



**Client  
Project**

N&H Golden Miles Village Close Corporation  
COMMANDPARK EXTENSION 4 TOWNSHIP  
ESTABLISHMENT – DRAFT EIAR  
EIA REF NO.: 1/3/1/16/1N-321  
JULY 2022

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**N&H GOLDEN MILES VILLAGE CLOSE CORPORATION**

**COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT ON  
PORTION 562, 563, 565 & REMAINING EXTENT OF PORTION 25 OF  
THE FARM NAAUWPOORT 335 JS, MPUMALANGA PROVINCE**

**DRAFT ENVIRONMENTAL IMPACT ASSESSMENT REPORT  
EIA REF NO.: 1/3/1/16/1N-321**

A handwritten signature in black ink, appearing to read 'Lourens de Villiers'.

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## **SCOPING & ENVIRONMENTAL IMPACT ASSESSMENT APPROACH**

### **Legal Requirements and Legislative Process**

As part of the proposed project, certain listed activities may be triggered which is defined under the National Environmental Management Act, Act No. 107 of 1998 (NEMA, 1998), as amended, and the regulations there under will take place.

Relevant listed activities triggered by the proposed development is discussed under Section 5.2 of this Report.

It is the intention of the Scoping Report to provide the necessary information pertaining to the proposed project and its associated activities, as required in terms of the Environmental Impact Assessment Regulations, 2014, as amended (EIA Regulations in terms of Chapter 4 of NEMA, 1998) under NEMA, 1998, as amended.

This Scoping Report intends to highlight all information relevant to the proposed township establishment.

The diagram below provides a visual representation of the S&EIR approach followed in terms of NEMA, 1998, as amended, and the Environmental Impact Assessment Regulations, 2014, as amended.

	Schedule	Process	Steps Followed
<b>P H A S E  1</b>	Scoping Report Compilation <b>(70 Days)</b>	<ul style="list-style-type: none"> <li>• Scoping Report.</li> </ul>	<ul style="list-style-type: none"> <li>❖ Compilation of Scoping Report containing all information as set out in <i>Appendix 2</i> of the 2014 EIA Regulations, as amended (GNR. 982 of 4 December 2014, as amended).</li> </ul>
	Public Participation Process (PPP)_Registration of I&APs <b>(52 Days)</b> Additional Registration <b>(30 Days)</b>  Scope Report Review and Commenting <b>(30 Days)</b>	<ul style="list-style-type: none"> <li>• Background Information Documents (BIDs);</li> <li>• Newspaper Advertisement;</li> <li>• Site Notice Boards; and</li> <li>• Registration of Interested and Affected Parties (I&amp;APs).</li> <li>• Scoping Report</li> </ul>	<ul style="list-style-type: none"> <li>❖ Background Information Document distributed to all I&amp;APs and relevant stakeholders.</li> <li>❖ Newspaper Advertisement placed within a local and/or provincial Newspaper.</li> <li>❖ Site Notice Boards placed along the proposed project site boundary.</li> <li>❖ Registered post and electronic notifications.</li> <li>❖ I&amp;APs and Stakeholder comments recorded.</li> <li>❖ Availability of Scoping Report and EMP.</li> <li>❖ I&amp;APs and Stakeholder comments recorded.</li> <li>❖ Continued consultation with local authorities and communication to I&amp;APs.</li> </ul>
	Application and Draft Scoping Report Submission to Competent Authority <b>(1 Day)</b>	<ul style="list-style-type: none"> <li>• EIA Application Form.</li> <li>• Draft Scoping Report</li> </ul>	<ul style="list-style-type: none"> <li>❖ Submission of application form and draft Scoping Report and obtaining project reference number.</li> <li>❖</li> </ul>
	Final Scoping Report Compilation <b>(33 Days)</b>	<ul style="list-style-type: none"> <li>• Final Scoping Report Compilation</li> </ul>	<ul style="list-style-type: none"> <li>❖ Incorporation of comments and issues from I&amp;AP and Stakeholders into Scoping Report.</li> </ul>
	Scoping Report Submission to Competent Authority <b>(1 Day)</b>	<ul style="list-style-type: none"> <li>• Scoping Report</li> </ul>	<ul style="list-style-type: none"> <li>❖ Submission of Scoping Report within 44 days of receipt of the application by the competent authority and which was subjected to a public participation process of at least 30 days, and which reflects the incorporation of comments received by registered I&amp;APs</li> </ul>



	Schedule	Process	Steps Followed
			(including any comments of the competent authority).
P H A S E  2	Consideration of Scoping Report by Competent Authority <b>(43 Days)</b>	<ul style="list-style-type: none"> <li>Scoping Report</li> </ul>	<ul style="list-style-type: none"> <li>Competent authority to:               <ol style="list-style-type: none"> <li>Accept Scoping Report (within 43 days of receipt), with or without conditions, and advise applicant to proceed or continue with tasks contemplated in the plan of study for environmental impact assessment;</li> <li>Refuse environmental authorisation if proposed activity is in conflict with a prohibition contained in legislation or the scoping report does not comply with Appendix 2, as referred to above.</li> </ol> </li> </ul>
	Environmental Impact Assessment Report (EIA) Compilation <b>(53 Days)</b>	<ul style="list-style-type: none"> <li>Environmental Impact Assessment Report;</li> <li>Environmental Management Programme (EMP); and</li> <li>Specialist Reports.</li> </ul>	<ul style="list-style-type: none"> <li>Compilation of Environmental Impact Assessment Report containing all information as set out in <i>Appendix 3</i> of the 2014 EIA Regulations, as amended (GNR. 982 of 4 December 2014, as amended).</li> <li>Compilation of Environmental Management Programme.</li> </ul>
	Public Participation Process (PPP): EIA Report Review and Commenting <b>(31 Days)</b>	<ul style="list-style-type: none"> <li>Draft EIA Report</li> </ul>	<ul style="list-style-type: none"> <li>I&amp;APs and Stakeholder comments recorded.</li> <li>Continued consultation with local authorities and communication to I&amp;APs.</li> </ul>
3	Draft EIA Report Submission to Competent Authority <b>(1 Day)</b>	<ul style="list-style-type: none"> <li>Draft EIA Report</li> </ul>	<ul style="list-style-type: none"> <li>Submission of draft EIA Report to MDARDLEA.</li> </ul>

	Schedule	Process	Steps Followed
P H A S E  3	Final EIA Report Compilation <b>(31 Days)</b>	<ul style="list-style-type: none"> <li>Final EIA Report compilation</li> </ul>	<ul style="list-style-type: none"> <li>Incorporation of comments and issues from I&amp;AP and Stakeholders into EIA Report.</li> </ul>
	Environmental Impact Assessment Report Submission to Competent Authority <b>(1 Day)</b>	<ul style="list-style-type: none"> <li>Environmental Impact Assessment Report;</li> <li>Environmental Management Programme (EMP); and</li> <li>Specialist Reports.</li> </ul>	<ul style="list-style-type: none"> <li>Submission of Environmental Impact Assessment Report (inclusive of EMP and Specialist Reports) within 106 days of acceptance of the Scoping Report by the competent authority and which was subjected to a public participation process of at least 30 days, and which reflects the incorporation of comments received by registered I&amp;APs (including any comments of the competent authority).</li> </ul>
P H A S E  4	Competent Authority Result of Decision <b>(107 Days)</b>	<ul style="list-style-type: none"> <li>Competent Authority to 'Grant' or 'Refuse' Environmental Authorisation.</li> </ul>	<ul style="list-style-type: none"> <li>Competent authority to (within 107 days of receipt of EIA Report):               <ol style="list-style-type: none"> <li>Grant environmental authorisation in respect of activity/activities applied for;</li> <li>Refuse environmental authorisation.</li> </ol> <p style="text-align: center;"><i>or</i></p> </li> <li>Applicant to inform all registered I&amp;APs on the result of decision by the competent authority within 14 days of receipt of decision.</li> </ul>

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## DEFINITIONS

### **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.

### **Application**

An application for an Environmental Authorisation (EA).

### **Biodiversity Plan**

A spatial plan that identifies one or more categories of biodiversity priority areas, using the principles and methods of systematic biodiversity planning.

### **Biodiversity Sector Plan**

A map of Critical Biodiversity Areas and Ecological Support Areas accompanied by contextual information, land and resource-use guidelines and supporting GIS data. The map must be produced using the principles and methods of systematic biodiversity planning. A Biodiversity Sector Plan is the precursor to a Bioregional Plan.

### **Biodiversity target (threshold)**

The minimum proportion of each ecosystem type that needs to be kept in a natural or near-natural state in the long term in order to maintain viable representative samples of all ecosystem types and the majority of species associated with those ecosystem types.

### **Biosphere Reserve**

An ecosystem with plants and animals of unusual scientific and natural interest. It is a title given by UNESCO to help protect these ecosystems and associated species etc. The plan is to promote management, research and education in ecosystem conservation. This includes the sustainable use of natural resources.

### **Buffer Area**

Unless specifically defined, means an area extending 10 kilometres from the proclaimed boundary of a world heritage site or national park and 5 kilometres from the proclaimed boundary of a nature reserve, respectively, or that defined as such for a biosphere.

### **Conservation Area**

Areas of land not formally protected by law, but informally protected by the current owners and users and managed at least partly for biodiversity conservation. Because there is no long-term security associated with conservation areas, they are not considered a guaranteed form of protection.

### **Critical Biodiversity Areas**

Terrestrial and aquatic areas required to meet biodiversity targets for ecosystems, species or ecological processes, as identified in a systematic biodiversity plan.

### **Cumulative Impact**

In relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity, that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities.

### **Development**

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

### **Development footprint**

Any evidence of physical alteration as a result of the undertaking of any activity.

### **EAP**

An environmental assessment practitioner as defined in section 1 of the National Environmental Management Act (NEMA).

### **Ecological corridors**

Ecological corridors, also referred to as biodiversity corridors, can be landscape structures of various size, shape and habitat composition that maintain, establish or re-establish natural landscape connectivity. They can have a continuous or interrupted structure or a structure of stepping stones (Jongman *et. al.*, 2002).

### **Ecological Support Areas**

Terrestrial and aquatic areas that are not essential for meeting biodiversity targets, but play an important role in supporting the ecological functioning of one or more Critical Biodiversity Areas, or in delivering ecosystem services.

### **EMPr**

An Environmental Management Programme contemplated in regulations 19 and 23 of the Environmental Impact Assessment (EIA) Regulations, 2014.

### **Environment**

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

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

### **Environmental Impact Assessment**

A systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes Basic Assessment and Scoping and Environmental Impact Reporting.

### **Environmental Impact Assessment Report**

A report contemplated in regulation 23 of the EIA Regulations, 2014.

### **Environmental Management Plan**

Environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning phases of a project are prevented; and that the positive benefits of the project are enhanced.

### **Important Bird Areas (IBA)**

The Important Bird and Biodiversity Areas (IBA) Programme is one of BirdLife International's most important conservation initiatives. The IBA Programme identifies and works to conserve a network of sites critical for the long-term survival of bird species that are globally threatened, have a restricted range, are restricted to specific biomes/vegetation types, and that have significant populations, for example 20 000 water birds ([www.birdlife.org.za](http://www.birdlife.org.za)).

### **Independent**

In relation to an EAP, a specialist or the person responsible for the preparation of an environmental audit report, means-

- a) that such EAP, specialist or person has no business, financial, personal or other interest in the activity or application in respect of which that EAP, specialist or person is appointed in terms of the EIA Regulations; or
- b) that there are no circumstances that may compromise the objectivity of that EAP, specialist or person in performing such work;

excluding -

- (i) normal remuneration for a specialist permanently employed by the EAP; or
- (ii) fair remuneration for work performed in connection with that activity, application or environmental audit.

### **Indigenous Vegetation**

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

### **Integrated Development Plan (IDP)**

A strategic development plan required by law and developed through participatory processes, to guide and inform all planning, budgeting, management and decision-making in a municipal area in South Africa. [Definition from Biodiversity for Development].

### **Industrial Complex**

An area used or zoned for industrial purposes, including bulk storage, manufacturing, processing or packaging purposes.

### **Mitigation**

To anticipate and prevent negative impacts and risks, then to minimise them, rehabilitate or repair impacts to the extent feasible.

### **Phased Activities**

An activity that is developed in phases over time on the same or adjacent properties to create a single or linked entity.

### **Plan of Study for Environmental Impact Assessment**

A study contemplated in regulation 22 of the EIA Regulations that forms part of a Scoping Report and sets out how an Environmental Impact Assessment will be conducted.

### **Present Ecological State (PES)**

The PES of a river is expressed in terms of various components. That is, drivers (physico-chemical, geomorphology, hydrology) and biological responses (fish, riparian vegetation and aquatic invertebrates), as well as an integrated state, the EcoStatus.

### **Protected Area**

An area of land or sea that is formally protected by law and managed mainly for biodiversity conservation. This is a narrower definition than the IUCN definition, which includes areas that are not legally protected and that would be defined in South Africa as Conservation Areas rather than Protected Areas.

### **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 in terms of regulation 42 of the EIA Regulations, 2014.

### **Scoping Report**

A report contemplated in regulation 21 of the EIA Regulations, 2014.

### **S&EIR**

The scoping and environmental impact reporting process contemplated in regulation 21 to regulation 24 of the EIA Regulations, 2014.

### **Significant Impact**

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

### **Specialist**

A person that is generally recognised within the scientific community as having the capability of undertaking, in conformance with generally recognised scientific principles, specialist studies or preparing specialist reports, including due diligence studies and socio-economic studies.

### **Systematic Biodiversity Plan**

A plan that identifies important areas for biodiversity conservation, taking into account biodiversity patterns (i.e. the principle of representation) and the ecological and evolutionary processes that sustain them (i.e. the principle of persistence). A Systematic Biodiversity Plan must set quantitative targets/thresholds for aquatic and terrestrial biodiversity features in order to conserve a representative sample of the biodiversity pattern and ecological processes.

### **Watercourse**

(a) a river or spring;  
(b) a natural channel in which water flows regularly or intermittently;  
(c) a wetland, pan, lake or dam into which, or from which, water flows; and  
any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse as defined in the National Water Act, 1998 (Act No. 36 of 1998); and  
a reference to a watercourse includes, where relevant, its bed and banks.

### **Wetland**

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.



## ABBREVIATIONS

<b>BID</b>	-	Background Information Document
<b>CRR</b>	-	Comments and Response Report
<b>DARDLEA</b>	-	Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs, Mpumalanga
<b>DWS</b>	-	Department of Water and Sanitation
<b>EA</b>	-	Environmental Authorisation
<b>EAP</b>	-	Environmental Assessment Practitioner
<b>EIA</b>	-	Environmental Impact Assessment
<b>EIR</b>	-	Environmental Impact Report
<b>EMF</b>	-	Environmental Management Framework
<b>EMP</b>	-	Environmental Management Programme
<b>GN</b>	-	Government Notice
<b>I&amp;AP</b>	-	Interested and Affected Party
<b>IWULA</b>	-	Integrated Water Use Licence Application
<b>NEMA</b>	-	National Environmental Management Act, Act No. 107 of 1998, as amended
<b>NEM:WA</b>	-	National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)
<b>NHRA</b>	-	National Heritage Resources Act, Act No. 25 of 1999
<b>NWA</b>	-	National Water Act, Act No. 36 of 1998
<b>R</b>	-	Regulation
<b>SAHRA</b>	-	South African Heritage Resources Agency
<b>S&amp;EIR</b>	-	Scoping and Environmental Impact Reporting

## 1. PROJECT TITLE

Commandpark Extension 4 Township Establishment on Portion 562, 563, 565 and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS.

## 2. APPLICANT DETAILS

<b>Applicant Name</b>	N&H Golden Miles Village Close Corporation
<b>Contact Person</b>	Nic Grobler
<b>Postal Address</b>	P. O. Box 12159, Leraatsfontein 1038
<b>Telephone Number</b>	066 231 0179
<b>Email Address</b>	27798753481@vodamail.co.za

## 3. ENVIRONMENTAL ASSESSMENT PRACTITIONER DETAILS

<b>Environmental Assessment Practitioner Company</b>	Labesh (Pty) Ltd
<b>Contact Person</b>	Lourens de Villiers
<b>Postal Address</b>	Postnet Box 469, Private Bag X504, Sinoville, 0129
<b>Telephone Number</b>	082 789 6525
<b>Fax Number</b>	
<b>Email Address</b>	info@labesh.co.za
<b>Qualifications</b>	B.Sc Earth Science (North West University) Hons B.Sc Geography and Environmental Studies (North West University) M.Sc Water Resource Management (University of Pretoria)
<b>Relevant experience</b>	20 years' experience conducting Environmental Impact Assessment processes

The EAP's Curriculum Vitae is attached to this report under Appendix E.

## 4. LOCATION OF THE DEVELOPMENT FOOTPRINT

The properties for the proposed development and its associated activities are as follows:

Property/Land Parcel	21 digit Surveyor General Code	Size (Hectares)
Portion 562 of the Farm Naauwpoort 335 JS	T0JS00000000033500562	67,4338Ha
Portion 563 of the Farm Naauwpoort 335 JS	T0JS00000000033500563	31,4104Ha
Portion 565 of the Farm Naauwpoort 335 JS	T0JS00000000033500565	16,6202Ha
Remainder of Portion 25 of the Farm Naauwpoort	T0JS00000000033500025	7,9880Ha
	<b>Total Area</b>	<b>123,4524Ha</b>

The project location is ±14km to the south south-east of Emalahleni CBD, in the Emalahleni Local Municipality, Nkangala District Municipality, Mpumalanga Province. Access to the project properties is from the R544 (Watermeyer Street).

The GPS coordinates for the project sites are as follows:

25°58'16.41"S; 29°16'43.29"E  
25°58'41.17"S; 29°16'54.12"E  
25°58'36.49"S; 29°17'19.20"E  
25°58'21.18"S; 29°17'14.11"E

A locality map, provided on the next page, shows the location of the four project properties, at an appropriate scale.

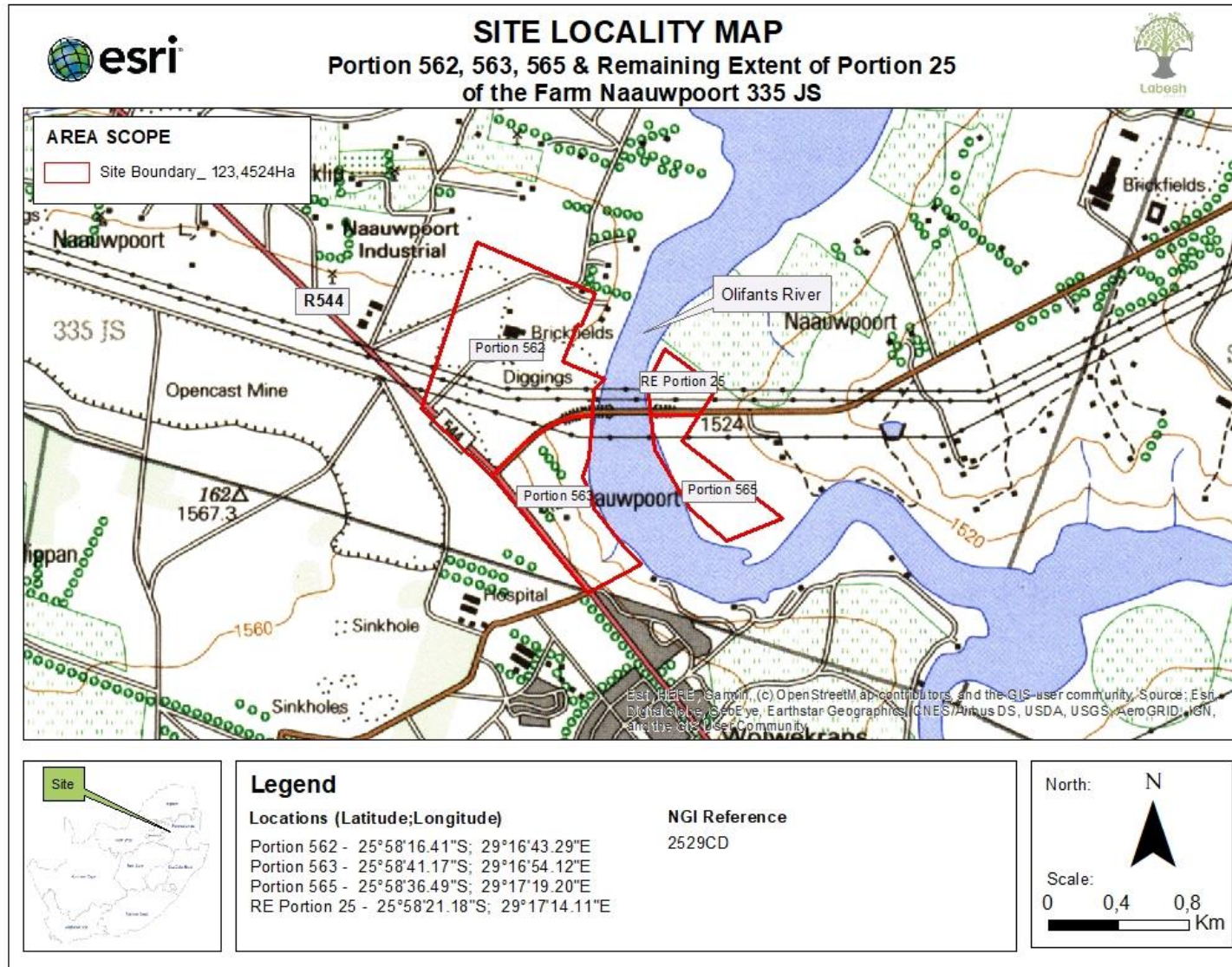


Figure 1: Site locality map (Map (in colour) is also given under Appendix A.)



The following photos give an indication of the current status of the project properties. Photographs are also given under Appendix B (in colour).







## 5. SCOPE OF THE PROPOSED DEVELOPMENT AND ACTIVITIES

### 5.1 Description of the activities to be undertaken

N&H Golden Miles Village Close Corporation (herein after referred to as the applicant) aims to establish a township to be known as Command Park Extension 4. The proposed project will entail a mixed land use township development to accommodate industrial and tourism development for the promotion of economic growth on the following properties:

- Portion 562 of the Farm Naauwpoort 335 JS;
- Portion 563 of the Farm Naauwpoort 335 JS;
- Portion 565 of the Farm Naauwpoort 335 JS; and
- Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS.

The four project properties are 123, 4524 Ha in extent. The area of land that will be developed is therefore 123, 4524 Ha.

#### Current activities on the project site

Portion 563, 565 and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS, is currently open vacant land. Portion 562 of the Farm Naauwpoort 335 JS consists of a scatter of industrial related structures that include overhead electricity cables and towers.

#### The proposed project

The proposed development will consist of the following land uses. The allocation towards the different land uses is given in the table below:

*Table 1: Land use differentiation and density units per hectare of the proposed development*

Proposed uses	Number of Erven	Size (ha)	Height	Coverage	FAR
Industrial 1	41	54, 1289	3 Storeys	70%	0.7
Business 2	1	2, 2325	3 Storeys	70%	1.2
Tourism	3	31, 6047	N/A	N/A	N/A
Private Park	1	21, 1315	N/A	N/A	N/A
Special for refuse and water treatment plant	2	1, 8998	N/A	N/A	N/A
Special for Sewer purification plant	2	1, 0416	N/A	N/A	N/A
Private Road	2	5, 1210	N/A	N/A	N/A

The main goal of the development layout plan was to create an industrial and tourism park which is secure, accessible and convenient for the proposed businesses and clients of the township.

The proposed new township will consist of 41 industrial erven, 3 tourism erven, 1 business erf, 1 erf for a private park, 2 erven for refuse and water treatment plant, 2 erven for sewer purification plant and 2 erven for private roads.

Portion 562 of the Farm Naauwpoort 335 JS will accommodate:

- Industrial Erven;
- Park Erf; and



- Special Erven.

Portion 563 of the Farm Naauwpoort 335 JS will accommodate:

- Industrial Erven;
- Tourism Erf;
- Business Erf; and
- Special Erven.

Portion 565 of the Farm Naauwpoort 335 JS will accommodate:

- Tourism Erven.

Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS will accommodate:

- Tourism Erven.

The proposed development will take place in three (3) phases. Phase 1 will include the development of 11 erven for 'Industrial 1' zoning, 1 erf for 'Private Park' zoning, 2 erven for 'Tourism' zoning and 2 erven for 'Special Use' zoning. Phase 2 will include the development of 17 erven for 'Industrial 1' zoning. Phase 3 will include the development of 13 erven for 'Industrial 1' zoning, 1 erf for 'Business 2' zoning, 1 erf for 'Tourism' zoning and 2 erven for 'Special Use' zoning.



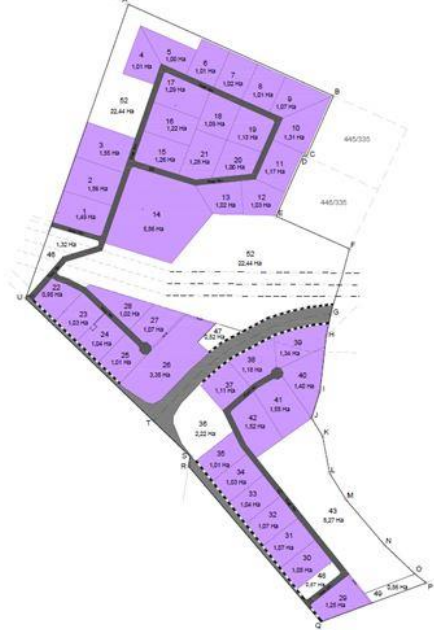
Figure 2: Site Layout Plan (Map (in colour) is also given under Appendix A.)



Figure 3: Phased Layout Plan (Map (in colour) is also given under Appendix A.)

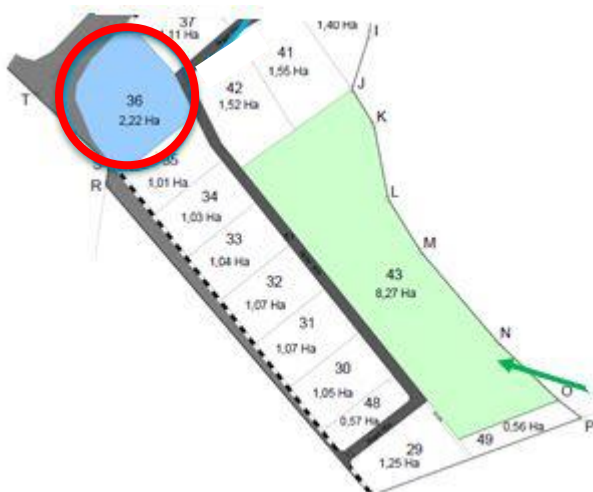
**The proposed development breakdown:**

• **Industrial Erven**



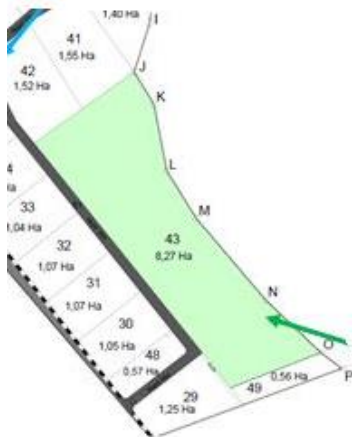
The size and zoning of the industrial erven were chosen due to the increasing need within the Naauwpoort Industrial area for small, light industrial erven. The average erf size is approximately 1 hectare. The erven are serviced with a 16m wide road in order to provide enough manoeuvrability for industrial vehicles.

• **Business Erf**

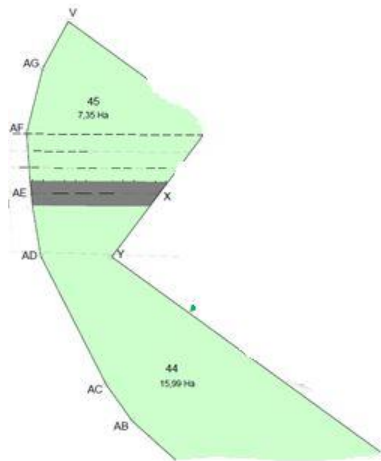
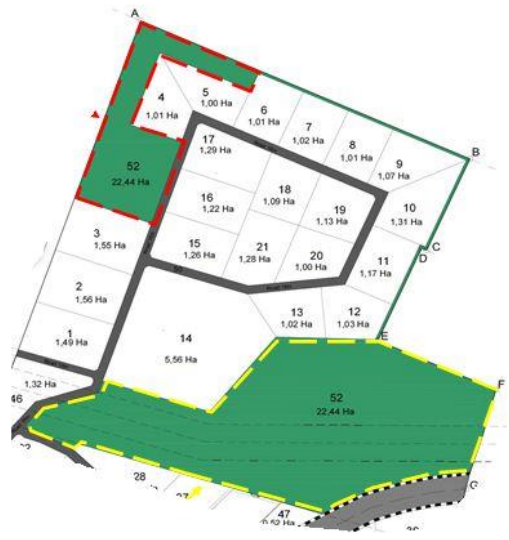
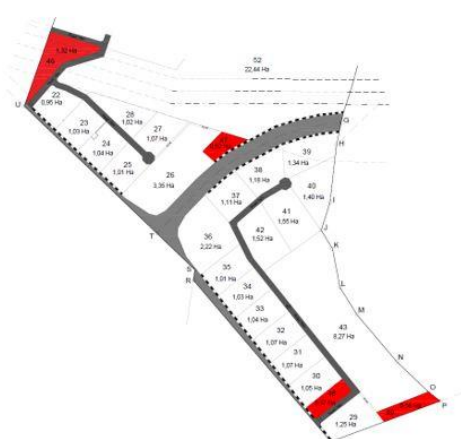


The business erf is specifically placed on the intersection to Duvha Park Power Station due to the visibility and accessibility the erf will enjoy. A 'Business 2' zoning aligns with the activity spine policy of Emalahleni. The applicant identified a need for a shopping centre within the Naauwpoort area and therefore decided to build a shopping centre on Erf 36 in order to serve the surrounding community of Emalahleni.

• **Tourism Erven**



The aim of the applicant is to develop a lodge on Erf 43 in order to provide overnight lodging facilities to business man and/or contractors. Erf 43 also consists of a nice viewing point towards the Olifants river and will add to the aesthetic of the lodge.

	<p>Erven 44 and 45 is aimed at creating camping sites and fishing spots alongside the Olifants river as there is a great demand for camping and fishing activities within the area. Additionally, hiking and cycling trails will also be created due to the scenery of the river and landscape.</p>
<p>● <b>Park Erven</b></p> 	<p>The aim of the applicant is to develop a 'Hobby Park' on the tourism erven and which will be the first of its kind in Emalaheni. The Hobby Park will accommodate various hobbies such as 4x4 trials, paint ball, hiking, cycling, birding, archery, fishing, picnics and camping. Erf 52 is deliberately oddly shaped and consists of two portions of land which is connected by a 5m wide road running at the back of the industrial erven. The road will be able to give access to the separated land portions and will serve as a mountain bike trail. A portion of land in the north is undevelopable due to deep excavations. This area of land will be developed into a paintball course. The portion of land in the south is partially developable due to electrical servitudes running over the property. This portion of land will accommodate 4x4 vehicle, off road motorbike and mountain bike courses.</p>
<p>● <b>Special Erven</b></p> 	<p>The township will consist of two water reclamation plants and refuse areas. Erf 46 will be able to serve the northern part of the township and Erf 48 will serve the southern part of the township. Erven are located on the highest points within the township in order to ensure efficient water pressure throughout the township. Additionally, the township will consist of two sewer package plants. Erf 47 will serve the northern part of the township and Erf 48 will serve the southern part of the township.</p>

The advantages of clustering these functional facilities are summarised in the Guidelines for Human Settlement and Design (Volume 1, Chapter 5.5, 5:2005):

- Convenience, as all services are located in one centre;
- Sharing of high-cost elements can reduce costs considerably;
- Exposure for public facilities and the encouragement of their use;
- The integration of different communities;
- A reduction in inequalities in the provision of facilities;
- Offsetting of transport costs;
- Cutting down on the amount of land required;
- The promotion of full use of buildings;
- Lower building costs and running costs;
- Reduced maintenance costs;
- A large catchment area is less susceptible to localized demographic changes.

**Land uses near and adjacent to the site**

Portion 563, 565 and the Remainder of Portion 25 of the Farm Naauwpoort 335 JS, Mpumalanga Province, is currently vacant, underutilized land. Portion 562 of the Farm Naauwpoort 335 JS, Mpumalanga Province, currently consists of a scatter of industrial related structures. The proposed township is situated within the Naauwpoort Industrial Area (as earmarked by the Emalahleni SDF 2015/16), as well as eco-tourism along the Olifantsriver.

Near and adjacent to the project property (Portion 562 of the Farm Naauwpoort 335 JS) are the following land uses:

- North: Industrial activities and Agricultural land;
- East: Open, vacant land and Olifantsriver;
- South: Open, vacant land and Residential activities; and
- West: Industrial activities and open, vacant land.

Near and adjacent to the project property (Portion 563 of the Farm Naauwpoort 335 JS) are the following land uses:

- North: Open, vacant land with a scatter of Industrial related structures;
- East: Olifantsriver;
- South: Open, vacant land and Agricultural land; and
- West: Residential activities.

Near and adjacent to the project property (Portion 565 of the Farm Naauwpoort 335 JS) are the following land uses:

- North: Open, vacant land;
- East: Open, vacant land and Resorts;
- South: Olifantsriver; and
- West: Olifantsriver.

Near and adjacent to the project property (Remainder of Portion 25 of the Farm Naauwpoort 335 JS) are the following land uses:

- North: Agricultural land;
- East: Agricultural land;
- South: Open, vacant land; and
- West: Olifantsriver.



### 5.1.1 Roads and Surface Drainage

#### Access

The proposed site is surrounded by the R544 road and the road to Duvha Power Station. Two access points will be provided at the R544 road. The proposed access roads will be designed and applied for at the Mpumalanga Department of Public Works, Roads and Transport. The site can currently be accessed from an entrance located on the R544 road, approximately 500m from the R544 and Duvha road intersection. One access point will link up with the existing Benicon Park at the western area of the township. Erven 44 and 45 (situated across the Olifants river) will each have its own access point from Duvha road. This will also be designed and applied for at the Mpumalanga Department of Public Works, Roads and Transport. All relevant road signs and markings to comply with standards as set out by the South African Road Traffic Signs Manual. SCIP Engineering group has also been appointed to conduct a Traffic Impact Assessment (TIA) for the proposed development (Korsman & Associates, 2021).



Figure 4: Proposed Access Points

The current access location is sufficient for Phase 1 of the proposed township development. This road is to be constructed according to the most relevant standards of the Emalahleni Local Municipality. All road signs and markings are to comply with the standards as set out by the South African Road Traffic Signs Manual.



### Roads

Internal road infrastructure will be required for the proposed township. Internal road infrastructure will include the development of private roads on two farm portions. One road will be developed within Portion 562 of the Farm Naauwpoort 335 JS and one road will be developed within Portion 563 of the Farm Naauwpoort 335 JS. These roads will be wider than 8 metres and longer than 1 kilometre. As a result, Government Notice R983 (Listing Notice 1), as amended by GN No. 327 of 7 April 2017, Activity No. 24 has been applied for as part of this environmental authorisation application.

### Surface Drainage

There is no existing stormwater drainage system present on the proposed site. As a result of the site being undeveloped, stormwater currently flows on the surface.



Figure 5: Flow of stormwater on the property

The compilation of a new stormwater model was compiled by SCIP Engineering Group (Civil Services Report is attached to this Report under Appendix D). 1:5 design floods were calculated for the following separate areas:

Phase 1 – Industrial: 9,843 m<sup>3</sup>/s

Phase 1 – Park: 0,047 m<sup>3</sup>/s

Phase 1 – Tourism 0,014m<sup>3</sup>/s

Phase 2 – 5,026 m<sup>3</sup>/s

Phase 3 – 8,106 m<sup>3</sup>/s

The above-shown peak flows for the 1:5 year floods for Phase 1 (Industrial), Phase 2 and Phase 3 will be drained from the roads via kerb inlets and stormwater pipes with a minimum diameter of 600mm. Water will be drained from these surfaces onto the park and tourism areas and from these areas it will flow on the surface by means of natural contours

into the Olifants river. For the park and tourism erven, minimal stormwater accumulated will be drained on the surface. The natural contours will assist flow into the Olifants river. A proposed stormwater system has been included in the Civil Services Report (attached to this report under Appendix D). The system is a proposed design and more extensive calculations are required for the final design.

## 5.1.2 Water Services

### Existing Services

According to the Civil Services Report (attached under Appendix D) there exists no water supply infrastructure on the proposed site. The surrounding area also contains no bulk water supply infrastructure. The closest available connection is the system located in Duvha Park, approximately 4,8km away from the proposed site.

A total of 5 (five) boreholes are present on the proposed project site, but the boreholes will have to be tested by a registered hydrogeologist according to the correct standards in order to determine the capacity thereof:

- Phase 1: 3 Boreholes
- Phase 2: 1 Borehole
- Phase 3: 1 Borehole

### Proposed Water Infrastructure (as per the Civil Services Report)

#### Phase 1

With the W11 classification and in accordance with the Guidelines of Human Settlement Planning and Design Handbook (Red Book), the projected annual average water demand for the development is calculated at a rate of 0,7kl / 100m<sup>2</sup> / day (F. A. R 0.7).

The Annual Average Daily Demand (AADD) is shown in the table below.

Table 2: AADD Calculation

Area (0.7 F.A.R)	Demand Rate	Peak Hour Factor	Demand (kl/day)	Demand (l/s)
137 410 m <sup>2</sup>	kl / 100m <sup>2</sup> / day	3	4122.3	47.71

For the development above, an AADD of 4122.3 kl / day will be needed for the development.

Due to the type of zoning, the proposed development is classified as a High-Risk area for firefighting. Due to the unavailability of water infrastructure in the area it is proposed that water storage facilities for firefighting purposes be constructed. The firefighting demand calculation is shown in the table below.

Table 3: Fire Fighting Demand Calculation

Minimum Design Fire Flow	Duration of Design Fire Flow	Volume of Fire Fighting Demand	Volume of AADD	Total Storage Volume Needed
12 000l / min (200l/sec)	6 hours	4320 m <sup>3</sup>	4122.3	8442m <sup>3</sup>

If storage for firefighting is needed, a reservoir with a minimum capacity of 8500m<sup>3</sup> will be required. A complete fire design must be done to standards as outlined by Emalahleni Local Municipality.

## Phase 2

With the W11 classification and in accordance with the Guidelines of Human Settlement Planning and Design Handbook (Red Book), the projected annual average water demand for the development is calculated at a rate of 0,7kl / 100m<sup>2</sup> / day (F. A. R 0.7). The Annual Average Daily Demand (AADD) is shown in the table below.

Table 4: AADD Calculation

Area (0.7 F.A.R)	Demand Rate	Peak Hour Factor	Demand (kl/day)	Demand (l/s)
132 440 m <sup>2</sup>	kl / 100m <sup>2</sup> / day	3	3793.2	45.99

For the development above, an AADD of 3793.2 kl / day will be needed for the development.

Due to the type of zoning, the proposed development is classified as a High-Risk area for firefighting. Due to the unavailability of water infrastructure in the area it is proposed that water storage facilities for firefighting purposes be constructed. The firefighting demand calculation is shown in the table below.

Table 5: Fire Fighting Demand Calculation

Minimum Design Fire Flow	Duration of Design Fire Flow	Volume of Fire Fighting Demand	Volume of AADD	Total Storage Volume Needed
12 000l / min (200l/sec)	6 hours	4320 m <sup>3</sup>	3793.2m <sup>3</sup>	8113.2m <sup>3</sup>

If storage for firefighting is needed, a reservoir with a minimum capacity of 8500m<sup>3</sup> will be required. A complete fire design must be done to standards as outlined by Emalaheni Local Municipality.

## Phase 3

With the W11 classification and in accordance with the Guidelines of Human Settlement Planning and Design Handbook (Red Book), the projected annual average water demand for the development is calculated at a rate of 0,7kl / 100m<sup>2</sup> / day (F. A. R 0.7) for Industrial 1 and 1,2kl/ 100m<sup>2</sup> / day (F. A. R 1.2) for Business 2. The Annual Average Daily Demand (AADD) is shown in the table below.

Table 6: AADD Calculation

Area (F.A.R)	Demand Rate	Peak Hour Factor	Demand (kl/day)	Demand (l/s)
108 010 m <sup>2</sup> (Industrial)	kl / 100m <sup>2</sup> / day	3	3240.3	37.50
26 640 m <sup>2</sup> (Business)	kl / 100m <sup>2</sup> / day	3	799.2	9.25

For the development above, an AADD of 4039.5 kl / day will be needed for the development.

Due to the type of zoning, the proposed development is classified as a High-Risk area for firefighting. Due to the unavailability of water infrastructure in the area it is proposed that water storage facilities for firefighting purposes be constructed. The firefighting demand calculation is shown in the table below.

Table 7: Fire Fighting Demand Calculation

Minimum Design Fire Flow	Duration of Design Fire Flow	Volume of Fire Fighting Demand	Volume of AADD	Total Storage Volume Needed
12 000l / min (200l/sec)	6 hours	4320 m <sup>3</sup>	4039.5m <sup>3</sup>	8359.5m <sup>3</sup>

If storage for firefighting is needed, a reservoir with a minimum capacity of 8500m<sup>3</sup> will be required. A complete fire design must be done to standards as outlined by Emalaheni Local Municipality.

### 5.1.3 Sewerage

#### Available Sewage Reticulation System

There currently no infrastructure available on the proposed project sites. The nearest wastewater treatment works, and which is under the jurisdiction of the Emalaheni Municipality, is situated across the Olifants river approximately 6km away from the proposed project sites.

#### Proposed Sewage Reticulation System

According to the Civil Services Report by SCIP Engineering Group (attached under Appendix D) and based on the Waterborne Sanitation Design Guide, the rate of average daily sewage production for the proposed industrial development is 0.56kl / 100m<sup>2</sup> / day. According to guidelines 15% of stormwater infiltration must be accounted for in the sewage outflow.

For Phase 1 of the development, a sewage production of 884.92 kl per day can be expected. Due to the unavailability of a main sewer system in the area, the construction of a sewage package plant is proposed. The sewage package plant will be designed with a minimum capacity of 11l/s (950.4 kl/day) in order to handle the sewage production. The sewage package plant will service the Industrial zoning of phase 1. For the tourism erven, ablution facilities will be provided for the minimal sewage produced and will be treated by means of a septic tank and French Drain System.

For Phase 2 of the development, a sewage production of 852.91 kl per day can be expected. Due to the unavailability of a main sewer system in the area, the construction of a sewage package plant is proposed. The sewage package plant will be designed with a minimum capacity of 10l/s (864 kl/day) in order to handle the sewage production.

For Phase 3 of the development, a sewage production of 867.14 kl per day can be expected. Due to the unavailability of a main sewer system in the area, the construction of a sewage package plant is proposed. The sewage package plant will be designed with a minimum capacity of 11l/s (950.4 kl/day) in order to handle the sewage production.

### 5.1.4 Electricity

An Electrical Engineering Service Report was conducted by Greenpower Electrical Engineering Ltd in August 2021. Detail as contained in the Electrical Engineering Service Report is described below. The Electrical Engineering Report is attached under Appendix D.

The following acts, municipal by-laws, codes of practice and regulations was used as guidelines, standards and technical requirement in the design of electrical engineering infrastructure and services for the development:

- The code of practice for the wiring of premises, SABS 0142 where applicable.
- The Occupational Health and Safety Act, act 85 of 1993, as amended.
- Eskom Standards and specifications
- The Municipal by-laws and special requirement of the supply authorities of the area or district concerned.
- The regulations of the local Fire Department.

- The regulations of the Post Office and Telkom.
- The National Building Regulations and Building Standards Act, Act 103 of 1977 and SABS 0400 of 1990.

Stands on the proposed development site will be zoned as follows:

Type of Zoning	Amount of Stands
Industrial 1	41 stands
Business 2	1 stand
Special	1 stand
Tourism	3 stands

The proposed site is fed by two different Eskom supply points:

**Stand 1-45**



Figure 6: Eskom Pole BRI/LA3 107/13

**GPS points of Eskom pole:** S-25° 58' 24.552"; E-29° 16' 30.6"

**Eskom Pole Number:** BRI/LA3 107/13

**Eskom Transformer:** 50kVA\22kV

**Eskom Meter Number:** 3122 5400 0024 18



**Stand 46 & 47**



Figure 7: Eskom Pole BRI/LA3 107/4A/1

**GPS points of Eskom pole:** S-25° 58' 40.716"; E-29° 16' 46.488"

**Eskom Pole Number:** BRI/LA3 107/4A/1

**Eskom Transformer:** 50kVA\22kV

**Eskom Meter Number:** 3114 4211 9139 6

It is proposed that an application be lodged to Eskom in order to obtain a feasibility quotation and budget quotation to supply adequate capacity to the proposed development.

**Previous Eskom Electricity Supply**

Previously Eskom supplied Portion 562 of the Farm Naauwpoort 335 JS with a bulk supply point. This point has however been decommissioned and are no longer in use.



Figure 8: Decommissioned Eskom Supply Point on the proposed site

Table 8: Estimated Required Power Requirements

Stand Description	No. of Stands	Estimated KVA Required per Stand	Total KVA Required per Stand
Industrial 1	41	50	2050
Business 2	1	200	200
Special	1	0	0

Stand Description	No. of Stands	Estimated KVA Required per Stand	Total KVA Required per Stand
Tourism (Stand 5 & 45)	2	16	32
Tourism (Stand 46) (Estimated load – Final load dependant on SDP)	1	50	50
Tourism (Stand 47) (Estimated load – Final load dependant on SDP)	1	16	16
<b>Estimated Load Required</b>			<b>2348</b>

### Supply Voltage

The supply voltage to the proposed site will be 22kV as was determined on site.

### Reticulation Methodology

Each industrial stand will be allowed an After Diversity Maximum Demand of 50kVA, 3 phase. Thus  $\pm 72$ Amp per stand. This is the industrial norm for an Industrial 1 development.

From an Eskom supply point, the applicant will have to install the required MV reticulation to make available capacity at the stand boundary of each stand. This must be done by means of:

- Installing overhead MV reticulation on wooden pole structures.
- Installing 100kVA and/or 200kVA pole top transformers to allow for the 50kVA per stand.
- The low voltage distribution to each stand will not form part of the initial project and will be installed by Eskom as and when applications for connections are received from each stand owner.
- Each stand owner in the proposed development will be liable for his/her own application, connection fee, deposit and supply agreement with Eskom.
- Should the new owner of a stand require more than the 50kVA, a separate application for this stand will have to be lodged by each of the consumers

### Area Lighting

No area lighting will be required. Each consumer must install sufficient lighting on the stand for own use.

### Energy Efficiency Requirements

In order to contribute to a more energy efficient development, it is recommended that some of the following methods be implemented by the applicant:

1. **Install energy saving LED light.**
2. **Motion Sensors for Outdoor Lighting** are activated when movement is detected at night, and they automatically turn off when movement is not detected.
3. **Occupancy Sensor for Indoor Lighting** are activated as soon as a person enters a room and once movement is not detected after a few minutes, these automatically turn off. These are typically used for bathrooms, conference rooms.
4. **Timer Controlled Lighting** can be programmed to turn on and off at certain times which can be used for indoor and outdoor lighting.
5. **Ventilation and air conditioning systems** - Air ventilation and air conditioning are usually interchanged but are completely different systems. In air ventilation, the system takes the air in the building and mixes fresh air from outside, without changing the air's temperature. The purpose of this is to refresh and remove the harmful elements in the air by bringing fresh air inside. By implementing a proper ventilation system less air conditioning is required

6. **Photovoltaic (PV) panels or more popularly known as solar panels** are used to self-generate electricity using the energy from the sun. The term “**photovoltaic**” refers to the direct conversion of light into electricity at the atomic level. Thus, the materials used in solar panels exhibit a photoelectric effect that causes them to absorb photons of light and release electrons. The freed electrons are then induced to travel through an electric circuit which can be used as electricity.

### **5.1.5 Traffic**

The proposed site is surrounded by the R544 road and the road to Duvha Power Station. The proposed site will be accessed from two entrances. SCIP Engineering group has been appointed to conduct a Traffic Impact Assessment (TIA) for the proposed development (Korsman & Associates, 2021).

### **5.1.6 Waste**

#### **Hazardous waste**

Hazardous waste generated on the premises will be removed and disposed of at a licensed waste facility.

#### **Domestic waste**

Domestic waste generated on the premises will be removed and disposed of at a licensed municipal waste facility.

## **5.2 Listed Activities triggered by the proposed development**

The following listed activities are triggered by the proposed development and therefore require Environmental Authorisation, in terms of the Environmental Impact Assessment Regulations of 4 December 2014, as amended:



Table 9: Listed activities triggered by the proposed development

Government Notice and Activity Number	Wording as per the Listing Notice	Description as per the project description relating to each listed activity
Government Notice R983 (Listing Notice 1), as amended by GN No. 327 of 7 April 2017, Activity No. 9	<p>The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or stormwater</p> <p>(i) with an internal diameter of 0,36 metres or more; or</p> <p>(ii) with a peak throughput of 120 litres per second or more;</p> <p>excluding where-</p> <p>(a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or</p> <p>(b) where such development will occur within an urban area.</p>	The development of infrastructure for the bulk transportation of stormwater with an internal diameter of 0,6 metres.
Government Notice R983 (Listing Notice 1), as amended by GN No. 327 of 7 April 2017, Activity No. 11	<p>The development of facilities or infrastructure for the transmission and distribution of electricity-</p> <p>(i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or</p> <p>(ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more.</p> <p>excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is:</p> <p>a) temporarily required to allow for maintenance of existing infrastructure;</p> <p>b) 2 kilometres or shorter in length;</p> <p>c) within an existing transmission line servitude; and</p> <p>d) will be removed within 18 months of the commencement of development.</p>	The installation of reticulation structures and transformers for the distribution of electricity outside urban areas with a capacity of less than 275 kilovolts.
Government Notice R983 (Listing Notice 1), as	<p>The development of</p> <p>(i) canals exceeding 100 square metres in size;</p> <p>(ii) channels exceeding 100 square metres in size;</p>	The development of buildings exceeding 100 square metres in size and infrastructure or structures with a physical footprint of 100 square metres

Government Notice and Activity Number	Wording as per the Listing Notice	Description as per the project description relating to each listed activity
amended by GN No. 327 of 7 April 2017, Activity No. 12	<ul style="list-style-type: none"> <li>(iii) bridges exceeding 100 square metres in size;</li> <li>(iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size;</li> <li>(v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size;</li> <li>(vi) bulk stormwater outlet structures exceeding 100 square metres in size;</li> <li>(vii) marinas exceeding 100 square metres in size;</li> <li>(viii) jetties exceeding 100 square metres in size;</li> <li>(ix) slipways exceeding 100 square metres in size;</li> <li>(x) buildings exceeding 100 square metres in size;</li> <li>(xi) boardwalks exceeding 100 square metres in size; or</li> <li>(xii) infrastructure or structures with a physical footprint of 100 square metres or more:</li> </ul> <p>The development of:</p> <ul style="list-style-type: none"> <li>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 10 square metres; or</li> <li>(ii) infrastructure or structures with a physical footprint of 100 square metres or more-</li> </ul> <p>Where such development occurs-</p> <ul style="list-style-type: none"> <li>(a) within a watercourse;</li> <li>(b) in front of a development setback; or</li> <li>(c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of the watercourse;</li> </ul> <p>excluding-</p>	or more within a watercourse and/or within 32m from the edge of a watercourse.

Government Notice and Activity Number	Wording as per the Listing Notice	Description as per the project description relating to each listed activity
	<p>aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>bb) where such development activities are related to the development of a port or harbour in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>dd) where such development occurs within an urban area; or</p> <p>ee) where such development occurs within existing roads or road reserves railway line reserves; or</p> <p>ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p>	
<p>Government Notice R983 (Listing Notice 1), as amended by GN No. 327 of 7 April 2017, Activity No. 24</p>	<p>The development of a road</p> <p>(i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or</p> <p>(ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres;</p> <p>but excluding a road</p> <p>a) which is identified and included in activity 27 in Listing Notice 2 of 2014; or</p> <p>b) where the entire road falls within an urban area; or</p> <p>c) which is 1 kilometre or shorter.</p>	<p>The development of 2 private roads (where the roads are wider than 8 metres and longer than 1 kilometre).</p>
<p>Government Notice R983 (Listing</p>	<p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming,</p>	<p>Mixed land use township development on land previously used for agriculture purposes comprising of industrial erven, tourism erven,</p>

Government Notice and Activity Number	Wording as per the Listing Notice	Description as per the project description relating to each listed activity
<p>Notice 1), as amended by GN No. 327 of 7 April 2017, Activity No. 28</p>	<p>equestrian purposes or afforestation on or after 01 April 1998 and where such development:</p> <ul style="list-style-type: none"> <li>(i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or</li> <li>(ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</li> </ul> <p>excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>	<p>business erf, transportation services erf, erf for a refuse area and erven for private roads. Development will occur outside of an urban area and the total land to be developed is 123, 4524 Ha.</p>
<p>Government Notice R984 (Listing Notice 2), as amended by GN No. 325 of 7 April 2017, Activity No. 15</p>	<p>The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for-</p> <ul style="list-style-type: none"> <li>(i) the undertaking of a linear activity; or</li> <li>(ii) maintenance purposes undertaken in accordance with a maintenance management plan.</li> </ul>	<p>The clearance of 123, 4524 hectares of indigenous vegetation for mixed land use township development.</p>
<p>Government Notice R985 (Listing Notice 3), as amended by GN No. 324 of 7 April 2017, Activity No. 12</p>	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p>Mpumalanga:</p> <ul style="list-style-type: none"> <li>i. Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</li> <li>ii. Within critical biodiversity areas identified in bioregional plans; or</li> </ul>	<p>The clearance of more than 300 square metres of indigenous vegetation within critical biodiversity areas identified in bioregional plans on Portion 565 of the Farm Naauwpoort 335 JS (±15 hectares) and the Remainder of Portion 25 of the Farm Naauwpoort 335 JS (±7,5 hectares).</p>

Government Notice and Activity Number	Wording as per the Listing Notice	Description as per the project description relating to each listed activity
	iii. On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open space, conservation or had an equivalent zoning or proclamation in terms of NEMPAA.	

### 5.3 Water Use Licence Activities

The proposed site contains 5 boreholes, which will need to be tested to determine the capacity. The calculated Annual Average Daily Demand (as per the Civil Services Report attached under Appendix D) is calculated as follows:

- Phase 1: 4122.3 kl/day
- Phase 2: 3793.2 kl/day
- Phase 3: 4039.5 kl/day

The following proposed water uses require Water Use Registration and/or Licence applications in terms of Chapter 4 of the National Water Act, 1998 (Act No. 36 of 1998):

- Section 21(a): Taking water from a water resource – the abstraction of groundwater from boreholes onsite;
- Section 21(b): Storage of water – the storage of clean water in a number of storage tanks;
- Section 21(f): Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit; and
- Section 21(g): Disposing of waste or water containing waste in a manner which may detrimentally impact on a water resource.

The required Water Use Registration and/or Licence application will be submitted to the Department of Water and Sanitation in due course.

## 6. POLICY AND LEGISLATIVE CONTEXT OF THE APPLICATION

The following legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments are applicable to the proposed development and have or will be considered in this full Scoping and Environmental Impact Assessment process.

### Legislation

<p><b>The Constitution of South Africa, 1996 (Act No. 108 of 1996), as amended</b></p> <ul style="list-style-type: none"> <li>To establish a Constitution with a Bill of Rights for the RSA.</li> </ul>
<p><b>The National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended</b></p> <ul style="list-style-type: none"> <li>To provide for the integrated management of the environment, and to regulate the 'Duty of Care' Principle.</li> </ul>
<p><b>The Environmental Impact Assessment Regulations of 4 December 2014, as amended</b></p> <ul style="list-style-type: none"> <li>To regulate and control the authorisation of certain listed activities.</li> </ul>
<p><b>The National Heritage Resources Act, 1999 (Act No. 25 of 1999), as amended</b></p> <ul style="list-style-type: none"> <li>To introduce an integrated and interactive system for the management of the national heritage resources.</li> </ul>
<p><b>The National Appeal Regulations</b> – Government Notice No. R.993 of 8 December 2014</p>
<p><b>Promotion of Access to Information Act, 2000 (Act No 2 of 2000 as amended)</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul>
<p><b>The National Water Act, 1998 (Act No. 36 of 1998), as amended</b></p> <ul style="list-style-type: none"> <li>To provide for fundamental reform of the law relating to water resources</li> </ul>
<p><b>The National Environmental Management: Waste Act (Act No. 59 of 2008)</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul>
<p><b>The National Environmental Management: Air Quality (Act No. 39 of 2004)</b></p> <ul style="list-style-type: none"> <li>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.</li> </ul>

### Plans

The Mpumalanga Biodiversity Sector Plan, 2014
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### Guidelines

Guide on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010
Guideline on Public Participation in the Environmental Impact Assessment Process, 2012

### Spatial tools

National Web Based Environmental Screening Tool
SANBI Biodiversity GIS Database

### Provincial development planning frameworks

Mpumalanga Spatial Development Framework, 2019
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### Municipal development planning frameworks



Emalahleni Local Municipality – Spatial Development Framework Final Report, 2011
Emalahleni Local Municipality – Spatial Development Framework Final Report, 2013/2014
Emalahleni Local Municipality – The Integrated Municipal Environmental Policy, 2018
Emalahleni Local Municipality – Reviewed and Approved Integrated Development Plan, 2013/2014

## **7. MOTIVATION FOR THE NEED AND DESIRABILITY OF THE PROPOSED DEVELOPMENT**

### **7.1 Need and desirability of the development in the context of the preferred location**

#### **7.1.1 Applicant**

The main aim of the applicant is to establish a township that addresses the need for small, industrial erven within Emalahleni and to strengthen and enhance the tourism character of the Emalahleni Local Municipality, and more specifically along the Olifantsriver. The Emalahleni SDF 2015/16 encourages both industrial and tourism related activities within the area and therefore will the two land uses (industrial and tourism) fit in perfectly within the Naauwpoort area.

With Emalahleni being one of the most industrialised municipal areas within its district, a need for additional small industrial erven has emerged. Also, according to the Emalahleni Integrated Development Plan (IDP) 2021/22, approximately 380 hectares of land needs to be provided by the year 2030 in order to accommodate gradual population growth. According to Mkwanazi, n.d., industrial developments can reduce unemployment, limit travelling time and distance and help capitalize on growing township tourism.

Subsequently, tourism contributed to 2,3% of the Emalahleni economy in the year 2017, and should tourism opportunities further be exploited to realize the potential benefits of this specific sector (Emalahleni Local Municipality, n.d.). Due to the need and lack of formal hobby areas within Emalahleni, the applicant decided to develop a Hobby Park on a portion of the property where landscape changes had occurred as a result of brickworks that were operated from the site for numerous years.

Furthermore, the proposed development is considered desirable due to:

- Accessibility to the site is easily reachable via local and provincial roads (this is via the existing N12 provincial road on to the R544 local road – from which the development will be accessed).
- The layout and structure of the proposed development is not constrained by the existing built environment.
- The design of the layout used a simple and cost-effective approach. The northern area of the township consists of one main road with a loop design and a secondary road with a cul-de-sac design linking all erven of the township. The southern area of the township consists of main road linking all the erven of the township.
- The R544 main road provides a north-south linkage between Emalahleni City and the settlements in the south specifically Ogies, Van Dyksdrift and Ga-Nala and further south to Bethal, Ermelo and Secunda.
- The site is situated within a low potential agricultural land. The proposed township is therefore favourable as it does not affect any prime agricultural land.

#### **7.1.2 Micro, Local and Regional Economy**

The micro economy of especially the Emalahleni area will benefit significantly from the proposed development. The construction phase will positively affect the micro economy as most of the required building material, labour force, etc. will be obtained from the Emalahleni area and surrounds. The facility itself will provide long-term employment opportunities for the local community. During the construction and operational phase of the proposed project, 250 new job opportunities will be generated. Local people will be employed, as far as possible.

#### **7.1.3 Provincial and South African context**

The proposed development will contribute to both the industrial and tourism sector within the country by providing industrial opportunities to the Emalahleni Municipality, referred to as the 'Energy Mecca of South Africa', and by providing recreational spaces that will encourage tourist interaction from other provinces.

#### **7.1.4 Relationship between the proposed facilities and the natural environment**

The development can be characterised as a greenfield site (a vacant piece of land that has never been developed/built upon) which according to the Guidelines for Neighbourhood Planning and Design Guid, 2018, allows for more flexibility with respect to planning and design of a development and helps unlock the potential of an entire area. The proposed township development will be developed on 4 portions of land (Portion 562, 563, 565 and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS), whilst taking into consideration the size of the development and the natural environment.

#### **7.2 Need and Desirability in terms of the Guideline on Need and Desirability**

The Department of Environmental Affairs published a Guideline on Need and Desirability in terms of the Environmental Impact Assessment (EIA) Regulations, 2010, in Government Notice 891 of 2014 (20 October 2014).

The table below indicates how the guideline requirements have been addressed.

Table 10: Need and desirability of the proposed project, in terms of the Guideline on Need and Desirability

Requirement	Part where requirement is addressed/response
<p>1. How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?<sup>1</sup></p>	<p>The proposed development will take place on land that is currently vacant.</p> <p>The impact of the proposed development on the ecological integrity of the project property will be evaluated in detail in this Environmental Impact Assessment Report.</p>
<p>1.1. How were the following ecological integrity considerations taken into account?</p>	
<p>1.1.1 <i>Threatened Ecosystems.</i><sup>2</sup></p>	<p>The site is situated within the Vulnerable Eastern Highveld Grassland. To take into consideration any threatened ecosystems that may be present on the project site, the following specialist studies were commissioned as part of this Environmental Impact Assessment process:</p> <ul style="list-style-type: none"> <li>• A Fauna, Flora &amp; Wetland Assessment;</li> <li>• Agricultural Agro-ecosystem Assessment; and</li> <li>• Heritage &amp; Paleontological Assessment.</li> </ul> <p>These studies identified the risks and impacts of the proposed project. These will be evaluated in detail in this Environmental Impact Assessment Report.</p>
<p>1.1.2 <i>Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure.</i><sup>3</sup></p>	<p>To take into consideration any Sensitive, vulnerable, highly dynamic or stressed ecosystems that may be present on the project site, the following specialist studies were commissioned as part of this Environmental Impact Assessment process:</p> <ul style="list-style-type: none"> <li>• A Fauna, Flora &amp; Wetland Assessment;</li> <li>• Agricultural Agro-ecosystem Assessment; and</li> </ul>

<sup>1</sup> Section 24 of the Constitution and section 2(4)(a)(vi) of NEMA refer.

<sup>2</sup> Must consider the latest information including the notice published on 9 December 2011 (Government Notice No. 1002 in Government Gazette No. 34809 of 9 December 2011 refers) listing threatened ecosystems in terms of Section 52 of National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).

<sup>3</sup> Section 2(4)(r) of NEMA refers.

Requirement	Part where requirement is addressed/response
	<ul style="list-style-type: none"> <li>• Heritage &amp; Paleontological Assessment.</li> </ul> <p>These studies identified the risks and impacts of the proposed project. These will be evaluated in detail in this Environmental Impact Assessment Report.</p>
<p>1.1.3 <i>Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs").</i></p>	<p>A Fauna, Flora and Wetland Assessment was conducted for the project site.</p> <p>According to the Fauna and Flora Assessment:</p> <ul style="list-style-type: none"> <li>• A visibly disturbed grassland is present at the site;</li> <li>• Various ecological disturbances are conspicuous at the site;</li> <li>• Rocky ridges are absent at the site;</li> <li>• No Threatened, Near Threatened or any other plant or animal species of particular conservation concern appear to be present at the site; and</li> <li>• The scope of the site to be part of a corridor of particular conservation importance is small.</li> </ul> <p>According to the Mpumalanga Biodiversity Sector Plan:</p> <ul style="list-style-type: none"> <li>• Portion 562 consists of "Heavily Modified Areas" and some "Moderately Modified – Old Lands" and "Other Natural Areas";</li> <li>• Portion 563 consists of "Other Natural Areas" and some "Moderately Modified – Old Lands" and "Heavily Modified Areas";</li> <li>• Portion 565 consists of a "CBA Optimal" area and some "Other Natural Area"; and</li> <li>• RE Portion 25 consists of a "CBA Optimal" areas.</li> </ul>
<p>1.1.4 <i>Conservation targets.</i></p>	<p>The conservation target for the Eastern Highveld Grassland is 24% (Mucina &amp; Rutherford, 2006).</p>
<p>1.1.5 <i>Ecological drivers of the ecosystem.</i></p>	<p>Mitigation measures will be incorporated into the Environmental Impact Assessment Report and Environmental Management Programme for this project. The measures will aim to mitigate the influence of ecological drivers such</p>

Requirement	Part where requirement is addressed/response
<p>1.1.6 <i>Environmental Management Framework.</i></p>	<p>as the influence of uncontrolled fires, human activity and alien invasive plant species.</p> <p>The Emalahleni Municipality does not yet have an Environmental Management Framework (as far as can be seen). It does, however, make use of an Integrated Municipal Environmental Policy (IMEP). The following has been extracted from the IMEP for the Municipality:</p> <p><b>Water Resources</b></p> <p>The Municipality commits to “ensuring that the quality of inland waters, streams and rivers of the Municipality is suitable for the maintenance of biodiversity, the protection of human health”</p> <p><b>Landforms and Soils</b></p> <p>The Municipality “recognizes that the conservation and enhancement of landform and soils in the Municipality is essential for:</p> <ul style="list-style-type: none"> <li>• The conservation of fauna, flora and the Municipal’s unique biodiversity.</li> <li>• Human activities such as farming and gardening.</li> <li>• Minimizing soil erosion.</li> <li>• Protecting the landscapes of the Municipality”</li> </ul> <p><b>Fauna and Flora</b></p> <p>The Municipality commits to the conservation of biodiversity through:</p> <ul style="list-style-type: none"> <li>• “The improvement, enhancement and protection of endemic biodiversity</li> <li>• Recognizing that the conservation and protection of terrestrial biodiversity is a priority.</li> <li>• Recognizing and protecting the marine environment and biodiversity of the Municipality.</li> </ul>



Requirement	Part where requirement is addressed/response
	<ul style="list-style-type: none"> <li>• Recognizing that the Municipal's most valuable resource is its natural environment which provides a range of essential goods and services.</li> <li>• Recognizing the negative impacts of invasive alien species on the environment.</li> <li>• Prioritizing fire management within the Municipality's boundaries.</li> <li>• Ensuring sustainable and equitable land-use practices within the Municipality."</li> </ul> <p><b>Urbanization and Housing</b>            The Municipality commits to:</p> <ul style="list-style-type: none"> <li>• "The promotion of clean, healthy, safe and efficient living environments, which take communities, their needs and the surrounding environment into account.</li> <li>• Emphasis being placed on upgrading the living environments of the urban poor.</li> <li>• Recognizing the need to manage uncontrolled urban expansion, which threatens the resources of the Municipality and lead to unwanted social, environmental and economic costs, by working towards creating a more compact municipal area.</li> <li>• Recognizing the impact of light pollution.</li> <li>• Recognizing that an effective Municipal Open Space System (MOSS) is essential to the protection of biodiversity in the Municipality and ensuring access to recreational opportunities for all."</li> </ul> <p>As can be seen by the above, the municipality aims to encourage development without damaging the environment. This development encourages the fulfilment of these goals.</p>
<p>1.1.7 <i>Spatial Development Framework.</i></p>	<p>According to the Emalahleni Local Municipality Spatial Development Framework (SDF), the property is located in areas identified as <b>Commercial/Industrial</b>,</p>

Requirement	Part where requirement is addressed/response
	<p><b>Strategic Development Areas and Provincial/Ecological Corridor</b> (Emalaheni SDF, 2015).</p> <p>The proposed project is in line with the Emalaheni Local Municipality SDF Strategic Objectives and will contribute towards the future short term spatial vision of Emalaheni in the following ways:</p> <p><b>Strategic objective 1:</b> To enhance the sustainability of the area by way of protection, management and enhancement of the natural environmental resources of the Municipality.</p> <p><b>Proposed development:</b> The proposed development will complement and contribute to the sustainable development of the area as natural environmental resources are considered throughout all project phases.</p> <p><b>Strategic objective 2:</b> To improve spatial efficiency, justice and sustainability by consolidating urbanisation around existing nodes and corridors and within an urban development boundary.</p> <p><b>Proposed development:</b> This proposed development is placed in a strategic position within the Emalaheni area, providing not only economic development to the area with the provision of a business and industrial node, but also economic diversification and job creation in the region.</p> <p><b>Strategic objective 3:</b> To maintain/enhance connectivity between the identified activity nodes, and with surrounding regional towns and activity areas.</p> <p><b>Proposed development:</b> The proposed development will enhance connectivity between identified activity nodes as it provides business and industrial opportunities as well as tourism related activities to Emalaheni and surrounding areas. The proposed development will also contribute to the connectivity between activity nodes as the project site is strategically located next to the R544 main road which provides a north-south linkage between Emalaheni City and</p>

Requirement	Part where requirement is addressed/response
	<p>the settlements in the south specifically Ogies, Van Dyksdrift and Ga-Nala and further south to Bethal, Ermelo and Secunda.</p> <p><b>Strategic objective 4:</b> To build a diverse, efficient and resilient local economy and to optimise the spatial distribution of conflicting economic sectors.</p> <p><b>Proposed development:</b> The proposed development will contribute to the implementation of new infrastructure in the Emalahleni area, not only in terms of business and industrial services, but also through the provision of tourism related services.</p>
<p>1.1.8 <i>Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.).</i><sup>4</sup></p>	<p>The proposed activities do not have significant contributions towards global and international responsibilities.</p>
<p>1.2 How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?<sup>5</sup></p>	<p>Fauna, Wetland and Vegetation Assessments were conducted for the proposed project site. The purpose of the studies was to determine the current status of the project site and the impact that the proposed development will have on fauna and flora assemblages. The findings of the assessments are presented under Section 8.3.3 of this report. The development will cover most of the site. A buffer has been created surrounding the wetland and riparian areas, which is important for the conservation of fauna. Areas of high conservation concern should be included in open space.</p> <p>Mitigation measures will also be identified and recommended in the Environmental Impact Assessment Report and EMP to mitigate negative environmental impacts.</p>
<p>1.3 How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be</p>	<p>Potential negative environmental impacts associated with the proposed development have been identified in Section 9.6 of this Environmental Impact Assessment Report. Mitigation measures are identified and recommended in the</p>

<sup>4</sup> Section 2(4)(n) of NEMA refers.

<sup>5</sup> Section 24 of the Constitution and Sections 2(4)(a)(i) and 2(4)(b) of NEMA refer.

Requirement	Part where requirement is addressed/response
<p>avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?<sup>6</sup></p>	<p>Environmental Impact Assessment Report and EMP to mitigate negative environmental impacts.</p> <p>The main positive impacts of the proposed development are the generation of job opportunities and the stimulation of the economy, business, industrial and tourism sector. To enhance the positive impacts, local people will be employed during the construction and operational phases of the development, as far as possible.</p>
<p>1.4 What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?<sup>7</sup></p>	<p>During the construction phase of the proposed development waste, such as building rubble and domestic waste, will be generated. Some hazardous waste, such as spilt oil or diesel may also be generated. Mitigation measures to minimise, reuse and/or recycle the generation of waste will be recommended in this Environmental Impact Assessment Report and Environmental Management Programme for the project.</p>
<p>1.5 How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?<sup>8</sup></p>	<p>A Phase 1 Heritage Impact Assessment was conducted for the project site. The assessment found the following heritage artefacts or resources at the site:</p> <ul style="list-style-type: none"> <li>• There are some cultural heritage sites and features in the larger geographical area within which the study area falls.</li> <li>• Besides a recent historical grave site (on Portion 563), no other cultural heritage sites, features or materials were identified in the study area during the field assessment.</li> </ul> <p>The proposed development should be halted if any other unknown objects, sites or features of an archaeological nature are uncovered during development activities, until inspection and recommendations of the way forward can be given.</p>

<sup>6</sup> Section 24 of the Constitution and Sections 2(4)(a)(ii) and 2(4)(b) of NEMA refer.

<sup>7</sup> Section 24 of the Constitution and Sections 2(4)(a)(iv) and 2(4)(b) of NEMA refer.

<sup>8</sup> Section 24 of the Constitution and Sections 2(4)(a)(iii) and 2(4)(b) of NEMA refer.

Requirement	Part where requirement is addressed/response
<p>1.6 How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?<sup>9</sup></p>	<p>The proposed development will likely use one or more of the following non-renewable natural resources: diesel, petrol, LPG and coal. This includes, for example, diesel and petrol used in construction vehicles and LPG that will potentially be used for heating.</p> <p>Mitigation measures will be recommended in the Environmental Management Programme for this proposed development, to minimise the usage of non-renewable natural resources.</p>
<p>1.7 How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?<sup>10</sup></p>	<p>The proposed development will not use or impact upon any renewable natural resources.</p>
<p>1.7.1 <i>Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)</i></p>	<p>The proposed development should decrease the dependency on the use of resources as the proposed development is situated next to the R544 main road and within an area dominated by industrial and tourism related activities. By situating business, industrial and tourism related activities in close proximity to amenities, the proposed project will promote travelling on foot, as opposed to using vehicles that run on diesel or petrol.</p>
<p>1.7.2 <i>Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more</i></p>	<p>The resource use is justifiable and should not affect intra- and intergenerational equity. Mitigation measures will also be recommended in the Environmental</p>

<sup>9</sup> Section 24 of the Constitution and Sections 2(4)(a)(v) and 2(4)(b) of NEMA refer.

<sup>10</sup> Section 24 of the Constitution and Sections 2(4)(a)(vi) and 2(4)(b) of NEMA refer.

Requirement	Part where requirement is addressed/response
<i>important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources this the proposed development alternative?)</i>	Management Programme for this proposed development, to minimise the usage of resources.
1.7.3 <i>Do the proposed location, type and scale of development promote a reduced dependency on resources?</i>	Yes. By situating business, industrial and tourism related activities in close proximity to amenities, the proposed project will promote travelling on foot, as opposed to using vehicles that run on diesel or petrol.
1.8 How were a risk-averse and cautious approach applied in terms of ecological impacts? <sup>11</sup>	The proposed development's layout has been done with cognisance of both the conservation needs of the presence of a wetland as well as the associated 1:100 year flood line. Thus, a buffer has been created in order to protect both the wetland and riparian area and the business, industrial and tourism development.
1.8.1 <i>What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?</i>	<p>Areas of high fauna and vegetation conservation concern should not be developed, but instead should form part of open space.</p> <p>Cumulative impacts need to be further assessed as part of the Environmental Impact Assessment phase and all impacts also need to be rated during this phase.</p> <p>The recommendations of the Traffic Impact Assessment that will be conducted may change based on discussions with the relevant authorities regarding the required upgrades and contributions.</p> <p>The following assumptions have been made:</p> <ul style="list-style-type: none"> <li>• That all research and reference sources or material is accurate and up to date;</li> <li>• That the project information, as provided by the applicant and project manager, is correct; and</li> <li>• That the specialist opinions are scientifically grounded and accurate.</li> </ul>

<sup>11</sup> Section 24 of the Constitution and Section 2(4)(a)(vii) of NEMA refer.



Requirement	Part where requirement is addressed/response
1.8.2 <i>What is the level of risk associated with the limits of current knowledge?</i>	It is Labesh's opinion that the level of risk associated with the limits of current knowledge is <i>low</i> .
1.8.3 <i>Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?</i>	A risk-averse and cautious approach was applied to both the Scoping and EIA Phase by keeping in mind the gaps in knowledge and limitations, such as time constraints for the specialist studies that have been conducted.
1.9 How will the ecological impacts resulting from this development impact on people's environmental right in terms following: <sup>12</sup>	
1.9.1 <i>Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</i>	Section 9.6 of this report provides a list of the anticipated impacts from the proposed development. Section 9.10 provides some mitigation measures for these impacts and the Environmental Management Programme for the proposed development will further detail mitigation measures that should be applied to minimise the impacts on the environment from the development.
1.9.2 <i>Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?</i>	The main positive impacts of the proposed development are the generation of job opportunities and the stimulation of the economy, business, industrial and tourism sector. Furthermore, the development can be seen as an infill development, in addition to fulfilling the great demand for business, industrial and tourism related activities in the area. To enhance the positive impacts, local people will be employed during the construction and operational phases of the development, as far as possible.
1.10 Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.)?	Refer to Section 9.6 of this report.
1.11 Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?	Refer to Section 9.6 of this report.
1.12 Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different	Refer to Section 9.5 of this report.

<sup>12</sup> Section 24 of the Constitution and Sections 2(4)(a)(viii) and 2(4)(b) of NEMA refer.

Requirement	Part where requirement is addressed/response
elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations? <sup>13</sup>	
1.13 Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area? <sup>14</sup>	Refer to Section 9.6 of this report.
2.1 What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?	
2.1.1 <i>The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area,</i>	<p>One of the key focus areas of the Emalahleni Local Municipality Integrated Development Plan is to ensure local economic transformation and development, to create employment opportunities and to facilitate the development of industrial parks. The proposed development will encourage economic transformation and development within Emalahleni and will also create employment opportunities by facilitating business, industrial and tourism related activities.</p> <p>The proposed development is in line with these needs, as identified in the IDP.</p> <p>The application site is also earmarked for industrial purposes and is located within the Naauwpoort industrial node. Therefore, the proposed township is favourably located and in line with the Emalahleni SDF 2015/16.</p>
2.1.2 <i>Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.),</i>	<p>One of the key focus areas of the Emalahleni Local Municipality Integrated Development Plan is to ensure local economic transformation and development, to create employment opportunities and to facilitate the development of industrial parks. The proposed development will encourage economic transformation and development within Emalahleni and will also create employment opportunities by facilitating business, industrial and tourism related activities.</p>

<sup>13</sup> Section 2(4)(b) of NEMA refer.

<sup>14</sup> Regulations 22(2)(i)(i), 28(1)(g) and 31(2)(1) in Government Notice No. R. 543 refer.

Requirement	Part where requirement is addressed/response
	The proposed development is in line with these needs, as identified in the IDP.
2.1.3 <i>Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and</i>	The proposed development is in line with the Emalahleni Local Municipality Spatial Development Framework (SDF), as discussed previously under point 1.1.7.
2.1.4 <i>Municipal Economic Development Strategy ("LED Strategy").</i>	The Emalahleni Local Municipality LED strategy was formulated in 2012 to create an industrial hub of the Mpumalanga Province through sustainable, efficient and effective economic growth, development and empowerment of the community. The proposed development is in line with these needs, as identified by the LED strategy.
2.2 Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?	<p>The following socio-economic impacts of the proposed development could be created:</p> <ul style="list-style-type: none"> <li>• Generation of a large number of job opportunities; and</li> <li>• Potential increase in crime due to the influx of workers, especially during the construction phase.</li> </ul> <p>Job creation is a socio-economic objective of the area.</p>
2.2.1 <i>Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?</i>	The Emalahleni Local Municipality's LED has identified the importance of the creation of decent job opportunities as well as community development and economic empowerment. Job creation is a socio-economic objective of the area and the proposed development will create a large number of job opportunities. Furthermore, it will fulfil business, industrial and tourism needs and will create greater community cohesion.
2.3 How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities? <sup>15</sup>	<p>The proposed development will address a number of specific needs of the community, namely the provision of:</p> <ul style="list-style-type: none"> <li>• Industrial erven</li> <li>• Shopping Centre;</li> </ul>

<sup>15</sup> Section 2(2) of NEMA refers.

Requirement	Part where requirement is addressed/response
	<ul style="list-style-type: none"> <li>• Amenities;</li> <li>• Open spaces;</li> <li>• Job opportunities;</li> <li>• Meeting places and community centres; and</li> <li>• Recreational activities.</li> </ul>
<p>2.4 Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term?<sup>16</sup> Will the impact be socially and economically sustainable in the short- and long-term?</p>	<p>It is expected for the proposed development to result in equitable impact distributions in the short- and long-term as well as to be socially and economically sustainable in the short- and long-term.</p>
<p>2.5 In terms of location, describe how the placement of the proposed development will:<sup>17</sup></p>	
<p>2.5.1 <i>result in the creation of residential and employment opportunities in close proximity to or integrated with each other,</i></p>	<p>The development has been created in such a way as to promote the interconnectedness of residential and local amenities (in the form of the business and industrial node). The development will likely generate a large number of employment opportunities in the short-term, whilst creating future job opportunities into the long-term owing to the business and industrial node.</p>
<p>2.5.2 <i>reduce the need for transport of people and goods,</i></p>	<p>By situating business, industrial and tourism related activities in close proximity to amenities, the proposed project will promote travelling on foot, as opposed to using vehicles that run on diesel or petrol.</p>
<p>2.5.3 <i>result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms public transport),</i></p>	<p>The proposed development will result in densification by situating business, industrial and tourism related activities in close proximity to amenities such as shops. This is further enhanced by the fact that the development can be seen as an infill development. Specific Lay-by's for public transport will be positioned at strategic points at the main access and within the development.</p>
<p>2.5.4 <i>compliment other uses in the area,</i></p>	<p>The proposed development is located within the southern extent of Emalahleni next to the R544 (Watermeyer Street) in the Naauwpoort industrial area and forms part of an area currently experiencing both industrial and tourism growth.</p>

<sup>16</sup> Sections 2(2) and 2(4)(c) of NEMA refers.

<sup>17</sup> Section 3 of the Development Facilitation Act, 1995 (Act No. 67 of 1995) ("DFA") and the National Development Plan refer.

Requirement	Part where requirement is addressed/response
2.5.5 <i>be in line with the planning for the area,</i>	The proposed development is in line with the development goals of the Emalahleni Local Municipality.
2.5.6 <i>for urban related development, make use of underutilised land available with the urban edge,</i>	The proposed development falls outside the urban edge.
2.5.7 <i>optimise the use of existing resources and infrastructure,</i>	The proposed development will make use of existing road infrastructure to the project site.
2.5.8 <i>opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g. not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement),</i>	The proposed development will make use of existing road infrastructure to the project site.
2.5.9 <i>discourage "urban sprawl" and contribute to compaction/densification,</i>	The proposed project is located just south of Duvhapark Township, next to Watermeyer Street (R544 – an activity spine) and the Olifants River and is situated within an area dominated by industrial and tourism related activities. This contributes to compaction/densification of both industrial and tourism related activities.
2.5.10 <i>contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,</i>	The proposed development will make use of existing road infrastructure to the project site. It is not expected for the proposed development to contribute towards the correction of historically distorted settlement spatial patterns.
2.5.11 <i>encourage environmentally sustainable land development practices and processes,</i>	Environmentally sustainable land development practices and processes will be encouraged through specific mitigation measures that will be included in the Environmental Management Programme for this project. Open spaces have been incorporated into the proposed development's layout to ensure that the environment is retained within the development.
2.5.12 <i>take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.),</i>	<p>The location for the proposed development is strategically ideal for the following reasons:</p> <ul style="list-style-type: none"> <li>• The site has existing access roads to it;</li> <li>• The site is situated in close proximity to Emalahleni (Witbank); and</li> </ul>

Requirement	Part where requirement is addressed/response
	<ul style="list-style-type: none"> <li>The site is close to existing townships in the area.</li> </ul>
<p>2.5.13 <i>the investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential),</i></p>	<p>Investment in the proposed development will result in high socio-economic returns for the area. It is expected to create employment opportunities as well as contribute to the support of the existing economy of the area.</p>
<p>2.5.14 <i>impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and</i></p>	<p>A Phase 1 Heritage Impact Assessment was conducted for the project site in June 2021. The following was concluded from the Phase 1 Heritage Impact Assessment:</p> <ul style="list-style-type: none"> <li>There are some cultural heritage sites and features in the larger geographical area within which the study area falls.</li> <li>Besides a recent historical grave site (on Portion 563), no other cultural heritage sites, features or materials were identified in the study area during the field assessment.</li> </ul> <p>The proposed development should be halted if any other unknown objects, sites or features of an archaeological nature are uncovered during development activities, until inspection and recommendations of the way forward can be given.</p>
<p>2.5.15 <i>in terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?</i></p>	<p>It is expected for the proposed development to create a more integrated settlement, by situating business, industrial and tourism related activities in close proximity to amenities such as those found within the business and industrial node.</p>
<p>2.6 How were a risk-averse and cautious approach applied in terms of socio-economic impacts?:<sup>18</sup></p>	<p>A risk-averse and cautious approach was applied to both the Scoping and EIA Phase by keeping in mind the gaps in knowledge and limitations, such as time constraints for the specialist studies that have been conducted.</p>
<p>2.6.1 <i>What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?<sup>19</sup></i></p>	<p>Areas of high fauna and vegetation conservation concern should not be developed, but instead should form part of open space.</p>

<sup>18</sup> Section 2(4)(a)(vii) of NEMA refers.

<sup>19</sup> Section 24(4) of NEMA refers.



Requirement	Part where requirement is addressed/response
	<p>Cumulative impacts have been further assessed as part of the Environmental Impact Assessment phase and all impacts also rated during this phase.</p> <p>The recommendations of the Traffic Impact Assessment that will be conducted may change based on discussions with the relevant authorities regarding the required upgrades and contributions.</p> <p>The following assumptions have been made:</p> <ul style="list-style-type: none"> <li>• That all research and reference sources or material is accurate and up to date;</li> <li>• That the project information, as provided by the applicant and project manager, is correct; and</li> <li>• That the specialist opinions are scientifically grounded and accurate.</li> </ul>
<p>2.6.2 <i>What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability and sustainability) associated with the limits of current knowledge?</i></p>	<p>It is Labesh’s opinion that the level of risk associated with the limits of current knowledge is <i>low</i>.</p>
<p>2.6.3 <i>Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?</i></p>	<p>A risk-averse and cautious approach was applied to the Scoping Phase by keeping in mind the gaps in knowledge and limitations, such as time constraints for the specialist studies that have been conducted.</p>
<p>2.7 How will the socio-economic impacts resulting from this development impact on people's</p>	<p>environmental right in terms following:</p>
<p>2.7.1 <i>Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</i></p>	<p>It is not expected for the proposed development to impact significantly on people’s health, safety and social ills.</p>
<p>2.7.2 <i>Positive impacts. What measures were taken to enhance positive impacts?</i></p>	<p>The main positive impacts of the proposed development are the generation of job opportunities and the stimulation of the economy and industrial and tourism sector. To enhance the positive impacts, local people will be employed during the construction and operational phases of the development, as far as possible.</p>

Requirement	Part where requirement is addressed/response
<p>2.8 Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socioeconomic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.)?</p>	<p>The development's socio-economic impacts will indirectly result in the consumption of natural resources, such as water. However, the usage of the resources is not considered to be an over-utilisation and some resources would have been utilised in any event, albeit at a different locality. For example, people moving to the industrial area of the proposed development will use water, but would have used water at their previous location also.</p>
<p>2.9 What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?<sup>20</sup></p>	<p>Refer to Section 8.1 of this report.</p>
<p>2.10 What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)?<sup>21</sup> Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?</p>	<p>Refer to Section 8.1 of this report. The alternatives considered allow for the "best practicable environmental option" to be selected.</p>
<p>2.11 What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?<sup>22</sup></p>	<p>Local labourers will be employed, as far as possible and up to certain skill levels, depending on the work involved.</p>
<p>2.12 What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?<sup>23</sup></p>	<p>To ensure that responsibility for the environmental health and safety consequences of the development has been addressed, mitigation measures have been identified and will be further expanded upon in this Environmental Impact Assessment Report. The responsibility for implementing the mitigation measures lies with the applicant.</p>

<sup>20</sup> Section 2(4)(b) of NEMA refers.

<sup>21</sup> Section 2(4)(c) of NEMA refers.

<sup>22</sup> Section 2(4)(d) of NEMA refers.

<sup>23</sup> Section 2(4)(e) of NEMA refers.

Requirement	Part where requirement is addressed/response
2.13 What measures were taken to:	
2.13.1 ensure the participation of all interested and affected parties,	<p>A public participation process was conducted, in accordance with the EIA Regulations, 2014, and also taking the following into consideration</p> <ul style="list-style-type: none"> <li>• GN 807 - Public Participation Guideline in the Environmental Impact Assessment Process, 2012; and</li> <li>• The Promotion of Access to Information Act (PAIA), 2000.</li> </ul>
2.13.2 provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation, <sup>24</sup>	<p>The public participation process for this project is open to all parties. Site notices and a newspaper advertisement were placed to encourage participation from a wider audience than simply the adjacent land owners.</p>
2.13.3 ensure participation by vulnerable and disadvantaged persons, <sup>25</sup>	<p>The public participation processes were open to all individuals, also to vulnerable and disadvantaged persons.</p>
2.13.4 promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means, <sup>26</sup>	<p>All employees, contractors and sub-contractors will be required to attend environmental awareness inductions (training).</p>
2.13.5 ensure openness and transparency, and access to information in terms of the process, <sup>27</sup>	<p>A public participation process was conducted, in accordance with the EIA Regulations, 2014, and also taking the following into consideration</p> <ul style="list-style-type: none"> <li>• GN 807 - Public Participation Guideline in the Environmental Impact Assessment Process, 2012; and</li> <li>• The Promotion of Access to Information Act (PAIA), 2000.</li> </ul> <p>The public participation process was open to participation from any members of the public and was a fully transparent process. All comments received from</p>

<sup>24</sup> Section 2(4)(f) of NEMA refers.

<sup>25</sup> Section 2(4)(f) of NEMA refers.

<sup>26</sup> Section 2(4)(h) of NEMA refers.

<sup>27</sup> Section 2(4)(k) of NEMA refers.

Requirement	Part where requirement is addressed/response
	Interested and Affected Parties has been included in the reports for this project and have also been responded to/addressed. The reports were available to any person wishing to review and comment upon the reports.
<p>2.13.6 ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge<sup>28</sup>, and</p>	<p>A public participation process was conducted, in accordance with the EIA Regulations, 2014, and also taking the following into consideration</p> <ul style="list-style-type: none"> <li>• GN 807 - Public Participation Guideline in the Environmental Impact Assessment Process, 2012; and</li> <li>• The Promotion of Access to Information Act (PAIA), 2000.</li> </ul>
<p>2.13.7 ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein were be promoted?<sup>29</sup></p>	<p>A public participation process was conducted, in accordance with the EIA Regulations, 2014, and also taking the following into consideration</p> <ul style="list-style-type: none"> <li>• GN 807 - Public Participation Guideline in the Environmental Impact Assessment Process, 2012; and</li> <li>• The Promotion of Access to Information Act (PAIA), 2000.</li> </ul>
<p>2.14 Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?<sup>30</sup></p>	<p>Local labourers will be employed, as far as possible and up to certain skill levels, depending on the work involved.</p>
<p>2.15 What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?<sup>31</sup></p>	<p>All employees, contractors and sub-contractors will be required to attend environmental awareness inductions (training). This will include informing workers that they have the right to refuse work should the work be harmful to human health or the environment.</p>

<sup>28</sup> Section 2(4)(g) of NEMA refers.

<sup>29</sup> Section 2(4)(q) of NEMA refers.

<sup>30</sup> x

<sup>31</sup> Section 2(4)(j) of NEMA refers.

Requirement	Part where requirement is addressed/response
2.16 Describe how the development will impact on job creation in terms of, amongst other aspects:	
2.16.1 <i>the number of temporary versus permanent jobs that will be created,</i>	It is estimated that the proposed development will generate a total of 250 job opportunities, over the construction and operational phases.
2.16.2 <i>whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area),</i>	Local labourers will be employed, as far as possible and up to certain skill levels, depending on the work involved.
2.16.3 <i>the distance from where labourers will have to travel,</i>	Labourers will be transported to and from the construction site. Using local labourers (as far as possible) will decrease travel distances.
2.16.4 <i>the location of jobs opportunities versus the location of impacts (i.e. equitable distribution of costs and benefits), and</i>	Job opportunities will be created at the proposed development site.
2.16.5 <i>the opportunity costs in terms of job creation (e.g. a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.).</i>	The proposed development will create job opportunities and should not impact upon employment opportunities in other sectors.
2.17 What measures were taken to ensure:	
2.17.1 <i>that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment, and</i>	Relevant environmental and town planning legislation was considered and adhered to during the Environmental Impact Assessment and Land Use Rights processes. Also refer to Chapter 6 of this report.
2.17.2 <i>that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?</i>	A public participation process was conducted, in accordance with the EIA Regulations, 2014, and also taking the following into consideration <ul style="list-style-type: none"> <li>• GN 807 - Public Participation Guideline in the Environmental Impact Assessment Process, 2012; and</li> <li>• The Promotion of Access to Information Act (PAIA), 2000.</li> </ul>
2.18 What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage? <sup>32</sup>	Open spaces have been incorporated into the proposed development's layout to ensure that the environment is retained within the development together with people's beneficial use of this amenity.

<sup>32</sup> Section 2(4)(o) of NEMA refers.

Requirement	Part where requirement is addressed/response
	Mitigation measures will also be included in the Environmental Management Programme for this development to minimise the impacts of the proposed development on the environment.
2.19 Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left? <sup>33</sup>	The mitigation measures will be proposed in detail in this Environmental Impact Assessment Report and EMP for this project. Any long-term environmental legacy or burden will also be discussed in the Environmental Impact Assessment Report.
2.20 What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment? <sup>34</sup>	The applicant will be responsible for any costs associated with the remediation of pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects.
2.21 Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations? <sup>35</sup>	Refer to Section 8.1 of this report.
2.22 Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area? <sup>36</sup>	Cumulative impacts have been described and assessed in section 9.6 of this report.

<sup>33</sup> Section 240(1)(b)(iii) of NEMA and the National Development Plan refer.

<sup>34</sup> Section 2(4)(p) of NEMA refers.

<sup>35</sup> Section 2(4)(b) of NEMA refers.

<sup>36</sup> Regulations 22(2)(i)(j), 28(1)(g) and 31(2)(1) in Government Notice No. R. 543 refer.

### 7.3 Need and Desirability: Motivation for the preferred development footprint within the approved site as contemplated in the accepted Scoping Report

Please refer to Section 8 below for the motivation for the preferred development footprints within the approved site (as contemplated in the accepted Scoping Report).

## 8. PROCESS FOLLOWED TO REACH THE PROPOSED DEVELOPMENT FOOTPRINT WITHIN THE APPROVED SITE

### 8.1 Alternatives considered

According to the Western Cape Department of Environmental Affairs and Development Planning's Guideline on Alternatives (2010), the following alternatives can be assessed:

Table 11: Alternative Types

Alternative Type	Explanation/Examples
Location	Refers to both alternative properties as well as alternative sites on the same property.
Activity	Incineration of waste rather than disposal at a landfill site/Provision of public transport rather than increasing the capacity of roads.
Design or Layout	Design: e.g. Different architectural and or engineering designs Site Layout: Consideration of different spatial configurations of an activity on a particular site (e.g. siting of a noisy plant away from residences).
Technological	Consideration of such alternatives is to include the option of achieving the same goal by using a different method or process (e.g. 1 000 megawatt of energy could be generated using a coal-fired power station or wind turbines).
Demand	Arises when a demand for a certain product or service can be met by some alternative means (e.g. the demand for electricity could be met by supplying more energy or using energy more efficiently by managing demand).
Input	Input alternatives are applicable to applications that may use different raw materials or energy sources in their process (e.g. industry may consider using either high sulphur coal or natural gas as a fuel source).
Routing	Consideration of alternative routes generally applies to linear developments such as power line servitudes, transportation and pipeline routes.
Scheduling and Timing	Where a number of measures might play a part in an overall programme, but the order in which they are scheduled will contribute to the overall effectiveness of the end result.
Scale and Magnitude	Activities that can be broken down into smaller units and can be undertaken on different scales (e.g. for a housing development there could be the option of 10, 15 or 20 housing units. Each of these alternatives may have different impacts).
"No-Go Option"	This is the option of not implementing the proposed activity.

Alternative Assessments must always include the "No-Go Option" as the baseline against which all other alternatives must be measured. The following alternatives could be considered for the proposed project:

- Location – Alternative properties and alternative sites on the same property;
- Activity;
- Design/Layout;
- Scheduling and Timing;



- Scale and Magnitude; and
- “No-Go Option”.

Alternatives were considered in a qualitative manner.

### **8.1.1 Location**

#### **Alternative properties**

As the applicant owns the properties relevant to this application, and also wishes to develop these properties, no property alternatives could be considered. The suitability and feasibility of the four project properties for the proposed project is demonstrated by the following:

- The properties are situated in close proximity to Emalahleni (approximately 14 km);
- The properties are located south of Duvhaphark Township, next to Watermeyer Street (R544 – an activity spine) and the Olifants River;
- The R544 road provides a north-south linkage between Emalahleni and settlements in the south such as Ogies, Van Dyksdrift, Ga-Nala and to larger towns further south in the Gert Sibande District like Bethal, Ermelo and Secunda;
- The properties are situated within an area dominated by industrial and tourism related activities;
- Portion 563, 565 and the Remainder of Portion 25 of the Farm Naauwpoort 335 JS, is currently vacant, underutilized land. Portion 562 of the Farm Naauwpoort 335 JS consist of a scatter of industrial related structures;
- The Emalahleni SDF 2015/16 earmarks Naauwpoort as an industrial node; and
- The properties is situated within low potential agricultural land and does not affect any prime agricultural land.

#### **Alternative sites on the same property**

A Site Sensitivity Mapping Exercise was used to identify the most suitable site(s) on the project properties for the proposed development. This also identified unsuitable sites where environmental constraints prohibit development activities. The maps were used to identify sensitive areas that should be avoided and protected as part of the proposed development, or where further mitigation measures would be required to address specific impacts that could not be avoided.

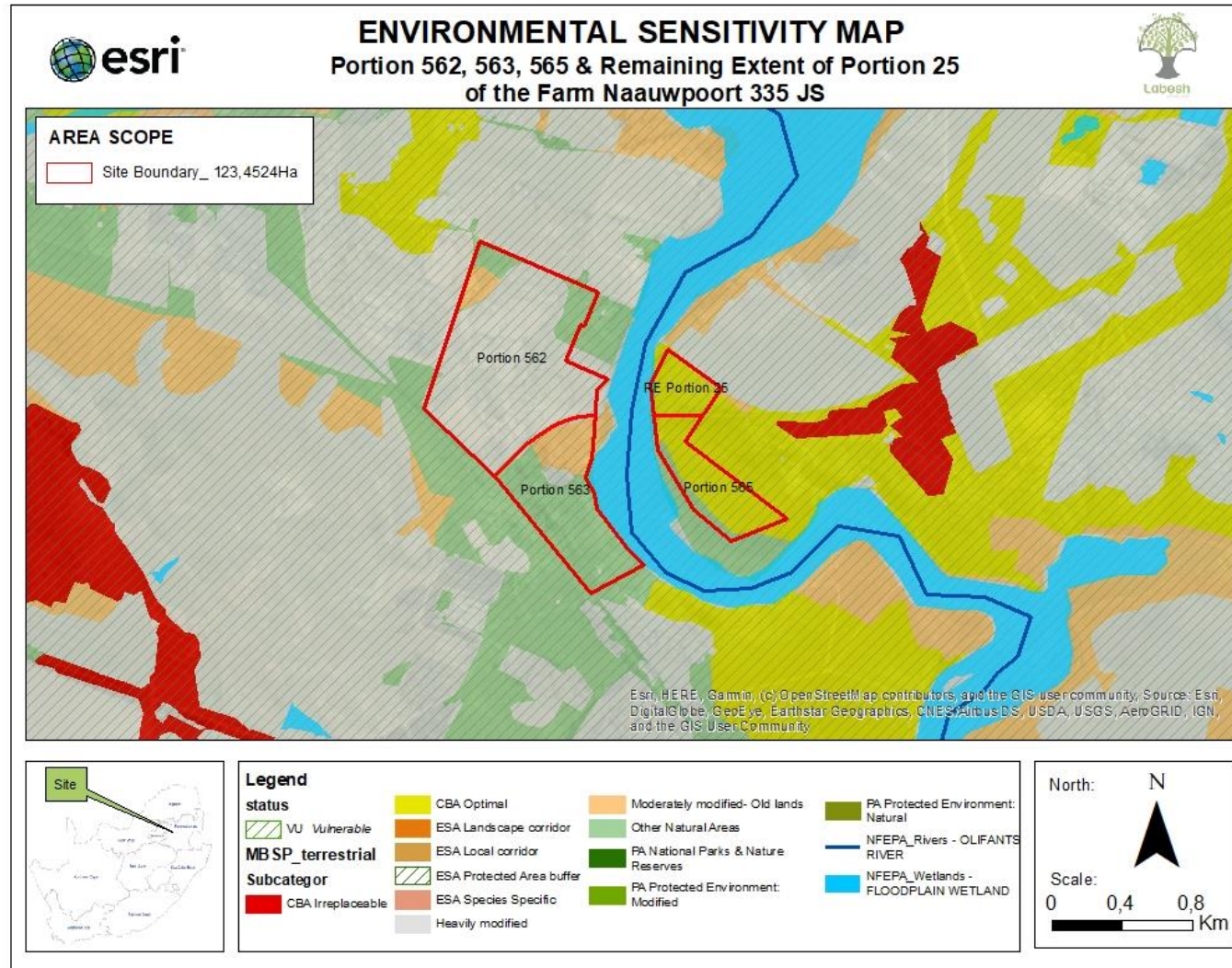


Figure 9: Environmental sensitivity map (Map (in colour) is also given under Appendix A.)

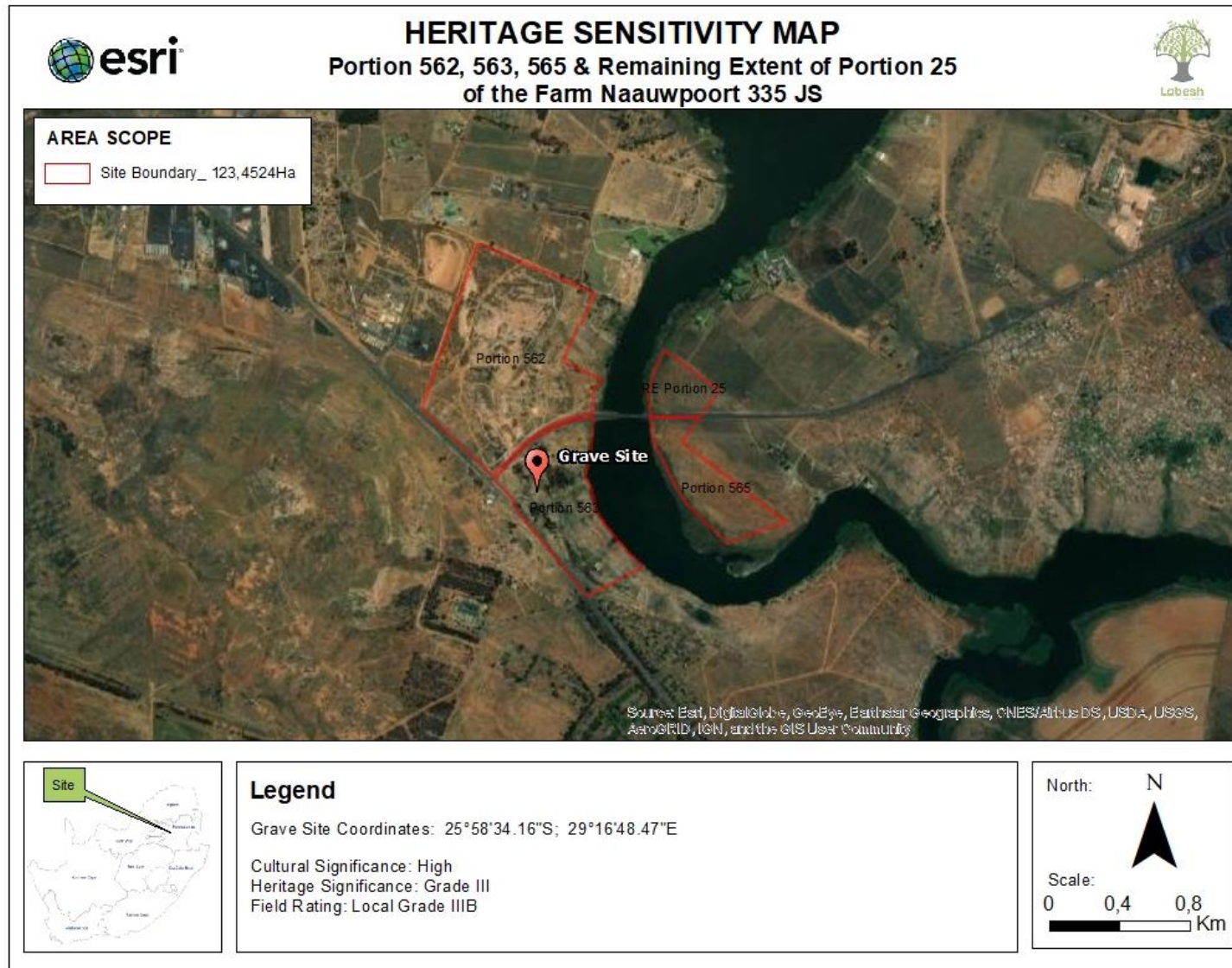


Figure 10: Heritage sensitivity map (Map (in colour) is also given under Appendix A.)



### 8.1.2 Activity

Portion 562, 563, 565 and the Remainder of Portion 25 of the Farm Naauwpoort 335 JS, were bought by the applicant with the aim to develop the properties to its fullest potential. When it came to deciding on the type of development that should take place the following was considered:

- Locality of the site;
- Current demand within the area and surrounds;
- Site demographics (as a result of original brick works that operated on the site in the past); and
- The need for certain land uses within the Emalahleni region.

Light industrial activities have become prominent within the Naauwpoort area due to its location being ideally situated within Emalahleni. The Emalahleni SDF 2015/2016 also earmarks the Naauwpoort area as an industrial node which this makes the proposed activity favourable to take place.

Subsequently, a portion of the landscape (north) was disturbed in the past by brickworks that operated from the site. As a result of the absence of recreational areas within Emalahleni, the applicant decided to develop a Hobby Park within the disturbed area where people can enjoy different types of hobbies such as 4x4 trails, paintball, hiking, cycling, archery, fishing, photography, picnic's, car clubs and clubhouse.

### 8.1.3 Design/Layout

The layout plan for the proposed development was influenced by the following factors:

- Design of the layout is a simple and cost-effective layout;
- The northern area of the township consists of one main road with a loop design and a secondary road with a cul-de-sac which links all the erven of the township;
- The southern area of the township consist of one main road which links all the erven of the township;
- The proposed development was designed to have three access points with two access points provided at the R544 road and one access point which links up with the existing Benicon Park;
- Tourism related activities which will take place on the designated erven does not include accommodation in the form of lodges or hotels, only outdoor activities such as 4x4 trials and hiking trials which fits in with the industrial character of the area;
- Industrial erven has an average erf size of 1 hectare and erven are serviced with a 16m wide road in order to provide manoeuvrability for industrial vehicles;
- The business erf is specifically placed at the intersection leading to Duvha Power Station in order to enjoy great visibility and accessibility;
- Camping sites, fishing spots, hiking and cycling trials are located on tourism erven along the Olifants river in order to enjoy the scenery and landscape of the area;
- A portion of land in the south will be partially developed (to accommodate 4x4 vehicle, off-road motorbike and mountain bicycle tracks) as electrical servitudes run over the property;
- A Wetland delineation was also conducted, which greatly influenced the design of the layout of the development. Th in-channel dam with its riparian zone and 32m buffer was incorporated and considered during the development of the proposed development layout.
- The 1:100 year floodline were considered as part of the proposed development layout; and
- Ensuring adequate surface storm water drainage.

Servitudes were also considered as part of the design/layout plant of the development. The proposed development will be affected by six types of servitudes which are registered over certain properties and is described below.

1. Servitudes over Erven 39, 44-46 and 52 in favour of Eskom to accommodate Eskom power lines.
2. Servitude over Erf 23 in favour of graves.
3. Servitude over Erven 50 and 51 in favour of a guard house.
4. Servitude of 3m wide over Erven 26 and 27 in favour of right of way for the sewage purification plant.
5. Servitude of 3m wide over Erf 29 in favour of right of way for the sewage purification plant.
6. Servitude of 3m wide over Erven 11, 26 and 39 in favour of stormwater.

The grave site identified on the proposed site cannot be avoided, but specific mitigation measures have been recommended by the heritage specialist in this regard. From a heritage point of view, only this one site of cultural heritage significance was identified and recorded. The grave site was recorded on Portion 563 of the Farm Naauwpoort 335JS, and contains a double grave (2 burials) of a husband and wife. This is, however, not considered to be a fatal flaw and the heritage specialist has indicated that the proposed development should be allowed to continue. The layout has ensured that all other sites will not be affected by the proposed development.

#### **8.1.4 Scheduling and Timing**

The proposed development will take place in three (3) phases. Phase 1 will include the development of 11 erven for 'Industrial 1' zoning, 1 erf for 'Private Park' zoning, 2 erven for 'Tourism' zoning and 2 erven for 'Special Use' zoning. Phase 2 will include the development of 17 erven for 'Industrial 1' zoning. Phase 3 will include the development of 13 erven for 'Industrial 1' zoning, 1 erf for 'Business 2' zoning, 1 erf for 'Tourism' zoning and 2 erven for 'Special Use' zoning.

#### **8.1.5 Scale and Magnitude**

Optimal use of the 4 properties were proposed and space utilised in a practical and efficient manner. The layout plan makes provision for 41 industrial erven, 3 tourism erven, 1 business erf, 1 erf for a private park, 2 erven for refuse and water treatment plant, 2 erven for sewer purification plant and 2 erven for private roads.

Portion 562 of the Farm Naauwpoort 335 JS (67, 4338 Ha) will accommodate:

- Industrial Erven;
- Park Erf; and
- Special Erven.

Portion 563 of the Farm Naauwpoort 335 JS (31, 4104 Ha) will accommodate:

- Industrial Erven;
- Tourism Erven;
- Business Erf; and
- Special Erven.

Portion 565 of the Farm Naauwpoort 335 JS (16, 6202 Ha) will accommodate:

- Tourism Erven.

Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS (7, 9880 Ha) will accommodate:

- Tourism Erven.

The average size of an Industrial 1 zoned erf is approximately one hectare. The size of the industrial zoned erven was chosen due to the increasing need for light industrial erven within the Naauwpoort area. Erven are serviced with a 16m wide road in order to ensure movability for industrial vehicles.

### 8.1.6 “No-Go Option”

The No-Go Option would be where the project sites are not developed and remains as vacant and open land. The No-Go Option is not considered to be a reasonable alternative as this would mean that the land is under-utilised in terms of its potential for a mixed use development and in particular, to contribute to the industrial and tourism need experienced within the Emalahleni Local Municipality.

According to the Emalahleni Local Municipality Spatial Development Framework (SDF), the property is located in areas identified as Commercial/Industrial, Strategic Development Areas and Provincial/Ecological Corridor (Emalahleni SDF, 2015) and the No-Go Option would therefore also not be in line with the spatial planning objectives of the municipality.

## 8.2 Public Participation Process undertaken in terms of Section 41 of the EIA Regulations, 2014

The following PPP was conducted for the proposed project:

- Identification of key Interested and Affected Parties (all adjacent landowners);
- Identification of key Stakeholders;
- Informing the key Stakeholders of the process by means of correspondence;
- Placement of a press notice in a national/local Newspaper, informing the public of the process;
- Placement of site notices at the site; and
- Correspondence with I&APs and Stakeholders and the addressing of their comments

The following potentially Interested and Affected Parties were identified as part of the proposed development's Environmental Impact Assessment process:

- Mpumalanga Department of Agriculture, Rural Development and Land Administration
- Mpumalanga Department of Community Safety, Security and Liaison
- Mpumalanga Department of Public Works, Roads and Transport
- Nkangala District Municipality
- Emalahleni Local Municipality
- Department of Water and Sanitation – B11G
- Mpumalanga Department of Co-operative Governance and Traditional Affairs Land Use Management Department
- Mpumalanga Department of Co-operative Governance and Traditional Affairs Spatial Planning Department
- Mpumalanga Department of Health
- Mpumalanga Department of Social Development
- Mpumalanga Department of Human Settlements
- Mpumalanga Department of Education
- Mpumalanga Department of Education – Nkangala Region
- Mpumalanga Department of Finance
- Mpumalanga Department of Culture, Sport and Recreation
- South African Heritage Resources Agency (SAHRA)
- Department of Mineral Resources
- Department of Agriculture, Forestry and Fisheries
- South African National Road Agency Limited (SANRAL) Northern Region
- Erf No.62 in Beniconpark
- Erf No. 63 in Beniconpark

- Erf No. 64 in Beniconpark
- Erf No. 65 in Beniconpark
- Erf No. 66 in Beniconpark
- Erf No. 67 in Beniconpark
- Erf No. 68 in Beniconpark
- Erf No. 71 in Beniconpark
- Erf No. 79 in Beniconpark
- Erf No. 80 in Beniconpark
- Erf No. 81 in Beniconpark
- Erf No. 82 in Beniconpark
- Erf No. 83 in Beniconpark
- Erf No. 84 in Beniconpark
- Portion 4 of Erf No. 17 in Wolverkrans
- Portion 569 of Erf No. 335 in Naauwpoort
- Portion 446 of Erf No. 335 in Naauwpoort
- Portion 445 of Erf No. 335 in Naauwpoort
- Portion 142 of Erf No. 335 in Naauwpoort
- Portion 144 of Erf No. 335 in Naauwpoort
- Portion 74 of Erf No. 335 in Naauwpoort
- Portion 146 of Erf No. 335 in Naauwpoort
- Portion 145 of Erf No. 335 in Naauwpoort
- Portion 93 of Erf No. 335 in Naauwpoort
- Portion 53 of Erf No. 335 in Naauwpoort
- Portion 94 of Erf No. 335 in Naauwpoort
- Portion 173 of Erf No. 335 in Naauwpoort
- Portion 556 of Erf No. 335 in Naauwpoort

For the initial Public Participation Process (notification of potentially Interested and Affected Parties), written notifications and Background Information Documents were distributed to the above mentioned list of identified Interested and Affected Parties. The notifications were sent via email, fax, registered post or hand delivered. Site notices were placed on the boundary of the project properties. A newspaper advertisement was placed in the Witbank News on the 26<sup>th</sup> of November 2021.

Proof of the above mentioned initial Public Participation Process is attached under Appendix C.



### **8.2.1 Public Review of the Draft Scoping Report**

As required by the Environmental Impact Assessment Regulations, 2014 (as amended), the Scoping Report (draft) was circulated for public review and commenting, for a period of at least 30 days. The review period was from the 24<sup>th</sup> of February 2022 to the 25<sup>th</sup> of March 2022. Interested and Affected Parties were notified of the availability of the Scoping Report and the review period via email and registered post. Proof hereof is attached under Appendix C. Comments received from Interested and Affected Parties during this review period have been included in *Table 12* below.

### **8.2.2 Public Review of the Draft Environmental Impact Assessment Report**

As required by the Environmental Impact Assessment Regulations, 2014 (as amended), the Environmental Impact Assessment Report (draft) will be circulated for public review and commenting, for a period of at least 30 days. The review period is from the 29<sup>th</sup> of July 2022 to the 29<sup>th</sup> of August 2022. Interested and Affected Parties will be notified of the availability of the Environmental Impact Assessment Report and the review period via email and courier. Proof hereof will be attached under Appendix C on submission of the Final Environmental Impact Assessment Report. Comments received from Interested and Affected Parties during this review period will be included in *Table 12* below.

### **8.2.3 Summary of the issues raised by the Interested and Affected Parties and how the issues were addressed or incorporated into the Environmental Impact Assessment process**

Comments received from Interested and Affected Parties are summarised in the following table:

Table 12: Comments and Responses Report

Entity represented	Name and Surname	Comment received on	Comment submitted via	Comment(s) raised	Response to comment(s) raised
Initial Public Participation Process					
No comments have been received from Interested & Affected Parties.					
Comments received during the public review of the Draft Scoping Report					
No comments have been received from Interested & Affected Parties.					
Comments received during the public review of the Draft Environmental Impact Assessment Report					
<b>The Environmental Impact Assessment Report (draft) will be circulated for public review and commenting, for a period of at least 30 days. The review period is from the 29<sup>th</sup> of July 2022 to the 29<sup>th</sup> of August 2022.</b>					

## 8.3 Environmental attributes associated with the alternatives considered – Environmental attributes of the proposed, project properties (the preferred alternative)

### 8.3.1 Geographical

#### Geology

A Geotechnical Investigation was conducted for the project site by Geobella in 2021. According to the 1: 250 000 Geological Map (titled: "SHEET 2528 PRETORIA (1998)"), the site is underlain by two geological formations. The western portion of the site is underlain by shale, sandstone and gritstone of the Vryheid Formation and the central and eastern portion of the site underlain by shale of the Loskop Formation. Weathered shale, sandstone and gritstone of the Vryheid Formation were observed on the southern, western and north-western sections of Portion 562 and Portion 563 of the Farm Naauwpoort 335 JS. The southern and eastern sections of the site is underlain by weathered shale of the Loskop Formation. Contact between the Vryheid and Loskop Formation covers Portion 562 and Portion 563 of the Farm Naauwpoort 335 JS from south to north, almost splitting the formations.

The proposed project site falls within a region with a Weinert N-Value of 2.5 which indicates that chemical decomposition would be the dominant mode of weathering. No diabase dykes or sills have been mapped or observed on the site. The site is also not underlain by dolomitic or other carbonaceous rocks prone to sinkhole or doline formation. The full report is attached under Appendix D.

#### Soil

An Agricultural Agro-ecosystem Assessment based on a detailed baseline evaluation, which include a soil, land capability and land use assessment was conducted for the project site by Rehab Green in August 2021. A soil survey was conducted in the winter season during July 2021. Soil types in the natural state are not subjected to mentionable seasonal variation in physical or chemical properties and follow-up surveys were not required for the proposed project.

During the field assessment conducted by Rehab Green, a total of 20 units were mapped that are largely homogenous in terms of dominant soil form, effective soil depth, internal drainage, terrain unit and slope percentage.

- **Portion 562 of the Farm Naauwpoort 335 JS consists of:** Exc (No soil – Excavated), Gs (Glenrosa 2211; Mispah), Hu1 (Hutton 2100; Clovelly), Cv4 (Clovelly 2100), Wb (Witbank 1000) and Cv2 (Clovelly 1100; Constantia) soil forms.
- **Portion 563 of the Farm Naauwpoort 335 JS consists of:** Fw1 (Fernwood 1110, Cartref, Constantia), Fw2 (Fernwood 1110; Cartref), Fw3 (Fernwood 1110), Exc (No soil – Excavated), R (No soil – Bare rock), RC (No soil – River channel), Ct (Constantia 1100; Clovelly), Cf (Cartref 1100; Glenrosa), Cv2 (Clovelly 1100; Constantia), Cv3 (Clovelly 2100), Gs (Glenrosa 2211; Mispah), Ms/R (Mispah 2100; Glenrosa) and Hu1 (Hutton 2100; Clovelly) soil forms.
- **Portion 565 of the Farm Naauwpoort 335 JS consists of:** Hu1 (Hutton 2100; Clovelly), Cv1 (Clovelly 2100), Cv1-w1 (Clovelly 2100), Cv1-w2 (Clovelly 2100) and Hu1-w1 (Hutton 2100; Bloemdal) soil forms.
- **Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS consists of:** Hu1 (Hutton 2100; Clovelly); Cv1 (Clovelly 2100) and Hu1-w2 (Hutton 2100; Bloemdal) soil types.

Shown below is a detailed soil map of the proposed site as well as detailed description of soil types. The full report is attached under appendix D.

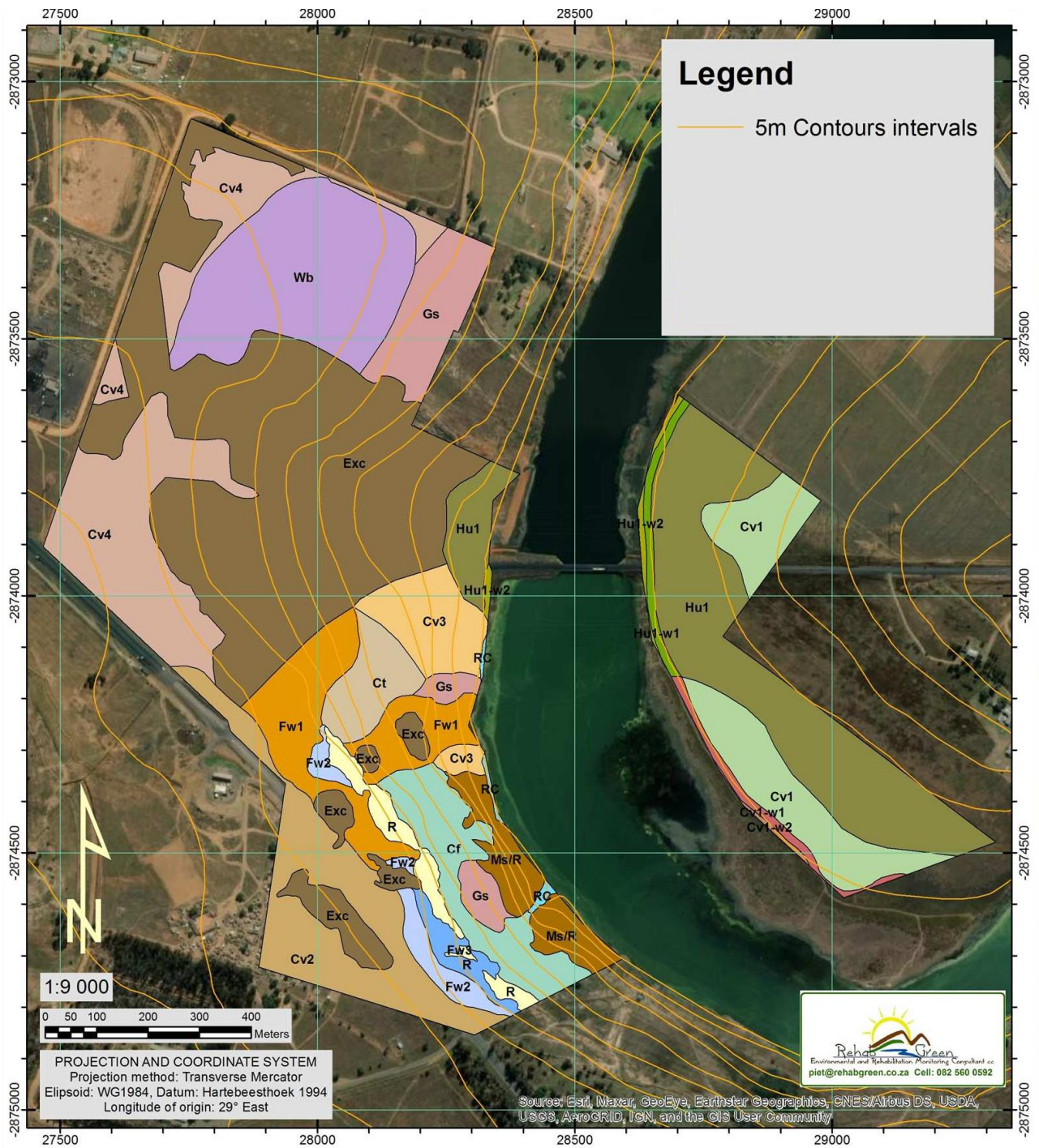


Figure 11: Detailed Soil Map of the Proposed Site



Soil Type Code	Dominant & subdominant Soil Form and Family	Terrain unit and slope	Summarized Description of Dominant Soil Forms in terms of soil depth, colour, internal drainage and soil texture	Agricultural sensitivity	Area ha	Area %
Hu1	*Hutton 2100; Clovelly	Gentle lower midslope and footslope (1-3% slopes)	Deep (1200-1500mm), well-drained, red soils, consisting of yellowish red, loamy sand, orthic A-horizons underlain by red, loamy sand to sandy loam, apedal B-horizons, underlain by saprolite.	High	16.84	13.25
Hu1-w1	*Hutton 2100; Bloemdal	Gentle footslope (1-3% slopes)	Similar to soil form Hu1 (initially well-drained), but either saturated or water table between 800-1400mm, due to the raised water level caused by the Witbank dam.	Medium	0.85	0.67
Hu1-w2	*Hutton 2100; Bloemdal	Gentle footslope (1-3% slopes)	Similar to soil form Hu1 (initially well-drained), but either saturated or water table between 400-800mm; Surface mostly moist or wet due to capillary movement from shallow water table, due to raised water level caused by Witbank dam.	Low	0.46	0.36
Cv1	*Clovelly 2100	Gentle footslope (1-3% slopes)	Deep (1200-1500mm), well-drained, yellow-brown soils, consisting of pale yellow, loamy sand, orthic A-horizons underlain by yellow-brown, loamy sand, apedal B-horizons, underlain by saprolite.	High	7.70	6.07
Cv1-w1	*Clovelly 2100	Gentle footslope (1-3% slopes)	Similar to soil form Cv1 (initially well-drained), but either saturated or water table between 800-1400mm, due to the raised water level caused by the Witbank dam.	Medium	0.79	0.63
Cv1-w2	*Clovelly 2100	Gentle footslope (1-3% slopes)	Similar to soil form Cv1 (initially well-drained), but either saturated or water table between 400-800mm; Surface mostly moist or wet due to capillary movement from shallow water table, due to raised water level caused by Witbank dam.	Low	0.15	0.12
Cv2	*Clovelly 1100; Constantia	Gently sloping crest (1% slope)	Deep (1400+ mm), well-drained, pale yellow to yellow-brown soils, consisting of greyish yellow, sandy, orthic A-horizons directly underlain by loamy sand, yellow-brown, apedal B-horizons or often via a pale yellow, apedal B2-horizon.	Medium	8.56	6.74
Cv3	*Clovelly 2100	Moderate to steep footslope (8-18% slope)	Similar to soil form Cv1, but situated on moderate to steep footslope with moderate to high erodibility.	Medium	3.84	3.03
Cv4	*Clovelly 2100	Gently sloping crest and upper midslope (1-3% slopes)	Shallow (300-500mm), well-drained, reddish yellow soils, consisting of reddish yellow, loamy sand, orthic A-horizons underlain by reddish yellow, loamy sand, apedal B-horizons, often containing 10-20 sesquioxide concretions, underlain by weathered rock.	Low	13.49	10.62
Ct	*Constantia 1100; Clovelly	Mild to moderate midslope (5-11% slope)	Deep (1400+ mm), well-drained, pale yellow to yellow-brown soils, consisting of grey to greyish yellow, sandy, orthic A-horizons underlain by grey to pale yellow, sandy E-horizons, underlain by loamy sand, yellow-brown, apedal B-horizons.	Medium	2.62	2.06
Gs	Glenrosa 2211; Mispah	Mild midslope to moderately steep footslope (5-12% slope)	Shallow (200-300mm), well-drained, greyish soils consisting of greyish yellow to greyish white, loamy sand orthic A-horizons (often somewhat gravelly) underlain by weathered or fractured rock.	Low	5.33	4.19
Ms/R	*Mispah 2100; Glenrosa	Steep, rocky footslope (14-35% slope)	Very shallow (100-200mm), well drained, pale grey soils in a complex association with bare rock and surface gravel and stones; Consisting of pale grey, gravelly, loamy sand, orthic A-horizons underlain by hard or weathered rock.	Low	3.21	2.53
Cf	*Cartref 1100; Glenrosa	Moderate steep midslope (10-20% slope)	Shallow (400-500mm), well-drained, grey to greyish white soils consisting of grey, sandy orthic A-horizons underlain by weakly defined, grey to greyish white, sandy E-horizons underlain by soft weathered rock.	Low	4.79	3.77
Fw1	*Fernwood 1110, Cartref, Constantia	Gentle upper midslope (1-4%) and moderate to steep footslope (7-16%)	Deep (1400+ mm), dry, leached, grey soils, consisting of grey, sandy orthic A-horizons underlain by one or more grey or pale yellowish grey, sandy E-horizons; Leached status due to former wetness; Water table in deep profile; Impacted by many excavations.	Low	6.66	5.24
Wb	*Witbank 1000	Initial gently sloping crest and upper midslope; Currently levelled with terrestrial material (0-1% slope)	Various layers of terrestrial material (300-5000mm thick) on top of the original surface, consisting of mixed soil, subsoil and brick related waste of former brick factory.	Low	11.88	9.35
Fw2	*Fernwood 1110; Cartref	Gentle upper midslope (1-4%)	Deep (900-1100 mm), imperfectly drained, leached, grey soils, consisting of grey, sandy orthic A-horizons underlain by one or more grey or pale yellowish grey, moist or occasionally saturated, sandy E-horizons, underlain by bedrock; Impacted by excavations.	Low	1.71	1.35

Figure 12: Detailed Description of Soil Types

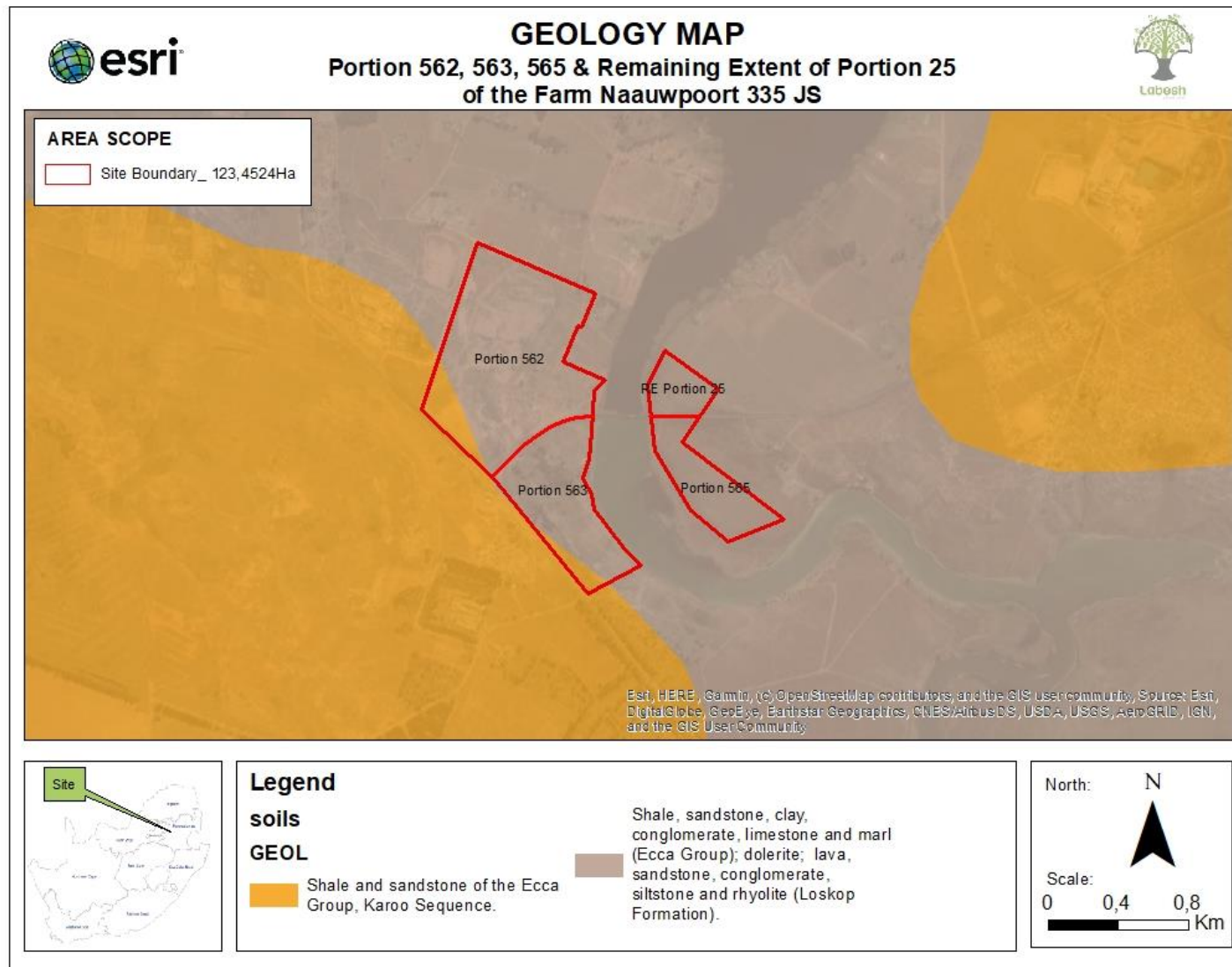


Figure 13: Geology Map of the project site (Map (in colour) is also given under Appendix A.)

## Agricultural Potential

According to the Environmental Screening Reports (Attached under Appendix D ) for Portion 562, 563, 565 and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS, the Agriculture Theme indicates a 'High Sensitivity'.

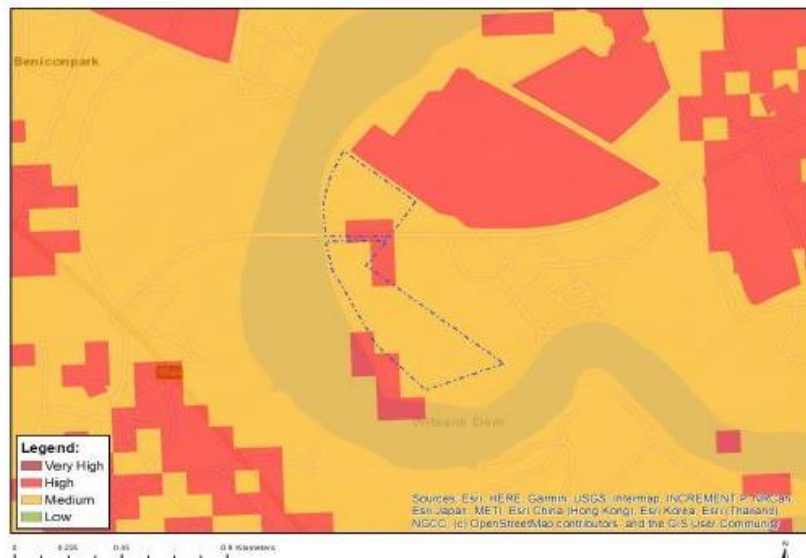
MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	x		

Figure 14: Agriculture Theme Sensitivity for Portion 562 and 563 (abstraction from the Environmental Screening Report, 2021)

MAP OF RELATIVE AGRICULTURE THEME SENSITIVITY



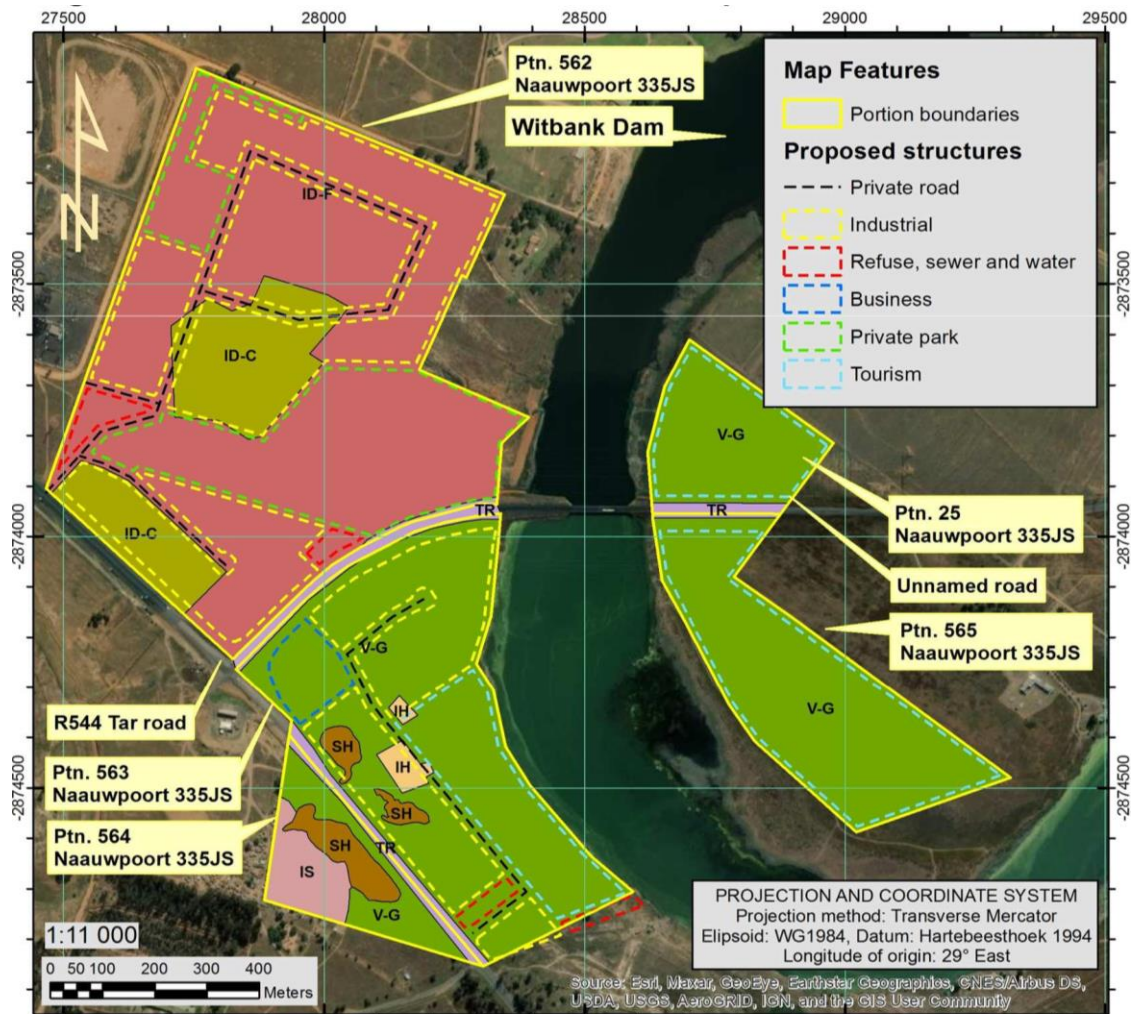
Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity
	x		

Figure 15: Agriculture Theme Sensitivity for Remaining Extent of Portion 25 and Portion 565 (abstraction from the Environmental Screening Report, 2021)



## Current Land Uses

An Agricultural Agro-ecosystem Assessment based on a detailed baseline evaluation, which include a soil, land capability and land use assessment was conducted for the project site by Rehab Green in August 2021. Land capability was assessed in categories of arable land, grazing land, wetlands and wilderness land.



LAND USE CODE	CURRENT LAND USE	Unit count	AREA (ha)	AREA (%)
ID-C	Current industrial sites	2	10.93	8.60
ID-F	Former industrial site - severely disturbed - former brick factory	1	52.38	41.24
V-G	Vacant - informal grazing from time to time	4	54.43	42.86
IH	Informal housing	2	0.76	0.60
IS	Informal settlement	1	2.29	1.80
SH	Sand harvesting	3	2.32	1.83
TR	Tar road	3	3.90	3.07
<b>Total</b>		<b>16</b>	<b>127.0</b>	<b>100.0</b>

Figure 16: Current Land Uses

According to the Agriculture Agro-ecosystem Assessment the current land uses within the proposed site is dominated by industrial land with a 49.8% coverage. The industrial land consists of current industrial sites with 8.6% (unit ID-C) coverage, and vacant, severely disturbed industrial land that was formally occupied by a clay mine and brick factory with a 41.2% (unit ID-F) coverage.

The industrial land uses covers the entire extent of Portion 562 of the Farm Naauwpoort 335 JS. The total extent of the Remainder of Portion 25 of the Farm Naauwpoort 335 JS and Portion 565 of the Farm Naauwpoort 335 JS as well as the majority of Portion 563 of the Farm Naauwpoort 335 JS appears to be vacant land with a coverage of 42.86% (unit V-G) and the only current form of land use identified as informal grazing that occurs from time to time. Other small land uses with a coverage of 7.3% are informal housing (IH), a small informal settlement (IS), sand harvesting (SH) and a tar road (TR).

Since no section of the proposed project site is utilized for agricultural production, the proposed development zones will not have any impact on current agricultural production.

### 8.3.2 Physical Rainfall

The proposed project site is approximately ±14km south south-east of Emalahleni CBD and lies within a summer rainfall area. Emalahleni experiences most of its rainfall from October to April and had an average annual rainfall of 26,68mm from June 2021 – June 2022 (World Weather Online, n.d.).



Figure 17: Rainfall, June 2021 – June 2022 (worldweatheronline.com)

### Temperature

Maximum temperatures for Emalahleni is experienced between September and March ranging between 27-31°C. Minimum temperatures are experienced between April and August ranging between 7-12°C. Average temperatures experienced during summer months (October – March) are 22-25°C (World Weather Online, n.d.).

## Wind

According to [www.windfinder.com](http://www.windfinder.com), the prevailing wind direction for Emalahleni is east and has been determined from yearly wind direction data taken from December 2011 – June 2022.

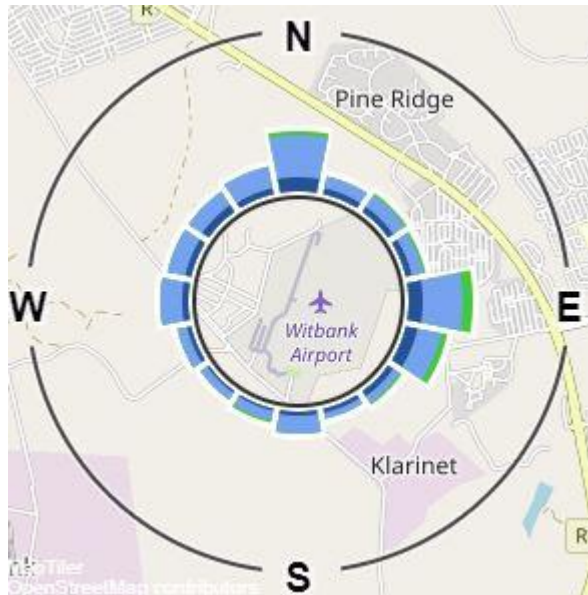


Figure 18: Prevailing wind direction for Emalahleni ([www.windfinder.com](http://www.windfinder.com))

## Topography

Emalahleni has an elevation of 1448 masl (metres above sea level) ([Windfinder.com](http://Windfinder.com), n.d.). The proposed development site consist of elevations of between 1505 and 1555masl (metres above sea level). This is also shown in the figure below.



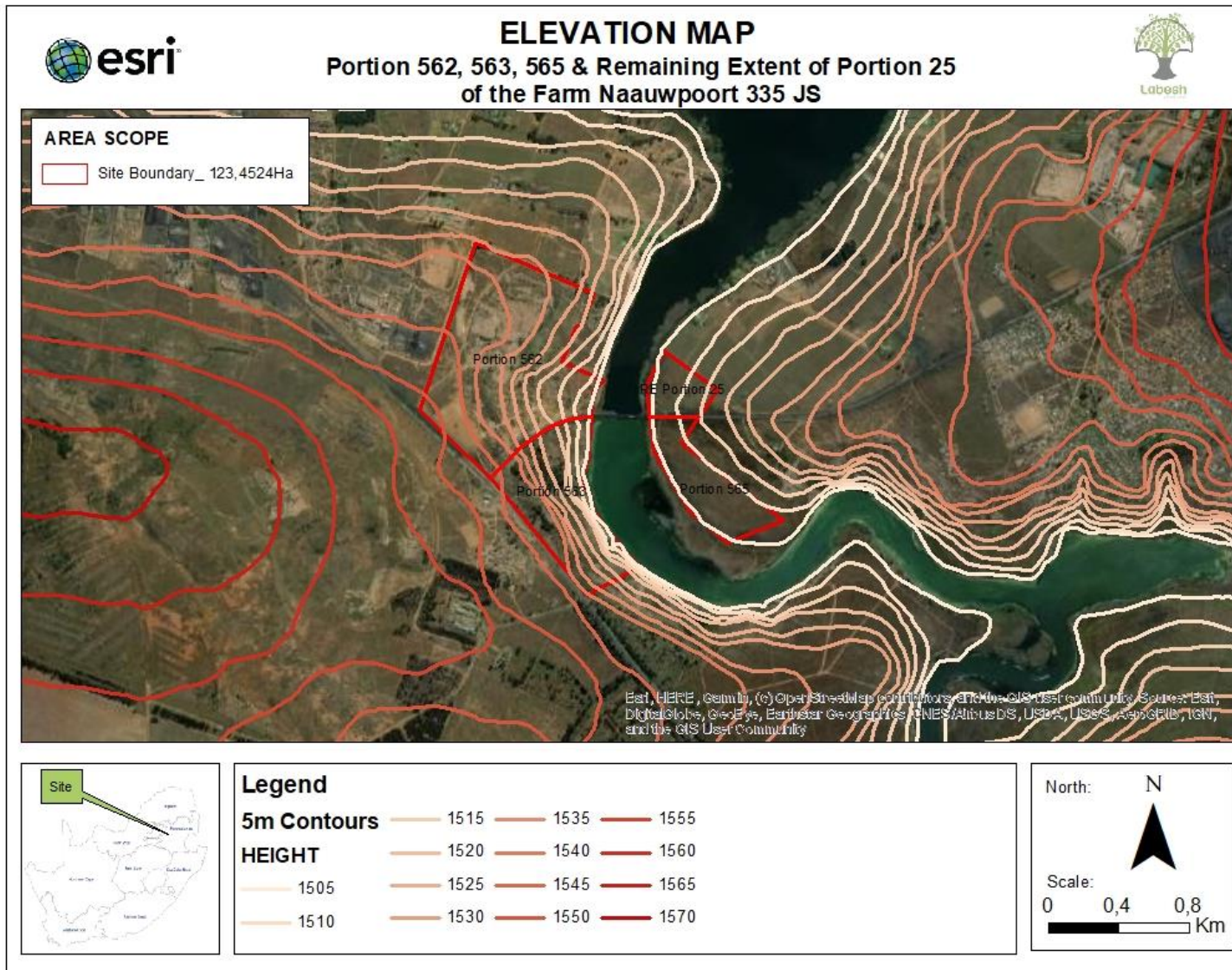


Figure 19: Elevation of the project site (Map (in colour) is also given under Appendix A.)

## Hydrology

### General

The project site is situated in the B11G quaternary catchment. The depth to the groundwater is 5 - 15 metres below ground level annum (DWA, 2010). The aquifers below the site are classified as minor aquifers (DWA, 2012).

No wetlands are present on the project site. An artificial waterbody, a large in-channel dam, is present at the site. The in-channel dam is the Witbank Dam. The Witbank Dam receives water from the Olifants river and other tributaries of the Olifants River system. The Present Ecological Status (PES) of the Witbank Dam is classified under Category C, >2 and <=3; moderately modified, but some loss of natural habitats (Rehab Green, 2021).

### 8.3.3 Biological

#### Ecological Sensitivity of the Site

According to the Ecological Fauna and Flora Habitat Survey done by Reinier F. Terblanche in September 2021 (attached under Appendix D), the ecological sensitivity at most of the site (the terrestrial zone) is medium-low. Although groundworks have taken place at large parts of the site in the past, grassland appears to be extensively distributed at the site. The in-channel Witbank Dam and its associated riparian and buffer zones, although conspicuously disturbed, remains a corridor of particular conservation concern in the larger area and is of a medium-high sensitivity.

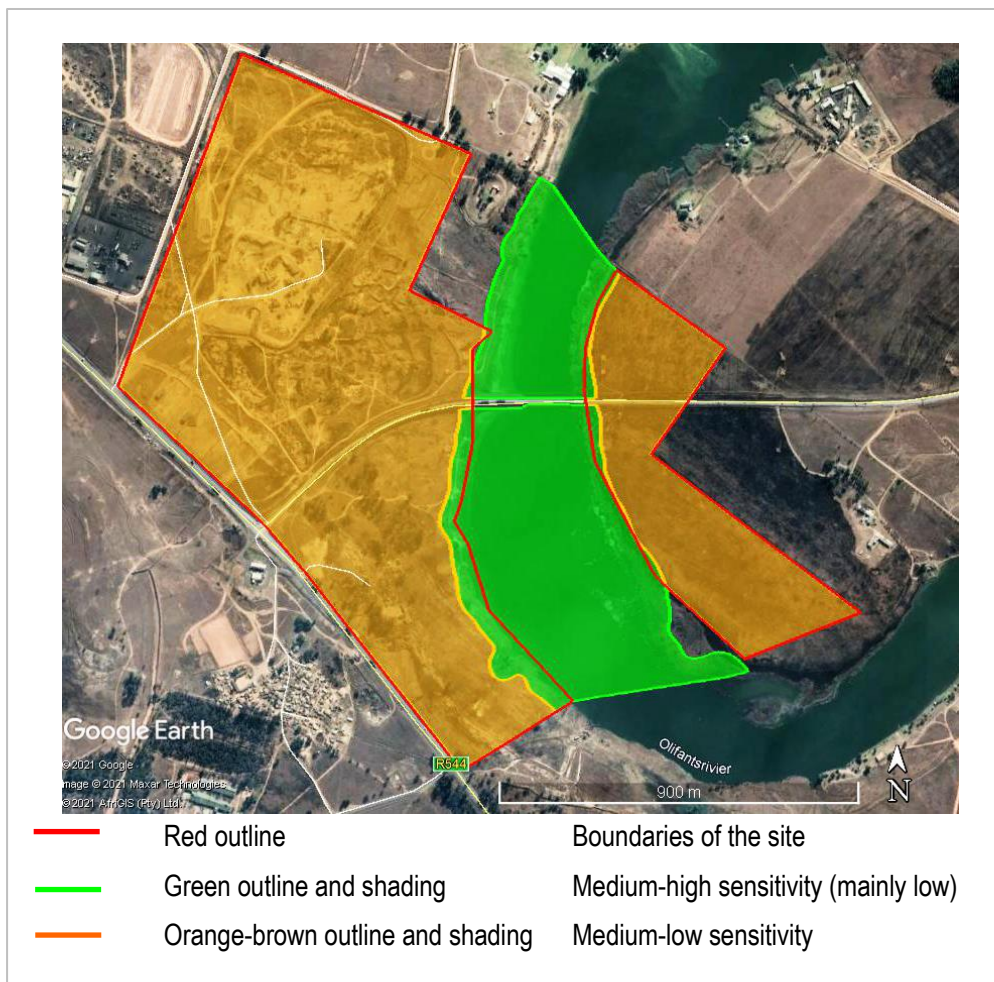


Figure 20: Ecological sensitivity of the site (Terblanche, 2021)



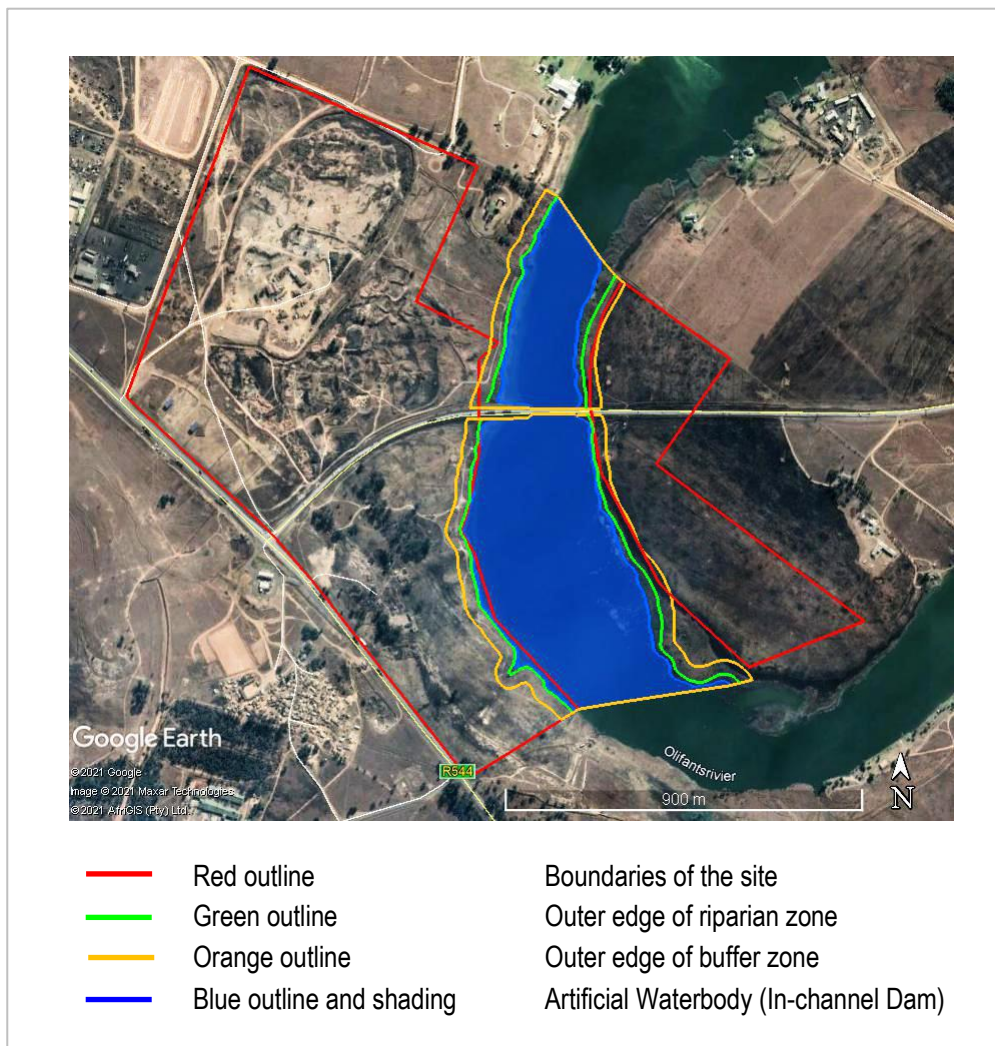


Figure 21: Witbank Dam (artificial waterbody), with its riparian zone (green outline of outer edge) and buffer zone (32 m; orange outline of outer edge) (Terblanche, 2021)

## Fauna

An Ecological Fauna and Flora Habitat Survey was done by Reinier F. Terblanche in September 2021. The full report is attached under Appendix D. The survey focussed on the possibility that fauna and/or flora of conservation concern (which include threatened species), known to occur in the Mpumalanga Province are likely to occur within the proposed site or not.

The site is located within the Grassland Biome and more specifically the Eastern Highveld Grassland. In South Africa the Eastern Highveld Grassland (Gm 12) is found in the Mpumalanga and Gauteng Provinces. Vegetation and landscape features of the Eastern Highveld Grassland include slight to moderately undulating plains and includes some low hills and pan depressions.

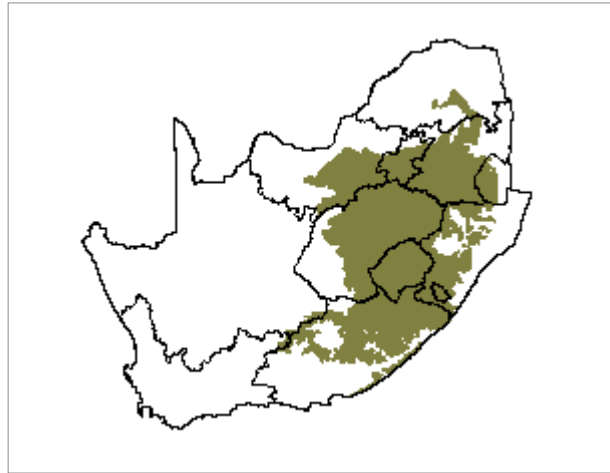


Figure 22: Grassland Biome of South Africa

Vegetation include short and dense grassland which is mostly dominated by the usual highveld grass composition (*Aristida*, *Digitaria*, *Eragrostis*, *Themeda*, *Tristachya* etc.) and small, scattered rocky outcrops with wiry, sour grasses and some woody species (*Acacia caffra*, *Celtis africana*, *Diospyros lycioides* subsp. *lycioides*, *Parinari capensis*, *Protea caffra*, *Protea welwitschia* and *Searsia magalismontanum*).

Climate within the Eastern Highveld Grassland is characterized by strong and seasonal summer-rainfall, with very dry winters. Mean annual precipitation range between 650-900mm with an overall average of 726mm.

Surveys in the larger area and at the site was done during June 2021 and was done in order to note key elements of habitats on the site which is relevant to the conservation of fauna and flora. The habitat was investigated by taking note of habitat structure such as rockiness, slope and plant structure/physiognomy as well as floristic composition.

### Mammals

Mammals were noted as site records by day. Sites were walked to cover as many habitat as possible. Signs of the presence of mammal species such as the calls of animals, animal tracks, burrows, runways, nests and faeces were recorded. Trapping was not done as it proved not necessary for the project site. Habitat characteristics were surveyed to note potential occurrence of mammals.

Assessment of mammals of particular conservation concern (as per the Ecological Fauna and Flora Habitat Survey by Terblanche. R, September 2021):

Table 13: Threatened, Endangered mammal species of the Mpumalanga Province

Species	Threatened Status (Regional)	Recorded at site during survey	Likely to be found based on habitat assessment
<i>Cloeotis percivali</i> Short-eared Trident Bat	Endangered	No	No
<i>Diceros bicornis</i> Black Rhinocerus	Endangered	No	No
<i>Lycaon pictus</i>	Endangered	No	No



African Wild Dog			
<b><i>Neamblysomus julianae</i></b> Juliana's Golden Mole	Endangered	No	No
<b><i>Redunca fulvorufula</i></b> Southern Mountain Reedbuck	Endangered	No	No

Main source: Child, Roxburgh, Do Linh San, Raimondo & Davies-Mostert (2016) with updates by several authors per species.

**Table 14: Threatened, Vulnerable mammal species of the Mpumalanga Province**

Species	Threatened Status (Regional)	Recorded at site during survey	Likely to be found based on habitat assessment
<b><i>Acinonyx jubatus</i></b> Cheetah	Vulnerable	No	No
<b><i>Felis nigripes</i></b> Black-footed Cat	Vulnerable	No	No
<b><i>Hydricteis maculicollis</i></b> Spotted-necked Otter	Vulnerable	No	No
<b><i>Mystromys albicaudatus</i></b> White-tailed Rat	Vulnerable	No	No
<b><i>Panthera pardus</i></b> Leopard	Vulnerable	No	No
<b><i>Smutsia temminckii</i></b> Temminck's Ground Pangolin	Vulnerable	No	No

Main source: Child, Roxburgh, Do Linh San, Raimondo & Davies-Mostert (2016) with updates by several authors per species.

**Table 15: Near Threatened mammal species of the Mpumalanga Province**

Species	Threatened Status (Regional)	Recorded at site during survey	Likely to be found based on habitat assessment
<b><i>Amblysomus septentrionalis</i></b> Highveld Golden Mole	Near Threatened	No	No
<b><i>Aonyx capensis</i></b> Cape Clawless Otter	Near Threatened	No	No
<b><i>Atelerix frontalis</i></b> Southern African Hedgehog	Near Threatened	No	No
<b><i>Ceratotherium simum simum</i></b> Southern White Rhinoceros	Near Threatened	No	No

<b><i>Crocuta crocuta</i></b> Spotted Hyaena	Near Threatened	No	No
<b><i>Leptailurus serval</i></b> Serval	Near Threatened	No	No
<b><i>Parahyaena brunnea</i></b> Brown Hyaena	Near Threatened	No	No
<b><i>Pelea capreolus</i></b> Grey Rhebok	Near Threatened	No	No
<b><i>Poecilogale albinucha</i></b> African Striped Weasel	Near Threatened	No	No

Main source: Child, Roxburgh, Do Linh San, Raimondo & Davies-Mostert (2016) with updates by several authors per species.

**In conclusion:** Due to the site being situated outside large reserves or national parks, threatened mammal species such as the black rhinoceros (*Diceros bicornis*), African elephant (*Loxodonta africana*) and the African wild dog (*Lycaon pictus*) are not present on the project site. Also, no smaller mammals of particular high conservation significance are likely to be found on the project site.

#### Avifauna (birds)

Birds were noted as sight records with the aid of binoculars (10x30). Any nearby bird calls of which the observer was sure of the identity were also recorded. The ringing of birds was not deemed necessary. The site was walked to cover as many habitats as possible and signs of the presence of bird species such as spoor and nests have been recorded. Habitat characteristics were also surveyed to note any potential occurrence of birds on the project site.

Assessment of birds of particular high conservation priority (as per the Ecological Fauna and Flora Habitat Survey by Terblanche. R, September 2021):

**Table 16: Bird species of particular conservation concern in the Mpumalanga Province**

Species	Common name	Red Listed Status	Recorded at site during survey	Likelihood of residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Aegypius occipitalis</i>	<b>White-headed Vulture</b>	Vulnerable	No	Unlikely, may be visitor
<i>Aegypius tracheliotos</i>	<b>Lappet-faced Vulture</b>	Vulnerable	No	Unlikely, may be visitor
<i>Alcedo semitorquata</i>	<b>Half-collared Kingfisher</b>	Near-threatened	No	Unlikely
<i>Anastomus lamelligerus</i>	<b>African Openbill</b>	Near-threatened	No	Unlikely

Species	Common name	Red Listed Status	Recorded at site during survey	Likelihood of residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Anthropoides paradiseus</i>	<b>Blue Crane</b>	Vulnerable	No	Highly unlikely
<i>Anthus chloris</i>	<b>Yellow-breasted Pipit</b>	Vulnerable (Globally)	No	Unlikely
<i>Apalis ruddi</i>	<b>Rudd's Apalis</b>	Near-threatened	No	Unlikely
<i>Aquila ayresii</i>	<b>Ayres's Hawk-Eagle</b>	Near-threatened	No	Unlikely
<i>Aquila rapax</i>	<b>Tawny Eagle</b>	Vulnerable	No	Unlikely
<i>Ardeotis kori</i>	<b>Kori Bustard</b>	Vulnerable	No	Highly unlikely
<i>Balearica regulorum</i>	<b>Grey Crowned Crane (Mahem)</b>	Vulnerable	No	Unlikely
<i>Bucorvis leadbeateri</i>	<b>Southern Ground-hornbill</b>	Vulnerable (in South Africa)	No	Unlikely
<i>Bugeranus carunculatus</i>	<b>Wattled Crane</b>	Vulnerable (Globally) Critically Endangered (RSA)	No	Highly unlikely
<i>Buphagus africanus</i>	<b>Yellow-billed Oxpecker</b>	Vulnerable	No	Unlikely
<i>Buphagus erythrorhynchus</i>	<b>Red-Billed Oxpecker</b>	Near-threatened	No	Unlikely
<i>Centropus grillii</i>	<b>Black Coucal</b>	Near-threatened	No	Unlikely
<i>Charadrius pallidus</i>	<b>Chestnut-banded Plover</b>	Near-threatened	No	Unlikely
<i>Ciconia nigra</i>	<b>Black Stork</b>	Near-threatened	No	Unlikely
<i>Circus macrourus</i>	<b>Pallid Harrier</b>	Near-threatened	No	Unlikely
<i>Circus ranivorus</i>	<b>African Marsh- Harrier</b>	Vulnerable	No	Unlikely
<i>Crex crex</i>	<b>Corn Crake</b>	Vulnerable	No	Unlikely
<i>Ephippiorynchus senegalensis</i>	<b>Saddle-billed Stork</b>	Endangered (in RSA)	No	Unlikely
<i>Eupodotis caerulescens</i>	<b>Blue Korhaan</b>	Near-threatened	No	Highly unlikely
<i>Eupodotis senegalensis</i>	<b>White-bellied Korhaan</b>	Vulnerable	No	Highly unlikely
<i>Falco biarmicus</i>	<b>Lanner Falcon</b>	Near-threatened	No	Unlikely

Species	Common name	Red Listed Status	Recorded at site during survey	Likelihood of residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Falco naumanni</i>	<b>Lesser Kestrel</b>	Vulnerable	No	Unlikely
<i>Falco peregrinus</i>	<b>Peregrine Falcon</b>	Near-threatened	No	Unlikely
<i>Geronticus calvus</i>	<b>Southern Bald Ibis</b>	Vulnerable	No	Unlikely
<i>Glareola pranticola</i>	<b>Collared Pranticole</b>	Near-threatened	No	Unlikely
<i>Gorsachius leuconotus</i>	<b>White-backed Night-heron</b>	Vulnerable	No	Unlikely
<i>Gyps africanus</i>	<b>White-backed Vulture</b>	Vulnerable	No	Unlikely
<i>Gyps coprotheres</i>	<b>Cape Vulture</b>	Vulnerable	No	Unlikely
<i>Heteromirafra ruddi</i>	<b>Rudd's Lark</b>	Critically Endangered (Globally)	No	Unlikely
<i>Hirundo atrocaerulea</i>	<b>Blue Swallow</b>	Critically Endangered (in RSA)	No	Unlikely
<i>Hypargos margaritatus</i>	<b>Pink-throated Twinspot</b>	Near-threatened	No	Unlikely
<i>Lioptilus nigricapillus</i>	<b>Bush Blackcap</b>	Near-threatened	No	Unlikely
<i>Lissotis melanogaster</i>	<b>Black-bellied Bustard</b>	Near-threatened	No	Unlikely
<i>Macheiramphus alcinus</i>	<b>Bat Hawk</b>	Near-threatened	No	Unlikely
<i>Mirafra cheniana</i>	<b>Melodious lark</b>	Near-threatened	No	Highly unlikely
<i>Mycteria ibis</i>	<b>Yellow-billed Stork</b>	Near-threatened	No	Unlikely
<i>Neophron percnopterus</i>	<b>Egyptian Vulture</b>	Regionally almost extinct	No	Unlikely
<i>Neotis denhami</i>	<b>Denham's Bustard</b>	Vulnerable	No	Highly unlikely
<i>Nettapus auritus</i>	<b>African Pygmy-goose</b>	Near-threatened	No	Unlikely
<i>Pelecanus onocrotalus</i>	<b>Great White Pelican</b>	Near-threatened	No	Unlikely
<i>Pelecanus rufescens</i>	<b>Pink-backed Pelican</b>	Vulnerable	No	Unlikely
<i>Phoenicopterus minor</i>	<b>Lesser Flamingo</b>	Near-threatened	No	Unlikely

Species	Common name	Red Listed Status	Recorded at site during survey	Likelihood of residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Phoenicopus ruber</i>	<b>Greater Flamingo</b>	Near-threatened	No	Unlikely
<i>Platysteira peltata</i>	<b>Black-throated Wattle-eye</b>	Near-threatened	No	Unlikely
<i>Polemaetus bellicosus</i>	<b>Martial Eagle</b>	Vulnerable	No	Unlikely
<i>Rostratula benghalensis</i>	<b>Greater Painted-snipe</b>	Near-threatened	No	Unlikely
<i>Rhynchops flavirostris</i>	<b>African Skimmer</b>	Endangered	No	Unlikely
<i>Sagittarius serpentarius</i>	<b>Secretarybird</b>	Vulnerable	No	Unlikely
<i>Sarothrura affinis</i>	<b>Striped Flufftail</b>	Vulnerable	No	Unlikely
<i>Sarothrura ayresi</i>	<b>White-winged Flufftail</b>	Critically Endangered	No	Highly unlikely
<i>Schoenicola brevisrostris</i>	<b>Broad-tailed Warbler</b>	Near-threatened	No	Unlikely
<i>Scotopelia peli</i>	<b>Pel's Fishing-Owl</b>	Vulnerable	No	Unlikely
<i>Spermestes fringilloides</i>	<b>Magpie Mannikin</b>	Near-threatened	No	Unlikely
<i>Spizocorys fringillaris</i>	<b>Botha's Lark</b>	Endangered (Globally)	No	Highly unlikely
<i>Stephanoaetus coronatus</i>	<b>African Crowned Eagle</b>	Near-threatened	No	Unlikely
<i>Sterna caspia</i>	<b>Caspian Tern</b>	Near-threatened	No	Unlikely
<i>Therathopius ecaudatus</i>	<b>Bateleur</b>	Vulnerable (in southern Africa)	No	Unlikely
<i>Turnix nanus</i>	<b>Black-rumped Buttonquail</b>	Endangered	No	Unlikely
<i>Tyto capensis</i>	<b>African Grass-Owl</b>	Vulnerable	No	Unlikely
<i>Vanellus albiceps</i>	<b>White-crowned Lapwing</b>	Near-threatened	No	Unlikely
<i>Vanellus melanopterus</i>	<b>Black-winged lapwing</b>	Near-threatened	No	Unlikely
<i>Zoothera gurneyi</i>	<b>Orange ground-thrush</b>	Near-threatened	No	Unlikely

Literature sources Barnes (2000), Hockey, Dean & Ryan, P.G. (2005) and Chittenden (2007).

**In conclusion:** With bird species often having a large distributional range, their presence on the project site does not mean that they are dependant on the site as a breeding location. For threatened (vulnerable, endangered, critically

endangered) bird species or any other bird species of particular conservation priority (near threatened, data deficient) the site does not appear to form part of any habitat of particular importance.

## Herpetofauna

### Reptiles

Reptiles were noted as sight records on the project site. The project site was walked to cover as many habitat as possible. Smaller reptiles are sometimes collected for identification but was not necessary for the particular study. Habitat characteristics were surveyed to note the potential occurrence of reptiles.

Assessment of reptiles of particular conservation concern (as per the Ecological Fauna and Flora Habitat Survey by Terblanche. R, September 2021):

**Table 17: Threatened reptile species of the Mpumalanga Province that are listed in the vulnerable category**

Species	Common name	Conservation status	Recorded at site during survey	Likelihood of being resident at the site
<i>Crocodylus niloticus</i>	Nile Crocodile	Vulnerable	No	Unlikely
<i>Smaug giganteus</i>	Giant Dragon Lizard	Vulnerable	No	Unlikely
<i>Tetradactylus breyeri</i>	Breyer's Long-tailed Seps	Vulnerable	No	Unlikely

Main source: Atlas and Red List of the Reptiles of South Africa, Lesotho and Swaziland (Bates, Branch, Bauer, Burger, Marais, Alexander & de Villiers (2014).

**Table 18: Near Threatened reptile species of the Mpumalanga Province**

Species	Common name	Conservation status	Recorded at site during survey	Likelihood to be resident at the site
<i>Chamaesaura aenea</i>	Coppery Grass Lizard	Near Threatened	No	Unlikely
<i>Chamaesaura macrolepis</i>	Large-scaled Grass Lizard	Near Threatened	No	Unlikely
<i>Homoroselaps dorsalis</i>	Striped Harlequin Snake	Near Threatened	No	Unlikely
<i>Platysaurus orientalis</i> subsp. <i>fitzsimonsi</i>	Fitzsimon's Flat Lizard	Near Threatened	No	Unlikely

Main source: Atlas and Red List of the Reptiles of South Africa, Lesotho and Swaziland (Bates, Branch, Bauer, Burger, Marais, Alexander & de Villiers (2014).

**In conclusion:** No reptile species that are threatened or any other reptile species of particular conservation priority appear to be present on the project site.

## Amphibians

Frogs and toads were noted as sight records in the field or by their calls. The project site was walked in order to cover as many habitat as possible. Habitat characteristics were also surveyed in order to note potential occurrences of amphibians on the project site.

Assessment of amphibian species of particular conservation concern (as per the Ecological Fauna and Flora Habitat Survey by Terblanche. R, September 2021):

**Table 19: Threatened amphibian species of the Mpumalanga Province which are listed in the Vulnerable category**

Species	Common name	Conservation status	Recorded at site during survey	Likelihood to be resident at the site
<i>Hemisus guttatus</i>	Spotted Shovel-nosed Frog	Vulnerable	No	Unlikely to be resident.

Sources: Minter et al. (2004), Du Preez & Carruthers (2009), Carruthers & Du Preez (2011).

**Table 20: Near Threatened amphibian species in Mpumalanga Province**

Species	Common name	Conservation status	Recorded at site during survey	Likelihood to be resident at the site
<i>Strongylopus wageri</i>	Plain Stream Frog	Near Threatened	No	Unlikely to be resident

Sources: Minter et al. (2004), Du Preez & Carruthers (2009) and Carruthers & Du Preez (2011).

**Table 21: Amphibian species of the Mpumalanga Province of which the conservation status is uncertain owing to a lack of information and which are listed in the Data Deficient category**

Species	Common name	Conservation status	Recorded at site during survey	Likelihood to be resident at the site
<i>Breviceps sopranus</i>	Whistling Rain Frog	Data Deficient	No	Unlikely to be resident

Sources: Minter et al. (2004), Du Preez & Carruthers (2009) and Carruthers & Du Preez (2011).

**In conclusion:** *Pyxicephalus aspersus* could possibly be present at a pan outside of the project site, but within 500m from the site. The project site is unlikely to be a sustainable foraging area for bullfrogs of the pan.

## Invertebrates

### Butterflies

Butterflies were noted as sight records or voucher specimens. Many butterflies use only one species or a limited number of plant species as host plants for their larvae. Some of the Myrmecophilous (ant-loving) butterfly species which lives in association with certain ant species require a unique ecosystem for survival and were known food plants of butterflies also recorded. After site visits and species identification, a list was compiled of butterflies that will most probably be found around the project site in all the other seasons due to the suitable habitat. Emphasis were however placed on a habitat survey.

Assessment of butterflies of particular conservation priority (as per the Ecological Fauna and Flora Habitat Survey by Terblanche. R, September 2021):

**Table 22: Threatened: Globally Critically Endangered butterfly species of the Limpopo and Mpumalanga Provinces combined**

Species	Red List Status	Recorded at site during survey	Residential status at the site: Confirmed, Highly likely, Likely,



			Medium possibility, Unlikely, Highly unlikely
<b><i>Alaena margaritacea</i></b> Wolkberg Zulu	Critically Endangered	No	Highly unlikely
<b><i>Anthene crawshayi juanitae</i></b> Juanita's Hairtail	Critically Endangered	No	Highly unlikely
<b><i>Dingana fraterna</i></b> Stoffberg Widow	Critically Endangered	No	Highly unlikely
<b><i>Eriksonia edgei</i></b> * Waterberg Copper	Critically Endangered	No	Highly unlikely

Sources: Mecenero et al. (2013), Henning, Terblanche & Ball (2009).

**Table 23: Threatened: Regionally Critically Endangered butterfly species of the Limpopo and Mpumalanga Provinces combined**

Species	Red List Status (Global unless stated otherwise)	Recorded at site during survey	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<b><i>Acada biseriata</i></b> Axehead Orange	Regionally Critically Endangered	No	Highly unlikely
<b><i>Charaxes guderiana</i></b> Blue-spangled Charaxes	Regionally Critically Endangered	No	Highly unlikely

Mecenero et al. (2013), Henning, Terblanche & Ball (2009).

**Table 24: Threatened: Endangered butterfly species of the Limpopo and Mpumalanga Provinces combined**

Species	Red List Status (Global status)	Recorded at site during survey	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<b><i>Aloeides stevensoni</i></b> Stevenson's Copper	Endangered	No	Highly unlikely
<b><i>Aloeides barbara</i></b> Barbara's Copper	Endangered	No	Highly unlikely
<b><i>Aloeides nubilus</i></b> Cloud Copper	Endangered	No	Highly unlikely
<b><i>Aloeides rossouwii</i></b> Rossouw's Copper	Endangered	No	Highly unlikely
<b><i>Chrysochloa aureus</i></b>	Endangered	No	Highly unlikely

Species	Red List Status (Global status)	Recorded at site during survey	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
Golden Opal/ Heidelberg Opal			
<b>Dingana clara</b> Wolkberg Widow	Endangered	No	Highly unlikely
<b>Lepidochrysops irvingi</b> Irving's Blue	Endangered	No	Highly unlikely
<b>Lepidochrysops jefferyi</b> Jeffery's Blue	Endangered	No	Highly unlikely
<b>Lepidochrysops lotana</b> Lotana Blue	Endangered	No	Highly unlikely
<b>Lepidochrysops swanepoeli</b> (Swanepoel's Blue)	Endangered	No	Highly unlikely
<b>Telchinia induna salmontana</b> Soutpansberg Acraea	Endangered	No	Highly unlikely

Sources: Mecenero et al. (2013), Henning, Terblanche & Ball (2009).

**Table 25: Threatened: Vulnerable butterfly species of the Limpopo and Mpumalanga Provinces combined**

Species	Red List Status (Global status)	Recorded at site During survey	Residential status at the site: Confirmed, Highly unlikely, Likely, Medium possibility, Unlikely, Highly unlikely
<b>Orachrysops violescens</b> Violescent Blue	Vulnerable	No	Highly unlikely

Source: Mecenero et al. (2013).

**Table 26: Near Threatened butterfly species of the Limpopo Province and Mpumalanga Province combined**

Species	Red List Status (Global unless stated otherwise)	Recorded at site during survey	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<b>Dingana alaedeus</b> Wakkerstroom Widow	Near Threatened	No	Highly unlikely

Source: Mecenero et al. (2013).

Table 27: Extremely Rare or Rare butterfly species of the Limpopo and Mpumalanga Provinces combined

Species	Red List Status	Recorded at site during survey	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<b><i>Anthene minima minima</i></b> Little Ciliated Blue/ Little Hairtail	Rare (Low density)	No	Unlikely
<b><i>Charaxes druceanus solitarius</i></b> Blouberg Silver-barred Charaxes	Rare (Restricted range)	No	Highly unlikely
<b><i>Charaxes marieps</i></b> Marieps Charaxes	Rare (Restricted range)	No	Highly unlikely
<b><i>Charaxes xiphares staudei</i></b> Blouberg Forest-king Charaxes	Rare (Restricted range)	No	Highly unlikely
<b><i>Colotis celimene amina</i></b> Lilac Tip	Rare (Low density)	No	Unlikely
<b><i>Dingana jerinae</i></b> (Kransberg Widow)	Rare (Restricted range)	No	Highly unlikely
<b><i>Dira swanepoeli isolata</i></b> Blouberg Widow	Rare (Restricted range)	No	Highly unlikely
<b><i>Lepidochrysops procera</i></b> Potchefstroom Blue	Rare (Habitat specialist)	No	Highly unlikely
<b><i>Metisella meninx</i></b> Marsh Sylph	Rare (Now Near Threatened) (Habitat specialist)	No	Low possibility, could make use of riparian zone as corridor, but no ideal habitat at present
<b><i>Orachrysops regalis</i></b> Royal Blue	Rare (Habitat specialist)	No	Highly unlikely
<b><i>Orachrysops warreni</i></b> Warren's Blue	Extremely Rare	No	Highly unlikely
<b><i>Papilio ophidicephalus entabeni</i></b> Entabeni Emperor Swallowtail	Rare (Habitat specialist)	No	Highly unlikely
<b><i>Papilio ophidicephalus transvaalensis</i></b> Woodbush Emperor Swallowtail	Rare (Habitat specialist)	No	Highly unlikely
<b><i>Platylesches dolomitica</i></b> (Hilltop hopper)	Rare (Low density)	No	Highly unlikely
<b><i>Serradinga clarki amissivallis</i></b>	Rare (Restricted range, Habitat specialist)	No	Highly unlikely

Source: Mecenero et al. (2013).

**Table 28: Data deficient butterfly species of the Limpopo and Mpumalanga Provinces combined**

Species	Red Listed Status	Recorded at site during survey	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Coenyropsis natalii poetulodes</i>	Data Deficient	No	Highly unlikely
<i>Pseudonympha swanepoeli</i> *	Data Deficient	No	Highly unlikely

Source: Mecenero et al. (2013).

**In conclusion:** In terms of the conservation status of invertebrates in South Africa, butterflies represent the most well studied group and many of the present extinction risk assessments are relatively well refined. Critically endangered (global) butterfly species such as *Alaena margaritacea* (Wolkberg zulu), *Anthene crawshayi juanita* (Juanita's Cilated Blue) and *Erikssonia edgei* (Waterberg Copper) presence at the project site is highly unlikely due to the lack of habitat requirements. Critically endangered (regionally: South Africa) butterfly species such as *Acada biseriata* (Axehead Orange) and *Charaxes guderiana guderiana* (Blue-spangled Charaxes) presence at the project site is highly unlikely due to the lack of habitat requirements. Threatened: Endangered (global) butterfly species such as *Aloeides stevensoni* (Stevenson's Copper), *Dingana clara* (Wolkberg Widow), *Lepidochrysops lotana* (Lotana Blue) and *Telchinia induna salmontana* (Soutpansberg Acraea) presence at the project site is highly unlikely due to the lack of habitat requirements.

Extremely Rare or Rare butterfly species (National categories) such as *Anthene minima minima* (Little Cilated Blue / Little Hairtail), *Charaxes druceanus solitarius* (Blouberg Silver-barred Charaxes), *Charaxes xiphares staudei* (Blouberg Foresting Charaxes), *Colotis celimene amina* (Lilac tip), *Dingana jerinae* (Kransberg Widow), *Dira swanepoeli isolate* (Blouberg Widow), *Orachrysops regalis* (Royal Blue), *Papilio ophidicephalus entabeni* (Entabeni Emperor Swallowtail) and *Papilio ophidicephalus transvaalensis* (Woodbush Emperor Swallowtail) presence at the project site is highly unlikely due to the lack of habitat requirements. However, *Metisella meninx* (Marsh Sylph) could be present at the site though the habitat at the edge of the dam does not appear to be as suitable as at other areas in the eastern highveld of Mpumalanga.

Data deficient butterfly species such as *Coenyropsis natalii poetulodes* and *Pseudonympha swanepoeli* presence at the project site is highly unlikely due to the lack of habitat requirements.

### Fruit Chafer Beetles

Different habitat types were explored on the project site in order to identify any sensitive or special fruit chafer species. Any possible chafer beetles of high conservation priority were noted as sight records along with the collection of voucher specimens with grass nets or container where deemed necessary.

Assessment of beetles of particular conservation priority (as per the Ecological Fauna and Flora Habitat Survey by Terblanche. R, September 2021):

**Table 29: Fruit chafer species (Coleoptera: Scarabaeidae: Cetoninae) in the Limpopo Province which are of known high conservation priority.**

Species	Red Listed Status	Recorded at site during survey	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Ichnestoma stobbiai</i>	Uncertain (Some populations maybe endangered: taxonomic difficulties)	No	Highly unlikely
<i>Trichocephala brincki</i>	Uncertain	No	Highly unlikely

**In conclusion:** No fruit chafer beetles of particular conservation priority are expected to be resident at the project site.

### Scorpions

Different homogenous habitat and vegetation areas were identified and explored to identify any sensitive and/or special species. Investigation methods included brushing of the soil surface with a small broom, scraping and digging with a spade. Actions were performed with the least disturbance possible.

Assessment of scorpions of particular conservation importance (as per the Ecological Fauna and Flora Habitat Survey by Terblanche. R, September 2021):

**Table 30: Highly endemic and/ or habitat specific rock scorpion species of Limpopo and Mpumalanga Provinces combined**

Species	Distribution	Conservation Status	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Hadogenes bicolor</i>	Endemic to South Africa (Mpumalanga and Limpopo)	Uncertain. Habitat specialist.	Highly unlikely
<i>Hadogenes longimanus</i>	Endemic to South Africa (Mpumalanga)	Uncertain. Habitat specialist	Highly unlikely
<i>Hadogenes longimanus</i> "Steelpoort specimens"	Specimens from Steelpoort have some different characteristics and may be a different taxon pending further investigations (See Prendini 2001).	Data deficient. Habitat specialist	Highly unlikely
<i>Hadogenes newlandsi</i>	Conservation status uncertain but species has restricted distribution in Limpopo Province (See Prendini 2001).	Uncertain. Habitat specialist with restricted distribution.	Highly unlikely

Species	Distribution	Conservation Status	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Hadogenes troglodytes</i>	Not threatened but regarded as sensitive species with high habitat specificity.	Not threatened (pers. obs.) but clearly lithophilous (rocky habitat specialist)	Highly unlikely

Main source: Prendini (2001)

**In conclusion:** It is highly unlikely that any sensitive rock scorpions are present at the project site.

### Damselflies and Cicadas

Assessment of damselflies and cicadas of particular conservation priority (as per the Ecological Fauna and Flora Habitat Survey by Terblanche. R, September 2021):

**Table 31: Threatened damselfly species (Odonata: Zygoptera) of Mpumalanga Province**

Species	Common name	Conservation Status	Residential status at the site: Confirmed, Highly unlikely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Pseudagrion newtoni</i>	Harlequin Sprite	Vulnerable	Highly unlikely

Source: Samways 2006, Samways, Taylor & Tarboton 2005

**Table 32: Data deficient but possibly highly localised cicada species of the Limpopo Province which is of conservation priority**

Species	Red Listed Status	Recorded at site during survey	Residential status at the site: Confirmed, Highly likely, Likely, Medium possibility, Unlikely, Highly unlikely
<i>Pycna sylvia</i> Giant Cicada	Data Deficient but possibly has restricted distribution in Sekhukhuneland.	No	Highly unlikely

**In conclusion:** In terms of conservation, many damselflies species and subspecies are poorly known (although extraordinary progress has been made). Only one species which is better known to an extent that it is listed as a conservation priority is the *Pseudagrion newtoni* and the presence of this species at the project site is highly unlikely.



With regards to the conservation status of cicadas, many species and subspecies are still unknown. Only one species which is better known to an extent that it is listed as a conservation priority is the *Pycna sylviai* and the presence of this species at the project site is highly unlikely.

### **Baboon Spiders**

In South Africa the baboon spider belongs to the genus *Ceratogyrus* and appears on the TOPS list with other baboon spider genera such as *Harpactira* and *Pterinochilus*. *Ceratogyrus bechuanicus* is well represented in the Kruger National Park, Musina, D'nyala and Atherstone Nature Reserves. It is also found in the Klaserie and Sabi Sand private nature reserves. *Ceratogyrus brachycephala* has only been found in the Messina Provincial Nature Reserve whilst some of its distribution includes the Langjan Nature Reserve. *C. brachycephala* with its smaller distribution has a higher conservation status than the *C. bechuanicus*. *Ceratogyrus bechuanicus* is likely to be present at or near the site. Occurrence of baboon spiders of particular conservation concern at the project site is however highly unlikely.

## Flora

An Ecological Fauna and Flora Habitat Survey was done by Reinier F. Terblanche in September 2021. The full report is attached under Appendix D.

The proposed project site is located within the Grassland Biome and is more specifically represented by the Eastern Highveld Grassland vegetation type.

### Gm 12 Eastern Highveld Grassland

Distribution: The Eastern Highveld Grassland (Gm 12) is found in the Mpumalanga and Gauteng Provinces of South Africa with plains between Belfast in the east and the eastern side of Johannesburg in the west and extends southwards to Bethal, Ermelo and west of Piet Retief.

Vegetation and landscape features: The Eastern Highveld Grassland consists mainly of slight to moderate undulating plains and includes some low hills and pan depressions. Vegetation is short and dense grassland and is dominated by the usual highveld grass species such as *Aristida*, *Digitaria*, *Eragrostis*, *Themeda*, *Tristachya* etc. Small, scattered rocky outcrops with wiry, sour grasses and some woody species (such as *Acacia caffra*, *Celtis africana*, *Diospyros lycioides* subsp. *lycioides*, *Parinari capensis*, *Protea caffra*, *Protea welwitschii* and *Searsia magalismontanum*) are also present within the Eastern Highveld Grassland.

**Table 33: Main landscape and habitat characteristics of the site**

HABITAT FEATURE	DESCRIPTION
Rockiness	Rocky ridges are absent at the site.
Presence of wetlands	An artificial waterbody, a large in-channel dam, is present at the site. This in-channel dam is the Witbank Dam.
Broad overview of vegetation	<p>A visibly disturbed grassland is present at the site. A riparian zone (often narrow) that contains some wetland plant species is present along the water edge of the Witbank Dam. Clumps of alien invasive trees, notably <i>Eucalyptus</i> species and alien invasive Australian <i>Acacia</i> species are present at the site. Pioneer grasses and forbs, including several alien invasive herbaceous weed species are present at areas where groundworks have taken place well as where other disturbances such as informal dumping occurred.</p> <p>Indigenous grass species at the site include <i>Cynodon dactylon</i>, <i>Aristida congesta</i>, <i>Eragrostis chloromelas</i>, <i>Eragrostis gummiflua</i>, <i>Pogonarthria squarrosa</i>, <i>Melinis repens</i>, <i>Urochloa mosambicensis</i>, <i>Perotis patens</i> and <i>Hyparrhenia hirta</i>. Indigenous herbaceous plant species such as <i>Helichrysum rugulosum</i>, <i>Helichrysum nudifolium</i>, <i>Polydora poskeana</i>, <i>Helichrysum rugulosum</i>, <i>Pollichia campestris</i>, <i>Chamaecrista mimosoides</i>, <i>Ipomoea crassipes</i> and <i>Cleome maculata</i> are present. The shrub, <i>Seriphium plumosum</i> (bankrupt bush) occurs at a number of places, at the site. The herbaceous shrub <i>Gomphocarpus fruticosus</i> is widespread at the site.</p> <p>Extensive clumps of alien invasive tree species include species such as <i>Eucalyptus camaldulensis</i> and <i>Acacia decurrens</i> are found at the site. Many alien, invasive herbaceous weed species are present at the site including <i>Solanum sisymbriifolium</i>, <i>Schkuhria pinnata</i>, <i>Tagetes minuta</i>, <i>Conyza</i> species, <i>Datura</i> species, exotic <i>Verbena</i> species, <i>Plantago lanceolata</i>, <i>Bidens pilosa</i>, <i>Alternanthera pungens</i> and <i>Acanthospermum australe</i>.</p> <p>Wetland plant species at the riparian zone along the edges of the dam include sedges such as <i>Cyperus denudatus</i>, <i>Cyperus congestus</i> and <i>Schoenoplectus corymbosus</i> and rushes</p>

	such as <i>Juncus oxycarpus</i> . The megagraminoids <i>Typha capensis</i> (Bulrush) and <i>Phragmites australis</i> (Reed) occur at some patches at the riparian zone.
Signs of disturbances	Extensive groundworks, excavations and diggings have taken place at many areas, including some large parts of the site, in the past. Clumps of alien invasive tree species are found at the site. Buildings and roads are present at the site. Fire places and clearings are encountered at the riparian zone. Large pylons and a bridge cross the site.
Connectivity of natural vegetation in the site and between the site and surrounding areas	There is little scope for most of the site to be part of a corridor of particular conservation importance. The in-channel Witbank Dam with its riparian and buffer zones are, despite being a conspicuously disturbed area, a corridor of particular conservation importance in the larger area.

Source: Terblanche, 2021



Figure 23: Indigenous reed *Phragmites australis* at the riparian zone of the south-eastern section of the site (Terblanche, 2021).



Figure 24: Dense cover of *Typha capensis* (Bulrush) at the south-eastern section of the site (Terblanche, 2021).



Figure 25: *Seriphium plumosum* (Banrupt Bush) at the site (Terblanche, 2021).



Figure 26: *Cynodon dactylon* (Couch Grass) at the site (Terblanche, 2021).



Figure 27: Pioneer herb *Senecio consanguineus* at the site (Terblanche, 2021).



Figure 28: Indigenous herbaceous shrub *Gomphocarpus fruticosus*, which is found at many disturbed areas at the site (Terblanche, 2021).





Figure 29: Alien invasive weed species *Solanum sisymbriifolium* at the site (Terblanche, 2021).



Figure 30: Alien invasive *Acanthospermum australe* at the site (Terblanche, 2021).

### **SANBI Red List of South African Plants**

None of the Threatened plant species of the Mpumalanga Province that are listed in the Critically Endangered, Endangered and Vulnerable categories as per the SANBI Red List of South African Plants are resident at the project site. None of the Near Threatened plant species of the Mpumalanga Province as per the SANBI Red List of South African Plants are resident at the project site.

None of the Least Concern plant species of the Mpumalanga Province that are listed in the Critically Rare, Rare and Declining categories as per the SANBI Red List of South African Plants are resident at the project site. None of the plants species that are listed in the SANBI Red List of South African Plants as being Data Deficient are resident at the project site.

Lastly, none of the tree species of the Mpumalanga Province that are listed as Protected species under the National Forests Act, 1998 (Act No. 84 of 1998), Section 51(1) are resident at the project site.

### **Mpumalanga Biodiversity Conservation Plan (MBCP)**

The Mpumalanga Biodiversity Conservation Plan (MBCP) groups the biodiversity assets of Mpumalanga into six conservation categories, based on the measured distribution of hundreds of biodiversity and ecological features throughout the province which are analysed for rarity and response to the pressures of various forms of land-use that diminish them. The conservation categories are:

Colour	Conservation Category
Green	Protected areas currently under formal biodiversity protection
Red	Irreplaceable areas, in urgent need of Protected Area status
Orange	Highly Significant areas, requiring strict land-use controls
Yellow	Important and Necessary areas, requiring special care
Light Green	Areas of Least Concern, providing areas for development
Brown	Areas with No Natural Habitat remaining, providing preferred sites for all forms of development

According to the MBCP:

- Portion 562 is comprised mainly of areas classified as “Heavily Modified” with some areas classified as “Moderately Modified – Old Lands” and “Other Natural Areas”.
- Portion 563 is comprised mainly of areas classified as “Other Natural Areas” with the remaining areas classified as being “Moderately Modified – Old Lands” and “Heavily Modified”.
- Portion 565 is comprised mainly of areas classified as “CBA Optimal” with some small areas classified as “Other Natural Areas”.
- The Remaining Extent of Portion 25 is comprised as being an “CBA Optimal Area”.



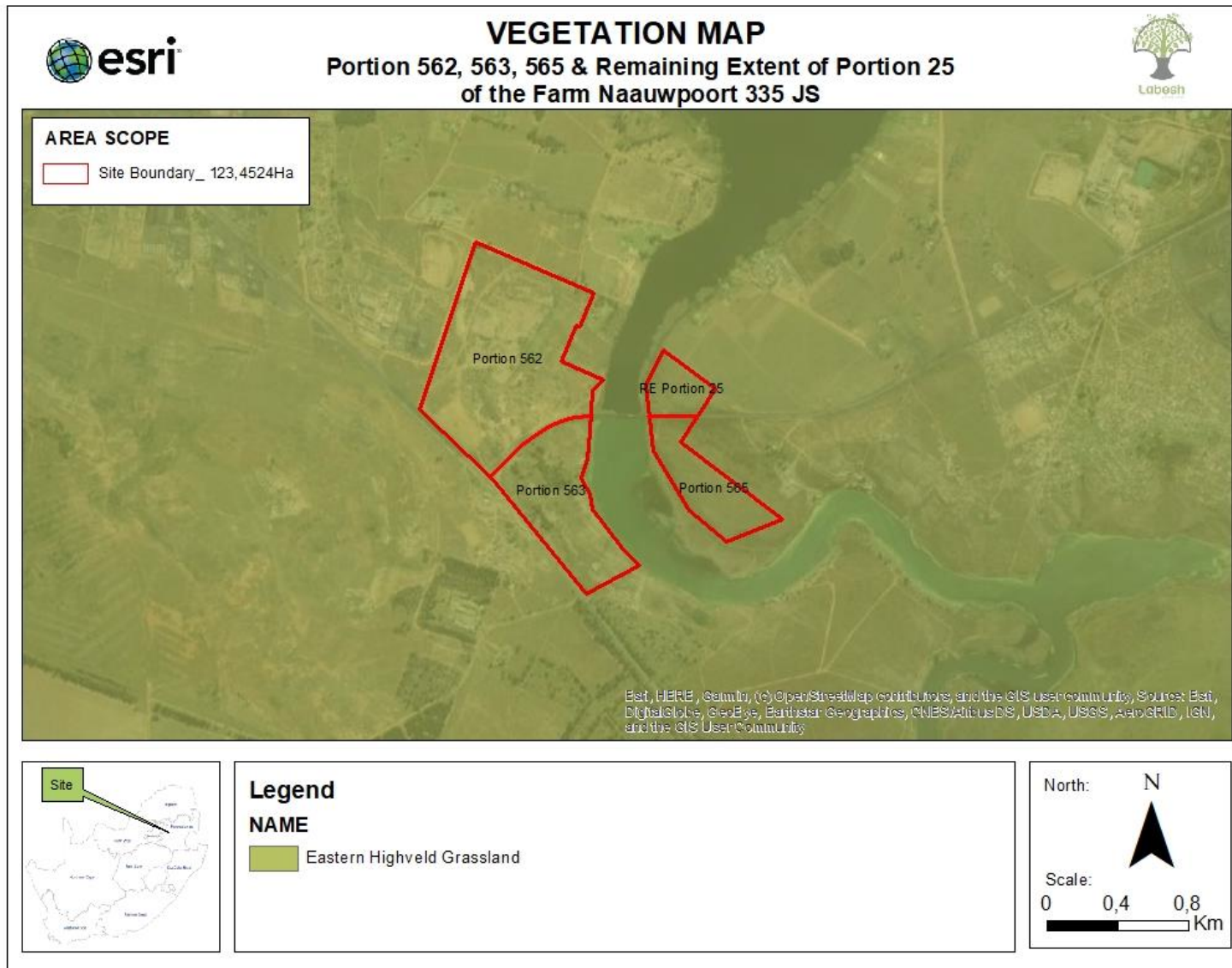


Figure 31: Vegetation types of the project site (Map (in colour) is also given under Appendix A.)

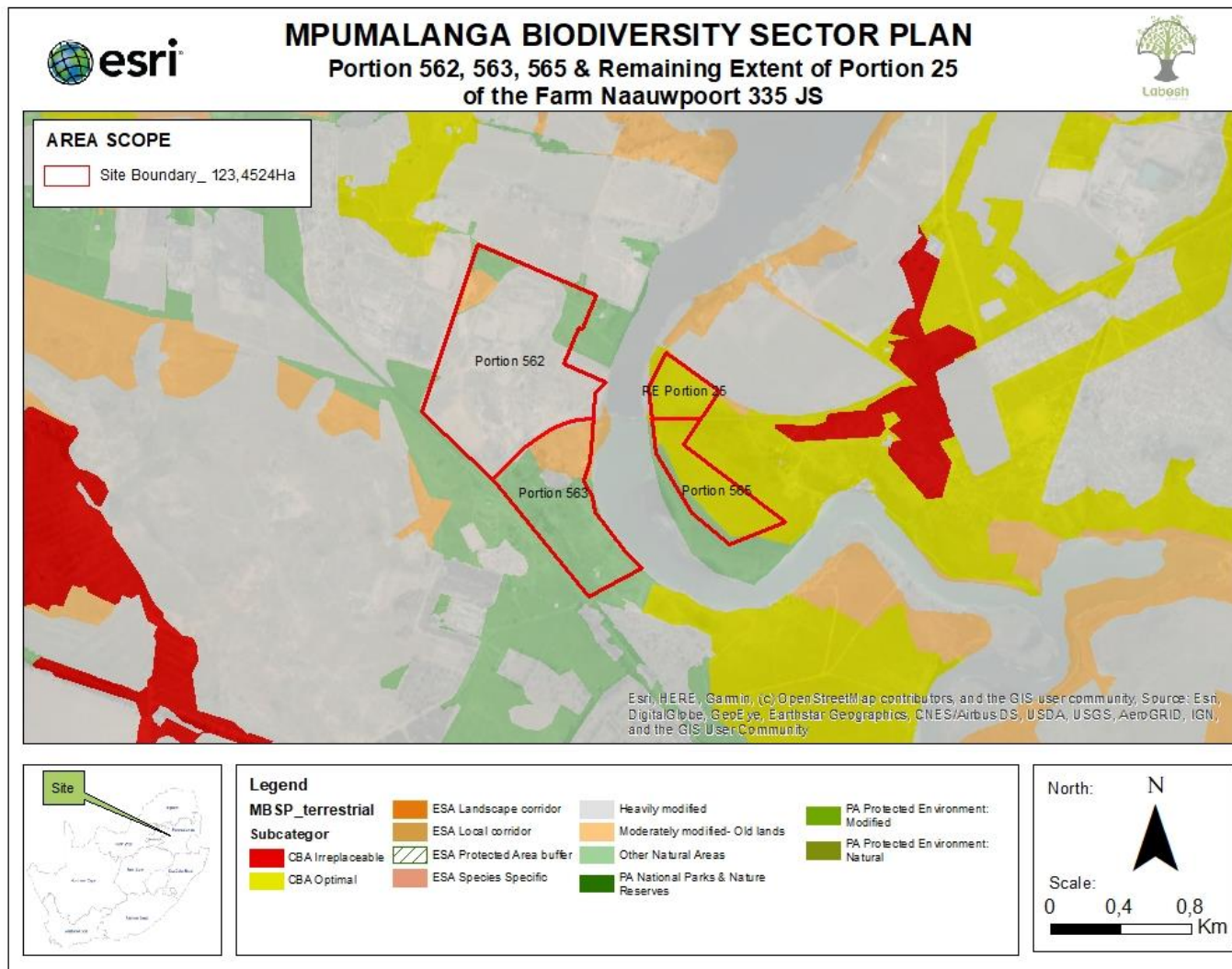


Figure 32: Mpumalanga Biodiversity Sector Plan (Map (in colour) is also given under Appendix A.)



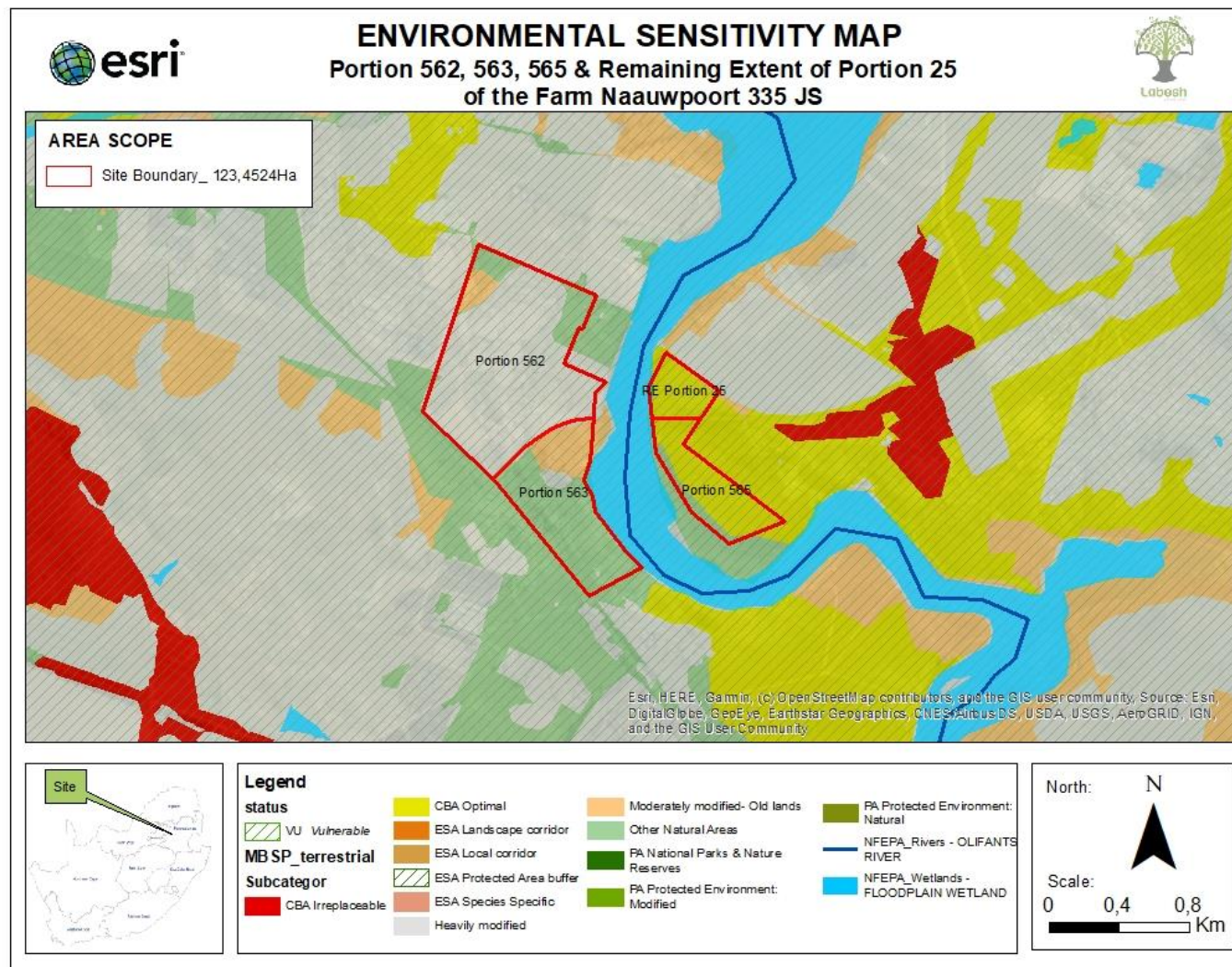


Figure 33: Environmental sensitivity of the project site (Map (in colour) is also given under Appendix A.)

## Wetlands and watercourses

### Wetland Delineation

An Agricultural Agro-ecosystem Assessment based on a detailed baseline evaluation, which include a soil, land capability and land use assessment was conducted for the project site by Rehab Green in August 2021 (The full report is attached under Appendix D). Land capability was assessed in categories of arable land, grazing land, wetlands and wilderness land.

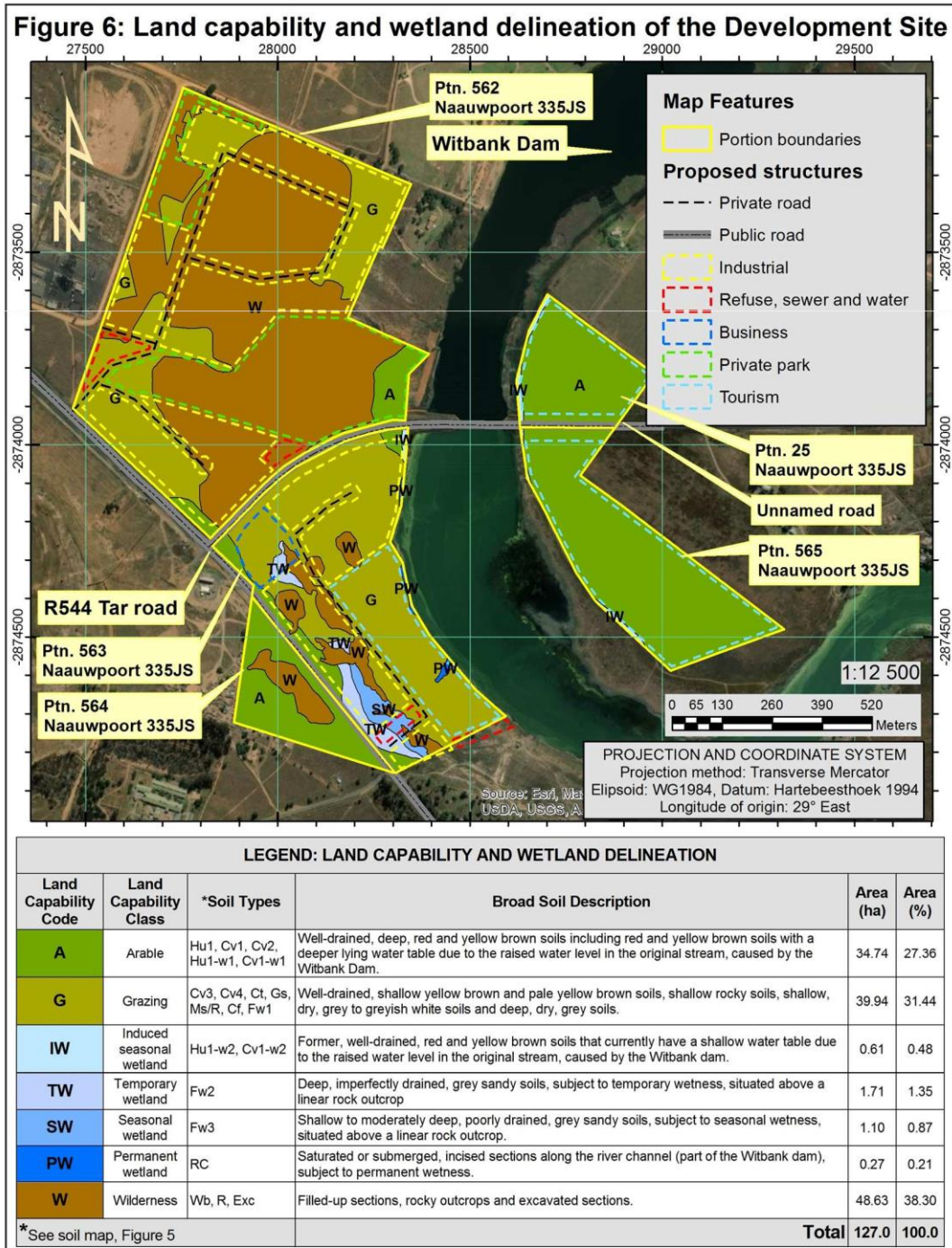


Figure 34: Land Capability and Wetland Delineation



Two (2) induced wetland zones occur as narrow strips alongside the western boundary of Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS and Portion 565 of the Farm Naauwpoort 335 JS. The induced wetlands consists of former well-drained soils that currently have a shallow water table that developed as a result of raised water levels within the original stream after the Witbank Dam was constructed. The planned development zone is earmarked for tourism and no structures are indicated within the induced wetland zones.

Temporary and seasonal wetland zones occur on Portion 563 of the Farm Naauwpoort 335 JS which are intersected by the proposed industrial, business, roads and refuse/sewer/water zones. A present ecological status (PES) by a wetland specialist is recommended to verify the status of the wetland and the anticipated impacts of the proposed development.

**Wetland Assessment**

A Wetland Assessment was done by Reinier F. Terblanche in September 2021. The full report is attached under appendix D.

Wetlands are classified as floodplain wetlands, channelled valley-bottom wetlands, unchanneled valley-bottom wetlands, depressions, seeps and wetland flats. No wetlands however are found at the project site. An artificial water body, a large in-channel dam, is present at the project site and is known as the Witbank Dam. The Witbank Dam receives its water from the Olifants River and other tributaries of the Olifant River system. Wetland plant species at the riparian zone along the edges of the dam include sedges such as *Cyperus denudatus*, *Cyperus congestus* and *Schoenoplectus* species and rushes such as *Juncus oxycarpus*. The megagraminoids *Thypa capensis* and *Phragmites australis* occur at some patches at the riparian zone.

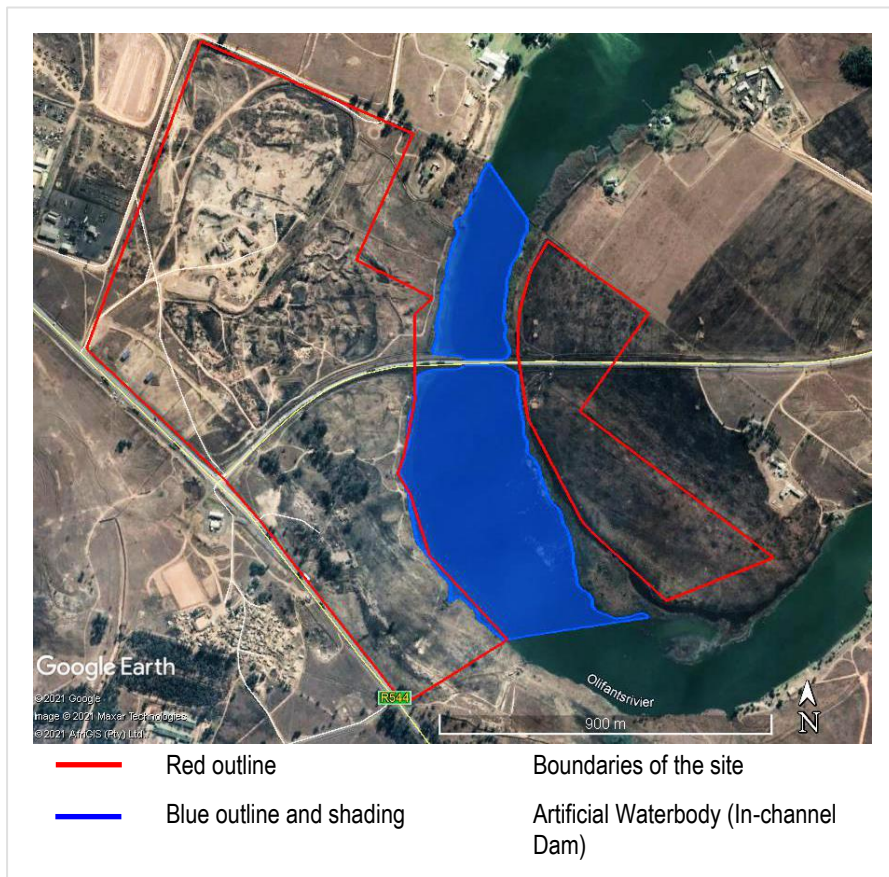


Figure 35: Artificial waterbody, the in-channel Witbank Dam, at the site.

The present ecological status (PES) of the in-channel dam, the Witbank Dam at the site is CATEGORY C which means that the watercourse is moderately modified, with some loss of natural habitats. The Tables below show the classification and outline of characteristics of the in-channel Witbank Dam at the project site according to the Classification System for Wetlands and other Aquatic Ecosystems in South Africa.

**Table 34: Classification and outline of characteristics of the in-channel dam, the Witbank Dam, at the site according to the Classification System for Wetlands and other Aquatic Ecosystems in South Africa (Ollis et al., 2013).**

CHARACTERISTIC TYPE WETLAND DISCRIMINATORS AND DESCRIPTORS	DESCRIPTION
<b>System</b> (level 1)	Inland watercourse
<b>Regional setting</b> (level 2)	Highveld (Kleynhans <i>et al.</i> , 2005)
<b>Landscape unit</b> (level 3)	Valley
<b>Hydrogeomorphic unit</b> (level 4)	River
<b>Hydrological regime</b> (Level 5)	An artificial waterbody, a large in-channel dam, is present at the site. This in-channel dam is the Witbank Dam. The Witbank Dam receives water from the Olifants River and other tributaries of the Olifants River system. The Witbank Dam acts as a sink for phosphates (Dabrowski & De Klerk, 2013). The water quality in general in the area is known for low scores in recent times.
<b>Additional descriptors</b> (Levels 5,6)	Wetland plant species at the riparian zone along the edges of the dam include sedges such as <i>Cyperus denudatus</i> , <i>Cyperus congestus</i> and <i>Schoenoplectus corymbosus</i> and rushes such as <i>Juncus oxycarpus</i> . The megagraminoids <i>Typha capensis</i> (Bulrush) and <i>Phragmites australis</i> (Reed) occur at some patches at the riparian zone. The riparian vegetation occurs as a few larger patches along the edge of the dam but at many other areas the riparian zone is narrow and rather poorly developed.



**Table 35: Scoresheet with criteria for assessing habitat integrity of the in-channel dam, the Witbank Dam, at the site according to DWAF (1999) such as adapted from Kleynhans (1996).**

Criteria and attributes	Relevance	Score	Confidence
<b>Hydrologic</b>			
Flow modification	Consequence of abstraction, regulation by impoundments or increased runoff from human settlements or agricultural land. Changes in flow regime (timing, duration, frequency), volumes, velocity which affect inundation of wetland habitats resulting in floristic changes or incorrect cues to biota. Abstraction of groundwater flows to the wetland.	2	4
Permanent inundation	Consequence of impoundment resulting in destruction of natural wetland habitat and cues for wetland biota.	2	4
<b>Water Quality</b>			
Water quality modification	From point or diffuse sources. Measure directly by laboratory analysis or assessed indirectly from upstream agricultural activities, human settlements and industrial activities. Aggravated by volumetric decrease in flow delivered to the wetland.	2	3
Sediment load modification	Consequence of reduction due to entrapment by impoundments or increase due to land use practices such as overgrazing. Cause of unnatural rates of erosion, accretion or infilling of wetlands and change in habitats.	2	3
<b>Hydraulic/Geomorphic</b>			
Canalisation	Results in desiccation or changes to inundation patterns of wetland and thus changes in habitats. River diversions or drainage.	2	4
Topographic alteration	Consequence of infilling, ploughing, dykes, trampling, bridges, roads, railway lines and other substrate disruptive activities which reduce or change wetland habitat directly or through changes in inundation patterns.	2	4
<b>Biota</b>			
Terrestrial encroachment	Consequence of desiccation of wetland and encroachment of terrestrial plant species due to changes in hydrology or geomorphology. Change from wetland to terrestrial habitat and loss of wetland functions.	2	4
Indigenous vegetation removal	Direct destruction of habitat through farming activities, grazing or firewood collection affecting wildlife habitat and flow attenuation functions, organic matter inputs and increases potential for erosion.	2	4
Invasive plant encroachment	Affect habitat characteristics through changes in community structure and water quality changes (oxygen reduction and shading).	2	4

Alien fauna	Presence of alien fauna affecting faunal community structure.	2	4
Overutilisation of biota	Overgrazing, over-fishing etc.	3	4
<b>TOTAL MEAN</b>		<b>23</b> <b>x=2.1</b>	42 x=3.8

Scoring guidelines per attribute:

natural, unmodified = 5; Largely natural = 4, Moderately modified = 3; largely modified = 2;

seriously modified = 1; Critically modified = 0.

Relative confidence of score: Very high confidence = 4; High confidence = 3; Moderate confidence = 2; Marginal/low confidence = 1.

**Table 36: Interpretation of scores for determining present ecological status (PES) of the Witbank Dam at the site according to DWAF (1999) such as adapted from Kleynhans (1999). Present ecological status of watercourse is indicated in blue font.**

<b>Interpretation of Mean* of Scores for all Attributes: Rating of Present Ecological Status Category (PES Category)</b>
WITHIN GENERALLY ACCEPTABLE RANGE
<b>CATEGORY A</b> >4; Unmodified, or approximates natural condition.
<b>CATEGORY B</b> >3 and <=4; Largely natural with few modifications, but with some loss of natural habitats.
<b>CATEGORY C</b> >2 and <=3; moderately modified, but with some loss of natural habitats.
<b>CATEGORY D</b> =2; largely modified. A large loss of natural habitats and basic ecosystem functions has occurred.
OUTSIDE GENERAL ACCEPTABLE RANGE
<b>CATEGORY E</b> >0 and <2; seriously modified. The losses of natural habitats and basic ecosystem functions are extensive.
<b>CATEGORY F</b> 0; critically modified. Modifications have reached a critical level and the system has been modified completely with an almost complete loss of natural habitat.

If any of the attributes are rated <2, then the lowest rating for the attribute should be taken as indicative of the PES category and not the mean.

**Table 37: Score sheet for determining ecological importance and sensitivity for floodplains of the Witbank Dam at the site (DWAF 1999, adapted from Kleynhans 1996, 1999).**

Determinant	Score	Confidence
<b>PRIMARY DETERMINANTS</b>		
1. Rare & Endangered Species	0	3
2. Populations of Unique Species	2	3
3. Species/taxon Richness	3	3
4. Diversity of Habitat Types or Features	2	3
5. Migration route/breeding and feeding site for wetland species	3	3
6. Sensitivity to Changes in the Natural Hydrological Regime	2	3
7. Sensitivity to Water Quality Changes	2	3
8. Flood Storage, Energy Dissipation & Particulate/Element Removal	3	3
<b>MODIFYING DETERMINANTS</b>		
9. Protected Status	1	4
10. Ecological Integrity	2	4
<b>TOTAL</b>	<b>20</b>	<b>32</b>
<b>MEAN</b>	<b>2.0</b>	<b>3.2</b>

Score guideline Very high = 4; High = 3, Moderate = 2; Marginal/Low = 1; None = 0. Confidence rating Very high confidence = 4; High confidence = 3; Moderate confidence = 2; Marginal/low confidence = 1

**Table 38: Ecological importance and sensitivity categories. Interpretation of median scores for biotic and habitat determinants (DWAF 1999, adapted from Kleynhans 1996, 1999). Ecological Importance and Sensitivity (EIS) of the Witbank Dam at the site is indicate.**

Ecological Importance and Sensitivity Category (EIS)	Range of Median	Recommended Ecological Management Class
<u>Very high</u>	>3 and <=4	A

Floodplains that are considered ecologically important and sensitive on a national or even international level. The biodiversity of these floodplains is usually very sensitive to flow and habitat modifications. They play a major role in moderating the quantity and quality of water of major rivers.		
<u>High</u> Floodplains that are considered to be ecologically important and sensitive. The biodiversity of these floodplains may be sensitive to flow and habitat modifications. They play a role in moderating the quantity and quality of water of major rivers.	>2 and <=3	B
<u>Moderate</u> Floodplains that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these floodplains is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers.	>1 and <=2	C
<u>Low/marginal</u> Floodplains which are not ecologically important and sensitive at any scale. The biodiversity of these floodplains is ubiquitous and not sensitive to flow and habitat modifications. They play an insignificant role in moderating the quantity and quality of water of major rivers.	>0 and =1	D

The in-channel dam, with its riparian zone and 32m buffer zone, is excluded from the proposed site footprint. The non-perennial river at the site, with its riparian zone and 32m buffer zone, is unlikely to be significantly impacted by the proposed development when the watercourse and buffer zone is set aside as “no-go” zone for developments. Loss of Threatened or Near Threatened plants, mammals, reptiles, amphibians and invertebrates at the proposed site footprint appears to be unlikely. The proposed site footprint is also highly unlikely to harbour any sensitive species, so the impact risk to any sensitive species are low. Potential impacts, mitigations and site-specific considerations have been taken into account to arrive at risk ratings relevant to the site and is outlined in the Wetland Assessment Report.

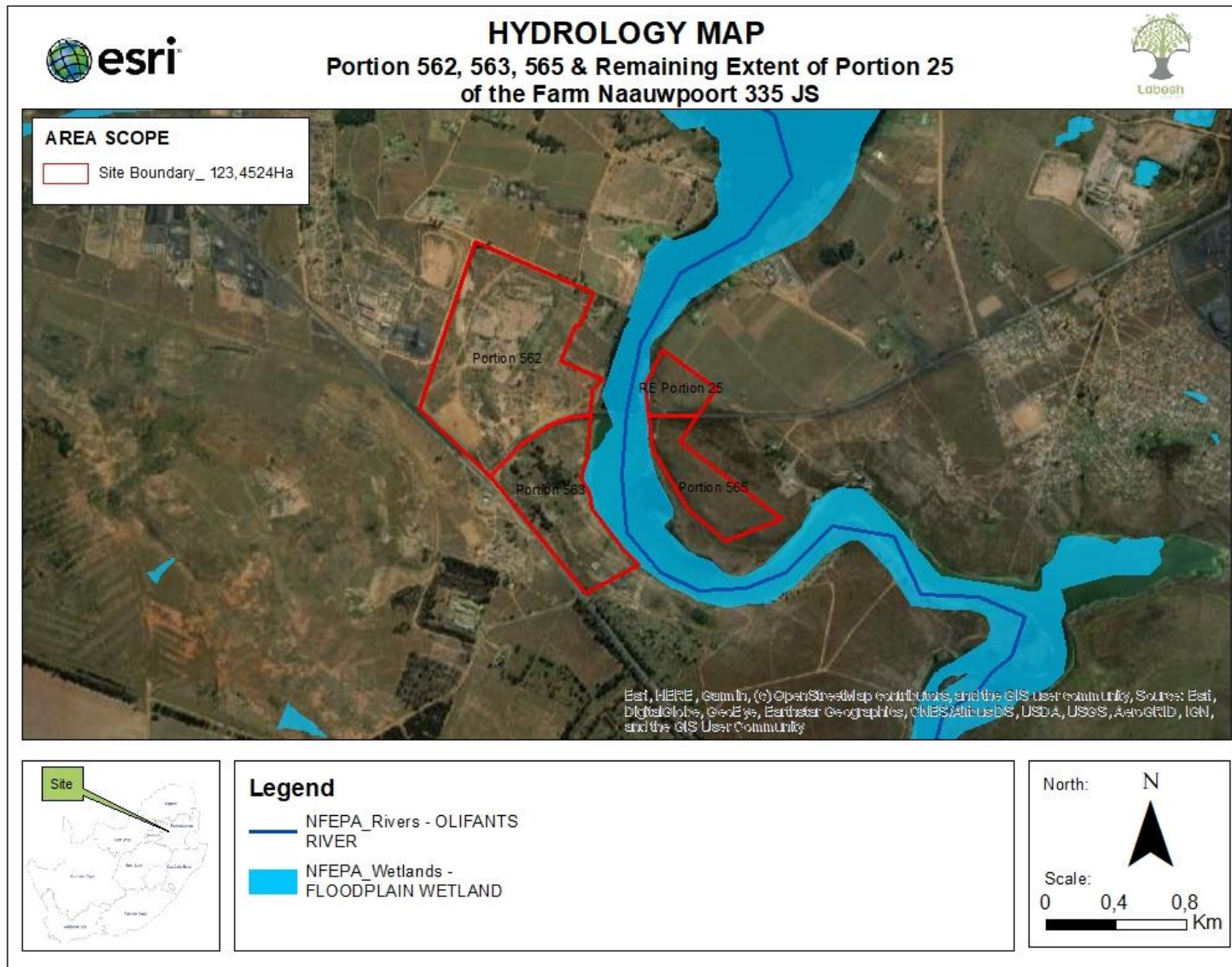


Figure 36: Hydrology of the project site and surrounding areas (Map (in colour) is also given under Appendix A.)

### 8.3.4 Social

The project site is situated within the Emalahleni Local Municipality, Mpumalanga Province.

According to the Emalahleni Integrated Development Plan 2018/19, the total population for Emalahleni was at 455 228 people in the year 2016. Between the years 2011 and 2016, the overall population growth was measured to be 3.02%. Emalahleni was the 3<sup>rd</sup> largest population within the Nkangala District in 2016 contributing to 31.5% of the total population. The Emalahleni IDP estimates that Emalahleni will have a total population of 707 530 people by the year 2030.

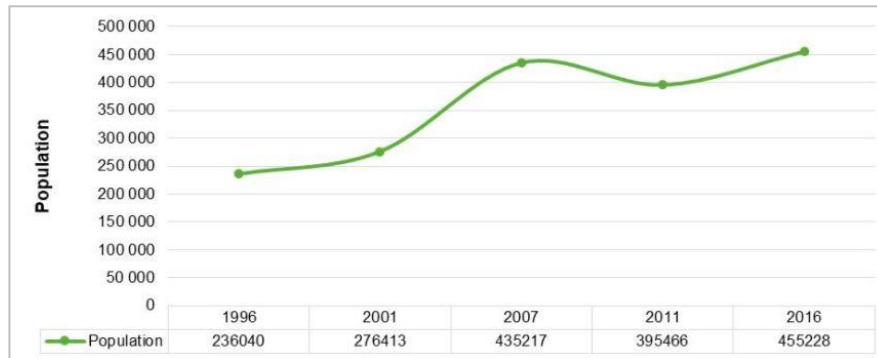


Figure 37: Emalahleni Population Growth (www.emalahleni.gov.za)

In 2011, males contributed to 52.8% of the population with females at 47.2%. According to the 2011 census, there was a 2% growth of males to females within Emalahleni from 2001-2011 (Emalahleni Local Municipality SDF, 2015).

Educational attainment is a key indicator of the development of a population. Based on educational background and the 2016 census, 146 952 individuals 20+ years old completed grade 12 compared to 117 021 individuals in 2011. This led to an overall increase of 25.6% from 2011-2016 (Emalahleni IDP 2018/19).

### 8.3.5 Economic

Emalahleni Local Municipality contributed 45.8% to the Nkangala economy in 2016 and was the largest contributor out of all six municipal areas. Dominant contributions were recorded in all industries except for agriculture and manufacturing – mining (58.5%), utilities (55.5%), construction (39.3%), trade (40.2%) and transport (38.2%) (Emalahleni LED Strategy, 2018-2023).

According to the Emalahleni Annual Report 2016/2017, the primary sector (consisting of the mining sector and agricultural sector) contributed 42.8% to Gross Value Added, the secondary sector (consisting of manufacturing, electricity and construction sectors) contributed 24.7% and the tertiary sector (consisting of trade, transport, finance and community services sectors) contributed a total of 32.5%. In 2018, tourism spend in Emalahleni was at R1.3 billion which was a percentage low at 2.1% of the total GDP. This is a clear indication that tourism should be further exploited in order to realize the benefits of this specific sector (Emalahleni Final IDP 2021/22).

The Municipality has identified that despite a growing economy, it is dominated by the mining sector, and the broadening of the economy is needed. It is projected that the annual growth domestic product of Emalahleni will be less than 0.9% between 2018 and 2023 (Emalahleni Final IDP 2021/22).

### 8.3.6 Archaeological and Cultural Heritage

A Phase 1 Heritage Impact Assessment was conducted for the project site by APelser Archaeological Consulting (2021). The full report is attached under Appendix D.



According to Pelsers (2021), areas of the site could have been used for agricultural purposes such as ploughing and/or crop growing in the past, while large parts of the site has been greatly disturbed through quarrying for sand and building material. Pelsers states that if any archaeological and/or historical sites did exist on the site, it would have been disturbed or destroyed as a result of the quarrying activities. There are some structures related to quarrying and other activities in the area present on the site, but are of recent origin and does not have any cultural heritage significance.

A Grave site was however recorded during the field assessment on Portion 563 of the Farm Naauwpoort 335 JS and includes a double grave (2 burials) of a husband and wife. The 1<sup>st</sup> is that of Willem Du Rand who passed away in 1932 and the 2<sup>nd</sup> is that of Petronella Margaretha Du Rand (nee Harmse) who passed away in 1947. Both graves are older than 60 years and protected by the National Cultural Heritage Resources Act.



Figure 38: Grave site location on Portion 563 of the Farm Naauwpoort 335 JS (Pelsers, 2021)

**GPS Location:** S25 58 34.16 E29 16 48.47

Graves always carry a High Significance Rating in terms of Cultural Heritage

**Cultural Significance:** High

**Heritage Significance:** Grade III: Other heritage resources of local importance and therefore worthy of conservation.

**Field Ratings:** Local Grade IIIB: Should be included in the heritage register and may be mitigated (High/Medium significance)

**Mitigation:** Preserving In Situ and Managing through a Graves Heritage Management Plan OR Exhumation and Relocation after detailed Public Participation and the obtaining of relevant permissions.

Pelsers (2021) states that there are two options for mitigation in dealing with possible impacts on a Burial Site (Cemetery) from any development:

**Option 1:**

The preferred option will be to leave the grave site intact. It will entail the demarcation of the site with a proper boundary fence and providing an entrance gate for any potential visitors (such as descendants/family members of the deceased). The grave site will have to be sign-posted as a grave site and will have to be cleaned with each grave marked, numbered and included in a Graves Register. A Graves Management Plan will have to be developed and implemented as part of the proposed development. A 20m buffer zone from the outside boundary fence of the grave site will have to be adhered to and development prevented within the exclusion zone.

**Option 2:**

A second option will be the exhumation and relocation of the graves from the site. This however will require the following:

- a) Detailed social consultation/public participation in the form of Newspaper Advertisements, the erection of site notices and possibly Radio Announcements. This is in order to try and trace any possible descendants of the deceased buried here and to obtain consent for the exhumation and relocation work. Advertisements and notices needs to run for 60 days before permit applications to various government and local authorities can be undertaken. This includes SAHRA, Department of Health, the Municipality and the SAP.
- b) Only once the permits have been issued can the physical work be undertaken. A registered undertaker also needs to be contracted to be part of the process.

It needs to be noted that the costs involved with Option 2 can be high and that time delays can be expected. On the other hand with Option 1 the commitment to preserving the grave site is ongoing and could lead to possible conflict with family members in terms of site visits/access and possible security issues.



Figure 39: Grave site on Portion 563 of the Farm Naauwpoort 335 JS (Pelser, 2021)



Figure 40: Close-up view of the double grave on Portion 563 of the Farm Naauwpoort 335 JS (*Pelser, 2021*)

**A, Pelsler concluded that the proposed township establishment on various portions of Naauwpoort 335 JS should be allowed to continue once the recommended mitigation measures related to the Grave Site on Portion 563 have been implemented.**



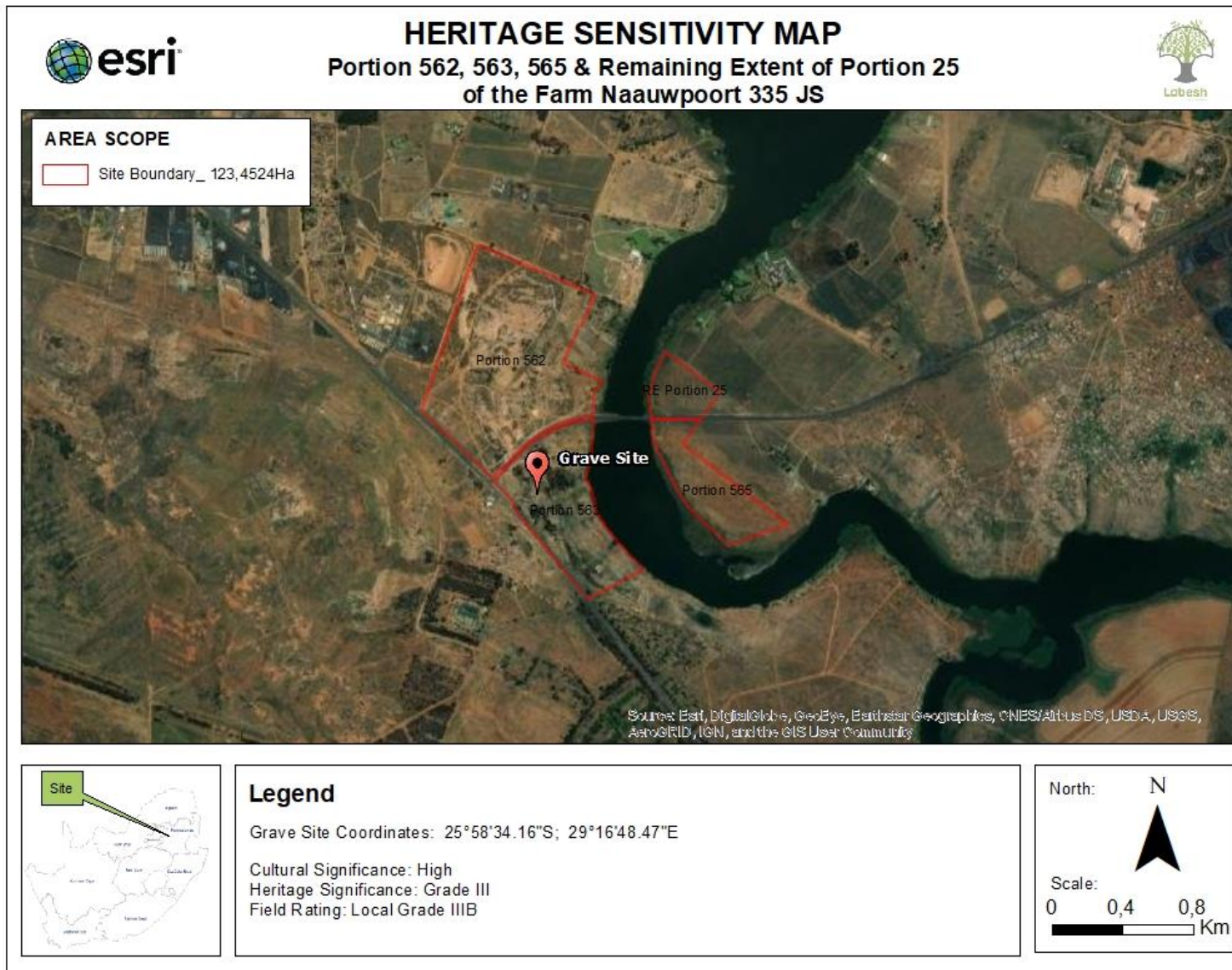


Figure 41: Heritage Sensitivity of the project site (Map (in colour) is also given under Appendix A.)

### 8.3.7 Palaeontological

A Desktop Palaeontological Impact Assessment was conducted for the project site by Dr H. Fourie (2021). The full report is attached under Appendix D.

A.Pelser Archaeological Consulting cc has facilitated the appointment of Dr H. Fourie, a palaeontologist, to undertake a Palaeontological Impact Assessment (PIA), Desktop Study for the proposed new Township Establishment on Naauwpoort 335 JS. The PIA Desktop study was undertaken in June 2021 in the winter in dry, windy and mild conditions.

Table 39: Palaeontological sensitivity classification

PALAEONTOLOGICAL SIGNIFICANCE/VULNERABILITY OF ROCK UNITS
This classification of sensitivity is adapted from that of Almond <i>et al.</i> (2008) and Groenewald <i>et al.</i> (2014).
<b>Very High</b> Palaeontological sensitivity/vulnerability. Development will most likely have a very significant impact on the Palaeontological Heritage of the region. Very high possibility that significant fossil assemblages will be present in all outcrops of the unit. Appointment of professional palaeontologist, desktop survey, phase I Palaeontological Impact Assessment (PIA) (field survey and recording of fossils) and phase II PIA (rescue of fossils during construction) as well as application for collection and destruction permit compulsory.
<b>High</b> Palaeontological sensitivity/vulnerability. High possibility that significant fossil assemblages will be present in most of the outcrop areas of the unit. Fossils most likely to occur in associated sediments or underlying units, for example in the areas underlain by Transvaal Supergroup dolomite where Cenozoic cave deposits are likely to occur. Appointment of professional palaeontologist, desktop survey and phase I Palaeontological Impact Assessment (field survey and collection of fossils) compulsory. Early application for collection permit recommended. Highly likely that a Phase II PIA will be applicable during the construction phase of projects.
<b>Moderate</b> Palaeontological sensitivity/vulnerability. High possibility that fossils will be present in the outcrop areas of the unit or in associated sediments that underlie the unit. For example, areas underlain by the Gordonia Formation or undifferentiated soils and alluvium. Fossils described in the literature are visible with the naked eye and development can have a significant impact on the Palaeontological Heritage of the area. Recording of fossils will contribute significantly to the present knowledge of the development of life in the geological record of the region. The minimum requirement is the appointment of a professional palaeontologist to do a desktop survey and phase I PIA (ground proofing of desktop survey) during initial excavation of more than 1.5m depth.
<b>Low</b> Palaeontological sensitivity/vulnerability. Low possibility that fossils that are described in the literature will be visible to the naked eye or be recognized as fossils by untrained persons. Fossils of, for example, small domal Stromatolites as well as micro-bacteria are associated with these rock units. Fossils of micro-bacteria are extremely important for our understanding of the development of Life, but are only visible under large magnification. Recording of the fossils will contribute significantly to the present knowledge and understanding of the development of Life in the region. Where geological units are allocated a blue colour of significance, and the geological unit is surrounded by highly significant geological units (red or orange coloured units), a palaeontologist must be appointed to do a desktop survey and to make professional recommendations on the impact of development on significant palaeontological finds that might occur in the unit that is allocated a blue colour. An example of this scenario will be where the scale of mapping on the 1:250 000 scale maps excludes small outcrops of highly significant sedimentary rock units occurring in dolerite sill outcrops. Collection of a representative sample of potential fossiliferous material is recommended. The minimum requirement is a Desktop Survey by suitably qualified Palaeontologist and a phase I investigation as soon as excavation of deeper than 1.5m is done on the site.
<b>Very Low</b> Palaeontological sensitivity/vulnerability. Very low possibility that significant fossils will be present in the bedrock of these geological units. The rock units are associated with intrusive igneous activities and no life would have been possible during emplacement of the rocks. It is, however, essential to note that the geological units mapped out on the geological maps are invariably overlain by Cenozoic aged sediments that might contain significant fossil assemblages and archaeological material. Examples of significant finds occur in areas underlain by granite, just to the

## PALAEONTOLOGICAL SIGNIFICANCE/VULNERABILITY OF ROCK UNITS

west of Hoedspruit in the Limpopo Province, where significant assemblages of fossils and clay-pot fragments are associated with large termite mounds. Where geological units are allocated a grey colour of significance, and the geological unit is surrounded by very high and highly significant geological units (red or orange coloured units), a palaeontologist must be appointed to do a desktop survey and to make professional recommendations on the impact of development on significant palaeontological finds that might occur in the unit that is allocated a grey colour. An example of this scenario will be where the scale of mapping on the 1:250 000 scale maps excludes small outcrops of highly significant sedimentary rock units occurring in dolerite sill outcrops. It is important that the report should also refer to archaeological reports and possible descriptions of palaeontological finds in Cenozoic aged surface deposits. The minimum requirement is a Desktop Survey by a suitably qualified Palaeontologist and a site visit (phase I PIA) during initial excavation of more than 1.5m.

According to Fourie. H, (2021), the potential impact of the development on fossil heritage is **VERY LOW** and therefore a field survey is not required (according to SAHRA protocol). A Phase 1 Palaeontological Impact Assessment: Field Study is only recommended if fossils or fossiliferous formation are found during the development.

Concerns/threads that must be included in the EMPr:

1. Threats to the National Heritage are earth moving equipment/machinery (for example haul trucks, front end loaders, excavators, graders and/or dozers) during construction, the sealing-in, disturbance, damage or destruction of the fossils by development, vehicle traffic and human disturbance.
2. Special care must be taken during the digging, drilling, blasting and excavation of foundations, trenches, channels and footings and removal of overburden not to intrude fossiliferous layers, only if infrastructure is constructed.

Recommendations by Fourie.H include:

1. Mitigation will be needed if fossils are found during the construction, but it is unlikely.
2. The ECO must familiarise him-or herself with the surrounding formations present and its fossils.
3. The development may go ahead.
4. The EMPr already covers the conservation of heritage and palaeontological material that may be exposed during construction activities. For a chance fossil find, the protocol is to immediately cease all construction activities, construct a 30m 'no-go' buffer, and contact SAHRA for further investigation.

Fourie. H, (2021), concluded that all the land involved in the development was assessed and that none of the property is unsuitable for development.



## **9. ENVIRONMENTAL IMPACT ASSESSMENT PROCESS (PROCESS UNDERTAKEN TO IDENTIFY, ASSESS AND RANK THE IMPACTS THAT THE PROPOSED ACTIVITY AND ASSOCIATED STRUCTURES AND INFRASTRUCTURE WILL IMPOSE ON THE PREFERRED DEVELOPMENT FOOTPRINT)**

### **9.1 Objectives of the EIA process**

According to the Environmental Impact Assessment Regulations, 2014, the objective of the environmental impact assessment process is 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--
  - (i) nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and
  - (ii) degree to which these impacts-
    - (aa) can be reversed;
    - (bb) may cause irreplaceable loss of resources, and
    - (cc) can be avoided, managed or mitigated;
- (e) identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
- (f) identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;
- (g) identify suitable measures to avoid, manage or mitigate identified impacts; and
- (h) identify residual risks that need to be managed and monitored.

### **9.2 Description of alternatives to be considered and assessed within the preferred site, including the option of not proceeding with the activity**

The alternatives that have been considered have been discussed under Section 8.1 of this report.

### **9.3 Description of the aspects that have been assessed as part of the EIA process**

The following aspects have been assessed as part of the Environmental Impact Assessment process:

- Fauna and flora;
- Sensitive environments (wetlands/rivers);

- Surface water and groundwater;
- Geology;
- Soils;
- Cultural and heritage resources;
- Palaeontological;
- Socio-economic; and
- Traffic.

## 9.4 Aspects assessed by specialists

The following specialist studies have been conducted and incorporated into the Environmental Impact Assessment Report for this project (specialist reports are attached in colour under Appendix D):

- Ecological Fauna and Flora Habitat Survey
- Wetland Assessment
- Phase 1 Heritage Impact Assessment
- Palaeontological Impact Assessment: Desktop Study
- Agricultural Agro-ecosystem Assessment

The specialist investigations covered the following aspects and were conducted in line with the requirements of Appendix 6 of the Environmental Impact Assessment Regulations, 2014:

### Ecological Fauna and Flora Habitat Survey

- To provide a detailed fauna and flora habitat survey;
- To provide a detailed habitat survey of possible threatened or localised plant species, vertebrates and invertebrates;
- To provide a recording of possible host plants (=foodplants) of fauna such as butterflies;
- To evaluate the conservation importance and significance of the site with special emphasis on the current status of threatened species;
- To provide a literature investigation of possible species that may occur on site;
- To provide identification of potential ecological impacts on fauna and flora that could occur as a result of the development; and
- To make recommendations to reduce or minimise impacts, should the development be approved.

### Wetland Assessment

- To provide an indication of the existence of wetlands at the site;
- To provide an indication of major aspects of the hydro-geomorphic setting and terrain unit at which the wetland occur;
- To provide an estimate of the size and roughness of the wetland;
- To provide an indication of the hydric soils at the site;
- To provide an indication of erodibility;
- To provide an indication of the presence or absence of peat at the site;
- To provide an outline of hydrological drivers that support the existence and character of the wetland;
- To provide an assessment of the possible presence or absence of threatened or localised plant species, vertebrates and invertebrates of the region, at the site;
- To provide a description of the functions provided by the wetland at the site;
- To provide an interpretation of the priority of the wetland for local communities in the area; and
- To provide an interpretation of the priority of the wetland to biodiversity at the site.

### **Phase 1 Heritage Impact Assessment**

- To identify all objects, sites, occurrences and structures of an archaeological or historical nature (cultural heritage sites) located on the portions of land that will be impacted upon by the proposed development;
- To assess the significance of the cultural resources in terms of their archaeological, historical, scientific, social, religious, aesthetic and tourism value;
- To describe the possible impact of the proposed development on these cultural remains, according to a standard set of conventions;
- To propose suitable mitigation measures to minimise possible negative impacts on the cultural resources; and
- To review applicable legislative requirements.

### **Desktop Palaeontological Impact Assessment**

- To identify exposed and subsurface rock formations that are considered to be paleontologically significant;
- To assess the level of palaeontological significance of these formations;
- To comment on the impact of the development on these exposed and/or potential fossil resources; and
- To make recommendations as to how the developer should conserve or mitigate damage to these resources.

### **Agricultural Agro-ecosystem Assessment**

- To conduct a site sensitivity verification by means of the national web based screening tool;
- To conduct a baseline assessment which provides the status quo of the development which entails:
  - A detailed soil assessment of the proposed development area, which includes soils forms, effective soil depth, top and subsoil clay percentage, internal drainage, terrain and slope percentage;
  - Classify and map soil forms according to the South African Taxonomic Soil Classification System, 1991;
  - Derive and map land capability based on soil properties, surface slope, current and former land uses and climatic conditions;
  - Identify soil properties related to wetness to enable the delineation of wetland or riparian zones based on guidelines of the former Department of Water Affairs;
  - Map all current land uses;
  - Map the current agricultural sensitivity of the development site based on gathered information and compare it to those of the Screening Tool;
  - Indicate the structure footprints of all proposed structures on the agricultural sensitivity map; and
  - Provide guidelines and procedures to minimize the impacts on agricultural resources and production;
- To determine the impacts on agriculture which entails:
  - Change in agricultural productivity;
  - Change in employment; and
- To provide opinion on the acceptability of the development in terms of natural resources and provide a recommendation on whether the development should be approved or not.

The following specialist studies have been commissioned by the town planner, Korsman & Associates, for the proposed development and incorporated into the Environmental Impact Assessment Report for this project (specialist reports are attached under Appendix D):

- Phase 1 Geotechnical Investigation
- Civil Services Investigation
- Electrical Services Investigation

### Phase 1 Geotechnical Investigation

- To determine the soil and rock profile across the site and evaluate its engineering properties and influence on the design of light single storey structures to a maximum depth of  $\pm 3.0\text{m}$ ;
- To establish depth to bedrock where not exposed to a depth of  $\pm 3.0\text{m}$ ;
- To evaluate the workability of the site materials with regard to their excavatability and compactability;
- To comment on predicted safe bearing capacity values, expected heave and settlement of the different potential founding horizons and recommended founding depths;
- To assess the groundwater conditions, including surface run-off, ponding, seepage and perched or permanent water tables; and
- To classify the site for development suitability according to the geotechnical categories proposed by the SAIEG in their Guidelines for Engineering Geological Investigations.

### Civil Services Investigation

- To assess the possibility of providing the required civil services to the proposed development.

### Electrical Services Investigation

- To identify electrical engineering infrastructure currently present on the proposed site; and
- To identify any electrical engineering infrastructure required for the proposed development.

## 9.5 Description of the method of assessing the environmental aspects and impacts

Elements of the proposed development that can interact with the environment are deemed to be environmental aspects. These have been identified during the Environmental Impact Assessment, for each phase of the proposed development. Thereafter, the potential impacts that can result from the development's aspects were identified. The impacts, whether positive or negative, are defined as any change to the environment resulting from the identified environmental aspects.

Assessing the significance of the potential impacts has been conducted using the parameters below. Direct, indirect and cumulative impacts have been assessed.

The **nature** of the impact: This will include a qualitative description of what caused the impact and how it will affect the environment;

The **extent** of the impact: The size (physical/geographical) that will be affected by the impact. The following weighting will be used:

- Onsite: Weighting value **1**: The impact is confined to the project site/property
- Local: Weighting value **2**: The impact is confined to the project site/property and a 10km radius around the project site/property
- Regional: Weighting value **3**: The impact extends further than a 10km radius around the project site/property

The **duration** of the impact: The length of time over which the impact will persist. The following weighting will be used:

- Short term: Weighting value **1**: The impact will persist for up to one year
- Medium term: Weighting value **2**: The impact will persist for longer than one year, but shorter than five years
- Long term: Weighting value **3**: The impact will persist for longer than five years

The **magnitude** of the impact: The intensity of the impact on the environment. The following weighting will be used:

- Low: Weighting value **1**: Natural processes continue, albeit in an altered manner
- Medium: Weighting value **2**: Natural processes cease temporarily
- High: Weighting value **3**: Natural processes cease indefinitely

The **probability** of the impact: How likely it is that the impact will happen. The following weighting will be used:

- Improbable: Weighting value **1**: It is unlikely that the impact will occur
- Probable: Weighting value **2**: There is a chance that the impact will occur
- Definite: Weighting value **3**: The impact will most certainly occur

The **status** of the impact: This will include a qualitative description of the following:

- Whether the impact is **positive** or **negative** in nature
- The degree to which the impact can be reversed
- The degree to which the impact can be mitigated
- The degree to which the impact may cause irreplaceable loss of resources

The **significance** of the impact: This will be calculated using the formula below:

$$\text{Significance} = (\text{Duration} + \text{Extent} + \text{Magnitude}) \times \text{Probability}$$

The significance of the impact will be divided into the following classes, based on the result of the above given equation:

- **Low Impact: Weighting value: 1-9**
- **Medium Impact: Weighting value: 10-18**
- **High Impact: Weighting value: 19-27**

The aspects to be assessed by specialists have been listed under Section 9.4. The impacts of the proposed project will be assessed by each specialist, mostly also using the following formula:

$$\text{Significance} = (\text{Duration} + \text{Extent} + \text{Magnitude}) \times \text{Probability}$$

The specialist's impact assessments are contained in each individual specialist report.

## 9.6 Environmental Impacts (Issues) and Risks identified during the Environmental Impact Assessment process

The following impacts and risks have been identified for the preferred alternative:

Impact	Risks
Planning & Design Phase	<ul style="list-style-type: none"> <li>• Inadequate planning and design of the proposed project/development that could result in environmental impacts that could have been avoided.</li> </ul>
<b>Wetlands</b>	



Impact	Risks
<p><b>Construction Phase</b></p>	<ul style="list-style-type: none"> <li>● Changing the quantity and fluctuation properties of the watercourse. The sources of this impacts include: <ul style="list-style-type: none"> <li>▪ Development within the water resource (Witbank Dam);</li> <li>▪ Lack of adequate rehabilitation resulting in invasion by exotic plants;</li> <li>▪ Material draining into Witbank Dam; and</li> <li>▪ Damage to vegetated areas.</li> </ul> </li> <li>● Changing the amount of sediment entering water resource and associated change in turbidity (increasing or decreasing the amount). Possible sources of the impacts include: <ul style="list-style-type: none"> <li>▪ Clearing of surface vegetation will expose the soils, which in rainy events would wash through the watercourse, causing sedimentation. In addition, indigenous vegetation communities are unlikely to colonise eroded soils successfully and seeds from proximate alien invasive trees can spread easily into these eroded soil;</li> <li>▪ Disturbance of soil surface;</li> <li>▪ Disturbance of slopes through creation of roads and tracks adjacent to the watercourse;</li> <li>▪ Changes in runoff characteristics;</li> <li>▪ Erosion (e.g. gully formation, bank collapse); and</li> <li>▪ Vehicles impacting on surface vegetation.</li> </ul> </li> <li>● Alteration of water quality – toxic contaminants (including toxic metal ions (e.g. copper, lead, zinc) and hydrocarbons. Possible sources of the impacts include: <ul style="list-style-type: none"> <li>▪ Runoff from road surfaces; and</li> <li>▪ Discharge of solvents, and other industrial chemicals.</li> </ul> </li> <li>● Changing the physical structure within a water resource (habitat). Possible sources include: <ul style="list-style-type: none"> <li>▪ Encroachment to achieve maximum commercial returns;</li> <li>▪ Deposition of wind-blown sand;</li> <li>▪ Loss of fringing vegetation and erosion;</li> <li>▪ Alteration in natural fire regimes; and</li> <li>▪ Loss of vegetation</li> </ul> </li> <li>● Introduction and spread of alien vegetation. The moving of soil and vegetation resulting in opportunistic invasions after disturbance and the introduction of seed in building materials and on vehicles. Invasions of alien plants can impact on hydrology, by reducing the quantity of water entering a wetland, and outcompete natural vegetation, decreasing the natural biodiversity. Once in a system, alien invasive plants can spread through the catchment. If allowed to seed before control measures are implemented alien plants can easily colonise and impact on downstream users.</li> </ul>
<p><b>Operational Phase</b></p>	<ul style="list-style-type: none"> <li>● Changing the quantity and fluctuation properties of the watercourse by, for example, storm water input, or restricting water flow. The sources of this impacts include: <ul style="list-style-type: none"> <li>▪ The compaction of soil;</li> <li>▪ The removal of vegetation; and</li> <li>▪ Surface water redirection.</li> </ul> </li> <li>● Changing the amount of sediment entering water resource and associated change in turbidity (increasing or decreasing the amount). Construction, operational and decommissioning activities will result in earthworks and soil disturbance as well as</li> </ul>

Impact	Risks
	<p>the removal of natural vegetation. This could result in the loss of topsoil, sedimentation of the wetland and increase the turbidity of the water. Possible sources of the impacts include:</p> <ul style="list-style-type: none"> <li>▪ Clearing of surface vegetation will expose the soils, which in rainy events would wash through the watercourse, causing sedimentation. In addition, indigenous vegetation communities are unlikely to colonise eroded soils successfully and seeds from proximate alien invasive trees can spread easily into these eroded soils;</li> <li>▪ Disturbance of the soil surface;</li> <li>▪ Disturbance of slopes through the creation of roads and tracks adjacent to the watercourses; and</li> <li>▪ Erosion (e.g. gully formation and bank collapse).</li> </ul> <ul style="list-style-type: none"> <li>• Introduction and spread of alien vegetation. The moving of soil and vegetation resulting in opportunistic invasions after disturbance and the introduction of seed in building materials and on vehicles. Invasions of alien plants can impact on hydrology, by reducing the quantity of water entering a wetland, and outcompete natural vegetation, decreasing the natural biodiversity. Once in a system, alien invasive plants can spread through the catchment. If allowed to seed before control measures are implemented alien plants can easily colonise and impact on downstream users.</li> <li>• Changes in water quality due to foreign materials and increased nutrients impact ratings. Construction, operational and decommissioning activities will result in the discharge of solvents and other industrial chemicals, leakage of fuel/oil from vehicles and the disposal of sewage resulting in the loss of sensitive biota in the wetlands/rivers and a reduction in wetland function. Could possibly impact on groundwater.</li> </ul>
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>• Same as under construction phase.</li> </ul>
<b>Decommissioning Phase</b>	<p>No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.</p>
<b>Aquatic Environment</b>	
<b>Construction Phase</b>	<ul style="list-style-type: none"> <li>• Increased surface water runoff due to hardened surfaces: During the construction phase of the development the use of heavy machinery, concrete foundations, compacted ground and impermeable surfaces will result in an increase in hardened surfaces. Hardened surfaces reduce infiltration rates and increase runoff volumes and velocities. The runoff from the construction activities is most likely to end up in the Olifantsriver. This can have impacts downstream where the increase in flow is concentrated; increase the risk of erosion and sedimentation; destroy riparian vegetation; and destabilise watercourses. A decrease in infiltration can also reduce natural recharge to the shallow and groundwater zones and subsequently may impact on the natural watercourses nearby.</li> <li>• Increased erosion and sedimentation: Any bare soil resulting from the construction and associated vegetation clearing will be susceptible to erosion, especially during the rainy season. The increase in erosion and dust generation can result in increased sediment loads. Sedimentation will reduce the water quality which can also affect aquatic life through the smothering of riverine habitat and fish gill clogging.</li> </ul>

Impact	Risks
	<ul style="list-style-type: none"> <li>• Sewerage spill: Raw sewerage will 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 <i>E. coli</i>) and large volumes of waste matter. This will make the water undrinkable. The large amount of waste matter will increase the turbidity and provide a habitat for bacteria to breed and feed on the suspended material. Increases in the turbidity of the water will block out sunlight which is necessary for all forms of life to exist in the water. It also blocks the gills of aquatic organisms, making it difficult for them to breathe as well as hunt and catch food. The excess nutrients cause massive algal growth, which could result in eutrophication.</li> </ul>
Operational Phase	<ul style="list-style-type: none"> <li>• Increased surface water runoff due to hardened surfaces: During the operational phase compacted ground and impermeable surfaces will result in an increase in hardened surfaces. Hardened surfaces reduce infiltration rates and increase runoff volumes and velocities. The runoff is most likely to end up in the Olifantsriver. This can have impacts downstream where the increase in flow is concentrated; increase the risk of erosion and sedimentation; destroy riparian vegetation; and destabilise watercourses. A decrease in infiltration can also reduce natural recharge to the shallow and groundwater zones and subsequently may impact on the natural watercourses nearby.</li> <li>• Increased erosion and sedimentation: Any bare soil will be susceptible to erosion, especially during the rainy season. The increase in erosion and dust generation can result in increased sediment loads. Sedimentation will reduce the water quality which can also affect aquatic life through the smothering of riverine habitat and fish gill clogging.</li> <li>• Sewerage spill: Raw sewerage will 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 <i>E. coli</i>) and large volumes of waste matter. This will make the water undrinkable. The large amount of waste matter will increase the turbidity and provide a habitat for bacteria to breed and feed on the suspended material. Increases in the turbidity of the water will block out sunlight which is necessary for all forms of life to exist in the water. It also blocks the gills of aquatic organisms, making it difficult for them to breathe as well as hunt and catch food. The excess nutrients cause massive algal growth, which could result in eutrophication.</li> </ul>
Post-Construction and Rehabilitation Phase	<ul style="list-style-type: none"> <li>• Same as under construction phase.</li> </ul>
Decommissioning Phase	<p>No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.</p>
<b>Surface and Groundwater</b>	
Construction Phase	<ul style="list-style-type: none"> <li>• Pollution of surface and/or groundwater resources due to the potential release of pollutants, such as chemicals, especially during the construction phase.</li> <li>• Pollution of surface and/or groundwater resources due to poor waste management.</li> <li>• Pollution of surface and/or groundwater resources due to the incorrect management of chemical substances and dangerous goods (fuels, oils etc.).</li> <li>• Pollution of surface and/or groundwater resources due to runoff of contaminated stormwater.</li> </ul>

Impact	Risks
	<ul style="list-style-type: none"> <li>● Pollution of surface and/or groundwater resources due to the incorrect management of concrete mixing.</li> <li>● Pollution of surface and/or groundwater resources due to sewage spills from chemical toilets.</li> <li>● Pollution of surface and/or groundwater resources due to the potential release of wastewater (sewage and wash water).</li> <li>● Unsustainable utilisation of groundwater.</li> </ul>
<b>Operational Phase</b>	<ul style="list-style-type: none"> <li>● Pollution of surface and/or groundwater resources due to poor waste management.</li> <li>● Pollution of surface and/or groundwater resources due to the incorrect management of chemical substances and dangerous goods (fuels, oils etc.).</li> <li>● Pollution of surface and/or groundwater resources due to runoff of contaminated stormwater.</li> <li>● Pollution of surface and/or groundwater resources due to sewage spills from ablution facilities.</li> <li>● Pollution of surface and/or groundwater resources due to the potential release of wastewater (sewage and wash water).</li> <li>● Unsustainable utilisation of water resources.</li> </ul>
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>● Same as under construction phase.</li> </ul>
<b>Decommissioning Phase</b>	<p>No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.</p>
<b>Fauna</b>	
<b>Construction Phase</b>	<ul style="list-style-type: none"> <li>● Loss of exotic species, declared weeds and invader plants: It is recommended that noxious alien trees are eradicated before construction is commenced. However, inevitably new gardens will be established by planting exotics. This may ecologically not be puritan but can be expected to favour an increase of garden birds.</li> <li>● Loss of ecological sensitive and important vegetation units: When expressed as vertebrate habitat the wetlands and water bodies are deemed as sensitive and their integrity are not to be jeopardized during the construction or operational phases.</li> <li>● Loss of ecosystem function (e.g. reduction in water quality, soil pollution): Storm water run-off from the hard-cover areas of the development could amount to significant volumes inundating the water bodies, unless contained. Unmanaged water masses and quality can be expected to harm the water bodies and streambeds.</li> <li>● Loss of faunal habitat: The likelihood that the proposed development will displace the biological components of the plains and slopes is high, but the ecological impact of this loss is spatially and ecologically deemed as small.</li> <li>● Loss/displacement of threatened or protected fauna: Few, if any, of the Red Data species still persisting on the terrestrial and rupicolous habitats will survive. These will be displaced in the face of the planned development. Such a loss will be the ultimate stage of a spiral decline of species richness commenced decades ago.</li> </ul>
<b>Operational Phase</b>	<ul style="list-style-type: none"> <li>● Loss of ecological sensitive and important vegetation units: When expressed as vertebrate habitat the wetlands and water bodies are deemed as sensitive and their integrity are not to be jeopardized during the construction or operational phases.</li> </ul>

Impact	Risks
	<ul style="list-style-type: none"> <li>● Loss of ecosystem function (e.g. reduction in water quality, soil pollution): Storm water run-off from the hard-cover areas of the development could amount to significant volumes inundating the water bodies, unless contained. Unmanaged water masses and quality can be expected to harm the water bodies and streambeds.</li> </ul>
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>● Disturbance of any fauna species that may be resident onsite.</li> </ul>
<b>Decommissioning Phase</b>	<p>No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.</p>
<b>Flora</b>	
<b>Construction Phase</b>	<ul style="list-style-type: none"> <li>● Removal of natural, good condition vegetation, due to: <ul style="list-style-type: none"> <li>▪ Clearing of vegetation for construction of the township as well as infrastructure;</li> <li>▪ Access roads;</li> <li>▪ Illegal disposal and dumping of construction material such as cement or oil during construction; and</li> <li>▪ Edge effects from construction.</li> </ul> </li> <li>● Destruction of plant species that are ‘Declining’, ‘Rare’ or provincially protected: Construction activity on the rocky ridge, especially the area where these plants are concentrated.</li> <li>● Destruction of moist grassland; and deterioration of the vegetation associated with moist grasslands: Clearing of the vegetation and change to water runoff patterns and soil hydrology; and the deterioration of vegetation in moist grasslands due to edge effects, sedimentation, compaction or increased pollutants.</li> <li>● Loss of the ecological function of the moist grasslands: Polluted water reaching the watercourses and moist grassland; and the lack of natural vegetation and the subsequent loss of the ecological function of the vegetation as catchment to the moist grassland and downstream watercourse.</li> <li>● Deterioration of natural vegetation and eventual loss of vegetation: Edge effects from the development; and altered fire regime where natural fires are prevented.</li> <li>● Possible increase in exotic and invasive vegetation: Alien vegetation spreading from existing infestation into disturbed soils as well as the dam area; and exotic plant species from gardens spreading to the rocky grasslands, moist grasslands and subsequently downstream.</li> <li>● Bush densification: <ul style="list-style-type: none"> <li>▪ Increase in bush encroacher species; and</li> <li>▪ Change in vegetation structure.</li> </ul> </li> </ul>
<b>Operational Phase</b>	<ul style="list-style-type: none"> <li>● Possible increase in exotic and invasive vegetation: Alien vegetation spreading from existing infestation into disturbed soils as well as the dam area; and exotic plant species from gardens spreading to the rocky grasslands, moist grasslands and subsequently downstream.</li> <li>● Bush densification: <ul style="list-style-type: none"> <li>▪ Increase in bush encroacher species; and</li> <li>▪ Change in vegetation structure.</li> </ul> </li> </ul>
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>● Establishment and spread of alien invasive vegetation (onsite and further than the site).</li> </ul>

<b>Impact</b>	<b>Risks</b>
<b>Decommissioning Phase</b>	No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.
<b>Heritage Resources</b>	
<b>Construction Phase</b>	<ul style="list-style-type: none"> <li>Disturbance or destruction of cultural and heritage resources.</li> </ul>
<b>Operational Phase</b>	<ul style="list-style-type: none"> <li>Disturbance or destruction of cultural and heritage resources.</li> </ul>
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>Disturbance or destruction of cultural and heritage resources.</li> </ul>
<b>Decommissioning Phase</b>	No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.
<b>Paleontological Resources</b>	
<b>Construction Phase</b>	<ul style="list-style-type: none"> <li>Construction and development activities resulting in a disturbance or destruction of palaeontological resources: <ul style="list-style-type: none"> <li>Earth moving equipment/machinery (front end loaders, excavators, graders, dozers); and</li> <li>Sealing-in or destruction of fossils by development, vehicle traffic and human disturbance.</li> </ul> </li> </ul>
<b>Operational Phase</b>	None anticipated.
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>Same as under construction phase.</li> </ul>
<b>Decommissioning Phase</b>	No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.
<b>Air Quality and Noise</b>	
<b>Construction Phase</b>	<ul style="list-style-type: none"> <li>Generation of dust;</li> <li>Release of vehicle emissions from construction vehicles; and</li> <li>Generation of nuisance and noise.</li> </ul>
<b>Operational Phase</b>	<ul style="list-style-type: none"> <li>Generation of dust;</li> <li>Release of vehicle emissions from vehicles; and</li> <li>Generation of nuisance and noise.</li> </ul>
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>Same as under construction phase.</li> </ul>
<b>Decommissioning Phase</b>	No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.
<b>Land Capability</b>	
<b>Construction Phase</b>	<ul style="list-style-type: none"> <li>Construction of industrial complexes, business complexes, tourism complexes, vehicle parking areas, roads etc.: The current arable, grazing or wilderness land capability will cease completely until the structures is removed.</li> <li>Possible contamination of soil by spillages of fuel or oil by mechanical equipment: The soil's physical and chemical properties will be adversely affected and will cause some reduction in land capability.</li> <li>Possible soil erosion at exposed building footprints due to higher runoff: Soil erosion will adversely affect land capability.</li> </ul>



Impact	Risks
Operational Phase	<ul style="list-style-type: none"> <li>• Use and maintenance of industrial complexes, business complexes, tourism complexes, vehicle parking areas, roads etc.: The pre-construction land capability at areas covered by concrete, tar or paving will remain ceased.</li> <li>• Possible contamination of soil by spillages of fuel or oil by mechanical equipment: The soil's physical and chemical properties will be adversely affected and will cause some reduction in land capability.</li> </ul>
Post-Construction and Rehabilitation Phase	<ul style="list-style-type: none"> <li>• Possible contamination of soil by spillages of fuel or oil by mechanical equipment: The soil's physical and chemical properties will be adversely affected and will cause some reduction in land capability.</li> </ul>
Decommissioning Phase	No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.

### Soil

Construction Phase	<ul style="list-style-type: none"> <li>• The construction of structures that cover the soil surface by means of concrete, tar or paving: <ul style="list-style-type: none"> <li>▪ Compaction of the soil surface for building foundations, parking areas etc. will alter the soil's physical properties negatively; and</li> <li>▪ Covering the soil surface with concrete, tar or paving will cause productive functioning of the soil to cease completely.</li> </ul> </li> <li>• Possible contamination of soil by spillages of fuel or oil by mechanical equipment: <ul style="list-style-type: none"> <li>▪ Possible contamination of soil by spillages of fuel or oil by mechanical equipment, with soil physical and chemical properties being adversely affected.</li> </ul> </li> <li>• Possible soil erosion at exposed building footprints due to higher runoff: <ul style="list-style-type: none"> <li>▪ Possible soil erosion at exposed construction sites where the current natural vegetation were removed.</li> </ul> </li> <li>• Construction of industrial complexes, business complexes, tourism complexes, vehicle parking areas, roads etc.: <ul style="list-style-type: none"> <li>▪ All impacts on soils during the construction phase will remain during the operational phase. The productive functioning of soil at areas covered by concrete, tar or paving will remain ceased.</li> </ul> </li> <li>• Soil erosion due to the clearance of vegetation.</li> <li>• Soil pollution due to the incorrect management of chemical substances and dangerous goods.</li> <li>• Soil pollution due to poor waste management (general and hazardous waste).</li> <li>• Soil pollution due to potential spillages from chemical toilets.</li> <li>• Soil pollution due to the incorrect management of concrete mixing.</li> <li>• Soil pollution due to runoff of contaminated stormwater.</li> </ul>
Operational Phase	<ul style="list-style-type: none"> <li>• Possible contamination of soil by spillages of fuel or oil by mechanical equipment: <ul style="list-style-type: none"> <li>▪ Possible contamination of soil by spillages of fuel or oil by mechanical equipment, with soil physical and chemical properties being adversely affected.</li> </ul> </li> <li>• Use and maintenance of industrial complexes, business complexes, tourism complexes, vehicle parking areas, roads etc.: <ul style="list-style-type: none"> <li>▪ All impacts on soils during the construction phase will remain during the operational phase. The productive functioning of soil at areas covered by concrete, tar or paving will remain ceased.</li> </ul> </li> </ul>

Impact	Risks
	<ul style="list-style-type: none"> <li>• Soil pollution due to the incorrect management of chemical substances and dangerous goods.</li> <li>• Soil pollution due to poor waste management (general and hazardous waste).</li> <li>• Soil pollution due to runoff of contaminated stormwater.</li> <li>• Soil pollution due to leakages from ablution facilities.</li> </ul>
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>• Soil pollution due to hydrocarbon spillages or leakages from vehicles.</li> <li>• Soil erosion due to inefficient rehabilitation of construction areas.</li> </ul>
<b>Decommissioning Phase</b>	No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.
Socio-economic	
<b>Construction Phase</b>	<ul style="list-style-type: none"> <li>• Generation of a large number of job opportunities; and</li> <li>• Potential increase in crime due to the influx of workers, especially during the construction phase.</li> <li>• The stimulation of the local and provincial economy.</li> </ul>
<b>Operational Phase</b>	<ul style="list-style-type: none"> <li>• Generation of a large number of job opportunities.</li> <li>• The stimulation of the local and provincial economy.</li> </ul>
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>• Generation of a number of employment opportunities.</li> <li>• Stimulation of the local economy.</li> </ul>
<b>Decommissioning Phase</b>	No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.
Traffic	
<b>Construction Phase</b>	<ul style="list-style-type: none"> <li>• Increase in traffic volumes to the site during both the construction and operational phases.</li> </ul>
<b>Operational Phase</b>	<ul style="list-style-type: none"> <li>• Increase in traffic volumes to the site during both the construction and operational phases.</li> </ul>
<b>Post-Construction and Rehabilitation Phase</b>	<ul style="list-style-type: none"> <li>• Same as under construction phase.</li> </ul>
<b>Decommissioning Phase</b>	No decommissioning activities are anticipated or planned for the proposed project. Therefore, no impacts have been identified or assessed as part of this Environmental Impact Assessment process.

## Cumulative Impacts

*Cumulative Impacts can be defined as the changes experienced within the environment that are caused by an action in combination with past, present and future human actions (environment.gov.za).*

### Wetlands/Aquatic

- Should mitigation measure not be implemented and changes made to the bed or banks of watercourse unstable channel conditions may result causing erosion, meandering, increased potential for flooding and movement of bed

material, which will result in property damage adjacent to and downstream of the site. Reversing this process is unlikely and should be prevented in the first place. Expected to be moderate.

- Construction areas within the watercourses along the proposed servitude can experience an increased alien invasion if mitigation is not implemented or implemented correctly. Regular monitoring should be implemented during construction, rehabilitation including for a period after rehabilitation is completed. Expected to be moderate to high.
- Once in the system it may take many years for some toxins to be eradicated. Expected to be moderate.

### **Surface and Groundwater**

None anticipated.

### **Fauna**

None anticipated.

### **Flora**

- Erosion, soil compaction and subsequent sedimentation:
  - Sedimentation;
  - Possible bush densification or invasion by alien invasive plant species;
  - Further fragmentation of natural habitats;
  - Altered topsoil conditions; and
  - Potential barren areas remaining after construction.
- Removal of protected species or species of conservation concern:
  - Loss of diversity; and
  - Decline in provincial or national numbers of species of conservation concern.
- Invasion by alien invasive plant species:
  - Increase in alien invasive plant species in the area that the site is situated in; and
  - Loss of indigenous species diversity.
- Bush densification:
  - Possible bush densification on the site and loss of indigenous species diversity.
- Deterioration of watercourses and riparian vegetation:
  - Possible loss of the ecological function of riparian vegetation and erosion of riverbanks;
  - Decrease in water quality; and
  - Flooding downstream.

### **Heritage Resources**

- Disturbance or destruction of cultural and heritage resources onsite resulting in a decline in the overall cultural and heritage value of the greater area.

### **Palaeontological resources**

None anticipated.

### **Air Quality and Noise**

None anticipated.

### **Soil**

None anticipated.

## Socio-economic

None anticipated.

## Traffic

None anticipated.

## 9.7 Impact Assessment [Assessment of the significance of each impact (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]

The following tables discuss the impacts and risks identified for each alternative, including the nature, significance, consequences, extent, duration and probability of the impacts, including the degree to which the impacts can be reversed; may cause irreplaceable loss of resources; and can be avoided, managed or mitigated, based on the information available at this stage of the process.

### Preferred Alternative

#### Wetlands

<b>Aspect</b>	Changing the quantity and fluctuation properties of the watercourse.	
<b>Impact and Nature</b>	Changing the quantity and fluctuation properties of the watercourse by, for example, storm water input, or restricting water flow. The sources of this impacts include: <ul style="list-style-type: none"> <li>• The compaction of soil;</li> <li>• The removal of vegetation;</li> <li>• Surface water redirection; and</li> <li>• The construction of infrastructure.</li> </ul>	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	3	1
<b>Duration</b>	2	2
<b>Magnitude</b>	2	1
<b>Probability</b>	2	2
<b>Significance</b>	<b>14 - Medium</b>	<b>8 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>	3	1
<b>Duration</b>	3	2
<b>Magnitude</b>	3	1
<b>Probability</b>	2	2
<b>Significance</b>	<b>18 - Medium</b>	<b>8 - Low</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Low degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	High degree	
<b>Aspect</b>	Changing the amount of sediment entering water resource and associated change in turbidity (increasing or decreasing the amount).	

<b>Impact and Nature</b>	<p>Construction, operational and decommissioning activities will result in earthworks and soil disturbance as well as the removal of natural vegetation. This could result in the loss of topsoil, sedimentation of the wetland and increase the turbidity of the water. Possible sources of the impacts include:</p> <ul style="list-style-type: none"> <li>• Earthwork activities during construction;</li> <li>• Clearing of surface vegetation will expose the soils, which in rainy events would wash through the watercourse, causing sedimentation. In addition, indigenous vegetation communities are unlikely to colonise eroded soils successfully and seeds from proximate alien invasive trees can spread easily into these eroded soils;</li> <li>• Disturbance of the soil surface;</li> <li>• Disturbance of slopes through the creation of roads and tracks adjacent to the watercourses; and</li> <li>• Erosion (e.g. gully formation and bank collapse).</li> </ul>	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	2	1
<b>Duration</b>	2	2
<b>Magnitude</b>	2	1
<b>Probability</b>	3	2
<b>Significance</b>	<b>18 - Medium</b>	<b>8 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>	2	1
<b>Duration</b>	3	2
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>16 - Medium</b>	<b>5 - Low</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Low degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	High degree	
<b>Aspect</b>	Introduction and spread of alien vegetation.	
<b>Impact and Nature</b>	<p>The moving of soil and vegetation resulting in opportunistic invasions after disturbance and the introduction of seed in building materials and on vehicles. Invasions of alien plants can impact on hydrology, by reducing the quantity of water entering a wetland, and outcompete natural vegetation, decreasing the natural biodiversity. Once in a system alien invasive plants can spread through the catchment. If allowed to seed before control measures are implemented, alien plants can easily colonise and impact on downstream users.</p>	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	3	1
<b>Duration</b>	3	2
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>18 - Medium</b>	<b>5 - Low</b>

Operational Phase		
Extent	3	1
Duration	3	2
Magnitude	3	1
Probability	2	2
Significance	<b>18 - Medium</b>	<b>8 - Low</b>
Status of Impact		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Low degree	
Degree to which impact can be avoided, managed or mitigated	High degree	
<b>Aspect</b>	Changes and/or alteration in water quality due to foreign materials and increased nutrients impact ratings.	
<b>Impact and Nature</b>	Construction, operational and decommissioning activities will result in the discharge of solvents and other industrial chemicals, leakage of fuel/oil from vehicles and the disposal of sewage resulting in the loss of sensitive biota in the wetlands/rivers and a reduction in wetland function as well as human and animal waste. Could possibly impact on groundwater.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
Construction Phase		
Extent	3	1
Duration	2	1
Magnitude	2	2
Probability	2	1
Significance	<b>14 - Medium</b>	<b>4 - Low</b>
Operational Phase		
Extent	3	1
Duration	3	2
Magnitude	3	1
Probability	2	1
Significance	<b>18 - Medium</b>	<b>4 - Low</b>
Status of Impact		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Low degree	
Degree to which impact can be avoided, managed or mitigated	High degree	
<b>Aspect</b>	Changing the physical structure within a water resource (habitat).	
<b>Impact and Nature</b>	Construction activities can cause change to the physical structure of the watercourse such as habitat loss.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
Construction Phase		
Extent	2	1
Duration	3	2
Magnitude	2	1
Probability	2	2



Significance	14 - Medium	8 - Low
<b>Operational Phase</b>		
Extent		
Duration		
Magnitude		
Probability		
Significance		
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Low degree	
Degree to which impact can be avoided, managed or mitigated	High degree	

### Aquatic Environment

Aspect	Construction and operational activities.	
Impact and Nature	Increased surface water runoff due to hardened surfaces.	
Impact Rating	Before mitigation	After mitigation
<b>Construction Phase</b>		
Extent	2	1
Duration	2	2
Magnitude	3	3
Probability	2	1
Significance	14 – Medium	6 – Low
<b>Operational Phase</b>		
Extent	2	1
Duration	3	2
Magnitude	3	3
Probability	2	1
Significance	16 – Medium	6 – Low
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Medium degree	
Degree to which impact can be avoided, managed or mitigated	Medium degree	

Aspect	Construction and operational activities.	
Impact and Nature	Increased erosion and sedimentation.	
Impact Rating	Before mitigation	After mitigation
<b>Construction Phase</b>		
Extent	2	1
Duration	2	2
Magnitude	3	2
Probability	2	1
Significance	14 – Medium	5 – Low
<b>Operational Phase</b>		
Extent	2	1

Duration	3	2
Magnitude	3	2
Probability	2	1
Significance	<b>16 – Medium</b>	<b>5 – Low</b>

**Status of Impact**

Consequence	Negative
Degree to which impact can be reversed	Medium degree
Degree to which impact may cause irreplaceable loss of resources	Medium degree
Degree to which impact can be avoided, managed or mitigated	Medium degree

Aspect	Construction and operational activities.	
Impact and Nature	Sewerage spill: Raw sewerage will have a severe impact upon the water quality if it enters a river.	

Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
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**Construction Phase**

Extent	2	1
Duration	2	2
Magnitude	3	3
Probability	2	1
Significance	<b>14 – Medium</b>	<b>6 – Low</b>

**Operational Phase**

Extent	2	1
Duration	3	2
Magnitude	3	3
Probability	2	1
Significance	<b>16 – Medium</b>	<b>6 – Low</b>

**Status of Impact**

Consequence	Negative
Degree to which impact can be reversed	Medium degree
Degree to which impact may cause irreplaceable loss of resources	Medium degree
Degree to which impact can be avoided, managed or mitigated	Medium degree

## Surface and Groundwater

Aspect	Construction and operational activities.	
Impact and Nature	Pollution of surface and/or groundwater resources due to the release of pollutants, such as chemicals.	

Pollution of surface and/or groundwater resources due to the incorrect management of chemical substances and dangerous goods.

Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
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**Construction Phase**

Extent	2	1
Duration	2	2
Magnitude	3	2
Probability	2	1
Significance	<b>14 – Medium</b>	<b>5 – Low</b>

Operational Phase		
Extent	2	1
Duration	3	2
Magnitude	3	2
Probability	2	1
Significance	<b>16 – Medium</b>	<b>5 – Low</b>
Status of Impact		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Medium degree	
Degree to which impact can be avoided, managed or mitigated	Medium degree	
Aspect	Construction and operational activities.	
Impact and Nature	Pollution of surface and/or groundwater resources due to poor waste management.	
Impact Rating	Before mitigation	After mitigation
Construction Phase		
Extent	2	1
Duration	2	1
Magnitude	2	2
Probability	2	1
Significance	<b>12 - Medium</b>	<b>4 - Low</b>
Operational Phase		
Extent	2	1
Duration	3	1
Magnitude	2	2
Probability	2	1
Significance	<b>14 - Medium</b>	<b>4 - Low</b>
Status of Impact		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Medium degree	
Degree to which impact can be avoided, managed or mitigated	High degree	
Aspect	Construction and operational activities.	
Impact and Nature	Pollution of surface and/or groundwater resources due to runoff of contaminated stormwater.	
Impact Rating	Before mitigation	After mitigation
Construction Phase		
Extent	2	1
Duration	2	1
Magnitude	3	2
Probability	2	1
Significance	<b>14 - Medium</b>	<b>4 - Low</b>
Operational Phase		
Extent	2	1
Duration	3	1
Magnitude	3	2

Probability	2	1
Significance	16 - Medium	4 - Low
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Medium degree	
Degree to which impact can be avoided, managed or mitigated	Medium degree	
<b>Aspect</b>		
Impact and Nature	The mixing of concrete.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent	2	1
Duration	2	1
Magnitude	2	1
Probability	2	1
Significance	12 - Medium	3 - Low
<b>Operational Phase</b>		
Extent		
Duration		
Magnitude		
Probability		
Significance		
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Medium degree	
Degree to which impact can be avoided, managed or mitigated	High degree	
<b>Aspect</b>		
Impact and Nature	Construction and Operational activities.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent	2	1
Duration	2	1
Magnitude	3	2
Probability	2	1
Significance	14 - Medium	4 - Low
<b>Operational Phase</b>		
Extent	2	1
Duration	3	2
Magnitude	3	2
Probability	2	1
Significance	16 - Medium	5 - Low
<b>Status of Impact</b>		
Consequence	Negative	

Degree to which impact can be reversed	Low degree
Degree to which impact may cause irreplaceable loss of resources	Medium degree
Degree to which impact can be avoided, managed or mitigated	High degree

<b>Aspect</b>	Construction and Operational activities.	
<b>Impact and Nature</b>	Unsustainable utilisation of groundwater. Unsustainable use of water resources.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent	3	1
Duration	2	1
Magnitude	2	1
Probability	2	1
Significance	<b>14 - Medium</b>	<b>3 - Low</b>
<b>Operational Phase</b>		
Extent	3	1
Duration	3	1
Magnitude	3	2
Probability	2	1
Significance	<b>18 - Medium</b>	<b>4 - Low</b>
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Low degree	
Degree to which impact may cause irreplaceable loss of resources	Medium degree	
Degree to which impact can be avoided, managed or mitigated	High degree	

<b>Aspect</b>	Construction and Operational activities	
<b>Impact and Nature</b>	Pollution of surface and/or groundwater resources due to sewage spills from chemical toilets (construction phase) and ablution facilities (operational phase).	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent	2	1
Duration	2	1
Magnitude	3	2
Probability	2	1
Significance	<b>14 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
Extent	2	1
Duration	3	2
Magnitude	3	2
Probability	2	1
Significance	<b>16 - Medium</b>	<b>5 - Low</b>
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Medium degree	

Degree to which impact can be avoided, managed or mitigated	High degree
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## Fauna

Aspect	Construction activities	
Impact and Nature	Loss of exotic species, declared weeds and invader plants.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent		
Duration		
Magnitude		
Probability		
Significance	Positive impact	No mitigation required – positive impact
<b>Operational Phase</b>		
Extent		
Duration		
Magnitude		
Probability		
Significance		
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	High degree	
Degree to which impact may cause irreplaceable loss of resources	Low degree	
Degree to which impact can be avoided, managed or mitigated	High degree	

Aspect	Construction and Operational activities.	
Impact and Nature	Loss of ecological sensitive and important vegetation units.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent	2	1
Duration	3	1
Magnitude	3	2
Probability	2	1
Significance	<b>16 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
Extent	2	1
Duration	3	1
Magnitude	3	2
Probability	2	1
Significance	<b>16 - Medium</b>	<b>4 - Low</b>
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	High degree	
Degree to which impact may cause irreplaceable loss of resources	Low degree	
Degree to which impact can be avoided, managed or mitigated	Low degree	



<b>Aspect</b>	Construction and operational activities.	
<b>Impact and Nature</b>	Loss of ecosystem function (e.g. reduction in water quality, soil pollution).	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	3	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>16 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>	3	1
<b>Duration</b>	3	2
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>18 - Medium</b>	<b>5 - Low</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Low degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	High degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	High degree	
<b>Aspect</b>	Loss of faunal habitat.	
<b>Impact and Nature</b>	The likelihood that the proposed development will displace the biological components of the plains and slopes is high, but the ecological impact of this loss is spatially and ecologically deemed as small.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	3	3
<b>Magnitude</b>	1	1
<b>Probability</b>	1	1
<b>Significance</b>	<b>5 - Low</b>	<b>5 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	High degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Low degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	High degree	
<b>Aspect</b>	Loss/displacement of threatened or protected fauna.	
<b>Impact and Nature</b>	Few, if any, of the Red Data species still persisting on the terrestrial and rupicolous habitats will survive. These will be displaced in the face of the	

	planned development. Such a loss will be the ultimate stage of a spiral decline of species richness commenced decades ago.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	3	3
<b>Magnitude</b>	1	1
<b>Probability</b>	1	1
<b>Significance</b>	<b>5 - Low</b>	<b>5 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	High degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Low degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	High degree	

## Flora

<b>Aspect</b>	Removal of natural, good condition vegetation.	
<b>Impact and Nature</b>	<ul style="list-style-type: none"> <li>• Clearing of vegetation for construction of the township as well as infrastructure;</li> <li>• Access roads;</li> <li>• Illegal disposal and dumping of construction material such as cement or oil during construction; and</li> <li>• Edge effects from construction.</li> </ul>	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	2
<b>Magnitude</b>	2	2
<b>Probability</b>	3	2
<b>Significance</b>	<b>15 – Medium</b>	<b>10 - Medium</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	

Degree to which impact can be avoided, managed or mitigated	Low degree
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<b>Aspect</b>	Destruction of plant species that are 'Declining', 'Rare' or provincially protected.	
<b>Impact and Nature</b>	Construction activities especially in areas where these plants are concentrated.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	3	2
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>14 – Medium</b>	<b>5 – Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	

<b>Aspect</b>	Destruction of moist grassland; and deterioration of the vegetation associated with moist grasslands.	
<b>Impact and Nature</b>	Clearing of the vegetation and change to water runoff patterns and soil hydrology; and the deterioration of vegetation in moist grasslands due to edge effects, sedimentation, compaction or increased pollutants.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	3	1
<b>Duration</b>	2	1 – avoidance or relocation
<b>Magnitude</b>	3	1
<b>Probability</b>	3	2 - assuming that final development footprint is surveyed for these species and are amended to avoid them where possible
<b>Significance</b>	<b>24 - High</b>	<b>6 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Low degree	

Degree to which impact may cause irreplaceable loss of resources	High degree
Degree to which impact can be avoided, managed or mitigated	High degree

<b>Aspect</b>	Loss of the ecological function of the moist grasslands.	
<b>Impact and Nature</b>	Polluted water reaching the watercourses and moist grassland; and the lack of natural vegetation and the subsequent loss of the ecological function of the vegetation as catchment to the moist grassland and downstream watercourse.	

<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
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**Construction Phase**

<b>Extent</b>	2	1
<b>Duration</b>	3	2
<b>Magnitude</b>	2	1
<b>Probability</b>	2	1
<b>Significance</b>	<b>14 – Medium</b>	<b>4 – Low</b>

**Operational Phase**

<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		

**Status of Impact**

<b>Consequence</b>	Negative
<b>Degree to which impact can be reversed</b>	Low degree
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree
<b>Degree to which impact can be avoided, managed or mitigated</b>	High degree

<b>Aspect</b>	Deterioration of natural vegetation and eventual loss of vegetation.	
<b>Impact and Nature</b>	Edge effects from the development; and altered fire regime where natural fires are prevented.	

<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
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**Construction Phase**

<b>Extent</b>	2	1
<b>Duration</b>	3	2
<b>Magnitude</b>	2	1
<b>Probability</b>	2	1
<b>Significance</b>	<b>14 – Medium</b>	<b>4 – Low</b>

**Operational Phase**

<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		

**Status of Impact**

<b>Consequence</b>	Negative
<b>Degree to which impact can be reversed</b>	Low degree
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree

Degree to which impact can be avoided, managed or mitigated	High degree
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<b>Aspect</b>	Possible increase in exotic and invasive vegetation.	
<b>Impact and Nature</b>	Alien vegetation spreading from existing infestation into disturbed soils as well as the dam area; and exotic plant species from gardens spreading to the rocky grasslands, moist grasslands and subsequently downstream.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	3	1
<b>Magnitude</b>	2	1
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 – Medium</b>	<b>3 – Low</b>
<b>Operational Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	3	2
<b>Magnitude</b>	3	1
<b>Probability</b>	2	1
<b>Significance</b>	<b>14 – Medium</b>	<b>4 – Low</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Low degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	High degree	

<b>Aspect</b>	Bush densification.	
<b>Impact and Nature</b>	<ul style="list-style-type: none"> <li>• Increase in bush encroacher species; and</li> <li>• Change in vegetation structure.</li> </ul>	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	2	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>14 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>	2	1
<b>Duration</b>	3	2
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>16 - Medium</b>	<b>5 - Low</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Low degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium - High degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	

## Heritage Resources

Aspect	Construction and operational activities.	
Impact and Nature	Disturbance or destruction of cultural and heritage resources.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent	1	1
Duration	3	2
Magnitude	3	2
Probability	3	1
Significance	<b>24 - High</b>	<b>5 - Low</b>
<b>Operational Phase</b>		
Extent	1	1
Duration	3	2
Magnitude	3	2
Probability	3	1
Significance	<b>24 - High</b>	<b>5 - Low</b>
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Low degree	
Degree to which impact may cause irreplaceable loss of resources	High degree	
Degree to which impact can be avoided, managed or mitigated	Medium degree	

## Palaeontological resources

Aspect	Construction activities if deep excavation is envisaged.	
Impact and Nature	Construction and development activities resulting in a disturbance or destruction of palaeontological resources: <ul style="list-style-type: none"> <li>▪ Earth moving equipment/machinery (front end loaders, excavators, graders, dozers); and</li> <li>▪ Sealing-in or destruction of fossils by development, vehicle traffic and human disturbance.</li> </ul>	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent	1	1
Duration	3	2
Magnitude	3	2
Probability	3	1
Significance	<b>21 - High</b>	<b>5 - Low</b>
<b>Operational Phase</b>		
Extent		
Duration		
Magnitude		
Probability		
Significance		
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Low degree	



Degree to which impact may cause irreplaceable loss of resources	High degree
Degree to which impact can be avoided, managed or mitigated	Medium degree

### Air Quality and Noise

Aspect	Construction and Operational activities.	
Impact and Nature	Generation of dust.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent	2	2
Duration	2	1
Magnitude	2	1
Probability	3	2
Significance	<b>18 - Medium</b>	<b>8 - Low</b>
<b>Operational Phase</b>		
Extent	2	2
Duration	3	1
Magnitude	3	1
Probability	2	2
Significance	<b>16 - Medium</b>	<b>8 - Low</b>
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	
Degree to which impact may cause irreplaceable loss of resources	Low degree	
Degree to which impact can be avoided, managed or mitigated	Medium degree	

Aspect	Construction and Operational activities.	
Impact and Nature	Release of emissions from vehicles.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent	2	1
Duration	2	1
Magnitude	2	2
Probability	3	2
Significance	<b>18 - Medium</b>	<b>8 - Low</b>
<b>Operational Phase</b>		
Extent	2	2
Duration	3	3
Magnitude	2	1
Probability	3	2
Significance	<b>21 - High</b>	<b>12 - Medium</b>
<b>Status of Impact</b>		
Consequence	Negative	
Degree to which impact can be reversed	Low degree	
Degree to which impact may cause irreplaceable loss of resources	Low degree	
Degree to which impact can be avoided, managed or mitigated	Low degree	

<b>Aspect</b>	Construction and Operational activities.	
<b>Impact and Nature</b>	Generation of nuisance and noise.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	2	2
<b>Duration</b>	2	2
<b>Magnitude</b>	2	1
<b>Probability</b>	3	2
<b>Significance</b>	<b>18 - Medium</b>	<b>10 - Medium</b>
<b>Operational Phase</b>		
<b>Extent</b>	2	1
<b>Duration</b>	3	3
<b>Magnitude</b>	3	1
<b>Probability</b>	2	2
<b>Significance</b>	<b>16 - Medium</b>	<b>10 - Medium</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Low degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Low degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	

#### Land Capability

<b>Aspect</b>	Construction of industrial complexes, business complexes, tourism complexes, vehicle parking areas, roads etc.:	
<b>Impact and Nature</b>	The current arable, grazing or wilderness land capability will cease completely until the structures is removed.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	

<b>Aspect</b>	Land capability reduction.	
<b>Impact and Nature</b>	Contamination of soil by spillages of fuel or oil by mechanical equipment: The soil's physical and chemical properties will be adversely affected and will cause some reduction in land capability.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	3	2
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>14 - Medium</b>	<b>5 - Low</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	
<b>Aspect</b>	Soil erosion.	
<b>Impact and Nature</b>	Soil erosion at exposed building footprints due to higher runoff: Soil erosion will adversely affect land capability.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	
<b>Aspect</b>	Use and maintenance of industrial complexes, business complexes, tourism complexes, vehicle parking areas, roads etc.:	

<b>Impact and Nature</b>	The pre-construction land capability at areas covered by concrete, tar or paving will remain ceased.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Operational Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	3	3
<b>Magnitude</b>	3	2
<b>Probability</b>	2	2
<b>Significance</b>	<b>14 - Medium</b>	<b>12 - Medium</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	

## Soil

<b>Aspect</b>	The construction of structures that cover the soil surface by means of concrete, tar or paving.	
<b>Impact and Nature</b>	Compaction of the soil surface for building foundations, parking areas etc. will alter the soil's physical properties negatively and covering the soil surface with concrete, tar or paving will cause productive functioning of the soil to cease completely.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	

<b>Aspect</b>	Soil pollution.	
<b>Impact and Nature</b>	Possible contamination of soil by spillages of fuel or oil by mechanical equipment, with soil physical and chemical properties being adversely affected.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	3	2
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>14 - Medium</b>	<b>5 - Low</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	

<b>Aspect</b>	Soil erosion at exposed building footprints due to higher runoff:	
<b>Impact and Nature</b>	Possible soil erosion at exposed construction sites where the current natural vegetation were removed.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	

<b>Aspect</b>	Construction and Operational activities.
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<b>Impact and Nature</b>	Construction, use and maintenance of industrial complexes, business complexes, tourism complexes, vehicle parking areas, roads etc.: All impacts on soils during the construction phase will remain during the operational phase. The productive functioning of soil at areas covered by concrete, tar or paving will remain ceased.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	3	3
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>14 - Medium</b>	<b>6 - Low</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	
<b>Aspect</b>	Site clearance during the construction phase.	
<b>Impact and Nature</b>	Soil erosion due to the clearance of vegetation.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	1
<b>Magnitude</b>	3	2
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 - Medium</b>	<b>4 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	
<b>Aspect</b>	Construction activities.	



<b>Impact and Nature</b>	Soil compaction to create foundations for buildings and other associated infrastructure.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	1
<b>Magnitude</b>	2	1
<b>Probability</b>	3	2
<b>Significance</b>	<b>15 - Medium</b>	<b>6 - Low</b>
<b>Operational Phase</b>		
<b>Extent</b>		
<b>Duration</b>		
<b>Magnitude</b>		
<b>Probability</b>		
<b>Significance</b>		
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	High degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Low degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	
<b>Aspect</b>	Construction and operational activities.	
<b>Impact and Nature</b>	Soil pollution due to the incorrect management of chemical substances and dangerous goods.	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
<b>Extent</b>	2	1
<b>Duration</b>	2	2
<b>Magnitude</b>	3	3
<b>Probability</b>	3	2
<b>Significance</b>	<b>21 - High</b>	<b>12 - Medium</b>
<b>Operational Phase</b>		
<b>Extent</b>	1	1
<b>Duration</b>	2	2
<b>Magnitude</b>	3	3
<b>Probability</b>	2	1
<b>Significance</b>	<b>12 – Medium</b>	<b>6 – Low</b>
<b>Status of Impact</b>		
<b>Consequence</b>	Negative	
<b>Degree to which impact can be reversed</b>	Medium degree	
<b>Degree to which impact may cause irreplaceable loss of resources</b>	Medium degree	
<b>Degree to which impact can be avoided, managed or mitigated</b>	Medium degree	
<b>Aspect</b>	Construction and operational activities.	
<b>Impact and Nature</b>	Soil pollution due to poor waste management (general and hazardous waste).	
<b>Impact Rating</b>	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		

Extent	2	1
Duration	2	1
Magnitude	2	1
Probability	2	1
Significance	<b>12 - Medium</b>	<b>3 - Low</b>

**Operational Phase**

Extent	2	1
Duration	3	1
Magnitude	2	1
Probability	2	1
Significance	<b>14 - Medium</b>	<b>3 - Low</b>

**Status of Impact**

Consequence	Negative
Degree to which impact can be reversed	Medium degree
Degree to which impact may cause irreplaceable loss of resources	Low degree
Degree to which impact can be avoided, managed or mitigated	High degree

Aspect	Construction activities.	
Impact and Nature	Soil pollution due to potential spillages from chemical toilets.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>

**Construction Phase**

Extent	2	2
Duration	2	2
Magnitude	3	3
Probability	2	1
Significance	<b>14 – Medium</b>	<b>7 – Low</b>

**Operational Phase**

Extent		
Duration		
Magnitude		
Probability		
Significance		

**Status of Impact**

Consequence	Negative
Degree to which impact can be reversed	Medium degree
Degree to which impact may cause irreplaceable loss of resources	Medium degree
Degree to which impact can be avoided, managed or mitigated	High degree

Aspect	Operational activities.	
Impact and Nature	Soil pollution due to leakages from ablution facilities.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>

**Construction Phase**

Extent		
Duration		
Magnitude		
Probability		
Significance		

**Operational Phase**

Extent	2	1
Duration	3	1
Magnitude	3	2
Probability	2	1
Significance	<b>16 - Medium</b>	<b>4 - Low</b>

**Status of Impact**

Consequence	Negative
Degree to which impact can be reversed	Medium degree
Degree to which impact may cause irreplaceable loss of resources	Medium degree
Degree to which impact can be avoided, managed or mitigated	High degree

Aspect	Mixing of concrete.	
Impact and Nature	Soil pollution due to the incorrect management of concrete mixing.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>

**Construction Phase**

Extent	2	2
Duration	2	2
Magnitude	2	2
Probability	2	1
Significance	<b>12 – Medium</b>	<b>6 – Low</b>

**Operational Phase**

Extent		
Duration		
Magnitude		
Probability		
Significance		

**Status of Impact**

Consequence	Negative
Degree to which impact can be reversed	Medium degree
Degree to which impact may cause irreplaceable loss of resources	Medium degree
Degree to which impact can be avoided, managed or mitigated	High degree

Aspect	Runoff of contaminated stormwater.	
Impact and Nature	Soil pollution.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>

**Construction Phase**

Extent	2	1
Duration	2	2
Magnitude	2	2
Probability	2	1
Significance	<b>12 – Medium</b>	<b>5 – Low</b>

**Operational Phase**

Extent	2	1
Duration	3	2
Magnitude	2	2
Probability	2	1
Significance	<b>14 – Medium</b>	<b>5 – Low</b>

**Status of Impact**

Consequence	Negative
Degree to which impact can be reversed	Medium degree
Degree to which impact may cause irreplaceable loss of resources	Medium degree
Degree to which impact can be avoided, managed or mitigated	High degree

### Socio-economic

Aspect	Construction and operational activities.	
Impact and Nature	Generation of a large number of job opportunities.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent		
Duration		
Magnitude		
Probability		
Significance	Positive impact	No mitigation required – positive impact
<b>Operational Phase</b>		
Extent		
Duration		
Magnitude		
Probability		
Significance	Positive impact	No mitigation required – positive impact
<b>Status of Impact</b>		
Consequence	Positive	
Degree to which impact can be reversed	N/A – positive impact	
Degree to which impact may cause irreplaceable loss of resources	N/A – positive impact	
Degree to which impact can be avoided, managed or mitigated	N/A – positive impact	

Aspect	Construction and operational activities.	
Impact and Nature	The stimulation of the local and provincial economy.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
<b>Construction Phase</b>		
Extent		
Duration		
Magnitude		
Probability		
Significance	Positive impact	No mitigation required – positive impact
<b>Operational Phase</b>		
Extent		
Duration		
Magnitude		
Probability		
Significance	Positive impact	No mitigation required – positive impact
<b>Status of Impact</b>		

Consequence	Positive
Degree to which impact can be reversed	N/A – positive impact
Degree to which impact may cause irreplaceable loss of resources	N/A – positive impact
Degree to which impact can be avoided, managed or mitigated	N/A – positive impact

Aspect	Construction activities.	
Impact and Nature	Potential increase in crime due to the influx of workers, especially during the construction phase.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
	<b>Construction Phase</b>	
Extent	2	2
Duration	2	2
Magnitude	3	1
Probability	2	1
Significance	<b>14 - Medium</b>	<b>5 - Low</b>
	<b>Operational Phase</b>	
Extent		
Duration		
Magnitude		
Probability		
Significance		
	<b>Status of Impact</b>	
Consequence	Negative	
Degree to which impact can be reversed	Low degree	
Degree to which impact may cause irreplaceable loss of resources	Medium degree	
Degree to which impact can be avoided, managed or mitigated	High degree	

## Traffic

Aspect	Construction and operational activities.	
Impact and Nature	Increase in traffic volumes to the site in both the construction and operational phases.	
Impact Rating	<b>Before mitigation</b>	<b>After mitigation</b>
	<b>Construction Phase</b>	
Extent	2	2
Duration	2	2
Magnitude	3	1
Probability	3	2
Significance	<b>21 – High</b>	<b>10 - Medium</b>
	<b>Operational Phase</b>	
Extent	3	3
Duration	3	3
Magnitude	2	1
Probability	3	2
Significance	<b>24 - High</b>	<b>14 - Medium</b>
	<b>Status of Impact</b>	
Consequence	Negative	
Degree to which impact can be reversed	Medium degree	

Degree to which impact may cause irreplaceable loss of resources	Medium degree
Degree to which impact can be avoided, managed or mitigated	Low degree

## No-Go Option

The No-Go Option would be where the project sites are not developed and remains as vacant and open land. The No-Go Option is not considered to be a reasonable alternative as this would mean that the land is under-utilised in terms of its potential for a mixed use development and in particular, to contribute to the industrial and tourism need experienced within the Emalahleni Local Municipality.

## 9.8 Methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks

Please refer to Section 9.5 of this report.

## 9.9 Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected

As detailed under Sections 9.6 and 9.7 above.

## 9.10 Possible mitigation measures that could be applied and level of residual risk

Detailed mitigation measures have also been included in the Environmental Management Programme (EMPr) that forms part of this Environmental Impact Assessment Report. The following table contains possible mitigation measures (as identified in the Scoping Phase and upon which the mitigation measures have been elaborated in the EMPr).

Impact	Possible mitigation measures
<b>Wetlands</b> Changing the quantity and fluctuation properties of the watercourse. The sources of this impacts include: <ul style="list-style-type: none"> <li>• Development within the Witbank Dam;</li> <li>• Lack of adequate rehabilitation resulting in invasion by exotic plants;</li> <li>• Material draining into the dam; and</li> <li>• Damage to vegetated areas.</li> </ul> Residual Impacts: Impacts to the flow characteristics of this watercourse are likely to be permanent unless rehabilitated.	<ul style="list-style-type: none"> <li>• No activities should take place in the watercourses and associated buffer zone.</li> <li>• Where the above is unavoidable, the construction in and around watercourses must be restricted to the dryer winter months.</li> <li>• A temporary fence or demarcation must be erected around the works area to prevent access to sensitive environments. The works areas generally include the servitude, construction camps, areas where material is stored.</li> <li>• Prevent pedestrian and vehicular access into the watercourse and buffer areas.</li> <li>• Formalise access roads and make use of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas.</li> <li>• Management of on-site water use and prevent stormwater or contaminated water directly entering the watercourse.</li> </ul>



Impact	Possible mitigation measures
	<ul style="list-style-type: none"> <li>• Management of point discharges.</li> <li>• Planning of construction site must include eventual rehabilitation/restoration of indigenous vegetative cover.</li> <li>• Alien plant eradication and follow-up control activities prior to construction, to prevent spread into disturbed soils, as well as follow-up control during construction.</li> <li>• The amount of vegetation removed should be limited to the least amount possible.</li> <li>• Rehabilitation plans must be submitted and approved for rehabilitation of damage during construction and that plan must be implemented immediately upon completion of construction.</li> </ul>
<p>Changing the amount of sediment entering water resource and associated change in turbidity (increasing or decreasing the amount). Possible sources of the impacts include:</p> <ul style="list-style-type: none"> <li>• Clearing of surface vegetation will expose the soils, which in rainy events would wash through the watercourse, causing sedimentation. In addition, indigenous vegetation communities are unlikely to colonise eroded soils successfully and seeds from proximate alien invasive trees can spread easily into these eroded soil;</li> <li>• Disturbance of soil surface;</li> <li>• Disturbance of slopes through creation of roads and tracks adjacent to the watercourse;</li> <li>• Changes in runoff characteristics;</li> <li>• Erosion (e.g. gully formation, bank collapse); and</li> <li>• Vehicles impacting on surface vegetation.</li> </ul> <p>Residual Impacts: Expected to be limited provided that the mitigation measures are implemented correctly and effective rehabilitation of the site is undertaken where necessary.</p>	<ul style="list-style-type: none"> <li>• Construction in and around watercourses must be restricted to the dryer winter months.</li> <li>• A temporary fence or demarcation must be erected around the works area to prevent water runoff and erosion of the disturbed or heaped soils into the water bodies.</li> <li>• Access roads and bridges should span the dam area, without impacting on the permanent or seasonal zones.</li> <li>• Formalise access roads and make use of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas.</li> <li>• Retain vegetation and soil in position for as long as possible, removing it immediately ahead of construction / earthworks in that area (DWAF, 2005).</li> <li>• A vegetation rehabilitation plan should be implemented. Grassland can be removed as sods and stored within transformed vegetation. The sods must preferably be removed during the winter months and be replanted by latest springtime. The sods should not be stacked on top of each other or within sensitive environs. Once construction is completed, these sods should be used to rehabilitate the disturbed areas from where they have been removed. In the absence of timely rainfall, the sods should be watered well after planting and at least twice more over the next 2 weeks.</li> <li>• Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining natural vegetation cover.</li> <li>• Rehabilitation plans must be submitted and approved for rehabilitation of damage during construction and</li> </ul>

Impact	Possible mitigation measures
	<p>that plan must be implemented immediately upon completion of construction.</p> <ul style="list-style-type: none"> <li>• Cordon off areas that are under rehabilitation as no-go areas using danger tape and steel droppers. If necessary, these areas should be fenced off to prevent vehicular, pedestrian and livestock access.</li> <li>• Delay the re-introduction of livestock (where applicable) to all rehabilitation areas until an acceptable level of re-vegetation has been reached.</li> <li>• During the construction phase measures must be put in place to control the flow of excess water so that it does not impact on the surface vegetation.</li> <li>• Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas.</li> <li>• Runoff from roads must be managed to avoid erosion and pollution problems.</li> <li>• Implementation of best management practices.</li> <li>• Source-directed controls.</li> <li>• Buffer zones to trap sediments.</li> <li>• Active rehabilitation.</li> </ul>
<p>Introduction and spread of alien vegetation.</p>	<ul style="list-style-type: none"> <li>• Use only indigenous plant species for gardens and rehabilitation.</li> <li>• Eradicate any alien invasive vegetation observed onsite.</li> </ul>
<p>Changing the physical structure within a water resource (habitat). Possible sources include:</p> <ul style="list-style-type: none"> <li>• Encroachment to achieve maximum commercial returns;</li> <li>• Deposition of wind-blown sand;</li> <li>• Loss of fringing vegetation and erosion;</li> <li>• Alteration in natural fire regimes; and</li> <li>• Loss of vegetation</li> </ul> <p>Residual Impacts: Expected to be limited provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Other than approved and authorized structure, no other development or maintenance infrastructure is allowed within the delineated dam or its associated buffer zones.</li> <li>• Demarcate the dam area and buffer zones to limit disturbance, clearly mark these areas as no-go areas.</li> <li>• Linear developments (e.g. roads) should span the watercourse.</li> <li>• Weed control in buffer zone.</li> <li>• Monitor rehabilitation and the occurrence of erosion twice during the rainy season for at least two years and take immediate corrective action where needed.</li> <li>• Monitor the establishment of alien invasive species within the areas affected by the construction and maintenance and take immediate corrective action where invasive species are observed to establish.</li> </ul>

Impact	Possible mitigation measures
<p>Changes and/or alteration of water quality – toxic contaminants (including toxic metal ions (e.g. copper, lead, zinc) and hydrocarbons. Possible sources of the impacts include:</p> <ul style="list-style-type: none"> <li>• Runoff from road surfaces; and</li> </ul> <p>Discharge of solvents, and other industrial chemicals</p> <p>Residual Impacts: Expected to be limited provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Provision of adequate sanitation facilities located outside of the watercourse/riparian area or its associated buffer zone.</li> <li>• Implementation of appropriate stormwater management around the excavations to prevent the ingress of run-off into the excavation and to prevent contaminated runoff into the watercourses.</li> <li>• Provision of adequate sanitation facilities located outside of the wetland/riparian area or its associated buffer zone.</li> <li>• The development footprint must be fenced off from the watercourse and no related impacts may be allowed into the watercourse e.g. water runoff from cleaning of equipment, vehicle access etc.</li> <li>• After construction, the land must be cleared of rubbish, surplus materials and equipment and all parts of the land shall be left in a condition as close as possible to that prior to use.</li> <li>• Maintenance of construction vehicles/equipment should not take place within the watercourse or watercourse buffer.</li> <li>• Maintenance of buffer zones to trap sediments with associated toxins.</li> <li>• Ensure that no operational activities impact on the watercourse or buffer area. This includes edge effects.</li> <li>• Control of waste discharges and do not allow dirty water from operational activities to enter the watercourse.</li> <li>• Regular independent water quality monitoring should form part of operational procedures in order to identify any pollution.</li> <li>• Treatment of any pollution identified should be prioritised accordingly.</li> </ul>
Aquatic Environment	
<p>Increased surface water runoff due to hardened surfaces: During the construction phase of the proposed development the use of heavy machinery, concrete foundations, compacted ground and impermeable surfaces will result in an increase in hardened surfaces. Hardened surfaces reduce infiltration rates and increase runoff volumes and velocities. The runoff from the construction activities is most likely to end up in the Witbank Dam and Olifantsriver. This can have impacts downstream where the increase in flow is concentrated; increase the risk of erosion and sedimentation; destroy</p>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> </ul>

Impact	Possible mitigation measures
<p>riparian vegetation; and destabilise watercourses. A decrease in infiltration can also reduce natural recharge to the shallow and groundwater zones and subsequently may impact on the natural watercourses nearby.</p>	<ul style="list-style-type: none"> <li>• All water systems should be sited, designed and operated to restrict the possibility of damage to the riparian or in-stream habitat.</li> </ul>
<p>Increased erosion and sedimentation: Any bare soil resulting from the construction and associated vegetation clearing will be susceptible to erosion, especially during the rainy season. The increase in erosion and dust generation can result in increased sediment loads. Sedimentation will reduce the water quality which can also affect aquatic life through the smothering of riverine habitat and fish gill clogging.</p>	<ul style="list-style-type: none"> <li>• Initiate catchment management to control and reduce erosive runoff containing suspended sediment.</li> <li>• 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. This minimises the potential for storm water disturbances and reduces the sediment loads to receiving streams.</li> <li>• Where site disturbance is significant and unavoidable, undertake proper storm water management planning in accordance with the DWA's Best Practice Guideline documents.</li> <li>• Retain sediments that are picked up on the project site through the use of sediment-capturing devices. On most sites successful erosion and sedimentation control requires a combination of structural (building required) and vegetative (planting required) practices.</li> <li>• Immediate re-vegetation of all bare soil areas should be undertaken. 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.</li> <li>• The design of water management facilities should include suitable erosion protection measures to ensure that downstream erosion or sedimentation is minimised.</li> <li>• Do not allow loose soil removed to wash away or blow away – keep covered and place in a secure location.</li> <li>• Access roads to the reed bed system, if any, should be regularly maintained and the roads should have an acceptable surface, be free from erosion damage and have effective drainage, preventing the impounding/ponding of water.</li> <li>• Water quality should be monitored regularly according to the monitoring program and appropriate and</li> </ul>

Impact	Possible mitigation measures
<p>Sewerage spill: Raw sewerage will have a severe impact upon the water quality if it enters a dam/river. The sewerage contains elevated levels of nutrients (nitrates and phosphates), disease causing bacteria (in particular E. coli) and large volumes of waste matter. This will make the water undrinkable. The large amount of waste matter will increase the turbidity and provide a habitat for bacteria to breed and feed on the suspended material. Increases in the turbidity of the water will block out sunlight which is necessary for all forms of life to exist in the water. It also blocks the gills of aquatic organisms, making it difficult for them to breathe as well as hunt and catch food. The excess nutrients cause massive algal growth, which could result in eutrophication.</p>	<p>timeous remedial interventions made in the case of non-compliance.</p> <ul style="list-style-type: none"> <li>• Proper planning and design should take place prior to construction to avoid sewerage spills.</li> <li>• Development should always be constructed outside of the 1:100 year flood line of the Olifantsriver or outside of the buffer created for the Witbank Dam, whichever is larger.</li> </ul>
<b>Surface and Groundwater</b>	
<p>Pollution of surface and/or groundwater resources due to the potential release of pollutants, such as chemicals, especially during the construction phase.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• No wastewater or wash water may be released into the environment from construction activities.</li> <li>• Vehicles should regularly be inspected to ensure that any fuel or oil leaks are repaired.</li> <li>• Spill kits must be onsite to clean up any hydrocarbon spillages.</li> <li>• The Wastewater Treatment Plant must treat the wastewater to a quality that at least complies with the Department of Water Affairs' General Limit Standards for discharge of wastewater into a water resource.</li> </ul>
<p>Pollution of surface and/or groundwater resources due to the potential release of wastewater (sewage and wash water).</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• All wastewater (sewage and wash water) must be collected in appropriate holding/conservancy tanks and may not come into contact with the environment prior to treatment in the proposed wastewater treatment plant.</li> <li>• All wastewater must be treated in the proposed wastewater treatment plant.</li> <li>• Sufficient ablution facilities must be provided.</li> <li>• The integrity of the holding/conservancy tanks must be checked at a frequency as determined by the tank suppliers.</li> </ul>
<p>Pollution of surface and/or groundwater resources due to poor waste management.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Waste must be managed according to its hazard classification (i.e. general vs. hazardous waste) and general and hazardous waste streams should not be mixed.</li> <li>• Waste stored onsite must be kept in appropriate containers with lids that can be closed.</li> </ul>

Impact	Possible mitigation measures
<p>Pollution of surface and/or groundwater resources due to the incorrect management of chemical substances and dangerous goods.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Waste must be taken to appropriately licensed facilities for reuse, recycling, recovery or disposal.</li> <li>• No waste may be stored on open soil or within wetlands and/or watercourses.</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• A register must be compiled of all chemical substances and dangerous goods used onsite.</li> <li>• MSDS' (Material Safety Data Sheets) must be maintained for all chemical substances and dangerous goods. The MSDS' must also be displayed onsite.</li> <li>• The chemical substances and dangerous goods must be stored safely and as per the requirements of the MSDS for each chemical substances and dangerous goods. Locked storage areas are preferable.</li> <li>• Drip trays must be readily available onsite and used for any repair work, maintenance work of refuelling undertaken onsite.</li> <li>• Spill kits must be readily available onsite and personnel must be trained on the appropriate procedures to clean hydrocarbon spillages.</li> </ul>
<p>Pollution of surface and/or groundwater resources due to runoff of contaminated stormwater.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Storm water must be diverted around areas where there are pollution sources.</li> <li>• Storm water drainage infrastructure must be regularly inspected for obstructions.</li> <li>• No contaminated storm water may be released into the environment from the construction activities.</li> <li>• Washing or cleaning of equipment or machinery must occur in a designated area and the contaminated wash water must be contained. Such an area could be a plastic drum, a container or a plastic lined pit.</li> </ul>
<p>Pollution of surface and/or groundwater resources due to the incorrect management of concrete mixing.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Concrete should ideally be mixed on an impermeable surface such as a concrete slab.</li> <li>• Cement bags (new and used) must be stored under roof or in closed containers where they will not be exposed to rain.</li> <li>• Dry concrete must be removed and disposed of together with other building rubble.</li> <li>• Ready-mix concrete trucks may clean chutes into foundations, but not elsewhere onsite.</li> </ul>
<p>Unsustainable utilisation of groundwater.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Determine the sustainable yield of each borehole that is to be used for the development.</li> <li>• Only abstract groundwater at the sustainable yield rate, as determined from the borehole yield pump tests.</li> <li>• Install water meters to measures the quantity of water abstracted on a daily basis from each borehole.</li> </ul>



Impact	Possible mitigation measures
	<ul style="list-style-type: none"> <li>• Regularly inspect reservoirs, water pipes, JoJo tanks and taps for leakages and repair where necessary.</li> <li>• All hose pipes must be fitted with the correct nozzle attachments and high-pressure hoses must be used where possible.</li> </ul>
<p>Pollution of surface and/or groundwater resources due to sewage spills from chemical toilets or ablution facilities.</p>	<ul style="list-style-type: none"> <li>• Sufficient ablution facilities must be provided.</li> <li>• Chemical toilets must be serviced regularly.</li> <li>• Any spillages from the chemical toilets must immediately be cleaned and contaminated soil disposed of as hazardous waste.</li> <li>• Ablution facilities must be regularly cleaned.</li> <li>• Should toilets run slowly or become blocked, this should be investigated to ensure that this is not due to a broken or blocked pipe underground.</li> <li>• Any broken or blocked pipes must be repaired.</li> </ul>
Fauna	
<p>Loss of exotic species, declared weeds and invader plants: It is recommended that noxious alien trees are eradicated before construction is commenced. However, inevitably new gardens will be established by planting exotics. This may ecologically not be puritan but can be expected to favour an increase of garden birds.</p> <p>Residual Impacts: None anticipated.</p>	<ul style="list-style-type: none"> <li>• This is a positive impact and no mitigation measures are required.</li> </ul>
<p>Loss of ecological sensitive and important vegetation units: When expressed as vertebrate habitat the water bodies are deemed as sensitive and their integrity are not to be jeopardized during the construction or operational phases.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• The area cleared for the proposed project must be kept to a minimum.</li> <li>• All areas designated as sensitive in a sensitivity mapping exercise should be incorporated into an open space system.</li> <li>• The open space system should be managed in accordance with an Ecological Management Plan that complies with the Minimum Requirements for Ecological Management Plans and forms part of the EMP.</li> <li>• The open space system should be fenced off prior to construction commencing.</li> </ul>
<p>Loss of ecosystem function (e.g. reduction in water quality, soil pollution): Storm water run-off from the hard-cover areas of the development could amount to significant volumes inundating the waterbodies, unless contained. Unmanaged water masses and quality can be expected to harm the dam, river and streambeds.</p>	<ul style="list-style-type: none"> <li>• Total sealing of paved areas such as parking lots, driveways, pavements and walkways should be avoided. Permeable material should rather be utilized for these purposes.</li> <li>• The crossing of natural drainage systems should be minimized and only constructed at the shortest possible route, perpendicular to the natural drainage system. Where possible, bridge</li> </ul>

Impact	Possible mitigation measures
<p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<p>crossings should span the entire stretch of the buffer zone.</p>
<p>Loss of faunal habitat: The likelihood that the proposed development will displace the biological components of the plains and slopes is high, but the ecological impact of this loss is spatially and ecologically deemed as small.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• The area cleared for the proposed project must be kept to a minimum.</li> <li>• All areas designated as sensitive in a sensitivity mapping exercise should be incorporated into an open space system</li> <li>• The open space system should be managed in accordance with an Ecological Management Plan that complies with the Minimum Requirements for Ecological Management Plans and forms part of the EMP.</li> <li>• The open space system should be fenced off prior to construction commencing</li> </ul>
<p>Loss/displacement of threatened or protected fauna: Few, if any, of the Red Data species still persisting on the terrestrial and rupicolous habitats will survive. These will be displaced in the face of the planned development. Such a loss will be the ultimate stage of a spiral decline of species richness commenced decades ago.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• All outside lighting should be directed away from sensitive areas. Fluorescent and mercury vapour lighting should be avoided and sodium vapour (yellow) lights should be used wherever possible.</li> <li>• All storm water structures should be designed so as to block amphibian and reptile access to the road surface.</li> </ul>
Flora	
<p>Removal of natural, good condition vegetation:</p> <ul style="list-style-type: none"> <li>• Destruction of vegetation;</li> <li>• Potential loss of individuals of large tree species and associated microhabitats;</li> <li>• Potential loss of species of conservation concern and their habitats;</li> <li>• Potential increase in runoff and erosion;</li> <li>• Potential spread of alien invasive vegetation; and</li> <li>• Potential contamination of soils with hydrocarbons and/or other pollutants.</li> </ul> <p>Residual Impacts: A decline in land remaining in CBA and ESA areas and a decrease in the number of species of conservation concern.</p>	<p><b>Planning phase</b></p> <ul style="list-style-type: none"> <li>• No areas of high sensitivity should be unduly fragmented.</li> <li>• Ideally, an on-site ecologist should be present when excavation takes place to ensure that any uncovered species of conservation concern are protected from destruction. Note that the species could be dormant until favourable conditions arise.</li> </ul> <p><b>Construction Phase</b></p> <ul style="list-style-type: none"> <li>• An independent Ecological Control Officer (ECO) should be appointed to oversee construction.</li> <li>• The construction footprint should incorporate as much grassland as possible into open space planning; especially the area marked as high sensitivity, which contains the highest concentration of plants of conservation concern.</li> <li>• A permanent fence or demarcation must be erected around the construction area to prevent access or</li> </ul>

Impact	Possible mitigation measures
	<p>edge effects to surrounding environs that will not be developed.</p> <ul style="list-style-type: none"> <li>• Prohibit vehicular or pedestrian access into natural areas beyond the demarcated boundary of the construction area.</li> <li>• Formalise access roads and make use of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas that will not be developed.</li> <li>• Where the localities of provincially protected and threatened plants cannot be avoided by construction, it must be removed - where possible and feasible - and either used during rehabilitation or be relocated to dedicated open space or conserved areas. These plants can only be removed and relocated with permission (permit) from the Mpumalanga Parks Board (MPB).</li> <li>• Re-vegetate developed areas with indigenous plant species as soon as possible. This will prevent erosion and invasion by alien invasive plant species.</li> </ul> <p><b>General</b></p> <ul style="list-style-type: none"> <li>• A rehabilitation plan, using indigenous species from the study area, must be implemented that will restore disturbed areas.</li> <li>• No open fires are permitted under trees or within naturally vegetated areas.</li> <li>• No vegetative matter may be removed for firewood or any other purpose other than the approved activity.</li> <li>• Do not remove any large tree without the permission of the ECO. In all areas, mark trees earmarked for removal prior to felling for approval by the ECO. No protected trees or plants may be removed without the relevant permits from the local authority.</li> <li>• Formalise access roads and make use of existing roads and tracks where feasible, rather than creating new routes through naturally vegetated areas.</li> <li>• Workers may not tamper or remove flora and neither may anyone collect seed from the plants without permission from the local authority.</li> <li>• Do not permit vehicular or pedestrian access into natural areas.</li> </ul>
Destruction of 'Declining', 'Rare' plant species and provincially protected plants	<ul style="list-style-type: none"> <li>• It is recommended that rocky ridge areas be regarded as sensitive due to the concentration of plants of conservation concern in this areas. In</li> </ul>

Impact	Possible mitigation measures
<p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<p>addition, the Gauteng Ridge Policy (GDACEL, 2001) should be followed as best practise. This policy discourages development on ridges or rocky outcrops. These areas are characterized by high spatial heterogeneity due to the range of differing aspects (north, south, east, west and variations thereof), slopes and altitudes all resulting in differing soil (e.g. depth, moisture, temperature, drainage, nutrient content), light and hydrological conditions (GDACEL, 2001) and are usually characterized by high biodiversity and therefore their protection contributes to conservation of biodiversity. According to climate change modelling, level topography will be particularly sensitive to future climate change and major extinction in these areas can be expected (Rutherford <i>et al.</i>, 2001). As such, in a landscape affected by climate change, chances for species survival will be higher on ridges (GDACEL, 2011).</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• In order to minimise the potential destruction of protected and threatened plants, it is advised that a summer assessment be undertaken to the sensitive areas in order to identify any species flowering or those that might have been overlooked during winter surveys.</li> <li>• Construction workers may not tamper or remove these plants and neither may anyone collect seed from the plants without permission from the local authority.</li> </ul>
<p>Destruction and deterioration of the moist grassland.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Minimum buffer zone, as recommended by the wetland specialist, around the moist grassland must be regarded as No-Go areas for the development. Instead these areas should be incorporated into open space planning</li> <li>• In order to maintain catchment areas to the moist grassland, use permeable paving within the development.</li> </ul>

Impact	Possible mitigation measures
	<ul style="list-style-type: none"> <li>• Make use of existing roads and tracks where feasible, rather than creating new routes through moist grassland areas.</li> <li>• Runoff from roads must be managed to avoid erosion and pollution problems.</li> <li>• Remove only the vegetation where essential for construction and do not allow any disturbance to the adjoining natural vegetation cover.</li> <li>• Protect all areas susceptible to erosion and ensure that there is no undue soil erosion resultant from activities within and adjacent to the construction camp and work areas.</li> <li>• Prevent polluted water from reaching the watercourse and surrounding moist grasslands.</li> <li>• An ecologically sound, storm water management plan must be implemented during construction and ensure that the storm water management of the completed development is adequate to prevent deterioration of the moist grasslands, Witbank Dam and the Olifantsriver.</li> <li>• The construction storm water plan could include berms or swales to allow infiltration of rainwater into the soil on the site, thereby retaining the function of the study site as a catchment area for the moist grassland, Witbank Dam and the Olifantsriver.</li> <li>• Do not allow storm water to be canalised.</li> <li>• Prevent contamination of rainwater on the site.</li> <li>• Place and maintain erosion control barriers as appropriate to prevent sedimentation into the watercourse and moist grasslands.</li> <li>• Trucks and equipment should only be washed in dedicated areas and the dirty water is not allowed to discharge into the watercourse or surrounding natural vegetation.</li> </ul>
<p>Loss of ecological function of the moist grasslands.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Implement an ecologically sound storm water management plan that will allow rainwater within the development to penetrate the soil e.g. via berms or swales as well as permeable paving.</li> <li>• Ensure that the stormwater management system prevents contamination of stormwater and that no polluted water reach the moist grasslands, Witbank Dam and Olifantsriver.</li> <li>• Cordon off the main developed area from the surrounding natural vegetation and moist grasslands</li> </ul>

Impact	Possible mitigation measures
	<p>to prevent any disturbances into the surrounding areas.</p> <ul style="list-style-type: none"> <li>Place and maintain erosion control barriers as appropriate to prevent sedimentation into the watercourse and moist grasslands.</li> <li>Incorporate the moist grasslands into open space planning and maintenance.</li> </ul>
<p>Deterioration and loss of natural vegetation.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>Incorporate the rocky grassland into open space planning.</li> <li>Regular surveys to ensure the survival of plants of conservation concern within the rocky grassland.</li> <li>In consultation with a specialist, consider a burning programme to maintain the rocky grassland.</li> </ul>
<p>Invasion by alien invasive plant species:</p> <ul style="list-style-type: none"> <li>Increase in alien invasive plant species and densities on the site.</li> </ul> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<p><b>Planning phase</b></p> <p>Alien invasive species that were identified within the study area should be removed prior to construction-related soil disturbances. By removing these species, the spread of seeds will be prevented into disturbed soils. This could therefore have a positive impact on the surrounding natural vegetation.</p> <p><b>Construction Phase</b></p> <ul style="list-style-type: none"> <li>All alien seedlings and saplings must be removed as they become evident for the duration of construction.</li> <li>Manual/mechanical removal is preferred to chemical control.</li> <li>All construction vehicles and equipment, as well as construction material should be free of plant material. Therefore, all equipment and vehicles should be thoroughly cleaned prior to access to the construction areas. This should be verified by the ECO.</li> <li>Dispose of the eradicated plant material at an approved solid waste disposal site.</li> </ul> <p><b>Operational Phase</b></p> <ul style="list-style-type: none"> <li>Dispose of eradicated plant material at an approved solid waste disposal site.</li> <li>Compile and implement an alien invasive monitoring plan to remove alien invasive plant species as they become apparent.</li> <li>Monitor all sites disturbed by construction activities for colonisation by exotics or invasive plants and control these as they emerge.</li> <li>Ensure that only properly trained people handle and make use of chemicals.</li> </ul>



Impact	Possible mitigation measures
	<ul style="list-style-type: none"> <li>• Rehabilitate all areas cleared of invasive plants as soon as practically possible, utilising specified methods and species.</li> <li>• In addition, only indigenous plant species naturally occurring in the area should be used during the rehabilitation of the areas affected by the construction activities.</li> </ul>
<p>Bush densification:</p> <ul style="list-style-type: none"> <li>• Increase in bush encroacher species; and</li> <li>• Change in vegetation structure.</li> </ul> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<p><b>Construction Phase</b></p> <ul style="list-style-type: none"> <li>• Leave as much natural vegetation intact as possible.</li> <li>• Do not disturb soil unnecessarily.</li> <li>• Monitor rehabilitation and do not allow grazing to take place until such time that re-vegetation was found to be successful.</li> <li>• Ensure that areas outside of the operational footprint that were disturbed, are adequately rehabilitated and that dense stands of encroacher species are prevented.</li> <li>• Develop a burning, cutting and/or grazing management plan with an ecologist that takes into account safety of the operation, local by-laws and national legislation, in order to effectively manage veld areas.</li> </ul> <p><b>Operational Phase</b></p> <ul style="list-style-type: none"> <li>• Monitor the establishment of dense stands of encroacher species and remove as soon as detected.</li> <li>• A rehabilitation plan, using indigenous species from the study area, must be implemented that will restore disturbed areas beyond the footprint of the infrastructure to what it was prior to construction, thereby making the impact on the remainder of the site negligible in the long term.</li> </ul>
<b>Heritage Resources</b>	
<p>Disturbance or destruction of cultural and heritage resources.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<p>The subterranean presence of archaeological or historical sites, features or objects should always be kept in mind. Should any be uncovered during the development process, an archaeologist should be called in to investigate and recommend on the best way forward. The presence of other low stone packed or unmarked graves should also be kept in mind.</p> <p>For Grave Site</p> <ul style="list-style-type: none"> <li>• Archaeological mitigation measures need to be implemented.</li> </ul>
<b>Palaeontological Resources</b>	

Impact	Possible mitigation measures
<ul style="list-style-type: none"> <li>• Construction and development activities: <ul style="list-style-type: none"> <li>▪ Earth moving equipment/machinery (front end loaders, excavators, graders, dozers); and</li> <li>▪ Sealing-in or destruction of fossils by development, vehicle traffic and human disturbance.</li> </ul> </li> </ul> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Care must be taken during the digging of foundations and removing topsoil, subsoil and overburden.</li> <li>• If any paleontological material is exposed during digging, excavating, drilling or blasting SAHRA must be notified. All construction activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures.</li> <li>• These recommendations should form part of the EMP of the project.</li> <li>• Mitigation measures and recommendations as outlined in the Palaeontological Impact Assessment Report should be implemented onsite.</li> </ul>
<b>Air Quality and Noise</b>	
<p>Generation of dust.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Implement dust suppression techniques.</li> <li>• Limit vegetation clearance until it is necessary for soil stripping.</li> <li>• Cordon off all construction areas with suitable materials in order to limit dust travelling into surrounding areas.</li> </ul>
<p>Release of vehicle emissions from vehicles.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Regular maintenance of vehicles to minimise the release of emissions.</li> </ul>
<p>Generation of nuisance and noise.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Noisy activities must be scheduled during times of the day that will result in the least disturbance to adjacent sensitive receptors.</li> <li>• Noisy work must be avoided on weekends and public holidays.</li> </ul>
<b>Land Capability</b>	
<p>Construction of industrial complexes, business complexes, tourism complexes, vehicle parking areas, roads etc.: The current arable, grazing or wilderness land capability will cease completely until the structures is removed.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• All mitigation measures applied on soils will mitigate land capability as far as possible.</li> </ul>
<p>Possible contamination of soil by spillages of fuel or oil by mechanical equipment: Soil physical and chemical properties will be adversely affected and will cause some reduction in land capability.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• All mitigation measures applied on soils will mitigate land capability as far as possible.</li> </ul>

Impact	Possible mitigation measures
<p>Possible soil erosion at exposed building footprints due to higher runoff: Soil erosion will adversely affect land capability.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• All mitigation measures applied on soils will mitigate land capability as far as possible.</li> </ul>
<b>Soil</b>	
<p>The construction of structures that cover the soil surface by means of concrete, tar or paving:</p> <ul style="list-style-type: none"> <li>• Compaction of the soil surface for building foundations, parking areas etc. will alter the soil's physical properties negatively; and</li> <li>• Covering the soil surface with concrete, tar or paving will cause productive functioning of the soil to cease completely.</li> </ul> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Contain construction footprint as far as possible.</li> <li>• Prevent removal of the natural vegetation cover where possible.</li> </ul>
<p>Possible contamination of soils by spillages of fuel or oil by mechanical equipment. Soil physical and chemical properties will be adversely affected.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Spill kits must be readily available on site.</li> <li>• All accidental fuel and oil spillages will be cleaned up immediately.</li> <li>• Contaminated soil will be disposed at a suitable disposal facility.</li> <li>• All mechanical equipment will be serviced at an approved facility.</li> </ul>
<p>Possible soil erosion at exposed building footprints due to higher runoff:</p> <ul style="list-style-type: none"> <li>• Possible soil erosion at exposed construction sites where the current natural vegetation were removed.</li> </ul> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Implement runoff control measures and structures during the first stages of construction as far as possible.</li> <li>• Contain construction footprint as far as possible.</li> <li>• Prevent removal of the natural vegetation cover where possible.</li> </ul>
<p>Construction, use and maintenance of industrial complexes, business complexes, tourism complexes, vehicle parking areas, roads etc.:</p> <ul style="list-style-type: none"> <li>• All impacts on soils during the construction phase will remain during the operational phase. The productive functioning of soil at areas covered by concrete, tar or paving will remain ceased.</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluation of the runoff control system and structures.</li> <li>• Rectification where structures are inadequate.</li> <li>• Frequent maintenance where necessary and prompt repair after damages caused by any nature.</li> </ul>

Impact	Possible mitigation measures
Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.	
<p>Soil erosion due to the clearance of vegetation.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Limiting vegetation clearance until it is necessary for soil stripping.</li> <li>• Implement adequate erosion prevention measures, such as measures to dissipate runoff water velocities.</li> <li>• Implement adequate storm water management measures.</li> </ul>
Soil compaction to create foundations for buildings and other associated infrastructure.	<ul style="list-style-type: none"> <li>• Soils should be moved when dry, as far as possible.</li> <li>• Excessively heavy vehicles should not be used for earthmoving activities. This will minimise compaction of soil.</li> </ul>
<p>Soil pollution due to the incorrect management of chemical substances and dangerous goods.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Use drip trays for any machinery and/or vehicle repair work.</li> <li>• Immediately repair any leaking machinery or vehicles.</li> <li>• Place oil drums on impermeable surfaces or plastic liners.</li> <li>• Immediately clean any hydrocarbon spillages and dispose of as hazardous waste.</li> </ul>
<p>Soil pollution due to poor waste management.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Waste must be managed according to its hazard classification (i.e. general vs. hazardous waste) and general and hazardous waste streams should not be mixed.</li> <li>• Waste stored onsite must be kept in appropriate containers with lids that must be kept closed.</li> <li>• Waste must be taken to appropriately licensed facilities for reuse, recycling, recovery or disposal.</li> <li>• No waste may be stored on open soil or within wetlands and/or watercourses.</li> </ul>
<p>Soil pollution due to potential spillages from chemical toilets or leakages from ablution facilities.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Sufficient ablution facilities must be provided.</li> <li>• Chemical toilets must be serviced regularly.</li> <li>• Any spillages from the chemical toilets must immediately be cleaned and the contaminated soil disposed of as hazardous waste. Safe Disposal Certificates must be obtained and kept on record.</li> </ul>
<p>Soil pollution due to the incorrect management of concrete mixing.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Concrete should ideally be mixed on an impermeable surface such as a concrete slab.</li> <li>• Cement bags (new and used) must be stored under roof or in closed containers where they will not be exposed to rain.</li> <li>• Dry concrete must be removed and disposed of together with other building rubble.</li> <li>• Ready-mix concrete trucks may clean chutes into foundations, but not elsewhere onsite.</li> </ul>

Impact	Possible mitigation measures
<p>Soil pollution due to runoff of contaminated stormwater.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Storm water must be diverted around areas where there are pollution sources.</li> <li>• Storm water drainage infrastructure must be regularly inspected for obstructions.</li> <li>• No contaminated storm water may be released into the environment from the construction activities.</li> <li>• Washing or cleaning of equipment or machinery must occur in a designated area and the contaminated wash water must be contained. Such an area could be a plastic drum, a container or a plastic lined pit.</li> </ul>
<p>Soil erosion due to inefficient rehabilitation of construction areas.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly and rehabilitation of the site is undertaken.</p>	<ul style="list-style-type: none"> <li>• Areas under rehabilitation must be cordoned off to prevent pedestrian and vehicular access.</li> <li>• Re-vegetation must be undertaken using indigenous species.</li> <li>• Areas under rehabilitation must be monitored to ensure successful vegetation establishment. Organic fertilizers and topsoil should be added to areas where vegetation establishment is not effective.</li> </ul>
Socio-economic	
<p>Generation of a large number of job opportunities.</p> <p>Residual Impacts: Permanent, positive impact.</p>	<p>This is a positive impact and no mitigation measures are therefore required.</p>
<p>The stimulation of the local and provincial economy.</p> <p>Residual Impacts: Permanent, positive impact.</p>	<p>This is a positive impact and no mitigation measures are therefore required.</p>
<p>Potential increase in crime due to the influx of workers, especially during the construction phase.</p> <p>Residual Impacts: None anticipated provided that the mitigation measures are implemented correctly.</p>	<ul style="list-style-type: none"> <li>• Reference checks should be conducted on all workers before they are appointed.</li> <li>• Workers should not be allowed to leave the construction site during the day and should be transported to and from the site on a daily basis.</li> </ul>
Traffic	
<p>Increase in traffic volumes to the site in both the construction and operational phases.</p> <p>Residual Impacts: Higher traffic volumes.</p>	<ul style="list-style-type: none"> <li>• Drivers must adhere to all speed restrictions and road rules.</li> <li>• Routing of vehicles must take other road users into account.</li> <li>• Load restrictions must be adhered to.</li> <li>• Speed bumps must be implemented at the construction site and speed limits adhered to.</li> </ul>

## 9.11 Outcome of the site selection matrix

The outcome of the site selection matrix was discussed under Section 8.1.1 of this report.

## **9.12 Motivation for not considering alternatives (including development footprint alternatives)**

The motivation for not considering certain alternatives was discussed under Section 8.1 of this report.

## **9.13 Concluding statement**

The preferred alternative development footprint is the proposed project/development (Commandpark Extension 4 Township Establishment) and the preferred location for the development is the four project properties, as detailed under Section 4 of this report.



## 9.14 Summary of the findings and recommendations of specialist reports complying with Appendix 6 of the EIA Regulations, 2014, and an indication as to how these findings and recommendations have been included in this Environmental Impact Assessment Report

### Ecological Fauna and Flora Habitat Survey

Ecological sensitivity at most of the site, the terrestrial zone, is medium-low (mainly low). Groundworks including excavations have taken place at large parts of the site in the past. Overall, the grassland appears to be extensively disturbed at the site. The in-channel Witbank Dam and its riparian and buffer zones, despite being conspicuously disturbed, remains a corridor of particular conservation concern in the larger area and is of medium-high sensitivity. The in-channel dam, with its riparian zone and buffer zone (32 m), is excluded from the proposed footprint. Following the mitigations which will be upheld and planned footprint for development all the impact risks listed above are moderate or low.

A visibly disturbed grassland is present at the site. A narrow riparian zone that contains some wetland plant species is present along the water edge of the Witbank Dam. Clumps of alien invasive trees, notably *Eucalyptus* species and alien invasive Australian *Acacia* species are present at the site. Pioneer grasses and forbs, including several alien invasive herbaceous weed species are present at areas where groundworks have taken place well as where other disturbances such as informal dumping occurred.

Indigenous grass species at the site include *Cynodon dactylon*, *Aristida congesta*, *Eragrostis chloromelas*, *Eragrostis gummiflua*, *Pogonarthria squarrosa*, *Melinis repens*, *Urochloa mosambicensis*, *Perotis patens* and *Hyparrhenia hirta*. Indigenous herbaceous plant species such as *Helichrysum rugulosum*, *Helichrysum nudifolium*, *Polydora poskeana*, *Helichrysum rugulosum*, *Pollichia campestris*, *Chamaecrista mimosoides*, *Ipomoea crassipes* and *Cleome maculata* are present. The shrub, *Seriphium plumosum* (bankrupt bush) occurs at a number of places, at the site. The herbaceous shrub *Gomphocarpus fruticosus* is widespread at the site.

Clumps of alien invasive tree species include species such as *Eucalyptus camaldulensis* and *Acacia decurrens* are found at the site. Many alien, invasive herbaceous weed species are present at the site including *Solanum sisymbriifolium*, *Schkuhria pinnata*, *Tagetes minuta*, *Conyza* species, *Datura* species, exotic *Verbena* species, *Plantago lanceolata*, *Bidens pilosa*, *Alternanthera pungens* and *Acanthospermum australe*.

Wetland plant species at the riparian zone along the edges of the dam include sedges such as *Cyperus denudatus*, *Cyperus congestus* and *Schoenoplectus corymbosus* and rushes such as *Juncus oxycarpus*. The megagraminoids *Typha capensis* (Bulrush) and *Phragmites australis* (Reed) occur at some patches at the riparian zone.

Various ecological disturbances are conspicuous at the site. Extensive groundworks, excavations, diggings and clearing of vegetation have taken place at large parts of the site in the past. Clumps of alien invasive tree species are found at the site. Buildings and roads are present at the site. Fire places and clearings are encountered at the riparian zone. Large pylons and a bridge cross the site. Rocky ridges are absent at the site. No Threatened or Near Threatened or any other plant or animal species of particular conservation concern appear to be present at the site.

Grassland at the site is represented by the Eastern Highveld Grassland (Gm 12) vegetation type which is listed as a Threatened Ecosystem, Vulnerable, according to the National List of Threatened Ecosystems (2011). The vegetation at the site has been transformed or modified in the past and is currently significantly degraded. There is little scope for the restoration and sustainable conservation of a natural grassland area at the site.

Site is part of the Olifants Water Management Area, WMA 4. The site is not part of a Freshwater Ecosystem Priority Area (FEPA) or wetland cluster (Nel *et al.*, 2011a, 2011b). The scope for the site to be part of a corridor of particular conservation importance is small. The in-channel Witbank Dam with its riparian and buffer zones are, despite being a conspicuously

disturbed area, a corridor of particular conservation importance in the larger area. The in-channel dam, with its riparian zone and buffer zone (32 m), is excluded from the proposed footprint. Exotic declared invaders such as *Melia azedarach* (Syringa) the green wattle, *Acacia decurrens* or the black wattle, *Acacia mearnsii*, should not be planted or allowed to establish. If the development is approved an opportunity exists to cultivate indigenous vegetation at the site which could benefit urban biodiversity conservation efforts in the larger area.

Please note: Full report is attached in colour under Appendix D.

### **Wetland Assessment**

Wetlands such as floodplain wetlands, channelled valley-bottom wetlands, unchannelled valley-bottom wetlands, depressions, seeps and wetland flats appear to be absent at the site. In conclusion no wetlands are found at the site. An artificial waterbody, a large in-channel dam, is present at the site. This in-channel dam is the Witbank Dam. The Witbank Dam receives water from the Olifants River and other tributaries of the Olifants River system. The Witbank Dam acts as a sink for phosphates (Dabrowski & De Klerk, 2013). The water quality in general in the larger area is known for low scores in recent times.

Wetland plant species at the riparian zone along the edges of the dam include sedges such as *Cyperus denudatus*, *Cyperus congestus* and *Schoenoplectus corymbosus* and rushes such as *Juncus oxycarpus*. The megagraminoids *Typha capensis* (Bulrush) and *Phragmites australis* (Reed) occur at some patches at the riparian zone.

Present ecological status (PES) of the in-channel dam, the Witbank Dam at the site is CATEGORY C which means the watercourse is moderately modified but with some loss of natural habitats. Ecological Importance and Sensitivity (EIS) of the Witbank Dam at the site is Category C which is Moderate and refers to watercourses that are considered to be ecologically important and sensitive on a provincial or local scale. The biodiversity of these floodplains is not usually sensitive to flow and habitat modifications. They play a small role in moderating the quantity and quality of water of major rivers. It should be mentioned that the assessment of the PES given here could be viewed as a compromise assessment for the Witbank Dam in its current state. In a sense the watercourse system had been extensively modified in the past, and strictly being interpreted as such, the scores would be lower.

Site is part of the Olifants Water Management Area, WMA 4. The site is not part of a Freshwater Ecosystem Priority Area (FEPA) or wetland cluster (Nel *et al.*, 2011a, 2011b). No Threatened or Near Threatened wetland plant or wetland animal species or any other wetland plant or wetland animal species of particular conservation concern appear to be resident at the site. The scope for the terrestrial zone at the site to be part of a corridor of particular conservation importance is small. The in-channel Witbank Dam with its riparian and buffer zones are, despite being a conspicuously disturbed area, a corridor of particular conservation importance in the larger area. The in-channel dam, with its riparian zone and buffer zone (32 m), is excluded from the proposed footprint.

Given the likely absence of sensitive species as residents, as well as the location, setting and current ecological status of the site a 32 m buffer zone from the edge of the riparian zone is recommended as a practical buffer zone for the conservation of the riparian zone along the Witbank Dam at the site specifically. No waste or rubble whatsoever should be dumped at the watercourse and buffer zone

The in-channel dam, with its riparian zone and buffer zone, is unlikely to be significantly impacted by the proposed developments when the watercourse and bufferzone are set aside as a no-go zone for developments. If the development is approved the construction should be planned in such a manner that surface flow function well while erosion is limited. There is no distinct indication that interflow plays an important role in the maintenance of the non-perennial river. The geomorphological setting and flow regime would be similar post development as to prior the development, if the development is approved.

The Negative Risk Rating in accordance with a risk matrix based on Section 21 c and (i) water use Risk Assessment Protocol and Notice 509 of 2016 (Government Gazette No. 40229: 105-133; Republic of South Africa) at the site is Low.

Please note: Full report is attached in colour under Appendix D.

### **Phase 1 Heritage Impact Assessment**

Background research indicates that there are some cultural heritage sites and features in the larger geographical area within which the study area falls. During the field assessment only one site of any cultural heritage significance was identified and recorded. Due to 26

extensive impacts from recent agricultural and quarrying activities the original natural and historical landscape of the area has been significantly altered, and if any archaeological and/or historical sites did exist here it would more than likely have been disturbed or completely destroyed as a result of these activities. Other impacts include Eskom Powerline servitudes and Pylons.

The Grave Site recorded during the assessment is located on Portion 563 of Naauwpoort 335JS, and contains a double grave (2 burials) of a husband and wife. The 1st is that of Willem Du Rand (passed away in 1932?) and the 2nd is that of Petronella Margaretha Du Rand (nee Harmse) who passed away in 1947. Both graves are therefore older than 60 years of age and protected by the National Cultural Heritage Resources Act.

Graves always carry a High Significance Rating in terms of Cultural Heritage and the following Mitigation Measures are recommended:

1. Preserving In Situ and Managing through a Graves Heritage Management Plan OR
2. Exhumation and Relocation after detailed Public Participation and the obtaining of relevant permissions

It should be noted that although all efforts are made to locate, identify and record all possible cultural heritage sites and features (including archaeological remains) there is always a possibility that some might have been missed as a result of grass cover and other factors. The subterranean nature of these resources (including low stone-packed or unmarked graves) should also be taken into consideration. Should any previously unknown or invisible sites, features or material be uncovered during any development actions then an expert should be contacted to investigate and provide recommendations on the way forward.

Finally, from a Cultural Heritage perspective it is recommended that the proposed development should be allowed to continue taking into consideration the mitigation measures provided above.

Please note: Full report is attached in colour under Appendix D.

### **Palaeontological Impact Assessment: Desktop Study**

There is no objection (see Recommendation B) to the development, it is not necessary to request a Phase 1 Palaeontological Impact Assessment: Field Study to determine whether the development will affect fossiliferous outcrops as the palaeontological sensitivity is **VERY LOW**. A Phase 1 Palaeontological Field Study is only required if a fossiliferous formation (Karoo Supergroup) or fossils are found during construction.

A Desktop Study was done in order to alert to the overlying Vryheid Formation. This project may benefit the economy, the life expectancy of the community, the growth of the community, and social development in general. Preferred choice: Only one Option is presented as is possible.

The following should be conserved: if any palaeontological material is exposed during clearing, digging, excavating, drilling or blasting SAHRA must be notified. All construction activities must be stopped, a 30 m no-go barrier constructed and a

palaeontologist should be called in to determine proper mitigation measures. Consultation with parties was not necessary and the development may go ahead.

In conclusion:

- a. All the land involved in the development was assessed and none of the property is unsuitable for development.
- b. All information needed for the Phase 1 Palaeontological Impact Assessment and Field Study was provided by the Consultant. All technical information was provided by Anton Pelsler.
- c. Areas that would involve mitigation and may need a permit from the South African Heritage Resources Agency are discussed.
- d. The following should be conserved: if any palaeontological material is exposed during clearing, digging, excavating, drilling or blasting, SAHRA must be notified. All development activities must be stopped and a palaeontologist should be called in to determine proper mitigation measures.
- e. Condition in which development may proceed: It is further suggested that a Section 37(2) agreement of the Occupational, Health and Safety Act 85 of 1993 is signed with the relevant contractors to protect the environment (fossils) and adjacent areas as well as for safety and security reasons.

Please note: Full report is attached in colour under Appendix D.

### **Agricultural Agro-ecosystem Assessment**

The proposed development will have an acceptable low impact on agricultural resources and agricultural production and it is recommended that the project is approved.

The ecological status of the wetlands intersected by proposed industrial zones on Portion 563 (Figure 6) and the impact thereon need to be assessed by a wetland specialist. The industrial zones should not be expanded onto the remainder of portion 25 and portion 565, situated to the east of the Witbank Dam. The impact assessment rating was based on the assumption that this section will be developed for tourism. No natural soils may be harvested or disturbed within these portions to be used for any constructions purposes within the industrial footprint to the west of the Witbank Dam.

Proper storm water management structures should be constructed in the first phase of the development in order to prevent soil erosion on the fairly steep slopes that occur within the planned industrial zones.

The agricultural sensitivity was thoroughly assessed by means of a detailed soil, land capability and land use assessment and there are no uncertainties or gaps in knowledge or data. There are a lack of knowledge in terms of the proposed structures and related impacts within the proposed the tourism development zones.

Please note: Full report is attached in colour under Appendix D.

## **10. ENVIRONMENTAL IMPACT STATEMENT**

### **10.1 Summary of the key findings of the Environmental Impact Assessment**

The summary of the key findings of this Environmental Impact Assessment process are as follows:

- A visually disturbed grassland is present at the site. A narrow riparian zone that contains some wetland plants species is present along the water edge of the Witbank Dam. Ecological sensitivity at most of the site, the terrestrial zone, is medium-low (mainly low).
- No Threatened or Near Threatened or any other plant or animal species of particular conservation concern appear to be present at the site.
- Grassland at the site is represented by the Eastern Highveld Grassland (Gm 12) vegetation type which is listed as a Threatened Ecosystem, Vulnerable, according to the National List of Threatened Ecosystems (2011). The vegetation at the site has been transformed or modified in the past and is currently significantly degraded. There is little scope for the restoration and sustainable conservation of a natural grassland area at the site.
- The site is not part of a Freshwater Ecosystem Priority Area (FEPA) or wetland cluster (Nel *et al.*, 2011a, 2011b).
- An artificial waterbody, a large in-channel dam, is present at the site. This in-channel dam is the Witbank Dam. The Witbank Dam receives water from the Olifants River and other tributaries of the Olifants River system. The Witbank Dam acts as a sink for phosphates (Dabrowski & De Klerk, 2013). The water quality in general in the larger area is known for low scores in recent times.
- Present ecological status (PES) of the in-channel dam, the Witbank Dam at the site is Category C which means the watercourse is moderately modified but with some loss of natural habitats.
- Ecological Importance and Sensitivity (EIS) of the Witbank Dam at the site is Category C which is Moderate and refers to watercourses that are considered to be ecologically important and sensitive on a provincial or local scale.
- No Threatened or Near Threatened wetland plant or wetland animal species or any other wetland plant or wetland animal species of particular conservation concern appear to be resident at the site.
- The in-channel Witbank Dam with its riparian and buffer zones are, despite being a conspicuously disturbed area, a corridor of particular conservation importance in the larger area. The in-channel dam, with its riparian zone and buffer zone, is unlikely to be significantly impacted by the proposed developments when the watercourse and bufferzone (32m) are set aside as a no-go zone for developments.
- The proposed development will have an acceptable low impact on agricultural resources and agricultural production.
- As per the Heritage Impact Assessment, a Grave Site was identified on Portion 563 of the Farm Naauwpoort 335 JS. Recommended mitigation measures include either (a) preserving in-situ and management through a Grave Heritage Management Plan OR (b) exhumation and relocation after a detailed public participation and obtaining of relevant permissions. From a Cultural Heritage perspective it is recommended that the proposed development should be allowed to continue, taking into consideration the mitigation measures proposed.
- As per the Palaeontological Impact Assessment: Desktop Study, there is no objection to the development, it is not necessary to request a Phase 1 Palaeontological Impact Assessment: Field Study to determine whether the development will affect fossiliferous outcrops as the palaeontological sensitivity is **VERY LOW**. A Phase 1 Palaeontological Field Study is only required if a fossiliferous formation (Karoo Supergroup) or fossils are found during construction.
- The total land area that will be disturbed, should the proposed project be authorised, will be 123, 4502 hectares.
- The proposed development will result in a positive socio-economic impact through the provision of a number of temporary and permanent job opportunities as well as the stimulation of the local economy through the provision of light, industrial erven as well as provision of recreational facilities and activities.
- The environmental impacts associated with the proposed development have been identified and assessed in terms of their significance in this report. The most significant impacts relate to the increase in traffic to the site, destruction or disturbance of cultural and heritage resources and clearance of vegetation.
- The majority of the impacts are rated as having a “Medium” significance before mitigation, and a “Low” significance after mitigation.



## 10.2 Environmental sensitivity overlay maps

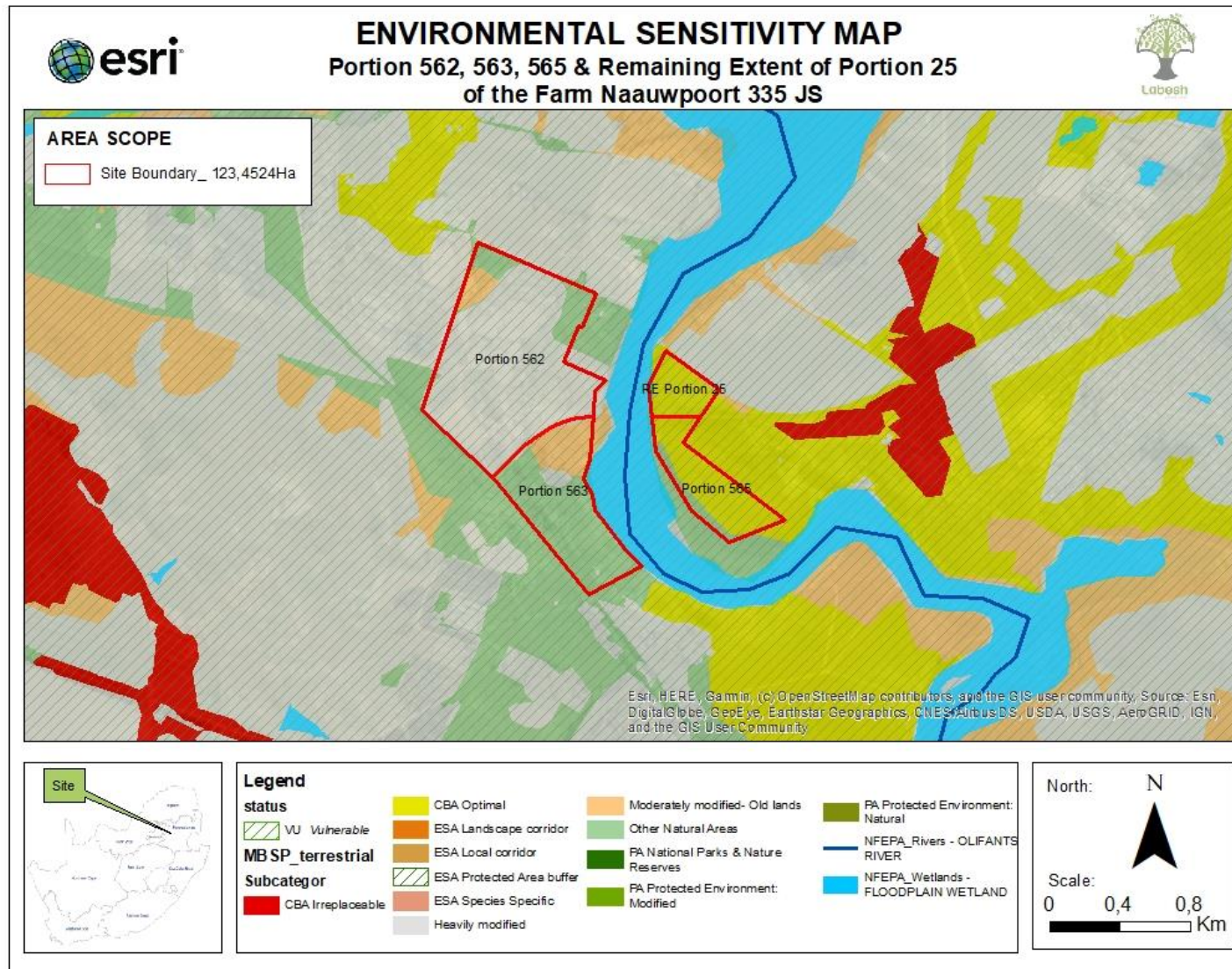


Figure 42: Sensitivity map of the project site (Map (in colour) is also given under Appendix A.)



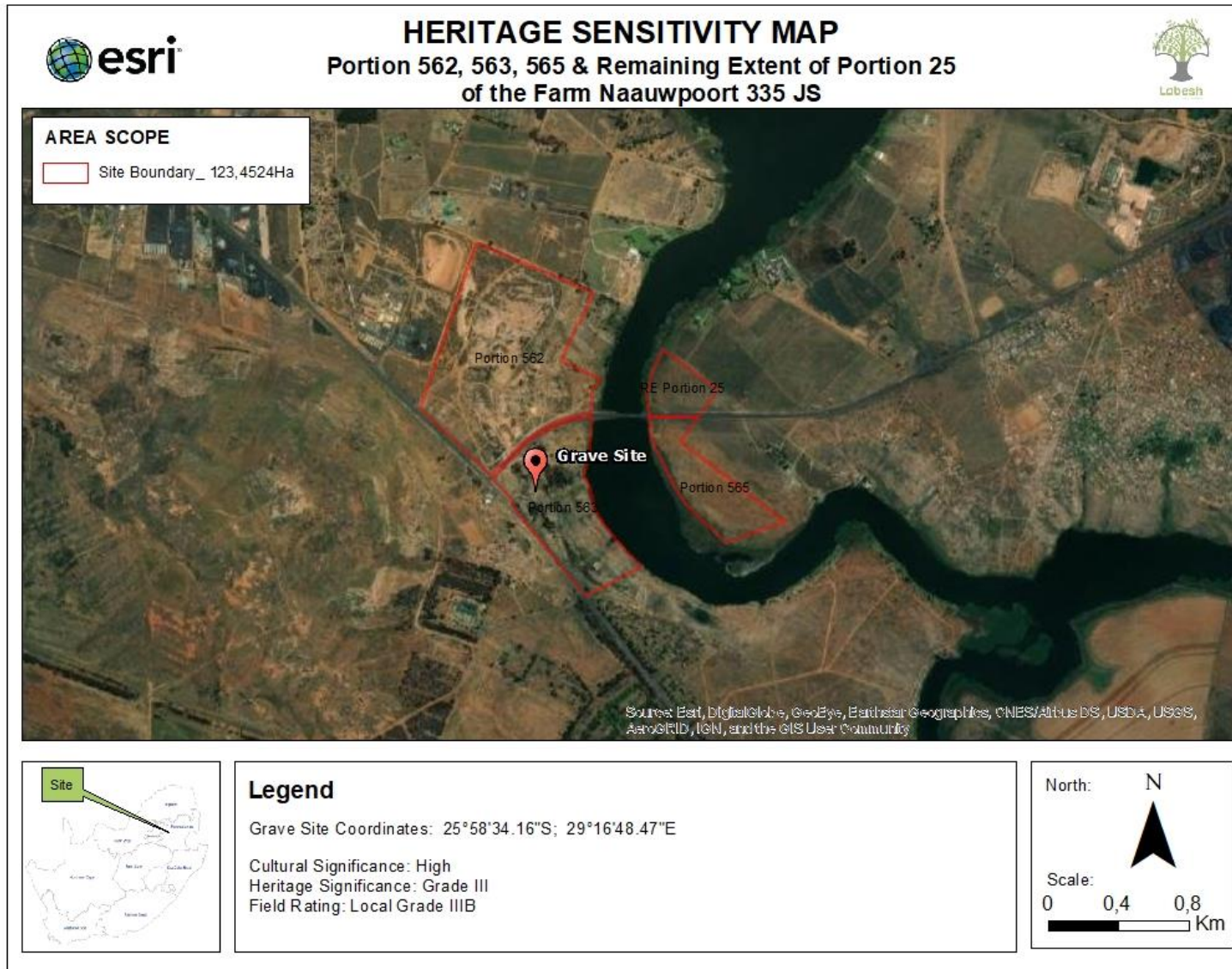


Figure 43: Heritage Sensitivity of the project site (Map (in colour) is also given under Appendix A.)

### **10.3 Summary of the positive and negative impacts and risks of the proposed activity and identified alternatives**

The following main positive and potential negative impacts and risks have been identified for the proposed project:

#### **Positive impacts**

- The generation of temporary and permanent job opportunities.
- The stimulation of the local economy.
- Contributing to the need for light, industrial erven within Emalahleni.
- Creation of recreational facilities and activities for local and surrounding communities.

#### **Negative impacts**

- Changing the quantity and fluctuation properties of the watercourse by, for example, storm water input, or restricting water flow.
- Changing the amount of sediment entering water resource and associated change in turbidity (increasing or decreasing the amount).
- Introduction and spread of alien vegetation.
- Pollution of surface and/or groundwater resources due to the potential release of pollutants, such as chemicals.
- Pollution of surface and/or groundwater resources due to the incorrect management of chemical substances and dangerous goods.
- Pollution of surface and/or groundwater resources due to poor waste management.
- Loss of mammal and herpetofaunal habitat and ecological structure.
- Removal of natural, good condition vegetation: Potential loss of species of conservation concern and their habitats.
- Erosion, soil compaction and subsequent sedimentation: Possible permanent loss of re-vegetation potential of soil surface.
- Removal of protected species or species of conservation concern.
- Bush densification.
- Deterioration of watercourses and riparian vegetation.
- Disturbance or destruction of cultural and heritage resources.
- Destruction of possible fossil assemblages below ground.
- Generation of dust.
- Release of vehicle emissions from construction vehicles.
- Generation of nuisance and noise.
- Soil erosion due to the clearance of vegetation.
- Soil pollution due to the incorrect management of chemical substances and dangerous goods.
- Soil pollution due to poor waste management (general and hazardous waste).
- Soil pollution due to potential spillages from chemical toilets and/or ablution facilities.
- Potential increase in crime due to the influx of workers.
- Increase in traffic volumes to the site.

### **10.4 Impact management measures from specialist reports and the recording of the proposed impact management outcomes for the development, for inclusion in the EMPr**

The impact management measures that have been provided in the various specialist reports have been included under Section 9.10 of this report and have also been included under Section 8.1 of the Environmental Management Programme.

## **10.5 The final proposed alternatives which respond to the impact management measures, avoidance and mitigation measures identified through the assessment**

The final property alternative for the Commandpark Extension 4 Township Establishment project is on the following properties (collectively known as the proposed development site):

- Portion 562 of the Farm Naauwpoort 335 JS;
- Portion 563 of the Farm Naauwpoort 335 JS;
- Portion 565 of the Farm Naauwpoort 335 JS; and
- Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS.

## **10.6 Aspects which were conditional to the findings of the assessment either by the EAP or specialists and which are to be included as conditions of authorisation**

The following conditions must be included in the Environmental Authorisation, should the proposed development be authorised:

- The mitigation measures contained in the Environmental Management Programme must be implemented during each developmental phase of the proposed project;
- An independent Environmental Control Officer must be appointed to audit compliance to the Environmental Management Programme during the construction phase of the proposed development.
- A Heritage Management Plan (HMP) must be developed for *in situ* conservation and management of heritage resources located within the development footprint. The HMP must be submitted to SAHRA for approval.
- A suitably qualified palaeontologist must be appointed to do a Phase 1 PIA investigation at the onset of excavations and to also update the basic recommendations made in the "Chance Find Protocol".
- An Ecological Management Plan must be compiled for the site. This plan must include a Alien Invasive Plant Species Management Plan, Sensitive Species Management and Monitoring Plan and an Erosion Monitoring and Management Plan. The plan must be submitted to the Competent Authority for approval.
- A minimum buffer area of 32m around the rivers onsite must be maintained, as recommended by the wetland specialists.

## **10.7 Description of assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed**

The following assumptions were made during this Environmental Impact Assessment process:

- That all research and reference sources or material is accurate and up to date;
- That the project information, as provided by the applicant, is correct;
- That the specialist opinions are scientifically grounded and accurate; and
- That the proposed development will be operated according to the Environmental Management Programme and in a responsible manner.

## **10.8 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**

It is Labesh's independent and reasoned opinion that the identified and assessed environmental impacts can be mitigated and that an Environmental Authorisation should therefore be issued for the proposed Commandpark Extension 4 Township Establishment project.

Please refer to Section 10.6 above for conditions that should be included in respect of the Environmental Authorisation.

## **10.9 Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised**

Not applicable. The proposed activity does include operational aspects.

## **11. ENVIRONMENTAL ASSESSMENT PRACTITIONER UNDERTAKING**

I, Lourens de Villiers, hereby confirm the following:

- The correctness of information provided in this Environmental Impact Assessment Report and the Environmental Management Programme;
- The inclusion of all comments and inputs from stakeholders and I&APs;
- The inclusion of inputs and recommendations from the specialist reports, where relevant; and
- Any information provided by the EAP to I&APs and any responses by the EAP to comments or inputs made by I&APs have been included in this report.

I further confirm that I have no business, financial, personal or other interest in the activity or application in respect of which I have been appointed as EAP, in terms of the EIA Regulations, other than fair remuneration for work performed in connection with this application for Environmental Authorisation.

## **12. DETAILS OF ANY FINANCIAL PROVISION FOR THE REHABILITATION, CLOSURE AND ONGOING POST DECOMMISSIONING MANAGEMENT OF NEGATIVE ENVIRONMENTAL IMPACTS**

No financial provisioning applicable to the proposed project.

## **13. INDICATION OF ANY DEVIATION FROM THE APPROVED SCOPING REPORT, INCLUDING THE PLAN OF STUDY**

There have been no deviations from the approved Scoping Report and Plan of Study.

## 14. SPECIFIC INFORMATION REQUIRED BY THE COMPETENT AUTHORITY

The Mpumalanga Department of Rural, Environmental and Agricultural Development, in their letter dated 21 June 2022, stated that the following:

*“The Department has received the Final Scoping Report for the abovementioned project on 06 April 2022. Based on the information supplied and the site inspection undertaken on the 05 May 2022, this Department has no objections to the proposed development. You may proceed with the submission of the Environmental Impact Report with the consideration of the comments below;-*

1. *Vegetation clearance must be limited to the development footprint.*
2. *Applicable licenses must be obtained before the commencement of the activity.*
3. *Applicable municipal By-Laws must be considered and adhered to at all times throughout the lifespan of the project.*
4. *All recommendations, key findings and conditions made in the specialist studies must be adhered to.*
5. *MTPA comments must be sourced and recommendations thereof must inform the site layout and protection of any identified endangered species.*
6. *Complaints received from the public must be attended to as soon as possible and addressed to the satisfaction of all concerned.*
7. *The applicant is responsible for the compliance with the provisions for “Duty of Care” and remediation of damage contained in Section 28 of the National Environmental Management Act, (Act 107 of 1998).*

*Please draw the applicant’s attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.*

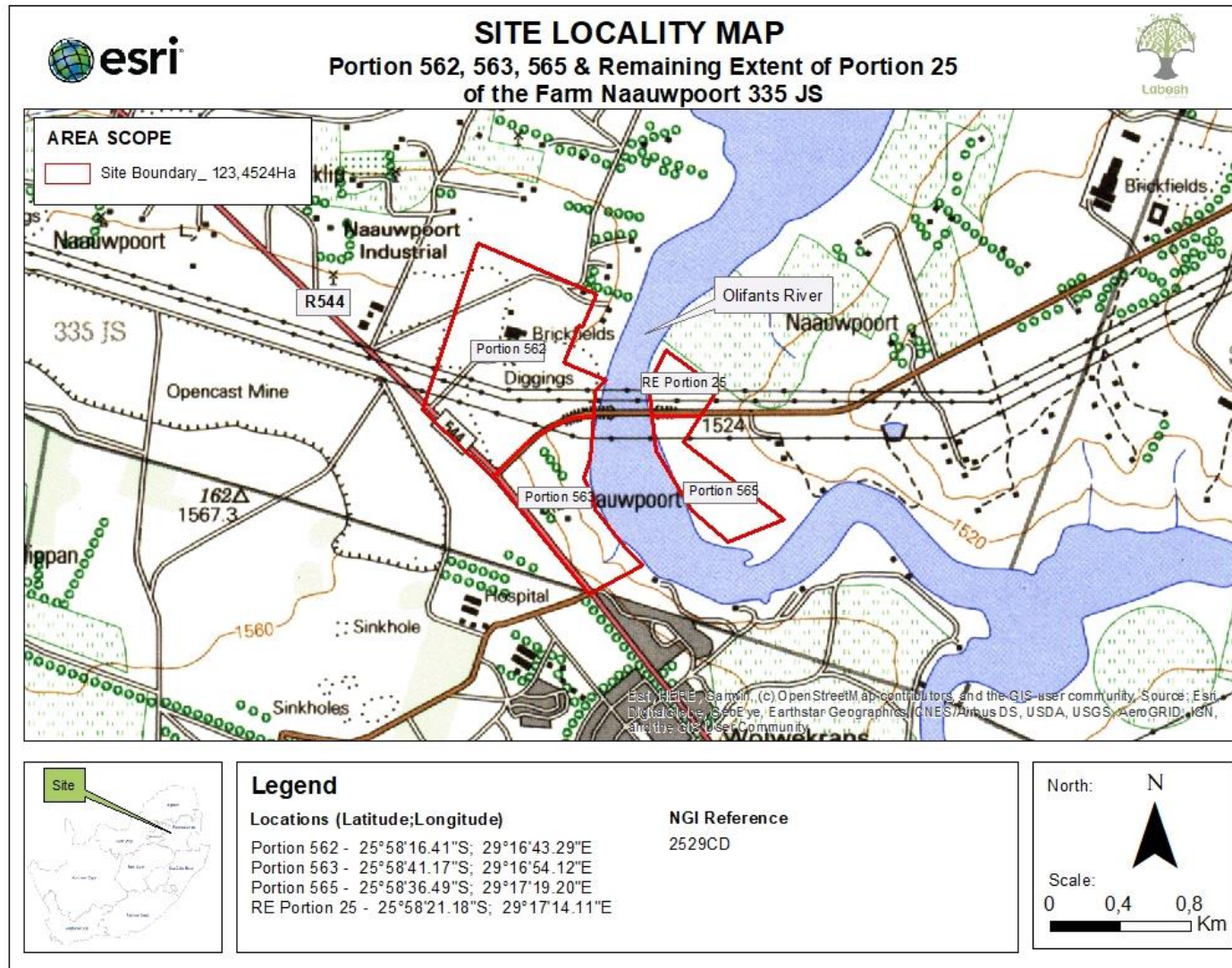
*Your cooperation will be highly appreciated.”*

## 15. OTHER MATTERS REQUIRED IN TERMS OF SECTION 24(4)(A) AND (B) OF NEMA

At this stage, no other matters to address have been identified or required.



## APPENDIX A – Plans and Maps



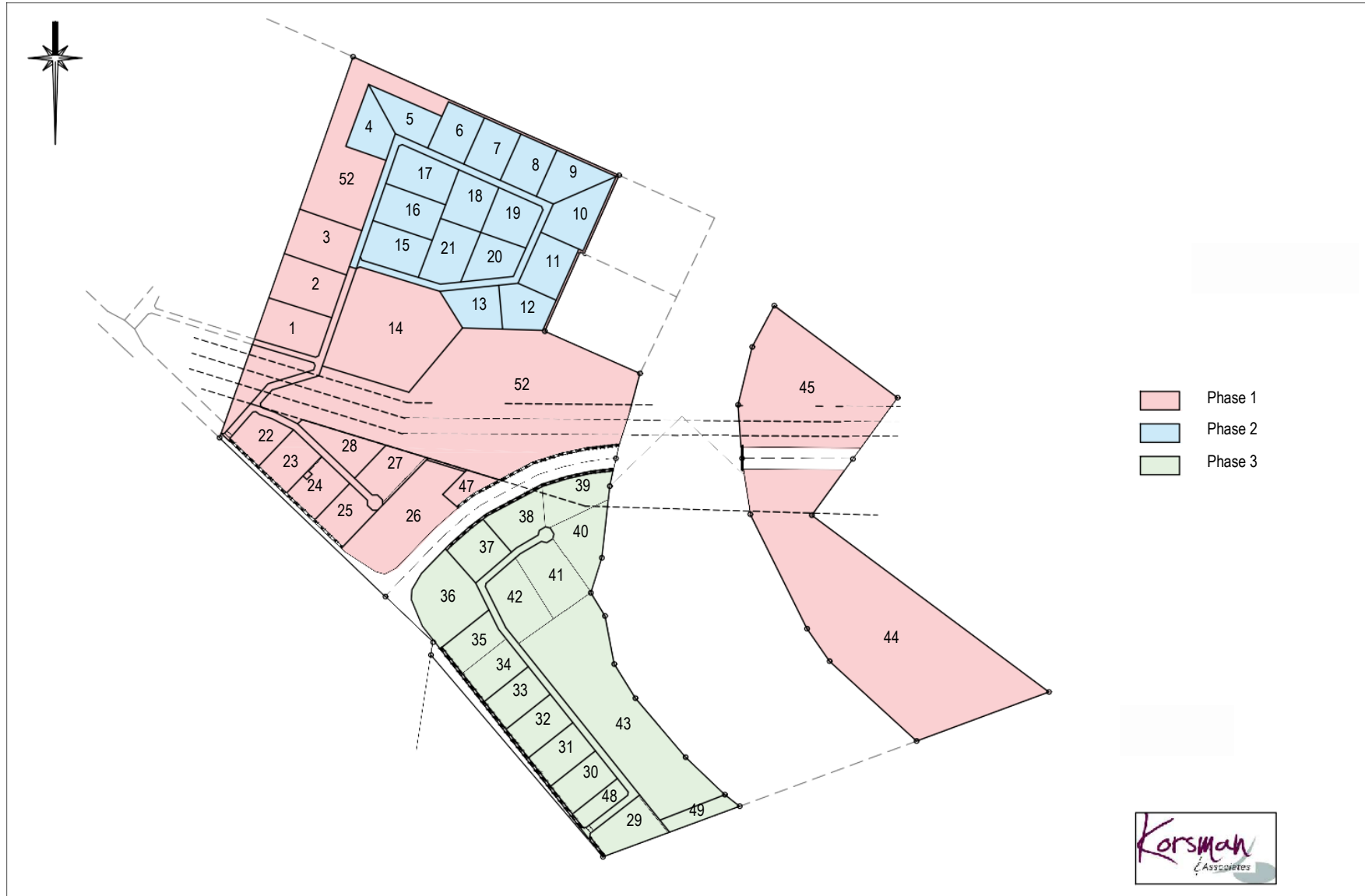
Site Locality Map



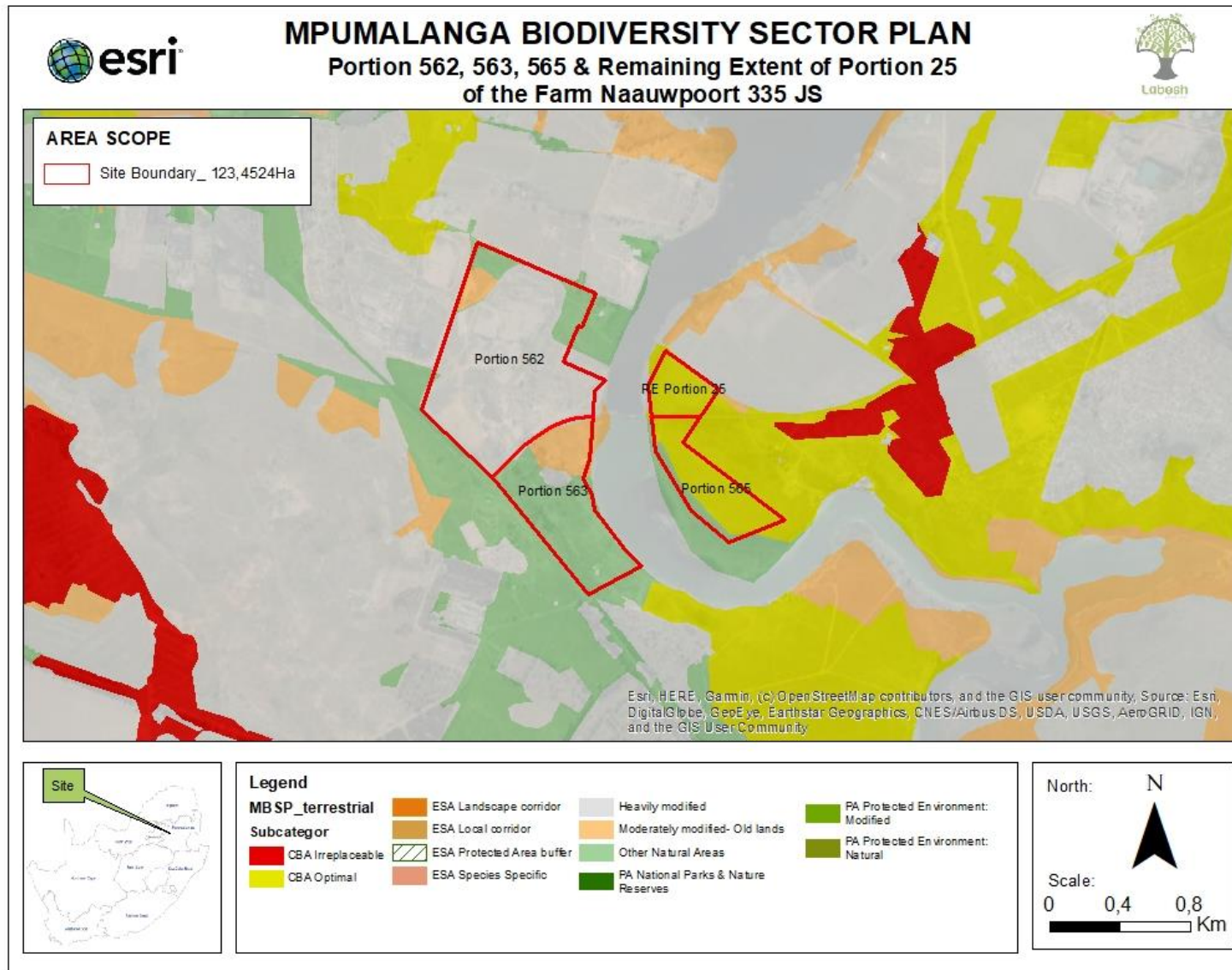
Figure 10: Proposed layout plan



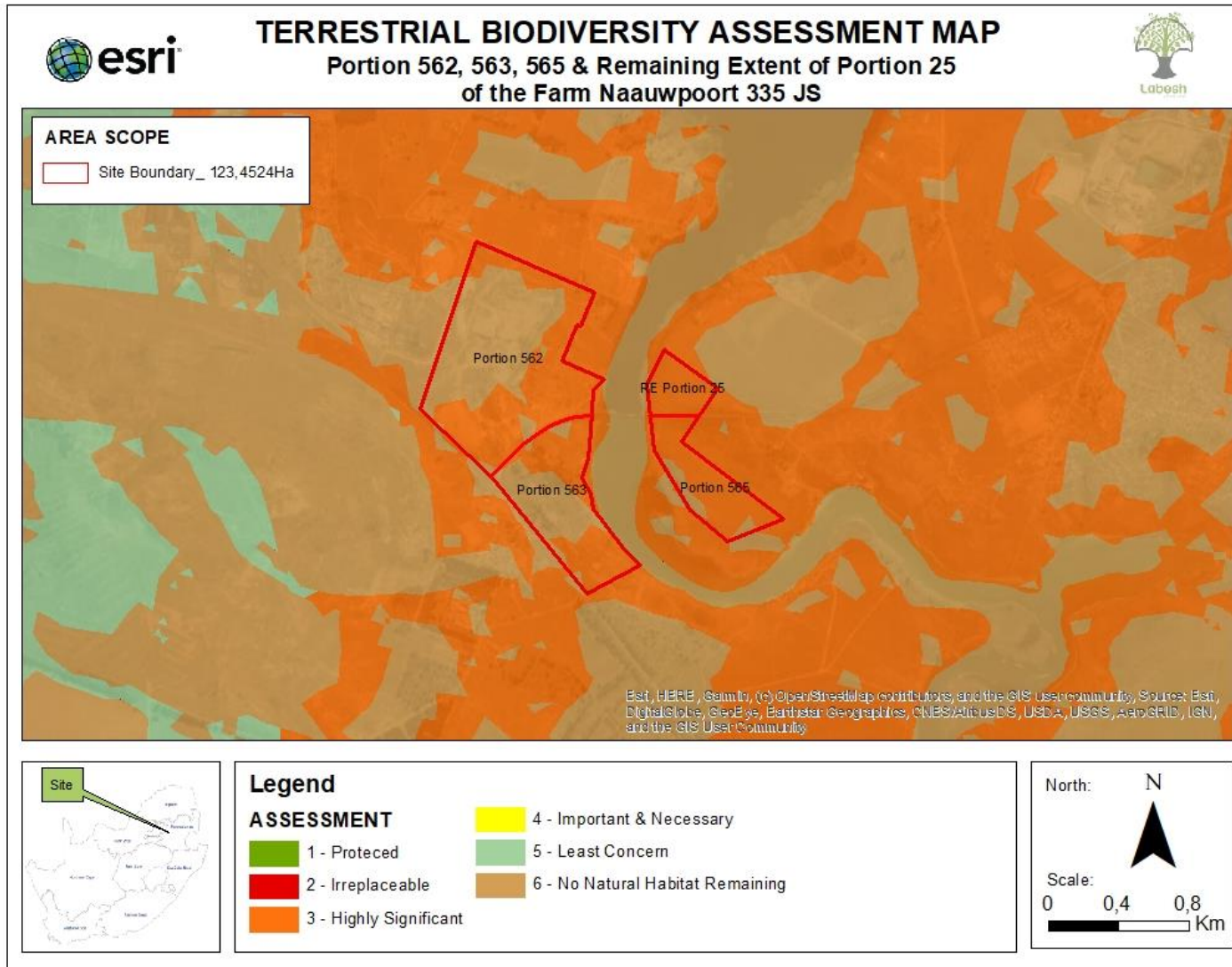
Facility illustration for the proposed project



Phased Layout Plan

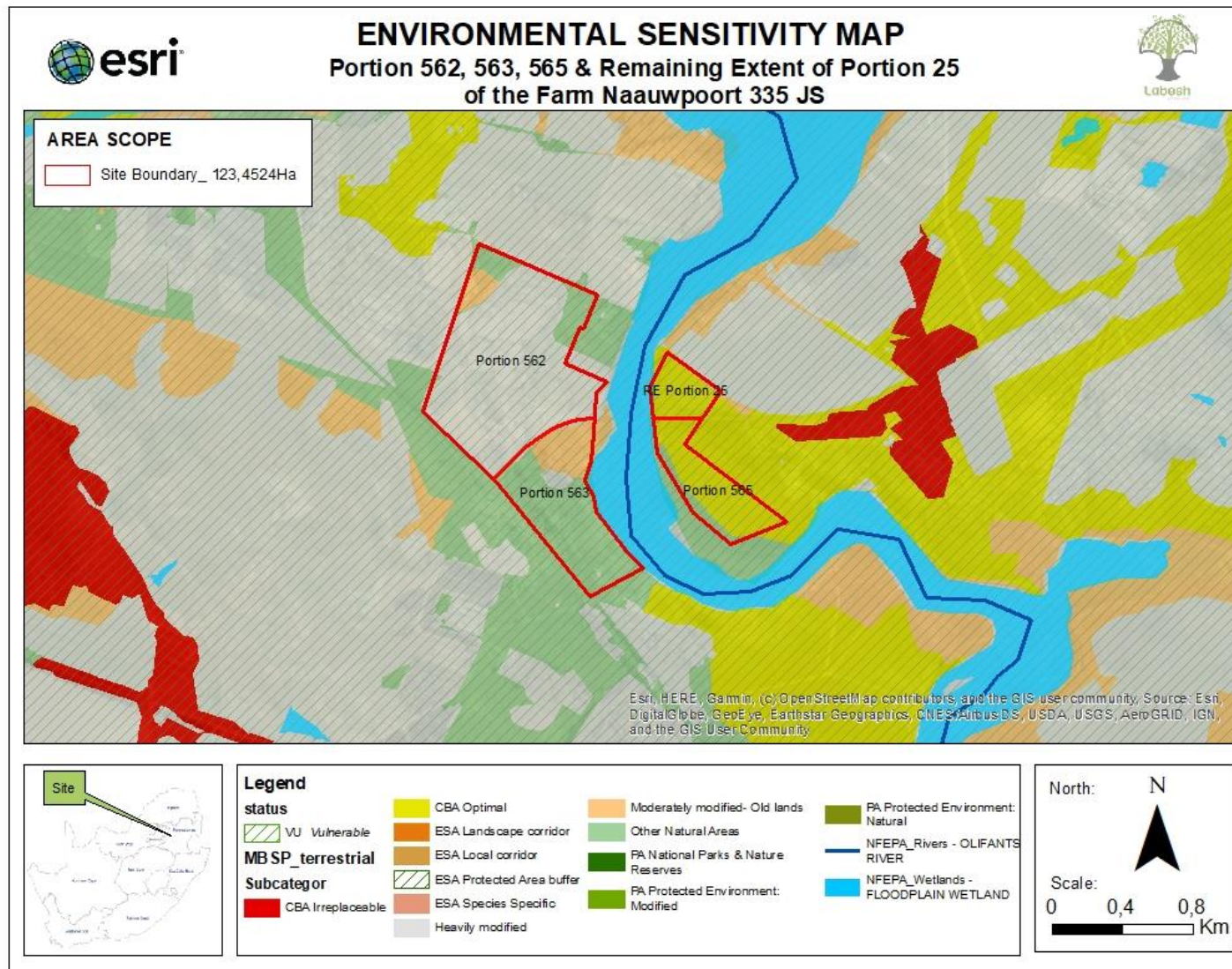


Mpumalanga Biodiversity Sector Plan Map of the project site

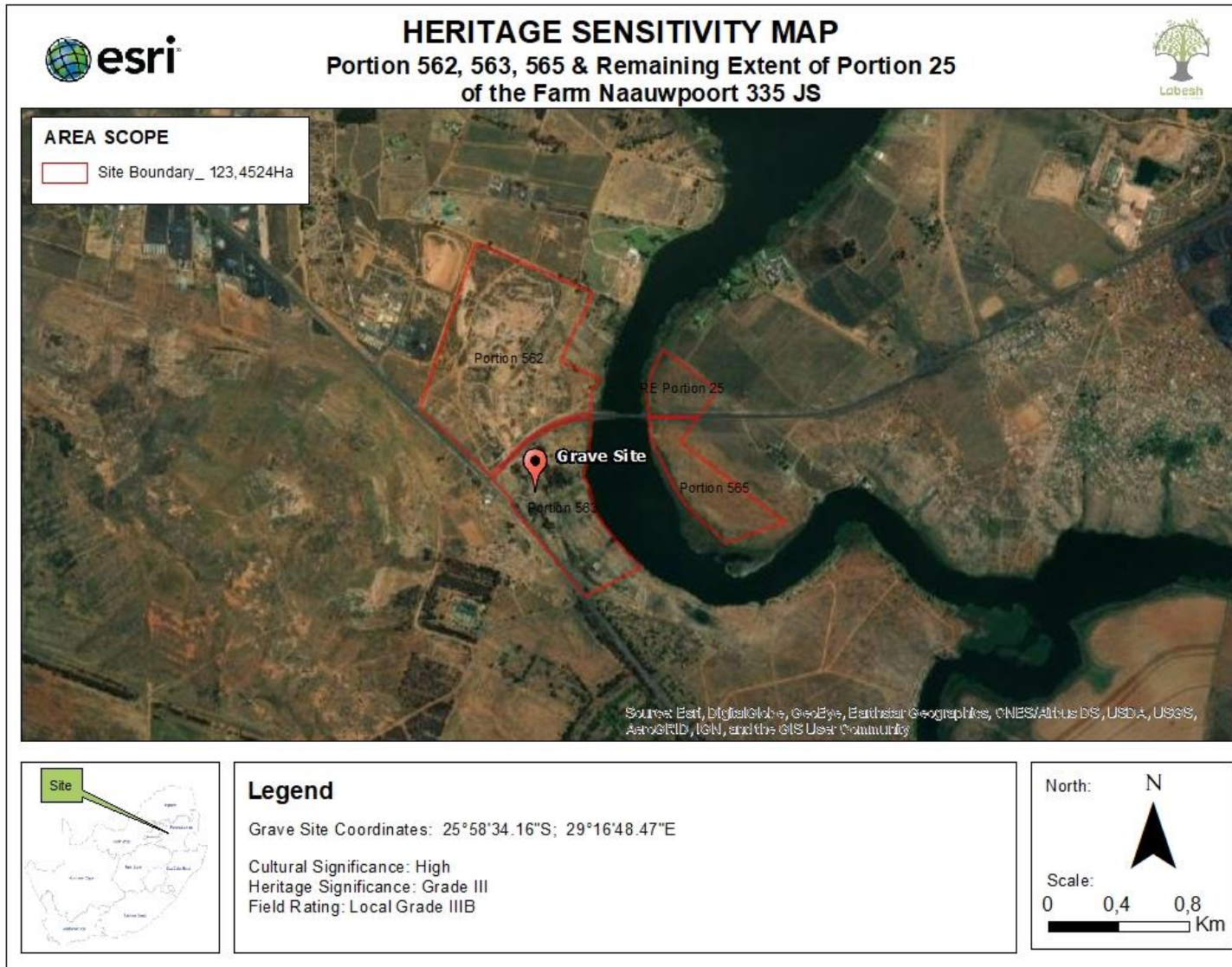


Terrestrial CBA Map of the project site



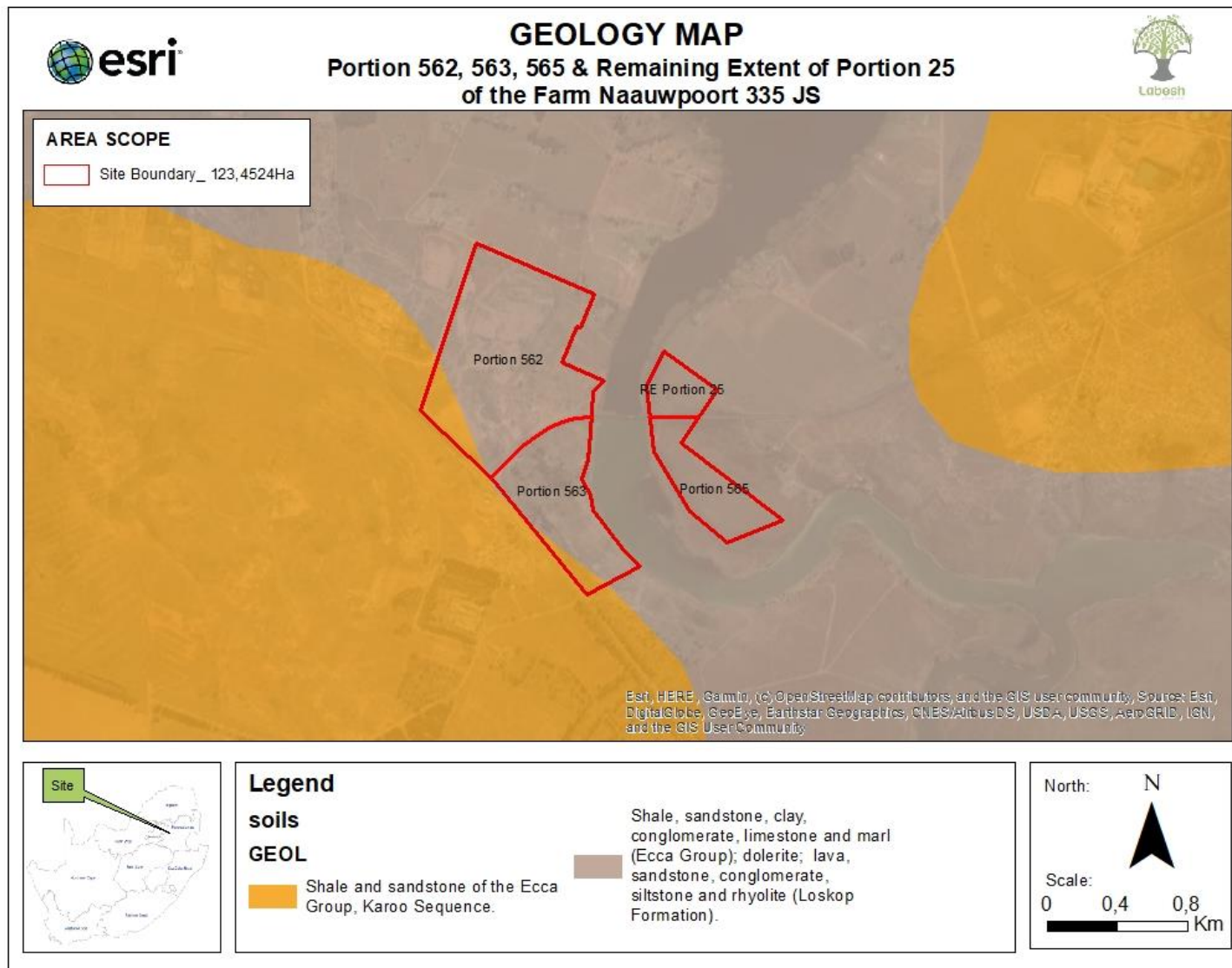


Sensitivity Map of the project site

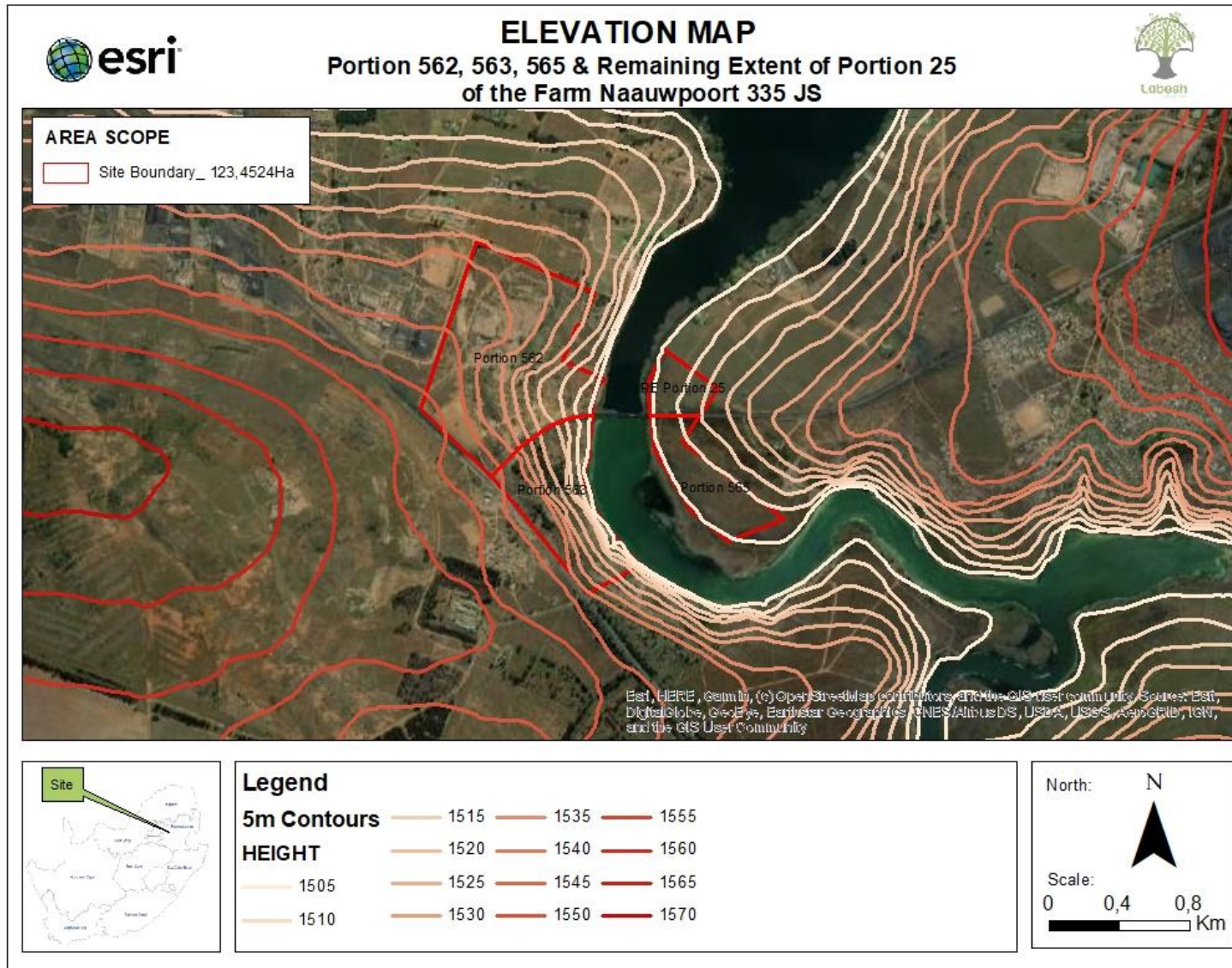


Heritage Sensitivity Map of the project site

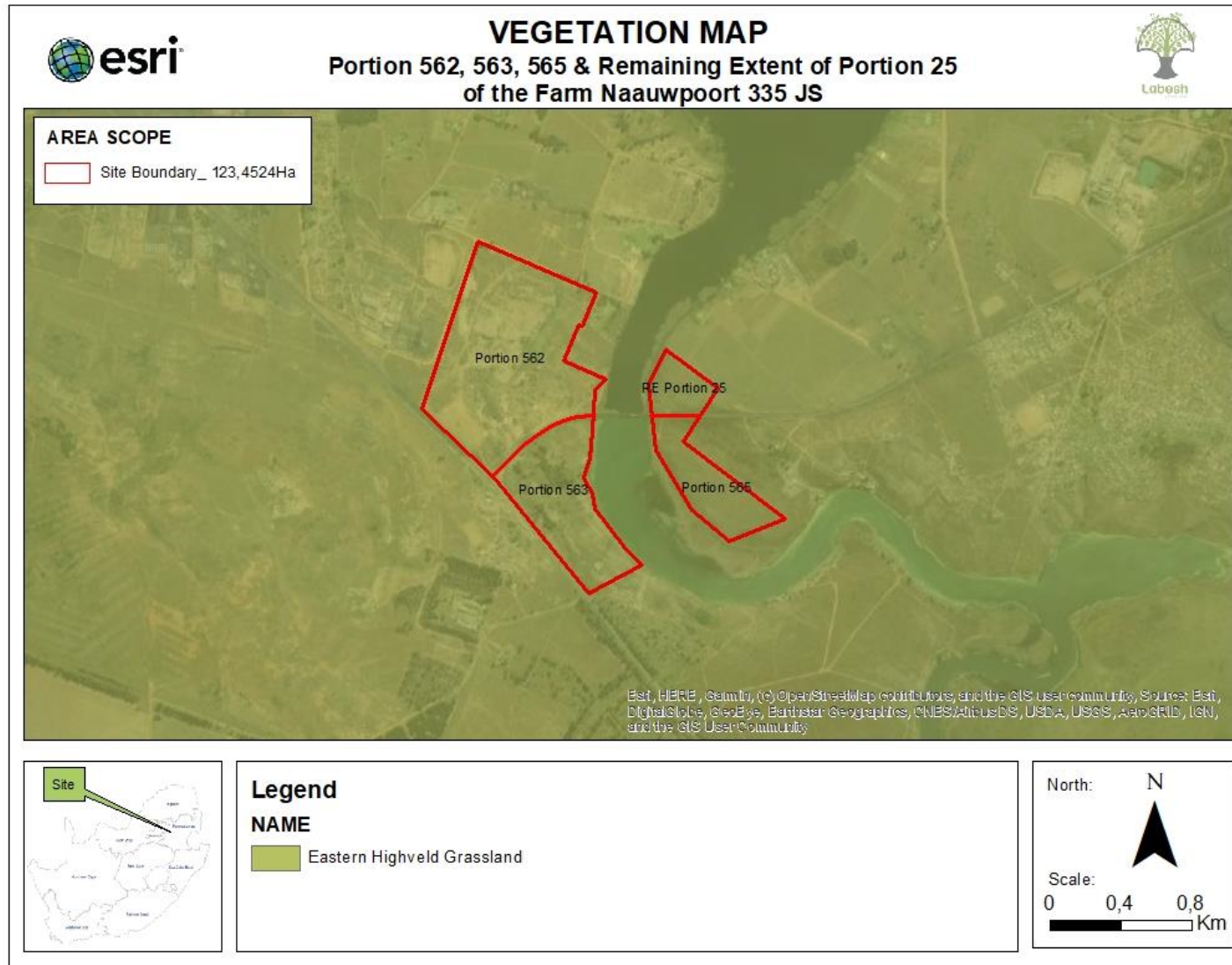




Geology Map of the project site

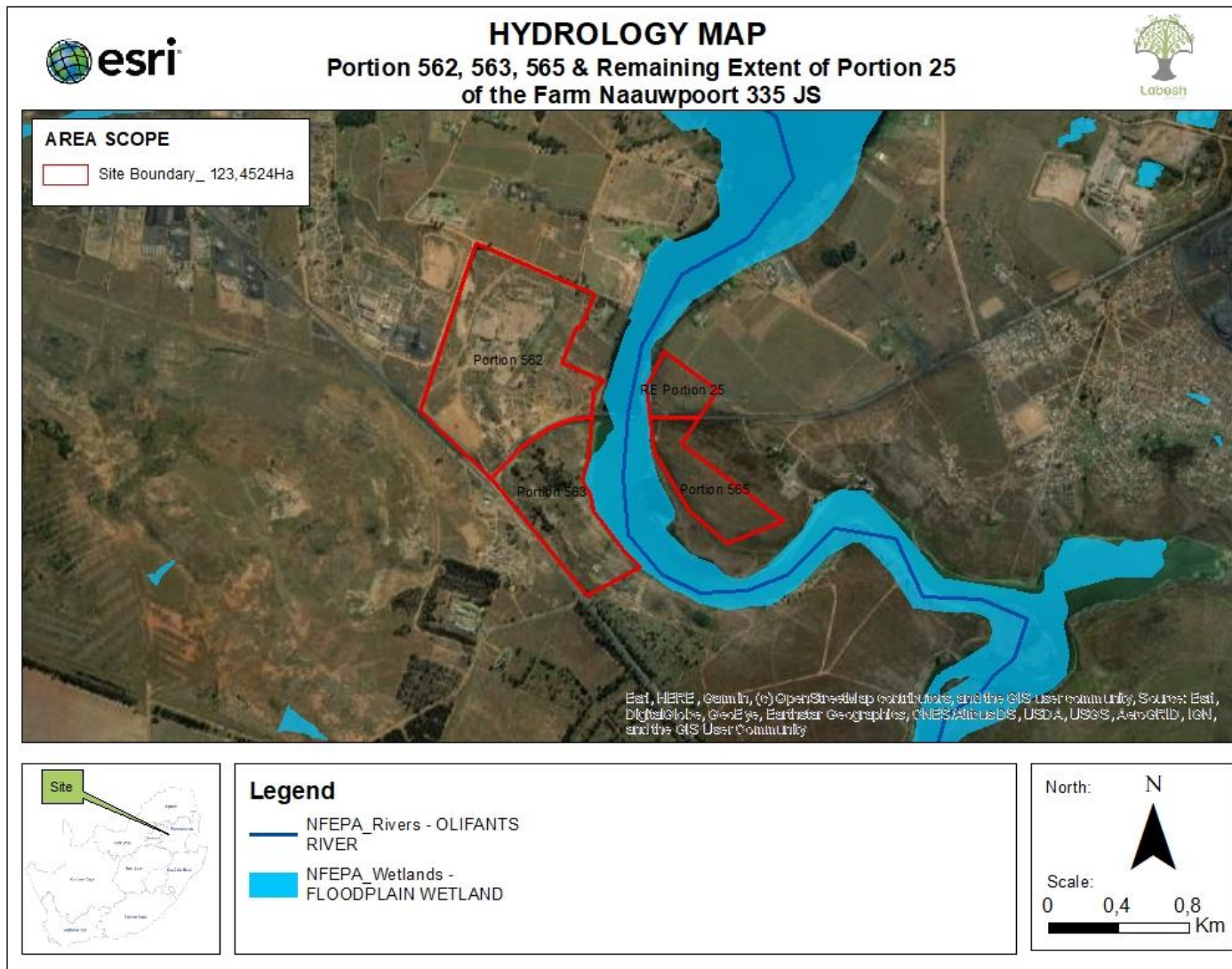


Elevation Map of the project site



Vegetation Map of the project site





Hydrology Map of the project site and surrounding area

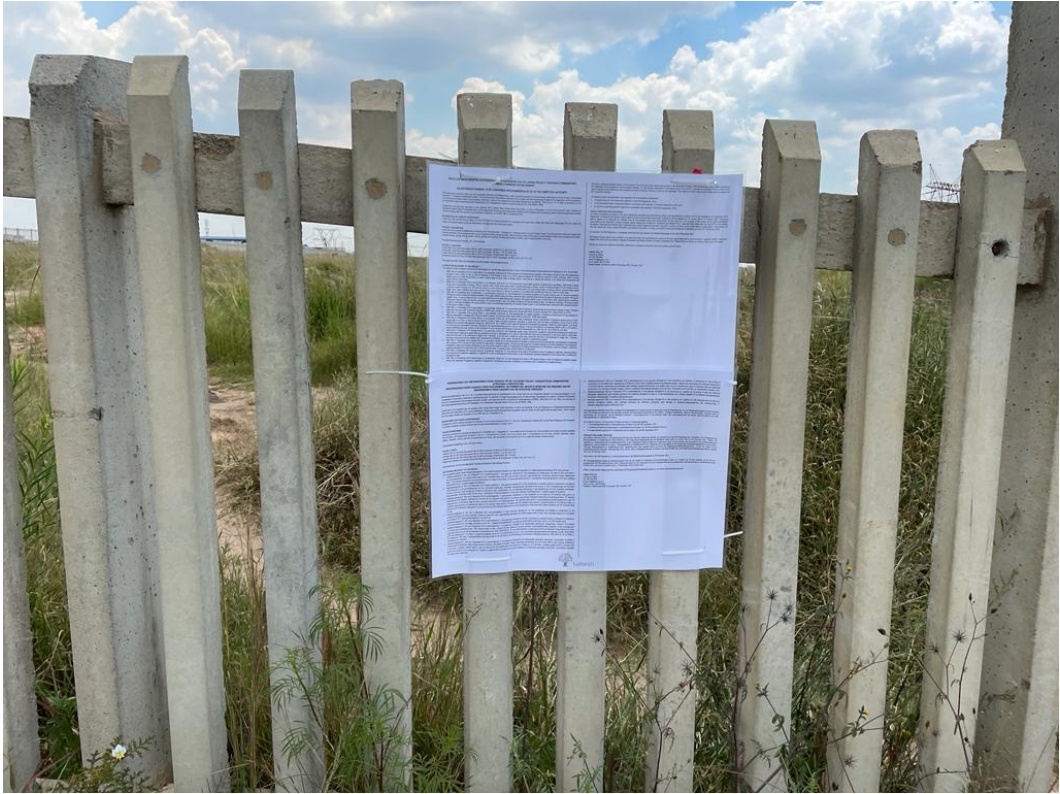
## APPENDIX B - Photographs





# APPENDIX C – Public Participation

## Appendix 1: Proof of Site Notice







**NOTICE OF ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**

**EIA REFERENCE NUMBER: TO BE CONFIRMED UPON SUBMISSION OF EA TO THE COMPETENT AUTHORITY**

This notice board serves to inform you, as a potentially Interested and Affected Party, of the proposed application for Environmental Authorisation for the proposed Commandpark Extension 4 Township Establishment project. The Environmental Authorisation application will be lodged with the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (the Competent Authority) in terms of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment (EIA) Regulations, 2014 (Regulations in terms of sections 24(5) and 44 of the NEMA, 1998).

Labesh (Pty) Ltd has been appointed by the applicant, Nk H Golden Miles Village Close Corporation, in terms of Regulation 12 of the Environmental Impact Assessment Regulations (GNR, 982 of 4 December 2014), as the independent Environmental Assessment Practitioner (EAP) tasked with conducting the above mentioned application process. Labesh complies with the necessary requirements of Regulation 13 of GNR, 982 of 4 December 2014.

**DESCRIPTION OF CURRENT OPERATIONS**

Portion 563, 565 and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS, is currently open vacant land. Portion 562 of the Farm Naauwpoort 335 JS consists of a scatter of industrial related structures that include overhead electric cables and towers.

**PROJECT DESCRIPTION**

Mixed land use township establishment comprising of 41 industrial erven, 1 business erf, 1 transport service erf and 3 tourism erven. The industrial erven will accommodate light industrial activities. The business erf will be used to accommodate a shopping centre, while the tourism erven will be used to accommodate a hobby park comprising of 4x4 trails, paintball, hiking, cycling, archery, fishing, picnics and camping. The transport service erf will be used to accommodate a truck stop.

Proposed Development Footprint: 123, 4524 Hectares

**PROJECT LOCATION**

Portion 562 of the Farm Naauwpoort 335 JS, GPS Coordinates: 25°58'16.41"S, 29°16'43.29"E  
 Portion 563 of the Farm Naauwpoort 335 JS, GPS Coordinates: 25°58'41.17"S, 29°16'54.12"E  
 Portion 565 of the Farm Naauwpoort 335 JS, GPS Coordinates: 25°58'36.49"S, 29°17'19.20"E  
 Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS, GPS Coordinates: 25°58'21.18"S, 29°17'14.11"E

The project site falls within the eMalaheni Local Municipality, Mpumalanga Province.

**LEGISLATION RELEVANT TO THE PROJECT**

The proposed project requires Environmental Authorisation for the following listed activities in terms of the Environmental Impact Assessment Regulations, 2014, as amended:

- GNR, 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 9: The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water (j) with an internal diameter of 0,36 metres or more, or (i) with a peak throughput of 120 litres per second or more, excluding where- (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve, or (b) where such development will occur within an urban area.
- GNR, 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 10: The development and related operation of infrastructure exceeding 1000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes- (i) with an internal diameter of 0,36 metres or more, or (j) with a peak throughput of 120 litres per second or more, excluding where- (a) such infrastructure is for bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve, or (b) where such development will occur within an urban area.
- GNR, 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 12: The development of (i) canals exceeding 100 square metres in size, (ii) channels exceeding 100 square metres in size, (iii) bridges exceeding 100 square metres in size, (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size, (v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size, (vi) bulk storm water outlet structures exceeding 100 square metres in size, (vii) marinas exceeding 100 square metres in size, (viii) jetties exceeding 100 square metres in size, (ix) slipways exceeding 100 square metres in size, (x) buildings exceeding 100 square metres in size, (xi) boardwalks exceeding 100 square metres in size, or (xii) infrastructure or structures with a physical footprint of 100 square metres or more,
- GNR, 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 13: The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.
- GNR, 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 25: The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres.
- GNR, 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 26: Residential, retail, recreational, tourism, commercial or institutional developments of 1000 square metres or more, on land previously used for mining or heavy industrial purposes, excluding- (i) where such land has been remediated in terms of part 8 of the National Environmental Management Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management Waste Act, 2008 applies, or (ii) where an environmental authorisation has been obtained for the decommissioning of such a mine or industry in terms of this Notice or any previous NEMA notice, or (iii) where a closure certificate has been issued in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for such land.
- GNR, 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 28: Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare, excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.
- GNR, 984 of 4 December 2014 (Listing Notice 2), as amended, Activity No. 9: The development of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex, excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is a) temporarily required to allow for maintenance of existing infrastructure; b) 2 kilometres or shorter in length; c) within an existing transmission line servitude; and d) will be removed within 18 months of the commencement of development.
- GNR, 984 of 4 December 2014 (Listing Notice 2), as amended, Activity No. 15: The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity, or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
- GNR, 985 of 4 December 2014 (Listing Notice 3), as amended, Activity No. 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

The above mentioned activities require a Full Scoping & Environmental Impact Assessment process to be conducted in support of the Environmental Authorisation application. The application will be submitted to the Competent Authority, the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs in due course. Upon acceptance of the application, the Competent Authority will issue a reference number for the application. This reference number will be communicated upon its receipt from the Competent Authority.

The following reports are applicable to this application for Environmental Authorisation:

- A Scoping Report in accordance with Appendix 2 of the EIA Regulations, 2014;
- An Environmental Impact Assessment Report in accordance with Appendix 3 of the EIA Regulations, 2014, and
- An Environmental Management Programme in accordance with Appendix 4 of the EIA Regulations, 2014.

**PUBLIC PARTICIPATION PROCESSES**

The public participation processes for the above mentioned application are conducted according to the requirements of Chapter 6 of the EIA Regulations of 4 December 2014. Registration of Interested and Affected Parties (I&AP's) for the Environmental Authorisation application will be available from 24 January 2022 to 23 February 2022. Should you wish to register as an Interested and Affected Party for the proposed project and subsequently be kept informed of the progress of the project and all public participation opportunities as the application process proceeds, please request and complete an "Interested and Affected Party" registration form (obtainable from the EAP for the project). Completed "Interested and Affected Party" registration forms should please be submitted to the EAP, Lourens de Villiers, at the contact details provided below. Alternatively, you may also submit your name, contact information and interest in the matter, in writing, to the EAP at the contact details provided before or on the 23<sup>rd</sup> of February 2022.

As required in the EIA Regulations, a newspaper advertisement was placed in the Witbank Newspaper on the 26<sup>th</sup> of November 2021.

The Scoping Report will be made available to the public for review and commenting for a period of 30 days (exact dates will be communicated to registered I&AP's). Electronic copies of the report will be provided to registered Interested and Affected Parties via email or registered post. Please inform us should you require a hard copy of the report.

Should you require any additional information, please do not hesitate to contact the EAP at the details provided below.

**Labesh (Pty) Ltd**

Lourens de Villiers  
 Tel: 082 789 6525  
 Email: info@labesh.co.za  
 Fax to Email: 086 552 6837  
 Postal Address: PostNet Box #469, Private Bag X504, Sinoville, 0129



**KENNISGEWING VAN OMGEWINGSMAGTIGING AANSOEK VIR DIE VOLGENDE PROJEEK: VOORGESTELDE COMMANDPARK UITBREIDING 4 DORPSTIGTING  
OMGEWINGSMAGTIGING AANSOEK VERWYSINGSNOMMER: DIE NOMMER SAL BEVESTIG WORD MET DIE INDIENING VAN DIE OMGEWINGSMAGTIGING AANSOEK AAN DIE BEVOEGDE OEWERHEID**

Hierdie kennisgewingbord dien om u, as 'n moontlike Belanghebbende en Geaffekteerde Party, te laat weet van die voorgenome aansoek om omgewingsmagtiging vir die voorgestelde Commandpark Uitbreiding 4 Dorpstigting projiek. Die aansoek vir Omgewingsmagtiging sal by die Mpumalanga Departement van Landbou, Landelike Ontwikkeling, Grond en Omgewingsake (die Bevoegde Owerheid) ingedien word ingevolge die Wet op Nasionale Omgewingsbestuur (NEMA), 1998 (Wet Nr. 107 van 1998), soos gewysig, en die Omgewingsimpakbeoordelingswet (OIE) Regulasies, 2014 (Regulasies ingevolge artikels 24 (5) en 44 van NEMA, 1998).

Labesh (Pty) Ltd is aangestel deur die applikant, N&H Golden Miles Village Close Corporation, in terme van Regulasie 12 van die Regulasies oor Omgewingsimpakbeoordelings (GNR. 982 van 4 Desember 2014), as die onafhanklike Omgewingsimpakbeoordelingspraktisyn wat getoets is met die uitvoer van die bogenoemde aansoek proses. Labesh voldoen aan die nodige vereistes van Regulasie 13 van GNR. 982 van 4 Desember 2014.

**BESKRYWING VAN HUIDIGE BEDRYWIGHEDE**

Gedeelte 563, 565 en Restant Gedeelte van Gedeelte 25 van die Plaas Naauwpoort 335 JS, is tans oop, vakante grond. Gedeelte 562 van die Plaas Naauwpoort 335 JS bestaan uit verskeie industriële verwante strukture wat oorhoofse elektrisiteitskabels en toerings insluit.

**PROJEEK BESKRYWING**

Gemengde grondgebruik dorpsdigting bestaande uit 41 industriële erwe, 1 besigheids erf, 1 vervoerdiens erf en 3 toerisme erwe. Die industriële erwe sal ligte industriële aktiwiteite akkommodeer. Die besigheids erf sal gebruik word om 'n winkelsentrum te huisves, terwyl die toerisme erwe 'n stokperdiepark met 4x4 bane, paintball, staproetes, fietsry, vollyk, boogskiet, visvang, piekniek en kampeerplek kan huisves. Die vervoerdiens erf sal gebruik word om 'n vrugmotorstoppel te akkommodeer.

Vorgestelde Ontwikkelings Area: 123, 4524 Hektaar

**PROJEEK LIGGING**

Gedeelte 562 van die Plaas Naauwpoort 335 JS; GPS Koördinate: 25°58'16.41"S; 29°16'43.29"E

Gedeelte 563 van die Plaas Naauwpoort 335 JS; GPS Koördinate: 25°58'41.17"S; 29°16'54.12"E

Gedeelte 565 van die Plaas Naauwpoort 335 JS; GPS Koördinate: 25°58'36.49"S; 29°17'19.20"E

Resterende Gedeelte van Gedeelte 25 van die Plaas Naauwpoort 335 JS; GPS Koördinate: 25°58'21.18"S; 29°17'14.11"E

Die projekterrein val binne die eMalahlani Plaaslike Munisipaliteit, Mpumalanga Provinsie.

**WETGEWING RELEVANT TOT DIE PROJEEK**

Die voorgestelde projek vereis Omgewingsmagtiging vir die volgende gestelde aktiwiteite ingevolge die Regulasies oor Omgewingsimpakbeoordelings, 2014, soos gewysig:

- Staatskennisgewing R. 983 van 4 Desember 2014 (Lyskennisgewing 1), soos gewysig: Aktiwiteit Nr 9: Die ontwikkeling van infrastruktuur van meer as 1000 meter lank vir die grootmaatvervoer van water of stormwater (i) met 'n binnedeursnee van 0,36 meter of meer; of (ii) met 'n piek deursnee van 120 liter per sekonde of meer, uitgesonderd waar – (a) sodanige infrastruktuur vir grootmaatvervoer van water of stormwater of stormwaterreïnering binne 'n padreserwe of spoortjereserwe is; of (b) waar sodanige ontwikkeling binne 'n stedelike gebied sal plaasvind.
- Staatskennisgewing R. 983 van 4 Desember 2014 (Lyskennisgewing 1), soos gewysig: Aktiwiteit Nr 10: Die ontwikkeling en verwante bedryf van infrastruktuur van meer as 1000 meter lank vir die grootmaatvervoer van riool, uitvoeisel, proseswater, afvalwater, terugvoerwater, industriële afvoer of slym- (i) met 'n binnedeursnee van 0,36 meter of meer; of (ii) met 'n piek deursnee van 120 liter per sekonde of meer; uitgesonderd waar –(a) sodanige infrastruktuur vir grootmaatvervoer van riool, afvalwater, proseswater, terugvoerwater, industriële afvoer of slym binne 'n padreserwe of spoortjereserwe is; of (b) waar sodanige ontwikkeling binne 'n stedelike gebied sal plaasvind.
- Staatskennisgewing R. 983 van 4 Desember 2014 (Lyskennisgewing 1), soos gewysig: Aktiwiteit Nr 12: Die ontwikkelin van (i) kanale wat 100 vierkante meter groot is; (ii) waterweë wat 100 vierkante meter groot is; (iii) brúe wat 100 vierkante meter groot is; (iv) damme, waar die dam, insluitend infrastruktuur en wateroppervlakte, 100 vierkante meter groot is; (v) stuwwalles, waar die stuw, insluitend infrastruktuur en wateroppervlakte, 100 vierkante meter groot is; (vi) grootmaat stormwateruitlaatstrukture wat 100 vierkante meter groot is; (vii) marinas wat meer as 100 vierkante meter groot is; (viii) jeeis wat 100 vierkante meter groot is; (ix) glybane groter as 100 vierkante meter; (x) geboue wat 100 vierkante meter groot is; (xi) promenade wat 100 vierkante meter groot is; of (xii) infrastruktuur of strukture met 'n fisiese voetspoor van 100 vierkante meter of meer.
- Staatskennisgewing R. 983 van 4 Desember 2014 (Lyskennisgewing 1), soos gewysig: Aktiwiteit Nr 13: Die ontwikkeling van fasiliteite of infrastruktuur vir die buitestroomberging van water, insluitend damme en reservoors, met 'n gesamentlike kapasiteit van 50000 kubieke meter of meer, lensy sodanige berging binne die bestek van aktiwiteit 16 in Noteringskennisgewing 2 van 2014 val.
- Staatskennisgewing R. 983 van 4 Desember 2014 (Lyskennisgewing 1), soos gewysig: Aktiwiteit Nr 25: Die ontwikkeling en verwante bedryf van fasiliteite of infrastruktuur vir die behandeling van uitvoeisel, afvalwater of riool met 'n daaglikse deurselkapasiteit van meer as 2000 kubieke meter maar minder as 15 000 kubieke meter.
- Staatskennisgewing R. 983 van 4 Desember 2014 (Lyskennisgewing 1), soos gewysig: Aktiwiteit Nr 26: Residensieel, kleinhandel-, ontspannings-, toerisme-, kommersiële of insituisionele ontwikkelings van 1 000 vierkante meter of meer, op grond voorheen gebruik vir mynbou of swaar nywerheidsdoeleindes, uitgesluit- (i) waar sodanige grond ingevolge deel 8 van die Wet op Nasionale Omgewingsbestuur: Afval, 2008 (Wet No. 59 van 2008) herstel is, in welke geval die Wet op Nasionale Omgewingsbestuur: Afval, 2008 van toepassing is; of (ii) waar 'n omgewingsmagtiging verkry is vir die ontmanteling van so 'n myn of nywerheid ingevolge hierdie Kennisgewing of enige vorige NEMA-kennisgewing; of (iii) waar 'n sluitingsertifikaat ingevolge artikel 43 van die Wet op die Ontwikkeling van Minerale en Petroleumloubronne, 2002 (Wet No. 28 van 2002) vir sodanige grond uitgereik is.
- Staatskennisgewing R. 983 van 4 Desember 2014 (Lyskennisgewing 1), soos gewysig: Aktiwiteit Nr 28: Residensieel, gemengde, kleinhandel-, kommersiële, industriële of insituisionele ontwikkelings waar sodanige grond vir landbou, wild gebruik is boerdery, perdry doeleindes of bebossing op of na 01 April 1998 en waar sodanige ontwikkeling: (i) sal binne 'n stedelike gebied voorkom, waar die totale grond wat ontwikkel gaan word groter as 5 hektaar is; of (ii) sal buite 'n stedelike gebied voorkom, waar die totale grond wat ontwikkel moet word groter as 1 hektaar is; uitgesluit waar sodanige grond reeds ontwikkel is vir residensieel, gemengde, kleinhandel-, kommersiële, industriële of insituisionele doeleindes.

- Staatskennisgewing R. 984 van 4 Desember 2014 (Lyskennisgewing 2), soos gewysig: Aktiwiteit Nr 9: Die ontwikkeling van fasiliteite of infrastruktuur vir die oordrag en verspreiding van elektrisiteit met 'n kapasiteit van 275 kilovolt of meer, buite 'n stedelike gebied of nywerheidskompleks, uitgesluit die ontwikkeling van verbypad-infrastruktuur vir die transmissie en verspreiding van elektrisiteit waar sodanige verbypad-infrastruktuur is a) tydelik vereis word om voorsiening te maak vir instandhouding van bestaande infrastruktuur; b) 2 kilometer of korter in lengte; c) binne 'n bestaande transmissielynseiwitruut; en d) sal binne 18 maande na die aanvang van ontwikkeling verwyder word.
- Staatskennisgewing R. 984 van 4 Desember 2014 (Lyskennisgewing 2), soos gewysig: Aktiwiteit Nr 15: Die opruiing van 'n gebied van 20 hektaar of meer van inheemse plantegroei, uitgesonderd waar sodanige opruiing van inheemse plantegroei is nodig vir- (i) die onderneming van 'n lineêre aktiwiteit; of (ii) instandhoudingsdoeleindes onderneem ooreenkomstig 'n instandhoudingsbestuursplan.
- Staatskennisgewing R. 985 van 4 Desember 2014 (Lyskennisgewing 3), soos gewysig: Aktiwiteit Nr 12: Die opruiing van 'n gebied van 300 vierkante meter of meer van inheemse plantegroei behalwe waar sodanige opruiing van inheemse plantegroei word benodig vir instandhoudingsdoeleindes wat ooreenkomstig 'n instandhoudingsbestuursplan onderneem word.

Die bogenoemde aktiwiteite vereis dat 'n volledige Omvangbepalings en Omgewingsimpak Evalueerings proses ter ondersteuning van die Omgewingsmagtiging aansoek gedoen word. Die aansoek sal metterdyd by die bevoegde owerheid, die Mpumalanga Departement van Landbou, Landelike Ontwikkeling, Grond en Omgewingsake, ingedien word. By aanvaarding van die aansoek, sal die Bevoegde Owerheid 'n verwysingsnommer vir die aansoek uitreik. Die verwysingsnommer sal daarna gekommunikeer word aan Belanghebbende en Geaffekteerde Partye.

Die volgende verslae is van toepassing tot hierdie aansoek vir Omgewingsmagtiging:

- 'n Omvangsbepalingsverslag in ooreenstemming met Bylae 2 van die OIE-regulasies, 2014;
- 'n Omgewingsimpakbeoordelingsverslag in ooreenstemming met Bylae 3 van die OIE-regulasies, 2014; en
- 'n Omgewingsbestuursprogram in ooreenstemming met Bylae 4 van die OIE-regulasies, 2014.

**PUBLIEKE DEELNAME PROSESSE**

Die publieke deelname proses vir die bogenoemde aansoek word uitgevoer volgens die vereistes van Hoofstuk 6 van die OIE-Regulasies van 4 Desember 2014. Registrasie van Belanghebbende en Geaffekteerde Partye (B&GPe) vir die Omgewingsmagtigingsaansoek sal beskikbaar wees vanaf 24 Januarie 2022 tot 23 Februarie 2022. Indien u wil registreer as 'n Belanghebbende en Geaffekteerde Party vir die voorgestelde projek en daarna op hoogte gehou word van die vordering van die projek en alle publieke deelname geleenthede, versoek asseblief en voltooï 'n "Belanghebbende en Geaffekteerde Party" registrasie vorm (verkrygbaar by die Omgewingsimpakbeoordelingspraktisyn vir die projek). Voltooid "Belanghebbende en Geaffekteerde Party" registrasievorms moet asseblief gestuur word aan die Omgewingsimpakbeoordelingspraktisyn, Lourens de Villiers, by die kontakbesonderhede hieronder. Alternatiewelik kan jy ook jou naam, kontakbesonderhede en belang in die saak skiflik aan die Omgewingsimpakbeoordelingspraktisyn verskaf voor of op 23 Februarie 2022.

Soos vereis in die OIE-Regulasies, is 'n koerantadvertensie in die Witbank koerant geplaas op 26 November 2021.

Die Omvangsbepalingsverslag sal beskikbaar gestel word aan die publiek vir hersiening en om kommentaar te lewer vir 'n tydperk van 30 dae (presiese datums sal aan geregistreerde B&GPe gekommunikeer word). Elektroniese kopie van die verslag sal per e-pos of geregistreerde pos aan geregistreerde Belanghebbende en Geaffekteerde Party voorsien word. Laat weet ons asseblief indien u 'n harde kopie van die verslag vereis.

Indien u enige verdere inligting benodig, kontak gerus die Omgewingsimpakbeoordelingspraktisyn by die kontak besonderhede hieronder.

**Labesh (Pty) Ltd**

Lourens de Villiers

Tel: 082 789 6525

E-pos: info@labesh.co.za

Faks na E-pos: 086 552 6837

Posadres: PostNet Boks #469, Privaatks X504, Sinoville, 0129

## Appendix 2: Written notices issued as required in terms of the regulations

### Appendix 2.1 – Written Notices



Postnet Box 469, Private Bag X504, Sinoville, 0129  
Tel: 087 230 8462  
Cell: 082 789 6525  
Email: info@labesh.co.za

November 26, 2021

Department of Agriculture, Forestry and Fisheries  
Private Bag X250  
Pretoria  
0001

Attention: Mr. B Nyathikazi

#### **BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**

**EIA REFERENCE NUMBER: TO BE CONFIRMED UPON SUBMISSION OF THE ENVIRONMENTAL APPLICATION TO THE COMPETENT AUTHORITY**

This letter serves to inform you, as a potential Interested and Affected Party, of the proposed application for Environmental Authorisation for the proposed Commandpark Extension 4 Township Establishment project. The Environmental Authorisation (EA) application will be lodged with the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (the Competent Authority [CA]) in terms of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Regulations in terms of sections 24(5) and 44 of the NEMA, 1998), as amended. For this Environmental Authorisation application, a Full Scoping & Environmental Impact Assessment process will be conducted.

The following table provides a brief summary of the project details. A Background Information Document (BID) is attached to this notification letter and contains more detail regarding the proposed project. Please also find attached an "Interested and Affected Party" registration form. This form should please be completed should you wish to register as an Interested and Affected Party for the proposed project and subsequently be kept informed of the progress of the project and all public participation opportunities as the application process proceeds. Completed "Interested and Affected Party" registration forms should please be submitted to the Environmental Assessment Practitioner (EAP) for the project, Lourens de Villiers, at the contact details provided below. Alternatively, you may also submit your name, contact information and interest in the matter, in writing, to the EAP at the contact details provided. Please send the registration information before or on the **17<sup>th</sup> of January 2022**.

Project Applicant	N&H Golden Miles Village Close Corporation
Project EIA Reference Number	To be confirmed upon submission of the EA to the CA
Project Name	Commandpark Extension 4 Township Establishment
Project Location	Portion 562 of the Farm Naauwpoort 335 JS; Portion 563 of the Farm Naauwpoort 335 JS; Portion 565 of the Farm Naauwpoort 335 JS; and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS.
Project GPS Coordinates	25°58'16.41"S; 29°16'43.29"E 25°58'41.17"S; 29°16'54.12"E 25°58'36.49"S; 29°17'19.20"E 25°58'21.18"S; 29°17'14.11"E
Environmental Assessment Practitioner for the project	Labesh (Pty) Ltd - Lourens de Villiers Tel: 082 789 6525

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Labesh (Pty) Ltd.



Postnet Box 469, Private Bag X504, Sinoville, 0129  
Toll: 087 230 8462  
Cell: 082 789 6525  
Email: info@labesh.co.za

	Email: info@labesh.co.za Fax to Email: 086 552 6837 Postal Address: PostNet Box #469, Private Bag X504, Sinoville, 0129
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Please do not hesitate to contact me should you require any additional information or if any of the information provided in this letter is unclear.

Regards,

Lourens de Villiers  
Managing Director and Environmental Assessment Practitioner



Postnet Box 469, Private Bag X504, Sinoville, 0129  
 Tell: 087 230 8462  
 Cell: 082 789 6525  
 Email: info@labesh.co.za

November 26, 2021

Department of Agriculture, Forestry and Fisheries  
 Private Bag X250  
 Pretoria  
 0001

Attention: Dr. ME Tau

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
**EIA REFERENCE NUMBER: TO BE CONFIRMED UPON SUBMISSION OF THE ENVIRONMENTAL APPLICATION TO THE COMPETENT AUTHORITY**

This letter serves to inform you, as a potential Interested and Affected Party, of the proposed application for Environmental Authorisation for the proposed Commandpark Extension 4 Township Establishment project. The Environmental Authorisation (EA) application will be lodged with the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (the Competent Authority [CA]) in terms of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Regulations in terms of sections 24(5) and 44 of the NEMA, 1998), as amended. For this Environmental Authorisation application, a Full Scoping & Environmental Impact Assessment process will be conducted.

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<b>Project Applicant</b>	N&H Golden Miles Village Close Corporation
<b>Project EIA Reference Number</b>	To be confirmed upon submission of the EA to the CA
<b>Project Name</b>	Commandpark Extension 4 Township Establishment
<b>Project Location</b>	Portion 562 of the Farm Naauwpoort 335 JS; Portion 563 of the Farm Naauwpoort 335 JS; Portion 565 of the Farm Naauwpoort 335 JS; and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS.
<b>Project GPS Coordinates</b>	25°58'16.41"S; 29°16'43.29"E 25°58'41.17"S; 29°16'54.12"E 25°58'36.49"S; 29°17'19.20"E 25°58'21.18"S; 29°17'14.11"E
<b>Environmental Assessment Practitioner for the project</b>	Labesh (Pty) Ltd - Lourens de Villiers Tel: 082 789 6525

Labesh (Pty) Ltd.





Postnet Box 469, Private Bag X504, Sinoville, 0129  
 Tell: 087 230 8462  
 Cell: 082 789 6525  
 Email: info@labesh.co.za

November 26, 2021

Department of Agriculture, Forestry and Fisheries  
 Private Bag X250  
 Pretoria  
 0001

Attention: Ms. N Dooka

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
**EIA REFERENCE NUMBER: TO BE CONFIRMED UPON SUBMISSION OF THE ENVIRONMENTAL APPLICATION TO THE COMPETENT AUTHORITY**

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<b>Project Applicant</b>	N&H Golden Miles Village Close Corporation
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<b>Environmental Assessment Practitioner for the project</b>	Labesh (Pty) Ltd - Lourens de Villiers Tel: 082 789 6525

Labesh (Pty) Ltd.



Postnet Box 469, Private Bag X504, Sinoville, 0129  
 Tell: 087 230 8462  
 Cell: 082 789 6525  
 Email: info@labesh.co.za

November 26, 2021

Department of Agriculture, Rural Development and Land Administration  
 Private Bag X11219  
 Nelspruit  
 1200

Attention: Mr. C Kleynhans

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**

**EIA REFERENCE NUMBER: TO BE CONFIRMED UPON SUBMISSION OF THE ENVIRONMENTAL APPLICATION TO THE COMPETENT AUTHORITY**

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<b>Environmental Assessment Practitioner for the project</b>	Labesh (Pty) Ltd - Lourens de Villiers Tel: 082 789 6525

---

Labesh (Pty) Ltd.



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November 26, 2021

Department of Agriculture, Rural Development and Land Administration  
 Private Bag X11219  
 Nelspruit  
 1200

Attention: Mr. J Venter

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
**EIA REFERENCE NUMBER: TO BE CONFIRMED UPON SUBMISSION OF THE ENVIRONMENTAL APPLICATION TO THE COMPETENT AUTHORITY**

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<b>Environmental Assessment Practitioner for the project</b>	Labesh (Pty) Ltd - Lourens de Villiers Tel: 082 789 6525

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November 26, 2021

Department of Community Safety, Security and Liaison  
 Private Bag X11269  
 Nelspruit  
 1200

Attention: Mr. W Mthombathi

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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Labesh (Pty) Ltd.





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November 26, 2021

Department of Co-operative Governance and Traditional Affairs  
 Private Bag X11304  
 Nelspruit  
 1200

Attention: Mr. B Ntiwane

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Department of Co-operative Governance and Traditional Affairs  
 Private Bag X11304  
 Nelspruit  
 1200

Attention: Ms. M Lushaba

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Department of Co-operative Governance and Traditional Affairs  
 Private Bag X11304  
 Nelspruit  
 1200

Attention: L van Niekerk

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Department of Culture, Sport and Recreation  
 PO Box 1243  
 Nelspruit  
 1200

Attention: Dr. PM Lubisi

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Labesh (Pty) Ltd.



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November 26, 2021

Department of Education  
 Private Bag X11341  
 Nelspruit  
 1200

Attention: Ms. R Motubatse

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Department of Finance  
 Private Bag X11205  
 Nelspruit  
 1200

Attention: Ms. N Nkamba

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Department of Finance  
 Private Bag X11205  
 Nelspruit  
 1200

Attention: Ms. E Chego

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Department of Health  
 Private Bag X11285  
 Nelspruit  
 1200

Attention: Mrs. C Swart

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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This letter serves to inform you, as a potential Interested and Affected Party, of the proposed application for Environmental Authorisation for the proposed Commandpark Extension 4 Township Establishment project. The Environmental Authorisation (EA) application will be lodged with the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (the Competent Authority [CA]) in terms of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Regulations in terms of sections 24(5) and 44 of the NEMA, 1998), as amended. For this Environmental Authorisation application, a Full Scoping & Environmental Impact Assessment process will be conducted.

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<b>Project Applicant</b>	N&H Golden Miles Village Close Corporation
<b>Project EIA Reference Number</b>	To be confirmed upon submission of the EA to the CA
<b>Project Name</b>	Commandpark Extension 4 Township Establishment
<b>Project Location</b>	Portion 562 of the Farm Naauwpoort 335 JS; Portion 563 of the Farm Naauwpoort 335 JS; Portion 565 of the Farm Naauwpoort 335 JS; and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS.
<b>Project GPS Coordinates</b>	25°58'16.41"S; 29°16'43.29"E 25°58'41.17"S; 29°16'54.12"E 25°58'36.49"S; 29°17'19.20"E 25°58'21.18"S; 29°17'14.11"E
<b>Environmental Assessment Practitioner for the project</b>	Labesh (Pty) Ltd - Lourens de Villiers Tel: 082 789 6525

Labesh (Pty) Ltd.



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 Email: info@labesh.co.za

November 26, 2021

Department of Health  
 Private Bag X11285  
 Nelspruit  
 1200

Attention: Mr. P Makhubela

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Department of Human Settlements  
 Private Bag X11328  
 Nelspruit  
 1200

Attention: Mr. D Dube

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Department of Human Settlements  
 Private Bag X11328  
 Nelspruit  
 1200

Attention: Mr. S Mstweni

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November 26, 2021

Department of Mineral Resources  
 Private Bag X7279  
 Emalahleni  
 1035

Attention: Mr. A Tshivhandekano

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November 26, 2021

Department of Public Works, Road and Transport  
 Private Bag X11310  
 Nelspruit  
 1200

Attention: Mr. K Mohlasedi

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November 26, 2021

Department of Social Development  
 Private Bag X11285  
 Nelspruit  
 1200

Attention: Ms. N Mlageni

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November 26, 2021

Department of Water and Sanitation  
 Private Bag X10580  
 Bronkhorspruit  
 1020

Attention: Ms. B Mnguni

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Emalahleni Local Municipality  
 PO Box 3  
 Emalahleni  
 1035

Attention: Municipal Manager

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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November 26, 2021

Nkangala District Municipality  
 PO Box 437  
 Middelburg  
 1050

Attention: Municipal Manager

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**

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Nkangala District Municipality  
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Attention: Mr. V Mahlangu

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**

**EIA REFERENCE NUMBER: TO BE CONFIRMED UPON SUBMISSION OF THE ENVIRONMENTAL APPLICATION TO THE COMPETENT AUTHORITY**

This letter serves to inform you, as a potential Interested and Affected Party, of the proposed application for Environmental Authorisation for the proposed Commandpark Extension 4 Township Establishment project. The Environmental Authorisation (EA) application will be lodged with the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (the Competent Authority [CA]) in terms of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Regulations in terms of sections 24(5) and 44 of the NEMA, 1998), as amended. For this Environmental Authorisation application, a Full Scoping & Environmental Impact Assessment process will be conducted.

The following table provides a brief summary of the project details. A Background Information Document (BID) is attached to this notification letter and contains more detail regarding the proposed project. Please also find attached an "Interested and Affected Party" registration form. This form should please be completed should you wish to register as an Interested and Affected Party for the proposed project and subsequently be kept informed of the progress of the project and all public participation opportunities as the application process proceeds. Completed "Interested and Affected Party" registration forms should please be submitted to the Environmental Assessment Practitioner (EAP) for the project, Lourens de Villiers, at the contact details provided below. Alternatively, you may also submit your name, contact information and interest in the matter, in writing, to the EAP at the contact details provided. Please send the registration information before or on the **17<sup>th</sup> of January 2022**.

<b>Project Applicant</b>	N&H Golden Miles Village Close Corporation
<b>Project EIA Reference Number</b>	To be confirmed upon submission of the EA to the CA
<b>Project Name</b>	Commandpark Extension 4 Township Establishment
<b>Project Location</b>	Portion 562 of the Farm Naauwpoort 335 JS; Portion 563 of the Farm Naauwpoort 335 JS; Portion 565 of the Farm Naauwpoort 335 JS; and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS.
<b>Project GPS Coordinates</b>	25°58'16.41"S; 29°16'43.29"E 25°58'41.17"S; 29°16'54.12"E 25°58'36.49"S; 29°17'19.20"E 25°58'21.18"S; 29°17'14.11"E
<b>Environmental Assessment Practitioner for the project</b>	Labesh (Pty) Ltd - Lourens de Villiers Tel: 082 789 6525

Labesh (Pty) Ltd.



Postnet Box 469, Private Bag X504, Sinoville, 0129  
 Tell: 087 230 8462  
 Cell: 082 789 6525  
 Email: info@labesh.co.za

November 26, 2021

SANRAL  
 Private Bag X17  
 Lynwood Ridge  
 0040

Attention: Mr. J Olivier

**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**  
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<b>Environmental Assessment Practitioner for the project</b>	Labesh (Pty) Ltd - Lourens de Villiers Tel: 082 789 6525

Labesh (Pty) Ltd.

MyDashboard | SAHRA    New Township Establishment in E

sahris.sahra.org.za/cases/new-township-establishment-emalahleni

 Heritage Cases *New Township Establishment in Emalahleni* has been created.

 Heritage Cases

VIEW    EDIT

**SAHRA Application Closure**

Please note the following concerning applications submitted to the South African Heritage Resources Agency (SAHRA) during the December 2021 to January 2022 period.

The full notice is available here: [Notice](#)

**New Township Establishment in Emalahleni**

[Add new comment](#)    [Subscribe to: This post](#)

**CaseHeader**    LocationInfo    Admin    Images

**Status:** DRAFT

**HeritageAuthority(s):** MPHRA

**Case Type:** Section 38 (1) - Decision from Heritage Authority required

**Development Type:** Mixed-Use

**ProposalDescription:**  
New Township Establishment on Portions 562, 563, 565 and the Remainder of Portion 25 of the Farm Naauwpoort 335 JS.

**ApplicationDate:** Thursday, December 2, 2021 - 13:29

**CaseID:** 17675


**Applicants:** N&H Golden Miles Village Close Corporation

**Consultants/Experts:** Lourens de Villiers

**OtherReferences:**

Dept	CaseReference	DueDate	FinalDecision
DAPPLEA			

**Caselmages**



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24°C    13:30    2021/12/02



**BACKGROUND INFORMATION DOCUMENT – ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE FOLLOWING PROJECT: PROPOSED COMMANDPARK EXTENSION 4 TOWNSHIP ESTABLISHMENT**

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Labesh (Pty) Ltd has been appointed by the applicant, N&H Golden Miles Village Close Corporation, in terms of Regulation 12 of the Environmental Impact Assessment Regulations (GNR. 982 of 4 December 2014), as amended, as the independent Environmental Assessment Practitioner (EAP) tasked with conducting the abovementioned application processes. Labesh complies with the necessary requirements of Regulation 13 of GNR. 982 of 4 December 2014 as amended.

**DESCRIPTION OF CURRENT OPERATIONS**

Portion 563, 565 and Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS, is currently open vacant land. Portion 562 of the Farm Naauwpoort 335 JS consists of a scatter of industrial related structures that include overhead electricity cables and towers.

**PROJECT DESCRIPTION**

Mixed land use township establishment comprising of 41 industrial erven, 1 business erf, 1 transport service erf and 3 tourism erven. The industrial erven will accommodate light industrial activities. The business erf will be used to accommodate a shopping centre, while the tourism erven will be used to accommodate a hobby park comprising of 4x4 trials, paintball, hiking, cycling, birding, archery, fishing, picnics and camping. The transport service erf will be used to accommodate a truck stop.

Proposed Development Footprint: 123, 4524 Hectares

**PROJECT LOCATION**

Portion 562 of the Farm Naauwpoort 335 JS; GPS Coordinates: 25°58'16.41"S; 29°16'43.29"E

Portion 563 of the Farm Naauwpoort 335 JS; GPS Coordinates: 25°58'41.17"S; 29°16'54.12"E

Portion 565 of the Farm Naauwpoort 335 JS; GPS Coordinates: 25°58'36.49"S; 29°17'19.20"E

Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS; GPS Coordinates: 25°58'21.18"S; 29°17'14.11"E

The project site falls within the eMalahleni Local Municipality, Mpumalanga Province.

**LEGISLATION RELEVANT TO THE PROJECT**

The proposed project requires Environmental Authorisation for the following listed activities in terms of the Environmental Impact Assessment Regulations, 2014, as amended:

- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 9: The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for bulk transportation of water or storm water or storm water



drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.

- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 10: The development and related operation of infrastructure exceeding 1000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes- (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.
- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 12: The development of (i) canals exceeding 100 square metres in size; (ii) channels exceeding 100 square metres in size; (iii) bridges exceeding 100 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; (v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size; (vi) bulk storm water outlet structures exceeding 100 square metres in size; (vii) marinas exceeding 100 square metres in size; (viii) jetties exceeding 100 square metres in size; (ix) slipways exceeding 100 square metres in size; (x) buildings exceeding 100 square metres in size; (xi) boardwalks exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more;
- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 13: The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.
- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 25: The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres.
- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 26: Residential, retail, recreational, tourism, commercial or institutional developments of 1000 square metres or more, on land previously used for mining or heavy industrial purposes; excluding- (i) where such land has been remediated in terms of part 8 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; or (ii) where an environmental authorisation has been obtained for the decommissioning of such a mine or industry in terms of this Notice or any previous NEMA notice; or (iii) where a closure certificate has been issued in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for such land.
- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 28: Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.
- GNR. 984 of 4 December 2014 (Listing Notice 2), as amended, Activity No. 9: The development of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex, excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is a) temporarily required to allow for maintenance of existing infrastructure; b) 2 kilometres or shorter in length; c) within an existing transmission line servitude; and d) will be removed within 18 months of the commencement of development.



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- GNR. 984 of 4 December 2014 (Listing Notice 2), as amended, Activity No. 15: The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
- GNR. 985 of 4 December 2014 (Listing Notice 3), as amended, Activity No. 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

The above-mentioned activities require a Full Scope & Environmental Impact Assessment process to be conducted in support of the Environmental Authorisation application. The application will be submitted to the Competent Authority, the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs in due course. Upon acceptance of the application, the Competent Authority will issue a reference number for the application. This reference number will be communicated upon its receipt from the Competent Authority.

The following reports are applicable to this application for Environmental Authorisation:

- A Scoping Report in accordance with Appendix 2 of the EIA Regulations, 2014;
- An Environmental Impact Assessment Report in accordance with Appendix 3 of the EIA Regulations, 2014; and
- An Environmental Management Programme in accordance with Appendix 4 of the EIA Regulations, 2014.

#### **PUBLIC PARTICIPATION PROCESSES**

The public participation processes for the above-mentioned application are conducted according to the requirements of Chapter 6 of the EIA Regulations of 4 December 2014, as amended. Registration of Interested and Affected Parties (I&AP's) for the Environmental Authorisation application will be available from 26 November 2021 to 17 January 2022. Should you wish to register as an Interested and Affected Party for the proposed project and subsequently be kept informed of the progress of the project and all public participation opportunities as the application process proceeds, please complete the "Interested and Affected Party" registration form that forms part of this BID. Completed "Interested and Affected Party" registration forms should please be submitted to the EAP for the project, Lourens de Villiers, at the contact details provided below. Alternatively, you may also submit your name, contact information and interest in the matter, in writing, to the EAP at the contact details provided. Please send the registration information to the EAP before or on the **17<sup>th</sup> of January 2022**.

As required in the EIA Regulations, site notice boards will be placed on the project property boundary and a newspaper advertisement will be placed in the Witbank Newspaper on the 26<sup>th</sup> of November 2021.

The Scoping Report will be made available to the public for review and commenting for a period of 30 days (exact dates will be communicated to registered I&AP's). Electronic copies of the report will be provided to registered Interested and Affected Parties via email or registered post. Please inform us should you require a hard copy of the report.

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Postal Address: PostNet Box #469, Private Bag X504, Sinoville, 0129

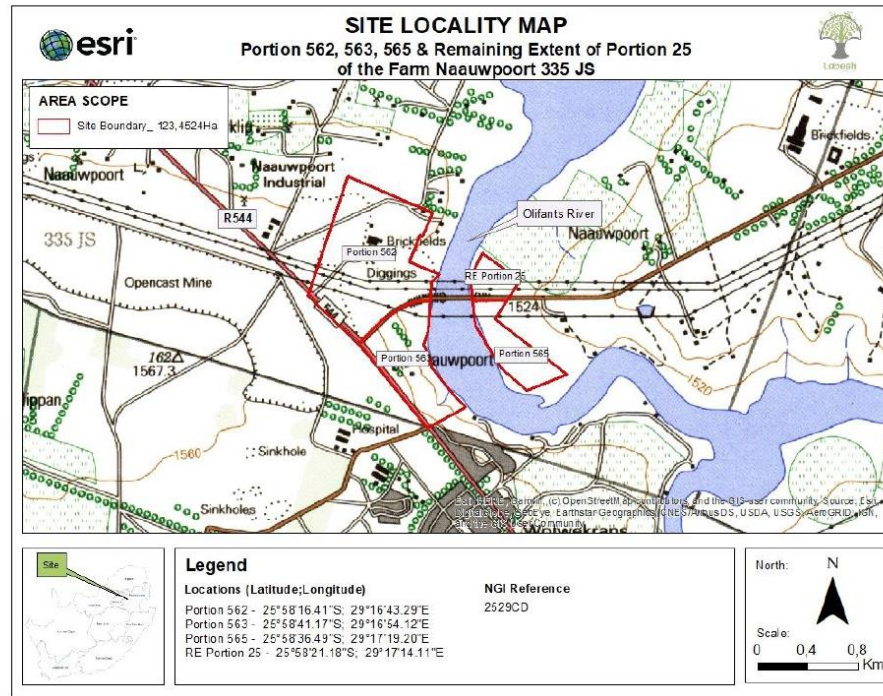


Figure 1: Site Locality Map







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As required in the EIA Regulations, site notice boards was placed on the project property boundary and a newspaper advertisement was placed in the Witbank Newspaper on the 26<sup>th</sup> of November 2021.

The Scoping Report will be made available to the public for review and commenting for a period of 30 days (exact dates will be communicated to registered I&AP's). Electronic copies of the report will be provided to registered Interested and Affected Parties via email or registered post. Please inform us should you require a hard copy of the report. Should you require any additional information, please do not hesitate to contact the EAP at the details provided below.

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Tel: 082 789 6525  
Email: [info@labesh.co.za](mailto:info@labesh.co.za)  
Fax to Email: 086 552 6837  
Postal Address: PostNet Box #469, Private Bag X504, Sinoville, 0129

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Labesh (Pty) Ltd.



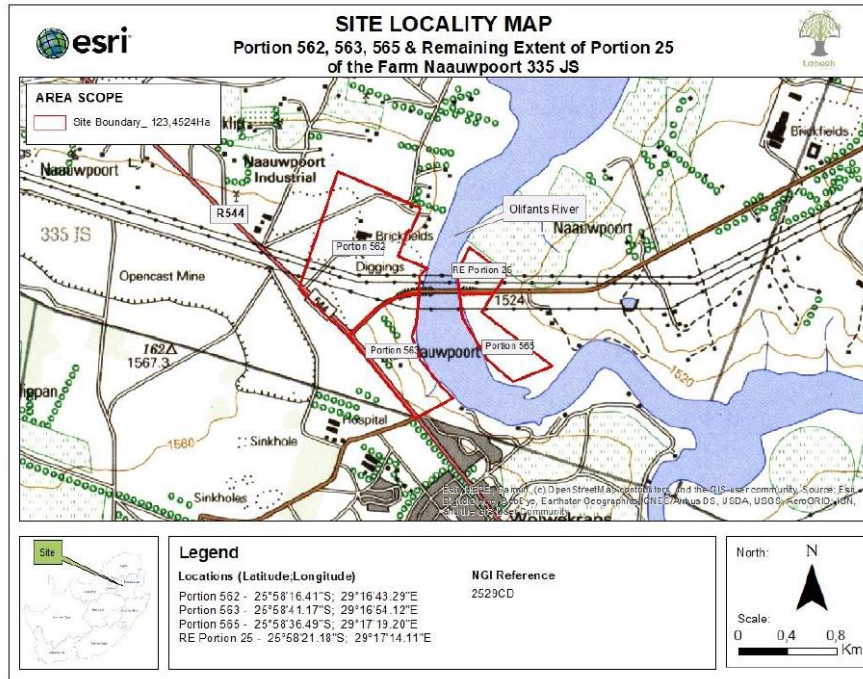


Figure 1: Site Locality Map







## Appendix 2.2 – Written Notices – Emailed

### Info

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:15  
**To:** 'nyathikazibw@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Agriculture, Forestry and Fisheries.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

Postnet Box 469  
 Private Bag X504  
 Sinoville 0129

**Labesh**  
sustainable, natural resource management



### Info

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:16  
**To:** 'Thokob@nda.agric.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Agriculture, Forestry and Fisheries01.pdf; BID\_Commandpark Ext4.pdf

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 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:16  
**To:** 'ndooka@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Agriculture, Forestry and Fisheries02.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:04  
**To:** 'Tiaan Kleynhans'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Agriculture, Rural Development and Land Administration.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:05  
**To:** 'jventer@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Agriculture, Rural Development and Land Administration01.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:00  
**To:** 'williamm@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Community Safety, Security and Liaison.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:05  
**To:** 'bcntiwane@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Co-operative Governance and Traditional Affairs.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:06  
**To:** 'mzmantashe@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Co-operative Governance and Traditional Affairs01.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:07  
**To:** 'lvanniekerk@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Co-operative Governance and Traditional Affairs02.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:12  
**To:** 'PMLubisi@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Culture, Sport and Recreation.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:11  
**To:** 'r.motubatse@education.mpu.gov.za'; 'p.moosa@education.mpu.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Education.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Private Bag X504  
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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:13  
**To:** 'nzkamba@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Finance.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Private Bag X504  
 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:13  
**To:** 'echego@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Finance01.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:07  
**To:** 'CareenS@mpuhealth.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Health.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:08  
**To:** 'Pauleck Makhubela'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Health01.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:10  
**To:** 'APohi@mpg.gov.za'; 'ntzulu@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Human Settlements.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

Postnet Box 469  
 Private Bag X504  
 Sinoville 0129

**Labesh**





**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:10  
**To:** 'APohl@mpg.gov.za'; 'ntzulu@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Human Settlements01.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:13  
**To:** 'Aubrey.Tshivhandekano@dmr.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Mineral Resources.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Private Bag X504  
 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:14  
**To:** 'Lydia.Maphoha@dmr.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Mineral Resources.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:00  
**To:** 'kmohlasedi@mpg.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Public Works, Road and Transport.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Private Bag X504  
 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:09  
**To:** 'paulb@dsdmpu.gov.za'; 'HlengiweT@dsdmpu.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Department of Social Development.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Private Bag X504  
 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:03  
**To:** 'Mnguni Betty (BHT)'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Department of Water and Sanitation.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:03  
**To:** 'officeofmm@emalahleni.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Emalahleni Local Municipality.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Private Bag X504  
 Sinoville 0129

**Labesh**



**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:01  
**To:** 'mm@nkangaladm.gov.za'; 'nkosinm@nkangaladm.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; Nkangala District Municipality.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Private Bag X504  
 Sinoville 0129

**Labesh**



**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:02  
**To:** 'mahlangumv@nkangaladm.gov.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** Nkangala District Municipality01.pdf; BID\_Commandpark Ext4.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

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 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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 Private Bag X504  
 Sinoville 0129

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**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 26 November 2021 14:15  
**To:** 'info@nra.co.za'  
**Subject:** Public Participation Notification - Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment  
**Attachments:** BID\_Commandpark Ext4.pdf; SANRAL.pdf

Good day

Please find attached a Notification Letter and Background Information Document relating to the following, for your attention please:

**Environmental Authorisation Application for the following project: Proposed Commandpark Extension 4 Township Establishment**

**EIA Reference Number: To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority**

Please do not hesitate to contact us should you require further information in this regard.

Regards,

Antoinette Nieuwoudt on behalf of Lourens de Villiers (EAP for the project).

Antoinette Nieuwoudt  
 Environmental Consultant  
 Cell: 082 789 6525  
 Email: antoinette@labesh.co.za

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## Appendix 2.3 – Link to Draft Scoping Report

### Info

**From:** Info <info@labesh.co.za>  
**Sent:** Thursday, 24 February 2022 16:04  
**To:** 'gideon@inmine.co.za'  
**Subject:** Draft Scope Report - Environmental Authorization Application: Proposed Commandpark Extension 4 Township Establishment

**Importance:** High

Good Day

Please find attached a link to the Draft Scope Report (BAR) and relevant documentation relating to the following, for your attention please:

**Environmental Authorisation Application for the following project:** Proposed Commandpark Extension 4 Township Establishment

**EIA Reference Number:** To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority

**Link:** [https://www.dropbox.com/sh/g7cvdkihdofknmp/AAAYnHu0yN2XDfnDx\\_7Y0P0ba?dl=0](https://www.dropbox.com/sh/g7cvdkihdofknmp/AAAYnHu0yN2XDfnDx_7Y0P0ba?dl=0)

The Draft Scope Report will be made available for review and commenting until the **25<sup>th</sup> of March 2022**.

Please do not hesitate to contact us should you require further assistance or any other information in this regard.

Regards,  
Antoinette Nieuwoudt

On behalf of Lourens De Villiers (EAP for the project)

Antoinette Nieuwoudt  
Environmental Consultant  
Cell: 082 789 6525  
Email: antoinette@labesh.co.za

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Private Bag X504  
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Labesh



1

### Info

**From:** Info <info@labesh.co.za>  
**Sent:** Thursday, 24 February 2022 16:04  
**To:** 'jacquesstander96@yahoo.com'  
**Subject:** Draft Scope Report - Environmental Authorization Application: Proposed Commandpark Extension 4 Township Establishment

**Importance:** High

Good Day

Please find attached a link to the Draft Scope Report (BAR) and relevant documentation relating to the following, for your attention please:

**Environmental Authorisation Application for the following project:** Proposed Commandpark Extension 4 Township Establishment

**EIA Reference Number:** To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority

**Link:** [https://www.dropbox.com/sh/g7cvdkihdofknmp/AAAYnHu0yN2XDfnDx\\_7Y0P0ba?dl=0](https://www.dropbox.com/sh/g7cvdkihdofknmp/AAAYnHu0yN2XDfnDx_7Y0P0ba?dl=0)

The Draft Scope Report will be made available for review and commenting until the **25<sup>th</sup> of March 2022**.

Please do not hesitate to contact us should you require further assistance or any other information in this regard.

Regards,  
Antoinette Nieuwoudt

On behalf of Lourens De Villiers (EAP for the project)

Antoinette Nieuwoudt  
Environmental Consultant  
Cell: 082 789 6525  
Email: antoinette@labesh.co.za

Postnet Box 469  
Private Bag X504  
Sinoville 0129

Labesh



1

**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Thursday, 24 February 2022 13:32  
**To:** 'maritapot@gmail.com'  
**Subject:** Draft Scope Report - Environmental Authorization Application: Proposed Commandpark Extension 4 Township Establishment

**Importance:** High

Good Day Ms. Potgieter

Please find attached a link to the Draft Scope Report (BAR) and relevant documentation relating to the following, for your attention please:

**Environmental Authorisation Application for the following project:** Proposed Commandpark Extension 4 Township Establishment

**EIA Reference Number:** To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority

**Link:** [https://www.dropbox.com/sh/q7cvdkihdofknmp/AAAYnHu0yN2XDfnDx\\_7Y0P0ba?dl=0](https://www.dropbox.com/sh/q7cvdkihdofknmp/AAAYnHu0yN2XDfnDx_7Y0P0ba?dl=0)

The Draft Scope Report will be made available for review and commenting until the **25<sup>th</sup> of March 2022**.

Please do not hesitate to contact us should you require further assistance or any other information in this regard.

Regards,  
Antoinette Nieuwoudt

On behalf of Lourens De Villiers (EAP for the project)

Antoinette Nieuwoudt  
Environmental Consultant  
Cell: 082 789 6525  
Email: antoinette@labesh.co.za

Postnet Box 469  
Private Bag X504  
Sinoville 0129

**Labesh**  
sustainable, natural resource management



**Info**

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 25 February 2022 09:49  
**To:** 'customerservices@totalcustomerco.za'  
**Subject:** Draft Scope Report - Environmental Authorization Application: Proposed Commandpark Extension 4 Township Establishment

**Importance:** High

Good Day **Total Energies Benicon (R544, Emalaheni, 1035)**

Please find attached a link to the Draft Scope Report (BAR) and relevant documentation relating to the following, for your attention please:

**Environmental Authorisation Application for the following project:** Proposed Commandpark Extension 4 Township Establishment

**EIA Reference Number:** To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority

**Link:** [https://www.dropbox.com/sh/q7cvdkihdofknmp/AAAYnHu0yN2XDfnDx\\_7Y0P0ba?dl=0](https://www.dropbox.com/sh/q7cvdkihdofknmp/AAAYnHu0yN2XDfnDx_7Y0P0ba?dl=0)

The Draft Scope Report will be made available for review and commenting until the **25<sup>th</sup> of March 2022**.

Please do not hesitate to contact us should you require further assistance or any other information in this regard.

Regards,  
Antoinette Nieuwoudt

On behalf of Lourens De Villiers (EAP for the project)

Antoinette Nieuwoudt  
Environmental Consultant  
Cell: 082 789 6525  
Email: antoinette@labesh.co.za

Postnet Box 469  
Private Bag X504  
Sinoville 0129

**Labesh**  
sustainable, natural resource management



## Info

---

**From:** Info <info@labesh.co.za>  
**Sent:** Friday, 25 February 2022 10:16  
**To:** 'customerservice@totalcustomercare.co.za'  
**Subject:** Draft Scope Report - Environmental Authorization Application: Proposed Commandpark Extension 4 Township Establishment

**Importance:** High

Good Day **Total Energies Benicon (R544, Emalaheni, 1035)**

Please find attached a link to the Draft Scope Report (BAR) and relevant documentation relating to the following, for your attention please:

**Environmental Authorisation Application for the following project:** Proposed Commandpark Extension 4 Township Establishment

**EIA Reference Number:** To be confirmed upon submission of Environmental Authorisation Application to the Competent Authority

**Link:** [https://www.dropbox.com/sh/q7cvdkihdofknmp/AAAYnHu0yN2XDfnDx\\_7Y0P0ba?dl=0](https://www.dropbox.com/sh/q7cvdkihdofknmp/AAAYnHu0yN2XDfnDx_7Y0P0ba?dl=0)

The Draft Scope Report will be made available for review and commenting until the **25<sup>th</sup> of March 2022**.

Please do not hesitate to contact us should you require further assistance or any other information in this regard.

Regards,  
Antoinette Nieuwoudt

On behalf of Lourens De Villiers (EAP for the project)

Antoinette Nieuwoudt  
Environmental Consultant  
Cell: 082 789 6525  
Email: antoinette@labesh.co.za

Postnet Box 469  
Private Bag X504  
Simonsville 0129

Labesh



New Township Establishment in E x

sahris.sahra.org.za/cases/new-township-establishment-emalahleni

Heritage Cases New Township Establishment in Emalahleni has been updated.

Heritage Cases

VIEW EDIT

## New Township Establishment in Emalahleni

Add new comment Subscribe to: This post 5 reads

**CaseHeader** LocationInfo Admin Images

**Status:** SUBMITTED

**HeritageAuthority(s):** MPHRA

**Case Type:** Section 38 (1) - Decision from Heritage Authority required

**Development Type:** Mixed-Use

**ProposalDescription:**  
New Township Establishment on Portions 562, 563, 565 and the Remainder of Portion 25 of the Farm Naauwpoort 335 JS.

**ApplicationDate:** Thursday, December 2, 2021 - 13:29

**CaseID:** 17675

**Applicants:** N&H Golden Miles Village Close Corporation

**Consultants/Experts:** Lourens de Villiers

**OtherReferences:**

Dept	CaseReference	DueDate	FinalDecision
DARDLEA			


**Heritage Reports:** PHASE 1 HIA REPORT FOR TOWNSHIP ESTABLISHMENT  
Palaeontological Impact Assessment: Desktop Study

**ReferenceList:**

**AdditionalDocuments**

- BID\_Commandpark Ext4.pdf
- Draft Scoping Report\_Draft\_Feb2022\_LD.pdf
- Draft EMPr\_Feb2022\_LD.pdf

**CaseImages**



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Chat (19)

Windows taskbar: Type here to search, 26°C Partly sunny, 10:39 2022/02/28

## Appendix 3 – Proofs of Newspaper Advertisements

**NOTICE OF ENVIRONMENTAL AUTHORISATION APPLICATION FOR THE PROPOSED COMMANDPARK  
EXTENSION 4 TOWNSHIP ESTABLISHMENT  
EIA REF NO.: TO BE CONFIRMED UPON SUBMISSION OF EA APPLICATION TO THE COMPETENT  
AUTHORITY**

This newspaper advertisement serves to inform you, as a potential Interested and Affected Party (I&AP), of the proposed application for Environmental Authorisation (EA) for the proposed Commandpark Extension 4 Township establishment project. The EA application will be lodged with the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (Competent Authority) in terms of the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment (EIA) Regulations, 2014, as amended. Labesh (Pty) Ltd has been appointed by the applicant, N&H Golden Miles Village Close Corporation, in terms of Regulation 12 of the EIA Regulations (GNR. 982 of 4 December 2014), as amended, as the independent Environmental Assessment Practitioner (EAP) tasked with conducting the above mentioned application processes. Labesh complies with the necessary requirements of Regulation 13 of GNR. 982 of 4 December 2014, as amended.

**PROJECT DESCRIPTION:**

Mixed land use township establishment comprising of 41 industrial erven, 1 business erf, 1 transport service erf and 3 tourism erven. The industrial erven will accommodate light industrial activities. The business erf will be used to accommodate a shopping centre, while the tourism erven will be used to accommodate a hobby park comprising of 4x4 trials, paintball, hiking, cycling, birding, archery, fishing, picnics and camping. The transport service erf will be used to accommodate a truck stop.

Proposed Development Footprint: 123, 4524 Hectares

**PROJECT LOCATION:**

Portion 562 of the Farm Naauwpoort 335 JS; GPS Coordinates: 25°58'16.41"S; 29°16'43.29"E

Portion 563 of the Farm Naauwpoort 335 JS; GPS Coordinates: 25°58'41.17"S; 29°16'54.12"E

Portion 565 of the Farm Naauwpoort 335 JS; GPS Coordinates: 25°58'36.49"S; 29°17'19.20"E

Remaining Extent of Portion 25 of the Farm Naauwpoort 335 JS; GPS Coordinates: 25°58'21.18"S;  
29°17'14.11"E

The project site is situated within the eMalahleni Local Municipality, Mpumalanga Province.

**APPLICABLE LEGISLATION:** The proposed project requires EA for the following listed activities in terms of the EIA Regulations, 2014, as amended:

- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 9: The development of infrastructure exceeding 1000 metres in length for the bulk transportation of water or storm water (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.
- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 10: The development and related operation of infrastructure exceeding 1000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes- (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where- (a) such infrastructure is for bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.
- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 12: The development of (i) canals exceeding 100 square metres in size; (ii) channels exceeding 100 square metres in size; (iii) bridges exceeding 100 square metres in size; (iv) dams, where the dam, including infrastructure and water surface area, exceeds 100 square metres in size; (v) weirs, where the weir, including infrastructure and water surface area, exceeds 100 square metres in size; (vi) bulk storm water outlet structures exceeding 100 square metres in size; (vii) marinas exceeding 100 square metres in size; (viii) jetties exceeding 100 square metres in size; (ix) slipways exceeding 100 square metres in size; (x) buildings



- exceeding 100 square metres in size; (xi) boardwalks exceeding 100 square metres in size; or (xii) infrastructure or structures with a physical footprint of 100 square metres or more;
- GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 13: The development of facilities or infrastructure for the off-stream storage of water; including dams and reservoirs, with a combined capacity of 50000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.
  - GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 25: The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic metres.
  - GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 26: Residential, retail, recreational, tourism, commercial or institutional developments of 1000 square metres or more, on land previously used for mining or heavy industrial purposes; excluding- (i) where such land has been remediated in terms of part 8 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; or (ii) where an environmental authorisation has been obtained for the decommissioning of such a mine or industry in terms of this Notice or any previous NEMA notice; or (iii) where a closure certificate has been issued in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for such land.
  - GNR. 983 of 4 December 2014 (Listing Notice 1), as amended, Activity No. 28: Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.
  - GNR. 984 of 4 December 2014 (Listing Notice 2), as amended, Activity No. 9: The development of facilities or infrastructure for the transmission and distribution of electricity with a capacity of 275 kilovolts or more, outside an urban area or industrial complex, excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is a) temporarily required to allow for maintenance of existing infrastructure; b) 2 kilometres or shorter in length; c) within an existing transmission line servitude; and d) will be removed within 18 months of the commencement of development.
  - GNR. 984 of 4 December 2014 (Listing Notice 2), as amended, Activity No. 15: The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for- (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
  - GNR. 985 of 4 December 2014 (Listing Notice 3), as amended, Activity No. 12: The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.

The above mentioned activities require a Full Scope & Environmental Impact Assessment process to be conducted in support of the EA application. The application will be submitted to the Competent Authority in due course. Upon acceptance of the application, the Competent Authority will issue a reference number for the application. This reference number will be communicated to I&APs upon its receipt.

**PUBLIC PARTICIPATION PROCESSES:** The public participation processes for the above mentioned applications are conducted according to the requirements of Chapter 6 of the EIA Regulations of 4 December 2014, as amended. Registration of Interested and Affected Parties (I&AP's) for the Environmental Authorisation application will be available from 26 November 2021 to 17 January 2022. Should you wish to register as an I&AP for the proposed project and be kept informed of the progress of the project and public participation opportunities, please request and complete an "Interested and Affected Party" registration form (obtainable from the EAP). Completed I&AP registration forms should please be submitted to the EAP, Lourens de Villiers, at the contact details provided below before or on the 17<sup>th</sup> of January 2022. Alternatively, you may also submit your name, contact information and interest in the matter, in writing, to the EAP at the

contact details provided before or on the 17<sup>th</sup> of January 2022. As required in the EIA Regulations, site notice boards will be placed on the project property boundary. The Scoping Report will be made available to the public for review and commenting for a period of 30 days, (exact dates will be communicated to registered I&APs). Electronic copies of the report will be provided to registered I&APs via email or registered post. Please inform us should you require a hard copy of the report. Should you require any additional information, please do not hesitate to contact the EAP at the details provided below.

**Labesh (Pty) Ltd:** Lourens de Villiers - Tel: 082 789 6525; Email: [info@labesh.co.za](mailto:info@labesh.co.za); Fax to Email: 086 552 6837; Postal Address: PostNet Box #469, Private Bag X504, Sinoville, 0129.





Appendix 4 – Communications to and from Interested and Affected Parties

There has been no communication from Interested and Affected Parties.

Appendix 5 – Minutes of any public and/or stakeholder meetings

No public or stakeholder meetings have been held.



Appendix 6 – Comments and responses report

No comments have been received from Interested & Affected Parties.

## Appendix 7 – Comments from I&APs on Scoping Report

No comments have been received on the Scoping Report.

Appendix 8 – Comments from I&APs on amendments to the Scoping Report

There has been no amendments to the Scoping Report.

Appendix 9 – Copy of the registered I&APs

Farm/Association	Contact via
Mr. Gideon Van Heerden: Inala Mining Services (Pty) Ltd - Beniconpark	Email: <a href="mailto:gideon@inmine.co.za">gideon@inmine.co.za</a>
Mr. Jacques Stander	Email: <a href="mailto:jacquesstander96@yahoo.com">jacquesstander96@yahoo.com</a>
Ms. Marita Potgieter	Email: <a href="mailto:maritapot@gmail.com">maritapot@gmail.com</a>
Total Energies Benicon	Email: <a href="mailto:customerservice@totalcustomercare.co.za">customerservice@totalcustomercare.co.za</a>
South African Heritage Resources Agency (SAHRA)	SAHRIS Website
Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (MDARDLEA)	Email: <a href="mailto:dtswai@mpg.gov.za">dtswai@mpg.gov.za</a> Tel: 013 692 6300 / 5848
Mpumalanga Department of Agriculture, Rural Development and Land Administration	Email: <a href="mailto:tkleynhans@mpg.gov.za">tkleynhans@mpg.gov.za</a> <a href="mailto:jventer@mpg.gov.za">jventer@mpg.gov.za</a> Tel: 013 766 6067 / 6068 017 819 2076
Mpumalanga Department of Community Safety, Security and Liaison	Email: <a href="mailto:williamm@mpg.gov.za">williamm@mpg.gov.za</a> Tel: 013 766 4437
Mpumalanga Department of Public Works, Roads and Transport	Email: <a href="mailto:kmohlasedi@mpg.gov.za">kmohlasedi@mpg.gov.za</a> Tel: 013 766 6978/9
Nkangala District Municipality	Email: <a href="mailto:mm@nkangaladm.gov.za">mm@nkangaladm.gov.za</a> <a href="mailto:nkosinm@nkangaladm.gov.za">nkosinm@nkangaladm.gov.za</a> <a href="mailto:mahlangumv@nkangala.gov.za">mahlangumv@nkangala.gov.za</a>  Tel: 013 249 2000
Emalahleni Local Municipality	Email: <a href="mailto:officeofmm@emalahleni.gov.za">officeofmm@emalahleni.gov.za</a> Tel: 013 690 6911
Department of Water and Sanitation – B11G	Email: <a href="mailto:MnguniB@dws.gov.za">MnguniB@dws.gov.za</a> Tel: 013 932 2061

Farm/Association	Contact via
Mpumalanga Department of Co-operative Governance and Traditional Affairs	Email: <a href="mailto:bcntiwane@mpg.gov.za">bcntiwane@mpg.gov.za</a> <a href="mailto:mzmantashe@mpg.gov.za">mzmantashe@mpg.gov.za</a> <a href="mailto:lvanniekerk@mpg.gov.za">lvanniekerk@mpg.gov.za</a>  Tel: 013 766 6087/6675
Mpumalanga Department of Health	Email: <a href="mailto:CareenS@mpuhealth.gov.za">CareenS@mpuhealth.gov.za</a> <a href="mailto:pauleckm@mpuhealth.gov.za">pauleckm@mpuhealth.gov.za</a>  Tel: 013 766 3448 013 766 3031
Mpumalanga Department of Social Development	Email: <a href="mailto:paulb@dsdmpu.gov.za">paulb@dsdmpu.gov.za</a> <a href="mailto:HlengiweT@dsdmpu.gov.za">HlengiweT@dsdmpu.gov.za</a>  Tel: 013 766 3097
Mpumalanga Department of Human Settlements	Email: <a href="mailto:APohl@mpg.gov.za">APohl@mpg.gov.za</a>  Tel: 013 766 6233
Mpumalanga Department of Education	Email: <a href="mailto:r.motubatse@education.mpu.gov.za">r.motubatse@education.mpu.gov.za</a> <a href="mailto:p.moosa@education.mpu.gov.za">p.moosa@education.mpu.gov.za</a>  Tel: 013 766 5520 Tel: 013 947 1500
Mpumalanga Department of Finance	Email: <a href="mailto:nznkamba@mpg.gov.za">nznkamba@mpg.gov.za</a> <a href="mailto:echego@mpg.gov.za">echego@mpg.gov.za</a>  Tel: 013 766 4564
Mpumalanga Department of Culture, Sport and Recreation	Email: <a href="mailto:PMLubisi@mpg.gov.za">PMLubisi@mpg.gov.za</a>  Tel: 013 766 5209
Department of Mineral Resources	Email: <a href="mailto:Aubrey.Tshivhandekano@dmr.gov.za">Aubrey.Tshivhandekano@dmr.gov.za</a> <a href="mailto:Lydia.Maphopha@dmr.gov.za">Lydia.Maphopha@dmr.gov.za</a>  Tel: 013 653 0500



Farm/Association	Contact via
Department of Agriculture, Forestry and Fisheries	Email: <a href="mailto:nyathikazibw@mpg.gov.za">nyathikazibw@mpg.gov.za</a> <a href="mailto:Thokob@nda.agric.za">Thokob@nda.agric.za</a> <a href="mailto:ndooka@mpg.gov.za">ndooka@mpg.gov.za</a>
South African National Road Agency Limited (SANRAL) Northern Region	Email: <a href="mailto:info@nra.co.za">info@nra.co.za</a> Tel: 012 426 6200

# APPENDIX D – Specialist Studies

The specialist studies for this project are attached to this report.

## **APPENDIX E – Other Information**

The Environmental Screen Report for this project is attached to this report.

The Environmental Management Programme (EMP) for this project is attached to this report.

The Townplanner Memorandum for this project is attached to this report.

# Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (MDARDLEA) correspondence



agriculture, rural development,  
land & environmental affairs  
**MPUMALANGA PROVINCE**  
REPUBLIC OF SOUTH AFRICA

Cnr Rosemead and Ryan Road  
Klipfontein, Ext 16, Emalaheni, 1038  
Mpumalanga Province  
Tel: 013 692 5843 Int: +27 13 692 5843

Litiko Letekulima. Kufut ukiswa  
Kwotindzawo Tasemakhaya, Temhlaba  
Netesimondzawo

Departement van Landbou,  
Landelike Ontwikkeling,  
Grond en Ongewirg Sake

## Nkangala Region

umNyango weZelimo  
UkuThuthukiswa kweNdawo zemaKhaya,  
iNarha neeNdaba zeBhoduluko

**Enquiries:** Dineo Tswai  
**Email:** [dtswai@mpg.gov.za](mailto:dtswai@mpg.gov.za)  
**Reference:** 1/3/1/16/1N-321

**Lourens de Villiers**  
**Labesh**  
**Plot 24, Haakdoornboom AH**  
**Pretoria North**  
**0001**

**Tel: 082 789 6525**  
**Email: [lourens@labesh.co.za](mailto:lourens@labesh.co.za)**

Dear Sir,

**APPLICATION FOR ENVIRONMENTAL AUTHORISATION: THE PROPOSED TOWNSHIP ESTABLISHMENT ON PORTION 562, 563, 565 AND REMAINING EXTENT OF PORTION 25 (COMMANDPARK EXTENSION 4) OF THE FARM NAAUWPOORT 335 JS, WITHIN EMALAHLENI LOCAL MUNICIPALITY, MPUMALANGA PROVINCE.**

The Department has received the Final Scoping Report for the abovementioned project on 06 April 2022. Based on the information supplied and the site inspection undertaken on the 05 May 2022, this Department has no objections to the proposed development. You may proceed with the submission of the Environmental Impact Report with the consideration of the comments below:-

1. Vegetation clearance must be limited to the development footprint.
2. Applicable licenses must be obtained before the commencement of the activity.
3. Applicable municipal By-Laws must be considered and adhered to at all times throughout the lifespan of the project.
4. All recommendations, key findings and conditions made in the specialist studies must be adhered to.
5. MTPA comments must be sourced and recommendations thereof must inform the site layout and protection of any identified endangered species.
6. Complaints received from the public must be attended to as soon as possible and addressed to the satisfaction of all concerned.
7. The applicant is responsible for the compliance with the provisions for "Duty of Care" and remediation of damage contained in Section 28 of the National Environmental Management Act, (Act 107 of 1998)



1/3/1/16/1N-321

Please draw the applicant's attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.

Your cooperation will be highly appreciated.

Yours faithfully,

  
\_\_\_\_\_  
**Dineo Tswai**  
**Deputy Director**  
**Environmental Impact Management**

21/06/2022  
**Date**





agriculture, rural development,  
land & environmental affairs  
MPUMALANGA PROVINCE  
REPUBLIC OF SOUTH AFRICA

Cnr Ryan and Rosemead Street  
Klipfontein  
eMalahleni  
1035  
Mpumalanga Province

NKANGALA DISTRICT

Litiko Letekulima, Kutfutukiswa  
Kwelindzawo Tasemakhaya, Temhlaba  
Netesimondzawo

Departement van Landbou,  
Landelike Ontwikkeling,  
Grond en Ongewing Sake

umNyango weZelimo  
UkuThuthukiswa kweeNdawo zemaKhaya,  
iNarha neeNdaba zeBhoduluko

Enquiries: Dineo Tswai, Cnr Rosemead & Ryan Str, Klipfontein Witbank, 1035, Tel: 013 692 6300/5848  
Email: [dtswai@mpg.gov.za](mailto:dtswai@mpg.gov.za)  
Reference: 1/3/1/16/1N-321

**Lourens de Villiers**  
**Labesh**  
**Plot 24, Haakdoornboom AH**  
**Pretoria North**  
**0001**

Tel: 082 789 6525  
Email: [lourens@labesh.co.za](mailto:lourens@labesh.co.za)

**APPLICATION FOR ENVIRONMENTAL AUTHORISATION: THE PROPOSED TOWNSHIP ESTABLISHMENT ON PORTION 562, 563, 565 AND REMAINING EXTENT OF PORTION 25 (COMMANDPARK EXTENSION 4) OF THE FARM NAAUWPOORT 335 JS, WITHIN EMALAHLENI LOCAL MUNICIPALITY, MPUMALANGA PROVINCE.**

The Department confirms having received and accepted the Final Scoping Report which was submitted by you in respect of the above mentioned project on the 06<sup>th</sup> April 2022. Please note that you must submit to this office an Environmental Impact Assessment Report within stipulated timeframes.

Please draw the applicant's attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.

Your cooperation will be highly appreciated.

Yours faithfully,

**Dineo Tswai**  
**Deputy Director**  
**Environmental Impact Management**

15/04/2022

Date





agriculture, rural development,  
land & environmental affairs  
MPUMALANGA PROVINCE  
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## Nkangala Region

Litiko Letekulima, Kutfutukiswa  
Kwetindzawo Tasemakhaya, Temhlaba  
Netesimondzawo

Departement van Landbou,  
Landelike Ontwikkeling,  
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umNyango weZelimo  
UkuThuthukiswa kweNdawo zamaKhaya,  
iNarha neeNdaba zeBhoduluk o

Enquiries: Dineo Tswai, Cnr Rosemead & Ryan Str, Klipfontein Witbank, 1035, Tel: 013 692 6300/5848  
Email: [dtswai@mpg.gov.za](mailto:dtswai@mpg.gov.za)  
Reference: 1/3/1/16/1N-321

**Mr. Lourens De Villiers**  
**Labesh (Pty) Ltd**  
**Private Bag X 504**  
**Sinoville**  
**0129**

Tel: 082 789 6525; Email: [info@labesh.co.za](mailto:info@labesh.co.za)

Dear Sir,

**APPLICATION FOR ENVIRONMENTAL AUTHORISATION: THE PROPOSED MIXED LAND USE TOWNSHIP ESTABLISHMENT COMPRISING OF 41 INDUSTRIAL ERVEN, 1 BUSINESS ERF, 1 TRANSPORT SERVICE ERF AND 3 TOURISM ERVEN ON PORTIONS 562, 563, 565 AND THE REMAINDER OF PORTION 25 OF THE FARM NAAUWPOORT 335 JS, EMALAHLENI LOCAL MUNICIPALITY, MPUMALANGA PROVINCE.**

The Department confirms having received the application form for environmental authorisation and the draft Scoping Report for the above-mentioned project on 23 February 2022.

The application has been assigned the reference number **1/3/1/16/1N-321**. Kindly quote this reference number in any future correspondence in respect of the application and the responsible officer is **Dineo Tswai** and all correspondence must be directed to: The Deputy Director, Environmental Impact Management, Nkangala District Office, marked for the attention of the responsible officer. Please note that you must, within 44 days from 23 February 2022, submit to this office a final Scoping Report which has already been subjected to a public participation process of at least 30 days, and which reflects the incorporation of comments received, including any comments from this office. In this regard you are referred to the requirements of Regulation 40(3).

Please note that in terms of the provisions of Regulation 45, this application will lapse, and this office will deem the application to have lapsed, if the applicant fails to submit the final scoping report within the timeframe specified above.

Please draw the applicant's attention to the fact that the activity may not commence prior to an environmental authorisation being granted by the Department.

Your cooperation will be highly appreciated.

Yours faithfully,

  
**Dineo Tswai**  
**Deputy Director**  
**Environmental Impact Management**

03/03/2022  
Date





# LABESH

## ENVIRONMENTAL CONSULTANTS

### ABILITY TO SUSTAIN . . .

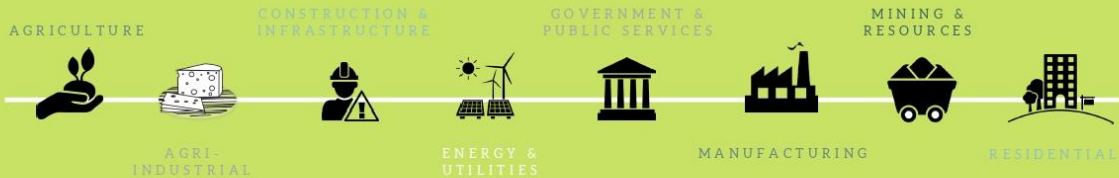
#### MISSION

Our mission at Labesh is to be a client focused company that is able and accountable and delivers a quality service on time.

#### VISION

To provide solid, scientific solutions in a socially challenged environment where the outcome is harmonious to people and the environment.

### INDUSTRIES



### SERVICES & EXPERTISE







# LABESH

ENVIRONMENTAL CONSULTANTS

MORE THAN 200 . . .

ENVIRONMENTAL  
IMPACT  
ASSESSMENTS  
(EIA'S)

WASTE LICENSES

AIR EMISSION  
LICENSES

WATER-USE  
LICENSES

RECTIFICATION  
APPLICATIONS



DIRECTOR / FOUNDER

LOURENS DE VILLIERS

B.Sc Earth Science; Hons B.Sc Geography and Environmental Studies; M.Sc Water Resource Management  
Email: [lourens@labesh.co.za](mailto:lourens@labesh.co.za) / [info@labesh.co.za](mailto:info@labesh.co.za)  
Cell: 082 789 6525



# LOURENS DE VILLIERS

DIRECTOR / FOUNDER

## PERSONAL PROFILE

I regard myself as a well renowned Environmental Assessment Practitioner with 18 years of experience in the discipline of environmental assessment and management.

I value the importance of a collective approach from various disciplines in order to establish a more sustainable outcome.

I am privileged to have a broad client base with the majority of them being personally serviced for more than 10 years.

## SKILLS & INTERESTS

- Principle Environmental Assessment Practitioner
- British Standard International ISO 14001 Lead Environmental Auditor
- International Global GAP Farm Assurer
- Plant Propagator

# RESUME

## WORK HISTORY

### Director / Founder

Labesh (Pty) Ltd, 2016 to Present

- Conducting EIA's
- Compiling EMP's for EIA's
- Conducting due diligence audits
- Conducting legal compliance audits
- Environmental management performance audits
- Natural resource optimization strategy

### Director and Partner

Shangoni Management Services (Pty) Ltd , 2011 to 2016

- Conducting EIA's
- Compiling EMP's for EIA's
- Conducting due diligence audits
- Conducting legal compliance audits
- Internal ISO 14001 audits
- External ISO 14001 certification audits

### Director

Prohibeo Environmental Management Solutions, 2004 to 2011

- Conducting EIA's
- Compiling EMP's for EIA's
- Compiling Soil and Land Capability Assessments as part of EIA's
- Conducting due diligence audits
- Conducting legal compliance audits
- Environmental management performance audits
- Natural resource optimization strategy

### Manager

Newtown Associates Environmental Services CC, 2003 to 2004

- Conducting of EMP's for mining industry
- Conducting EMP performance assessments for mining industry
- Compiling Soil and Land Capability Assessments as part of EIA's
- Conducting EIA's
- Conducting EMP's for EIA's
- Conducting due diligence audits
- Conducting legal compliance audits
- Conducting Environmental Risk Assessments

### Environmental Consultant

Helio Alliance (Pty) Ltd, 2002 to 2003

- Conducting of EMP's for mining industry
- Conducting EMP performance assessments for mining industry
- Compiling Soil and Land Capability Assessments as part of EIA's
- Conducting EIA's
- Conducting EMP's for EIA's
- Conducting due diligence audits
- Conducting legal compliance audits
- Conducting Environmental Risk Assessments





# LOURENS DE VILLIERS

DIRECTOR / FOUNDER

## GET IN TOUCH

Mobile: 082 789 6525

Email: lourens@labesh.co.za

Residential Address: Plot 24, Soutpan Road,  
Haakdoornboom, Pretoria 0200

Postal Address: Postnet Box 469, Private Bag  
X504, Sinoville, 0129

# RESUME

## ACADEMIC BACKGROUND

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### University of Pretoria

M.Sc Water Resource Management, 2003

### North West University

B.Sc (Hons) Geography and Environmental Studies, 1999

### North West University

B.Sc Earth Science, 1998

## COURSES COMPLETED

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1998 - 1999 : Prestige Leadership Development

2000 : Advanced EMS Auditing Course for Quality and Environmental Professionals

2002 : Public Presentation Skills

2010 : Implementation of Environmental Management Systems

2010 : Auditing Environmental Management Systems

2010 : Environmental Law

2014 : Waste Classification

2015 : Advanced HACCP

2015 : Train the Trainer

2016 : Transition from ISO 14001:2004 to ISO 14001: 2015 - Environmental Management Systems.

2017 & 2019: Global GAP International Farm Assurer

