

**DRAFT BASIC ASSESSMENT REPORT  
FOR  
PRINCESS MKABAYI CITY  
MIXED USE DEVELOPMENT  
ON ERF 6018 VRYHEID**





ENVIRONMENT SERVICES

Making Green Environment Sense

6 October 2022

**i. Document Control and Curriculum Vitae**

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**ii. Declaration of independence**

I Johannes Albert Bodenstein (SA ID 6001045092089) hereby declare that the work presented here is my own, other than where I quoted specialists who prepared reports related to the project for whom due recognition is given. I have been paid an agreed professional fee for conducting this EIA process. I have nothing to gain from the outcome of this application. I have not left any information undisclosed.




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Johan Bodenstein

Indiflora cc Environment Services

13 October 2022

**iii. Disclaimer**

This report has been prepared by Indiflora CC and reviewed by AJ Plomp of Triplo4 Sustainable Solutions (Pty) Ltd (Triplo4). It is understood that the information is based on information provided by Mr. Bodenstein, the client and others that is presumed to be correct and professional assessments and opinions that are presumed to be honestly and professionally provided. The review does not apply to conditions and features that may arise after the date of this report, about which Triplo4 had no prior knowledge nor had the opportunity to evaluate. Triplo4 does not accept any liability for any loss or damage whatsoever, whether direct, indirect, or consequential that may result to any person from any advice, opinion, information, representation, or omission, whether negligent or otherwise, contained in this report, including the use and interpretation of this report by the client, its representative agents, any government authority or any other third parties.

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## 1. Name and contact details of Environmental Assessment Practitioner (EAP)

Name and contact details of the EAP who prepared this report:

<b>Business name of EAP:</b>	<b>Indiflora cc Environmental Services</b>		
<b>Physical address:</b>	<b>25 Helston Road, Manor Gardens</b>		
<b>Postal address:</b>	<b>25 Helston Road, Manor Gardens</b>		
<b>Postal code:</b>	<b>4001</b>	<b>Cell:</b>	<b>082 577 0898</b>
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<b>E-mail:</b>	<b>johan@indiflora.co.za</b>		

## 2. Names and expertise of Representatives of the EAP

Names and details of the expertise of each representative of the EAP involved in the preparation of this report:

Name of representative of the EAP	Education qualifications	Professional affiliations	Experience at environmental assessments (yrs)
<b>Johan Bodenstein</b>	<b>ND Horticulture, Masters in Nature Conservation</b>	<b>IAIAsaKZN SACNASP GSSA</b>	<b>20yrs</b>

## 3. Names and expertise of specialists

Names and details of the expertise of each specialist that has contributed to this report:

Name of specialist	Education qualifications	Field of expertise	Section/s in this basic assessment report contributed to	Title of specialist report/ s as attached in Appendix D
<b>Philip Nel DG Consulting Engineers</b>	<b>BSc Civil Eng</b>	<b>Civil Engineering</b>	<b>Civil Engineering</b>	<b>Civil Engineering Report Stormwater Management Plan</b>
<b>Ryan Kok PrSciNat EcoPulse Environmental Consulting</b>	BSc Environmental Science, BSc Hons. and MSc in Biological and Ecological Sciences	<b>Wetlands</b>	<b>Wetland Assessment</b>	<b>Freshwater Ecosystem Specialist Review</b>
<b>Gavin J MacDonald PriSciNat</b>	MSc Biological Science	<b>Botanical</b>	<b>Vegetation assessment</b>	<b>Proposed Princess Mkabayi City and Mall Development, Vryheid, Kzn</b>
<b>Sian M Hall Ancient Places Cultural and Built Heritage Consultancy</b>	BA Degree in 1989 BA (Hons) in Anthropology 1990	<b>Heritage and Anthropology</b>	<b>Heritage Assessment and Anthropological Assessment</b>	<b>Phase one heritage impact assessment</b>
<b>Justin Van Huyssteen PrSciNat Davel &amp; Van Huyssteen Consulting Engineering</b>	BSc Hons Geology	<b>Geotechnical Engineering</b>	<b>Geotechnical Assessment</b>	<b>Geotechnical Investigation</b>

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<b>Geologists (Pty) Ltd</b>				
<b>Gwen Theron Leap Environmental</b>	PhD Landscape Architecture	<b>Aviation</b>	<b>Aviation Assessment</b>	<b>Aviation Impact Assessment Proposed Princess Mkabayi Mall</b>
<b>Eddie Krause Designed Engineering Solutions (Pty) Ltd</b>	<b>M Comm, NHD Civil Eng, B-Tech Transport Management &amp; Planning</b>	<b>Traffic</b>	<b>Traffic Impact Assessment</b>	<b>Shopping Centre Development On Erf 6018 Vryheid, Abaqulusi Local Municipality, Kwazulu-Natal Traffic Impact Assessment</b>

### SECTION A: ACTIVITY INFORMATION

Has a specialist been consulted to assist with the completion of this section? YES

If YES, please complete the form entitled "Details of specialist and declaration of interest" for the specialist appointed and attach in Appendix I.

#### 1. Project Description

##### a) Describe the project associated with the listed activities applied for

The developer, Princess Mkabayi City (Pty) Ltd, is proposing to develop the PRINCESS MKABAYI CITY an integrated mixed use development on ERF 6018 VRYHEID (231104.12m<sup>2</sup>), comprising of a regional mall (141,730.39m<sup>2</sup>), free standing residential and high density apartments, hotel & casino, drive through fast food restaurants, a décor retail show room and a future petrol station (40,649.63m<sup>2</sup>), motor show rooms logistics park (16,389.52m<sup>2</sup>), and Office park & Abaqulusi Council chambers (31,492.95m<sup>2</sup>) with associated infrastructure such as roads, water supply pipes, sewer pipes, storm water pipes and attenuation structures, electricity supply and telecommunication cables. To establish the foundations for the construction of the mall buildings the natural vegetation will have to be stripped off the site exceeding the area of 1 hectare of indigenous vegetation but will be less than 20 hectares. Topsoil containing organic matter and dolerite soils will have to be stripped and spoilt to landfill as it is unsuitable for construction. Stormwater runoff will change with the removal of vegetation and will have to be addressed during the construction and operational phase. Potable water will be supplied and the sewerage outfall will be treated by the Abaqulusi Municipality, who will also remove the general solid waste. Electricity will be supplied by Eskom through the Abaqulusi Municipality. Access to the development will be off Oos Street (R34): off the Unnamed Road on the north side. No upgrades are required. Stormwater harvesting is being considered and the use of low energy lighting and appliances with Solar PV back-up systems.

##### b) Provide a detailed description of the listed activities associated with the project as applied for.

Activities that do require environment authorisation in terms of Listing Notice 1:

<b>Indicate the Activity Number:</b>	<b>Provide the relevant Activity (ies) as set out in Listing Notice 1, 2 &amp; 3 (GN R327, GNR325 &amp; GNR324)</b>	<b>Describe each listed activity as per the project description (and not as per wording of the relevant Government Notice)!</b>
Listing Notice 1 Activity 27	The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for the undertaking of a linear activity; or (ii) maintenance purposes	The proposed development will require clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation for the groundworks as well as the establishment of the mixed use development with associated infrastructure

	undertaken in accordance with a maintenance management plan.	and services as per the description. This is covered in Section B, p35 and p 54-46
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## 2. Feasible and reasonable alternatives

“**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—

- (a) the property on which or location where it is proposed to undertake the activity;
- (b) the type of activity to be undertaken;
- (c) the design or layout of the activity;
- (d) the technology to be used in the activity;
- (e) the operational aspects of the activity; and
- (f) the option of not implementing the activity.

Describe alternatives that are considered in this application as required by Appendix 1 (3)(h), Regulation 2014. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity (NOT PROJECT) could be accomplished in the specific instance taking account of the interest of the applicant in the activity. The no-go alternative must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed.

The determination of whether site or activity (including different processes, etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment. After receipt of this report the competent authority may also request the applicant to assess additional alternatives that could possibly accomplish the purpose and need of the proposed activity if realistic alternatives have not been considered to a reasonable extent.

The identification of alternatives should be in line with the Integrated Environmental Assessment Guideline Series 11, published by the DEA in 2004. Should the alternatives include different locations and lay-outs, the co-ordinates of the different alternatives must be provided. The co-ordinates should be in degrees, minutes, and seconds. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

### Site alternatives

The development site is Erf 6018 Vryheid which is marked with the four corners as represented by the co-ordinates listed below. This land was sold on tender by the Abaqulusi Municipality for the development of a regional mall as the site is zoned for.

<b>Alternative 1 (Only alternative)</b>		
Description	Lat (DDMMSS)	Long (DDMMSS)
<b>South-western corner</b>	<b>27° 47' 17,23"S</b>	<b>30° 48' 14,89"E</b>
<b>South-eastern corner</b>	<b>27° 47' 11,62"S</b>	<b>30° 48' 36,57"E</b>
<b>North-eastern corner</b>	<b>27° 46' 55,26"S</b>	<b>30° 48' 16,51"E</b>
<b>North-western corner</b>	<b>27° 46' 57,93"S</b>	<b>30° 48' 08,86"E</b>





Figure 1: The locality of Erf 6108 Vryheid is indicated in the Location Plan above.

There are no site alternatives as the property, previously owned by the Abaqulusi Municipality, was sold on the condition that a regional mall is developed on the land as allowed under the zoning of Regional Mall. A resolution was taken, 27 July 2017 (Resolution number CR97/2017), by the Abaqulusi Municipal Council to give notice to invite public comment on the proposal to dispose of the capital asset (Erf 6018, Vryheid) for the development of the Vryheid Regional Mall. The property Erf 6018 Vryheid was disposed in terms of Section 14 & 90 of the Municipal Finance Management Act, 2003 (Act 56 of 2003) read together with Chapter 2 of the Municipal Asset Transfer Regulations of 22nd August 2008, (after it was determined that the property is not needed to provide the minimum level of basic municipal services) with an intention to develop a Vryheid Regional Mall. The property was put on sale as per tender with reference number 8/2/1/409 and the tender was allocated to the successful tenderer, Green Giraffe Properties (PTY) Ltd. The asset is to be transferred to Princess Mkhabayi City (Pty) Ltd who will operate and manage the mall development.

**b) Lay-out alternatives**

The layout alternatives are presented in Appendix C.

The proposed layout		
Description	Lat (DDMMSS)	Long (DDMMSS)
An integrated development will be developed in phases comprising of:	27° 47' 17,23" S	30° 48' 14,89" E
	27° 47' 11,62" S	30° 48' 36,57" E

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<p>A regional mall with associated infrastructure such as roads, water supply pipes, sewer pipes, storm water pipes and attenuation structures, electricity supply and telecommunication cables in phase one.</p> <p>Free standing residential and high-density apartments, and hotel &amp; casino, a drive through, a Décor retail show room in Phase 2 and a site set aside for a future petrol station as phase three</p> <p>Motor show rooms, logistics park and Office Park &amp; Abaqulusi Council chambers in Phase two,</p>	27° 46'55,26"S	30° 48'16,51"E	
	27° 46'57,93"S	30° 48'08,86"E	
	<b>Proposed land uses</b>		
	<b>Code</b>	<b>Land use</b>	<b>Area</b>
		A regional mall	141,730.39m <sup>2</sup>
	Residential apartments Hotel & casino, Drive through fast food outlet A décor retail show room, future petrol station	40,649.63m <sup>2</sup>	
	Motor show rooms, logistics park	16,389.52m <sup>2</sup>	
	Office Park Abaqulusi Council chambers	31,492.95m <sup>2</sup>	
	<b>Total area</b>	<b>230,262.49m<sup>2</sup></b>	



Figure 2: The Layout of The Princess Mkabayi City development

Alternative layout		
Description	Lat (DDMMSS)	Long (DDMMSS)
<p>The alternative layout is an integrated development to be developed in phases comprising of a regional mall and associated infrastructure such as roads, water supply pipes, sewer pipes, storm water pipes and attenuation structures, electricity supply and telecommunication cables in phase one, 32 free-standing residential units in an exclusive gated eco-style estate, a storage unit park, an 85-room hotel with a pool and a deck and Office park</p>	27° 47' 17,23"S	30° 48' 14,89"E
	27° 47'11,62"S	30° 48'36,57"E
	27° 46'55,26"S	30° 48'16,51"E
	27° 46'57,93"S	30° 48'08,86"E
<b>Proposed land uses</b>		
	A regional mall	152,000m <sup>2</sup>
	A storage unit park	20,750m <sup>2</sup>
	32 free-standing residential unit gated eco-style estate	25,000m <sup>2</sup>



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


& Abaqulusi Council chambers as phase two and two drive through fast food restaurants (12,300m <sup>2</sup> ), a taxi rank in phase two with a site set aside for a future petrol station as phase three.		Office park & Abaqulusi Council chambers	4,000m <sup>2</sup>
		A hotel with a pool	16,270m <sup>2</sup>
		Drive through fast food restaurants, a taxi rank and a future petrol station	13,004m <sup>2</sup>
		<b>Total area</b>	<b>231,024m<sup>2</sup></b>



Figure 3: The Alternative development layout

Alternative 3 – NO-GO OPTION		
Description	Lat (DDMMSS)	Long (DDMMSS)
<b>No-Go Alternative – Leave the land undeveloped.</b>	27° 47' 17,23"S	30° 48' 14,89"E
	27° 47'11,62"S	30° 48'36,57"E
	27° 46'55,26"S	30° 48'16,51"E
	27° 46'57,93"S	30° 48'08,86"E

Paragraphs 3 – 13 below should be completed for each alternative.

### 3. Physical size of the activity

a) Indicate the physical size of the preferred activity/technology as well as alternative activities/technologies (footprints):

	Size of the activity:
Alternative A1 <sup>2</sup> (preferred activity alternative – Princess Mkabayi City)	230,262.49m <sup>2</sup>
Alternative A2	231, 240m <sup>2</sup>
Alternative A3 (No-Go)	0m <sup>2</sup>

<sup>2</sup> "Alternative A.." refer to activity, process, technology, or other alternatives.

**4. Site Access**

Does ready access to the site exist?

If NO, what is the distance over which a new access road will be built

NO
100m

Describe the type of access road planned:

The access is as prepared in accordance with the requirements of the South African Road Classification and Access Management Manual (COTO, 2012). The accesses to the proposed shopping centre will be gained off Oos Street (R34), as well as off the Unnamed Road to the northern side of the development site. The accesses will be used as follows:

- Access off Oos Street (R34): Access to the centre, except for deliveries.
- Access off the Unnamed Road: Access for deliveries only.

Include the position of the access road on the site plan and required map, as well as an indication of the road in relation to the site.

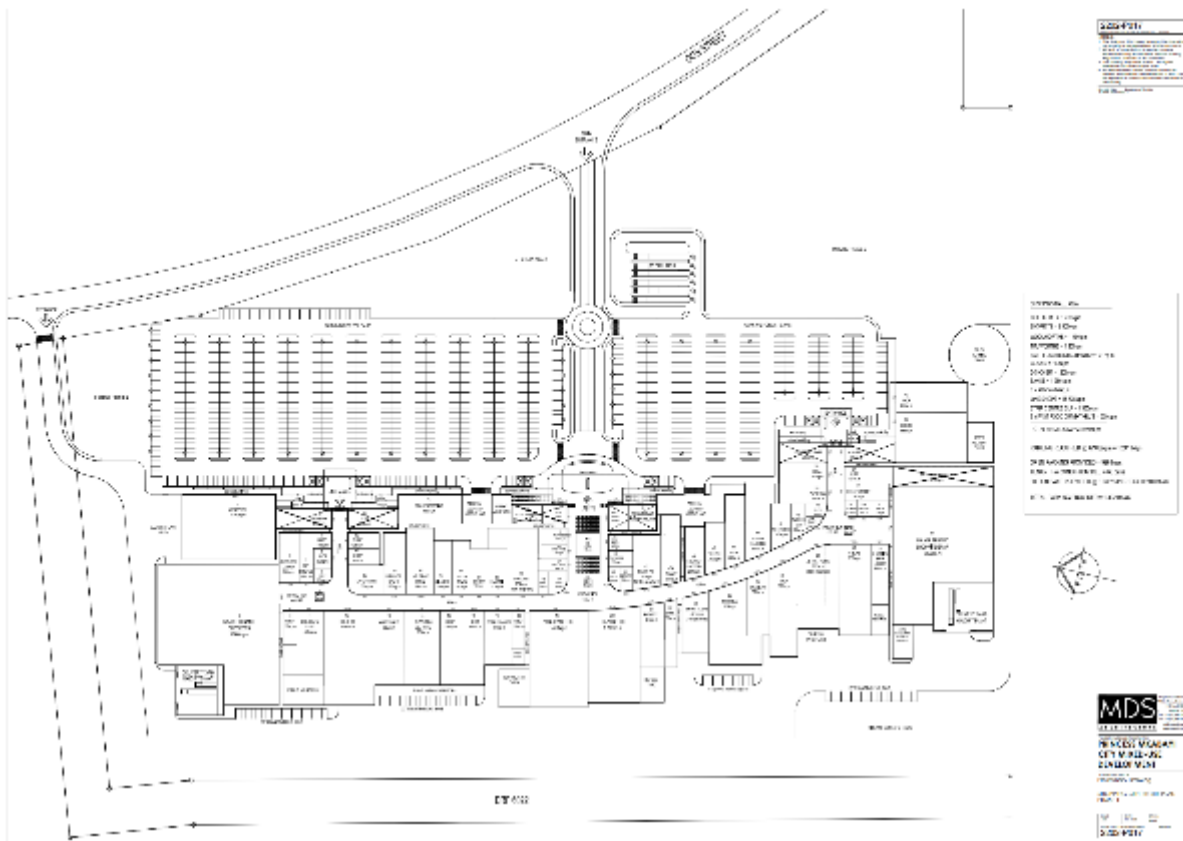


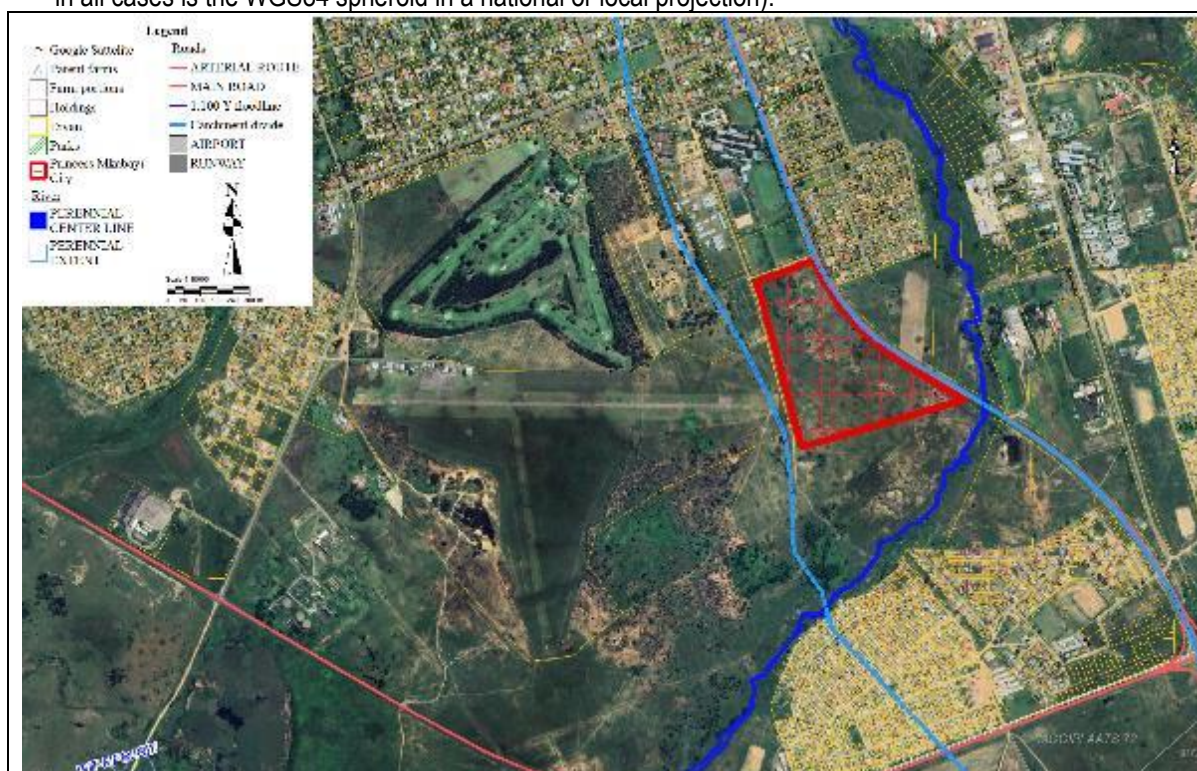
Figure 4: The access routes indicated for the Princess Mkabayi Regional Mall


A site development plan showing the access points is included in APPENDIX D – Traffic Impact Assessment and will be the same for the alternative layout.

**5. Locality Map**

An A3 locality map must be attached to the back of this document, as Appendix A. The scale of the locality map must be relevant to the size of the development (at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g., 1:250 000 can be used. The scale must be indicated on the map.). The map must indicate the following:

- an accurate indication of the project site position as well as the positions of the alternative sites, if any.
- indication of all the alternatives identified.
- closest town (s);
- road access from all major roads in the area.
- road names or numbers of all major roads as well as the roads that provide access to the site(s).
- all roads within a 1km radius of the site or alternative sites; and
- a north arrow.
- a legend; and
- locality GPS co-ordinates (Indicate the position of the activity using the latitude and longitude of the centre point of the site for each alternative site. The co-ordinates should be in degrees and decimal minutes. The minutes should have at least three decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection).



 <p>25 Helston Road Manor Gardens,  Durban Cell 0825770898</p>	<p><b>ERF 6018 VRYHEID</b></p> <p><b>SITE LOCALITY PLAN</b></p>
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**A Locality Map is included in APPENDIX A.**

## 6. Layout/Route Plan

A detailed site or route plan(s) must be prepared for each alternative site or alternative activity. It must be attached as Appendix A to this document.

The site or route plans must indicate the following:

- the property boundaries and numbers of all the properties within 50 metres of the site.
- the current land use as well as the land use zoning of the site.
- the current land use as well as the land use zoning each of the properties adjoining the site or sites.
- the exact position of each listed activity applied for (including alternatives).



servitude(s) indicating the purpose of the servitude.  
 a legend; and  
 a north arrow.



Figure 5: The Site Location Map of Erf 6018 Vryheid

This Location Map and the Layout Map of the preferred and alternative layouts are included in APPENDIX A

## 7. Sensitivity map

The layout/route plan as indicated above must be overlain with a sensitivity map that indicates all the sensitive areas associated with the site, including, but not limited to:

- watercourses.
- the 1:100-year flood line (where available or where it is required by DWS).
- ridges.
- cultural and historical features.
- areas with indigenous vegetation (even if it is degraded or infested with alien species); and
- critical biodiversity areas.

The sensitivity map must also cover areas within 100m of the site and must be attached in Appendix A.

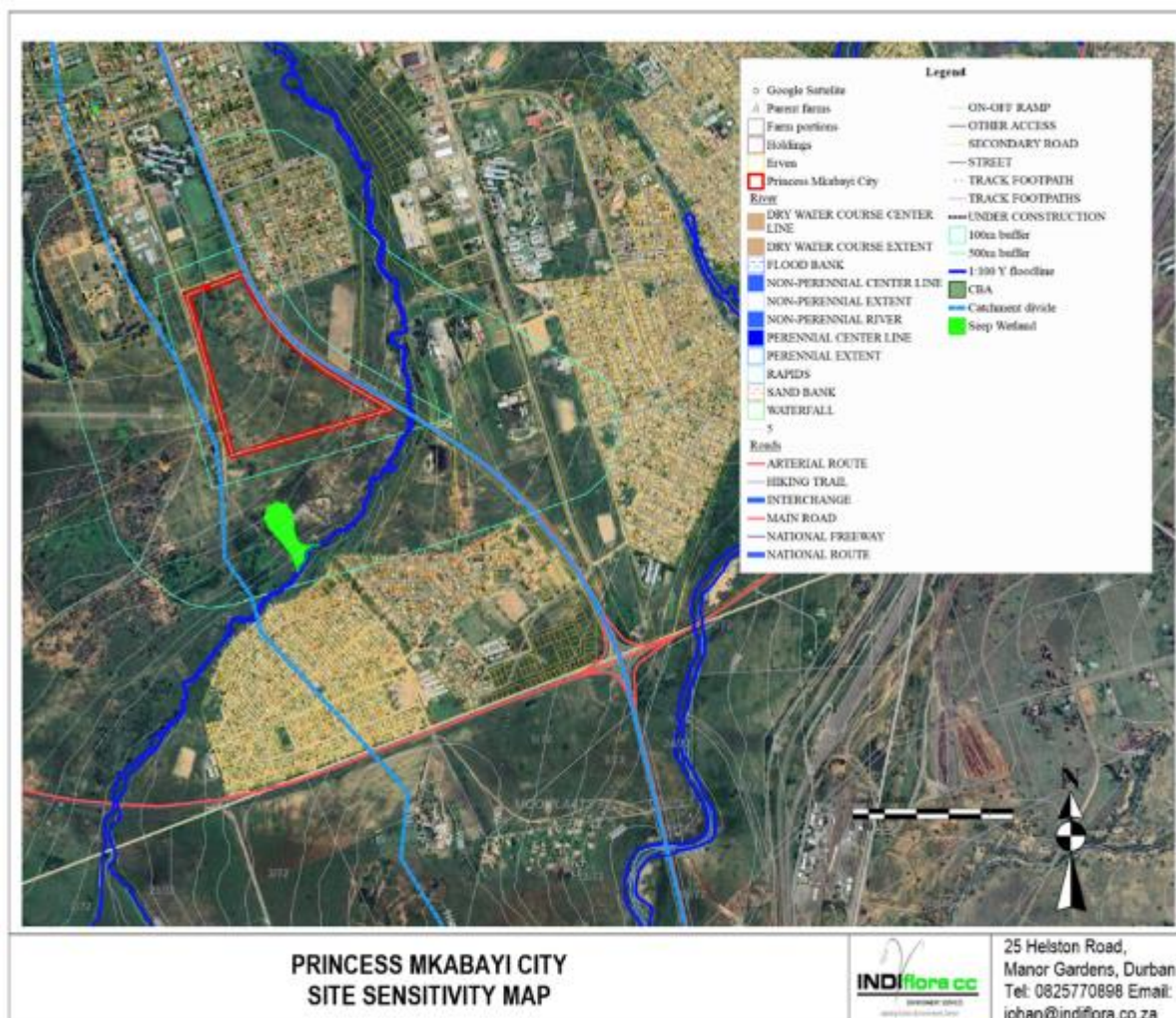


Figure 6: The site sensitivity Map for Erf 6018 Vryheid

This Site Sensitivity Map is included in Appendix A.

## 8. Site Photographs

Colour photographs from the centre of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under Appendix B to this report. It must be supplemented with additional photographs of relevant features on the site, if applicable.



Site photographs are included in APPENDIX B.



## 9. Facility Illustration

A detailed illustration of the activity must be provided at a scale of at least 1:200 as Appendix C for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity.

The Facility Illustrations are not presently available to be included in APPENDIX C.

## 10. Activity Motivation

Table 1: Motivate and explain the need and desirability of the activity (including demand for the activity):

NEED	
Question	Response
<p>1. How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?</p> <p>1.1. How were the following ecological integrity considerations considered?</p> <p>1.1.1. Threatened Ecosystems,</p> <p>1.1.2. Sensitive, vulnerable, highly dynamic, or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure,</p> <p>1.1.3. Critical Biodiversity Areas ("CBAs") and Ecological Support Areas ("ESAs"),</p> <p>1.1.4. Conservation targets,</p> <p>1.1.5. Ecological drivers of the ecosystem,</p> <p>1.1.6. Environmental Management Framework,</p> <p>1.1.7. Spatial Development Framework, and</p> <p>1.1.8 Global and international responsibilities relating to the environment (e.g., RAMSAR sites, Climate Change).</p>	<p>1.1.1 The existing Northern KZN Moist Grassland (Gs4) is Vulnerable.</p> <p>1.1.2 ERF 6018 is not located in a threatened ecosystem according to the SANBI BGIS database.</p> <p>1.1.3 Erf 6018 Vryheid is not in a CBA or ESA area.</p> <p>1.1.4 The conservation target for GS4 is 24% where only 2% is statutorily conserved.</p> <p>1.1.5 The GS4 is a grassland which is driven by fire and grazing.</p> <p>1.1.6 The development is in line with the EMF, the IDP of Zululand District Municipality and Abaqulusi Local Municipality.</p> <p>1.1.7 The development is in line with the IDP and the SDF.</p> <p>1.1.8 The nearest notable wetland is at Blood River which is 20km south-west of Vryheid.</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?</p>	<p>To prepare the site for construction grassland vegetation will be removed and it is unavoidable as there are no alternative sites. There is no way of avoiding negative impacts. Post-development appropriate indigenous landscaping of common land will contribute towards mitigating the 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 avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</p>	<p>The proposed development will generate sewerage and solid waste. The sewer will be connected to the Municipal trunk sewer. Rapid containment measures can be incorporated into the management plan to prevent spillages into the water course by having a rapid deployment system at</p>



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NEED	
Question	Response
	<p>vulnerable points to contain the waste in the event of a spillage. A contractual arrangement with a sewerage suction contractor to withdraw any backed-up sewerage can be arranged until the blockage is removed.</p> <p>Solid waste will be kept in a waste holding area where it awaits collection by the municipality. Spillages may occur and the wind could transport waste into the road, vermin can contribute to the spreading of waste or scrounging people could gain access to dig for items of value. The properly managed waste holding area will have systems in place to collect and containerise spilt waste when it happens. A quality management plan will be incorporated into the Princess Mkabayi City development EMPr which will be made onerous to all tenants, to ensure waste is managed in a responsible manner ensuring the least amount of waste ends in landfill, all other waste streams have disposal points as raw material for repurposing the waste into new products.</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?</p>	<p>Waste will be domestic waste, packaging waste from shops and food waste from restaurants. Food waste will be containerised for disposal to pig farms as food. Shop owners will be encouraged to buy in bulk to reduce packaging materials. Waste will be sorted at source, kept in separate containers to facilitate recycling by others. Only non-recyclable domestic waste will be sent to landfill. Food waste from restaurants will be used as pig food. The office park will generate domestic waste. Printer ink cartridges will be returned to the supplier for recycling.</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?</p>	<p>The development will cover most of the land and the flat landscape will be developed. The demand for shop and commercial space and residential opportunities requires all the site to be developed. The Shembe Church will be allocated another area on Municipal land adjacent to the mall site where there will be no environmental impacts. The cultural heritage of the area is incorporated into the colours and the decor of the development. The development will generate many new job opportunities which is positive in this environment.</p>
<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?</p>	<p>Sand and stone will be used in the concrete along with steel rebar for the structural integrity of the development. These are sourced from registered and licensed suppliers. The non-renewable source will not be taken from this site. The non-renewable material is sourced from licensed operations that have made financial provision for the rehabilitation at the end of their life cycle. Built into the</p>

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NEED	
Question	Response
	price of using the material from a licensed service provider is the cost to rehabilitate that site. Topsoil will be stockpiled for use in the post-development landscaping.
<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 considering carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is 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?</p> <p>1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e., de-materialised growth)? (Note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life)</p> <p>1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra-and intergenerational equity, and are there more important priorities for which the resources should be used (i.e., what are the opportunity costs of using these resources of the proposed development alternative?)</p> <p>1.7.3. Do the proposed location, type and scale of development promote a reduced dependency on resource</p>	<p>The development will use Eskom power and municipal supplied water. This will place additional strain on the already stressed network. This use will impact negatively on-air quality where the power is generated by Eskom. Where there are capacity constraints the development will have to contribute to the upgrade of the network to ensure sustainability. Incorporate low energy consumption utilities into the design to reduce the consumption of power and water. Install solar geysers to provide hot water and install PV panels to provide power to decrease the need for power from the grid. Use renewable resources such as sustainably grown timber in finishings.</p> <p>1.7.1 The development will connect to the Eskom grid for electricity supply and connected to the municipal water supply line for potable water which is source dependent. Using solar panels for electricity generation will reduce the dependency.</p> <p>1.7.2 Use natural resources to construct the framework of the development, but renewable materials in the finishing of it. Ensuring structural integrity will see the development being usable by future generations.</p> <p>1.7.3 The development location is on the edge of the town on virgin land. It requires proper foundations and vertical structures. The development is a private development for public usage. Public safety is important</p>
<p>1.8. How were a risk-averse and cautious approach applied in terms of ecological impacts?</p> <p>1.8.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?</p>	<p>The site was selected because it is not a CBA, is not in an ecological corridor, is not critically endangered or endangered habitat, and no sensitive vegetation was encountered.</p> <p>1.8.1 Limits of knowledge: Gaps: a. What companies will occupy shops in the mall and what their energy and water demands are and what waste they will be producing. Uncertainties: a. To what extent the Solar PV system will function to augment the power supply. b. How effective water harvesting, storage plans incorporated into the development will be. Assumptions: a. It is assumed the interested and affected parties will find the mall development beneficial because it offers many opportunities and facilities to make their life</p>

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NEED	
Question	Response
<p>1.8.2. What is the level of risk associated with the limits of current knowledge?</p> <p>1.8.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?</p>	<p>easier based on the socio-economic analysis conducted by the Municipality when they planned for this site to be a regional mall.</p> <p>b. It is assumed the regional mall will open economic opportunities in the primary, secondary and tertiary economies of the Vryheid area.</p> <p>c. It is assumed the regional mall will encourage other developments to become established to augment the Vryheid economy</p> <p>1.8.2 The level of risk is Low.</p> <p>1.8.3 The development of the regional mall will be done in phases to monitor the impacts of the development and to apply mitigation measures as they become obvious.</p>
<p>1.9. How will the ecological impacts be resulting from this development impact on people's environmental right in terms following:</p> <p>1.9.1. Negative impacts: e.g., access to resources, opportunity costs, loss of amenity (e.g., open space), air and water quality impacts, nuisance (noise, odour), health impacts, visual impacts. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</p> <p>1.9.2. Positive impacts: e.g., improved access to resources, improved amenity, improved air, or water quality. What measures were taken to enhance positive impacts?</p>	<p>1.9.1 The development results in the loss of undeveloped, virgin land. The avoidance approach was to select land with the lowest environmental integrity for this scale and type of development. The development footprint will permanently transform the land. Minimisation was not possible. Remedial action will be in the post-developmental landscaping of the development.</p> <p>1.9.2 The mall development will provide critically needed job opportunities, open economic opportunities for entrepreneurs and stimulate the local economy.</p>
<p>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.</p>	<p>The development will however make a major positive contribution to the social and economic environment of the Vryheid town area that will positively impact on human wellbeing and livelihoods. As discussed, the environmental and heritage aspects are addressed in the EMP. Consideration was given to capacity for sewage at the WWTWC and expansion of road infrastructure. .</p>
<p>1.11. Based on all the above, how will this development positively or negatively impact on ecological integrity objectives / targets / considerations of the area?</p>	<p>The development is in an area that is identified in the IDP as developable land because, in relation to other areas of undeveloped land in the Vryheid area, has low environmental sensitivity. The development will have negative ecological impacts, but not significantly impact the objectives and targets as per the IDP and SDF because the development has already been accounted for within the SDF and the IDP.</p>
<p>1.12. Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the "best practicable environmental option" in terms of ecological considerations?</p>	<p>This site was selected by the Municipality for the development of a regional mall because of the limited environmental constraints as identified in the IDP. The Municipality put the land up for sale for purposes of developing a regional mall. No</p>

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NEED	
Question	Response
	other sites were considered as this was the only piece of land that was put out on tender for the development of a regional mall.
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?	The development will have a negative impact on the biophysical environment as other developments will have a negative impact on transforming natural habitat
2.1. What is the socio-economic context of the area, based on, amongst other considerations, the following considerations? 2.1.1. The IDP (and its sector plans' vision, objectives, strategies, indicators, and targets) and any other strategic plans, frameworks of policies applicable to the area,	2.1 The socio-economic context for Erf 6018 is that it is located at the edge of the town beside an airport, a cemetery on one side, a school (presently the outlying development) and a middle-income residential area across the main road into town where there is a church. Two townships are close by (0.5-0.7km). An informal church site is present on the land. 2.1.1 The primary focus, for socio-economic development for the Vryheid area according to the LED unit of Abaqulusi Local Municipality Final 2022/2023 – 2026/2027 IDP p136, is developing Business (Formal and Informal) within Abaqulusi Local Municipality, to also improve Agriculture, Mining, and Tourism Sector through supporting economic development initiatives that will empower the community, create job opportunities, minimise income leakages and growth by building partnerships within relevant stakeholders in order to create a conducive environment for job creation
2.1.2. Spatial priorities and desired spatial patterns (e.g., need for integration of segregated communities, need to upgrade informal settlements, need for densification.	This development has a residential component in the later phases close to the Vryheid Airport that will be made available on the open market and any person from all race groups with the means will be able to enter that market. Providing a retail centre ties in with the concept of integrated human settlements (augmenting residential land use with complimentary land uses).
2.1.3. Spatial characteristics (e.g., existing land uses, planned land uses, cultural landscapes.	The mall is within the municipal urban area. There is a residential area across the district road, a school to the north, a cemetery and an airport on the west side and vacant land to the south.
2.1.4. Municipal Economic Development Strategy ("LED" Strategy)	The development is in line with the LED Strategic Approach because it encourages the broadening of the economic base or the diversification of the economic base by creating opportunities for emerging entrepreneurs can establish their enterprises. Capacity building is incorporated into the construction phase which will be extended to the operational phase when entrepreneurs will train staff to conduct their businesses. The establishment of an integrated regional mall opens opportunities for the creation of favourable locational factors. The regional
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?	The regional mall will create job opportunities which is sorely needed by the Vryheid inhabitants. The additional traffic

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NEED	
Question	Response
2.2.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?	to the mall may be slow traffic leaving or entering Vryheid down.  2.2.1 Yes. Inservice training to construction staff during construction, and shop assistants once the mall is operational will address the LED initiatives.
2.3. How will this development address the specific physical, psychological, developmental, cultural, and social needs and interests of the relevant communities?	2.3 Physical needs of the people of Vryheid as listed in the 2022/23 IDP are 23 Broad-based community needs, poverty, education, health, safety and security, Nation building and social cohesion and Community development. The regional mall will address some of the broad-based community needs and poverty. The mall will be a positive boost for Vryheid and may inspire people to become economically active. The integrated nature of the Princess Mkabayi City Development will potentially attract other complimentary development types to seek opportunities close by. The architectural style celebrates the Zulu culture as iconic of the Zululand Municipal area. This platform encourages other opportunities where the culture of the community, not only the Zulu culture, to be celebrated. The mall in the first phase with the hotel and casino developments in the future phases will potentially provide a preferred place where people want to meet and be social. Through the public participation process specific needs and interests of the public may become known and can be addressed by the development team.
2.4. Will the development result in equitable (intra-and inter-generational) impact distribution, in the short-and long term? Will the impact be socially and economically sustainable in the short-and long-term?	2.4 The development will through its integrated development approach open opportunities where young and old could engage with the development through entrepreneurship or consumerism in the short and long term i.e., during construction (job opportunities or sub-contracts) or during operation (job or entrepreneurship opportunities). The integrated development brings multiple business types into the area to service various social and economic needs. Some shops and merchandise will be trendy and not be sustainable whilst other shops and merchandise will have stood the test of time and be sustainable no matter where it is located. This provides opportunities for large anchor tenants that will secure the development for the long term whilst the
2.5. In terms of location, describe how the placement of the proposed development will: 2.5.1. result in the creation of residential and employment opportunities near or integrated with each other,	2.5.1 The mixed-use nature of the mall development creates residential opportunities in future phases right next to the mall, the car show rooms, and the
2.5.12. consider 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),	2.5.12 The development is located on the outer edge of the town, close to a major road intersection which connects Lakeside and Bhekuzulu townships with the mall development.

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NEED	
Question	Response
2.5.13. the investment in the settlement or area in question will generate the highest socio-economic returns (i.e., an area with high economic potential),	2.5.13 People buying or renting property in the proposed development will contribute to the municipal income through the paying of rates, purchasing water and electricity from the municipality, and paying for waste removal. Additional job opportunities for domestic workers, gardeners, or maintenance staff at residential complexes will arise.
2.5.14. impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and	2.5.14 The land is presently vacant and has no significant heritage elements on it. The land has had local abuse with waste dumped on the property on multiple fronts and has alien invader plants growing on it. The sense of place is that of neglect. The mall development will provide a significant and iconic entrance to the town of Vryheid.
2.5.15. in terms of the nature, scale and location of the development promote or function as a catalyst to create a more integrated settlement?	2.5.15 The mixed-use nature of the development will serve as a catalyst to other developments. therefore risk averse by arranging development types to border similar development types where possible.
2.6.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?	2.6.1 <u>Gaps:</u> a. It is not known how the public transport sector will respond to the development. b. It is not known what infrastructure upgrades is required from the developer to meet the municipal requirements. <u>Uncertainties:</u> a. It is uncertain how the contractor appointed to execute the work will approach the construction. <u>Assumptions:</u> The EAP assumed that the approach will be to be more manual labour than mechanical to create more temporary employment where possible.
2.6.2. 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?	2.6.2 The risk is moderate as the developer must still draft the contracts and the best environment practice implemented to achieve the objectives of a socio-economic sustainable development.
2.6.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?	2.6.3 The preferred mixed-use development approach was the risk-averse approach as it creates multiple opportunities to address socio-economic concerns versus a particular use large-scale development. The alternative followed the same process but contains a varied selection of development types.
2.7. How will the socio-economic impacts be resulting from this development impact on people's environmental right in terms following: 2.7.1. Negative impacts: e.g., health (e.g., HIV-Aids), safety, social ills. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?	2.7.1 The proposed development is within an urban environment where the public will obtain access to basic food supplies and other commodities. The planned casino in future phases may attract people who opt to gamble with their limited funds which leads to exacerbated social needs. People will have a choice which they do not

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NEED	
Question	Response
2.7.2. Positive impacts. What measures were taken to enhance positive impacts?	currently have. The rights of the public will therefore not be affected.  2.7.2 The proposed development will create job opportunities during the construction and operational phases which will be beneficial for families of the employed persons and for the secondary and tertiary economies supported by the employed individuals.
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 socio- economic impacts will result in ecological impacts (e.g., over utilisation of natural resources)?	2.8 The development will enhance economic environment of the Vryheid area. This benefits the social environment. The development will cause the destruction of the ecosystem during construction. The operations within the completed development will place pressure on the electricity and water supply networks. Mitigations were proposed as per EMPPr e.g. indigenous landscaping, attenuation of stormwater, and others.
2.9. What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?	2.9 Labour intensive construction methods are the best practicable environment option in terms of socio-economic considerations. The work will cost much more and take much longer to complete when using manual labour.
2.10. What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the "best practicable environmental option" to be selected, or is there a need for other alternatives to be considered?	2.10 The activities are taking place within an urban environment on land designated for the development type. The environment justice of vulnerable and disadvantaged people will not be affected because this was considered in the IDP when the Municipality set the land aside and zoned it for a Regional Mall. The alternatives identified are also located within the urban environment where the environment justice of vulnerable and disadvantaged people will not be affected as it is also in accordance to the requirements of the Municipal IDP. The incorporation of a taxi rank facility makes it accessible to a wider community.
2.11. What measures applied to pursue equitable access to environmental resources, benefits, and services to meet basic human needs and ensure human wellbeing, and what specific measures applied to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	2.11 Equitable access to environment resources, benefits, and services to meet basic human needs and wellbeing remains unaffected by the proposed activities as they take place within an urban environment where such development type is anticipated. Access is possible through appointments made with the developers and entering negotiations with them. A taxi rank forms part of the development which will allow direct access to the facility.
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?	2.12 The Environment Management Plan ensures environment health and safety consequences are catered for during construction and operation. The Municipality's environmental health officials will have access to monitor and control operations.
2.13. What measures were taken to: 2.13.1. ensure the participation of all interested and affected parties,	2.13.1 Site notices were erected, adverts placed in the Vryheid Herald in English and

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NEED	
Question	Response
<p>2.13.2. provide all people with an opportunity to develop the understanding, skills, and capacity necessary for achieving equitable and effective participation,</p> <p>2.13.3. ensure participation by vulnerable and disadvantaged persons,</p> <p>2.13.4. promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means,</p> <p>2.13.5. ensure openness and transparency, and access to information in terms of the process,</p> <p>2.13.6. ensure that the interests, needs and values of all interested and affected parties were considered, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge, and</p> <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?</p>	<p>isiZulu. Neighbours were supplied with a Background Information Document (BID).</p> <p>2.13.2 From the time the BID was issued to when the Draft Basic Assessment Report was released for comment provided sufficient time for people to become informed regarding the rights to comment on the information provided. Specialist studies are made available to learn more about the receiving environment and the expected impacts.</p> <p>2.13.3 The public participation process is open and accessible to the public. Interventions provide clarity when people or I&amp;AP's express a need for clarification.</p> <p>2.13.4 Notice boards erected on two sides of the development site (Oos Street and Landdrost Street), inform the public of the proposed development activities on the site, and what the impacts will be and how it may affect the public.</p> <p>2.13.5 The information is available on the <a href="http://www.indiflora.co.za">www.indiflora.co.za</a> and which is accessible for the public through a copy placed in the Vryheid Municipal Library for public perusal.</p> <p>2.13.6 All comments received will be listed in a table in the Comment and Response Report where the responses to the queries will be tabled and responded to by the compiler and the developer.</p> <p>2.13.7 Women contributed to the preparation of the specialist reports and the compilation of the draft Basic Assessment Report. It will be available to the public where women and the youth can engage the project and provide comment. All comments received will be listed in a table in the comments and response report and will be responded to by the EAP and the developer.</p>
<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)?</p>	<p>2.14 The proposed activities take place within an existing urban environment where the Municipality has determined the type of residential types that may occur on the site. The interests, needs and values of interested and affected parties regarding low-, middle- and high-income housing opportunities will be partly addressed by future phases of this application.</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?</p>	<p>2.15 The Environment Management Plan has an environment education section where the workers will be informed about the risks associated with the proposed activities that are to take place e.g., working at height, doing 'hot works or where other risks exist. In such cases only trained and qualified personnel will be employed.</p>



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<b>NEED</b>	
Question	Response
<p>2.16. Describe how the development will impact on job creation in terms of, amongst other aspects:</p> <p>2.16.1. the number of temporary versus permanent jobs that will be created,</p> <p>2.16.2. whether the labour available in the area will be able to start the job opportunities (i.e., do the required skills match the skills available in the area),</p> <p>2.16.3. the distance from where labourers will have to travel,</p> <p>2.16.4. the location of jobs opportunities versus the location of impacts (i.e., equitable distribution of costs and benefits), and</p> <p>2.16.5. the opportunity costs in terms of job creation (e.g., a mine might create one hundred jobs, but impact on one thousand agricultural jobs</p>	<p>2.16.1 500 Temporary jobs and four hundred permanent jobs will arise.</p> <p>2.16.2 Employing local labour will be required of the building contractor.</p> <p>2.16.3 The workers will most probably be coming from surrounding townships.</p> <p>2.16.4 The job opportunities and the location of impacts will be at the same location</p> <p>2.16.5 The opportunity costs in terms of job creation will be low as the type of jobs created will be manual in nature and unemployed people can do the work.</p>
<p>2.17. What measures were taken to ensure:</p> <p>2.17.1. that there were inter-governmental coordination and harmonisation of policies, legislation and actions relating to the environment, and</p> <p>2.17.2. that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?</p>	<p>2.17.1 This is a non-government project supported by the Local Government. Provincial Government Departments may provide comment.</p> <p>2.17.2 Focus group meetings will be arranged by the EAP should conflicts arise between organs of state to resolve the matter for the benefit of the developer, the communities affected and the relevant organs of state.</p>
<p>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?</p>	<p>2.18 The proposed development is aimed at providing facilities for the public to benefit from. To establish these facilities there will be an environment cost.</p>
<p>2.19. Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?</p>	<p>2.19 Mitigation measures proposed by the specialists indicate the residual impacts will be low and can be further mitigated through the rehabilitation and landscaping of the undeveloped open space and implementing the conditions in the EMP in the operational phase.</p>
<p>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?</p>	<p>2.20 The EMP provides measures to control, remedy and prevent pollution. The EMP is structured that the contractor responsible for pollution will be responsible for the clean-up. The operational EMP will ensure there are environmental controls in the event of a spoilage during operation.</p>
<p>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?</p>	<p>2.21 The preferred alternatives were selected as the best environment option as the desired socio-economic equitable benefits are achieved will have the lowest environmental impact.</p>
<p>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?</p>	<p>2.22 The proposed activities take place along the Vryheid-Ulundi corridor. Other development projects along the same corridor contribute to the impacts on the watercourse and other virgin habitats. The various projects have combined positive impact on the socio-economic environment.</p>

## 11. Applicable legislation, policies and/or guidelines

Table 2: List all legislation, policies and/or guidelines of any sphere of government that are applicable to the application as contemplated in the EIA regulations, if applicable:

Title of legislation, policy, or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act (NEMA) & The National Environmental Management Amendment Act	The proposed development of Timberland Estate triggers activities listed under NEMA	Department of Economic Development Tourism and Environmental Affairs	Act 107 of 1998 & Act 8 of 2004
National Environmental Management: Biodiversity Act (NEMBA)	All landowners have an obligation to remove alien invasive plant species on their property.	eZemvelo KZN Wildlife	Act 10 of 2004
National Environmental Management: Air Quality Act	There will be a limited amount of air pollution during the construction and operational phase	Directorate: Air Quality Management (DEAT)	Act 39 of 2004
National Environmental Management: Waste Act	Waste will be generated and the disposal thereof must comply with this Act.	KZNEDETA	Waste Act 59 of 2008
Natal Nature Conservation Ordinance	For the conservation of any protected plants on site	eZemvelo KZN Wildlife	Act 15 of 1974
National Water Act (NWA)	This project will trigger a WULA.	Department of Water and Sanitation	Act 36 of 1998
Conservation of Agricultural Resources Act (CARA)	All landowners have an obligation to remove alien invasive plant species on their property.	Department of Water and Sanitation	Act 43 of 1983
National Heritage Resources Act	Screening before construction commences will flag sensitivities	South African Heritage Resources Agency	Act 25 of 1999
KwaZulu Natal Heritage Act	Screening before construction commences will flag sensitivities	AMAFA aKwaZulu-Natali	Act 10 of 1997
Labour Relations Act	During the construction and operational phase there will be new employment opportunities.	Department of Labour	Act 66 of 1995
Basic Conditions of Employment Act	During the construction and operational phase	Department of Labour	Act 75 of 1997

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	there will be new employment opportunities.		
Occupational Health and Safety Act	This establishment must comply with the Occupational Health and Safety Act during the construction and operational phase.	Department of Labour	Act 85 of 1993
Hazardous Substances Act	Hazardous substances will be used during the construction phase	Department of Health, Welfare and Pensions	Act 15 of 1973
The Civil Aviation Regulations (CARs)	Aviation Impact Assessment for proposed Princess Mkhabayi Mall. The Civil Aviation Act No. 13 of 2009 and associated regulations regulate air space and the safety requirements at airports. The regulations aim to safeguard the airplanes and the surrounding land uses. The regulations thus aim to ensure that aircrafts can safely carry out their scheduled operations, and to prevent the aerodromes from becoming unusable due to the proliferation of obstacles in the surrounding area	The South African Civil Aviation Authority (SACAA)	Act No. 13 of 2009
The South African Civil Aviation Technical Standards (SA-CATS)			
White Paper on National Civil Aviation Policy, 2015		Department of Transport	Notice 401 OF 2017
Municipal Systems Act (MSA)	Municipalities exercise their executive and legislative authority within the constitutional system of co-operative government envisaged in section 41 of the Constitution.	Zululand District Municipality and Abaqulusi Local Municipality	Act No. 32 of 2000
Spatial Planning and Land Use Management (SPLUMA),	Town Planning	Abaqulusi Municipality	Act No. 16 of 2013

## 12. Waste, effluent, emission and noise management

### a) Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?  
If YES, what estimated quantity will be produced per month?

YES	NO
32 cubic meters	

How will the construction solid waste be disposed of (describe)?

**Construction waste will be sorted, and recyclable material separated from inert material and general construction waste. Recyclable material will be reused in the construction process or sent for recycling. Inert material will be used for back fill in the construction footprint. Only general waste will be taken to landfill by truck.**

Where will the construction solid waste be disposed of (describe)?

**At the Vryheid landfill site**

Will the activity produce solid waste during its operational phase?  
If YES, what estimated quantity will be produced per month?

YES	NO
12m <sup>3</sup>	

How will the solid waste be disposed of (describe)?

**Waste will be separated at source. The different waste streams will be stored in the waste holding area from where recyclable materials will be removed by recycling companies. Organic material will be collected by pig food farmers or compost makers. Any hazardous waste e.g. fluorescent tubes must be collected by a reputable hazardous company to dispose of it safely. Only general waste will be sent to landfill by truck.**

If the solid waste will be disposed of into a municipal waste stream, indicate which registered landfill site will be used.

**Waste will be sent to the Vryheid landfill**

Where will the solid waste be disposed of if it does not feed into a municipal waste stream (describe)?

**Organic waste will be taken by pig farmers or composters**

*If the solid waste (construction or operational phases) will not be disposed of in a registered landfill site or be taken up in a municipal waste stream, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

Can any part of the solid waste be classified as hazardous in terms of the NEM: WA? 

YES	NO
-----	----

If YES, inform the competent authority and request a change to an application for scoping and EIA. An application for a waste permit in terms of the NEM: WA must also be submitted with this application.

Is the activity that is being applied for a solid waste handling or treatment facility? 

YES	NO
-----	----

If YES, then the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA. An application for a waste permit in terms of the NEM: WA must also be submitted with this application.

### b) Liquid effluent

Will the activity produce effluent, other than normal sewage, that will be disposed of in a municipal sewage system?

If YES, what estimated quantity will be produced per month?

YES	NO
m <sup>3</sup>	
YES	NO

Will the activity produce any effluent that will be treated and/or disposed of on-site?

*If YES, the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.*

**c) Emissions into the atmosphere**

Will the activity release emissions into the atmosphere other than exhaust emissions and dust associated with construction phase activities?

YES	NO
YES	NO

If YES, is it controlled by any legislation of any sphere of government?

If YES, the applicant must consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA.

If NO, describe the emissions in terms of type and concentration:

--

**d) Waste permit**

Will any aspect of the activity produce waste that will require a waste permit in terms of the NEM: WA?

YES	NO
-----	----

If YES, please submit evidence that an application for a waste permit has been submitted to the competent authority

**e) Generation of noise**

Will the activity generate noise?

YES	NO
YES	NO

If YES, is it controlled by any legislation of any sphere of government?

Describe the noise in terms of type and level:

<p><b>The proposed activity will temporarily generate noise during the construction phase from construction vehicles and equipment. Noise levels during construction are not expected to exceed 85dBa. Noise suppressors are recommended for machinery and workers will be trained on how to minimise noise on site to prevent unnecessary disturbance during construction hours (07h00 to 17h00). Construction should not continue over weekends, after hours or public holidays, if necessary, then due notification should be given to the surrounding communities. The development will generate operational noise in the form of traffic and people talking.</b></p>
---

**13. Water Use**

Please indicate the source(s) of water that will be used for the activity by ticking the appropriate box(es):

<b>Municipal X</b>	water board	Groundwater	river, stream, dam, or lake	other	the activity will not use water
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If water is to be extracted from groundwater, river, stream, dam, lake, or any other natural feature, please indicate the volume that will be extracted per month:

Does the activity require a water use authorisation (general authorisation or water use license) from the Department of Water Affairs?

YES	NO

If YES, please provide proof that the application has been submitted to the Department of Water Affairs.

**A Water Use License Application will be submitted to DWS, and proof of submission will be submitted with the final BAR.**

**14. Energy Efficiency**

Describe the design measures, if any, which have been taken to ensure that the activity is energy efficient:

Low energy light fittings and water heating systems have been incorporated. Solar PV panels to generate a portion of the electrical demand, low energy lighting and cooling systems are incorporated in the design.

Describe how alternative energy sources have been considered or been built into the design of the activity, if any:

PV Solar panels have been incorporated into the design to supplement the power supply and provide backup power in the event of power outages

**SECTION B: SITE/AREA/PROPERTY DESCRIPTION**

i. Paragraphs 1 - 6 below must be completed for each alternative.

ii. Has a specialist been consulted to assist with the completion of this section?

<b>YES</b>	<b>NO</b>
------------	-----------

If YES, please complete the form entitled "Details of specialist and declaration of interest" for each specialist thus appointed and attach it in Appendix I. All specialist reports must be contained in Appendix D.

**Property description/physical address:**

<b>Province</b>	KwaZulu-Natal
<b>District Municipality</b>	Zululand District Municipality
<b>Local Municipality</b>	Abaqulusi Local Authority
<b>Ward Number(s)</b>	
<b>Farm name and number</b>	Erf 6018 Vryheid
<b>Portion number</b>	-
<b>SG Code</b>	N0HT03670001000000000

Where many properties are involved (e.g., linear activities), please attach a full list to this application including the same information as indicated above.

**Current land-use zoning as per local municipality IDP/records:**

**Special Zone 2 (Erf 6018 Vryheid Regional Mall)**

In instances where there is more than one current land-use zoning, please attach a list of current land use zonings that also indicate which portions each use pertains to, to this application.

Is a change of land-use or a consent use application required?

<b>YES</b>	<b>NO</b>
------------	-----------

The present zoning Regional Mall excludes casino, dwelling house, hospitality facility, and residential building. These land uses are not listed under Consent Uses. The height of buildings is restricted to one story. The only way for these land uses and multiple floor level developments to be applied to the site is through a rezoning application to the Municipality. This will occur in Phase 2.

## 1. Gradient of the Site

Indicate the general gradient of the site.

### Alternative S1:

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

### Alternative S2 (if any): N/A

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

### Alternative S3 (if any): N/A

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
------	-------------	-------------	-------------	--------------	-------------	------------------

## 2. Location in landscape

Indicate the landform(s) that best describes the site:

2.1 Ridgeline	<input type="checkbox"/>	2.4 Closed valley	<input type="checkbox"/>	2.7 Undulating plain / low hills	<input checked="" type="checkbox"/>
2.2 Plateau	<input type="checkbox"/>	2.5 Open valley	<input type="checkbox"/>	2.8 Dune	<input type="checkbox"/>
2.3 Side slope of hill/mountain	<input type="checkbox"/>	2.6 Plain	<input type="checkbox"/>	2.9 Seafront	<input type="checkbox"/>
2.10 At sea	<input type="checkbox"/>				

## 3. Groundwater, Soil and Geological stability of the site

Is the site(s) located on any of the following?

	Alternative S1:		Alternative S2 (if any): N/A		Alternative S3 (if any): N/A	
	YES	NO	YES	NO	YES	NO
Shallow water table (less than 1.5m deep)	YES	NO	YES	NO	YES	NO
Dolomite, sinkhole, or doline areas	YES	NO	YES	NO	YES	NO
Seasonally wet soils (often close to water bodies)	YES	NO	YES	NO	YES	NO
Unstable rocky slopes or steep slopes with loose soil	YES	NO	YES	NO	YES	NO
Dispersive soils (soils that dissolve in water)	YES	NO	YES	NO	YES	NO
Soils with high clay content (clay fraction more than 40%)	YES	NO	YES	NO	YES	NO
Any other unstable soil or geological feature	YES	NO	YES	NO	YES	NO
An area sensitive to erosion	YES	NO	YES	NO	YES	NO

If you are unsure about any of the above or if you are concerned that any of the above aspects may be an issue of concern in the application, an appropriate specialist should be appointed to assist in the completion of this section. Information in respect of the above will often be available as part of the project information or at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by the Council for Geo Science may also be consulted.

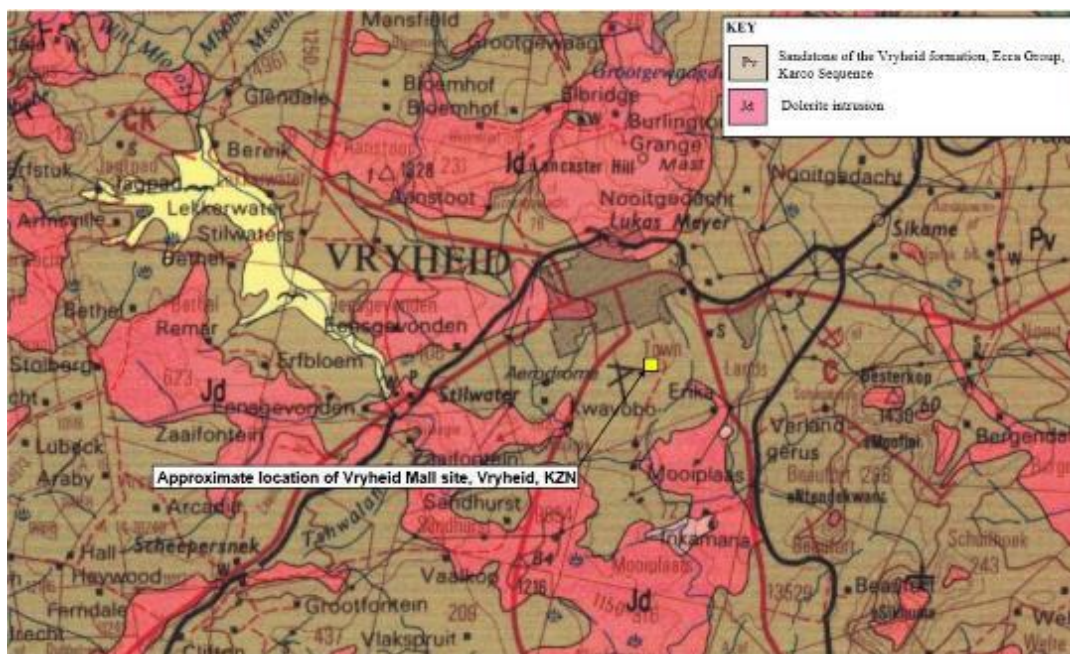


Figure 7: The regional geological map 1:250 000 “2730 Vryheid”

## GEOTECHNICAL REPORT

### Chapter 4 Regional & site-specific geology

Page 7

Siltstone and sandstone of the Vryheid Formation, Ecca Group, Karoo Sequence underlies the area of investigation and was confirmed during the current investigation. A dolerite intrusion has locally intruded the siltstone / sandstone. Weathering of the sandstone bedrock has developed residual soils across portions of the site and include residual siltstone / sandstone and residual dolerite soils.

### Chapter 5 Excavation Procedures

Page 8

Soft excavation material is present to depths in excess of 4,0m below present ground level. Exceptions are seen where the soft excavation materials extend to depths of the order of 2,0m to 3,0m and are in turn underlain by hard excavation material in the form of soft rock siltstone bedrock or localised boulder class A excavation material in the form of abundant dolerite core stones. Hard excavation material would require excavation by blasting.

### Chapter 6 Lateral Support Recommendations

Page 9

Lateral supports - Consideration could be given to utilising pre-cast block retaining structures as a suitable lateral support solution where space constraints do not permit the recommended batter slopes. Precast block retaining walls would also apply for the short-term batter slope angles temporary slopes. Alternatively, a soil nail and mesh reinforced gunite lateral support system could be considered.

### Chapter 7 Evaluation of founding conditions and recommended foundation types

Page 9

The upper transported hillwash and transported pebble marker soil horizons are considered to be potentially highly compressible / collapsible owing to their normally consolidated nature and generally poor in situ consistencies.

An allowable bearing pressure of 150kPa could be utilised for the medium dense / firm or better reworked residual sandstone and localised firm reworked residual dolerite. These founding horizons occur at depths varying between 0,2m and 1,1m (average depth 0,65m) below present ground level. An allowable bearing pressure of 250kPa is applicable to the underlying medium dense or better residual sandstone / siltstone. These founding horizons occur



at depths varying between 0,8m and 2,2m below present ground level (average depth 1,5m).

**Chapter 8      Materials usage**

**Page 11**

Recommendations based on the laboratory test results and the fieldwork visual assessment are considered appropriate to the in-situ soils encountered across the site.

- The upper 150mm of in situ soils containing abundant organic is unsuitable for use as construction material and should be removed to spoil prior to construction commencing. At least the upper 0,5m of in situ soil where existing and/or previously trees were removed would need to be spoiled owing to abundant tree roots.
- The upper in situ soils across the majority of the site (hillwash, pebble marker and reworked / residual sandstone / siltstone) are considered suitable for use as poor quality general fill materials only.
- The poor materials quality of the in situ soils, requires a high degree of engineering quality control implemented on site to ensure that the required compaction densities within the bulk fill platforms are attained at optimum moisture content. All compacted layers should be tested using a nuclear gauge device (Troxlér). Moisture contents must be determined in a soils laboratory by oven drying because Troxlér readings cannot be relied upon.
- The localised reworked / residual dolerite soils (see test pits TP8 and TP16) are considered to be potentially moderately to highly plastic. It is recommended that should the proposed bulk earthworks operations cut into these soils then they should be removed to spoil in their entirety.

Materials of a minimum G7 quality would need to be imported onto site for the construction of bulk fill terraces and as layer works for access roads and parking areas.

**Chapter 9      Surface beds**

**Page 12**

Recommendations for surface bed:

- The surface beds could be placed conventionally on top of the in-situ soil within areas of cut. The upper 150mm of soil should however be ripped and recompacted to 90% of Mod AASHTO density at optimum moisture content prior to placing of concrete.
- Within areas of engineered fill, the fill should be compacted in 150mm thick layers to a minimum of 90% of Mod AASHTO density at optimum moisture content.
- Should the cut terrace excavations expose siltstone bedrock at final terrace level it should be ensured that there is cover of at least 300mm of engineered fill above the siltstone bedrock prior to placing of surface beds. This would be to provide a consistent foundation platform for the surface beds. This fill should be compacted in 150mm layers to 90% of Mod AASHTO density at optimum moisture content.
- All surface beds should be kept free of vertical external and internal walls and structural members. That is, the surface beds should be allowed to “float”. This would require that the surface bed be placed upon a polyethylene plastic geomembrane which is folded up on the perimeter between concrete and brickwork to serve both as a bond-breaker and an isolation joint between concrete and brickwork. Across the areas underlain by dolerite, that is, in the vicinity of test pits TP8 and TP16 lightly loaded surface beds could be placed directly upon the in-situ soils with the following provisos.
- The in situ soils should be nominally rolled without vibration where exposed at terrace level. A 300mm thick imported G7 layer should then be placed directly above the in-situ soils and compacted in 150mm layers to 90% of Mod AASHTO density at optimum moisture content to provide a consistent working

**Chapter 10 Access roads & parking areas**

**Page 13**

- The upper in situ sub-grade material across the majority of the site, is estimated to have a CBR of the order of 5 percent if compacted to 90% of Mod AASHTO density at optimum moisture, content, and of the order of 7,5 percent if compacted to 93% of Mod AASHTO density at optimum moisture content, for pavement design purposes.
- Where dolerite underlies the areas (see test pits TP8 and TP16), and the underlying reworked / residual dolerite soils become exposed at final terrace level then these in situ soils would have a CBR of less than 3% percent if compacted to 90% Mod AASHTO density at optimum moisture content. It is therefore recommended that the in-situ subgrade only be nominally rolled, in these areas without vibration, prior to construction of layer works.
- It is noted that the guideline design requires that a minimum cover of 600mm (including layer works is required )where the subgrade has an in situ CBR of less than 3% at 90% Mod AASHTO compaction.
- Should brick paving be utilised for proposed access roads / parking areas, it is recommended that the layer immediately below the bedding sand be stabilised so as to seal the layerworks from stormwater ingress from above.

**Chapter 11 Sub-surface drainage**

**Page 14**

A perched water table was encountered locally in test pit TP16 where the perched water influx occurred at 2,6m depth and a slight flow rate was recorded. No perched water table or zones of seepage were encountered in the remaining test pits across the site at the time of the investigation.

Comments relevant to the design and construction of the development in terms of sub-surface drainage are.

- Dewatering, within areas of cut across the localised eastern portions of the site, may be required. This would need to be assessed at the time of construction. Sumps and pumps of adequate capacity would be required in order to manage the influx of groundwater into excavations.
- Conventional drainage should be allowed for behind all retaining walls within areas of cut.
- Particular attention must be paid to ensure that the damp-proof membrane (DPM) and damp-proof course (DPC) is suitably installed in order to avoid problems in the future with rising damp.

**The complete FINAL GEOTECHNICAL REPORT is included in APPENDIX D – Geotechnical Assessment**

**4. Groundcover**

Indicate the types of groundcovers present on the site. The location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Natural veld - good condition <sup>E</sup>	<b>Natural veld with scattered aliens<sup>E</sup></b>	Natural veld with heavy alien infestation <sup>E</sup>	Veld dominated by alien species <sup>E</sup>	Gardens
Sport field (golf)	Cultivated land	Paved surface	Building or other structure	Bare soil

If any of the boxes marked with an “E “is ticked, please consult an appropriate specialist to assist in the completion of this section if the environmental assessment practitioner doesn’t have the necessary expertise.

**Vegetation assessment**

GJ McDonald reports that the entire site has Northern KwaZulu-Natal Moist Grassland on it. The

grassland is considered to be Vulnerable and has a National Conservation Target of 24%. The natural grassland is made up of thirty eight species of grass, nineteen herbs, nine geophytic herbs, two succulent herbs, three low shrubs and a succulent shrub. The Sensitivity Report indicated low sensitivity for the terrestrial biodiversity theme sensitivity and medium sensitivity for plant species theme sensitivity. The potential presence of four species of conservation concern which are known to occur in the vegetation type. Sensitive species 1252 is unlikely to find suitable habitat, while Sensitive species 1152 would have been conspicuous, but was not encountered. Sensitive species 998 could presumably be present, but was not seen either as a result of absence or it was dormant. The latter species usually has some persistent plant parts even when dormant. *Dierama erectum* (Iridaceae) perennates from an underground corm and may have been dormant. Again, the species usually has some persistent plant parts even when dormant. Because of the grazing and burning pressure experiences at the site, these species are not likely to exist, and during the walk-down survey of the site, none of the species of conservation significance indicated above were encountered. This was not unexpected as the area has been transformed by current land-use practices.

### **Current status of the vegetation**

The flora of the general area has suffered a number of anthropogenic impacts, more especially from clearing, dumping, burning and grazing by livestock. Whether natural or of anthropogenic origin resulting from excessive grazing and burning, the grassland has a low diversity and geophytes are generally conspicuously absent. Invasion by woody species such as *Acacia sieberiana* and the alien *Melia azedarach* is common, as is invasion by alien weeds. Inadequate control efforts aimed at removing *Melia* (*Syringa*) has led to extensive coppicing, and most trees of this species are now multi-stemmed.

### **Sensitive species**

From a floral point of view the sensitivities relating to the proposed site are minimal and include the presence of a number of *Agapanthus praecox* (Amaryllidaceae sensu lato), *Aloe maculata* (Asphodelaceae) and *Boophone disticha* (Amaryllidaceae). Limited numbers of *Aristea* and *Dietes grandiflora* (Iridaceae), and Bulbine asphodeloides (Liliaceae sensu lato) were also encountered. All LILIACEAE, IRIDACEAE, AMARYLLIDACEAE and ALOE are SPECIALLY PROTECTED species according to the ordinance, despite these species being Red Listed as of Least Concern by Raimondo et al. (2009). Permits to move, damage or destroy these Specially Protected species will be required (see later under Permit requirements).

(a) *Agapanthus praecox*



(b) *Aloe maculata*



(c) *Boophone disticha*



(d) *Chlorophytum, Crocosmia, Bulbine and Aristea*



Figure 16: Distribution of Specially Protected species on the site

No plants protected by the National Forests Act or that are Rare, Red Listed and Endemic Species were encountered on site.

### Potentially sensitive habitats

#### Termitaria

There are termitaria in the grassland on this site. Herpetofauna often utilize these mounds as refugia and are well utilized in winter. These termitaria should be checked for fauna during the site clearing and any animals found should be released into the nearest safe habitat, before the development proceed

#### Rocky areas

Rock pavements with shallow soils often harbour plants which handle drought by becoming dormant in winter, but shoot in spring when the rains provide sufficient moisture trapped by the rock or from seepage

over the rocks. These species were not present (eg. *Brachystelma*, *Selaginella*, *Ornithogallum*, *Crassula*), but this may be due to the season, and these species will need to be sought out and relocated, if present, during construction should the project receive approval.

### **Seasonally wet areas**

Depressions on the site containing hygrophilous species (eg. *Imperata cylindrica*) and cattle spoor in the mud indicates these may contain water beyond the rainy season. They are often encircled by rock (below, right).

### **Permit requirements**

Application for a permit to translocate, damage or destroy any of the Specially Protected species occurring on the site must be made to eKZN Wildlife. Large numbers of *Aloe maculata* (~100 or more) and of *Agapanthus praecox* are present on site. There were seven *Boophone disticha* encountered, but more may be present because they are currently dormant. A single clump of approximately 10 individual *Crocasmia aurea* plants, a single clump of *Dietes grandiflora* and *Bulbine asphodeloides* and a single plant of *Chlorophytum krookianum* were encountered. *Aloe* and *Agapanthus*, should be included in the indigenous and water-wise planting palette for the landscaping of the complex, wherever possible and as far as practical.

### **Potential impacts**

Habitat destruction during the construction phase of the project causes disturbance during the construction activities and the operation phase. Soil compaction, hardening of surfaces and erosion impacts will occur through the clearing of vegetation during construction and operation, the operation of earth moving equipment and stockpile areas during construction. The clearing of vegetation during construction and the operation of earth moving equipment and stockpile areas during construction will result in increased levels of alien plant invasion.

### **Mitigations relating to the impact assessment**

- **Habitat destruction**  
Construction and maintenance activities should be carried out according to accepted environmental best practice with the minimum removal of indigenous vegetation. Existing access should be utilised wherever possible. Indigenous planting must be undertaken during rehabilitation and landscaping, including the re-planting of suitable species removed during site clearing (eg. *Aloe*, *Agapanthus*)
- **Disturbance**  
Construction and maintenance vehicles should be restricted to existing roads and access points where practical and access of machinery and vehicles should be carefully controlled. Little can be done about the disturbance which will occur during the operational phase of the project as this is a high impact land-use option.
- **Soil compaction, hardening of surfaces and erosion**  
The movement of construction and maintenance vehicles and personnel should be restricted as far as possible and where practical and access of machinery and vehicles should be carefully controlled. Compaction from human and vehicular traffic will result in higher runoff and erosion

leading to loss of topsoil and delayed rehabilitation. Hardening of surfaces will require suitable drainage infrastructure to prevent wash-aways.

- Alien plant invasion

Disturbance will lead to alien plant invasion. Initially a high intensity control programme should be implemented in order to remove competition with indigenous vegetation and then routine follow-up control until rehabilitation is complete.

#### General mitigations

- The apparent absence of species of conservation significance and the transformed nature of the study site indicate that a final walk-through should not be required, although a thorough searching of termitaria is recommended before construction takes place;
- The extent of the construction sites should be demarcated on site layout plans and no construction personnel or vehicles should leave the demarcated area except those authorised to do so. Those areas surrounding the construction site that are not part of the demarcated development area should be considered as “zero-access” areas for employees and machinery in order to reduce unnecessary habitat loss and disturbance;
- During construction, sensitive habitats must be avoided by construction vehicles and equipment wherever possible, in order to reduce potential impacts. Only necessary damage must be caused and, for example, unnecessary driving around in the veld must not take place as this can result in compaction resulting in increased runoff and slower rehabilitation of the area;
- Checks must be carried out at regular intervals to identify areas where erosion is occurring. Appropriate remedial action, including the rehabilitation of the eroded areas should be undertaken;
- No plants should be collected, nor animals intentionally killed or destroyed and poaching and hunting should not be permitted on the site and severe contractual fines must be imposed and immediate dismissal of any contract employee who is found attempting to snare or otherwise harm wild animals or collect plants or plant parts;
- The presence of construction workers and construction camps may result in an increased fire risk during construction. No open fires shall be allowed on site under any circumstance. The Contractor shall have fire-fighting equipment available on all vehicles working on site, especially during the winter months;
- Vegetation cleared should be removed from site so as to prevent a fire hazard, notwithstanding the fact that occasional use of brush-packing may be required to counter potential soil erosion in specific areas;
- An ongoing monitoring programme must be implemented to enforce the continual eradication of alien and invasive species during and post-construction as this is a permanent impact of the proposed activity and poses a potential long-term impact to the local habitat and its biota;
- Construction related (solid and hazardous) and general waste must be collected regularly from the site and disposed of at an appropriate registered landfill site;
- Construction waste must not be stored more than 30 days on site;
- Management of oil and other spillages and leakages must be minimized and hydrocarbon spills should be dealt with immediately to prevent contamination of ground water;

- The operation of vehicles, construction equipment, and use of construction materials and on-site sanitation could result in pollution spills and the introduction of contaminants (eg. hydrocarbons and solid waste) into natural habitats. This will increase levels of disturbance and encourage the invasion of early successional ‘weeds’ and alien invasive species. Both of these impacts can lead to degradation of habitat quality during construction and must be controlled; and
- Dust suppression on the construction site and access roads will need to be controlled and can be achieved using water sprayers as necessary, since dust may become deposited on vegetation leading to impaired photosynthesis, potentially causing damage to individual plants.

## 5. Surface Water

Indicate the surface water present on and or adjacent to the site and alternative sites?

Perennial River	<b>YES</b>	<b>NO</b>	<b>UNSURE</b>
Non-Perennial River	<b>YES</b>	<b>NO</b>	<b>UNSURE</b>
Permanent Wetland	<b>YES</b>	<b>NO</b>	<b>UNSURE</b>
Seasonal Wetland	<b>YES</b>	<b>NO</b>	<b>UNSURE</b>
Artificial Wetland	<b>YES</b>	<b>NO</b>	<b>UNSURE</b>
Estuarine / Lagoonal wetland	<b>YES</b>	<b>NO</b>	<b>UNSURE</b>

If any of the boxes marked YES or UNSURE is ticked, please provide a description of the relevant watercourse.

GCS Water and Environmental Consultants conducted a Desktop Hydrological Assessment for the Proposed Vryheid Mall. Hydrometeorological data for the study area were obtained from various sources and were used to refine hydrological data. These sources provided methods of determining the Mean Annual Precipitation (MAP), Mean Annual Runoff (MAR), and Mean Annual Evaporation (MAE) of the study site as well as the design rainfall data. Data was applied to the site water balance calculations, runoff peak flow estimates for flood line modelling and stormwater runoff peak flow estimates for stormwater system sizing. Based on the investigation undertaken, the following conclusions are made:

- The site is situated in Quaternary W21A of the Pongola to Mtamvuna Water Management Area.
  - The site mean annual precipitation (MAP) is in the order of 849 mm/yr.
  - Natural runoff was recorded as approximately 103.2 mm/yr, which represents approximately 12% of the MAP.
  - Evaporation is reported as 1 200 to 1 300 mm/annum (S-Pan).
- The delineated drainage lines associated with the development area can be considered moderate flood hazard areas, based on the peak flows estimated and the flooding depth observed from the HEC-RAS model output. From the flood lines produced, it is noted that all the infrastructure at the site is situated outside probable zones of inundation. Hence, there is no likely flooding risk.
- The non-perennial streams downstream of the site, on-site wetland units and vadose zone soils are the main receptors of potential surface-related pollution at the site. The risk assessment for both construction and post-construction phases of the project is considered marginal to low, with reversible impacts.
- The hydrological risk was evaluated (refer to Section 6) and the hydrological risk of the proposed activities is considered marginal. Mitigation measures were proposed to circumvent potential impacts (refer to Section 6). As all activities will take place on the same property, there will be cumulative impacts. The

operational phase risk table includes cumulative risk about the site, and activities thereon. Considering the subcatchment conceptual hydrological cycle and the activities associated with the site and surroundings, no impacts are expected in terms of the hydrological cycle. This is due to no groundwater and surface water usage in the sub-catchment as well as the site activities not significantly altering the hydrological functions of the given environment.

### **Avoidance areas**

Limited sedimentation and erosion for the drainage lines and streams associated with the site are anticipated. The flood lines also suggest no flooding risk associated with the development.

The 1:100-year flood line should be considered an avoidance area (buffer area) (CSIR, 2005).

Care should be taken if development is to take place within the exclusion zone. If development does take place in the exclusion zone, proper flooding protocols and erosion prevention measures should be implemented. This could include gabion mattresses and cut-off walls, gutters and drains, roadside curbs, reed beds or stilling basins at discharged areas, integrated into the engineering designs for the development. Sub-surface infrastructure (i.e. sewer lines, water pipes etc.) will be less susceptible to surface flood damage, and can highly likely be constructed in the demarcated flood line areas. It should, however, be noted that soils on steeply sloped areas (> 1:4) should be compacted to prevent slope failure which could cause mass wasting and sub-surface infrastructure damage. These systems would need to be sized by a civil engineer, considering runoff patterns and stormwater flow velocities from the final engineering designs for the development.

If linear infrastructure is zoned to occur in the demarcated flood line areas, the structures are to be designed to such a degree by a professional engineer to:

1. Prevent environmental damage if a flood does occur;
2. Prevent slope failure on the water course banks;
3. Prevent increased flooding potential;
4. Withstand the flood peak flow forces and buoyancy forces;
5. Effectively convey flood water/stormwater for safe discharge to the environment; and
6. Have erosion control measures in place at any point of discharge into the environment (stilling basins, reed beds, energy damping blocks or mats, gabion mattresses etc).

### Mitigation measures for inclusion in the EMPr

The following mitigation measures can be implemented as part of the EMPr to further reduce the risk of flooding on site and contribution to stormwater generation potential:

- During the construction phase, it is recommended that sandbags and temporary berms be used, to manage stormwater runoff (if storms do occur). It is recommended that the construction phase take place during the winter months, with a decreased probability of storm events. Temporary stormwater systems should be sufficient to manage the stormwater at the site during the construction phase.
- Ensure a stormwater management plan is implemented, and that all stormwater systems are kept clean of any debris to reduce flooding risk.
- Ensure that eroded areas are re-vegetated, to ensure reduced sedimentation risk and reduced runoff volumes to the streams.
- To prevent erosion and deposition during construction use:
  - o Minimise vegetation disturbance during construction.



- o Re-vegetate as soon as possible to establish and maintain good ground cover across the site.
- o Conduct regular inspections and maintenance of the site to ensure that vegetation cover is adequate, and no rivulets are generated.

Reasoned opinion on whether the activity should be authorized

This hydrological assessment cannot find any grounds or identify high hydrological risks that do not proceed with the development. This is grounded on the assumption that the proposed mitigation measures (Section 6), EMPr and EIA recommendations are implemented during the construction and operational phase of the development.

### Wetland Assessment

Eco-Pulse Environmental Consulting Services prepared the Wetland Impact Assessment Report, in March 2022, which sets out the findings of a **Specialist Wetland Impact Assessment** to inform the application for environmental approval in terms of the NEMA: EIA Regulations (2014, as amended in 2017) and a water use license application (WULA) in terms of the National Water Act, for the proposed 'Princess Mkabayi City' Mixed-Use development (Phase 1) and associated infrastructure located in the town of Vryheid in the AbaQulusi Local Municipality, KwaZulu-Natal. The main findings of the wetland baseline and impact/risk assessment have been summarized below.

#### Potential Risk of Development Impact:

The proposed development is likely to pose the risk of indirectly impacting the two (2) wetlands located downstream and within a 500m radius of the site of the development. Due to the potential risk of indirect impact, the proposed development may constitute Section 21 (c) and (j) Water Uses in terms of Chapter 4 and Section 21 of the National Water Act (Act No. 36 of 1998) and an investigation into potential water use licensing requirements was warranted.

Notably, **there will be no direct incursion into watercourses as these have been identified as being outside of the proposed development layout, thus no impeding or diverting of flows will be involved.** It is recommended the **layout of the development takes into account both wetland areas and a prescribed buffer zone, direct loss impacts to wetland habitat, vegetation and fauna will not be relevant to the development.** However, risk of indirect water quality and sediment/flow impacts could result in a change in the watercourse characteristics, albeit that the risk has been assessed as being 'low' with adequate mitigation (as per the recommendations in Chapter 7 of this report). **Where properly mitigated and managed onsite in accordance with the mitigation and management recommendations contained in Chapter 7 of this report, indirect water quality, erosion and sediment impacts can be managed such that these are unlikely to reduce wetland PES.**

**The Princess Mkabayi City Mixed-Use Development can potentially be licensed under a General Authorisation (GA).** Ultimately, it is up to the DWS to confirm whether a GA may be applied for.

#### Baseline PES/EIS Assessment:

A summary of the PES (Present Ecological State) and EIS (Ecological Importance & Sensitivity) assessment results for the three watercourses identified is presented below as follows:

Watercourse Units	PES	EIS	RMO
Wetland W01	C: Moderately Modified	Moderately-Low	Maintain PES/EIS
Wetland W02	C: Moderately Modified	Low	

The RMO (Recommended Management Objective) for the wetlands assessed is to ‘Maintain’ current PES through water resource management measures that do not lead to a reduction in PES.

**Preliminary Development Design & Planning Recommendations:**

A 15m buffer for both wetlands has been proposed to assist with mitigating construction and operational risks. The development and associated infrastructure (i.e., stormwater) is to be located outside of this buffer zone. In addition, environmental design recommendations for operational stormwater management have been provided to further reduce any possible impact linked to stormwater management during the operational phase in particular.

Additional construction and operational management recommendations have also been included in the report to reduce risk of impact to overall ‘low’ levels or potentially ‘eliminate’ risk.

**Conclusion:**

Given that wetland ecological risks and impacts can be mitigated and reduced to relatively ‘low’ levels generally, it is recommended that the proposed development be authorised and licensed from a wetland ecosystems perspective, subject to implementation of the range of mitigation measures provided in Chapter 7 of this specialist Freshwater Assessment Report which should be a specific condition of the EA / WUL where issued.

**Hydropedological Assessment**

GCS Water and Environment (Pty) Ltd (GCS) undertook a hydropedological assessment for the Vryheid Mall Princess Mkabayi City (Phase 1) at the site situated along the R34 in Vryheid, KwaZulu-Natal Province. The project falls in quaternary catchment W21A of the Pongola to Mtamvuna Water Management Area (WMA) (DWS, 2016).

The Vryheid Mall Development covers an area of 23Ha and comprises of a mixed-use shopping complex, with a dedicated parking area. Vryheid Mall to be developed in several phases. The mall area covers 14Ha, and Phase 1 includes the mall complex. This hydropedological study evaluated the potential impact relating to the total development, with Phase 1 being the main focus. The hydrological report will be included in the Water Use License Application (WULA) for the site. The sub-soil conditions at the site were investigated in this report and focused on soil-water transfer functions and classification of hydrological soil types (HST):

Hydrological soil type	Description
Recharge	The soils do not have any morphological indication of saturation. Vertical flow through and out of the profile into the underlying bedrock is the dominant flow path. These soils are deep and freely drained and are experiencing the leaching of nutrients to underlying soil horizons.
Interflow (A/B)	The soils have a textural discontinuity which facilitates the build-up of water in the topsoil, the water that sits on the upper layer then flows laterally into the stream on the A/B horizon interface. The flow path is predominantly downslope in a lateral direction.
Interflow (Soil/Bedrock) Or Interflow (A/ Bedrock)	Soils overlying relatively impermeable bedrock. Hydromorphic properties signify the temporal build of water on the soil/bedrock interface and slow discharge in a predominantly lateral direction.

Responsive (Shallow)	The soils are shallow, and they are over a relatively less permeable weathered rock or bedrock. They have limited storage capacity which results in the generation of overland flow after rainfall events.
Responsive (Saturated)	Soils with morphological evidence of long periods of saturation. These soils are close to saturation during rainy seasons and promote the generation of overland flow due to saturation.

The prominent hillslopes present in the proposed development area forms two (2) sub-catchments. Generally, the portion of the hillslopes which characterises the crest to footslope position is characterised by shallow soils of the Westleigh soil form, which entails a shallow orthic A horizon (varies across the site) followed by a soft plinthic B horizon (residual soils).

- Soils overlying relatively impermeable bedrock. Hydromorphic properties signify the temporal build of water on the soil/bedrock interface and slow discharge in a predominantly lateral direction.
- Deep percolation into the sub-soils/hard rock and subsequent aquifers towards the lower topography areas is expected.

On the valley positions of the hillslope 2 responsive (saturated)/responsive (shallow) soils occur. For responsive soil types, the following is likely:

- Soils with morphological evidence of long periods of saturation or structure that promotes overland flow instead of lateral flow via the soil horizon.
- In responsive soils, the build-up of water is expected in the B and upper A horizons after rain and overland discharge and minor lateral seepage are expected (due to saturation excess). Secondary vertical seepage to deeper soil zones from the saturated B horizon is expected. At the transition from one soil type to the other (upstream to downstream) overland flow may take place during wet seasons.
- The release of water from the gleyic or soft plinthic B horizons will be somewhat slow, and can still contribute to vertical and lateral water movement during dry periods.

Lateral movement of water due to deep interconnected fractures within the bedrock likely to be present, is anticipated. Flow is from high to low topography areas. This depends on the degree of fracturing and interconnectivity between the vadose and saturated zones.

Impacts of the proposed activities, in terms of hydrogeological flow suppression on a sub-catchment scale, are based on the HSTs were identified. The predicted impact on the wetlands and watercourses fed by the hydrogeological process is estimated at 7 and 37% for the hydrogeological sub-catchments (moderate to high impact). This calculation considers the 15 m prescribed buffer areas as proposed by Eco-Pulse (2022).

The resource management objectives (RMO) for these wetlands need to maintain the current PES and EIS post development. The calculation suggests that the PES will likely change if the wetland units were only fed by the sub-catchments. However, considering the greater subcatchment, the severity decreases to 1.74% (larger sub-catchment feeding the non-perennial stream and CVB wetland have an area in the order of 9.26 km<sup>2</sup>). The severity

## BASIC ASSESSMENT REPORT

is expected to maintain a no-impact category if the larger drainage area is considered, and very high if the local drainage system is considered.

Several hydrogeological risks were identified for the construction and operational phase of the project. The identified risks include:

- During construction
  - Site preparation, including placement of contractor laydown areas and storage (i.e. temporary stockpiles, bunded areas etc.) facilities.
  - Disturbing vadose zone during soil excavations/infilling activities.
  - In-situ placement of new soils, altering existing soil-flow processes (i.e. infilling of wetlands or cut-and-fill areas).
  - Soil compaction.
  - Soil & surface water contamination and sedimentation from the following activities:
    - Leakages from vehicles and machines, and building materials
    - Erosion and sedimentation of watercourses if excavations are left open due to unforeseen circumstances (i.e. bad weather); and
    - Alteration of natural drainage lines may lead to ponding or increased runoff patterns (i.e. may cause stagnant water levels or increase erosion).
  - Vegetation loss could decrease soil infiltration and increase runoff.
- Operational:
  - Reduced soil infiltration due to the residential development units and site access roads (i.e. areas which will potentially become impermeable).
  - Reduced rainfall runoff to wetland areas from drainage servitudes (i.e. this water will be captured in stormwater infrastructure).
  - Soil quality could be compromised if leakages occur from sewer lines. Moreover, oil & fuel spills from resident vehicles can cause soil contamination.
- Closure/decommission phase:
  - Similar impacts as per the construction/preparation phase are anticipated.

Soil structure & infiltration capacity: • Exposure of soils, leading to increased runoff from cleared areas and erosion of the watercourses, and thus increased the potential for sedimentation of the water courses. • Vegetation loss, and soil erosion.	Areas which were backfilled with collapsible soils; water leakages from the stormwater system or sewer leakages may cause soil subsidence/erosion. Likely associated with soil structure compaction.	Site activities / Not result of Earthworks and development	Long-term (4)	Site (2)	Yes (1)	Low (1-3)	Slightly detrimental (1-7 to 12) (1-7)	Definite (2)	Low (12 to 23) (1-14)	<ul style="list-style-type: none"> <li>• Hydraulic monitoring of stormwater systems to ensure that the system operates as per design specifications.</li> <li>• Retain as much indigenous vegetation as possible.</li> <li>• Ensure the sewer system is monitored for leakages.</li> <li>• Routine visual inspections of sewer infrastructure and parking areas for signs of soil contamination.</li> <li>• Have emergency fuel &amp; oil spill kits on site.</li> </ul>
Soil quality	Seepage/leakages/overland flow from the sewer lines may cause soil degradation. Moreover, oil & fuel spills from vehicles parked at the site may compromise soil quality. Prolonged pollution may migrate to the nearby watercourse and/or percolate into the groundwater table.	Site activities	Long-term (4)	Site (2)	Yes (1)	Negligible (0)	Slightly detrimental (1-7 to 12) (1-7)	Definite (2)	Low (12 to 23) (1-14)	<ul style="list-style-type: none"> <li>• Ensure the sewer system is monitored for leakages.</li> <li>• Routine visual inspections of sewer infrastructure and resident parking areas for signs of soil contamination.</li> <li>• Have emergency fuel &amp; oil spill kits on site.</li> </ul>

## BASIC ASSESSMENT REPORT

Primary Surface Water Receivers • Non-perennial stream • Wetland units	<p><b>Stormwater runoff</b></p> <ul style="list-style-type: none"> <li>• Potential surface water contamination as a result of poor stormwater drainage on-site.</li> <li>• Increased erosion due to vegetation loss.</li> <li>• Contaminated runoff water into nearby streams from parked vehicles at the site.</li> <li>• Sedimentation of watercourses due to altered runoff patterns.</li> </ul> <p>Sewer lines (see below for sanitation)</p>	Net Result of Earthworks and development	Long-term (4)	Site (2)	Yes (1)	Low (1-1)	Slightly detrimental (-7 to -12) (-7)	Definite (2)	Low (12 to 25) (-14)	<ul style="list-style-type: none"> <li>• Water quality monitoring and visual assessments.</li> <li>• Install a temporary cut-off trench to contain poor quality runoff (if required and pre-determined by visual assessments).</li> <li>• Routine hydraulic monitoring of stormwater system (monthly)</li> </ul>
	<ul style="list-style-type: none"> <li>• Poor quality seepage into the subsols from sewer lines may impact soil quality, and eventually lead to poor quality seepage into the surrounding.</li> </ul>	Net Result of the development	Long-term (4)	Site (2)	Yes (1)	Moderate (-2)	Negligible (0 to -6) (-14)	Definite (2)	Moderate (-25 to -36) (-28)	<ul style="list-style-type: none"> <li>• Water quality monitoring and visual assessments.</li> <li>• Routine inspections of all sewer-related infrastructure (hydraulic monitoring)</li> </ul>

The following mitigation measures can be considered as part of the EMPr:

During construction:

- Ensure clean stormwater is conveyed to the natural environment. An attenuation pond can be used to ensure steady seepage of accumulated stormwater into the soils upstream of wetland areas (as is already proposed based on the stormwater report for the site).
- Ensure fuel spill cleaning kits are on site.
- Conduct weekly water quality monitoring and visual assessments and repeat it after rain events.
- Install a temporary cut-off trench to contain poor-quality runoff (if required) during construction.
- Temporary dewatering of perched groundwater (only expected during intense storm events and shortly thereafter).
- Discharge dewatered / rainwater collected into the nearby stream. May require authorisation. If water is contaminated, discharge to the closest greywater system (depending on the extent of contamination)

During operation:

- Conduct routine (monthly) inspections of all sewer-related infrastructure (hydraulic monitoring) during operation.
- Water quality monitoring and routine visual assessment for contamination.
- Ensure that stormwater systems conveying water to the nearby river are fitted with silt and oil traps, as well as that surface drains, are isolated from any potential surface pollution sources.

P37 - The table below shows how the severity of a sub-catchment scale can further be improved by incorporating stormwater attenuation back into the environment. No defined hydrogeological buffer areas are recommended, however, it is proposed that stormwater attenuation from the development area back to the natural environment be considered. (i.e. stormwater attenuation dams or seepage trenches downstream of the site). Efforts should be made to maintain the current PES and EIS of the wetland units identified post-development.

## 6. Land use character of surrounding area

Indicate land uses and/or prominent features that currently occur within a 500m radius of the site and give description of how this influences the application or may be impacted upon by the application:

Natural area		Polo fields
Low density residential	Hospital/medical centre	Filling station <sup>H</sup>
Medium density residential	<b>School</b>	Landfill or waste treatment site
High density residential	Tertiary education facility	Plantation
Informal residential <sup>A</sup>	Church	Agriculture
Retail commercial & warehousing	Old age home	<b>River, stream, or wetland</b>
Light industrial	Sewage treatment plant <sup>A</sup>	Nature conservation area
Medium industrial <sup>AN</sup>	Train station or shunting yard <sup>N</sup>	Mountain, koppie or ridge
Heavy industrial <sup>AN</sup>		Museum
Power station	Major road (4 lanes or more) <sup>N</sup>	Historical building
Office/consulting room	<b>Airport <sup>N</sup></b>	Protected Area
Military or police base/station/compound	Harbour	Graveyard
Spoil heap or slimes dam <sup>A</sup>	Sport facilities	Archaeological site
Quarry, sand or borrow pit	Golf course	Other land uses (describe)

If any of the boxes marked with an “N” are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

**The proposed development is on the property adjacent to the airport at the eastern end of the runway. The height of buildings (+/-13m) may impact on aeroplane movement.**

### Aviation Impact Assessment

L E A P consultancy conducted an Aviation Impact Assessment in respect of the Obstacle Limitation Surfaces (OLS) and in terms of Regulation 982-985 as amended by GNR 324 – 327 of the National Environmental Management Act 1998 (Act 107 of 1998), for the proposed compilation of an Environmental Impact Assessment for the proposed Princess Mkhabayi Mall. The Vryheid aerodrome is located within 8 km of the proposed project and ICAO Annex 14 regulates no building or structure may be erected without CAA approval.

#### VRYHEID AIRFIELD CLASSIFICATION

The Vryheid Airfield is located within Erf 1366, west of the development site. The International Civil Aviation Organisation (ICAO) designator of this airfield is FAVY (Vryheid ICAO designator) and it's International Air Transport Association (IATA) code is VYD(Vryheid). It is situated at an elevation of 1158 mamsl and has a Traffic Pattern Altitude of 1463 mamsl. The airport is unlicensed and is used at pilot's own risk. It does not publish a METeorological Aerodrome Report (METAR) and the nearest weather station is Big Bend Met, which is 157 km away.

Vryheid Airport FAVY has two (2) runways. The runway with asphalt surface has runway number of 11/29 and has a 12009 m Long by 13 m. The second runway with a grass surface runway number is 01/19 and a length of 944 m x 45 m wide, refer to Figure 6.

A series of restrictions for buildings, installations, plantations and other elements located in the surrounding area are provided by the The Civil Aviation Regulations in order to guarantee the safety of the aircraft that operate in airports and aerodromes. The International Civil Aviation Organization (ICAO) defines a series of 3D Obstacle Limitation Surfaces (OLS) to ensure the safety of the scheduled operations in aerodromes and airports.

The highest planned structure on the proposed development site is 13 mamsl and will fall well below the obstacle identification surfaces area and not cause any obstacle complications.

Potential Impact of Mixed use development:

The safety of the aircraft is not compromised although the proposed structure with a height of 13m is within the 300 m runway end safety area, however the height of the buildings is not an obstacle in the flight path. However, failure of an aircraft may results in collition with the buildings., refer to Figure 8 The proposed structure will be visible by day and not further markings.. This also concludes that the mall does notrequire obstacle lighting to maintain an acceptable level of safety to potential emergency aircraft. The Project Area is located outside of controlled airspace and is not located in any Prohibited, Restricted and Danger areas. Therefore, the Project will not impact controlled airspace. Since communications structures below 45m in height above ground do not require markings or lights to improve its visibility, the mall does not require additional marking on the south western side othe structure which is facing the airfield.

The proposed development will not have an unacceptable negative impact on civil aviation installations and is considered low sensitivity. The building will be less than 45 metres high, and will have no lighting obstacles. In addition the project is within the regulated approach and take-off, transitional or horizontal surfaces of an aerodrome. No physical safeguarding concerns from Vryheid Airport are predicted.

**Mitigation measure:**

Since communications structures below 45m in height above ground does not require additional markings to improve its visibility, the mall does not require marking on the south western side of the structure which is facing the airfield.

If any of the boxes marked with an "An" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

Not applicable

If any of the boxes marked with an "H" are ticked, how will this impact / be impacted upon by the proposed activity? Specify and explain:

Not applicable

Does the proposed site (including any alternative sites) fall within any of the following:

Critical Biodiversity Area (as per provincial conservation plan)	YES	NO
Core area of a protected area?	YES	NO
Buffer area of a protected area?	YES	NO
Planned expansion area of an existing protected area?	YES	NO
Existing offset area associated with a previous Environmental Authorisation?	YES	NO
Buffer area of the SKA?	YES	NO

If the answer to any of these questions was YES, a map indicating the affected area must be included in Appendix A.

## 7. Cultural/Historical Features

Are there any signs of culturally or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including Archaeological or paleontological sites, on or close (within 20m) to the site? If YES, explain:	YES	NO
	Uncertain	
<b>No buildings were encountered on the site. The screening tool indicated the risk for heritage and anthropology impacts. A study was commissioned.</b>		

If uncertain, conduct a specialist investigation by a recognised specialist in the field (archaeology or palaeontology) to establish whether there is such a feature(s) present on or close to the site. Briefly explain the findings of the specialist:

**A heritage study was conducted by Ancient Places Heritage and Built Heritage Consultancy.**

Will any building or structure older than 60 years be affected in any way?	YES	NO
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?	YES	NO
If YES, please provide proof that this permit application has been submitted to SAHRA or the relevant provincial authority.		

### Heritage Assessment

Ancient Places Pty. Heritage Consultancy conducted a First Phase Heritage Impact Assessment of the Proposed Development of Princess Mkabayi Mixed Use Development, incorporating a shopping complex, at the co-ordinates 30°31'58.46"S 30°34'14, Erf 6018, Vryheid, AbaQulisi Local Municipality, KwaZulu-Natal.

Various heritage features, or archaeological and cultural features, have been identified within the study footprint. These include an apparent extensive Iron Age / Historic Period traditional African settlement which covers the entire footprint. It is possible that this once formed part of a Cultural Landscape, but this has been destroyed by development outside the borders of the study footprint. Associated features may



be present in the form of homestead structures, now only in the form of imprints on the landscape, some walling, hearths, granary bins, pot sherds, grindstones, and graves.

There may also be Early, Middle and Later Stone Age features and objects on site, such as stone tools and flakes. There may even be partial remnants of activity assigned to the Boer War Period as traces of some unidentified activity can be seen on some historical images of the study footprint. Bullet cartridges, and other associated objects may lie scattered under the vegetation.

The study footprint lies within a high Palaeo Sensitivity Zone. This necessitates a Phase II Field Assessment by a registered palaeontologist, to be followed by a report which must be submitted to the heritage authority.

It is suggested that, before further development take place, that the area be burnt, or the vegetation cut, so permitting a visit by a heritage officer / consultant, to examine the human activity and imprints upon the land, and to establish if any visible graves, or engraved stones are present. The heritage officer may also want to obtain GPS co-ordinates of obvious features, and perhaps to collect items for storage. It is also suggested that a notice be placed in a local newspaper advertising a community meeting in a nearby location, during which the developers may present to the interested members of the public, the proposed development. Members of the public may, in return, offer information regarding memory and oral history pertaining to the homestead features on the study footprint, and to the imprints of human activity on the ground in the footprint.

Attention is drawn to the National Heritage Resources Act, 1999 (Act No. 25 of 1999) which, requires that operations that expose archaeological or historical remains should cease immediately, pending evaluation by the provincial heritage resources authority.

## **8. Socio-Economic Character**

### **a) Local Municipality**

Please provide details on the socio-economic character of the local municipality in which the proposed site(s) are situated.

Level of unemployment:

<p><b>The employment profile of Abaqulusi Municipality indicates that the employed population from the economically active accounts for 66%. The remaining 34% of the population are unemployed.</b></p>
--

Economic profile of local municipality:

**The economy of this region is dominated by agriculture (primarily grazing), light industry (engineering) and tourism.**

Level of education:

**33.4% of the population in Abaqulusi Municipality have a Grade 12 and 6.8% have higher education qualifications. Eight percent (8.1%) of the population of Vryheid has no form of schooling.**

**b) Socio-economic value of the activity**

What is the expected capital value of the activity on completion?  
 What is the expected yearly income that will be generated by or because of the activity?  
 Will the activity contribute to service infrastructure?  
 Is the activity a public amenity?  
 How many new employment opportunities will be created in the development and construction phase of the activity/ies?  
 What is the expected value of the employment opportunities during the development and construction phase?  
  
 What percentage of this will accrue to previously disadvantaged individuals?  
 How many permanent new employment opportunities will be created during the operational phase of the activity?  
 What is the expected current value of the employment opportunities during the first 10 years?  
  
 What percentage of this will accrue to previously disadvantaged individuals?

<b>R600m</b>
<b>R50m</b>
<b>YES</b>
<b>YES</b>
<b>+/-500</b>
=500 job opportunities * 300/pp/pd ave wage * 18 months*20days/month =R54m
<b>+/-90%</b>
<b>+/-400</b>
<b>400 opportunities *R12k per month*12 months*10y = +/- R600m</b>
<b>+/-90%</b>

**Socio-Economic Assessment:**

A socio-economic study was not commissioned because ERF 6018 Vryheid was singled out and zoned by the Abaqulusi Local Municipality as a Regional Mall. The Abaqulusi Municipal Council took a resolution on 27 July 2017 (Resolution number CR97/2017) to give notice to invite public comment on the proposal to dispose of the capital asset (Erf 6018, Vryheid) for the development of the Vryheid Regional Mall. The notice was published in the Vryheid Herald of 25 August 2017 and the Ilanga newspaper of 17 August 2017. See attached resolution. The property was then sold on 21 October 2021 to Green Giraffe Properties. The zoning certificate (attached in APPENDIX G) is an extract from the Abaqulusi Urban Land Use Scheme August 2020. The property was therefore rezoned for specific purposes of developing a mall between 2017 and 2020. The successful tenderer is now executing the wish of the Municipality. The property was covered within the Environment Management Framework of the Zululand District Municipality and the Independent Development Plan of the Abaqulusi Municipality.

Due diligence was conducted by the Municipalities in the preparation of the EMF and the IDP. Based on the above motivation a socio-economic assessment was not conducted.

## 9. Biodiversity

Please note: The Department may request specialist input/studies depending on the nature of the biodiversity occurring on the site and potential impact(s) of the proposed activity/ies. To assist with the identification of the biodiversity occurring on site and the ecosystem status consult <http://bgis.sanbi.org> or [BGIShelp@sanbi.org](mailto:BGIShelp@sanbi.org). Information is also available on compact disc (cd) from the biodiversity-GIS Unit, Ph (021) 799 8698. This information may be updated from time to time, and it is the applicant/ EAP's responsibility to ensure that the latest version is used. A map of the relevant biodiversity information (including an indication of the habitat conditions as per (b) below) and must be provided as an overlay map to the property/site plan as Appendix A to this report.

### Mammals:

The virtual Virtual Museum of African Mammals ([https://vmus.adu.org.za/vm\\_view\\_db.php](https://vmus.adu.org.za/vm_view_db.php)) has 47 mammal records for the 2730DD quarter degree square. Erf 6018 Vryheid is only 0.005% of the 50 000Ha quarter degree square. One mammal, potentially occurring is the Oribi (*Ourebia ourebu*) is regarded as endangered. The Leopard (*Panthera pardus*), Swinny's Horseshoe Bat (*Rhinolophus swinnyi*) and African White-tailed Rat (*Mystromys albicaudatus*) are regarded as Vulnerable. The Plains Zebra (*Equus quagga*), Serval (*Leptailurus serval*), Highveld Gerbil (*Gerbilliscus brantsii*), African Clawless Otter (*Aonyx capensis*), and Swamp Musk Shrew (*Crocidura mariquensis*) are regarded as Near Threatened. The habitat present on Erf 6018 Vryheid is too fragmented, too disturbed and there is too much activity to support Oribi. They are very sensitive to their habitat requirements. Swinny's Horseshoe Bats' habitat is temperate Afromontane forests, moist montane rain forest, dry and moist savanna woodlands, and Podocarpus mist forests where they roost during the day. They roost in caves, mines and similar habitats which is not present on the site. The habitat on Erf 6018 Vryheid is grassland and suitable habitat. African White-tailed Rat (*Mystromys albicaudatus*) are found on grassland calcrete soils form the substrate but never found on soft, sandy substrate, rocks, wetlands or river banks. There are no calcrete soils present in the study area. There are no Plains Zebra, Serval, African Clawless Otter present in the study area. Swamp Musk Shrew (*Crocidura mariquensis*) has very specific habitat requirements only being close to open water with semi-aquatic vegetation such as reedbeds, wetlands and the thick grass along river banks. Swamp Musk Shrews are found in the wet soils and drier grassland close by. They are often trapped in areas that are waterlogged, e.g. inundated grasslands and vleis. *Gerbilliscus brantsii* – Highveld Gerbil are normally found on areas that are open plains, on sandy soils or sandy alluvium with subtropical and wooded grasslands. These gerbils are also found in peat-like soils around marshes or wetlands.

### Birds

The South African Bird Atlas Project (SABAP 2) has a list of 336 bird species for the pentad 2745-3045 which covers ERF 6018 Vryheid. Ten of the listed birds are red data species. Two birds, Wattled Crane and White-backed Vultures are Critically Endangered. Four birds, Grey Crowned Crane, Martial Eagle, African Marsh Harrier and Yellow-billed Stork are Endangered. Two birds, Crowned Eagle and Lanner Falcon are Vulnerable. Two birds, Blue Crane and Red-footed Falcon are Near Threatened. The three crane species and the Yellow-bird stork are the only birds that may potentially be present in the area. The frequent disturbance on the site makes it unlikely that these birds would be visitors to the site. The other birds are all raptors that may fly over the area as visitors to the site.

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Roberts 6 Sort	Full Name	Scientific Name	Regional Red List rating
208	Blue Crane	<i>Grus paradisea</i>	NT
209	Grey Crowned Crane	<i>Balearica regulorum</i>	EN
207	Wattled Crane	<i>Grus carunculata</i>	CR
141	Crowned Eagle	<i>Stephanoaetus coronatus</i>	VU
140	Martial Eagle	<i>Polemaetus bellicosus</i>	EN
172	Lanner Falcon	<i>Falco biarmicus</i>	VU
179	Red-footed Falcon	<i>Falco vespertinus</i>	NT
165	African Marsh Harrier	<i>Circus ranivorus</i>	EN
90	Yellow-billed Stork	<i>Mycteria ibis</i>	EN
123	White-backed Vulture	<i>Gyps africanus</i>	CR

### Reptiles

The ReptileMAP — Reptile Atlas of Africa in the Virtual Museum of the FitzPatrick Institute of African Ornithology lists 38 reptiles to potentially occur in the 2730DD quarter degree square including ten lizards of five families, 27 snakes of five families and one chameleon. All the reptiles are of Least Concern.

### Amphibia

Frogs listed to occur in the 2730DD quarter degree square are all considered Least Concern. The Painted Reed (*Hyperolius marmoratus*) has been recorded the most frequently (14 observations) and the Natal Sand Frog (*Tomopterna natalensis*) was recorded the second most (11 observations). The frog recorded the third most times (9 observations) is the Guttural Toad (*Sclerophrys gutturalis*). All other frogs were seen 5 times or less.

#	Scientific name	Common name	Red category
1	<i>Schismaderma carens</i>	Red Toad	Least Concern
2	<i>Sclerophrys capensis</i>	Raucous Toad	Least Concern
3	<i>Sclerophrys gutturalis</i>	Guttural Toad	Least Concern (IUCN, 2016)
4	<i>Hyperolius marmoratus</i>	Painted Reed Frog	Least Concern (IUCN ver 3.1, 2013)
5	<i>Hyperolius semidiscus</i>	Yellowstriped Reed Frog	Least Concern
6	<i>Kassina senegalensis</i>	Bubbling Kassina	Least Concern
7	<i>Semnodactylus wealii</i>	Rattling Frog	Least Concern
8	<i>Phrynobatrachus natalensis</i>	Snoring Puddle Frog	Least Concern (IUCN, 2013)
9	<i>Xenopus laevis</i>	Common Platanna	Least Concern
10	<i>Ptychadena oxyrynchus</i>	Sharpnosed Grass Frog	Least Concern
11	<i>Amietia delalandii</i>	Delalande's River Frog	Least Concern (2017)
12	<i>Amietia fuscigula</i>	Cape River Frog	Least Concern (2017)
13	<i>Cacosternum nanum</i>	Bronze Caco	Least Concern (2013)
14	<i>Tomopterna natalensis</i>	Natal Sand Frog	Least Concern

### Butterflies and other insects

Twelve species of butterflies of three families occur in the 2730DD quarter degree square. All of them are regarded as Least Concern. Only one species was observed seven times and one species five

times whilst the remainder three times or less. Thirteen dragonflies and damselflies occur in the quarter degree square of three families. All of them are regarded as Least Concern. Observations of these insects are 3 or less.

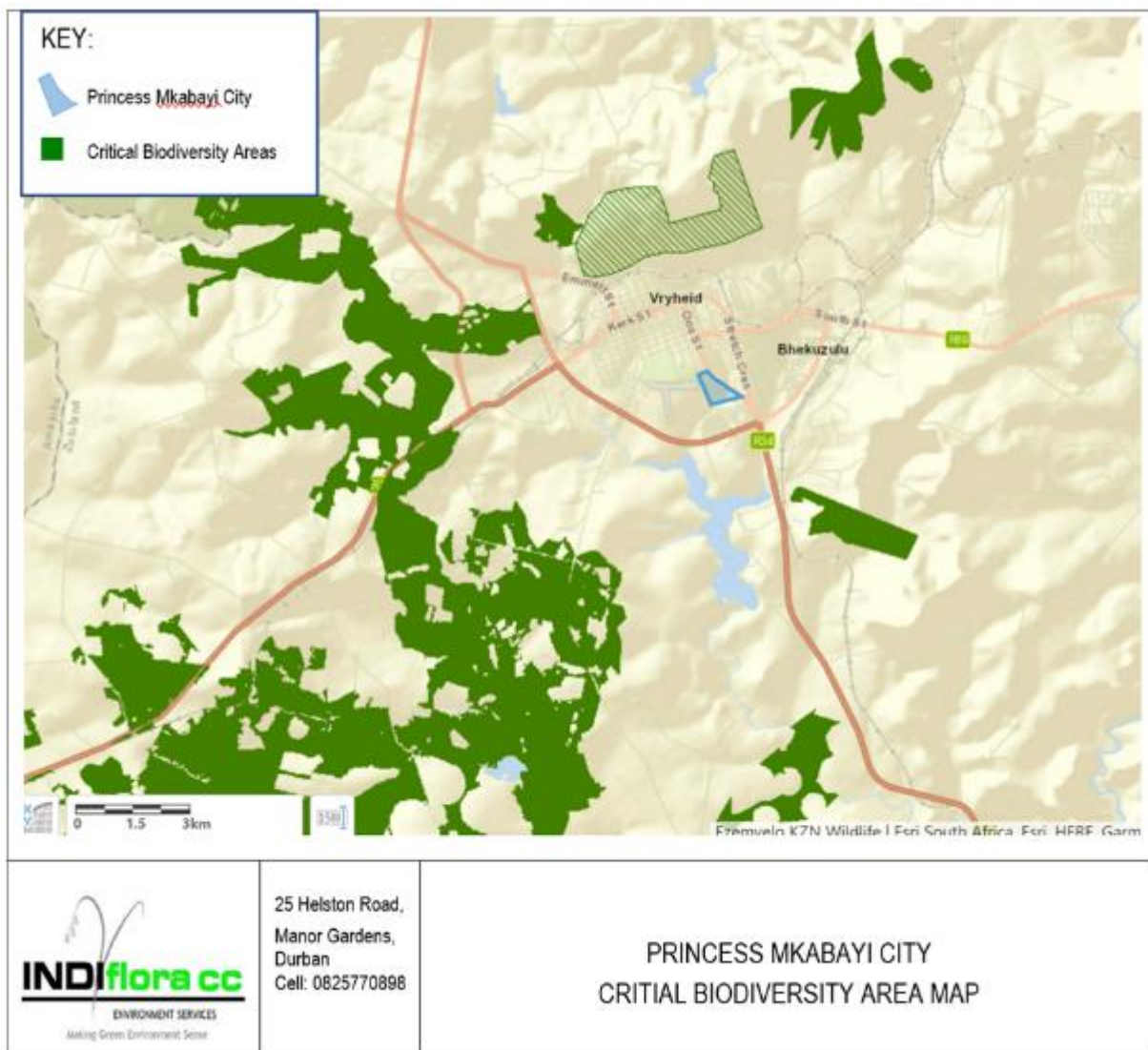


Figure 8: Critical biodiversity Area Map

See the environment biodiversity Map in Appendix A

- a) Indicate the applicable biodiversity planning categories of all areas on site and indicate the reason(s) provided in the biodiversity plan for the selection of the specific area as part of the specific category)

Systematic Biodiversity Planning Category				If CBA or ESA, indicate the reason(s) for its selection in biodiversity plan
Critical Biodiversity Area (CBA)	Ecological Support Area (ESA)	Other Natural Area (ONA)	No Natural Area Remaining (NNA)	None

b) Indicate and describe the habitat condition on site

Habitat Condition	Percentage of habitat condition class (adding up to 100%)	Description and additional Comments and Observations (Including additional insight into condition, e.g., poor land management practises, presence of quarries, grazing, harvesting regimes).
Natural	3%	Neighbouring land to the south remains natural
Near Natural (Includes areas with low to moderate level of alien invasive plants)	3%	Light infestation of invasive alien plants is evident
Degraded (Includes areas heavily invaded by alien plants)	2%	Localised areas have dense stands of invasive alien plants
Transformed (Includes cultivation, dams, urban, plantation, roads)	92%	The surrounding areas to the east, west and north are developed as a residential area.

c) Complete the table to indicate:

- (i) the type of vegetation, including its ecosystem status, present on the site; and
- (ii) whether an aquatic ecosystem is present on site.

Terrestrial Ecosystems		Aquatic Ecosystems						
Ecosystem threat status as per the National Environmental Management: Biodiversity Act (Act No. 10 of 2004)	Critical Endangered	Wetland (including rivers, depressions, channelled and unchannelled wetlands, flats, seep pans, and artificial wetlands)			Estuary		Coastline	
	Endangered							
	Vulnerable							
	Least Threatened							
		YES	NO	UNSURE	YES	NO	YES	NO

d) Please provide a description of the vegetation type and/or aquatic ecosystem present on site, including any important biodiversity features/information identified on site (e.g., threatened species and special habitats)

Northern KZN Moist Grassland, Hillslope Seep wetland and Channelled-bottom Valley wetland

Seasonally wet areas There are a number of depressions on the site containing hygrophilous species (eg. *Imperata cylindrica*) and cattle spoor in the mud indicates these may contain water beyond the rainy season. Some of these depressions are indicated below (left). They are often encircled by rock (below, right). Figure 9: Location of seasonally wet areas on the site.





Figure 9: The Seasonal Wetland Location Map.

No direct incursion into watercourses will occur because they are identified as being outside of the proposed development layout, thus no impeding or diverting of flows will be involved. It is recommended that both wetland areas and the prescribed buffer zone is taken into account in the layout of the development. The development will not lead to direct loss impacts to wetland habitat, vegetation and fauna. However, risk of indirect water quality and sediment/flow impacts could result in a change in the watercourse characteristics, albeit that the risk has been assessed as being 'low' with adequate mitigation

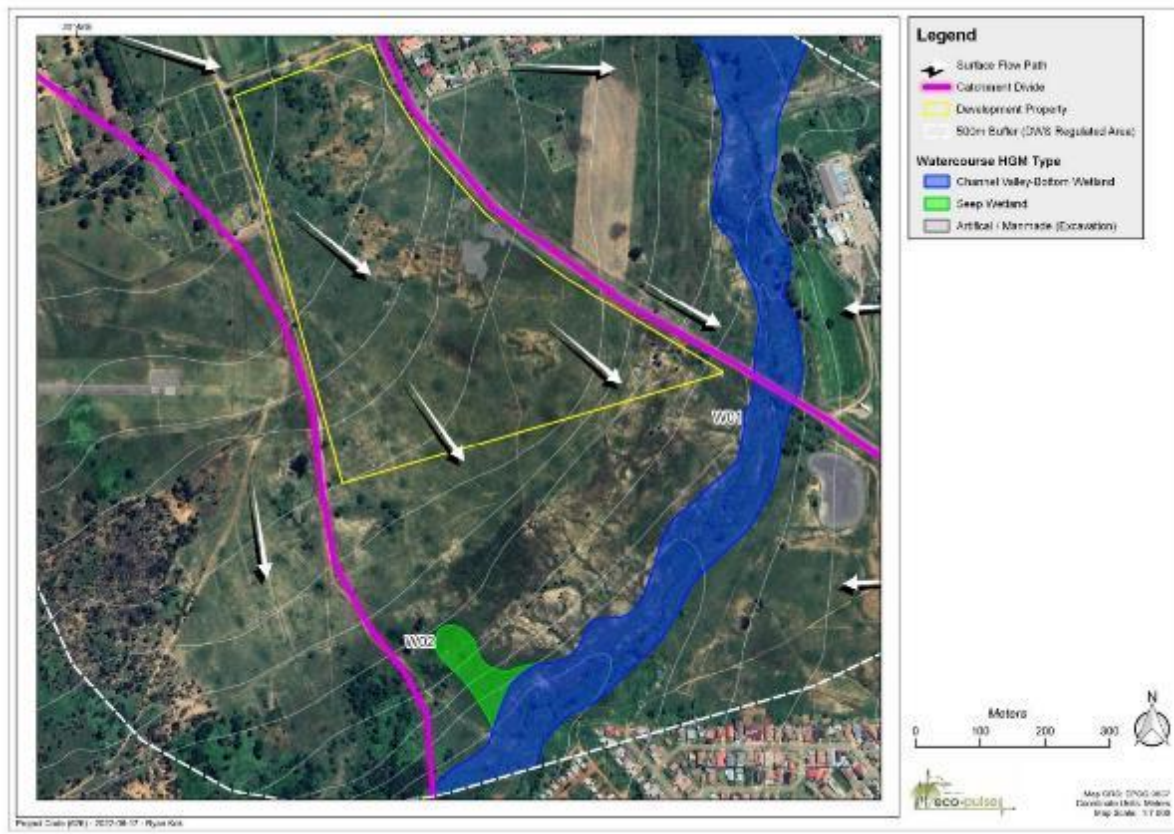


Figure 10: The wetland delineation assessment map indicating the wetland elements observed

Regulations require application must be made for permits to eKZN Wildlife for a permit to translocate, damage or destroy any of the Specially Protected species occurring on the site. The large numbers of *Aloe maculata* (~100 or

more) and an equal number of *Agapanthus praecox* must be rescued. The seven or more *Boophone disticha* may currently be dormant. Single clumps of around 10 individual plants of *Crocasmia aurea*, of *Dietes grandiflora* and *Bulbine asphodeloides* and a single plant of *Chlorophytum krookianum* were also observed and must be rescued., The landscaping of the complex should be with indigenous and water-wise plants, as far as practical, including Aloe and Agapanthus, wherever possible.

## SECTION C: PUBLIC PARTICIPATION

### 1. Advertisement and Notice

Publication name	The Vryheid Herald
Date published	22 July 2022
Site notice Date placed	25 August 2022

Include proof of the placement of the relevant advertisements and notices in Appendix E.

### 2. Determination of appropriate measures

Key stakeholders (other than organs of state) identified in terms of Regulation 41(2)(b) of GN 733

Title of legislation, policy, or guideline	Applicability to the project	Administering authority	Date
National Environmental Management Act (NEMA) & The National Environmental Management Amendment Act	The proposed development of Princess Mkabayi City triggers activities listed under NEMA	Department of Economic Development Tourism and Environmental Affairs	Act 107 of 1998 & Act 8 of 2004
National Environmental Management: Biodiversity Act (NEMBA)	All landowners have an obligation to remove alien invasive plant species on their property.	eZemvelo KZN Wildlife	Act 10 of 2004
National Environmental Management: Air Quality Act	There will be a limited emissions during the construction and operational phase	Directorate: Air Quality Management (DFFE)	Act 39 of 2004
Natal Nature Conservation Ordinance	For the conservation of any protected plants on site	Ezemvelo KZN Wildlife	Act 15 of 1974
National Water Act (NWA)	This project will trigger a WULA.	Department of Water and Sanitation	Act 36 of 1998
Conservation of Agricultural Resources Act (CARA)	All landowners have an obligation to remove alien invasive plant species on their property.	Department of Water and Sanitation	Act 43 of 1983
National Heritage Resources Act	All landowners must protect cultural	South African Heritage Resources Agency	Act 25 of 1999



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	<b>heritage resources present</b>		
<b>KwaZulu Natal Heritage Act</b>	<b>The contractor to report all heritage resources uncovered during site inspections.</b>	<b>AMAFA aKwaZulu-Natali</b>	<b>Act 10 of 1997</b>
<b>Labour Relations Act</b>	<b>During the construction and operational phase there will be new employment opportunities.</b>	<b>Department of Labour</b>	<b>Act 66 of 1995</b>
<b>Basic Conditions of Employment Act</b>	<b>During the construction and operational phase there will be new employment opportunities.</b>	<b>Department of Labour</b>	<b>Act 75 of 1997</b>
<b>Occupational Health and Safety Act</b>	<b>This establishment must comply with the Occupational Health and Safety Act during the construction and operational phase.</b>	<b>Department of Labour</b>	<b>Act 85 of 1993</b>
<b>Hazardous Substances Act</b>	<b>The contractor will use hazardous substances during the construction phase</b>	<b>Department of Health, Welfare and Pensions</b>	<b>Act 15 of 1973</b>

Background Information Documents with questionnaires were hand delivered to the houses on both side of the road in Begonia Crescent, to the Local Municipality for the Councillor and at the Vryheid Airport , for the attention of the airport manager. Site notices were erected where the large marketing billboard on the Oos Street side of the property and another site notice was erected at the end of Landdrost Street.

### 3. Issues raised by interested and affected parties

Table 3: A summary of comments by stakeholders and I&AP's See Appendix E for the Comments and Responses Report

Summary of main issues raised by I&APs
The desire to become involved during the construction phase in construction site and process management
Developer to give back to local community by contributing into upgrade and upkeep of adjacent cemetery. Financial contribution to upgrade/upkeep local cemetery adjacent to proposed development
No comment on the project presently

### 4. Comments and response report

The practitioner must record all comments received from I&APs and respond to each comment before the Draft BAR is submitted. The comments and responses must be captured in a comments and response report as prescribed in the EIA regulations and be attached to the Final BAR as Appendix E.

Summary of key issues raised by I&APs	Summary of response from EAP
The desire to become involved during the construction phase in construction site and process management	The details of the I&AP who made the request has been handed to the developer to pass onto the contractor
Developer to give back to local community by contributing into upgrade and upkeep of adjacent cemetery. Financial contribution to upgrade/upkeep local cemetery adjacent to proposed development	The developer has received your comment from the EAP, for their consideration.
No comment on the project presently	The EAP will inform you when the Draft Basic Assessment Report is available for comment

### 5. Authority Participation

Table 4: Authorities and organs of state identified as key stakeholders: See I&AP register attached in Appendix E

Authority/Organ of State	Contact person (Title, Name and Surname)	Tel No	e-mail	Postal address
KZN Department of Transport	Judy Reddy	033 355 0564	Judy.Reddy@kzntransport.gov.za	Private Bag X9043 Pietermaritzburg 3200
Department of Water & Sanitation	Nonku Mokoena	(031) 336 2759	<a href="mailto:mokoenan@dws.gov.za">mokoenan@dws.gov.za</a>	P O Box X1018 Durban 4000
Ezemvelo KZN Wildlife	Dominic Wieners	033 8451455	<a href="mailto:wienersd@kznwildlife.com">wienersd@kznwildlife.com</a>	PO Box 13053, Cascades, 3202
Amafa	Weziswe Tsabalala	(033) 394 6543	<a href="mailto:archaeology@amafapmb.co.za">archaeology@amafapmb.co.za</a>	P.O. Box 2685, Pietermaritzburg, 3200

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Zululand Municipality	Mr. Stefan Landman	035 874 5500	<a href="mailto:slandman@abaqulusi.gov.za">slandman@abaqulusi.gov.za</a>	Private Bag X76, Ulundi, 3838
Abaqulusi Municipality	S Vandayar-Dookilal	034 982 2133	<a href="mailto:svdookhilal@abaqulusi.gov.za">svdookhilal@abaqulusi.gov.za</a>	Cnr. Mark & High Street, Vryheid, 3100, Kwazulu Natal
ACSA	Gopolang Peme	+27 (0)11 723 1400	<a href="mailto:acsa@thehotline.co.za">acsa@thehotline.co.za</a>	PO Box 75480 Gardenview, 2047
CAA	Nivashnee Naraindath	011 545 1000	<a href="mailto:mail@caa.co.za">mail@caa.co.za</a>	Private Bag X73, HALFWAY HOUSE, 1685
Commission of Land Right and Land Resitution	Lynn Boucher		<a href="mailto:Lynn.Boucher@dalrrd.gov.za">Lynn.Boucher@dalrrd.gov.za</a>	Private Bag X9120, Pietermaritzburg, 3200

Include proof that the Authorities and Organs of State received written notification of the proposed activities as appendix E.

### 5. Consultation with other stakeholders

Note that, for any activities (linear or other) where deviation from the public participation requirements may be appropriate, the person conducting the public participation process may deviate from the requirements of that sub-regulation to the extent and in the manner as may be agreed to by the competent authority.

Proof of any such agreement must be provided, where applicable. Application for any deviation from the regulations relating to the public participation process must be submitted prior to the commencement of the public participation process.

A list of registered I&APs must be included as appendix E.

Copies of any correspondence and minutes of any meetings held must be included in Appendix E.

Comments received
'n Vriendin het my jul details rakende beoogde ontwikkeling in Vryheid gestuur.
Ek neem hiermee inisiatief om myself bekend te stel vir moontlike betrokkenheid op n later stadium, sou sodanige beplande ontwikkeling wel plaasvind.
Ek is tans 58 jaar oud en het deur Murray & Roberts studeer en en 'n Nasionale Hoër Diploma in Konstruksie bestuur verwerf in 1987. Van daar het ek deur die volle spektrum van konstruksie sowel as die siviele deel oor die jare deurloop tot waar ek vandag konsentreer op Projek Bestuur.
My portefeulje van betrokkenheid sluit in nkule onlangse voorbeelde.
Sou daar 'n geleentheid ontstaan sou ek graag betrokke wou raak. Ek werk tans in Lesotho op infrastruktuur projekte, maar aangesien ek steeds in Newcastle bly sou ek graag nader of self net weer in Suid Afrika wou werk, indien moontlik.
Dankie vir u tyd en aandag
No comment
We want to comment on the project
Developer to give back to local community by contributing in/to upgrade and upkeep of adjacent cemetery
Financial contribution to upgrade/upkeep local cemetery adjacent to proposed development
No comment on the project presently

## SECTION D: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014 and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts.

### 1. Assessment of impacts: -

Impacts that may result from the planning and design, construction, operational, decommissioning and closure phases as well as proposed management of identified impacts and proposed mitigation measures

Provide a summary and anticipated significance of the potential direct, indirect, and cumulative impacts that are likely to occur because of the planning and design phase, construction phase, operational phase, decommissioning and closure phase, including impacts relating to the choice of site/activity/technology alternatives as well as the mitigation measures that may eliminate or reduce the potential impacts listed. This impact assessment must be applied to all the identified alternatives to the activities identified in Section A (2) of this report.

### 2. Introduction

Impact rating

The methodology used to calculate the impact rating is according to that of Smallie and Steytler (2011) as described below.

The extent, intensity and duration of the impact are scored according to the following criteria:

Rating	Definition of Rating	Score
<b>A. Extent</b> – the area over which the impact will be experienced		
Local	Confined to project or study area or part thereof (e.g. site)	1
Regional	The region, which may be defined in various ways, e.g. cadastral, catchment, topographic	2
(Inter) national	Nationally or beyond	3
<b>B. Intensity</b> – the magnitude of the impact in relation to the sensitivity of the receiving environment, taking into account the degree to which the impact may cause irreplaceable loss of resources		
Low	Site-specific and wider natural and/or social functions and processes are negligibly altered	1
Medium	Site-specific and wider natural and/or social functions and processes continue albeit in a modified way	2
High	Site-specific and wider natural and/or social functions or processes are severely altered	3
<b>C. Duration</b> – the timeframe over which the impact will be experienced and its reversibility		
Short-term	Up to 2 years	1
Medium-term	2 to 15 years	2
Long-term	More than 15 years	3

Once established, the above factors are used to calculate the Consequence Rating as tabled below.

Combined Score (A+B+C)	3 – 4	5	6	7	8 – 9
Consequence Rating	Very low	Low	Medium	High	Very high

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After the Consequence Rating has been established, the probability of the impact occurring is determined according to the following criteria.

<b>Probability– the likelihood of the impact occurring</b>	
Improbable	< 40% chance of occurring
Possible	40% - 70% chance of occurring
Probable	> 70% - 90% chance of occurring
Definite	> 90% chance of occurring

Using a combination of Consequence Rating and probability it is possible to determine the Significance rating.

<b>Significance Rating</b>	<b>Possible Impact Combinations</b>		
	<b>Consequence</b>		<b>Probability</b>
<b>Insignificant</b>	Very Low	&	Possible
	Very Low	&	Improbable
<b>Very Low</b>	Very Low	&	Definite
	Very Low	&	Probable
	Low	&	Possible
	Low	&	Improbable
<b>Low</b>	Low	&	Definite
	Low	&	Probable
	Medium	&	Possible
	Medium	&	Improbable
<b>Medium</b>	Medium	&	Definite
	Medium	&	Probable
	High	&	Possible
	High	&	Improbable
<b>High</b>	High	&	Definite
	High	&	Probable
	Very High	&	Possible
	Very High	&	Improbable
<b>Very High</b>	Very High	&	Definite
	Very High	&	Probable

The final determinations are the status of the impact (+ve or -ve) and the confidence level.

<b>Rating of impacts</b>	
Indication whether the impact is adverse (negative) or beneficial (positive).	+ ve (positive – a 'benefit')
	- ve (negative – a 'cost')
<b>Confidence of assessment</b>	
The degree of confidence in predictions based on available information,	Low
	Medium
	High

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The above methodology was used to generate the impact schedules.

<b>Reversibility</b>	
<b>Reversibility</b> degree to which the impact can be reversed	Reversible – the impact is reversible Irreversible – the impact is not reversible
<b>Irreplaceable Loss of Resources</b>	
<b>Irreplaceable Loss of Resources</b> degree to which the loss of resources can be replaced	Yes – the impact causes a loss of resources that cannot be replaced No – the impact causes a loss of resources that can be replaced
<b>Fatal Flaw</b>	
<b>Fatal Flaw</b> degree to which the impact is a fatal flaw	<b>Yes</b> – the impact results in a fatal flaw <b>No</b> – the impact does not result in a fatal flaw

2. Impact Assessment Schedules

2.1 The impacts of the preferred development layout

The construction activities associated with the mall development and the operational phase of the development will have additional impacts through disturbance. High levels of human, vehicular and earth moving equipment activity will occur during construction. During the operational phase disturbance will be by human and vehicular activity, which will be less disruptive than earth-moving and construction. Construction disturbance may be reduced to a minimum, but operational phase disturbance by humans and vehicles forms part of the developments character.

**Potential environmental impacts for the Preferred Layout: Princess Makabayan City Regional Mall.**

<b>IMPACT: HABITAT DESTRUCTION</b>		Preparing Erf 6018 Vryheid for the construction of the Princess Mkabayi City mall development the site will be stripped of the existing natural vegetation. Natural habitat of mammals, birds, reptiles, and insects will be permanently lost in this process.						
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>RATING</b>	<b>CONFIDENCE</b>
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Probable	Medium	-Ve	High
<b>Reversibility</b>	Irreversible	<b>Irreplaceable Loss of Resources</b>			Yes	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b>								
<ul style="list-style-type: none"> <li>Construction and maintenance activities should be carried out according to accepted environmental best practice with the minimum removal of indigenous vegetation.</li> <li>Existing access should be utilised wherever possible.</li> <li>Indigenous planting must be undertaken during rehabilitation and landscaping, including the re-planting of suitable species removed during site clearing (e.g., <i>Aloe</i>, <i>Agapanthus</i>).</li> </ul>								
<b>IMPACT: DISTURBANCE</b>		Disturbance may present high impacts during construction and lower impacts during operational and maintenance phases.						
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>RATING</b>	<b>CONFIDENCE</b>
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Probable	Medium	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b>								
Construction and maintenance vehicles should be restricted to existing roads and access points where practical and access of machinery and vehicles should be carefully controlled. Little can be done about the disturbance which will occur during the operational phase of the project as this is a high impact land-use option.								
<b>IMPACT: SOIL COMPACTION, HARDENING OF SURFACES AND EROSION:</b>		Plant removal, movement of machinery and stockpiles during construction will denude the land, cause disturbance, and lead to the compaction of the soil. Soil erosion will degrade habitat quality and lead to the siltation of down-slope areas.						
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>RATING</b>	<b>CONFIDENCE</b>
Without Mitigation	Local	Medium	Long-Term	Medium	Definite	Medium	-Ve	High
With Mitigation	Local	Low	Short Term	Very Low	Possible	Insignificant	-Ve	High

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<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>	No	<b>Fatal Flaw</b>	No			
<b>Mitigation measure/s:</b>								
<ul style="list-style-type: none"> <li>Restrict the movement of construction and maintenance vehicles and personnel as far as possible, where practical, and control access of machinery and vehicles carefully</li> <li>Loosen compacted soil to prevent delayed rehabilitation.</li> <li>Install suitable drainage infrastructure to prevent wash-aways from hardened surfaces.</li> </ul>								
<b>IMPACT: TRAFFIC</b>		Attracting patrons to the mall will require transport services. Additional trips will be generated for increased vehicles on the road network around the mall. Parking must be provided for the vehicles for stock deliveries and restaurants. Upgrades are required. The traffic assessment only considered the First Phase of the development namely the regional mall. The mixed land uses in Phase 2 will be subject to a separate traffic assessment.						
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>RATING</b>	<b>CONFIDENCE</b>
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Definite	Medium	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>	No	<b>Fatal Flaw</b>	No			
<b>Mitigation Measure/s</b>								
<ul style="list-style-type: none"> <li>The signalization of Oos Street (R34) and Suid Street intersection by the Council.</li> <li>The signalization of Oos Street (R34) and Stretch Crescent/ Main Street intersection by the Council.</li> <li>The installation of a double-lane roundabout access off Oos Street (R34) to be carried out by the Developer. The paving of the Unnamed Gravel Road to be carried out by the Developer.</li> <li>Establish a sidewalk as part of the Non-Motorised Transport Facilities / non-motorised transport (NMT) facility, along Oos Street (R34) and the Unnamed Road, on the frontage of the development site, to be carried out by the Developer</li> </ul>								
<b>IMPACT: SOCIO-ECONOMIC ENVIRONMENT</b>		The Princess Mkabayi City development will create temporary and permanent job opportunities in an environment where employment figures are low. The proposed development will also open economic opportunities for primary, secondary, and tertiary market entrepreneurs. This will collectively contribute to the local economy.						
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>RATING</b>	<b>CONFIDENCE</b>
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Definite	Medium	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>	No	<b>Fatal Flaw</b>	No			
<b>Mitigation Measure/s:</b>								
<ul style="list-style-type: none"> <li>Construction and maintenance activities should be carried out according to accepted environmental best practice with the minimum removal of indigenous vegetation.</li> <li>Existing access should be utilised wherever possible.</li> <li>Indigenous planting must be undertaken during rehabilitation and landscaping, including the re-planting of suitable local indigenous species removed during site clearing (e.g., Al Agapanthus).</li> </ul>								
<b>IMPACT: GEOTECHNICAL</b>		Exact earthworks levels are unknown, but maximum cut excavation depths are +/- 2,0m deep. Blasting may be required. 4 Regional & Site-Specific Geology p7 – Reworked residual dolerite soils 5 Excavation Procedures p8 – Blasting 6 Lateral Support Recommendations p9 - Slope instability 7 Evaluation of Founding Conditions and Recommended Foundation Types p9 8 Materials Usage p11 - Poor materials quality of the in situ soils						



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		9 Surface Beds p12 - Areas underlain by dolerite 10 Access roads & parking areas p12 - Areas underlain by dolerite 11 Sub-Surface Drainage p14 - A perched water table						
STATUS	EXTENT	INTENSITY	DURATION	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	STATUS	CONFIDENCE
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Definite	Medium	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b> <ul style="list-style-type: none"> <li>• Chapter 4 Regional &amp; site-specific geology Page 7, Remove the residual dolerite soils.</li> <li>• Chapter 5 Excavation Procedures Page 8 Excavate dolerite core stones. Take safety precautions blasting when blasting.</li> <li>• Chapter 6 Lateral Support Recommendations Page 9 Use pre-cast block retaining structures as a suitable lateral support solution where space constraints do not permit the recommended batter slopes. Precast block retaining walls would also apply for the short-term batter slope angles temporary slopes. Alternatively, a soil nail and mesh reinforced gunite lateral support system could be considered.</li> <li>• Chapter 7 Evaluation of founding conditions and recommended foundation types Page 9- Use allowable bearing pressure of 150kPa for the medium dense / firm or better reworked residual sandstone and localised firm reworked residual dolerite. An allowable bearing pressure of 250kPa is applicable to the underlying medium dense or better residual sandstone / siltstone.</li> <li>• Chapter 8 Materials usage Page 11 Do not use the upper 150mm of in situ soils containing organic matter for construction material and remove it to spoil. At least the upper 0,5m of in situ soil where trees were removed due to tree roots.</li> <li>• Use the upper in situ soils as poor quality general fill materials only.</li> <li>• Apply high degree of engineering quality control when compaction densities are established due to the poor materials. Determine moisture contents in a soils laboratory by oven drying.</li> <li>• The localised reworked / residual dolerite soils must be removed to spoil in their entirety.</li> <li>• Import materials of a minimum G7 quality for bulk fill terraces and as layer works for access roads and parking areas.</li> <li>• Chapter 9 Surface beds Page 12</li> <li>• Place surface beds on top of the in-situ soil within areas of cut. Rip and recompact the upper 150mm of soil prior to placing of concrete.</li> <li>• Compact the fill in 150mm thick layers at optimum moisture content.</li> <li>• Cover siltstone bedrock at final terrace level with at least 300mm of engineered fill above the siltstone bedrock prior to placing of surface beds.</li> <li>• Keep all surface beds free of vertical external and internal walls and structural members. Allow the surface beds to "float". Place the surface bed upon a polyethylene plastic geomembrane which is folded up on the perimeter between concrete and brickwork to serve as a bond-breaker and an isolation joint between concrete and brickwork. Place lightly loaded surface beds over the areas underlain by dolerite, provided</li> <li>• Nominally roll in situ soils without vibration where exposed at terrace level. Place a 300mm thick imported G7 layer directly above the in-situ soils and compacted it in 150mm layers to 90% of Mod AASHTO density at optimum moisture content to provide a consistent working</li> <li>• Chapter 10 Access roads &amp; parking areas Page 13</li> </ul>								

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- Compact the upper in situ sub-grade material across the majority of the site, to 93% of Mod AASHTO at optimum moisture content, for pavement design purposes.
- Nominally roll without vibration, to 90% Mod AASHTO density at optimum moisture content, prior to construction of layer works, the areas where the underlying dolerite and the reworked / residual dolerite soils becomes exposed. It is therefore recommended that the in-situ subgrade only be, in these areas.
- Compact a minimum cover of 600mm (including layer works is required )where the subgrade has an in situ CBR of less than 3% at 90% Mod AASHTO.
- Stabilise the layer immediately below the bedding sand, to seal the layer works from stormwater ingress from above, where access roads / parking areas, are to be.
- Chapter 11 Sub-surface drainage Page 14 Conduct dewatering, within areas of cut across the localised eastern portions of the site. Assess it at the time of construction. Use sumps and pumps of adequate capacity to manage the influx of groundwater into excavations.
- Allow conventional drainage behind all retaining walls within areas of cut.
- Pay particular attention to the installation of damp-proof membrane (DPM) and damp-proof course (DPC) to avoid problems in the future with rising damp.

<b>IMPACT: HYDROLOGICAL</b>	<p>Construction phase:</p> <ol style="list-style-type: none"> <li>1. Vadose zone soils: Disturbing vadose zone during soil excavations/activities,</li> <li>2. Primary Surface Water Receivers: <ul style="list-style-type: none"> <li>• Surface water contamination and sedimentation <ul style="list-style-type: none"> <li>○ Washing vehicles in water bodies</li> <li>○ Erosion and sedimentation of watercourses</li> <li>○ Alteration of natural drainage lines</li> </ul> </li> </ul> </li> <li>3. Perched Water Table Dewatering Temporary dewatering of perched groundwater</li> </ol> <p>Operational Phase</p> <ol style="list-style-type: none"> <li>1. Vadose zone soils: <ul style="list-style-type: none"> <li>○ Poor quality seepage and runoff from vehicles parked at the site and from ruptured sewer lines</li> <li>○ Domestic waste pollution of rivers/streams.</li> </ul> </li> <li>2. Primary Surface Water <ul style="list-style-type: none"> <li>• Receivers: Stormwater runoff <ul style="list-style-type: none"> <li>○ Potential surface water contamination</li> <li>○ Increased erosion due to vegetation loss.</li> <li>○ Contaminated runoff water into nearby streams</li> <li>○ Sedimentation of watercourses</li> </ul> </li> <li>• Sewer lines <ul style="list-style-type: none"> <li>○ Poor quality seepage into the subsoils from sewer lines</li> </ul> </li> </ul> </li> </ol>
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STATUS	EXTENT	INTENSITY	DURATION	CONSEQUENCE	PROBABILITY	SIGNIFICANCE	RATING	CONFIDENCE
<b>1. Vadose zone soils</b>								
Without Mitigation	Site	Low	Long-Term	Insignificant	Probable	Negligible	-Ve	High
With Mitigation	Site	Negligible	Long-Term	Insignificant	Probable	Negligible	-Ve	High
<b>2. Primary Surface Water Receivers</b>								
Without Mitigation	Site	Low	Long-Term	High	Definite	Low	-Ve	High
With Mitigation	Local	Negligible	Long-Term	Medium	Definite	Negligible	-Ve	High
<b>3. Perched Water Table</b>								
Without Mitigation	Local	Medium	Long-Term	High	Definite	Medium	-Ve	High

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With Mitigation	Local	<b>Negligible</b>	Long-Term	Medium	Definite	<b>Negligible</b>	-Ve	High
<b>Reversibility</b>	Irreplaceable	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<p><b>Mitigation measures:</b></p> <p><b>1. During Construction:</b></p> <ul style="list-style-type: none"> <li>• Only excavate areas applicable to the project area.</li> <li>• Keep the site clean of all general and domestic wastes.</li> <li>• All development footprint areas to remain as small as possible and vegetation clearing to be limited to what is essential.</li> <li>• Retain as much indigenous vegetation as possible. • Exposed soils to be protected using a suitable covering.</li> <li>• Existing roads should be used as far as practical to gain access to the site, and crossing the streams in areas where no existing crossing is apparent should be unnecessary, but if it is essential crossings should be made at right angles.</li> <li>• Install a temporary cut-off trench (if required) to contain poor-quality runoff.</li> <li>• Cover soil stockpiles with a temporary liner to prevent contamination (where required and visually determined).</li> <li>• Water quality monitoring and routine visual assessment for contamination.</li> <li>• Discharge dewatered / rainwater collected into the nearby stream. May require authorisation. If water is contaminated, discharge to the closest greywater system (depending on the extent of contamination).</li> </ul> <p><b>2. During Operation:</b></p> <ul style="list-style-type: none"> <li>• Keep the site clean of all general and domestic wastes.</li> <li>• Water quality of the streams and sewer line monitoring.</li> <li>• Water quality monitoring and visual assessments.</li> <li>• Install a temporary cutoff trench to contain poorquality runoff (if required and pre-determined by visual assessments).</li> <li>• Routine hydraulic monitoring of stormwater system (monthly)</li> <li>• Water quality monitoring and visual assessments.</li> <li>• Routine inspections of all sewer-related infrastructure (hydraulic monitoring</li> </ul>								
<b>IMPACT :</b> Pedohydrological		<p><b>Construction Phase:</b></p> <ul style="list-style-type: none"> <li>○ Site preparation, including placement of contractor laydown areas and storage (i.e. Temporary stockpiles, bunded areas etc.) Facilities.</li> <li>○ Disturbing vadose zone during soil excavations/infilling activities.</li> <li>○ In-situ placement of new soils, altering existing soil-flow processes (i.e. Infilling of wetlands or cut-and-fill areas).</li> <li>○ Soil compaction.</li> <li>○ Soil &amp; surface water contamination and sedimentation from the following activities: <ul style="list-style-type: none"> <li>• Leakages from vehicles and machines, and building materials</li> <li>• Erosion and sedimentation of watercourses if excavations are left open due to unforeseen circumstances (i.e. bad weather); and</li> <li>• Alteration of natural drainage lines may lead to ponding or increased runoff patterns (i.e. may cause stagnant water levels or increase erosion).</li> </ul> </li> <li>○ Vegetation loss could decrease soil infiltration and increase runoff.</li> </ul> <p><b>Operational Phase:</b></p> <ul style="list-style-type: none"> <li>○ Reduced soil infiltration due to the residential development units and site access roads (i.e. Areas which will potentially become impermeable).</li> <li>○ Reduced rainfall runoff to wetland areas from drainage servitudes (i.e. This Water will be captured in stormwater infrastructure).</li> </ul>						

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<ul style="list-style-type: none"> <li>○ Soil quality could be compromised if leakages occur from sewer lines. Moreover, oil &amp; fuel spills from resident vehicles can cause contamination.</li> </ul>								
<b>During Construction:</b>								
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>RATING</b>	<b>CONFIDENCE</b>
<b>Soil interflow processes: Site preparation, including placement of contractor laydown areas and storage</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	Neutral	Medium
With Mitigation	Site	Negligible	Medium-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Disturbing vadose zone during soil excavations/infilling</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Vegetation clearing &amp; soil stockpiling.</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Medium	Definite	Negligible	-Ve	Medium
<b>Seepage/leakages/overland flow from the sewer lines may cause soil degradation</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Medium	Definite	Negligible	-Ve	Medium
<b>Surface water contamination and sedimentation.</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Negligible	Definite	Negligible	-Ve	Medium
<b>Temporary dewatering of perched groundwater</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Negligible	Definite	Negligible	-Ve	Medium
<b>Operational phase</b>								
<b>Vadose zone soils: Poor quality seepage and runoff from vehicles parked at the site and from ruptured sewer lines</b>								
Without Mitigation	Site	Low	Long-Term	Low	Probable	Negligible	-Ve	Medium
With Mitigation	Site	Negligible	Long-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Soil interflow processes:</b>								
<ul style="list-style-type: none"> <li>○ Disturbing the inner-soil architecture of the original soil profile will disturb natural flow processes.</li> <li>○ Excavated soil will be placed in other areas</li> <li>○ Impermeable areas (urbanisation) may decrease rainfall infiltration into recharge soils</li> </ul>								
Without Mitigation	Site	Low	Long-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Long-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Areas which were backfilled with collapsible soils; water leakages from the stormwater system or sewer leakages</b>								
Without Mitigation	Site	Low	Long-Term	Negligible	Definite	Negligible	-Ve	Medium
With Mitigation	Site	Negligible	Long-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Stormwater runoff:</b>								
<ul style="list-style-type: none"> <li>• Potential surface water contamination</li> </ul>								

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<ul style="list-style-type: none"> <li>• Increased erosion</li> <li>• Contaminated runoff water into nearby streams</li> <li>• Sedimentation of watercourses</li> </ul>								
Without Mitigation	Site	Low	Long-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Long-Term	Negligible	Definite	Negligible	-Ve	Medium
<b>Sewer lines: Poor quality seepage into the subsoils from sewer lines</b>								
Without Mitigation	Site	Medium	Long-Term	Negligible	Definite	Medium	-Ve	Medium
With Mitigation	Site	Negligible	Long-Term	Negligible	Definite	Negligible	-Ve	Medium
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<p><b>Mitigation Measure/s:</b></p> <ul style="list-style-type: none"> <li>• Only excavate areas applicable to the project area.</li> <li>• Backfill the material in the same order it was excavated to reduce contamination of deeper soils with shallow oxidised soils.</li> <li>• Cover excavated soils with a temporary liner to prevent contamination.</li> <li>• Keep the site clean of all general and domestic wastes. All development footprint areas are to remain as small as possible and vegetation clearing is to be limited to what is essential.</li> <li>• Retain as much indigenous vegetation as possible.</li> <li>• Exposed soils are to be protected using a suitable covering or revegetating.</li> <li>• Existing roads should be used as far as practical to gain access to the site, and crossing watercourses in areas where no existing crossing is apparent should be unnecessary, but if it is essential crossings should be made at right angles.</li> <li>• Have emergency fuel &amp; oil spill kits on site.</li> <li>• Soil quality monitoring &amp; visual assessments – monthly basis. If obvious pollution is noted (visually) then it is advised that soil screening be undertaken.</li> <li>• Ensure the sewer system is monitored for leakages. Routine visual inspections of sewer infrastructure and resident parking areas for signs of soil contamination. Have emergency fuel &amp; oil spill kits on site.</li> <li>• Water quality monitoring and visual assessments.</li> <li>• Install a temporary cut-off trench to contain poor-quality runoff (if required).</li> <li>• Routine (monthly) inspections of all sewer-related infrastructure (hydraulic monitoring)</li> <li>• Ensure that stormwater systems conveying water to the nearby river are fitted with silt and oil traps, as well as that surface drains, are isolated from any potential surface pollution sources.</li> <li>• Water quality monitoring and routine visual assessment for contamination.</li> <li>• Discharge dewatered / rainwater collected into the nearby stream. May require authorisation. If water is contaminated, discharge to the closest greywater system (depending on extent of contamination)</li> </ul>								
<b>IMPACT Wetland</b>			<p><b>Construction Phase</b></p> <ul style="list-style-type: none"> <li>○ Direct physical loss or modification of wetland habitat</li> <li>○ Alteration of hydrological and geomorphological processes</li> <li>○ Impacts to water quality</li> <li>○ Impacts to ecological connectivity and/or ecological disturbance impacts</li> </ul> <p><b>Operational phase impacts</b></p> <ul style="list-style-type: none"> <li>○ Direct physical loss or modification of wetland habitat</li> <li>○ Alteration of hydrological and geomorphological processes</li> </ul>					

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									<ul style="list-style-type: none"> <li>○ Impacts to water quality</li> <li>○ Impacts to ecological connectivity and/or ecological disturbance impacts</li> </ul>
<b>Direct physical loss or modification of wetland habitat</b>									
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>STATUS</b>	<b>CONFIDENCE</b>	
Without Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
<b>Alteration of hydrological and geomorphological processes</b>									
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>STATUS</b>	<b>CONFIDENCE</b>	
Without Mitigation	Local	Medium-Low	Long-Term	Low	Definite	Low	-Ve	High	
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
<b>Impacts to water quality</b>									
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>STATUS</b>	<b>CONFIDENCE</b>	
Without Mitigation	Local	Medium-Low	Long-Term	Low	Definite	Low	-Ve	High	
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
<b>Impacts to ecological connectivity and/or ecological disturbance impacts</b>									
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>STATUS</b>	<b>CONFIDENCE</b>	
Without Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
<b>Wetland - Operational phase impacts</b>									
<b>Direct physical loss or modification of wetland habitat</b>									
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>STATUS</b>	<b>CONFIDENCE</b>	
Without Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
<b>Alteration of hydrological and geomorphological processes</b>									
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>STATUS</b>	<b>CONFIDENCE</b>	
Without Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
<b>Impacts to water quality</b>									
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>STATUS</b>	<b>CONFIDENCE</b>	
Without Mitigation	Local	Moderately Low	Long-Term	Low	Definite	Low	-Ve	High	
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
<b>Impacts to ecological connectivity and/or ecological disturbance impacts</b>									
<b>STATUS</b>	<b>EXTENT</b>	<b>INTENSITY</b>	<b>DURATION</b>	<b>CONSEQUENCE</b>	<b>PROBABILITY</b>	<b>SIGNIFICANCE</b>	<b>STATUS</b>	<b>CONFIDENCE</b>	
Without Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High	
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No		
<b>Mitigation Measures:</b>									

### **Construction Phase:**

- Strict avoidance of the delineated wetlands is to be made a priority and implement and adhere to buffer zones for wetlands, with planned development infrastructure to remain outside of the recommended wetland buffer zones.
- Demarcate the edge of wetland buffers on the ground to avoid incursions into these areas.
- Restrict access to wetland areas beyond the development footprint.
- Should accidental/intentional incursions into or direct disturbance of wetlands occur, rehabilitate wetlands, riparian areas and buffer zones and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.
- Implement appropriate ecological monitoring during construction and use findings to inform site management.
- Construction phase method statement(s) to be developed and finalised prior to construction taking place, taking into consideration the wetland impact mitigation measures and requirements of the EMPr to be developed.
- Strict avoidance of the delineated wetlands is to be made a priority and implement and adhere to buffer zones for wetlands, with planned development infrastructure to remain outside of the recommended wetland buffer zones.
- Limit construction activities to the dry (winter) season where possible, to reduce erosion and sediment risks.
- Address potential construction-phase erosion and sedimentation risks on site through the implementation of Best Management Practices (BMPs) in erosion and sediment control.
- Rehabilitate any erosion or vegetation clearing impacts as soon as practically possible and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.
- Implement appropriate ecological monitoring during construction and use findings to inform site management.
- Construction phase method statement(s) to be developed and finalised prior to construction taking place, taking into consideration the wetland impact mitigation measures and requirements of the EMPr to be developed.
- Limit construction activities to the dry (winter) season where possible, to reduce erosion and sediment risks.
- Address potential erosion and sedimentation risks on site through the implementation of Best Management Practices (BMPs) in erosion and sediment control.
- Sediment controls (e.g. silt fences/berms) should be implemented to reduce sediment inputs to the nearby wetlands.
- Address potential spill and pollution risks on site through the implementation of Best Management Practices (BMPs) in spill and pollution control and hazardous substances management.
- Rehabilitate any spill related impacts as soon as practically possible.
- A suitable spill response and remediation plan is to be developed for the construction phase.
- Implement appropriate ecological monitoring during construction and use findings to inform site management.
- Construction phase method statement(s) to be developed and finalised prior to construction taking place, taking into consideration the wetland impact mitigation measures and requirements of the EMPr to be developed.
- Strict avoidance of the delineated wetlands is to be made a priority and implement and adhere to buffer zones for wetlands, with planned development infrastructure to remain outside of the recommended wetland buffer zones.
- Demarcate the edge of wetland buffers on the ground to avoid incursions into these areas.
- Restrict worker and machinery access to the active construction site and construction site camp areas only.
- Prohibit the poaching of animals and/or collection of plants and biota from natural areas, including wetlands.
- Temporary erosion/sediment control to be removed only once construction has been completed and operational storm water management infrastructure is suitably in place and operating correctly.
- Should accidental/intentional incursions into or direct disturbance of wetlands occur, rehabilitate wetlands, riparian areas and buffer zones and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.

### **Operational Phase Impacts:**



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- Appropriate storm water management to be implemented with a focus on reducing erosion risk.
- No solid waste dumping to take place within wetlands or buffers.
- Should accidental/intentional incursions into or direct disturbance of wetlands occur, rehabilitate wetlands, riparian areas and buffer zones and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.
- Appropriate Storm Water Management Plan (SMWP) to be implemented with a focus on reducing downstream erosion risk.
- Monitoring plan to be implemented for water quality and erosion/sediment.
- Maintain storm water infrastructure as necessary through unblocking of drains, desilting where required, etc.
- Implement and adhere to the recommended buffer zones for wetlands.
- Rehabilitate any erosion or vegetation clearing impacts as soon as practically possible and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.
- Implement best practice stormwater management design.
- Use appropriate sediment and pollution traps.
- Sewer and water pipelines associated with the development to be buried below ground to prevent exposure and damage.
- Strict avoidance of the delineated wetlands is to be made a priority and implement and adhere to buffer zones for wetlands.
- Restrict worker and machinery access to the development and planned access roads only.
- Eradicate and/or control Invasive Alien Plant species as necessary.
- Should accidental/intentional incursions into or direct disturbance of wetlands occur, rehabilitate wetlands and buffer zones and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.

### 2.2 The First Alternative

#### Potential environmental impacts for the First Alternative Layout: Princess Makabayan City Regional Mall.

<b>Impact:</b> <b>HABITAT DESTRUCTION</b>		Preparing Erf 6018 Vryheid for the construction of the Princess Mkabayi City mall development the site will be stripped of the existing natural vegetation. Natural habitat of mammals, birds, reptiles, and insects will be permanently lost in this process.						
<b>Status</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Rating</b>	<b>Confidence</b>
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Probable	Medium	-Ve	High
<b>Reversibility</b>	Irreversible	<b>Irreplaceable Loss of Resources</b>			Yes	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b>								
<ul style="list-style-type: none"> <li>• Construction and maintenance activities should be carried out according to accepted environmental best practice with the minimum removal of indigenous vegetation.</li> <li>• Existing access should be utilised wherever possible.</li> <li>• Indigenous planting must be undertaken during rehabilitation and landscaping, including the re-planting of suitable species removed during site clearing (e.g., <i>Aloe</i>, <i>Agapanthus</i>).</li> </ul>								
<b>IMPACT: DISTURBANCE</b>		Disturbance may present high impacts during construction and lower impacts during operational and maintenance phases.						

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Status	Extent	Intensity	Duration	Consequence	Probability	Significance	rating	Confidence
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Probable	Medium	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b> Construction and maintenance vehicles should be restricted to existing roads and access points where practical and access of machinery and vehicles should be carefully controlled. Little can be done about the disturbance which will occur during the operational phase of the project as this is a high impact land-use option.								
<b>IMPACT: SOIL COMPACTION, HARDENING OF SURFACES AND EROSION:</b>		Plant removal, movement of machinery and stockpiles during construction will denude the land, cause disturbance, and lead to the compaction of the soil. Soil erosion will degrade habitat quality and lead to the siltation of down-slope areas.						
STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	rating	Confidence
Without Mitigation	Local	Medium	Long-Term	Medium	Definite	Medium	-Ve	High
With Mitigation	Local	Low	Short Term	Very Low	Possible	Insignificant	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation measure/s:</b> <ul style="list-style-type: none"> <li>• Restrict the movement of construction and maintenance vehicles and personnel as far as possible, where practical, and control access of machinery and vehicles carefully</li> <li>• Loosen compacted soil to prevent delayed rehabilitation.</li> <li>• Install suitable drainage infrastructure to prevent wash-aways from hardened surfaces.</li> </ul>								
<b>IMPACT: TRAFFIC</b>		Attracting patrons to the mall will require transport services. Additional trips will be generated for increased vehicles on the road network around the mall. Parking must be provided for the vehicles for stock deliveries and restaurants. Upgrades are required. The traffic assessment only considered the First Phase of the development namely the regional mall. The mixed land uses in Phase 2 will be subject to a separate traffic assessment.						
STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	Rating	Confidence
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Definite	Medium	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s</b> <ul style="list-style-type: none"> <li>• The signalization of Oos Street (R34) and Suid Street intersection by the Council.</li> <li>• The signalization of Oos Street (R34) and Stretch Crescent/ Main Street intersection by the Council.</li> </ul>								

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<ul style="list-style-type: none"> <li>The installation of a double-lane roundabout access off Oos Street (R34) to be carried out by the Developer. The paving of the Unnamed Gravel Road to be carried out by the Developer.</li> <li>Establish a sidewalk as part of the Non-Motorised Transport Facilities / non-motorised transport (NMT) facility, along Oos Street (R34) and the Unnamed Road, on the frontage of the development site, to be carried out by the Developer</li> </ul>								
<b>IMPACT: SOCIO-ECONOMIC ENVIRONMENT</b>		The Princess Mkabayi City development will create temporary and permanent job opportunities in an environment where employment figures are low. The proposed development will also open economic opportunities for primary, secondary, and tertiary market entrepreneurs. This will collectively contribute to the local economy.						
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>rating</b>	<b>Confidence</b>
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Definite	Medium	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b>								
<ul style="list-style-type: none"> <li>Construction and maintenance activities should be carried out according to accepted environmental best practice with the minimum removal of indigenous vegetation.</li> <li>Existing access should be utilised wherever possible.</li> <li>Indigenous planting must be undertaken during rehabilitation and landscaping, including the re-planting of suitable local indigenous species removed during site clearing (e.g., Aloe, Agapanthus).</li> </ul>								
<b>IMPACT: GEOTECHNICAL</b>		Exact earthworks levels are unknown, but maximum cut excavation depths are +/- 2,0m deep. Blasting may be required. 4 Regional & Site-Specific Geology p7 – Reworked residual dolerite soils 5 Excavation Procedures p8 – Blasting 6 Lateral Support Recommendations p9 - Slope instability 7 Evaluation of Founding Conditions and Recommended Foundation Types p9 8 Materials Usage p11 - Poor materials quality of the in situ soils 9 Surface Beds p12 - Areas underlain by dolerite 10 Access roads & parking areas p12 - Areas underlain by dolerite 11 Sub-Surface Drainage p14 - A perched water table						
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	High	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Medium	Long-Term	Medium	Definite	Medium	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b>								
<ul style="list-style-type: none"> <li>Chapter 4 Regional &amp; site-specific geology Page 7, Remove the residual dolerite soils.</li> </ul>								

- Chapter 5 Excavation Procedures Page 8 Excavate dolerite core stones. Take safety precautions blasting when blasting.
- Chapter 6 Lateral Support Recommendations Page 9 Use pre-cast block retaining structures as a suitable lateral support solution where space constraints do not permit the recommended batter slopes. Precast block retaining walls would also apply for the short-term batter slope angles temporary slopes. Alternatively, a soil nail and mesh reinforced gunite lateral support system could be considered.
- Chapter 7 Evaluation of founding conditions and recommended foundation types Page 9- Use allowable bearing pressure of 150kPa for the medium dense / firm or better reworked residual sandstone and localised firm reworked residual dolerite. An allowable bearing pressure of 250kPa is applicable to the underlying medium dense or better residual sandstone / siltstone.
- Chapter 8 Materials usage Page 11 Do not use the upper 150mm of in situ soils containing organic matter for construction material and remove it to spoil. At least the upper 0,5m of in situ soil where trees were removed due to tree roots.
- Use the upper in situ soils as poor quality general fill materials only.
- Apply high degree of engineering quality control when compaction densities are established due to the poor materials. Determine moisture contents in a soils laboratory by oven drying.
- The localised reworked / residual dolerite soils must be removed to spoil in their entirety.
- Import materials of a minimum G7 quality for bulk fill terraces and as layer works for access roads and parking areas.
- Chapter 9 Surface beds Page 12
- Place surface beds on top of the in-situ soil within areas of cut. Rip and recompact the upper 150mm of soil prior to placing of concrete.
- Compact the fill in 150mm thick layers at optimum moisture content.
- Cover siltstone bedrock at final terrace level with at least 300mm of engineered fill above the siltstone bedrock prior to placing of surface beds.
- Keep all surface beds free of vertical external and internal walls and structural members. Allow the surface beds to “float”. Place the surface bed upon a polyethylene plastic geomembrane which is folded up on the perimeter between concrete and brickwork to serve as a bond-breaker and an isolation joint between concrete and brickwork. Place lightly loaded surface beds over the areas underlain by dolerite, provided
- Nominally roll in situ soils without vibration where exposed at terrace level. Place a 300mm thick imported G7 layer directly above the in-situ soils and compacted it in 150mm layers to 90% of Mod AASHTO density at optimum moisture content to provide a consistent working
- Chapter 10 Access roads & parking areas Page 13
- Compact the upper in situ sub-grade material across the majority of the site, to 93% of Mod AASHTO at optimum moisture content, for pavement design purposes.
- Nominally roll without vibration, to 90% Mod AASHTO density at optimum moisture content, prior to construction of layer works, the areas where the underlying dolerite and the reworked / residual dolerite soils becomes exposed. It is therefore recommended that the in-situ subgrade only be, in these areas.
- Compact a minimum cover of 600mm (including layer works is required )where the subgrade has an in situ CBR of less than 3% at 90% Mod AASHTO.
- Stabilise the layer immediately below the bedding sand, to seal the layer works from stormwater ingress from above, where access roads / parking areas, are to be.
- Chapter 11 Sub-surface drainage Page 14 Conduct dewatering, within areas of cut across the localised eastern portions of the site. Assess it at the time of construction. Use sumps and pumps of adequate capacity to manage the influx of groundwater into excavations.

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- Allow conventional drainage behind all retaining walls within areas of cut.
- Pay particular attention to the installation of damp-proof membrane (DPM) and damp-proof course (DPC) to avoid problems in the future with rising damp.

<b>IMPACT: HYDROLOGICAL</b>	<p>Construction phase:</p> <ol style="list-style-type: none"> <li>4. Vadose zone soils: Disturbing vadose zone during soil excavations/activities,</li> <li>5. Primary Surface Water Receivers:             <ul style="list-style-type: none"> <li>• Surface water contamination and sedimentation                 <ul style="list-style-type: none"> <li>○ Washing vehicles in water bodies</li> <li>○ Erosion and sedimentation of watercourses</li> <li>○ Alteration of natural drainage lines</li> </ul> </li> </ul> </li> <li>6. Perched Water Table Dewatering Temporary dewatering of perched groundwater</li> </ol> <p>Operational Phase</p> <ol style="list-style-type: none"> <li>3. Vadose zone soils:             <ul style="list-style-type: none"> <li>○ Poor quality seepage and runoff from vehicles parked at the site and from ruptured sewer lines</li> <li>○ Domestic waste pollution of rivers/streams.</li> </ul> </li> <li>4. Primary Surface Water             <ul style="list-style-type: none"> <li>• Receivers: Stormwater runoff                 <ul style="list-style-type: none"> <li>○ Potential surface water contamination</li> <li>○ Increased erosion due to vegetation loss.</li> <li>○ Contaminated runoff water into nearby streams</li> <li>○ Sedimentation of watercourses</li> </ul> </li> <li>• Sewer lines                 <ul style="list-style-type: none"> <li>○ Poor quality seepage into the subsoils from sewer lines</li> </ul> </li> </ul> </li> </ol>							
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STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	RATING	Confidence
<b>1. Vadose zone soils</b>								
Without Mitigation	Site	Low	Long-Term	Insignificant	Probable	Negligible	-Ve	High
With Mitigation	Site	Negligible	Long-Term	Insignificant	Probable	Negligible	-Ve	High
<b>2. Primary Surface Water Receivers</b>								
Without Mitigation	Site	Low	Long-Term	High	Definite	Low	-Ve	High
With Mitigation	Local	Negligible	Long-Term	Medium	Definite	Negligible	-Ve	High
<b>3. Perched Water Table</b>								
Without Mitigation	Local	Medium	Long-Term	High	Definite	Medium	-Ve	High

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With Mitigation	Local	<b>Negligible</b>	Long-Term	Medium	Definite	<b>Negligible</b>	-Ve	High
<b>Reversibility</b>	Irreplaceable	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<p><b>Mitigation measures:</b></p> <p><b>3. During Construction:</b></p> <ul style="list-style-type: none"> <li>• Only excavate areas applicable to the project area.</li> <li>• Keep the site clean of all general and domestic wastes.</li> <li>• All development footprint areas to remain as small as possible and vegetation clearing to be limited to what is essential.</li> <li>• Retain as much indigenous vegetation as possible. • Exposed soils to be protected using a suitable covering.</li> <li>• Existing roads should be used as far as practical to gain access to the site, and crossing the streams in areas where no existing crossing is apparent should be unnecessary, but if it is essential crossings should be made at right angles.</li> <li>• Install a temporary cut-off trench (if required) to contain poor-quality runoff.</li> <li>• Cover soil stockpiles with a temporary liner to prevent contamination (where required and visually determined).</li> <li>• Water quality monitoring and routine visual assessment for contamination.</li> <li>• Discharge dewatered / rainwater collected into the nearby stream. May require authorisation. If water is contaminated, discharge to the closest greywater system (depending on the extent of contamination).</li> </ul> <p><b>4. During Operation:</b></p> <ul style="list-style-type: none"> <li>• Keep the site clean of all general and domestic wastes.</li> <li>• Water quality of the streams and sewer line monitoring.</li> <li>• Water quality monitoring and visual assessments.</li> <li>• Install a temporary cutoff trench to contain poorquality runoff (if required and pre-determined by visual assessments).</li> <li>• Routine hydraulic monitoring of stormwater system (monthly)</li> <li>• Water quality monitoring and visual assessments.</li> <li>• Routine inspections of all sewer-related infrastructure (hydraulic monitoring)</li> </ul>								
<b>IMPACT :</b> Pedohydrological		<p><b>Construction Phase:</b></p> <ul style="list-style-type: none"> <li>○ Site preparation, including placement of contractor laydown areas and storage (i.e. Temporary stockpiles, bunded areas etc.) Facilities.</li> <li>○ Disturbing vadose zone during soil excavations/infilling activities.</li> <li>○ In-situ placement of new soils, altering existing soil-flow processes (i.e. Infilling of wetlands or cut-and-fill areas).</li> <li>○ Soil compaction.</li> <li>○ Soil &amp; surface water contamination and sedimentation from the following activities: <ul style="list-style-type: none"> <li>• Leakages from vehicles and machines, and building materials</li> </ul> </li> </ul> <p>Erosion and sedimentation of watercourses if excavations are left open due to unforeseen circumstances (i.e. bad weather); and</p>						

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<ul style="list-style-type: none"> <li>• Alteration of natural drainage lines may lead to ponding or increased runoff patterns (i.e. may cause stagnant water levels or increase erosion).             <ul style="list-style-type: none"> <li>○ Vegetation loss could decrease soil infiltration and increase runoff.</li> </ul> </li> </ul> <p><b>Operational Phase:</b></p> <ul style="list-style-type: none"> <li>○ Reduced soil infiltration due to the residential development units and site access roads (i.e. Areas which will potentially become impermeable).</li> <li>○ Reduced rainfall runoff to wetland areas from drainage servitudes (i.e. This Water will be captured in stormwater infrastructure).</li> <li>○ Soil quality could be compromised if leakages occur from sewer lines. Moreover, oil &amp; fuel spills from resident vehicles can cause soil contamination.</li> </ul>								
<b>During Construction:</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>RATING</b>	<b>Confidence</b>
<b>Soil interflow processes: Site preparation, including placement of contractor laydown areas and storage</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	Neutral	Medium
With Mitigation	Site	Negligible	Medium-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Disturbing vadose zone during soil excavations/infilling</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Vegetation clearing &amp; soil stockpiling.</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Medium	Definite	Negligible	-Ve	Medium
<b>Seepage/leakages/overland flow from the sewer lines may cause soil degradation</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Medium	Definite	Negligible	-Ve	Medium
<b>Surface water contamination and sedimentation.</b>								



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Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Negligible	Definite	Negligible	-Ve	Medium
<b>Temporary dewatering of perched groundwater</b>								
Without Mitigation	Site	Low	Medium-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Medium-Term	Negligible	Definite	Negligible	-Ve	Medium
<b>Operational phase</b>								
<b>Vadose zone soils: Poor quality seepage and runoff from vehicles parked at the site and from ruptured sewer lines</b>								
Without Mitigation	Site	Low	Long-Term	Low	Probable	Negligible	-Ve	Medium
With Mitigation	Site	Negligible	Long-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Soil interflow processes:</b>								
<ul style="list-style-type: none"> <li>○ Disturbing the inner-soil architecture of the original soil profile will disturb natural flow processes.</li> <li>○ Excavated soil will be placed in other areas</li> <li>○ Impermeable areas (urbanisation) may decrease rainfall infiltration into recharge soils</li> </ul>								
Without Mitigation	Site	Low	Long-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Long-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Areas which were backfilled with collapsible soils; water leakages from the stormwater system or sewer leakages</b>								
Without Mitigation	Site	Low	Long-Term	Negligible	Definite	Negligible	-Ve	Medium
With Mitigation	Site	Negligible	Long-Term	Negligible	Probable	Negligible	-Ve	Medium
<b>Stormwater runoff:</b>								
<ul style="list-style-type: none"> <li>• Potential surface water contamination</li> <li>• Increased erosion</li> <li>• Contaminated runoff water into nearby streams</li> <li>• Sedimentation of watercourses</li> </ul>								
Without Mitigation	Site	Low	Long-Term	Low	Definite	Low	-Ve	Medium
With Mitigation	Site	Negligible	Long-Term	Negligible	Definite	Negligible	-Ve	Medium
<b>Sewer lines: Poor quality seepage into the subsoils from sewer lines</b>								

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Without Mitigation	Site	<b>Medium</b>	Long-Term	Negligible	Definite	<b>Medium</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Long-Term	Negligible	Definite	<b>Negligible</b>	-Ve	Medium
<b>Reversibility</b>		<b>Irreplaceable Loss of Resources</b>				<b>Fatal Flaw</b>		
<p><b>Mitigation Measure/s:</b></p> <ul style="list-style-type: none"> <li>• Only excavate areas applicable to the project area.</li> <li>• Backfill the material in the same order it was excavated to reduce contamination of deeper soils with shallow oxidised soils.</li> <li>• Cover excavated soils with a temporary liner to prevent contamination.</li> <li>• Keep the site clean of all general and domestic wastes. All development footprint areas are to remain as small as possible and vegetation clearing is to be limited to what is essential.</li> <li>• Retain as much indigenous vegetation as possible.</li> <li>• Exposed soils are to be protected using a suitable covering or revegetating.</li> <li>• Existing roads should be used as far as practical to gain access to the site, and crossing watercourses in areas where no existing crossing is apparent should be unnecessary, but if it is essential crossings should be made at right angles.</li> <li>• Have emergency fuel &amp; oil spill kits on site.</li> <li>• Soil quality monitoring &amp; visual assessments – monthly basis. If obvious pollution is noted (visually) then it is advised that soil screening be undertaken.</li> <li>• Ensure the sewer system is monitored for leakages. Routine visual inspections of sewer infrastructure and resident parking areas for signs of soil contamination. Have emergency fuel &amp; oil spill kits on site.</li> <li>• Water quality monitoring and visual assessments.</li> <li>• Install a temporary cut-off trench to contain poor-quality runoff (if required).</li> <li>• Routine (monthly) inspections of all sewer-related infrastructure (hydraulic monitoring)</li> <li>• Ensure that stormwater systems conveying water to the nearby river are fitted with silt and oil traps, as well as that surface drains, are isolated from any potential surface pollution sources.</li> <li>• Water quality monitoring and routine visual assessment for contamination.</li> <li>• Discharge dewatered / rainwater collected into the nearby stream. May require authorisation. If water is contaminated, discharge to the closest greywater system (depending on the extent of contamination)</li> </ul>								
<b>IMPACT Wetland Construction Phase</b>								
<b>Direct physical loss or modification of wetland habitat</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Low</b>	Long-Term	Low	Definite	<b>Low</b>	-Ve	High
With Mitigation	Local	<b>Low</b>	Long-Term	Low	Definite	<b>Low</b>	-Ve	High
<b>Alteration of hydrological and geomorphological processes</b>								

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STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without Mitigation	Local	Medium-Low	Long-Term	Low	Definite	Low	-Ve	High
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
<b>Impacts to water quality</b>								
STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without Mitigation	Local	Medium-Low	Long-Term	Low	Definite	Low	-Ve	High
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
<b>Impacts to ecological connectivity and/or ecological disturbance impacts</b>								
STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
<b>Wetland - Operational phase impacts</b>								
<b>Direct physical loss or modification of wetland habitat</b>								
STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
<b>Alteration of hydrological and geomorphological processes</b>								
STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
<b>Impacts to water quality</b>								
STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without Mitigation	Local	Moderately Low	Long-Term	Low	Definite	Low	-Ve	High
With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
<b>Impacts to ecological connectivity and/or ecological disturbance impacts</b>								
STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	Status	Confidence
Without Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High

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With Mitigation	Local	Low	Long-Term	Low	Definite	Low	-Ve	High
<b>Reversibility</b>		<b>Irreplaceable Loss of Resources</b>				<b>Fatal Flaw</b>		
<p><b>Mitigation Measures:</b></p> <p><b>Construction Phase:</b></p> <ul style="list-style-type: none"> <li>• Strict avoidance of the delineated wetlands is to be made a priority and implement and adhere to buffer zones for wetlands, with planned development infrastructure to remain outside of the recommended wetland buffer zones.</li> <li>• Demarcate the edge of wetland buffers on the ground to avoid incursions into these areas.</li> <li>• Restrict access to wetland areas beyond the development footprint.</li> <li>• Should accidental/intentional incursions into or direct disturbance of wetlands occur, rehabilitate wetlands, riparian areas and buffer zones and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.</li> <li>• Implement appropriate ecological monitoring during construction and use findings to inform site management.</li> <li>• Construction phase method statement(s) to be developed and finalised prior to construction taking place, taking into consideration the wetland impact mitigation measures and requirements of the EMPr to be developed.</li> <li>• Strict avoidance of the delineated wetlands is to be made a priority and implement and adhere to buffer zones for wetlands, with planned development infrastructure to remain outside of the recommended wetland buffer zones.</li> <li>• Limit construction activities to the dry (winter) season where possible, to reduce erosion and sediment risks.</li> <li>• Address potential construction-phase erosion and sedimentation risks on site through the implementation of Best Management Practices (BMPs) in erosion and sediment control.</li> <li>• Rehabilitate any erosion or vegetation clearing impacts as soon as practically possible and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.</li> <li>• Implement appropriate ecological monitoring during construction and use findings to inform site management.</li> <li>• Construction phase method statement(s) to be developed and finalised prior to construction taking place, taking into consideration the wetland impact mitigation measures and requirements of the EMPr to be developed.</li> <li>• Limit construction activities to the dry (winter) season where possible, to reduce erosion and sediment risks.</li> <li>• Address potential erosion and sedimentation risks on site through the implementation of Best Management Practices (BMPs) in erosion and sediment control.</li> <li>• Sediment controls (e.g. silt fences/berms) should be implemented to reduce sediment inputs to the nearby wetlands.</li> <li>• Address potential spill and pollution risks on site through the implementation of Best Management Practices (BMPs) in spill and pollution control and hazardous substances management.</li> <li>• Rehabilitate any spill related impacts as soon as practically possible.</li> </ul>								

- A suitable spill response and remediation plan is to be developed for the construction phase.
- Implement appropriate ecological monitoring during construction and use findings to inform site management.
- Construction phase method statement(s) to be developed and finalised prior to construction taking place, taking into consideration the wetland impact mitigation measures and requirements of the EMP to be developed.
- Strict avoidance of the delineated wetlands is to be made a priority and implement and adhere to buffer zones for wetlands, with planned development infrastructure to remain outside of the recommended wetland buffer zones.
- Demarcate the edge of wetland buffers on the ground to avoid incursions into these areas.
- Restrict worker and machinery access to the active construction site and construction site camp areas only.
- Prohibit the poaching of animals and/or collection of plants and biota from natural areas, including wetlands.
- Temporary erosion/sediment control to be removed only once construction has been completed and operational storm water management infrastructure is suitably in place and operating correctly.
- Should accidental/intentional incursions into or direct disturbance of wetlands occur, rehabilitate wetlands, riparian areas and buffer zones and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.

**Operational Phase Impacts:**

- Appropriate storm water management to be implemented with a focus on reducing erosion risk.
- No solid waste dumping to take place within wetlands or buffers.
- Should accidental/intentional incursions into or direct disturbance of wetlands occur, rehabilitate wetlands, riparian areas and buffer zones and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.
- Appropriate Storm Water Management Plan (SMWP) to be implemented with a focus on reducing downstream erosion risk.
- Monitoring plan to be implemented for water quality and erosion/sediment.
- Maintain storm water infrastructure as necessary through unblocking of drains, desilting where required, etc.
- Implement and adhere to the recommended buffer zones for wetlands.
- Rehabilitate any erosion or vegetation clearing impacts as soon as practically possible and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.
- Implement best practice stormwater management design.
- Use appropriate sediment and pollution traps.
- Sewer and water pipelines associated with the development to be buried below ground to prevent exposure and damage.
- Strict avoidance of the delineated wetlands is to be made a priority and implement and adhere to buffer zones for wetlands.
- Restrict worker and machinery access to the development and planned access roads only.
- Eradicate and/or control Invasive Alien Plant species as necessary.
- Should accidental/intentional incursions into or direct disturbance of wetlands occur, rehabilitate wetlands and buffer zones and in accordance with the conceptual 'Wetland Rehabilitation Strategy'.

2.3 The NO-GO Alternative

<b>Impact:</b> <b>HABITAT DESTRUCTION</b>		Erf 6018 Vryheid remains undevelopment with the existing natural vegetation intact. The natural habitat of mammals, birds, reptiles, and insects remains vacant and derelict.						
<b>Status</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Rating</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	High	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Medium	Probable	<b>Low</b>	+Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b>								
<ul style="list-style-type: none"> <li>• Light grazing of the natural indigenous vegetation.</li> <li>• Maintain fire regime, burning the grassland when the fuel load requires it.</li> <li>• Minimise anthropocentric activity on the land.</li> </ul>								
<b>IMPACT: DISTURBANCE</b>		<b>Disturbance may present to the natural habitat.</b>						
<b>Status</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>rating</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	High	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Medium	Probable	<b>Low</b>	+Ve	High

BASIC ASSESSMENT REPORT

<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>	No	<b>Fatal Flaw</b>	No			
<b>Mitigation Measure/s:</b>								
Restrict access to prevent the disturbance to the land.								
<b>IMPACT: SOIL COMPACTION, HARDENING OF SURFACES AND EROSION:</b>		<b>Compaction of the soil does not occur and soil erosion does not occur on down-slope areas.</b>						
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>rating</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	Medium	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Short Term	Very Low	Possible	<b>Low</b>	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>	No	<b>Fatal Flaw</b>	No			
<b>Mitigation measure/s:</b>								
<ul style="list-style-type: none"> <li>• Restrict the movement of vehicles and personnel as far as possible, where practical, and control access of machinery and vehicles carefully</li> <li>• Loosen compacted soil to prevent delayed rehabilitation.</li> <li>• Install suitable drainage infrastructure to prevent wash-aways from hardened surfaces.</li> </ul>								
<b>IMPACT: TRAFFIC</b>		<b>No mall development will not attract visitors who require transport services. Trip generation remains unaltered.</b>						
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Rating</b>	<b>Confidence</b>
<b>Without Mitigation</b>	Local	<b>Ngilgible</b>	Long-Term	High	Definite	<b>Negligible</b>	-Ve	High



BASIC ASSESSMENT REPORT

<b>With Mitigation</b>	Local	<b>Negligible</b>	Long-Term	Medium	Definite	<b>Negligible</b>	+Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s</b>								
<ul style="list-style-type: none"> <li>The traffic signalization at Oos Street (R34) and Suid Street intersection remains unaltered.</li> <li>The signalization st Oos Street (R34) and Stretch Crescent/ Main Street intersection remains unaltered.</li> <li>The Oos Street (R34) road remains unaltered. The Unnamed gavel road remains unaltered.</li> <li>No sidewalk along Oos Street (R34) and the Unnamed Road, will be established</li> </ul>								
<b>IMPACT: SOCIO-ECONOMIC ENVIRONMENT</b>		<b>No additional temporary and permanent job opportunities will be created and employment figures remain low. No economic opportunities for entrepreneurs will be created.</b>						
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>rating</b>	<b>Confidence</b>
Without Mitigation	Local	Low	Long-Term	High	Definite	High	-Ve	High
With Mitigation	Local	Low	Long-Term	Medium	Definite	Negligible	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b>								
<ul style="list-style-type: none"> <li>Employ people to maintain the land alien plant free and prevent erosion.</li> </ul>								

BASIC ASSESSMENT REPORT

<b>IMPACT: GEOTECHNICAL</b>		<p>Exact earthworks levels are unknown, but maximum cut excavation depths are +/- 2,0m deep. Blasting may be required.</p> <p>4 Regional &amp; Site-Specific Geology p7 – Reworked residual dolerite soils</p> <p>5 Excavation Procedures p8 – Blasting</p> <p>6 Lateral Support Recommendations p9 - Slope instability</p> <p>7 Evaluation of Founding Conditions and Recommended Foundation Types p9</p> <p>8 Materials Usage p11 - Poor materials quality of the in situ soils</p> <p>9 Surface Beds p12 - Areas underlain by dolerite</p> <p>10 Access roads &amp; parking areas p12 - Areas underlain by dolerite</p> <p>11 Sub-Surface Drainage p14 - A perched water table</p>						
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	High	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Medium	Definite	<b>Negligible</b>	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	

## BASIC ASSESSMENT REPORT

### Mitigation Measure/s:

- Chapter 4 Regional & site-specific geology Page 7, The residual dolerite soils remain unaltered.
- Chapter 5 Excavation Procedures Page 8 Dolerite core stones remain. No blasting is required.
- Chapter 6 Lateral Support Recommendations Page 9 No pre-cast block retaining structures are required.
- Chapter 7 Evaluation of founding conditions and recommended foundation types - Nothing is required.
- Chapter 8 Materials usage Page 11 The upper 150mm of in situ soils with organic matter remain where it is. No fill material is required, no engineering quality control required, no localised reworked / residual dolerite soils to be removed, no material import is required.
- Chapter 9 Surface beds No surface beds are required.
- Chapter 10 Access roads & parking areas Page 13 No rolling, compaction or layer stabilisation is required.
- Chapter 11 Sub-surface drainage Page 14 No dewatering, is required and conventional drainage occurs naturally.

IMPACT: HYDROLOGICAL		No construction or operational phase, water flow percolates into the soil or runs off as surface flow.						
STATUS	Extent	Intensity	Duration	Consequence	Probability	Significance	RATING	Confidence
<b>1. Vadose zone soils</b>								
Without Mitigation	Site	<b>Negligible</b>	Long-Term	Insignificant	Probable	<b>Negligible</b>	-Ve	High
With Mitigation	Site	<b>Negligible</b>	Long-Term	Insignificant	Probable	<b>Negligible</b>	-Ve	High
<b>2. Primary Surface Water Receivers</b>								
Without Mitigation	Site	<b>Negligible</b>	Long-Term	High	Definite	<b>Negligible</b>	-Ve	High

BASIC ASSESSMENT REPORT

With Mitigation	Local	<b>Negligible</b>	Long-Term	Medium	Definite	<b>Negligible</b>	-Ve	High
<b>3. Perched Water Table</b>								
Without Mitigation	Local	<b>Negligible</b>	Long-Term	High	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Medium	Definite	<b>Negligible</b>	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation measures:</b>								
Land remains altered and natural precipitation percolates into the soil or runs off as surface flow.								
<b>IMPACT :</b>		<b>Construction Phase:</b>						
<b>Pedohydrological</b>		<ul style="list-style-type: none"> <li>○ No site preparation, and contractor laydown areas.</li> <li>○ No disturbing of the vadose zone.</li> <li>○ No placement of soils, or soil compaction.</li> <li>○ No soil &amp; surface water contamination and sedimentation</li> </ul> <p>No erosion and sedimentation of watercourses from open excavations</p> <p>No alteration of natural drainage lines</p> <p>No vegetation loss to decrease soil infiltration and increase runoff.</p>						
<b>During Construction:</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>RATING</b>	<b>Confidence</b>

BASIC ASSESSMENT REPORT

<b>Soil interflow processes: Unaltered site</b>								
Without Mitigation	Site	<b>Negligible</b>	Medium-Term	Low	Definite	<b>Negligible</b>	Neutral	Medium
With Mitigation	Site	<b>Negligible</b>	Medium-Term	Negligible	Probable	<b>Negligible</b>	-Ve	Medium
<b>Vadose zone remains unaffected</b>								
Without Mitigation	Site	<b>Negligible</b>	Medium-Term	Low	Definite	<b>Negligible</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Medium-Term	Negligible	Probable	<b>Negligible</b>	-Ve	Medium
<b>No vegetation clearing &amp; soil stockpiling.</b>								
Without Mitigation	Site	<b>Negligible</b>	Medium-Term	Low	Definite	<b>Negligible</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Medium-Term	Medium	Definite	<b>Negligible</b>	-Ve	Medium
<b>No seepage/leakages/overland flow from the sewer lines to cause soil degradation</b>								
Without Mitigation	Site	<b>Negligible</b>	Medium-Term	Low	Definite	<b>Negligible</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Medium-Term	Medium	Definite	<b>Negligible</b>	-Ve	Medium
<b>No surface water contamination and sedimentation.</b>								
Without Mitigation	Site	<b>Negligible</b>	Medium-Term	Low	Definite	<b>Negligible</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Medium-Term	Negligible	Definite	<b>Negligible</b>	-Ve	Medium
<b>No dewatering of perched groundwater</b>								

BASIC ASSESSMENT REPORT

Without Mitigation	Site	<b>Negligible</b>	Medium-Term	Low	Definite	<b>Negligible</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Medium-Term	Negligible	Definite	<b>Negligible</b>	-Ve	Medium
<b>Operational phase</b>								
<b>Vadose zone soils: No seepage and runoff from vehicles parked at the site</b>								
Without Mitigation	Site	<b>Negligible</b>	Long-Term	Low	Probable	<b>Negligible</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Long-Term	Negligible	Probable	<b>Negligible</b>	-Ve	Medium
<b>Soil interflow processes:</b>								
<ul style="list-style-type: none"> <li>○ <b>Remains unaltered</b></li> </ul>								
Without Mitigation	Site	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Long-Term	Negligible	Probable	<b>Negligible</b>	-Ve	Medium
<b>No areas are backfilled with collapsible soils and no water leakages from the stormwater system or sewer leakages</b>								
Without Mitigation	Site	<b>Negligible</b>	Long-Term	Negligible	Definite	<b>Negligible</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Long-Term	Negligible	Probable	<b>Negligible</b>	-Ve	Medium
<b>Stormwater runoff:</b>								
<ul style="list-style-type: none"> <li>• Natural runoff and soil infiltration</li> </ul>								
Without Mitigation	Site	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	Medium

BASIC ASSESSMENT REPORT

With Mitigation	Site	<b>Negligible</b>	Long-Term	Negligible	Definite	<b>Negligible</b>	-Ve	Medium
<b>No sewer lines: No seepage into the subsoils from sewer lines</b>								
Without Mitigation	Site	<b>Negligible</b>	Long-Term	Negligible	Definite	<b>Negligible</b>	-Ve	Medium
With Mitigation	Site	<b>Negligible</b>	Long-Term	Negligible	Definite	<b>Negligible</b>	-Ve	Medium
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measure/s:</b>								
<ul style="list-style-type: none"> <li>• Maintain natural vegetation cover intact.</li> <li>• Manage natural drainage flows</li> </ul> Prevent erosion								
<b>IMPACT Wetland Construction Phase</b>								
<b>Wetland habitat remain unaltered</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
<b>Hydrological and geomorphological processes remains unaltered</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High



BASIC ASSESSMENT REPORT

With Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
<b>Water quality remains unaltered</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
<b>Ecological connectivity and/or ecological integrity impacts</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
<b>Wetland - Operational phase impacts</b>								
<b>Wetland habitat remains natural and healthy</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
<b>Hydrological and geomorphological processes</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>

BASIC ASSESSMENT REPORT

Without Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
<b>Water quality remains natural</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
<b>Ecological connectivity and/or ecological integrity</b>								
<b>STATUS</b>	<b>Extent</b>	<b>Intensity</b>	<b>Duration</b>	<b>Consequence</b>	<b>Probability</b>	<b>Significance</b>	<b>Status</b>	<b>Confidence</b>
Without Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
With Mitigation	Local	<b>Negligible</b>	Long-Term	Low	Definite	<b>Negligible</b>	-Ve	High
<b>Reversibility</b>	Reversible	<b>Irreplaceable Loss of Resources</b>			No	<b>Fatal Flaw</b>	No	
<b>Mitigation Measures:</b> <ul style="list-style-type: none"> <li>• Maintain natural inflow into the wetland.</li> <li>• Ensure there is no active erosion..</li> <li>• Avoid impacts on the wetland</li> </ul>					<ul style="list-style-type: none"> <li>• Maintain the wetland buffer</li> <li>• Maintain wetland vegetation intact</li> </ul>			

**SECTION E. RECOMMENDATION OF PRACTITIONER**

Is the information contained in this report and the documentation attached hereto sufficient to decide in respect of the activity applied for (in the view of the environmental assessment practitioner)?

<b>YES</b>	<b>NO</b>
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If “NO”, indicate the aspects that should be assessed further as part of a Scoping and EIA process before a decision can be made (list the aspects that require further assessment).

If “YES”, please list any recommended conditions, including mitigation measures that should be considered for inclusion in any authorisation that may be granted by the competent authority in respect of the application.

The specialist studies conducted and the impact assessment indicates the impacts are moderate or less. Impacts can be mitigated. The developer is responsible to ensure the contractor must implement the recommendations of the specialists and recorded in the EMPr.

Topsoil cleared from the construction site must be stockpiled for use of rehabilitation and landscaping of common open space between development units.

Is an EMPr attached? The EMPr must be attached as Appendix F.

<b>YES</b>	
------------	--

If any specialist reports were used during the compilation of this BAR, please attach the declaration of interest for each specialist in Appendix D.

Any other information relevant to this application and not previously included must be attached in Appendix G.

**REFERENCES:**

Department of Environmental Affairs, 2017 Draft National Biodiversity Offset Policy: National Environmental Management Act (107/1998): No. 276 31 March 2017, Government Gazette, 31 March 2017, No. 40733, Pretoria

Development Planning and Finance Departments, 2021. Abaqulusi Local Municipality Final 2022/2023 – 2026/2027 Integrated Development Plan. Vryheid

Mucina, Ladislav & Hoare, D.B. & Lötter, M.C. & Preez, J. & Rutherford, M.C. & Scott-Shaw, C.R. & Bredenkamp, G.J. & Powrie, Leslie & Scott, Louis & Camp, K.G.T. & Bezuidenhout, Hugo & Mostert, T.H. & Siebert, Stefan & Winter, Pieter & Burrows, J.E. & Dobson, L. & Ward, R.A. & Stalmans, Marc & Seleteng Kose, Lerato. (2006). Grassland biome. *Strelitzia*. 19. 348-437.

Office of the Municipal Manager, 2022. Zululand District Municipality Draft Integrated Development Plan 2022-2026 2022/2023 Cycle. Ulundi

South African Biodiversity Institute and Department of Water and Sanitation, 2016. Wetland Offsets: A Best practice Guideline for South Africa. WRC Report No. TT 660/16, Pretoria

**SECTION F: APPENDIXES**

The following appendixes must be attached as appropriate:

Appendix A: Site plan(s)

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Specialist reports

Appendix E: Public Participation & Comments and responses report

Appendix F: Draft Environmental Management Programme (EMPr)

Appendix G: Other information

**APPENDIX A:  
SITE PLAN(S)**

## **LOCALITY PLAN**



Figure 11: The Princess Mkhabayi City Site Location Plan

## **SITE LAYOUT ROUTE PLAN**



BASIC ASSESSMENT REPORT



Figure 12: Princess Makabayan City Site Sensitivity Map

## **SITE SENSITIVITY PLAN**

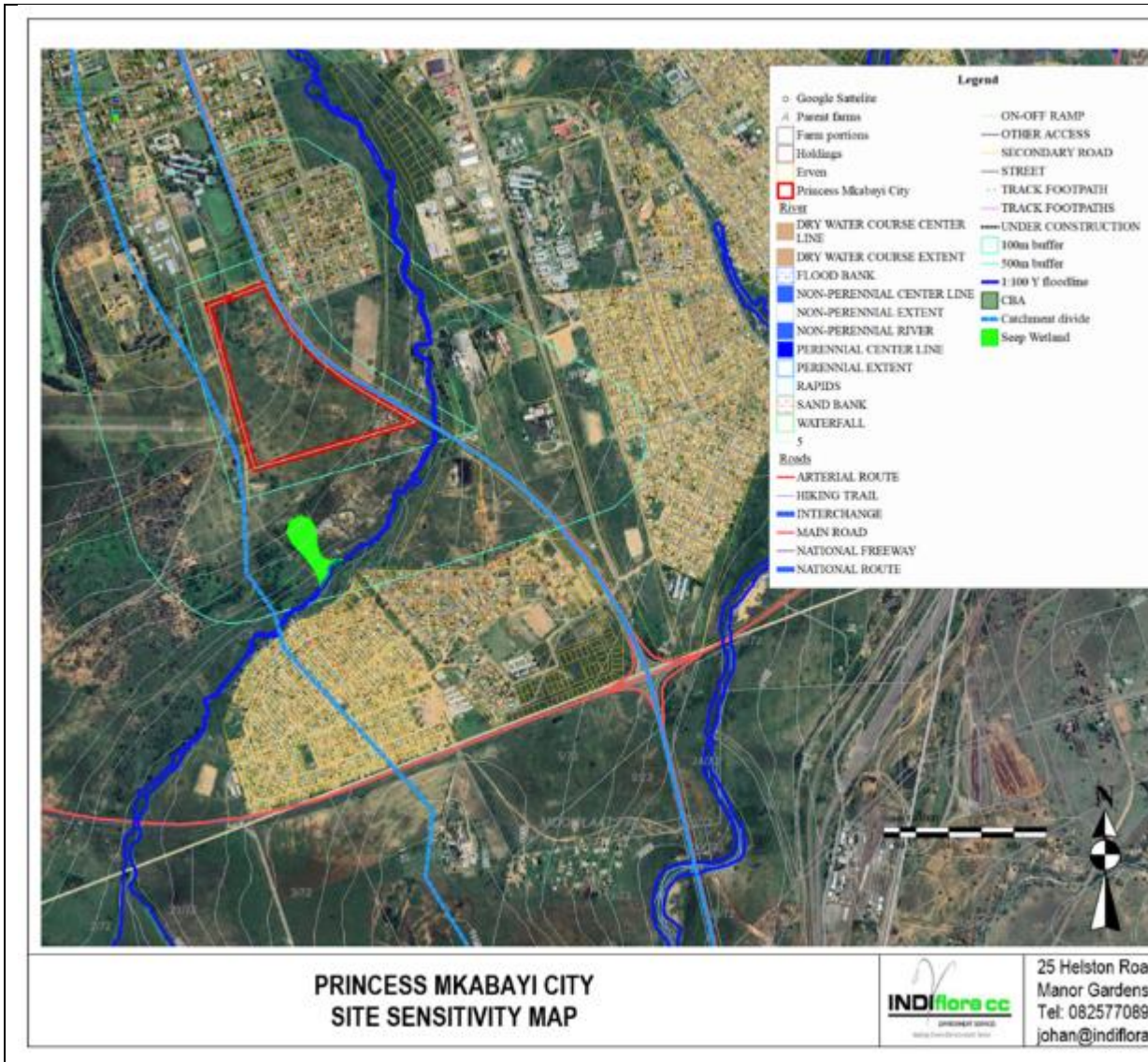


Figure 13: Princess Mkhabyi City Site Sensitivity Map

**BIODIVERSITY MAP**



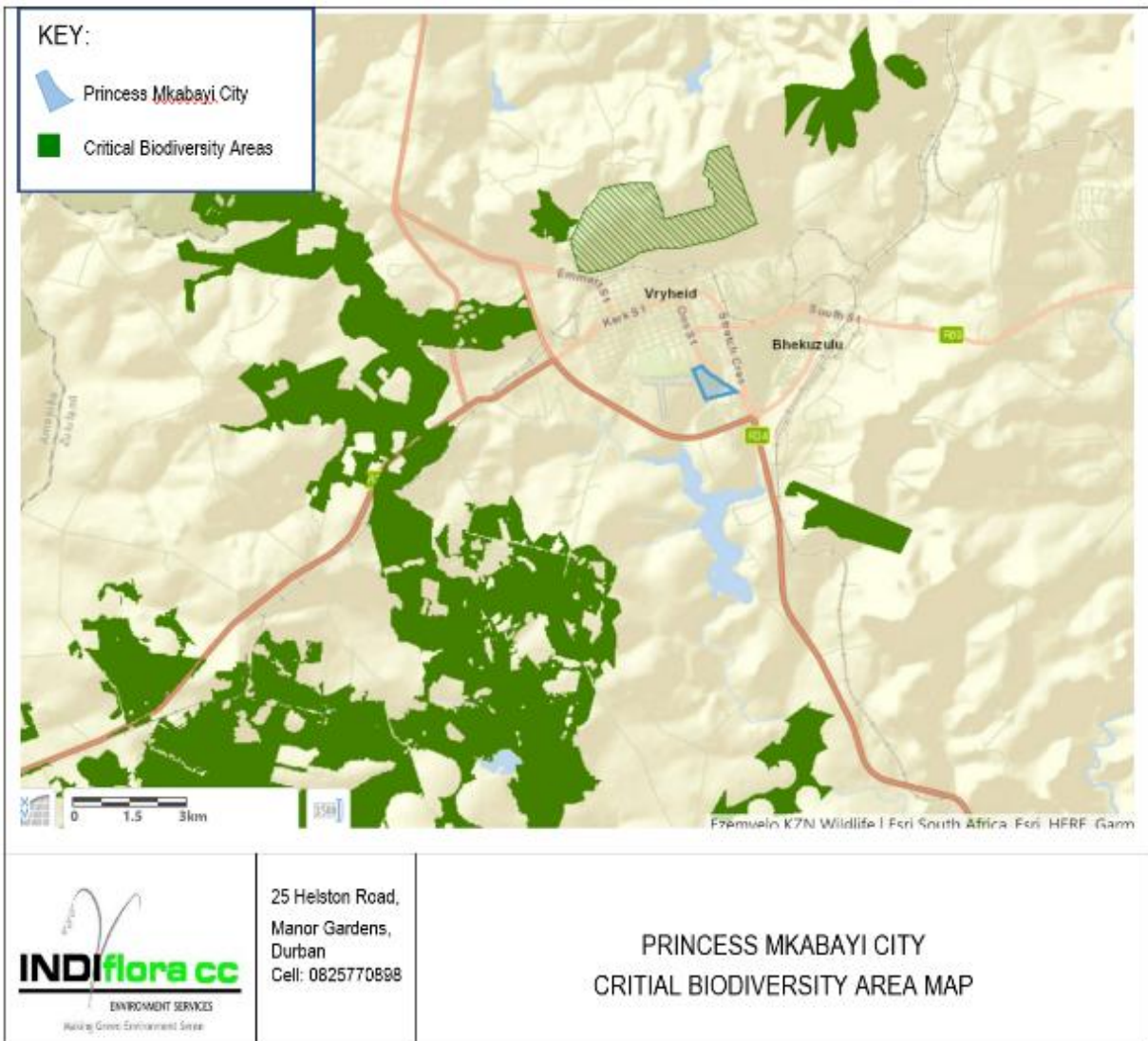


Figure 11: Critical Biodiversity Area Map

**PREFERRED LAYOUT PLAN FOR  
PRINCESS MKABAYI CITY**

# BASIC ASSESSMENT REPORT

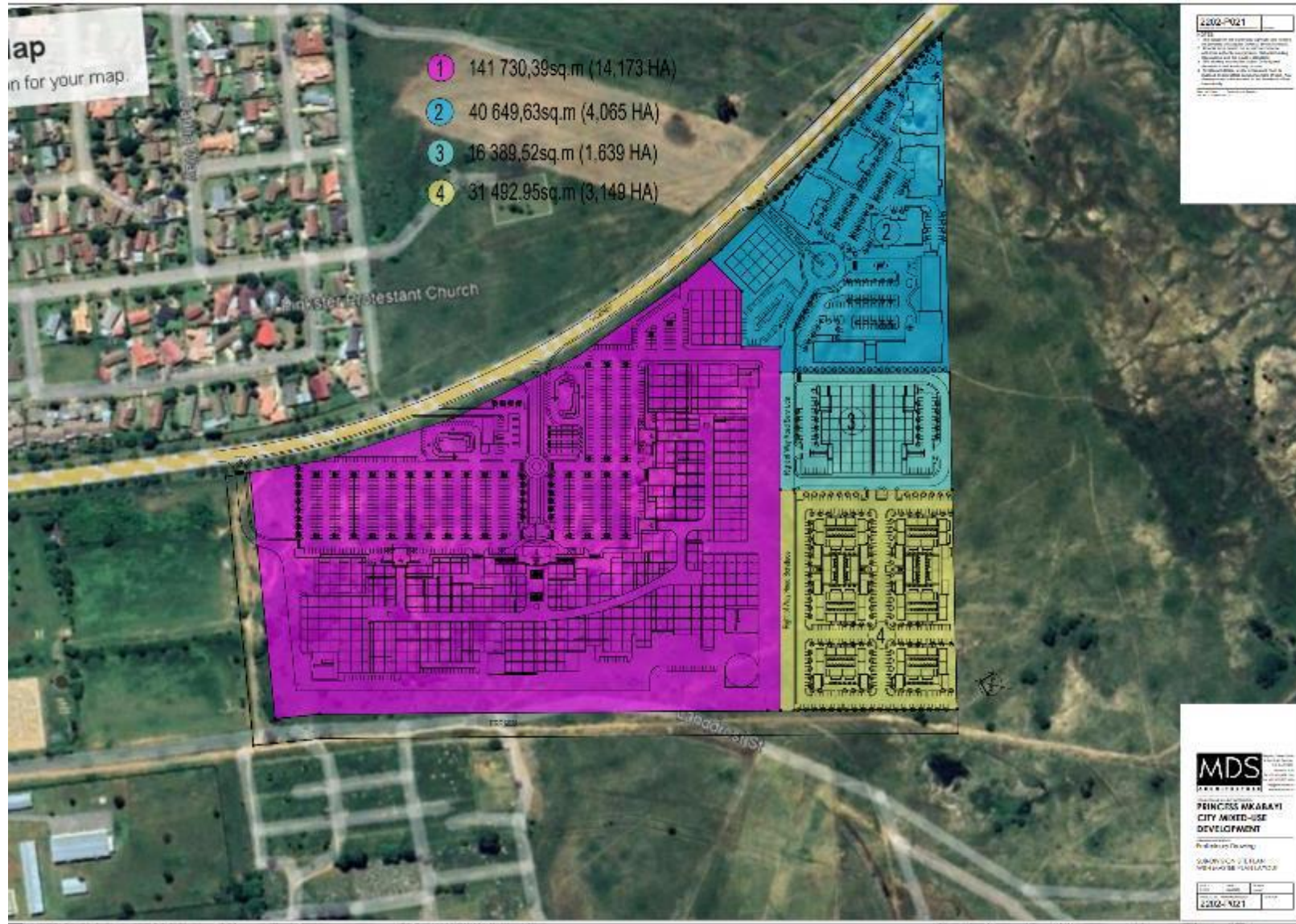


Figure 14: The Princess Mkabayi City Mall development Layout Plan

**THE ALTERNATIVE MALL DEVELOPMENT  
LAYOUT PLAN**



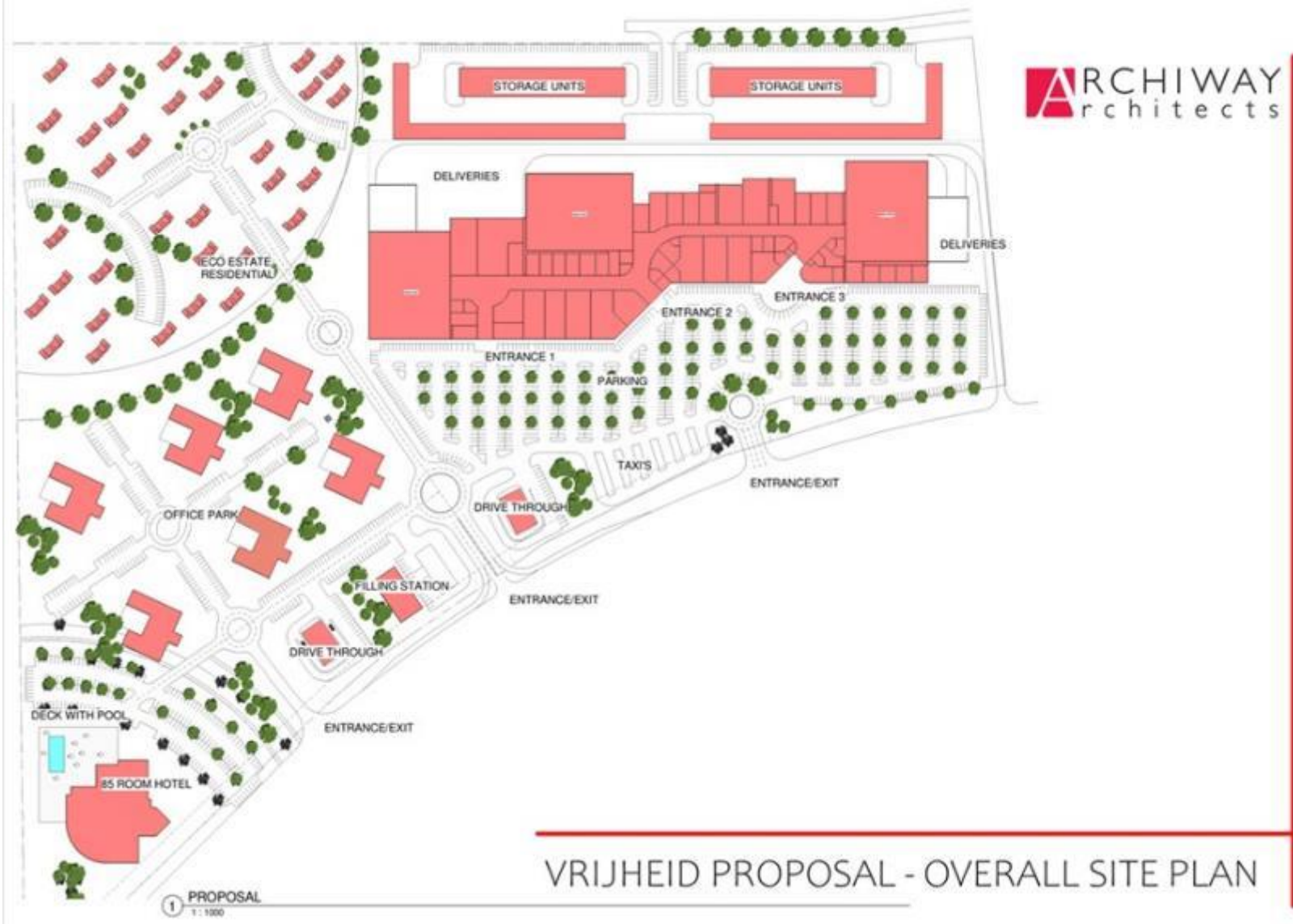


Figure 15: The Alternative Mall Site Layout Plan

**APPENDIX B  
SITE PHOTOGRAPHS**



: Plate 1: Taken from the site centre looking north towards the Pionier High School



Plate 2: Taken from the site centre looking north-east



Plate 3: Taken from the site centre looking east towards the R34 Oos Street



Plate 4: Taken from the site centre looking south-east towards the R34 leaving town





Plate 5: Taken from the site centre looking due south



Plate 6:: Taken from the site centre looking south-west



Plate 7: Taken from the site centre looking west towards the Vryheid airport



Plate 8: Taken from the site centre looking north-west towards the cemetery.

**APPENDIX C:  
FACILITY ILLUSTRATION(S)**

**IMAGES OF THE MALL TO BE INSERTED HERE**



**APPENDIX D:  
SPECIALIST REPORTS**

## **WETLAND ASSESSMENT**

## **VEGETATION ASSESSMENT**

**CIVIL ENGINEERING REPORT AND  
STORMWATER MANAGEMENT PLAN**



**CIVIL ENGINEERING  
GEO-TECHNICAL ASSESSMENT**

**CIVIL ENGINEERING  
METHOD STATEMENT**

## **HERITAGE ASSESSMENT**



## **HYDROPEDOLOGICAL ASSESSMENT**

## **TRAFFIC IMPACT ASSESSMENT**

## **AVIATION IMPACT ASSESSMENT**

**APPENDIX E:  
PUBLIC PARTICIPATION &  
COMMENTS AND RESPONSES REPORT**

## **NEWSPAPER ADVERT**

The advert in the Vryheid Herald on

Friday July 22, 2022

Vryheid Herald | 7



higher education & training
Department of Higher Education and Training
REPUBLIC OF SOUTH AFRICA
Mthashana College
Department of Higher Education and Training
REPUBLIC OF SOUTH AFRICA

POST: EXAMINATION OFFICER
Reference No: MTC62022
Section: Academic and Student Administration Support Services

SALARY: R261 372 per annum (Level 7)
CENTRE: Ngqena Campus, Ngqena

REQUIREMENTS: A recognised National Diploma (NQF 6) in Education / Administration or equivalent qualification. 1 - 2 years in the examination services / Teaching and Learning environment / related field. Knowledge of White Paper on PSET Act. Knowledge of the Public TVET sector and its regulatory and legislative framework. Knowledge and understanding of the Higher Education sector. Knowledge and understanding of COLTECH system, TVETMES, and ITS. Knowledge of practice roles, national, provincial policy frameworks relevant to Education, Training and Development. Knowledge of Skills Development Act, Public Service Act and Public Service Regulations, Labour Relations Act. Skills: Administrative, planning and organising, financial management, report writing, communication and interpersonal, problem solving, computer literacy, analytical, client oriented, project management, team leadership, people management. Values/Attitudes: Client service focus, integrity, committed, proactive, loyal, ethics. DUTIES: Coordinating internal and external examination assessment services. Coordinating and conducting training of invigilators, Markers and Data Capturers. Facilitating examination and irregularity Committee for the campus and serving as a Scribe. Processing application and issuing of certificates services. Providing administrative support for the examination unit. Supervising staff.

ENQUIRIES: Mr DP Zulu (054 271 1954)

POST: EXAMINATION OFFICER
Reference No: MTC42022
Section: Academic and Student Administration Support Services

SALARY: R261 372 per annum (Level 7)
CENTRE: Vryheid Campus, Vryheid

REQUIREMENTS: A recognised National Diploma (NQF 6) in Education / Administration or equivalent qualification. 1 - 2 years in the examination services / Teaching and Learning environment / related field. Knowledge of White Paper on PSET Act. Knowledge of the Public TVET sector and its regulatory and legislative framework. Knowledge and understanding of the Higher Education sector. Knowledge and understanding of COLTECH system, TVETMES, and ITS. Knowledge of practice roles, national, provincial policy frameworks relevant to Education, Training and Development. Knowledge of Skills Development Act, Public Service Act and Public Service Regulations, Labour Relations Act. Skills: Administrative, planning and organising, financial management, report writing, communication and interpersonal, problem solving, computer literacy, analytical, client oriented, project management, team leadership, people management. Values/Attitudes: Client service focus, integrity, committed, proactive, loyal, ethics. DUTIES: Coordinating internal and external examination assessment services. Coordinating and conducting training of invigilators, Markers and Data Capturers. Facilitating examination and irregularity Committee for the campus and serving as a Scribe. Processing application and issuing of certificates services. Providing administrative support for the examination unit. Supervising staff.

ENQUIRIES: Mr Y Bhekhisa (034 588 9116)

POST: STUDENT SUPPORT (LIAISON OFFICER)
Reference No: MTC62022
Section: Academic and Student Administration Support Services

SALARY: R261 372 per annum (Level 7)
CENTRE: KwaGqokwe Campus, Nongoma

REQUIREMENTS: A recognised National Diploma / Degree in Social Science / Psychology / Education or equivalent relevant qualification. 2 - 3 years' experience in student support services (Education/Teaching and Learning environment) or related field. Proven knowledge of Public Sector. Knowledge of TVET environment. Proven knowledge of Psychology practice. Teaching background. Public Service legislative framework such as Public Service Act, Public Service Regulations, PFMA, Treasury Regulations, SASSA Policy principles. Skills: Interpersonal relations, problem solving, programme and project management, analytical skills, usability communication skills, computer skills, delegation and development of others, planning, organising and execution, language proficiency, listening skills, insight, report writing skills, administrative skills. Personal attributes: Good interpersonal relations, ability to work under pressure, honesty, trustworthiness, innovative and creative, independent thinker, ability to work in a team and independently, student liaison services at the Campus. Ensuring that there is continuous awareness and level of knowledge in HIV/AIDS to students. Ensuring that the Student Representative Council is fully functional at the campus. Coordinate Academic Support activities. Render disability support to all students. Coordinate all sports and culture activities. Facilitate all extra-curricular activities at the campus. Addressing socio-economic student matters appropriately including substance and other relevant matters. Promoting regular attendance of students and monitoring the attendance register.

ENQUIRIES: Mr TV Mtshahla (025 531 3202)

Vacancies



POST: STUDENT SUPPORT (LIAISON OFFICER)
Reference No: MTC62022
Section: Academic and Student Administration Support Services

SALARY: R261 372 per annum (Level 7)
CENTRE: Nongoma Campus, Nongoma

REQUIREMENTS: A recognised National Diploma / Degree in Social Science / Psychology / Education or equivalent relevant qualification. 2 - 3 years' experience in student support services (Education/Teaching and Learning environment) or related field. Proven knowledge of Public Sector. Knowledge of TVET environment. Proven knowledge of Psychology practice. Teaching background. Public Service legislative framework such as Public Service Act, Public Service Regulations, PFMA, Treasury Regulations, SASSA Policy principles. Skills: Interpersonal relations, problem solving, programme and project management, analytical skills, usability communication skills, computer skills, delegation and development of others, planning, organising and execution, language proficiency, listening skills, insight, report writing skills, administrative skills. Personal attributes: Good interpersonal relations, ability to work under pressure, honesty, trustworthiness, innovative and creative, independent thinker, ability to work in a team and independently, student liaison services at the Campus. Ensuring that there is continuous awareness and level of knowledge in HIV/AIDS to students. Ensuring that the Student Representative Council is fully functional at the campus. Coordinate Academic Support activities. Render disability support to all students. Coordinate all sports and culture activities. Facilitate all extra-curricular activities at the campus. Addressing socio-economic student matters appropriately including substance and other relevant matters. Promoting regular attendance of students and monitoring the attendance register.

ENQUIRIES: Mr TV Mtshahla (025 531 3202)

POST: FINANCIAL AID (BURSARY) OFFICER
Reference No: MTC72022
Section: Academic and Student Administration Support Services

SALARY: R261 372 per annum (Level 7)
CENTRE: KwaGqokwe Campus, Nongoma

REQUIREMENTS: A recognised National Diploma / Degree in Financial Management (NQF level 5) or equivalent qualification. 1 - 2 years' experience in financial environment / bursary environment. Knowledge of CET and PSET. Knowledge of PSA and PBR, 2016. Knowledge of PFMA and Departmental policies. Knowledge of Coltech. Basic knowledge of practice as well as the ability to capture data, operate computer and create financial statements. Basic knowledge of the Public Service financial regulations, procedures and Treasury Regulations (PFMA, DORA, PSA, PSR, PPFPA, Financial Manual). Knowledge of basic financial operating systems (TFS, etc.). Skills: Computer skills, planning and organising, language, good verbal and written communication, basic numerical skills, ability to perform routine tasks, ability to operate office equipment, flexibility, interpersonal relations, accuracy, initiative of office. DUTIES: Coordinating student bursary schemes and financial aid administrative support services at the campus. Administering the bursary and financial aid schemes application processes for the campus in line with NSFAS guidelines, under MDUSA and policies. Processing application for financial aid. Analyzing NSFAS provisionally funded students. Coordinating the authorization of disbursement funds. Facilitating of other financial schemes i.e. SFRSSTA, HWYSTA, etc. Reporting on all bursary and financial aid applications to financial aid committee and other stakeholders. Supervising staff.

ENQUIRIES: Mr TV Mtshahla (025 531 3202)

POST: ADMINISTRATION CLERK
Reference No: MTC62022
Section: General Administration Support

SALARY: R175 310 per annum (Level 5)
CENTRE: KwaGqokwe Campus, Nongoma

REQUIREMENTS: A Grade 12 certificate or equivalent qualification. 1 - 2 years' experience in Clerical / Administrative environment. Knowledge: Clerical duties, ability to capture data, operating computer, receiving statistical information, framework governing the Public Service. Knowledge of procedures in terms of the working environment. Skills: Planning and organising, good verbal and written communication, computer. DUTIES: Rendering general clerical support services. Providing supply chain clerical support services within the component. Providing financial administration clerical support services within the component. Providing financial administration support services to the component.

ENQUIRIES: Mr TV Mtshahla (025 531 3202)

ESTATE NOTICE
MASTER'S REFERENCE NO:
3750/2021/PMB

IN THE TESTATE ESTATE OF THE LATE
COREEN FIKILE MDLALOSE, IDENTITY
NUMBER 610526 0269 08 6, WHO WAS
MARRIED IN COMMUNITY OF PROPERTY
TO RICHMAN TAMSANQA MDLALOSE,
IDENTITY NUMBER 982611 8826 08 6, WHO
RESIDED AT 29 BIRCH STREET, VRYHEID,
KWAZULU-NATAL AND WHO DIED ON 23
FEBRUARY 2021.

Pursuant to the Provisions of Section 35(5)
of Act 60 of 1965, notice is hereby given that
the First and Final Liquidation and Distribution
Account will be open for inspection by all
interested persons at the Office of the
Master of the KwaZulu-Natal High Court,
PIETERMARITZBURG and the Magistrate at
VRYHEID for a period of 21 (TWENTY ONE)
days from date of publication hereof.
If no objection is lodged with the Master of the
High Court within the period, the Executor will
distribute accordingly.

COX & PARTNERS
Agent for Executor
Standard Bank Building
Cnr Mark and Hoog Streets
PO Box 5
VRYHEID 3100
(REF: EA ADENDORFF/06M001321)

In the high court of Pietermaritzburg
Heid at Pietermaritzburg
In the matter between:
Neil Butson (Liquidator)
Execution creditor and
Jan De Lange
Execution debtor

In Pursuance of a Judgment in the
Pietermaritzburg High Court and Writ of
Execution in the goods, alternatively the right
title and interest in and to the goods listed
hereunder, will be sold in execution on
Thursday 4 August 2022 at 10.00 at 150
Landrost street, Vryheid
To the highest bidder:
340L Detroit compressor
Bunch of corrugated steel
Granite slabs
Lot of cement slabs
Hyundai H1100 white NV37135
5 x Desks
Steel draw cabinet
4 x steel lockers
Rayoli lawn mower
Steel ladder
Wheel harrow
5 Speed bench drill press
Nikka drill(blue)
Yellow stanley drill
Nikka drill
Black & decker drill
Rotary hammer drill
Granite tops, side stands
Brown wooden table
Chairs
The Sheriff for Vryheid shall conduct the sale
with auctioneer Shaven Lantz. Advertising costs
at current publication rates and sale costs
according to court rules, apply
Signed at Vryheid on 15 July 2022

Ikhemiso Sesico 345Gunguwa SIZEMVELO genethuko okongawayo
Leni lesiiso noma ikhemiso ezilalayo leziho zingawawo okwazi ukubhalelwa eMqungqeni sezizulu
Thuthulane koMthetho, ezizukulwana nomaWaka, KwaZulu-Natal ngokweSizaba esithetheko. Okubizwa kuthi
ke ezizukulwana ezinobulungani lomthetho 107 ka-1998 (NEMA) njengoko bithethwe, kusazwa ukuba izimari R225
ingawo ka -45, ne - GMR26 ne - Regulation 21, ka - 7 April 2017, yentuthuko okongawawo.

Imininingwane yezintetho
Umbutho: Princess Mubayi (Pty) Ltd, ulunguza ekuthethukeni PRINCESS MKABAYI CBY, vRYHEID
(SIF 4078); Kuzobekelwa:
1. I - mall yefufofane (79 200m2),
2. Aringumbi okutakisa omoto (8150m2),
3. Ipathe lokugcina imininingwane (12 730m2),
4. Ifrithola ka-casino (14 600m2),
5. I-motel okufika esithuthubaneni nezindlu ezininziye (52 000m2),
6. Ipathe lokufika ka-Aringumbi OMI hooded Wood - Abaqulqi (31 500m2),
7. Ukusetyenziswa ngokubanzi komatshini wokucutshya imibhobo (12 300m2),
8. Indawo ezobekelwa ukuthatha i-pathe thabeholwe ngokuthatho esizaba.
Iinkcubo Zingawawo
Injongo yengawawo ye - EA Isukela kuba bonke abaninzi baka imibutho eNingeni (BAP) ihlala kuba khona
ingawawo - BAP okubizwa kuthi kuzobizwa ngokuba mayelana namama yingawawo imibutho eNingeni khona
kuzoba nokuba inokuba okongawawo ingawawo ngayo.
Ikhemiso Sokulungawawo
Bonke abaninzi baka bayaminyaka okuba bazi ulungu njengabandakanyisi nababizwa. Thuthulane
ingawawo imininingwane yetho yezizukulwana noma yezizukulwana noma yezizukulwana noma yezizukulwana
ezinobulungani lomthetho 107 ka-1998 (NEMA) njengoko bithethwe, kusazwa ukuba izimari R225
ingawawo ka -45, ne - GMR26 ne - Regulation 21, ka - 7 April 2017, yentuthuko okongawawo.

Notice of an application for ENVIRONMENT
Authorisation
Notice is hereby given of an application for environmental authorization, to the KwaZulu-Natal Department of
Economic Development, Tourism and Environmental Affairs, in terms of the National Environmental manage
ment Act, (Act 107 of 1989 (NEMA) as amended, in Government Notice R25 Section 15, and GMR26, dated
7 April 2017, of a proposed development.
Project details:
The developer Princess Mubayi (Pty) Ltd, is proposing to develop the PRINCESS MKABAYI CBY on
SIF 4078 VRYHEID. It will comprise of:
• a regional mall (78,200m²),
• a motor show room (8330m²),
• a logistics park (12,750m²),
• a hotel & casino (14,600m²),
• a free standing residential flats and high density apartments (52,000m²),
• an office park & Abaqulqi Council chambers (31,500m²),
• a drive through motor retail show room (12,300m²) and
• land to be set aside for a future petrol station.
Aim of the Process
The aim of the EA process is to provide all interested and affected parties (I&APs), opportunity to register as
I&APs and to make representations regarding any potential impacts (both positive and negative) the
proposed development may have.
Invitation to Participate
To register as an interested and/or affected party, please submit your name, contact information and interest
in the matter to the Environmental Assessment Practitioner (EAP), Johan Bodensta - 082570889, email
johan@edfara.co.za or info@edfara.co.za.

Plate 9: Newspaper advert tear-sheet for 22 July 2022

<p style="text-align: center;"><b>Isimemezelo Sesicelo SeSigunyazo SEZEMVELO gentuthuko ehlongozwayo</b></p> <p>Lesi isaziso noma isimemezelo esinikeza isicelo sesigunyazo sezemvelo esibhekiswe eMnyangweni wezoku-Thuthukiswa koMnotho, ezokuVakasha nezeMvelo, KwaZulu-Natal ngokweSigaba soMthetho Wokulawulwa Kwezemvelo Kuzwelonke (umthetho 107 ka-1998) (NEMA) njengoba ishintshwe, kwisaziso sikaHulumeni R325 ingxenyane ka -15, ne - GNR326 ne - Regulation 21, ka - 7 April 2017, yentuthuko ehlongozwayo.</p> <p><b>Imininingwane yeprojekthi:</b> Umthuthukisi, Princess Mkabayi (Pty) Ltd, uhlongoza ukuthuthukisa <b>PRINCESS MKABAYI CITY</b>, eVRYHEID (ERF 6018). Kuzobandakanya:</p> <ol style="list-style-type: none"> <li>1. I - mall yesifunda (79 200m<sup>2</sup>),</li> <li>2. Amagumbi okubukisa izimoto (6350m<sup>2</sup>),</li> <li>3. Ipaki lokugcina imininingwane (12 750m<sup>2</sup>),</li> <li>4. Ihotel &amp; casino (14 600m<sup>2</sup>),</li> <li>5. Izindlu zokuhlala ezikhululekile nezindlu eziminyene (52 000m<sup>2</sup>),</li> <li>6. Ipaki lasehhovisi &amp; Amagumbi OMkhandlu Wase - Abaqulusi (31 500m<sup>2</sup>),</li> <li>7. Ukushayela udlule egumbini lombukiso wokudayisa imihlobiso (12 300m<sup>2</sup>),</li> <li>8. Indawo ezobekelwa ukwakha igalaji likaphethiloli ngesikhathi esizayo.</li> </ol> <p><b>Inhloso Yengqubo</b> Injongo yengqubo ye - EIA iwukunikeza bonke abanentshisekelo nabathintekayo (I&amp;AP) ithuba lokubhalisa njenge - I&amp;AP's ukuze bathole ithuba lokwenza izethulo mayelana nanoma yimiphi imithelela engaba khona (okuhle nokubi) intuthuko ehlongozwayo ingase ibe nayo.</p> <p><b>Isimemo Sokuhlanganyela</b> Bonke abanentshisekelo bayamenywa ukuba babhalise njengeBanomdlandla Nabathintekayo. Thumela igama lakho nemininingwane yakho yokukhuman bese uphakamisa noma yiziphi izinkinga noma izinto ezikhathazayo zemvelo mayelana nale phrojekthi, sicela uthinte: U-Johan Bodenstein (EAP), ucingo: 0825770889, imeyili: johan@indiflora.co.za noma indifloracc@gmail.com</p>	<p style="text-align: center;"><b>Notice of an application for ENVIRONMENT AUTHORISATION</b></p> <p>Notice is hereby given of an application for environmental authorization, to the KwaZulu-Natal Department of Economic Development Tourism and Environment Affairs, in terms of the National Environmental management Act, (Act 107 of 1998) (NEMA) as amended, in Government Notices R325 Section 15, and GNR326, dated 7 April 2017, of a proposed development.</p> <p><b>Project details:</b> The developer, Princess Mkabayi (Pty) Ltd, is proposing to develop the <b>PRINCESS MKABAYI CITY</b> on ERF 6018 VRYHEID. It will comprise of:</p> <ul style="list-style-type: none"> <li>- a regional mall (79,200m<sup>2</sup>),</li> <li>- motor show rooms (6350m<sup>2</sup>),</li> <li>- a logistics park (12,750m<sup>2</sup>),</li> <li>- a hotel &amp; casino (14,600m<sup>2</sup>),</li> <li>- free standing residential units and high density apartments (52,000m<sup>2</sup>),</li> <li>- an office park &amp; Abaqulusi Council chambers (31,500m<sup>2</sup>),</li> <li>- a drive through décor retail show room (12,300m<sup>2</sup>) and</li> <li>- land to be set aside for a future petrol station.</li> </ul> <p><b>Aim of the Process</b> The aim of the EIA process is to provide all interested and affected parties (I&amp;AP's), opportunity to register as I&amp;AP's and to make representations regarding any potential impacts (both positive and negative) the proposed development may have.</p> <p><b>Invitation to Participate</b> To register as an interested and/or affected party, please submit your name, contact information and interest in the matter to the Environment Assessment Practitioner (EAP): Johan Bodenstein – 0825770889, email: johan@indiflora.co.za or indifloracc@gmail.com</p>
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Plate 10: Close-up of the newspaper advert

## **SITE NOTICE**



The Site notice in English

**NOTICE OF AN APPLICATION FOR ENVIRONMENT  
AUTHORISATION**

Notice is hereby given of an application for environmental authorization, to the KwaZulu-Natal Department of Economic Development Tourism and Environment Affairs, in terms of the National Environmental management Act, (Act 107 of 1998) (NEMA) as amended, in Government Notices R325 Section 27, and GNR326 and Regulation 21, dated 7 April 2017, of a proposed development.

**Project details:**

The developer, Princess Mkabayi (Pty) Ltd, is proposing to develop the **PRINCESS MKABAYI CITY** on ERF 6018 VRYHEID. It will comprise of:

- a regional mall (79,200m<sup>2</sup>),
- motor show rooms (6350m<sup>2</sup>),
- a logistics park (12,750m<sup>2</sup>),
- a hotel & casino (14,600m<sup>2</sup>),
- free standing residential units and high density apartments (52,000m<sup>2</sup>),
- an office park & Abaqulusi Council chambers (31,500m<sup>2</sup>),
- a drive through décor retail show room (12,300m<sup>2</sup>) and
- land to be set aside for a future petrol station.

**Aim of the Process**

The aim of the EIA process is to provide all interested and affected parties (I&AP's), opportunity to register as I&AP's and to make representations regarding any potential impacts (both positive and negative) the proposed development may have.

**Invitation to Participate**

To register as an interested and/or affected party, please submit your name, contact information and interest in the matter to the Environment Assessment Practitioner (EAP): Johan Bodenstein – 0825770889, email: [joan@indiflora.co.za](mailto:joan@indiflora.co.za) or [indifloracc@gmail.com](mailto:indifloracc@gmail.com)



The Site Notice in isiZulu

## ISIMEMEZELO SESICELO SESIGUNYAZO SEZEMVELO GENTUTHUKO EHLONGOZWAYO

Lesi isaziso noma isimemezelo esinikeza isicelo sesigunyazo sezemvelo esibhekiswe eMnyangweni wezokuThuthukiswa koMnotho, ezokuVakasha nezeMvelo, KwaZulu-Natal ngokweSigaba soMthetho Wokulawulwa Kwezemvelo Kuzwelonke (umthetho 107 ka-1998) (NEMA) njengoba ishintshwe, kwisaziso sikaHulumeni R325 ingxenye ka -27, ne - GNR326 ne - Regulation 21, ka - 7 April 2017, yentuthuko ehlongozwayo.

### Imininingwane yeprojekthi:

Umthuthukisi, Princess Mkabayi (Pty) Ltd, uhlongoza ukuthuthukisa **PRINCESS MKABAYI CITY**, eVRYHEID (ERF 6018). Kuzobandakanya:

1. I - mall yesifunda (79 200m<sup>2</sup>),
2. Amagumbi okubukisa izimoto (6350m<sup>2</sup>),
3. Ipaki lokugcina imininingwane (12 750m<sup>2</sup>),
4. Ihhotela & casino (14 600m<sup>2</sup>),
5. Izindlu zokuhlala ezikhululekile nezindlu eziminyene (52 000m<sup>2</sup>),
6. Ipaki lasehhovisi & Amagumbi OMkhandlu Wase - Abaqulusi (31 500m<sup>2</sup>),
7. Ukushayela udlule egumbini lombukiso wokudayisa imihlobiso (12 300m<sup>2</sup>),
8. Indawo ezobekelwa ukwakha igalaji likaphethiloli ngesikhathi esizayo.

### Inhloso Yenqubo

Injongo yenqubo ye - EIA iwukunikeza bonke abanentshisekelo nabathintekayo (I&AP) ithuba lokubhalisa njenge - I&AP's ukuze bathole ithuba lokwenza izethulo mayelana nanoma yimiphi imithelela engaba khona (okuhle nokubi) intuthuko ehlongozwayo ingase ibe nayo.

### Isimemo Sokuhlanganyela

Bonke abanentshisekelo bayamenywa ukuba babhalise njengeBanomdlandla Nabathintekayo. Thumela igama lakho nemininingwane yakho yokukhuman bese uphakamisa noma yiziphi izinkinga noma izinto ezikhathazayo zemvelo mayelana nale projekthi, sicela uthinte:

U-Johan Bodenstein (EAP), ucingo: 0825770889, imeyili: [joan@indiflora.co.za](mailto:joan@indiflora.co.za) noma [indifloracc@gmail.com](mailto:indifloracc@gmail.com)

Photos of the site notices erected at the



Plate 11: The site notice on Landrost Street





**NOTICE OF AN APPLICATION FOR ENVIRONMENT  
AUTHORISATION**

Notice is hereby given of an application for environmental authorization, to the KwaZulu-Natal Department of Economic Development Tourism and Environment Affairs, in terms of the National Environmental Management Act, (Act 107 of 1998) (NEMA) as amended, in Government Notices R325 Section 27, and GNR326 and Regulation 21, dated 7 April 2017, of a proposed development.

**Project details:**

The developer, Princess Mkabayi (Pty) Ltd, is proposing to develop the **PRINCESS MKABAYI CITY** on ERF 6018 VRYHEID. It will comprise of:

- a regional mall (79,200m<sup>2</sup>),
- motor show rooms (6350m<sup>2</sup>),
- a logistics park (12,750m<sup>2</sup>),
- a hotel & casino (14,600m<sup>2</sup>),
- free standing residential units and high density apartments (52,000m<sup>2</sup>),
- an office park & Abaqulusi Council chambers (31,500m<sup>2</sup>),
- a drive through décor retail show room (12,300m<sup>2</sup>) and
- land to be set aside for a future petrol station.

**Aim of the Process**

The aim of the EIA process is to provide all interested and affected parties (I&AP's), opportunity to register as I&AP's and to make representations regarding any potential impacts (both positive and negative) the proposed development may have.

**Invitation to Participate**

To register as an interested and/or affected party, please submit your name, contact information and interest in the matter to the Environment Assessment Practitioner (EAP): Johan Bodenstein – 0825770889, email: [johan@indiflora.co.za](mailto:johan@indiflora.co.za) or [indifloracc@gmail.com](mailto:indifloracc@gmail.com)



Plate 12: A close up of the site notice





Plate 13: Site notice erected on Oos Street

## **BACKGROUND INFORMATION DOCUMENT**

**Background Information Document**

**ENVIRONMENT IMPACT ASSESSMENT IN TERMS OF  
THE NATIONAL ENVIRONMENT MANAGEMENT ACT**

**PROPOSED PRINCESS MKABAYI MIXED USE DEVELOPMENT ON ERF 6018 VRYHEID**

**1. Context**

Indiflora cc Environmental Services (EAP) is conducting a Basic Assessment Process, on behalf of Princess Mkabayi Mall Pty Ltd (Applicant), in respect of an application to the KwaZulu-Natal Department of Economic Development Tourism and Environmental Affairs (DEDTEA) for authorization to undertake certain scheduled activities (listed below) resulting from the proposed development.

The application for authorization requires the undertaking of the minimum of a *Basic Assessment process* and compilation of a *Basic Assessment Report (BAR)* prior to the approval of such residential development in terms of Government Notices R326 and R327 dated 7 April 2017, of the National Environmental management Act, Act 107 of 1998 (NEMA).

This document highlights relevant information for all interested and affected parties (I&AP's) and provide further information on technical issues related to the project.

**2. Locality Plan of Proposed Activity**

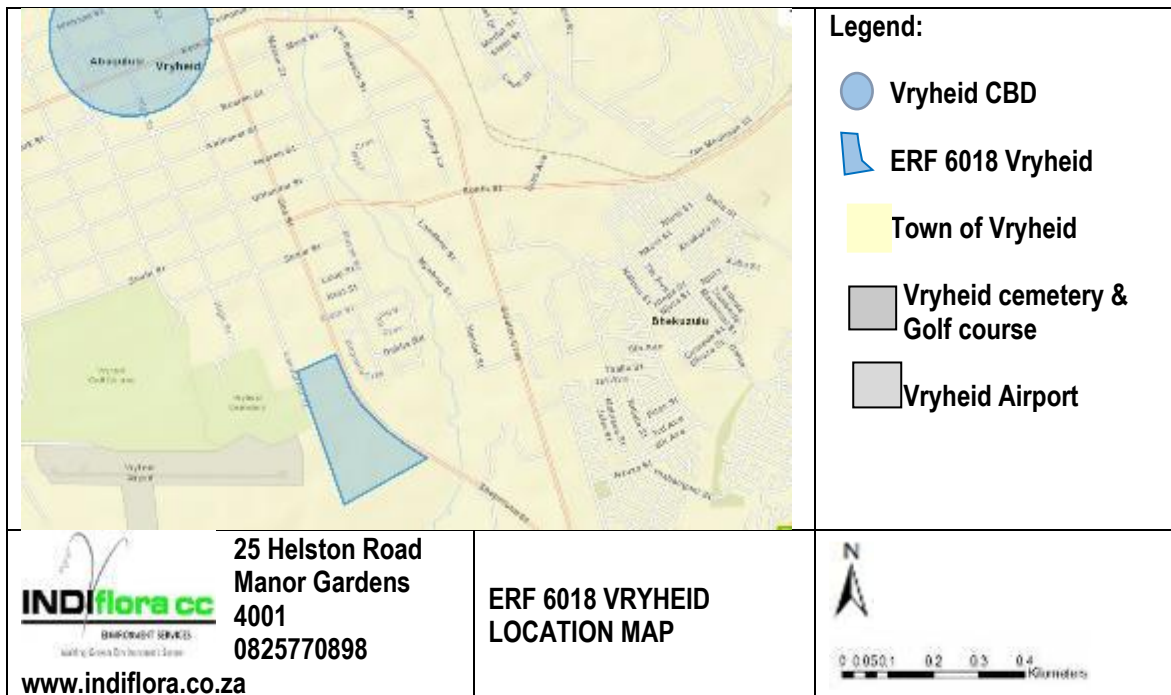


Figure 1: The location of ERF 6018 is indicated by the trapezoid shape

**3. Description of the Proposed Activity**

The developer, Princess Mkabayi (Pty) Ltd, is proposing to develop the PRINCESS MKABAYI MIXED USE DEVELOPMENT ON ERF 6018 VRYHEID, which is an integrated development comprising of a regional mall (79,200m<sup>2</sup>), free standing residential and high density apartments (52,000m<sup>2</sup>, motor show rooms (6350m<sup>2</sup>),

logistics park (12,750m<sup>2</sup>), hotel & casino (14,600m<sup>2</sup>) and Office park & Abaqulusi Council chambers (31,500m<sup>2</sup>) and a site set aside for a future petrol station drive through & décor retail show room (12,300m<sup>2</sup>).

#### 4. Environmental Legislation Requirements

In terms of GN R327, regulations promulgated under the National Environmental Management Act, Act 107 of 1998, (NEMA) as amended on 7 April 2017, the proposed development requires approval from the Department of Economic Development Tourism and Environmental Affairs for the undertaking of the following activities:

<b>GNR 327 Section 27.</b>	<b>Indigenous vegetation will be cleared from on an area exceeding 1 hectare.</b>
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#### 5. Servicing of the Development:

Water: Zululand District Municipality is the Water Service Provider for this development.

Sewerage: Sewerage will be connected to the Abaqulusi Municipal sewer.

Road access: Access will be off the district road R33.

Waste Management: Waste removal is by Abaqulusi Local Municipality who will pick up the waste.

Electricity: Eskom is the electrical service provider.

Telecommunication: Telkom and cellular companies provide the service.

#### 6. Aim of the Process

The aim of the Environmental Impact Assessment process is to provide the competent authorities, The Department of Economic Development Tourism and Environmental Affairs (DEDTEA), with enough information to make an informed decision regarding any proposed development. This is achieved by informing and involving all potentially interested and affected parties (I&AP's), identifying potential impacts (both positive and negative) that the proposed development may have, and if necessary, conducting specialist studies, and making recommendations based on the identified impacts and conclusions of the specialists.



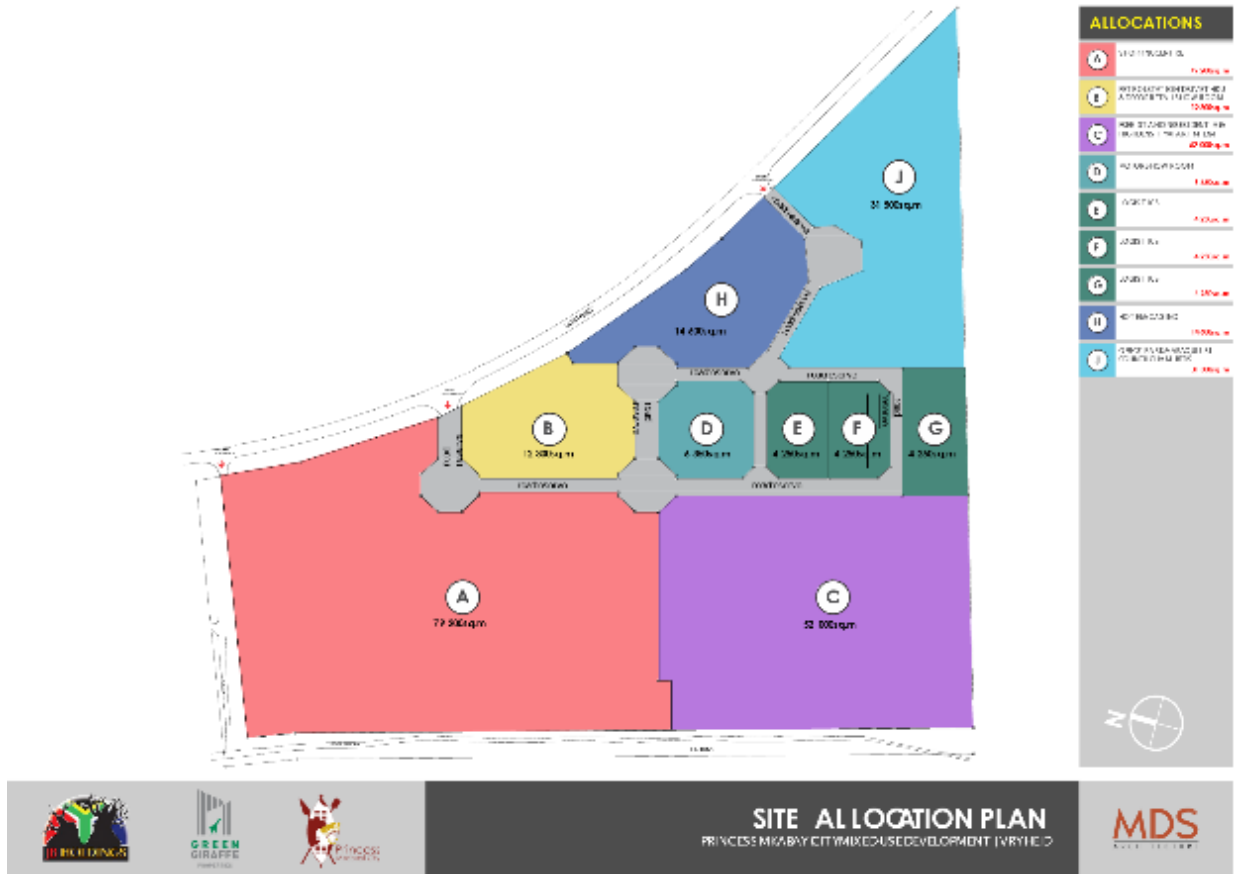


Figure 2: The proposed development layout

## **7. Programme of Activities**

The environmental process involves a series of activities which will be followed as listed below:

- Conduct necessary baseline studies.
- Preparation and circulate of a Background Information Document (BID)
- Communication with Abaqulusi Municipality and Zululand District Municipality regarding the proposed development
- Communication with other relevant departments and commenting authorities such as the Department of Water and Sanitation, Department of Agriculture Forestry and Fisheries (DAFF), KZN Department of Transport (KZNDoT) and the Department of Agriculture, Department of Land Restitution and Land Affairs, Amafa aKwaZulu-Natali, KZN Department of Education, KZN Department of Health, Civil Aviation Authority, Ezemvelo KZN Wildlife (EKZNW).
- Conduct specialist studies
- Notification of and consultation with stakeholders and Interested and Affected Parties (I&AP's)
- Compilation of a Draft Basic Assessment Report for circulation and comment by stakeholders and I&AP's
- Conduct additional specialist studies if required
- Compilation of a comments report
- Preparation of Environmental Management Plan
- Submit the Final Basic Assessment Report to DEDTEA
- Environmental Authorisation by DEDTEA

## **8. Invitation to Participate**

To ensure that you are identified and registered as an interested and/or affected party, please submit your name, contact information and interest in the matter to: Johan Bodenstein - 0825770889



**QUESTIONNAIRE**

Name of I & AP: \_\_\_\_\_

Contact Details: \_\_\_\_\_

Postal Address: \_\_\_\_\_

Telephone number: \_\_\_\_\_

Fax number: \_\_\_\_\_

Email address: \_\_\_\_\_

Please indicate your preferred language for communication purposes in block provided:

English	Afrikaans	Other

Please indicate whether you wish to remain on the project mailing list in block provided:

YES	NO

We wish to raise the following issue/s of concern:

We wish to the following suggestions to enhance benefits of the project:

We wish to comment on the proposed public participation process for the project:

Thank you for your participation in the above questionnaire.

Please complete, scan, and return by email to [johan@indiflora.co.za](mailto:johan@indiflora.co.za).

## **Register of I&AP's**

BASIC ASSESSMENT REPORT

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<b>PRINCESS MKABAYI CITY DEVELOPMENT I&amp;AP REGISTER</b>
<b>NEIGHBOURING PROPERTIES</b> (within 100m of ERF 6018 Vryheid) (Princess Mkabayi Regional Mall)
Property Description
ERF 1007 VRYHEID
RE of ERF 1339 VRYHEID
ERF 2173 (Portion 1 of ERF 1339) VRYHEID
ERF 2173 VRYHEID
ERF 1024 VRYHEID
ERF 1025 VRYHEID
ERF 1026 VRYHEID
ERF 1027 VRYHEID
ERF 1028 VRYHEID
ERF 1029 VRYHEID
ERF 1030 VRYHEID
ERF 1031 VRYHEID
ERF 1032 VRYHEID
ERF 1034 VRYHEID
ERF 2439 VRYHEID
ERF 1037 VRYHEID
ERF 1038 VRYHEID
ERF 1039 VRYHEID
ERF 1040 VRYHEID
ERF 1041 VRYHEID
ERF 1371 VRYHEID
ERF 10000 VRYHEID
ERF 1066 VRYHEID
ERF 6022 VRYHEID
RE of ERF 10000 VRYHEID
<b>STAKEHOLDERS</b>
Abaqulusi Local Municipality KZ263
Zululand District Municipality DC 26
Department of Water and Sanitation
Department of forestry, Fisheries and Environment - Forestry
Department of Land Restitution and Land Affairs
Commission of Land Restitution and Land Claims
Airports Company of South Africa
Civil Aviation Association
KZN Department of Economic Development Tourism and Environment Affairs
KZN Department of Transport
Amafa aKwaZulu-Natali
KZN Department of Education
KZN Department of Health
Vryheid Municipal Library
Ezemvelo KZN Wildlife
Vryheid Business Forum
Vryheid Taxi Association
Resident from Vryheid #1
Resident for Vryheid #2
Resident from Vryheid #3

BASIC ASSESSMENT REPORT

**CORRESPONDENCE RECEIVED:**

To follow the requirements of the POPI Act the contact details of individual I&AP's have been blocked.

Name of I&AP	Contact details	Comments received	Responses
Resident #1	[REDACTED]	My name is XXX resides in Bhekuzulu Old Location Vryheid, my contact number XXXXX and I have a company XXXXX	Your information will be passed onto the developer
Resident #2	[REDACTED]	<p>Iemand het my jul details rakende beoogde ontwikkeling in Vryheid gestuur.</p> <p>Ek neem hiermee inisiatief om myself bekend te stel vir moontlike betrokkenheid op n later stadium, sou sodanige beplande ontwikkeling wel plaasvind.</p> <p>Ek is tans X jaar oud en het deur XXXX studeer en en 'n X Diploma in XXX bestuur verwerf. Vandaar het ek deur die volle spektrum van konstruksie sowel as die siviele deel oor die jare deurloop tot waar ek vandag konsentreer op Projek Bestuur.</p> <p>My portefeulje van betrokkenheid sluit in onlangse voorbeelde.</p> <p>Brue, Paaie, Riool en Stormwater Strukture.</p> <p>Sou daar 'n geleentheid ontstaan sou ek graag betrokke wou raak. Ek werk tans op infrastruktuur projekte, maar sou ek graag nader of self-net weer wou werk, indien moontlik.</p> <p>Dankie vir u tyd en aandag</p>	The details of the I&AP who made the request has been handed to the develop to pass onto the contractor
Vryheid Resident #3	PO Box [REDACTED]	No comment	Your interest has been noted and you will be advised when the Draft

BASIC ASSESSMENT REPORT

		We want to comment on the project	BAR is available for public scrutiny.
Vryheid Resident #4	Address	<p>Developer to give back to local community by contributing in/to upgrade and upkeep of adjacent cemetery</p> <p>Financial contribution to upgrade/upkeep local cemetery adjacent to proposed development</p> <p>No comment on the project presently</p>	Your requests have been noted and provided to the developer to consider.
OFFICE OF THE REGIONAL LAND CLAIM COMMISSIONER : KWAZULU NATAL		<p>REQUEST INFORMATION ON PROPERTY:</p> <p>We confirm that at the date of this letter, no land claims appear on our database in respect of the property described as Erf 6018 Vryheid. This includes the database for claims lodged by 31 December 1998 and those lodged between 1 July 2014 and 27 July 2016 in terms of the provisions of the Restitution of Land Rights Act, 22 of 1994 (as amended).</p> <p>Whilst the Commission takes reasonable care to ensure and verify the accuracy of the information it provides, there are various factors that are beyond the Commission's control, particularly relating to claims that have been lodged but not yet published in the relevant government gazette, such as:</p> <ol style="list-style-type: none"> <li>1. Some claimants refer to properties they claim dispossession of rights in land against, using historical property descriptions which may not match the current property description; and</li> <li>2. Some claimants provide the geographic description of the</li> </ol>	Your comments are noted.

## BASIC ASSESSMENT REPORT

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		<p>land they claim without mentioning the actual property description against which they are claiming dispossession of rights in land.</p> <p>The Commission therefore does not accept any liability whatsoever if through the process of further investigation, it is found that there is in fact a land claim in respect of the above property.</p> <p>If you are aware of any change in the description of the above property after 19 June 1913, kindly supply us with such description (historic and current) to enable us to do a further search.</p> <p>DATE: 10 August 2022</p>	
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## **LETTERS RECEIVED FROM STAKEHOLDERS**



**OFFICE OF THE REGIONAL LAND CLAIMS COMMISSIONER: KWAZULU-NATAL**  
139 Langalibalele Street, PIETERMARITZBURG, 3200, Private Bag X 9120, PIETERMARITZBURG, 3200  
Tel: (033) 341 2600 | Fax: (033) 342 2881

Your Ref:

Enquiries: Lynn Boucher

Indiflora cc Environmental Services  
25 Helston Road  
Manor Gardens  
**DURBAN**  
4001

Dear Sir/Madam

**REQUEST INFORMATION ON PROPERTY: LAND CLAIM**

We acknowledge receipt of your enquiry received on 4 August 2022.

We confirm that at the date of this letter, no land claims appear on our database in respect of the property described as **Erf 6018 Vryheid**. This includes the database for claims lodged by 31 December 1998 and those lodged between 1 July 2014 and 27 July 2016 in terms of the provisions of the Restitution of Land Rights Act, 22 of 1994 (as amended).

Whilst the Commission takes reasonable care to ensure and verify the accuracy of the information it provides, there are various factors that are beyond the Commission's control, particularly relating to claims that have been lodged but not yet published in the relevant government gazette, such as:

1. Some claimants refer to properties they claim dispossession of rights in land against, using historical property descriptions which may not match the current property description; and
2. Some claimants provide the geographic description of the land they claim without mentioning the actual property description against which they are claiming dispossession of rights in land.

The Commission therefore does not accept any liability whatsoever if through the process of further investigation, it is found that there is in fact a land claim in respect of the above property.

If you are aware of any change in the description of the above property after 19 June 1913, kindly supply us with such description (historic and current) so as to enable us to do a further search.

Regards

*pp LMD Boucher*

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**MR N. P. MDLULI**  
**MANAGER: INFORMATION AND RECORDS MANAGEMENT**  
**OFFICE OF THE REGIONAL LAND CLAIM COMMISSIONER: KWAZULU NATAL**  
**DATE: 10 August 2022**



**EMAILS RECEIVED IN THE RESPONSE TO THE  
BACKGROUND INFORMATION DOCUMENT WAS HAND  
DELIVERED**

Email 1  
Email 2  
Email 3

**APPENDIX F:  
ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)**


**Draft Environmental Management Plan  
for the proposed  
Princess Mkhabayi City Regional Mall**



**Prepared by  
Johan Bodenstein  
PrSciNat**

**September 2022**

**i. Document control**

<p>Compiled by</p>	<p>Johan Bodenstein Indiflora cc Environment Services Environment Consultant to ZEMA Qualifications: ND Horticulture, Masters in Nature Conservation Expertise: Johan is an environment practitioner with 20-year experience. Johan participated in a Masters Degree course in Environment Management at UOFS in 2000/02 and passed all subjects but did not submit a mini thesis. Registered with SACNASP as an environment scientist. He is a member of IAIAAsa. A CV is included in Appendix G.</p>	 23 September 2022
<p>Verified by</p>	<p>Hantie Plomp Pr.Sci.Nat, Reg EAP (EAPASA), also an accredited professional (AP) with the Green Building Council of South Africa (GBCSA). Masters in Environmental Management Managing Director of Triplo4 Sustainable Solutions. She worked at Royal Has Koning DHV in the environmental sector within KZN as the Regional Environmental Manager for 5 years. Prior to that she was at AngloGold Ashanti for 19 years where she headed up the Environmental Systems Section within the Environmental Management Department and functioned as Head of the Environmental Management Department on several occasions. Hantie was an Alternate Director at Midvaal Water Company. She has experience in a broad range of environmental aspects, to legal compliance and internal systems audits, waste management, water management and the management and execution of environmental authorisations. She has 20 years' experience in environmental management in several environmental areas.</p>	

**ii. Acronyms:**

<b>DEA</b>	<b>Department of Environmental Affairs</b>
<b>EA</b>	<b>Environmental Authorisation</b>
<b>ECO</b>	<b>Environmental Control Officer</b>
<b>EIA</b>	<b>Environmental Impact Assessment</b>
<b>EMC</b>	<b>Environment Management Committee</b>
<b>EMP</b>	<b>Environment Management Plan</b>
<b>NEMA</b>	<b>National Environment Management Act</b>
<b>NEMBA</b>	<b>National Environment Management Biodiversity Act</b>



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## 1. Introduction

Green Giraffe (Pty) Ltd acquired Erf 6018 Vryheid from the Abaqulusi Local Municipality for the purpose of developing a regional mall. Environmental Authorisation applied for from the KwaZulu-Natal Department of Economic Development Tourism and Environment Affairs through a Basic Assessment. The land is in untransformed Northern KwaZulu-Natal Moist Grassland on the south-eastern end of the town of Vryheid.

The property borders an educational site where Pioneer High School is located. To the north-east is a residential area, and to the east is vacant municipal land. South of the site is vacant, undeveloped land of the tributary to the Wit Mfolozi River corridor. To the west is the Vryheid airport and north-west is the Vryheid cemetery.

The integrated type of development of the Regional Mall will create five hundred temporary and four hundred permanent jobs and stimulate the local economy.

The natural vegetation is a vulnerable ecosystem. The development footprint will impact the natural vegetation significantly. The geology of the site is sandstone and shale of the Vryheid Formation.

## 2. Location Map



The location of the Erf 6018 Vryheid is indicated by the yellow shape



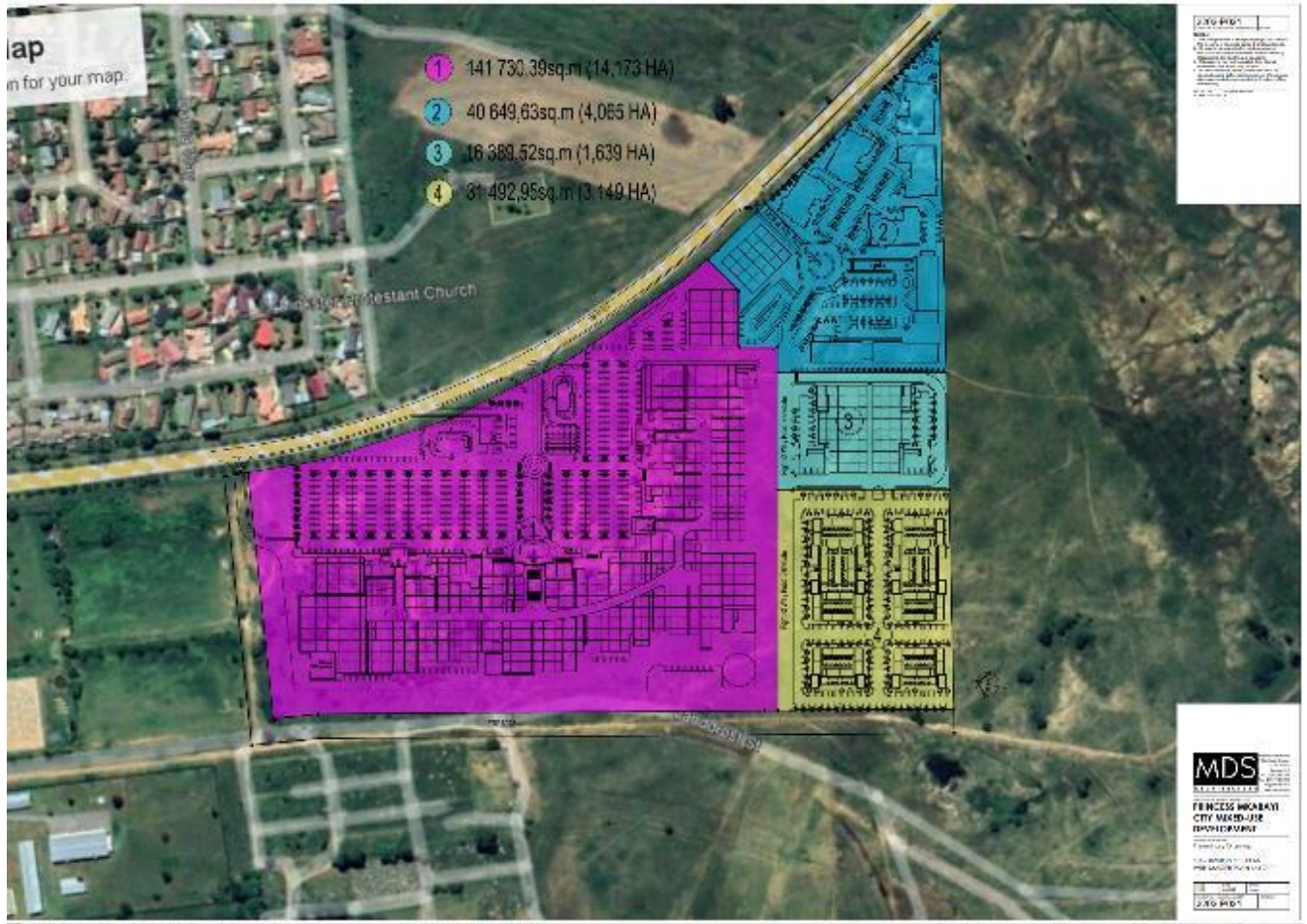


Figure 16: The Princess Mbabazi City Mall development Layout Plan

### 3. Objectives of the Environmental Management Programme (EMPr)

The objective of the EMPr is to provide measures to mitigate and manage rehabilitation activities to minimize potential negative impacts on the surrounding environment. Objectives achieved by:

- Assigning environmental impact mitigation responsibilities to key personnel,
- Developing specific action plans designed to ensure mitigation,
- Managing and auditing the specified action plans, and
- Managing stakeholder involvement.

Integrated Environmental Management Principles (IEM) applied by the EAP, as a foundation for the development of this Empire, and applied strictly during its implementation. The EMPr serves as a standalone document provided to and used by the contractors and other stakeholders involved in the construction phase.

#### 3.1 Planning and design:

During the design process the following impacts were identified.

Vegetation: Habitat destruction  
Disturbance  
Soil compaction, hardening of surfaces and erosion

Traffic

Socio-economic environment

Geotechnical

Hydrological Construction phase: Construction Phase

- o Direct physical loss or modification of wetland habitat
- o Alteration of hydrological and geomorphological processes
- o Impacts to water quality
- o Impacts to ecological connectivity and/or ecological disturbance impacts

Operational phase impacts

- o Direct physical loss or modification of wetland habitat
- o Alteration of hydrological and geomorphological processes
- o Impacts to water quality
- o Impacts to ecological connectivity and/or ecological disturbance impacts
  1. Vadose zone soils: Disturbing vadose zone during soil excavations/activities,
  2. Primary Surface Water Receivers:
    - Surface water contamination and sedimentation
      - o Washing vehicles in water bodies
      - o Erosion and sedimentation of watercourses
      - o Alteration of natural drainage lines
  3. Perched Water Table Dewatering Temporary dewatering of perched groundwater

Operational Phase

1. Vadose zone soils:
  - o Poor quality seepage and runoff from vehicles parked at the site and from ruptured sewer lines
  - o Domestic waste pollution of rivers/streams.
2. Primary Surface Water
  - Receivers:..Stormwater runoff
    - o Potential surface water contamination
    - o Increased erosion due to vegetation loss.
    - o Contaminated runoff water into nearby streams
    - o Sedimentation of watercourses
  - Sewer lines
    - Poor quality seepage into the subsoils from sewer lines

Pedohydrological

Construction Phase:

- o Site preparation, including placement of contractor laydown areas and storage (i.e. Temporary stockpiles, bunded areas etc.) Facilities.
- o Disturbing vadose zone during soil excavations/infilling activities.
- o In-situ placement of new soils, altering existing soil-flow processes (i.e. Infilling of wetlands or cut-and-fill areas).
  - o Soil compaction.
  - o Soil & surface water contamination and sedimentation from the following activities:
    - Leakages from vehicles and machines, and building materials
- o Erosion and sedimentation of watercourses if excavations are left open due to unforeseen circumstances (i.e. bad weather); and
- o Alteration of natural drainage lines may lead to ponding or increased runoff patterns (i.e. may cause stagnant water levels or increase erosion).
  - o Vegetation loss could decrease soil infiltration and increase runoff.

Operational Phase:

- o Reduced soil infiltration due to the residential development units and site access roads (i.e. Areas which will potentially become impermeable).
- o Reduced rainfall runoff to wetland areas from drainage servitudes (i.e. This Water will be captured in stormwater infrastructure).

**Wetland - Construction Phase**

- o Direct physical loss or modification of wetland habitat
- o Alteration of hydrological and geomorphological processes
- o Impacts to water quality
- o Impacts to ecological connectivity and/or ecological disturbance impacts

**Operational phase impacts**

- Direct physical loss or modification of wetland habitat
- Alteration of hydrological and geomorphological processes
- Impacts to water quality
- Impacts to ecological connectivity and/or ecological disturbance impacts

### 3.2 Pre-construction Phase:

- Plant rescue
- Sensitive area demarcation
- Site camp set-up
- Environmental induction and training of staff

### 3.3 Construction Phase

- Site camp management
- Site clearing and grubbing
- Stockpile formation
- Dig and pour foundations
- Construct development structures
- Complete structures
- Materials management
- Waste management
- Stormwater Management
- Erosion control
- Awareness training
- Spill control

### 3.4 Post-construction

- Removal of site camp
- Rehabilitation of site
- Landscaping

### 3.5 Operation

- Establish Environment Management System
- Materials management
- Waste management
- Stormwater Management
- Erosion control
- Environment Training

## 4. Assigned responsibility

Various role players have responsibilities for various aspects of the project. The responsibilities are in a table below for each role player.

The Applicant	Princess Mkabayi City (Pty) Ltd represented by Mr Willem Posthumus Tel: Cell: Email:
Responsibilities	- Ensuring that the contractor comply with the approved EMPr. - Ensuring compliance with the provisions for duty of care and remediation of damage in accordance with section 28 of the National Environmental Management Act (NEMA), (No. 107 of 1998) and its obligations regarding the control of emergency incidents in terms of Section 30 of NEMA. - Notifying the EDTEA of any incident as defined in subsection 30(1)(a) of NEMA

Project Manager	To be confirmed
Responsibilities:	<ul style="list-style-type: none"> <li>- Appointing the appropriately qualified contractor to co-ordinate, supervise and expedite different action plans.</li> <li>- Ensuring adherence to the EDTEA's conditions of authorization and any other laws and standards relevant to the construction of the facility.</li> <li>- Ensuring all elements of the work undertaken are directed, guided, and executed at appointed stages of the project.</li> <li>- Ensuring the adherence to statutory safety, health, and environment (SHE) standards and ensuring the construction activities comply with the EMPr.</li> <li>- Monitoring the site daily to ensure compliance.</li> <li>- Overall responsibility and accountability for the site during the construction phase.</li> <li>- Avoiding and / or mitigating adverse impacts on the environment by the appropriate design and construction.</li> </ul>

Contractors	To be appointed when the Environment Authorisation is issued
Responsibilities	<ul style="list-style-type: none"> <li>- Managing and operating their activities with due care and diligence.</li> <li>- Complying with all elements of the EMPr.</li> <li>- Ensuring that stakeholder interest is reported to the ECO.</li> <li>- Maintaining relevant documentation for review by the ECO.</li> </ul>

The Environmental Control Officer (ECO)	Johan Bodenstein Indiflora cc Environment Services 25 Helston Road, Manor Gardens, Durban, 4001 Cell:0825770898 Email: johan@indiflora.co.za
Responsibilities	<ul style="list-style-type: none"> <li>- Determining the conformance of the site with the EMPr criteria and compliance with the conditions of the EMPr.</li> <li>- Consulting with the EDTEA and I&amp;APs, if required.</li> <li>- Identification of areas of improvement during construction.</li> <li>- Undertaking on-going monitoring of the construction site through regular site visits and record key findings. This includes photographic monitoring of the construction site. The frequency of these visits will be determined by the progress and complexity of the project.</li> <li>- Advising the Project Manager and the contractors on environmental matters during the construction phase of the development.</li> <li>- Monitoring implementation of the EMPr by the contractor.</li> <li>- Advising the project manager on environmental impacts and provide appropriate recommendations to address and rectify these matters.</li> <li>- Ensuring that the conditions stipulated in the EA and any other laws and standards relevant to the construction are being complied with.</li> </ul>

## 5. Compliance Monitoring

A copy of the Empire must be always available on site. Compliance with all elements of the EMPr must be reviewed daily by the site engineer and all responsible parties. In addition, it must be noted as per the Environment Conservation Act and the National Environmental Management Act No 107 of 1998 (Section 28) offending parties will be held financially accountable for any pollution or environmental damage.

### 5.1 Monitoring

The key to a successful EMPr is appropriate monitoring and review to ensure effective functioning of the EMPr and to identify and implement corrective measures in a timely manner. Monitoring for non-compliance must be done daily by the contractors under the guidance of the Project Manager / Environmental Officer. An appropriately timed audit report should be compiled by the independent ECO. Paramount to the reporting of non-conformance and incidents is that appropriate corrective and preventative action plans are developed and adhered to. Photographic records of all incidents and non-conformances must be retained.

### 5.2 Identified Risk and mitigation measures.

Compliance against the EMPr must be monitored on a weekly basis by an independent ECO. An EMPr checklist/audit template must be utilised on site to conduct weekly compliance monitoring by a contractor representative. Complaints register and a non-conformance record must be utilised to record any complaints and non-conformances which will assist in monitoring compliance.

Time Frames

Phase 1: Rescue (removal of indigenous plant and frog species worthy of conservation)

Phase 2: Removal of overgrown and invasive alien vegetation

Phase 3: Construction of the platforms and installing the infrastructure

Phase 4: Rehabilitate the wetland, and the stream bank

Impacts are perceived to be minimal if the following EMPr mitigation measures are followed. All potential impacts can be easily mitigated by following the proposed action plans in the EMPr.

The following are identified risks and mitigation measures associated with the establishment of the proposed development

Identified Risks and Mitigation Measures				
Identified Risk	Mitigation measure	Time frame for mitigation measure to be undertaken	Person responsible for monitoring	Monitoring frequency
The destruction of habitat of threatened amphibian species	Rescue the threatened amphibian species and relocate them to other suitable habitat. Rescue Indigenous, threatened plant species and keep them in the on-site nursery for use during rehabilitation	Phase 1	ZEMA Environment staff	Do checks at night for a week to confirm all have amphibia and by day to confirm valuable plants have been removed
The disturbance of nesting birds	Restrict the construction activities to the post-nesting season (April – August)	Phase 2	Contractor / Designated Representative and ECO	During the “grub and clear” stage
The onsite erosion of Exposed soil	The contractor must stabilise cleared areas to prevent and control erosion and/or sedimentation, particularly in	Phase 3	Contractor / Designated Representative	The contractor / designated representative



Identified Risks and Mitigation Measures				
Identified Risk	Mitigation measure	Time frame for mitigation measure to be undertaken	Person responsible for monitoring	Monitoring frequency
before rehabilitation is completed.	areas where embankments are steep or exposed. Use soil curtains, sandbag berms and compacted soil berms to divert or slow the water down. An ECO must Monitor construction compliance with this construction Empire.		and ECO	must monitor the site on a daily basis and conduct weekly checklists. ECO must conduct monthly audits.
Risk of spills from construction equipment (Oils, fuels) contaminating soil.	Ensure that construction vehicles have a drip tray, and any oil leaks must be to over a drip tray. All equipment must be in good working order to reduce the likelihood of oil leaks occurring. Any re-fuelling of equipment must occur on a hardened surface, within a designated re-fuelling area where any spills can be contained. An ECO must monitor construction compliance with this construction EMPr.	Phase 3	Contractor / Designated Representative and ECO	The contractor / designated representative must monitor the site on a daily basis and conduct weekly checklists. Monthly audits must be conducted by an ECO.
Increased stormwater run-off leading to erosion and sedimentation of the surrounding environment	Implement Reno mattresses, gabion baskets, silt fences or stone pitching at all stormwaters discharge points. Implement suitable erosion control measures prior to commencement of rehabilitation activities, at areas susceptible to erosion.	Phase 3	Contractor / Designated Representative and ECO	The contractor / designated representative must monitor the site on a daily basis and conduct weekly checklists. An ECO to conduct monthly audits
Risk of spills from construction equipment (Oils, fuels) contaminating stormwater.	Place a drip tray under any construction equipment that could leak oil. Deal with any drip tray detected oil leaks of construction vehicles must. All equipment must be in good working order to reduce the likelihood of oil leaks occurring. Any re-fuelling of equipment must occur on a hardened surface, within a designated re-fuelling area where any spills can be contained. an ECO must monitor construction compliance with the construction EMPr.	Phase 3	Contractor / Designated Representative and ECO	The contractor / designated representative must monitor the site on a daily basis and conduct weekly checklists. An ECO must conduct monthly audits.
Loss of and / or damage to	Avoid degradation / damage to environmentally sensitive areas	Phase 3	Contractor / Designated	The contractor / designated



Identified Risks and Mitigation Measures				
Identified Risk	Mitigation measure	Time frame for mitigation measure to be undertaken	Person responsible for monitoring	Monitoring frequency
the drainage lines, riparian vegetation and associated environmental services.	(Wetlands and drainage lines) outside the immediate work area. Erect temporary fencing to screen off the sensitive area to prevent accidental interference. Rehabilitation of disturbed areas must occur immediately using an approved rehabilitation plans.		Representative and ECO	representative must monitor the site on a daily basis and conduct weekly checklists. An ECO must conduct monthly audits.
Potential for improper storage and disposal of waste materials generated during rehabilitation.	Provide separate waste bins for each of the waste streams generated. Line and cover the waste containers. Dispose of accumulated waste regularly by a reputable contractor. Dispose hazardous waste such as oils, contaminated rags. at a hazardous class landfill.	Phase 3	Contractor / Designated Representative and ECO	The contractor / designated representative must monitor the site on a daily basis and conduct weekly checklists. An ECO must conduct Monthly audits.
Improper disposal of rubble i.e.: burying or neglecting rubble resulting in direct damage to surrounding vegetation and disorder of the site.	Remove rubble temporarily stored on site in a designated area until it is ready for disposal. Remove all excess material and rubble from the site so not to restrict the rehabilitation process. No dumping is to occur in sensitive environmental areas. Dispose of any rubble produced at a designated landfill site. Fence off the temporary storage area with Bonn ox wire fixed to wooden posts clad with 80% dark green shade cloth	Phase 3	Contractor / Designated Representative and ECO	The contractor / designated representative must monitor the site on a daily basis and conduct weekly checklists. An ECO must conduct monthly audits.
Use of the surrounding environment and / neighbouring properties as ablution facilities by contractors.	Provide staff with chemical toilets. Dispose of the toilet waste at an appropriate disposal site and obtain safe disposal certificates as proof. The staff may not use the surrounding environment or residents' properties as ablution facilitates. The person in charge of managing construction / management activities must brief workers on the dos and don'ts on the property when workers arrive at the property. Repeat this in weekly toolbox talks.	Phase 1 – 4	Contractor / Designated Representative and ECO	The contractor / designated representative must monitor the site on a daily basis and conduct weekly checklists. An ECO must conduct monthly audits

Identified Risks and Mitigation Measures				
Identified Risk	Mitigation measure	Time frame for mitigation measure to be undertaken	Person responsible for monitoring	Monitoring frequency
Interruption or damage to surrounding services (Electricity, water).	Disruption or damage of a service line, inform the relevant authority immediately. Construction must cease until further notice. Notify service users and the relevant authority where planned disruption of a service is required for a specific period during construction, in advance of the disruption. Reinstate the service immediately at the cost of the applicant or contractor.	Phase 3	Contractor / Designated Representative and ECO	The contractor / designated representative must monitor the site on a daily basis and conduct weekly checklists. An ECO must conduct monthly audits.
Safety and security of construction workers due to construction activities taking place.	Make construction workers aware of the potential health and safety impacts. Contractors must make all workers are aware of the associated dangers and supply these workers with the relevant PPE. Working in water or mud has drowning risks. Lifesaving rings must be available when someone enters the water.	Phase 1 -4	Contractor / Designated Representative and ECO	The contractor / designated representative must monitor the site on a daily basis and conduct weekly checklists. An ECO must conduct monthly audits.

### 5.3. Procedures for environmental related emergencies and remediation

The purpose of this section is to anticipate a potential impact resulting in an environmental crisis which may occur due to unforeseen circumstances. Such events cannot be predicted and as such a procedure has been prepared. This procedure must be followed in the event of such an incident to prevent degradation to the surrounding environment and to contribute to the safety of the workers and I&APs.

#### 5.3.1 Potential environmental incidences / emergencies

The National Environmental Management Act (NEMA) defines an 'incident' as an unexpected sudden occurrence, including a major emission, fire or explosion leading to danger to the public or potentially serious pollution of or detriment to the environment, whether immediate or delayed. The following hazards have the potential to occur within the proposed site:

- Hazardous chemical spillage
- Leakage of fuel or oil from equipment
- Potential contamination of water resources (ground and surface).
- Damage to surrounding infrastructure
- Erosion

#### 5.3.2 Response to environmental emergencies

The emergency response plan must be used to update the onsite emergency response plans. A record of all incidents must be recorded as defined in NEMA and NWA. Incidents should be reported and recorded the relevant authority as soon as reasonably practicable after knowledge of the incident.

An emergency incident report must be completed in terms of section 30(5) of the National Environmental Management Act (Act No. 107 of 1998).

*“The responsible person or, where the incident occurred during that person’s employment, his or her employer, must, within 14 days of the incident, report to the Director General, provincial head of department and municipality such information as is available to enable an initial evaluation of the incident, including:*

*(a) the nature of the incident.*

*(b) the substances involved, and an estimation of the quantity released and their possible acute effect on persons and the environment and data needed to assess these effects.*

*(c) initial measures taken to minimise impacts.*

*(d) causes of the incident, whether direct or indirect, including equipment, technology, system, or management failure; and*

*(e) measures taken and to be taken to avoid a recurrence of such incident.”*

### **5.3.3 Environmental Awareness Plan**

In accordance with NEMA EIA (2014) regulations, an environmental awareness plan is required. As part of the environmental awareness plan ‘Toolbox Talks’ posters have been developed and can be used for training purposes.

#### **a. Objectives of the plan**

The objective of the environmental awareness plan is to inform employees and contractors of any environmental risks which may result from their work and the way the identified possible risks must be dealt with to prevent degradation of the environment.

#### **b. Content of the plan**

The environmental awareness plan should include:

- The definition of environment (people + air + soil + water +business).
- Reasons for conserving and protecting the environment.
- How the following activities can impact the environment: - Not using assigned ablutions, hazardous materials, uncleaned spills, mixing of cement or paint on soil or grass surfaces, waste management i.e., use of waste receptacles and waste separation for recycling, vehicle washing polluting soil & ground water; litter.
- What to do to prevent the above impacting the environment i.e., assign impermeable mixing areas, no vehicle washing on site, use of waste receptacles and separation of waste to allow for recycling, how to respond in an emergency and deal with a spill; and
- Consideration of neighbours.

A training record of all staff that has undergone environmental training must be kept on record.

## **6. Environmental Management Plan**

### **6.1 General Administration**

- An environmental file must be maintained at the site office during construction.
- An emergency response plan, a copy of the EMPr and the Rehabilitation Plan must be available on site in the environmental file.
- An incident register and record of training must be maintained and kept on site.
- A record of audits conducted on operations, as well as findings must be kept on site, and findings from audits are to be communicated to the Foreman on site. Proof of communication of findings is to be kept on site.
- The following details are to be available at each site:
  - *Emergency contact numbers: Name, contact details*
  - *Environmental Control Officer: Name, contact details*
  - *A list of the sensitive areas identified for that site*
  - *Proof of communication of these details to the staff at that site.*
- A hazardous chemical/waste storage area must be provided for, if required. This could be in the form of a leak proof container or suitably sized drip tray. An inventory of goods stored must be maintained and updated weekly.

- General waste bins with lids must be provided on site. Accumulated waste must be removed from site weekly (no less than) and disposed of at a suitably licensed landfill site.
- Adequate spill kits and containers for spilled and contaminated material must be provided on site.
- All staff are to be trained on their environmental responsibilities before commencing work. All new staff are to be trained before they start work on site. All staff must have basic environmental awareness training, which can be conducted with the required health, & safety training. Training should include (1) the definition of environment (people + air + soil + water +business); (2) reasons for conserving and protecting the environment; (3) how the following activities can impact the environment: - Not using assigned ablutions, hazardous materials, uncleaned spills, mixing of cement or paint on soil or grass surfaces, waste management i.e. use of waste receptacles and waste separation for recycling, vehicle washing polluting soil & ground water; litter; (4) What to do to prevent the above impacting the environment i.e. assign impermeable mixing areas, no vehicle washing on site, use of waste receptacles and separation of waste to allow for recycling, how to respond in an emergency and deal with a spill; (5) Consideration of neighbours.
- All existing services must be identified as standard practice.
- Any damage to existing infrastructure (i.e., water pipelines, electricity lines and property) must be repaired or replaced on completion of the proposed development. The cost of which must be borne by the applicant (or representative of the applicant).
- Evidence of items with historical or archaeological value must be reported to AMAFA and work in the affected area should be stopped immediately.
- Properties neighbouring the site must be notified before any phase of construction commences. =

## 6.2 Site Camp Establishment

- Storage areas containing hazardous substances / materials must be clearly signed and must have fire extinguishers in proximity.
- Sufficient bins must be provided within the construction camp.
- Suitable spill kits must be available at the site camp.
- “No Go” areas should be clearly identified for the entirety of the construction phase.
- Demarcated areas should be marked using easily visible fencing and should be properly maintained during construction.
- Signs to indicate hazardous areas or indication signs need to be placed where required.
- All demarcated areas need to be agreed upon with an ECO before construction begins.
- A designated waste area must be always utilised. Bins must be provided and emptied at no less than weekly intervals.
- Chemical toilets must be located on site and maintained regularly (weekly or bi-weekly).
- Storm water control measures implemented must be maintained.
- Drip trays are to be cleaned out daily and material collected disposed of as hazardous waste.
- No contaminated runoff or grey water is allowed to be discharged from the site camp.
- Decanting of any chemical must be done within the confines of a suitably sized drip tray.
- Decanting from large containers (e.g., 210L drums) should be done using a hand pump, where possible.
- Only emergency (breakdown where equipment is no longer mobile) and minor maintenance (e.g., greasing) may be done on site. Any other planned or required maintenance must be done offsite at a suitable location.
- Clearance from the ECO must be obtained to ensure that all the requirements of the EMPr have been complied with before the PCA is conducted.
- Construction camp to be rehabilitated if required.
- Any fences, barriers or demarcations utilized must be removed.
- Waybills have been produced showing the removal of waste / spoil / rubble to a registered waste site.

### Key Issues

- Site camp must be established in accordance with all the requirements of the EMPr.

### 6.3 Stormwater

- Any runoff from the site must not be allowed to cause excessive erosion or sediment input into the surrounding environment.
- Flow of stormwater must not be impeded during rehabilitation.
- Contamination of stormwater must be always avoided.
- During rehabilitation unchanneled flow must be controlled to avoid soil erosion. Where large areas of soil are left exposed, rows of straw / hay or bundles of cut vegetation should be dug into the soil in contours to slow surface wash and capture eroded soil. The spacing between rows will be dependent on the slope.
- Any incidents involving stormwater contamination must be reported to the ECO for the purposes of maintaining the site's incident records.
- The stormwater control plan must be always adhered to.
- Stormwater control measures will need to be implemented to ensure water runoff does not cause erosion to the surrounding environment.

#### Key Issues

- Stormwater must be controlled before it is released into the surrounding areas.

### 6.4 Incidents/Spills

- A method statement must be completed by the Contractor and submitted to the ECO showing procedures for dealing with possible emergencies that can occur, such as fire and accidental leaks and spillages.
- The Contractors and ECO must be aware of the location of the emergency spill kit and have access to it.
- Drip trays must be made available for all construction vehicles and Hazardous chemical/substances bought on to the construction site.
- Drip trays must be cleaned out daily and material collected disposed of as hazardous waste.
- The environment surrounding the development footprint must be protected from any contamination.
- Should any soil or groundwater be contaminated by a spillage it must be removed, stored in a sealed container, and disposed of at a licensed disposal facility.
- A monitoring system must be put in place to ensure safety and to detect any leakage or spillage of coolants from all oil contaminating equipment.
- An incident record must be maintained on site and all spills entered into the incident record. Minor incidents will include small spills of less than 5l that do not enter the stormwater drains, housekeeping issues, and general small non-compliances with the requirements of the EMPr. The list of incidents to be included in the reporting to the authorities.
  - Minor incidents: small spills less than 5l that do not enter stormwater, minor non-compliance with EMPr that does not cause major environmental impact i.e. house-keeping issues etc.
  - Action: Supervisor and staff on site to record and address and notify ECO. ECO to advise on remediation measures and to follow up on actions taken to address incident.
  - Records: On site incident register.
  - Major incidents: large spills or any spills that enter stormwater, contamination of soil, fires, explosions.
  - Action: Report immediately to ECO, action to be taken to prevent further damage and incident to be reported to authorities. ECO to advise on remediation measures and to follow up on actions taken to address incident.
  - Records: On site incident register and report to authorities.
- Should any spills occur on the site or in the storage area, the relevant clean-up specialists must be contacted immediately. Materials that absorb fuel & oil, such as Drizit, sawdust or earth must be placed over the spill. This contaminated material must be uplifted and disposed of at a recognized hazardous waste site.
- In the event of a spillage that cannot be contained, and which poses a serious threat to the local environment, the following Departments must be informed of the incident in accordance with Section 30 of the National Environmental Management Act, Act 107 of 1998, within forty-eight (48) hours.

- The Local Authority.
- Department of Water Affairs.
- The KZN Department of Economic Development, Tourism and Environment Affairs.
- The Local Fire Department; and

- Any other affected department

- Ensure clean up and rehabilitation of areas where any wastewater spillage has occurred.

#### Key Issues

- Correct procedures followed and records to be compiled.
- Wastewater must either be collected for removal, or no washing should occur on site.

### 6.5 Waste Management

- The designated waste area must be always utilized.
- Littering is prohibited and the site must be cleaned daily.
- Refuse must be separated at source and disposed of in the appropriate bins, which must be emptied regularly.
- All solid waste generated during the construction process (including packets, plastic, rubble, cut plant material, waste metals etc.) must be placed in the designated waste area and must not be allowed to blow around the site, be accessible by animals, or be placed in piles adjacent the skips / bins.
- Separation of waste and recycling of paper, glass etc. must be implemented. Composting of organic waste is encouraged.
- Waste must be disposed at the appropriate landfill site by an approved contractor.
- Safe disposal certificates for all waste forms (i.e., general/construction/hazardous) must be obtained and kept on site within the site office.
- The excavation of rubbish pits on site is not allowed.
- Burning and burying of rubbish and waste on site is prohibited.
- Waste must not be allowed to accumulate on site but should be disposed of regularly by a reputable contractor. Proof of safe disposal must be kept in an environmental file on site.
- Rubble can be temporarily stored on site in the designated storage area.
- No dumping to occur in the open space and surrounds.
- Hazardous waste must be stored separately from general waste and must be disposed of at a hazardous class landfill.
- A register of waste generated and waste that leaves the site must be maintained.
- Adequate toilets must be always available on site for use by construction staff.
- The chemical toilets to be provided must be from a registered company and all sewage must be disposed at an appropriate facility. Safe disposal certificates must be kept on record.
- Any container use to storage any hazardous material must be disposed of as hazardous waste at a registered hazardous waste site.
- A Spill Contingency Plan should form part of the Environmental Management Programme (EMPr). The Spill Contingency Plan should address measures to prevent and mitigate the spillage of hazardous materials, which include oil, grease, and petrochemicals as well as herbicides which may be used as part of the alien clearing operation.



- All chemicals must be appropriately stored and handled. Storerooms must be located more than 100m from watercourse zones, have appropriate concrete flooring and bunding and must be able to carry 110% of the total capacity.
- No washing of equipment and vehicles must be done on site.
- Any remnant rubbish, spoil, machinery, and contaminants need to be removed from the development area.
- A register of all waste removed from the construction camp must be compiled and stored within the site office (Appendix 14). The register must indicate the type of waste (General, Hazardous, Construction, Rubble) removed from site and to which landfill site that waste has been removed to.
- The waste containers must be appropriate to the waste type contained therein and where necessary should be lined and covered.
- Refuse must be separated at source and disposed of in the appropriate bins, which must be emptied regularly.
- No litter must be left on site
- All bins and other waste storage are removed from site.
- A final check must be done to ensure that no waste is left on site.

#### Key Issues

- Recycling to be encouraged.
- Bins must be located at adequate intervals in the construction area.

### 6.6 Waste Water

- Stabilisation of cleared areas to prevent and control erosion and/or sedimentation must be actively managed.
- Damage to stabilised areas must be repaired and maintained to the satisfaction of the ECO.
- Vehicles travelling along the access roads must adhere to speed limits to avoid creating excessive dust.
- Dust suppression techniques must be adopted to control dust generated during rehabilitation (e.g., keep dusty areas watered).
- A complaints register must be always maintained on site and be made accessible to the surrounding community (or any affected person(s)) to record complaints regarding odours, emissions and/or excessive levels of dust.
- Vehicles and machinery are to be kept in good working order and to meet manufacturer's specifications for safety, fuel consumption etc.
- No contaminated runoff or gray water is to be discharged from the construction camp.
- The chemical toilets servicing the camp must be maintained in a good state, and any spills or overflows must be attended to immediately by a sanitation expert.
- Ensure clean up and rehabilitation of areas where any wastewater spillage has occurred.
- Areas that have been rehabilitated must be maintained and monitored to ensure infestation by alien vegetation does not occur.

#### Key Issues

- Cleared areas must have erosion control measures implemented.

### 6.7 Hazardous Storage and Disposal

- Ensure all staff must be trained on proper hazardous waste disposal.
- Storage areas containing hazardous substances/materials must be clearly demarcated.
- Transport of hazardous materials around the site must be limited, and materials must be transported in sealed bags/containers.
- Mixing/decanting of all chemicals and hazardous substances must take place either on a drip tray or on an impermeable surface.
- Drip trays must be cleaned out daily and material collected disposed of as hazardous waste.
- All hazardous chemicals to be returned to the storage area at the site camp each night.
- The transportation, handling and storage of hazardous substances must comply with all the provisions of the Hazardous Substances Act and relevant SANS codes.

- Appropriate signage must be fixed for all hazardous materials or materials requiring special management.
- A full inventory of hazardous substances and MSDS for each substance stored on site must be maintained and each substance must be stored and managed in accordance with the MSDS.
- Fuel storage areas must be bunded with a catchpit of at least 110% the storage capacity of the fuel storage container. This bund must have a controlled stormwater outlet with a filter.
- Firefighting equipment to be kept near store for materials.
- Staff dealing with these materials/substances must be aware of their potential impacts and follow the appropriate safety measures.
- Vehicles or machinery must not be serviced or re-fueled within 100m of the watercourse zones.
- Material Safety Data Sheets (MSDSs) must be readily available on site for all chemicals and hazardous substances to be used in the construction of the road and vehicle culvert bridges. Where possible and available, MSDSs should additionally include information on ecological impacts and measures to minimise negative environmental impacts during accidental releases or escapes.
- The hazardous materials storage area must be fully secured to prevent people and animals from accessing it.

#### Key Issues

- Workers must be briefed on the requirements of the EMPr.
- Regular toolbox sessions are to be held to remind staff about environmental and safety issues.

### 6.8 Erosion Control

- The Contractor must, as an initial and ongoing exercise, implement erosion and sedimentation control measures to the satisfaction of the ECO.
- Stabilization of cleared areas to prevent and control erosion and/or sedimentation must be actively managed.
- All areas that have been stripped of vegetation, must be dampened periodically to avoid excessive dust.
- Soil erosion measures must be implemented in sensitive areas such as water discharge points.
- Traffic and movement over stabilised areas must be restricted and controlled, and damage to stabilised areas must be repaired and maintained to the satisfaction of the ECO.
- Erosion barriers must be regularly cleaned and checked.
- Sediment barriers/controls must be installed in vulnerable areas prior to any erosion on the site.
- Re-vegetation of cleared land must utilize only 100% locally indigenous plant material to ensure no erosion occur.
- Any eroded soil on paths / roadways / other areas must be collected and replaced in the area from which it was eroded.
- All areas affected by erosion must be rehabilitated to the satisfaction of the ECO.

### 6.9 Equipment and Vehicle Maintenance

- All vehicles and equipment must be kept in good working order to maximise efficiency and minimize pollution.
- Vehicles travelling along the access roads must adhere to speed limits ensure the safety of the local landowners and community members.
- The contractor must check vehicles and equipment daily for leaks and ensure that no contamination of soil or vegetation occurs.
- Drip trays must be provided for all stationary plant.
- Drips trays must be used way refueling of plant and machinery is conducted.
- No washing of machinery can take place on site.
- Noise suppressors must be used on machinery on site. All construction vehicles will be fitted with standard silencers and will be well maintained.
- Vehicles or machinery must not be serviced or re-fueled within 100m of the watercourse zones.

#### Key Issues

- All vehicles and equipment must be kept in good working order to minimise pollution.



### 6.10 Sensitive Habitats (wetlands and watercourses)

- The Contractor must not work in sensitive areas without written approval from the ECO as required for the execution of the work.
- The disturbance footprint, including the areas traversed by trucks and machinery must be kept to a minimum and limited to a specific operational area.
- No stockpiling must take place within the defined golf course and wetland/riparian zones.
- Water diversions must be limited to a specific time frame and must only divert a portion of the river at a time.
- In the event of a spill, the Contractor must take prompt action to clear polluted areas and prevent spreading of the pollutants. The Contractor must be liable to arrange for professional service providers to clear affected areas, if required.
- The Contractor must submit a method statement to the ECO for approval, detailing spill prevention measures, erosion, and sedimentation control measures, etc.
- Environmentally sensitive areas (i.e., wetlands, riparian area, drainage lines, streams, and rivers) outside of the operational area must be avoided.
- Site staff must not be permitted to use the stream or any other open water body or natural water source adjacent to the site for the purposes of bathing, washing of clothing or for any construction related activities. Municipal water (or another source) should instead be used for all activities such as dust suppression etc.
- Excess stockpiles must not be placed in or near any environmentally sensitive areas, they must be removed from site and disposed of at the nearest approved Landfill site.
- Excess flows from open surfaces and increased slope areas need to be controlled by an erosion control measure.
- AMAFA must be contacted if any heritage objects are identified during earthmoving activities and following procedure is to be followed:
  - stop construction
  - report finding to local police station
  - report to AMAFA to investigate

### 6.11 Training & Conduct

- The ECO must ensure that the contractor have sufficient understanding of environmental issues to pass this information on to the construction staff.
- The site manager must ensure that all direct and sub-contracted site personnel have a basic level of environmental awareness training, and this has been offered to them in English and isiZulu.
- The Environmental Control Officer must be on hand to explain more difficult / technical environmental issues and to answer questions at project commencement.
- The need for a “clean site” policy must be explained to construction workers.
- The Environmental Control Officer (ECO) must ensure that all site staff are informed of the details of the EMP document as well as the conditions of the Environmental Authorisation issued by EDTEA.
- Workers must be shown any indigenous vegetation areas and must be informed of the importance of ensuring this area is not impacted on.
- Workers must be briefed by the person in charge of managing construction / management activities on the *dos and don'ts* on the site when workers arrive at site. This must be repeated in weekly toolbox talks.
- Regular toolbox sessions must be held to ensure that staff are reminded about environmental and safety issues and procedures.
- No fires may be made on the property.
- Workers that are under the influence of alcohol or drugs may not operate chainsaws, vehicles, or other machinery.
- The harvesting of firewood, medicinal plants, tree bark, flowers or other natural materials is forbidden on the site and adjacent properties.
- No workers may sleep on the property unless proper accommodations for this have been established.

- Prior to the commencement of construction, all workers need to know what possible archaeological or historical objects of value may look like, and to notify the site manager if one is found.
- Any damage caused by misconduct must be remedied and rehabilitated.

#### Key Issues

- Workers must be briefed on the requirements of the EMPr.
- Regular toolbox sessions are to be held to remind staff about environmental and safety issues.

## 7. Recommendations by the Specialists

### 7.1 Vegetation

#### Mitigations relating to the impact assessment

- **Habitat destruction**  
Construction and maintenance activities should be carried out according to accepted environmental best practice with the minimum removal of indigenous vegetation. Existing access should be utilised wherever possible. Indigenous planting must be undertaken during rehabilitation and landscaping, including the re-planting of suitable species removed during site clearing (e.g., Aloe, Agapanthus). Create a nursery for rescued plants and to propagate local species (collected under permit) for use in rehabilitation.
- **Disturbance**  
Construction and maintenance vehicles should be restricted to existing roads and access points where practical, and access of machinery and vehicles should be carefully controlled. Little can be done about the disturbance which will occur during the operational phase of the project as this is a high impact land-use option.
- **Soil compaction, hardening of surfaces and erosion**  
The movement of construction and maintenance vehicles and personnel should be restricted as far as possible and where practical, and access of machinery and vehicles should be carefully controlled. Compaction from human and vehicular traffic will result in higher runoff and erosion leading to loss of topsoil and delayed rehabilitation. Hardening of surfaces will require suitable drainage infrastructure to prevent wash-aways.
- **Alien plant invasion**  
Disturbance will lead to alien plant invasion. Initially a high intensity control programme should be implemented to remove competition with indigenous vegetation and then routine follow-up control until rehabilitation is complete.

#### General mitigations

- The apparent absence of species of conservation significance and the transformed nature of the study site indicate that a final walk-through should not be required, although a thorough searching of termitaria is recommended before construction takes place.
- The extent of the construction sites should be demarcated on site layout plans and no construction personnel or vehicles should leave the demarcated area except those authorised to do so. Those areas surrounding the construction site that are not part of the demarcated development area should be considered as “zero-access” areas for employees and machinery to reduce unnecessary habitat loss and disturbance.
- During construction, sensitive habitats must be avoided by construction vehicles and equipment wherever possible, to reduce potential impacts. Only necessary damage must be caused and, for example, unnecessary driving around in the veld must not take place as this can result in compaction resulting in increased runoff and slower rehabilitation of the area.
- Checks must be carried out at regular intervals to identify areas where erosion is occurring. Appropriate remedial action, including the rehabilitation of the eroded areas should be undertaken.
- No plants should be collected, nor animals intentionally killed or destroyed and poaching and hunting should not be permitted on the site and severe contractual fines must be imposed and immediate dismissal of any contract employee who is found attempting to snare or otherwise harm wild animals or collect plants or plant parts.

- The presence of construction workers and construction camps may result in an increased fire risk during construction. No open fires shall be allowed on site under any circumstance. The Contractor shall have fire-fighting equipment available on all vehicles working on site, especially during the winter months.
- Vegetation cleared should be removed from site to prevent a fire hazard, notwithstanding the fact that occasional use of brush-packing may be required to counter potential soil erosion in specific areas.
- An ongoing monitoring programme must be implemented to enforce the continual eradication of alien and invasive species during and post-construction as this is a permanent impact of the proposed activity and poses a potential long-term impact to the local habitat and its biota.
- Construction related (solid and hazardous) and general waste must be collected regularly from the site and disposed of at an appropriate registered landfill site.
- Construction waste must not be stored more than 30 days on site.
- Management of oil and other spillages and leakages must be minimized, and hydrocarbon spills should be dealt with immediately to prevent contamination of ground water.
- The operation of vehicles, construction equipment, and use of construction materials and on-site sanitation could result in pollution spills and the introduction of contaminants (e.g., hydrocarbons and solid waste) into natural habitats. This will increase levels of disturbance and encourage the invasion of early successional 'weeds and alien invasive species. Both impacts can lead to degradation of habitat quality during construction and must be controlled; and
- Dust suppression on the construction site and access roads will need to be controlled and can be achieved using water sprayers as necessary, since dust may become deposited on vegetation leading to impaired photosynthesis, potentially causing damage to individual plants.

## 7.2 Wetland

### 7.2.1 Storm water management

- Attenuate stormwater within the development footprint to pre-development levels prior to discharge to the freshwater environment. No storm water attenuation is to take place within the delineated wetlands downstream, and infrastructure for attenuating storm flows needs to be located outside of these watercourses and buffer zones. Wetlands are not to be relied upon for any attenuation capacity.
- Harvesting measures for rainwater are recommended.
- Possible recycling of grey water is recommended.
- Where 100% attenuation onsite / within the platform footprint is not feasible for well substantiated reasons, consideration would be given to the establishment of attenuation structures below the outlets (and within wetland buffer zones) but not within the wetlands themselves.
- Where possible, it is recommended that the development be designed to deal with stormwater separately and that bulk collection points are avoided. Where bulk collection points are unavoidable, bulk attenuation interventions / structures will need to be installed to attenuate and treat the bulk runoff volumes prior to discharge to the freshwater environment.
- In terms of general stormwater conveyance, stormwater runoff generated by developed and hardened surfaces should be directed into, and conveyed by, open, impermeable swales rather than into underground piped systems or concrete V-channels wherever feasible and practical. These features should be well vegetated with appropriate species and stabilised by means of gabion or concrete check walls to prevent erosion and vertical incision. This will provide for some filtration and removal of urban pollutants (e.g., oils and hydrocarbons), provide some attenuation by increasing the time runoff takes to reach low points, and reduce the energy of storm water flows within the stormwater system through increased roughness when compared with pipes and concrete V-drains.
- Wherever possible, the gradient of bulk collector pipes and discharge pipes should be reduced as far as practically possible to not unnecessarily increase the velocity of flows after onsite attenuation rainwater harvesting measures are recommended.
- Many smaller stormwater outlets must be favoured over a few large outlets. This also applies to roads.
- All stormwater outlets must be designed to dissipate the energy of outgoing flows to levels that present a low erosion risk. In this regard, suitably designed energy dissipation (e.g., stilling basins) and erosion protection structures (Reno-mattresses) will need to be installed at appropriate locations. Pre- and post-discharge velocities at each outlet should be calculated to inform the appropriate design of the energy

dissipation and erosion protection measures. All erosion protection measures (e.g., Reno-mattresses) must be established to reflect the natural slope of the surface and located at the natural ground-level.

- Measures to capture solid waste and debris entrained in stormwater runoff must be incorporated into the design of the system and should include the use of either curb inlet/inlet drain grates and/or debris baskets/bags.
- All stormwater generated by the medium to high-risk contamination urban surfaces (parking areas, light industrial operations, washing areas etc.) must receive basic filtering and treatment onsite prior to discharge into the freshwater environment. The higher the watercourse pollution risk, the more stringent the basic treatment methods. Furthermore, all treatment should occur within the development footprint. Recommended filtering interventions include grit / oil separators and/or sand filter traps. These structures will require regular maintenance by the site owners / operators. In this regard, a 'first-flush' system should also be investigated.
- To function adequately, it is critically important that the onsite stormwater system be regularly maintained over time. Key maintenance will include litter and sediment clearing and the servicing and maintenance of key collection points like catch pits, filtering devices (e.g., grit / oil separators), detention tanks etc. Such maintenance should be the responsibility of either the local municipality or, where possible, the relevant owners/estate associations, and budgeted for.

### **7.2.2 Road Stormwater Management Design Recommendations**

- Stormwater generated by the upgraded road should be discharged at regular intervals and many small outlets should be favoured over few large.
- As far as practically possible, stormwater conveyance should be via open drains rather than pipes and conveyance from the road drains to the outlets should via open drains with rough surfaces that are armoured with erosion protection.
- All outlets must be designed to dissipate the energy of outgoing flows to levels that present a low erosion risk. In this regard, suitably designed energy dissipation (e.g., stilling basins) and erosion protection structures (Reno-mattresses) will need to be installed at appropriate locations. Pre-and post-discharge velocities at each outlet should be calculated to inform the appropriate design of the energy dissipation and erosion protection measures.
- All erosion protection measures (e.g., Reno-mattresses) must be established to reflect the natural slope of the surface and located at the natural ground-level.
- Stormwater outlets should not be located at low points within the watercourses.

### **7.2.3 Construction Phase Mitigation and Management Measures**

#### **a. Timing of Construction**

- Construction be undertaken during the dry season/winter months (May to September generally) to reduce erosion and sedimentation risks associated with summer rainfall.

#### **b. Method Statements**

- Relevant Method Statement(s) for the construction activity must be compiled and appended to the construction (EMPr) prior to construction commencing.

### **7.2.4 Runoff, erosion, and sediment control**

A detailed construction phase stormwater management plan (SWMP) must be compiled. This plan must include (but not be limited to) the following measures:

- Land clearing (striping and grubbing) must occur in a phased / stepwise manner so that the extent of bare soil is minimised at any one time in the construction phase. In this regard a phasing plan must be developed as part of the construction SWMP and adhered to.
- Clearing activities must only be undertaken during agreed working times and permitted weather conditions. If heavy rains are expected, clearing activities should be put on hold. In this regard, the contractor must be aware of weather forecasts.

- All bare slopes and surfaces to be exposed to the elements during clearing and earthworks must be protected against erosion using rows of hay-bales, sandbags and/or silt fences aligned along the contours and spaced at regular intervals (e.g., every 2m) to break the energy of surface flows.
- For large areas to be cleared, runoff and sediment must drain into temporary sediment control dams established at strategic locations. In this regard, a perimeter stormwater protection berm and swale system must be established along the planned toe of the final platform embankment and the construction areas graded to divert flows into these sediment control dams.
- Regular maintenance of sediment control dams must be undertaken during the construction period to ensure that these structures continue to function appropriately.
- Platforms must be shaped to limit the risk of stormflows flowing over the platform edge and causing erosion. Berms and cut-off drains must therefore be maintained along the periphery of the platform unit such time as final platform shaping has been completed (to link with operational stormwater conveyance network).
- Appropriate inlet protection measures must be installed and maintained around all stormwater inlets during construction to reduce risk of sediment entering the stormwater network.
- Once shaped, all exposed/bare surfaces and embankments must be re-vegetated immediately. Revegetation using hydroseeding, plugs and/or sods of locally occurring indigenous plants is recommended.
- If re-vegetation of exposed surfaces cannot be established immediately due to phasing issues, temporary erosion and sediment control measures must be maintained until such a time that revegetation can commence.
- All temporary erosion and sediment control measures must be monitored for the duration of the construction phase and repaired immediately when damaged. All temporary erosion and sediment control structures must only be removed once vegetation cover has successfully recolonised the affected areas.
- After every rainfall event, the contractor must check the site for erosion damage and rehabilitate this damage immediately. Erosion rills and gullies must be filled-in with appropriate material and silt fences or fascine work must be established along the gulley for additional protection until vegetation has recolonised the rehabilitated area.
- Runoff generated by the hardened haulage road surface must be adequately managed. Many small open outlets/chutes must be established at regular intervals along the length of the roads, with erosion protection e.g., riprap / dump rock.
- Quantities and costs of measures must be determined by the project engineer in conjunction with the appointed contractor and ECO and factored into the tender specification and awarded contract for the implementation of such measures.

### 7.2.5 Soil management

- Soil stockpiles must be established on flat ground at least 15m away from the wetlands.
- Erosion/sediment control measures such as silt fences, low soil berms or wooden shutter boards must be placed around the stockpiles to limit sediment runoff from stockpiles.
- Subsoil and topsoil are to be stockpiled separately. Stockpiled soil must be replaced in the reverse order as to which it was removed (subsoil first followed by topsoil).
- Stockpiles of construction materials must be clearly separated from soil stockpiles to limit any contamination of soils.
- The stockpiles may only be placed within demarcated stockpile areas, which must fall within the demarcated construction area. The contractor shall, where possible, avoid stockpiling materials in vegetated areas that will not be cleared.
- Stockpiled soils are to be kept free of weeds and are not to be compacted. The stockpiled soil must be kept moist using some form of spray irrigation on a regular basis as appropriate and according to weather conditions.
- If soil stockpiles are to be kept for more than 3 months, they must be hydroseeded.
- The slope and height of stockpiles must be limited to 1.5m and are not sloped more than 1:2 to avoid collapse.

### 7.2.6 Invasive Alien Plant Control



- All alien invasive vegetation that colonises the construction site must be removed, preferably by uprooting. The contractor should consult the ECO regarding the method of removal.
- All bare surfaces across the construction site must be checked for IAPs every two weeks and IAPs removed by hand pulling/uprooting and adequately disposed.
- Herbicides should be utilised where hand pulling/uprooting is not possible. ONLY herbicides which have been certified safe for use in wetlands by independent testing authority are to be used. The ECO must be consulted in this regard.

### **7.2.7 Hazardous substances / materials management**

- The proper storage and handling of hazardous substances (e.g., fuel, oil, cement, etc.) needs to be administered.
- Mixing and/or decanting of all chemicals and hazardous substances must take place on a tray, shutter boards or on an impermeable surface and must be protected from the ingress and egress of stormwater.
- Drip trays should be utilised at all dispensing areas.
- No refuelling, servicing or chemical storage should occur within 15m of the wetlands.
- No vehicles transporting concrete, asphalt or any other bituminous product may be washed on site.
- Vehicle maintenance should not take place on site unless a specific bunded area is constructed for such a purpose.
- Hazardous storage and refuelling areas must be bunded prior to their use on site during the construction period following the appropriate SANS codes. The bund wall should be high enough to contain at least 110% of any stored volume. The surface of the bunded surface should be graded to the centre so that spillage may be collected and satisfactorily disposed of.
- All necessary equipment for dealing with spills of fuels/chemicals must be available at the site. Spills must be cleaned up immediately and contaminated soil/material disposed of appropriately at a registered site.
- Sanitation - portable toilets (1 toilet per 10 users) to be provided where construction is occurring. Workers need to be encouraged to use these facilities and not the natural environment. Toilets must not be located within the 1:100yr flood line of a watercourse or within the buffer of any natural watercourses. Waste from chemical toilets must be disposed of regularly (at least once a week) and in a responsible manner by a registered waste contractor. Toilet facilities must be serviced weekly and in a responsible manner by a registered waste contractor to prevent pollution and improper hygiene conditions.
- Contaminated water containing fuel, oil or other hazardous substances must never be released into the environment. It must be disposed of at a registered hazardous landfill site.
- An emergency spill response procedure must be formulated, and staff are to be trained in spill response. All necessary equipment for dealing with spills of fuels/chemicals must be available at the site. Spills must be cleaned up immediately and contaminated soil/material disposed of appropriately at a registered site.
- 44-gallon drums must be kept on site to collect contaminated soil. These should be disposed of at a registered hazardous waste site.
- Provide adequate rubbish bins and waste disposal facilities on-site and educate/encourage workers not to litter or dispose of solid waste in the natural environment but to use available facilities for waste disposal.
- Clear and completely remove from site all general waste, constructional plant, equipment, surplus rock, and other foreign materials once construction has been completed.
- Litter generated by the construction crew must be collected in rubbish bins and disposed of at registered landfill sites.
- Litter bins must be equipped with a closing mechanism to prevent their contents from blowing out or wild animals from accessing the contents.

### **7.2.8 Solid waste management**

- Eating areas must not be located within 30m of the wetland/aquatic habitats.
- Waste bins must be provided at the eating areas.
- Bins and/or skips need to be supplied at convenient intervals on site for disposal of waste within the construction camp. The bins should have liner bags for easy control and safe disposal of waste.

- Bins should be provided to all areas that generate waste e.g., worker eating and resting areas and the camp site. General refuse and construction material refuse should not be mixed.
- Regular clearing/maintenance of bins is required.

### **7.2.9 Prohibitions related to the Illegal harvesting of plants and hunting of wildlife**

Appropriate environmental awareness talks must be given to workers. This must include training on the need to protect indigenous biodiversity. Key messages should include:

- No firewood or medicinal plants may be harvested from natural areas.
- No wild animal may under any circumstance be hunted, snared, captured, injured, killed, harmed in any way, or removed from the site. This includes animals perceived to be vermin.
- Access to sensitive habitat types (e.g., wetland habitat) outside of the construction zone is not permitted.
- Any fauna that are found within the construction corridor should be moved to the closest point of natural or semi-natural vegetation outside the construction servitude.

### **7.2.10 Construction phase monitoring measures**

- Compliance monitoring will be the responsibility of a suitably qualified/trained ECO (Environmental Control Officer) with any additional supporting EO's (Environmental Officers) having the required competency skills and experience to ensure that monitoring is undertaken effectively and appropriately.
- A photographic record of the state of the watercourse prior to the commencement of clearing/construction must be kept for reference and rehabilitation monitoring purposes.
- The ECO must undertake weekly compliance monitoring audits. Freshwater ecosystem aspects that must be monitored related to monitoring freshwater ecosystem impacts include:
  - The condition of the demarcation fence.
  - Evidence of any no-go area incursions.
  - The condition of the temporary runoff, erosion and sediment control measures and evidence of any failures or sediment deposits within watercourses.
  - Evidence of elevated channel turbidity levels.
  - Evidence of gully or bed/bank erosion.
  - Visual assessment of stormwater quality and in channel water quality.
  - The condition of waste bins and the presence of litter within the working area.
  - Evidence of solid waste within the no-go areas.
  - Evidence of hazardous materials spills and soil contamination.
  - Presence of alien invasive and weedy vegetation within the working area.
  - Rehabilitation and re-vegetation methods and success.
- Once the construction and rehabilitation has been completed, the ECO should conduct a close out site audit 1 month after the completion of rehabilitation.

### **7.2.11 Operational Phase Mitigation and Management Measures**

#### **7.2.12 Storm Water Infrastructure Maintenance**

- The applicant must ensure the proper functioning of any stormwater systems associated with the operational development site. The stormwater management system and related infrastructure require regular, on-going maintenance in the form of the silt and debris clearing and removal from catch pits, filtration devices and attenuation ponds, and maintenance and repair of stormwater outlets to ensure the optimal functioning of such systems.
- Incorporate the location and extent of the watercourses (wetlands) in the vicinity of stormwater infrastructure into all formal maintenance and repair plans.

#### **7.2.13 Wetland Ecosystem Rehabilitation and Management**

- Rehabilitate any freshwater ecosystems measurably impacted by the construction and operational activities of the project under guidance of a suitably qualified and experienced freshwater ecologist.

- The landowner must ensure that negative impacts to the watercourses within or downstream of the development property resulting from onsite activities are minimised and managed in perpetuity (while the owner).
- Long-term monitoring must involve alien invasive plant control. In line with the requirements of Section 2(2) and Section 3(2) the National Environmental Management: Biodiversity Act (NEM:BA), which obligates the landowner/developer to control IAPs on his property, all IAPs within the study area must be controlled on an on-going basis. The need for this exercise should be reviewed based on the presence of IAPs during the operational phase of the project.

### **5.3.3 Wetland Ecosystem Monitoring**

- Undertake periodic, long-term monitoring of the stormwater management and the onsite wetland ecosystems through basic visual inspections by the ECO and support staff, documenting issues such as:
  - Erosion and/or sedimentation below stormwater outlets or within wetland and/or channels.
  - Leakages or issues with the development infrastructure.
  - Invasive alien plant invasion and proliferation.

### **7.2.14 Landscaping Recommendations**

Use of indigenous species common to the region in the landscaping post-development that promotes as much natural ground cover on the site to help with binding soils and encouraging water infiltration, thus reducing overland flows and the pressure on stormwater management infrastructure.

### **7.2.15 Waste Minimisation, Reuse and Recycling**

Promote a culture of “conserve, reduce, reuse & recycle” with regards to the use and disposal of products to minimise resource consumption and reduce the amount of potential waste. Project design can also promote the conservation and efficient utilisation of water, implement rainwater harvesting measures, the recycling / re-use through grey water systems and using water efficient fittings.

## **7.2 Geotechnical assessment**

### **7.2.1 Lateral support recommendations**

Provide stability for slope instability by battering back the cut faces back to suitable slope angles not exceeding 1H:1V in the short term, and 2H:1V in the long term for the general soil profile. Use lateral support techniques, designed by a suitably qualified engineer, to support all cut faces and facilitate safe bulk earthworks operations, future structural stability and include the design of drainage at the top of all cut faces. Pre-cast block retaining structures could be a suitable lateral support solution. Temporary slopes also require precast block retaining walls or a soil nail and mesh reinforced gunite, lateral support system.

### **7.2.2 Recommended foundation types**

- Provide brick force in all foundation brickwork courses as well as in the two courses above the foundation brickwork.
- Provide brick force in the three consecutive brickwork courses above and below all windows and door openings. The brick force should extend to a minimum of 600mm beyond the edge of the openings.
- Provide brick force generally in every fourth course of brickwork. The brick force should be continuous, that is, it should have a lap length of 400mm minimum.
- Place suitably designed reinforcing steel within foundations.

### **7.2.3 Materials usage**

- Remove the upper 150mm of in situ soils across the site to spoil prior to construction commencing, as it contains abundant organic matter and is thus unsuitable for use as construction material.



- Send to spoil the upper 0,5m of in situ soil in the vicinity of existing and/or previously removed trees owing to abundant tree roots.
- The upper in situ soils across the site (hill wash, pebble marker and reworked / residual sandstone / siltstone) are suitable for use as inferior quality general fill materials only.
- Implement a high degree of engineering quality control on site, given the poor-quality materials of the in-situ soils. Ensure that the required compaction densities within the bulk fill platforms are attained at optimum moisture content. Test all compacted layers using a nuclear gauge device (Troxler). Determine moisture contents in a soils laboratory by oven drying. Remove to spoil the localised reworked / residual dolerite soils (see test pits TP8 and TP16) where the proposed bulk earthworks operations cut into these soils because it is potentially moderately to highly plastic.
- Imported materials for use in the construction of bulk fill terraces and as layer works for access roads and parking areas must be of a minimum G7 quality.

#### 7.2.4 Surface beds

- Place the surface beds conventionally on top of the in-situ soil within areas of cut with the upper 150mm of soil ripped and recompacted to 90% of Mod AASHTO density at optimum moisture content prior to placing of concrete.
- Compact areas of engineered fill, in 150mm thick layers to a minimum of 90% of Mod AASHTO density at optimum moisture content.
- Ensure there is cover of at least 300mm of engineered fill above the siltstone bedrock where the cut terrace excavations expose siltstone bedrock at final terrace level prior to placing of surface beds, to provide a consistent foundation platform for the surface beds. Compact this fill in 150mm layers to 90% of Mod AASHTO density at optimum moisture content.
- Keep all surface beds free of vertical external and internal walls and structural members. Allow the surface beds to “float.” Place the surface beds upon polyethylene plastic
- Geomembrane, folded up on the perimeter between concrete and brickwork to serve both as a bond-breaker and an isolation joint between concrete and brickwork.  
Nominally roll, without vibration, the areas underlain by dolerite, where lightly loaded surface beds could be placed directly upon the in-situ soils exposed at terrace level. Place a 300mm thick imported G7 layer directly above the in-situ soils and compacted in 150mm layers to 90% of Mod AASHTO density at optimum moisture content to provide a consistent working platform.

#### 7.2.5 Access roads & parking areas

- Pavement design estimates require that the upper in situ sub-grade material across most of the site would have a CBR of the order of 5 percent if compacted to 90% of Mod AASHTO density at optimum moisture content, and of the order of 7,5 percent if compacted to 93% of Mod AASHTO density at optimum moisture content.
- Nominally roll without vibration in the areas underlain by dolerite, and where underlying reworked / residual dolerite soils be exposed at final terrace level with a CBR of less than 3% percent if compacted to 90% Mod AASHTO density at optimum moisture content. A minimum cover of 600mm (including layer works) is required where the subgrade has an in situ CBR of less than 3% at 90% Mod AASHTO compaction.
- Stabilise the layer immediately below the bedding sand where brick paving used for proposed access roads / parking areas, to seal the layer works from stormwater ingress from above.

#### 7.2.6 Sub-surface drainage

- Dewater the influx of groundwater in excavations at localised eastern portions of the site at the time of construction using sumps and pumps of adequate capacity because a perched water table was encountered locally at 2,6m depth where a slight flow rate was recorded.
- Allow for conventional drainage behind all retaining walls within areas of cut.
- Install the damp-proof membrane (DPM) and damp-proof course (DPC) is to avoid problems in the future with rising damp.

### 7.3 Heritage assessment:

- If any heritage features are uncovered during development, all work must immediately cease, and the provincial heritage authority, Amafa, must be notified, without delay.
- Development should not take place on areas where graves are found, and that a buffer of some ten metres be afforded the area.
- The site be cleared of the covering vegetation in order to permit a heritage officer / consultant to correctly identify, and to obtain the GPS co-ordinates, of any definite heritage, or archaeological features, on the site.
- 
- Iron Age / Historical Period traditional settlements often include hidden graves. These are of high significance, and it is probable that further mitigation will be required if development is to continue. Often hidden graves are not visible from the ground surface, and only become apparent when excavation occurs. If any burials are uncovered, then all work must cease immediately, and the provincial heritage authority, Amafa, must be contacted for further direction.
- Pottery shards, grinders, metal objects, and engraved stones (see Hall, 2021) may be encountered on site in association with traditional Iron Age / Historical sites. These will be left, collected, recorded as seen fit by the attendant heritage officer. Engraved stone hold high significance, and mitigation will be required, as seen fit by Amafa.
- This recommended procedure applies equally to any Early, Middle, or Late Stone Age sites, features, and objects encountered on site.
- It is therefore suggested that the implementers of the intended development place a notice in local newspapers of a Community Meeting, at a specific date, at a specific venue during which the developers may outline the intended benefits, and benefits of such development to the public. Interested members of the public voice, their concerns, relationships to the site, any existing memories, and oral history. This may then be noted and recorded. Any concerns raised during such meeting will need to be addressed. In this way, any Living History issues may be attended to in a satisfactory manner to all.
- A Field Paleontological Assessment be conducted by a registered palaeontologist. and submitted to the provincial heritage authority.
- Cease work when any of the graves and archaeological and historical residues as well as fossils are exposed reported to the heritage authorities.
- All work must cease when heritage resources, such as graves, archaeological residues, any fossils, are exposed and the Contractor must immediately inform the Project Manager. A registered heritage specialist must be called to site for inspection. The provincial heritage resource agency (Amafa) must also be informed about the finding. The heritage specialist will assess the significance of the resource and provide guidance on the way forward.
- Obtain written permission from Amafa if heritage resources are to be removed, destroyed or altered. All heritage resources found in close proximity to the construction area must be protected by a 5m buffer in which no construction can take place. The buffer material (danger tape, fencing, etc.) must be highly visible to construction crews.
- Under no circumstances may any heritage material be destroyed or removed from site unless under direction of a heritage specialist.
- Should any remains be found on site that is potentially human remains, the South African Police Service (SAPS) should also be contacted. No SAPS official may disturb or exhume such remains, whether of recent origin or not, without the necessary permission.

### 7.4 Engineering

#### 7.4.1 Stormwater drainage

- Apply for approvals from the applicable authorities to construct the proposed new erf connection link line to discharge position at the Wit – Mfolozi water stream.
- Protect new stormwater erf connection link line towards low laying Wit – Mfolozi stream by stormwater servitude to be registered in favor of council.
- Lodge a wayleave application for the upgrade or construction of infrastructure within the municipal boundary.

## 7.5 Aviation

Additional markings to improve the visibility of communications structures and markings on the south western side of the structures facing the airfield are not required because it is below 45m in height above ground does.

## 8. Spill Response Plan

### 8.1 Clean-Up Procedures

Spilled chemicals must be effectively and quickly contained and cleaned up. Employees must clean up spills themselves only if properly trained and protected. Employees who are not trained in spill clean-up procedures must report the spill to the relevant emergency staff (both internal and external), warn other employees and the Contractor, and leave the area.

The following general guidelines must be followed for evacuation, spill control, notification of proper authorities, and general emergency procedures in the event of an incident in which there is potential for a significant release of hazardous materials.

#### a) Evacuation

Persons in the immediate vicinity of a spill must immediately evacuate the premises (except for employees with training in spill response). If the spill is of “medium” or “large” size, or if the spill seems hazardous, immediately notify emergency response personnel.

#### b) Spill Control Techniques

Once a spill has occurred, the employee must inform the Contractor who must inform the project manager, the ECO and the necessary authorities who needs to decide whether the spill is small enough to handle without outside assistance. Only employees with training in spill response must attempt to contain or clean up a spill.

NOTE: If you are cleaning up a spill yourself, make sure you are aware of the hazards associated with the materials spilled, have adequate ventilation, and proper personal protective equipment. Treat all residual chemical and clean-up materials as hazardous waste.

Spill control equipment must be located wherever significant quantities of hazardous materials are received or stored. MSDSs, absorbents, over-pack containers, container patch kits, spill dams, shovels, floor dry, acid/base neutralizers, and “caution-keep out” signs are common spill response items.

#### c) Spill Response and Clean-up

Chemical spills are divided into three categories: Small, Medium, and Large. Response and clean-up procedures vary depending on the size of the spill.

#### **Small Spills:**

Any spill where the major dimension is less than 50cm in diameter. Small spills are generally handled by internal personnel and usually do not require an emergency response by police or fire department teams.

- Quickly control the spill by stopping or securing the spill source. This could be as simple as up-righting a container and using floor-dry or absorbent pads to soak up spilled material. Wear gloves and protective clothing, if necessary.
- Put spill material and absorbents in secure containers if any are available.
- Consult with the OH&S representative and the MSDS for spill and waste disposal procedures.
- In some instances, the area of the spill should not be washed with water. Use Dry Clean-up Methods and never wash spills into the natural environment.
- Both the spilled material and any absorbent must be considered hazardous waste and must be disposed of in compliance with municipal and DWA regulations.

### **Medium Spills:**

Spills where the major dimension exceeds 50cm but is less than 2m. Outside emergency response personnel (police and fire department teams) must be called for medium spills. Common sense, however, will dictate when it is necessary to call them.

- Immediately try to help contain the spill at its source by simple measures only. This means quickly up righting a container, or putting a lid on a container, if possible. Do not use absorbents unless they are immediately available. Once you have made a quick attempt to contain the spill, or once you have quickly determined you cannot take any brief containment measures, leave the area, and alert emergency response personnel (police and fire department teams). Give personnel accurate information as to the location, chemical, and estimated amount of the spill.
- Evaluate the area outside the spill. Engines and electrical equipment near the spill area must be turned off. This eliminates various sources of ignition in the area. Advise emergency response personnel on how to turn off engines or electrical sources. Do not go back into the spill area once you have left. Help emergency response personnel by trying to determine how to shut off heating, air conditioning equipment, or air circulating equipment, if necessary.
- If emergency responders evacuate the spill area, follow their instructions in leaving the area.
- After emergency response personnel have contained the spill, be prepared to assist them with any other information that may be necessary, such as MSDSs and questions about the facility. Emergency response personnel or trained personnel with proper personal protective equipment will then clean up the spill residue. Do not re-enter the area until the emergency response personnel in charge gives the all-clear. Be prepared to assist these persons from outside the spill area with MSDSs, absorbents, and containers.
- Reports must be filed with proper authorities. It is the responsibility of the spiller to inform both his/her supervisor and the emergency response personnel as to what caused the spill. The response for large spills is like the procedures for medium spills, except that the exposure danger is greater

### **Large Spills:**

Any spill involving flammable liquid where the major dimension exceeds 6 feet in diameter; and any "running" spill, where the source of the spill has not been contained or flow has not been stopped.

- Leave the area and notify emergency response personnel. Give the operator the spill location, chemical spilled, and approximate amount.
- From a safe area, attempt to get MSDS information for the spilled chemical for the emergency response personnel to use. Also, be prepared to advise emergency response personnel as to any ignition sources, engines, electrical power, or air conditioning/ventilation systems that may need to be shut off. Advise emergency response personnel of any absorbents, containers, or spill control equipment that may be available. This may need to be done from a remote area, because an evacuation that would place the spiller far from the scene may be needed. Use radio or phone to assist from a distance, if necessary.
- Only emergency response personnel, in accordance with their own established procedures, must handle spills greater than 2m in any dimension or that are continuous. Remember, once the emergency response personnel are on the job cleaning up spills or putting out fires, the area is under their control, and no one may re-enter the area until the emergency response personnel in charge gives all clear.
- Provide information for reports to supervisors and emergency response personnel, just as in medium spills.

#### **d) Reporting spills**

All chemical spills, regardless of size, must be reported as soon as possible to the supervisor/contractor. These people will determine whether the spill has the potential to affect the environment outside of the facility and must be reported to emergency response personnel. Examples of spills that could affect the outside environment include spills that are accompanied by fire or explosion and spills that could reach nearby water bodies.

# ZONING CERTIFICATE



ZONE: SPECIAL ZONE 2 (Erf 6018 Vryheid Regional Mall)									
<b>STATEMENT OF INTENT:</b> This zone is intended for development as a Regional Mall with a special theme					<b>MAP COLOUR REFERENCE:</b> <div style="border: 2px solid black; padding: 10px; display: inline-block; margin-top: 5px;">SZ2</div>				
PRIMARY USES		CONSENT USES		PROHIBITED USES					
5 ATM 6 Betting Depot 22 Launderette 26 Motor Vehicle Showroom 27 Motor Workshop 29 Office Building 30 Parking Garage 31 Petrol Filling Station 36 Public Office 40 Restaurant 46 Shop 49 Transportation Terminal		16 Funeral Parlour 17 Garden Nursery 32 Place of Instruction 33 Place of Public Amusement 34 Place of Public Assembly 35 Private Recreation Area 37 Recreational Building 38 Recycling Centre 48 Tavern		1 Abattoir 2 Agricultural Industry 3 Agricultural Use 4 Animal Care Centre 7 Boarding House 8 Brick Making 9 Builders Yard 10 Chalet Development 11 Commercial Workshop 12 Crematorium 13 Day Care Centre 14 Dwelling House 15 Extractive Industrial Use 18 General Industrial Building 19 Home Business 20 Hospitality Facility 21 Institution			23 Light Industrial Building 24 Medium Density Housing 25 Mortuary 28 Nature and Resource Conservation 39 Residential Building 41 Restricted Building 42 Retirement Centre 43 Scrap-Yard 44 Service Industrial Building 45 Service Workshop 47 Special Industrial Building 50 Tuck Shop 51 Warehouse Any other use not stipulated under primary use or consent use		
ADDITIONAL CONTROLS									
<ol style="list-style-type: none"> <li>1. The Erf shall not be further subdivided except with the Consent of the Municipality.</li> <li>2. Accommodation for motor vehicles to be provided in terms of a site development plan for the entire property and is to be to the satisfaction of the Municipality.</li> <li>3. No building, boundary wall and fences shall be erected between the building line and the street boundary. The area between such building line and street boundary is to be landscaped to the satisfaction of the municipality and may not be used for storage of goods, parking of motor vehicles, depositing of refuse or any other use which, in the opinion of the Municipality will detract from the visual amenities of the area.</li> <li>4. Development shall be in terms of a site development plan, which shall have a central theme to it whereby all buildings resemble each other making a harmonious development.</li> <li>5. Subject to the provision of servicing, traffic and pedestrian control measures to the satisfaction of the Municipality.</li> <li>6. Reference should be made to the Controls for Petrol Filling Stations set in <b>Clause 7.3</b></li> </ol>									
DEVELOPMENT PARAMETERS									
BUILDING LINES		DWELLING UNITS PER HECTARE	MINIMUM ERF AREA	HEIGHT IN STOREYS	COVERAGE	FLOOR AREA RATIO			
STREET FRONT SPACE	SIDE AND REAR SPACE								
15m	2m	N/A	N/A	1	45%	0.60			

## **MINUTES OF THE PRE-APPLICATION MEETING**





Minutes of the pre-application meeting for the Princess Mbabazi City Development and Regional Mall held on 17 March 2022 in the office of the Municipal Manager of the Abaqulusi Municipality in Vryheid at 10am

Present:

- JS Landman                      JSL      Acting MM Abaqulusi Municipality
- S Vandayar-Dookilal        SV-D     Manager Town Planning Abaqulusi Municipality
- JN Khumalo                    JK        EDTEA
- N Shezi                         NS        EDTEA
- Johan Botha                    JBo      Princess Mbabazi City Development
- Johan Bodenstein            JB        Indiflora cc Environment Services – EAP

Introduction	Welcome and background to the project. Planned opening is Easter 2024.	JSL
	The development area is 25,000m <sup>2</sup> lettable area	SV-D
	JBo talks through a Power-Point presentation on the development comprising of a Mall, a Hotel and casino, a residential component, offices, car dealerships, warehousing and a filling station. It will be done in phases with the mall being the first phase.	JBo
	All depends on activities and the site sensitivities. The Screening Tool Report indicates Archaeology and Anthropology to be the highest sensitivities. Biodiversity is low. The habitat on the site is KwaZulu-Natal Moist Highland Grassland – it is not critically endangered and it is not a CBA. There is a river close by on one side of the development but there is no direct impact.	JB

Specialist studies	An archaeological assessment and an anthropological assessment are the two most important studies indicated by the National Screening Tool.	<b>JB</b>
	JBo indicates the Municipal trunk sewer cuts the north-eastern corner of the site. A servitude will have to be registered for the sewer. The engineer needs to confirm whether there is capacity in the pipe and at the treatment works. The engineer will have to advise on stormwater impacts. No stream crossing is planned, and the sewer is running on the side of the road. .	<b>JBo</b> <b>JB</b>
	The first specialist studies to be done is a wetland delineation to show where the nearest wetland is. If there is one closer than 500m we'll have to apply for a WULA.	<b>JB</b>
	Then we need a vegetation assessment. There are sensitive species listed in the Screening Tool Report and we'll have to enquire SANBI to advise us on what they are. The site is quite disturbed and the potential is quite low.	<b>JB</b>
	A Traffic impact assessment is required because of the road network.	
	An aviation study needs to be done due to the proximity of the airport.	<b>JB</b>
Project timeline	The time line is critical.  Specialist studies will take about a month. We need to do public participation for 30 days giving the public and government departments 30 days to review the Draft Basic Assessment Report (DBAR) and once the report is submitted the Department of Environment has 107 days (by law) to consider the application before issuing the environment authorisation. It is a 5-6 months period.  JBo goes through the projected timeline on computer.  JK indicates that if the project is flagged as a priority project then the Department can fast track the evaluation of the report. The Department must also receive the DBAR and will provide comments that can help to fast track the approval. Politicians want earthworks to start by 1 July.	<b>JSL</b> <b>JB</b>  <b>JBo</b> <b>JK</b>
Future development and authorisations	The filling station is a future development. This application will only identify the site or location of the filling station and will not assess the impacts of the filling station. The developer who builds the filling station will have to conduct their own impact assessment when they want to build it.	<b>JB</b>
Basic assessment of EIA	Checking activities Section 27 of Listing Notice 1 is the only activity. Section 14 of Listing Notice 1 will only become necessary when the filling station developer wants to establish the fillings station and will be submitted as a separate application by the developer. There are no other sensitivities present that will require a Section 12 of Listing Notice 3 application. The development property is more than 20 hectares in size but the development footprint is 2.5Ha.	<b>JB/JK</b>

Priority project	If the project is a priority project then the EAP must submit a copy of the project to Ulundi, one to the Durban office (Vanessa Maclou) and one copy to Pietermaritzburg (Kacy Rengasamy). It is better to submit it directly to Ulundi otherwise JK must fetch it from Pmb	<b>JK</b>
Minutes	Minutes must be drafted that EDTEA can consider and approve.	<b>JK</b>
Meeting close	10h50	



**ATTENDANCE REGISTER**  
**MEETING: PRINCESS MKABAYI MALL PROGRESS MEETING**

TIME: 10:00  
 VENUE: OFFICE OF THE MM  
 DATE: 17 MARCH 2022

	INITIALS AND SURNAME	DESIGNATION	EMAIL	SIGNATURE
1	D.S. LINDOMAN	ACT MM	slindoman@abagulusi.gov.za	
2	Johan Bodenstein	EAP	johan@indiflora.co.za	
3	Saïnessa Vandayar-Dookhilal	Manager: Town Planning	svdookhilal@abagulusi.gov.za	
4	JANE N KUMALO	EDTEA - EIA	Jane.kumalo@kenedem.gov.za	
5	Nasipho Shoz	EDTEA - EIA	Nasipho.Shoz@kznedem.gov.za	
6	Johan Joffe	Princess Mkabayi City Development	johan@princessmkabayi.org.co.za	
7				
8				