOR	SCORE	AVAILABILITY OF RECEPTOR	SCORE
Never known to have happened, but may happen	1	A pathway to allow for the impact to occur is never available	1	The receptor is never available	1
Known to happen in industry	2	A pathway to allow for the impact to occur is almost never available	2	The receptor is almost never available	2
< once a year	3	A pathway to allow for the impact to occur is sometimes available	3	The receptor is sometimes available	3
Once per year to up to once per month	4	A pathway to allow for the impact to occur is almost always available	4	The receptor is almost always available	4
Once a month - Continuous	5	A pathway to allow for the impact to occur is always available	5	The receptor is always available	5

***Step 1**: Determine the **PROBABILITY** of the impact by calculating the average between the Frequency of the Aspect, the Availability of a pathway to the receptor and the availability of the receptor.*

Table 38: Determination of Magnitude of impact

SOURCE								RECEPTOR			
Duration of impact	**Score**	**Extent**	**Score**	**Volume / Quantity / Intensity**	**Score**	**Toxicity / Destruction Effect**	**Score**	**ersibility**	**Score**	**Sensitivity of environmental component**	**Score**
Lasting days to a month	1	Effect limited to the site. (metres);	1	Very small quantities / volumes / intensity (e.g. < 50L or < 1Ha)	1	Non toxic (e.g. water) / Very low potential to create damage or destruction to the environment	1	Bio-physical and/or social functions and/or processes will remain unaltered.	1	Current environmental component(s) are largely disturbed from the natural state. Receptor of low significance / sensitivity	1
Lasting 1 month to 1 year	2	Effect limited to the activity and its immediate surroundings. (tens of metres)	2	Small quantities / volumes / intensity (e.g. 50L to 210L or 1Ha to 5Ha)	2	Slightly toxic / Harmful (e.g. diluted brine) / Low potential to create damage or destruction to	2	Bio-physical and/or social functions and/or processes might be negligibly altered or enhanced / Still reversible	2	Current environmental component(s) are moderately disturbed from the	2

SOURCE								RECEPTOR			
Duration of impact	**Score**	**Extent**	**Score**	**Volume / Quantity / Intensity**	**Score**	**Toxicity / Destruction Effect**	**Score**	**ersibility**	**Score**	**Sensitivity of environmental component**	**Score**
						the environment				natural state. No environmentally sensitive components.	
Lasting 1 – 5 years	3	Impacts on extended area beyond site boundary (hundreds of metres)	3	Moderate quantities / volumes / intensity (e.g. > 210 L < 5000L or 5 – 8Ha)	3	Moderately toxic (e.g. slimes) Potential to create damage or destruction to the environment	3	Bio-physical and/or social functions and/or processes might be notably altered or enhanced / Partially reversible	3	Current environmental component(s) are a mix of disturbed and undisturbed areas. Area with some environmental sensitivity (scarce /	3

SOURCE								RECEPTOR			
Duration of impact	**Score**	**Extent**	**Score**	**Volume / Quantity / Intensity**	**Score**	**Toxicity / Destruction Effect**	**Score**	**ersibility**	**Score**	**Sensitivity of environmental component**	**Score**
										valuable environment etc.).	
Lasting 5 years to Life of Organisation	4	Impact on local scale / adjacent sites (km's)	4	Very large quantities / volumes / intensity (e.g. 5000 L – 10 000L or 8Ha–12Ha)	4	Toxic (e.g. diesel & Sodium Hydroxide)	4	Bio-physical and/or social functions and/or processes might be considerably altered or enhanced / potentially irreversible	4	Current environmental component(s) are in a natural state. Environmentally sensitive environment / receptor (endangered species / habitats etc.).	4
Beyond life of Organisation / Permanent	5	Extends widely (nationally or globally)	5	Very large quantities / volumes / intensity	5	Highly toxic (e.g. arsenic or TCE)	5	Bio-physical and/or social functions and/or processes might be severely/substantially	5	Current environmental component(	5

SOURCE								RECEPTOR			
Duration of impact	**Score**	**Extent**	**Score**	**Volume / Quantity / Intensity**	**Score**	**Toxicity / Destruction Effect**	**Score**	**ersibility**	**Score**	**Sensitivity of environmental component**	**Score**
impacts				(e.g. > 10 000 L or > 12Ha)				altered or enhanced / Irreversible		s) are in a pristine natural state. Highly Sensitive area (endangered species, protected habitats etc.)	

*Step 2: Determine the **MAGNITUDE** of the impact by calculating the average of the factors above.*

Table 39: Determination of Severity of impact

ENVIRONMENTAL IMPACT RATING / PRIORITY					
	MAGNITUDE				
PROBABILITY	1 Minor	2 Low	3 Medium	4 High	5 Major
5 Almost Certain	Low	Medium	High	High	High
4 Likely	Low	Medium	High	High	High
3 Possible	Low	Medium	Medium	High	High
2 Unlikely	Low	Low	Medium	Medium	High
1 Rare	Low	Low	Low	Medium	Medium

Step 3: Determine the SEVERITY of the impact by plotting the averages that were obtained above for Probability and Magnitude in the table below.

9.5 Stages at which the competent authority will be consulted

The stages, at which the competent authority will be consulted in the process of compiling the EIR and EMPr as per Appendix 3 & 4 of the EIA Regulations R982 (2014), will include amongst other, the following:

- During the public participation process in accordance to the EIA regulations (2014) the EIR will be provided to the competent authority as well as for public comment for a period of 30 days [GNR982 (3) 8];
- The EIR inclusive of any specialist reports and an EMPr which was subjected to the public participation process above will reflect the comments received, including any comments from the competent authority [GNR982 (23) (1) (a))]; and
- The EIR above will be submitted to the competent authority (within 106 days of the acceptance of the Scoping report) [GNR982 (23) (1)] where after they must within 107 days of receipt of the EIR and EMPr in writing grant environmental authorisation in respect of all or part of the activity applied for or refuse environmental authorisation [GNR982 (24) (1) (a-b)].
- Continued consultation with the competent authority until the decision is issued.

9.6 Public Participation during the EIA process

The compilation of the EIR and EMPr as per GNR982 will include, but is not limited to, the following public participation:

- The EIR and EMPr will be provided to the client for review prior to public and competent authority comment;
- During the public participation process in accordance to the EIA regulations (2014) the EIR will be provided to the competent authority as well as for public comment for a period of 30 days [GNR982 (3) 8];
- The EIR inclusive of any specialist reports and an EMPr which was subjected to the public participation process above will reflect the comments received, including any comments from the competent authority [GNR982 (23) (1) (a))];
- The EIR will be submitted to the client for final review;
- The EIR above will be submitted to the competent authority (within 106 days of the acceptance of the Scoping report [GNR982 (23) (1)]) where after they must within 107 days of receipt of the EIR and EMPr in writing grant environmental authorisation in respect of all or part of the activity applied for or refuse environmental authorisation [GNR982 (24) (1) (a-b)].
- Registered Interested and Affected Parties (I&APs) will be given an opportunity to comment on the EIR. Their comments will be submitted to the competent authority and the EAP or applicant will be copied.
- Continued consultation with the competent authority until the decision is issued.

9.7 Description of the tasks to be undertaken as part of the EIA process

The Environmental Impact Assessment process will be conducted subsequent to the Scoping process and will be undertaken in accordance with Appendix 3 of the 2104 EIA Regulations. The Environmental Impact Report (EIR) for the proposed project will include detailed information relating to the potential or anticipated impacts that may arise as a result of the proposed activity.

The EIR in accordance with NEMA and as per Appendix 3 paragraph (3) of the 2014 EIA Regulations will include, but is not limited, to the following:

An environmental impact assessment report must contain the information that is necessary for the competent authority to consider and come to a decision on the application, and must include-

(a) details of-

(i) the EAP who prepared the report; and

(ii) the expertise of the EAP, including a curriculum vitae;

(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; and

(iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties; a plan which locates the proposed activity or activities applied for as well as the associated structures and infrastructure at an appropriate scale, or, if it is-

(i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken;

(ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken;

(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 associated structures and infrastructure related to the development; a description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;

(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;

(g) a motivation for the preferred development footprint within the approved site;

(h) a full description of the process followed to reach the proposed development footprint within the approved site, including:

(i) details of the development footprint 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 development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

(v) the impacts and risks identified including the nature, significance, cons impacts-

(aa) can be reversed;

(bb) may cause irreplaceable loss of resources; and

(cc) can be avoided, managed or mitigated;

(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks; 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) if no alternative development locations for the activity were investigated, the motivation for not considering such; and

(x) a concluding statement indicating the preferred alternative development location within the approved site;

(I) a full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity, including-

(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;

(j) an assessment of each identified potentially significant impact and risk, including-

(i) cumulative impacts;

(ii) the nature, significance and consequences of the impact and risk;

(iii) the extent and duration of the impact and risk;

(iv) the probability of the impact and risk occurring;

(v) the degree to which the impact and risk can be reversed;

(vi) the degree to which the impact and risk may cause irreplaceable loss of resources; and

(vii) the degree to which the impact and risk can be mitigated;

(k) where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 (Specialist studies) to the EIA 2014 Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;

(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; based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;
(n) the final proposed alternatives which respond to the impact management measures, avoidance, and mitigation measures identified through the assessment;
(o) 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
(p) a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;
(q) 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;
(r) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised;
(s) an undertaking under oath or affirmation by the EAP in relation to:
(i) 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 or affected parties;
(t) where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;
(u) an indication of any deviation from the approved scoping report, including the plan of study, including-
(i) any deviation from the methodology used in determining the significance of potential environmental impacts and risks; and
(ii) a motivation for the deviation;
(v) any specific information that may be required by the competent authority; and
(w) any other matters required in terms of section 24(4)(a) and (b) of the Act.

Compilation of the EMPr will be conducted and according to Appendix 4 of the 2014 EIA Regulations and will include, but is not limited to, the following:

(1) An EMPr must comply with section 24N of the Act and include-

(a) details of
(i) the EAP who prepared the EMPr; and
(ii) the expertise of that EAP to prepare an EMPr, including a curriculum vitae;
(b) a detailed description of the aspects of the activity that are covered by the EMPr as identified by the project description;
(c) a map at an appropriate scale which superimposes the proposed activity, its associated structures, and infrastructure on the environmental sensitivities of the preferred site, indicating any areas that any areas that should be avoided, including buffers;
(d) a description of the impact management objectives, including management statements, identifying the impacts and risks that need to be avoided, managed and mitigated as identified through the environmental impact assessment process for all phases of the development including-
(i) planning and design;
(ii) pre-construction activities;
(iii) construction activities;
(iv) rehabilitation of the environment after construction and where applicable post closure; and
(v) where relevant, operation activities;
(e) a description and identification of impact management outcomes required for the aspects contemplated in paragraph (d);
(f) a description of proposed impact management actions, identifying the manner in which the impact management objectives and outcomes contemplated in paragraphs (d) and
(e) will be achieved, and must, where applicable, include actions to - avoid, modify, remedy, control or stop any action, activity or process which causes pollution or environmental degradation;
(ii) comply with any prescribed environmental management standards or practices;
(iii) comply with any applicable provisions of the Act regarding closure, where rehabilitation, where applicable;
(g) the method of monitoring the implementation of the impact management actions contemplated in paragraph (f);
(h) the frequency of monitoring the implementation of the impact management actions contemplated in paragraph (f); an indication of the persons who will be responsible for the implementation of the impact management actions;
(j) the time periods within which the impact management actions contemplated in paragraph
(f) must be implemented;
(k) the mechanism for monitoring compliance with the impact management actions contemplated in paragraph (f); a program for reporting on compliance, taking into account the requirements as prescribed by the Regulations;
(m) an environmental awareness plan describing the manner in which-
(i) the applicant intends to inform his or her employees of any environmental risk which may result from their work; and

(ii) risks must be dealt with in order to avoid pollution or the degradation of the environment; and

(n) any specific information that may be required by the competent authority.

9.8 Measures to avoid, reverse, mitigate or manage identified impacts and the extent of the residual risks

As the proposed Mixed Residential Township project will be permanent there will be no residual impacts.

10. CONCLUSION

This scoping process has been carried out in accordance with the NEMA and the Regulations there under.

Anticipated significant impacts

Appropriate mitigation measures will assist in minimising the potential impacts on the surrounding environment during the construction, operational and decommissioning phases of the development. Detailed mitigation measures will be identified during the Environmental Impact Assessment Phase of this project.

Knowledge gaps

The following knowledge gaps and uncertainties have been identified during the scoping process of the proposed project and require further investigations that will be carried out comprehensively as part of the EIA process for the proposed project:

- All relevant specialist studies need to be conducted for the area associated with the proposed Mixed Residential Township. The studies identified during the Scoping Phase include an Aquatic, Fauna, Flora, Flood line, Geological, Heritage, Soil and land use capability, Traffic, Wetland study.
- While impacts have been identified as part of the scoping process, it is required as part of the EIA Phase to fully quantify impacts to all aspects of the environment.
- Designs and layout plans are being developed for the proposed Mixed Residential Township and the associated infrastructure; these designs will be presented as part of the EIR.

Way forward

IAPs have been identified and will be involved in the Environmental Impact Assessment process, to provide their input with regards to the identification of potential impacts, the significance thereof and alternatives for the proposed project. Further public participation during the EIA process is outlined in Section 9.6 of the Plan of Study for EIA.

Based on the above-mentioned information and the identification of the potential environmental impacts as a result of the proposed Mixed Residential Township, it is concluded that a full Environmental Impact Assessment may commence.