

**PROPOSED LETHABONG PROVINCIAL HOSPITAL  
DEVELOPMENT ON THE REMAINING EXTENT OF FARM  
QUAGGASFONTEIN ALIAS LAPDOORN 548 IQ,  
SEBOKENG, VEREENIGING, GAUTENG.**

**PRE-APPLICATION DRAFT BASIC ASSESSMENT REPORT**

**Submitted to:**

**Gauteng Province Department of Agriculture and Rural Development (GDARD)**

Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch  
P.O. Box 8769  
Johannesburg  
2000

**Prepared for:**

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**November 2022**

## ADMINISTRATIVE DETAILS:

<p><b>Duplicate this section where there is more than one Proponent</b>  Name of Applicant/Proponent:  Name of contact person for Applicant/Proponent (if other):  Company/ Trading name/State  Department/Organ of State:  Company Registration Number:  Postal address:  Telephone:  E-mail:</p>	<p>Set Square Developments (Pty) Ltd</p> <p>John Coetzee</p> <p>Set Square Developments (Pty) Ltd</p> <p>1<sup>st</sup> Floor Verdi House, Klein D’Aria Estate, 97 Jip De Jager Drive.</p> <p>Bellville <span style="float: right;">Postal code: 7530</span></p> <p>Cell: 083 784 1309</p> <p>John@slmdev.co.za <span style="float: right;">Fax:</span></p>
<p>Company of EAP:  EAP name:  Postal address:  Telephone:  E-mail:  Qualifications:  EAPASA registration no:</p>	<p>Guillaume Nel Environmental Consultants (GNEC)</p> <p>Author: Cahlan Williams; Reviewer: Euonell Visagie</p> <p>P.O. Box 2632</p> <p>Paarl <span style="float: right;">Postal code: 7620</span></p> <p>(021) 870 1874 <span style="float: right;">Cell: 076 684 6566</span></p> <p>eg@gnec.co.za/cahlan@gnec.co.za <span style="float: right;">Fax: (021) 870 1873</span></p> <p>Euonell Visagie has an MPhil En Man (SU), BA Development &amp; Environment (SU), Certificate in EIA Administration (University of Pretoria), Certificate in Waste Management (EnviroSus Training), Management Development Programme (University of Stellenbosch Business School). Euonell Visagie has eight years relevant experience as an Environmental Assessment Practitioner.</p> <p>2020/2299 (Euonell Visagie)</p>
<p><b>Duplicate this section where there is more than one landowner</b>  Name of landowner:  Name of contact person for landowner (if other):  Postal address:  Telephone:  E-mail:</p>	<p>Same as applicant</p> <p>( ) <span style="float: right;">Postal code:</span></p> <p>Cell:</p> <p>Fax: ( )</p>
<p>Name of Person in control of the land:  Name of contact person for person in control of the land:  Postal address:  Telephone:  E-mail:</p>	<p>Same as applicant</p> <p>( ) <span style="float: right;">Postal code:</span></p> <p>Cell:</p> <p>Fax: ( )</p>
<p><b>Duplicate this section where there is more than one Municipal Jurisdiction</b>  Municipality in whose area of jurisdiction the proposed activity will fall:  Contact person:  Postal address:  Telephone:  E-mail:</p>	<p>Emfuleni Local Municipality</p> <p>Lekgotla Motapane</p> <p>P.O Box 471</p> <p>Vereeniging <span style="float: right;">Postal code: 1930</span></p> <p>016 950 5619 <span style="float: right;">Cell: 083 417 7998</span></p> <p>letgotlam@emfuleni.gov.za <span style="float: right;">Fax:</span></p>

## **Basic Assessment Report in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended, and the Environmental Impact Assessment Regulations, 2014 (Version 1/2022)**

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### **Kindly note that:**

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This template is current as of April 2022. It is the responsibility of the EAP to ascertain whether subsequent versions of the template have been published or produced by the competent authority.
3. A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.
4. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority (uploaded to the EIA online system) empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application. The EIA online system can be accessed at <https://eia.gauteng.gov.za>.**
5. **A copy (PDF) of the final report and attachments must be uploaded to the EIA online system. The EIA online system can be accessed at <https://eia.gauteng.gov.za>.**
6. **Draft and final reports submitted in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) must be emailed to [environmentsue@gauteng.gov.za](mailto:environmentsue@gauteng.gov.za).**
7. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
8. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
9. An incomplete report may lead to an application for environmental authorisation or Waste Management License being refused.
10. Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorization or Waste Management License being refused.
11. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for environmental authorisation or Waste Management License being refused.
12. The applicant must fill in all relevant sections of this form. Incomplete applications will not be processed. The applicant will be notified of the missing information in the acknowledgement letter that will be sent within 10 days of receipt of the application.
13. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
14. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

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### **DEPARTMENTAL DETAILS**

Gauteng Department of Agriculture and Rural Development  
Attention: Administrative Unit of the Sustainable Utilisation of the Environment (SUE) Branch  
P.O. Box 8769  
Johannesburg  
2000

Ground floor, Umnotho House, 56 Eloff Street, Johannesburg

Administrative Unit telephone number: (011) 240 3051/3052

Department central telephone number: (011) 240 2500

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(For official use only)

<b>NEAS Reference Number:</b>						
<b>File Reference Number:</b>						
<b>Application Number:</b>						
<b>Date Received:</b>						

If this BAR has not been submitted within 90 days of receipt of the application by the competent authority and permission was not requested to submit within 140 days, please indicate the reasons for not submitting within time frame.

This BAR is currently in pre-application phase and therefore an application has not yet been submitted to the Competent Authority.

Is a closure plan applicable for this application and has it been included in this report?

No

if not, state reasons for not including the closure plan.

The proposal is for the development of a provincial hospital. Thus, it is not the intention of the applicant to apply for a closure plan.

Has a draft report for this application been submitted to a competent authority and all State Departments administering a law relating to a matter likely to be affected as a result of this activity?

Yes

Is a list of the State Departments referred to above attached to this report including their full contact details and contact person?

Yes

If no, state reasons for not attaching the list.

N/A

Have State Departments including the competent authority commented?

No

If no, why?

The pre-application Draft BAR has been submitted to GDARD for comment. The pre-application Draft BAR will also be circulated to I&AP's for comment.

# SECTION A: ACTIVITY INFORMATION

## 1. PROPOSAL OR DEVELOPMENT DESCRIPTION

Project title (must be the same name as per application form):

### PROJECT TITLE

**THE PROPOSED LETHABONG PROVINCIAL HOSPITAL DEVELOPMENT ON THE REMAINING EXTENT OF FARM QUAGGASFONTEIN ALIAS LAPDOORN 548 IQ, SEBOKENG, VEREENIGING, GAUTENG.**

### BACKGROUND

Guillaume Nel Environmental Consultants (GNEC) were appointed by Set Square Developments (Pty) Ltd to facilitate the Basic Assessment process for the proposed provincial hospital development on the remaining extent of Farm Quaggasfontein Alias Lapdoorn 548 IQ, Lethabong, Sebokeng, Gauteng, in accordance with the National Environmental Management Act of 1998 (Act 107 of 1998) (NEMA), as amended.

Set Square Developments (Pty), conducted an Environmental Impact Assessment (EIA) application during 2015/16 for the proposed Phase 1 to 4 Lethabong Mixed Housing Development situated on the remaining extent of the farm Quaggasfontein Alias Lapdoorn 548 IQ. The Environmental Authorisation (EA) for the application was received from the Gauteng Department of Agriculture and Rural Development (GDARD) on 30 June 2016. The application covered an area of 224 ha and the intention is to develop approximately 5715 residential units. Civil construction commenced for phase 2 in October 2017 and was shortly thereafter put on hold. A new civil contractor was appointed in November 2018 to date, continuing with the construction work associated with the western portion for the study area.

The 2016 environmental authorization only assessed the construction of internal engineering services in the form of roads, electricity, sewage and water provision, required as part the original development footprint. No external services, outside of the study areas were included in the environmental application. Another EIA application (for the authorisation of civil services) was consequently lodged with the EA received in 2022.



Figure 1: Previous development phases (Batho Earth, 2021).

## **LOCATION AND SURROUNDING LAND USES**

The proposed development is located on the remaining extent of the farm Quaggasfontein Alias Lapdoorn 548 IQ. The site is located in Sebokeng approximately 5 km west of the R82 and north off Waterdal Road (Houtkop Road).

The surrounding land-use is characterized by high density informal and low-income communities. Sebokeng Unit 10 is situated approximately 500m to the east of the site, and vacant land borders the site to the west. Thabong Shopping Centre is approximately 500m to the southeastern side of the site.

Informal settlement occurs widespread throughout the area with the largest informal settlements within Sebokeng being located around Bophelong, Polomiet, Sonderwater, Lybia, Waterval, Sicelo and Impumelelo.

## **PROPOSED DEVELOPMENT**

The applicant proposes a provincial hospital with an approximate gross leasable area (GLA) of 50 000m<sup>2</sup> on an area of approximately 12,37 hectares in extent. The proposed hospital will consist of *approximately* 800 beds.

### **Access:**

The main access will be taken off Waterdal Road (Houtkop Road) at the corner of Springbok Street.

## **BULK SERVICES**

Lyners Consulting Engineers were appointed to compile a civil services report for the proposed development. All design criteria will be based on the "Guidelines for Human Settlement Planning and Design" referred to as the "Red Book", the National Building Regulation (SANS 10400), the Code of Practice: Water Supply and Drainage for Buildings (Part 1 & 2) (SANS 10252) and will comply with the standards of the Civil Engineering Department of Emfuleni Local Municipality (ELM) where applicable.

### ***Potable Water***

An existing 1000 mm diameter Randwater bulk supply line is located adjacent Waterdal Road that has been utilised for supplying the current Phase 2 of the Development. The connecting 355mm diameter link watermain was sized in an appropriate manner to make ample allowance for the balance of the proposed development. To service the Phase 5 and the hospital site, the 355mm dia watermain from Phase 2 will be extended across the wetland (within the planned road servitude crossing the wetland) to the eastern portion (Phase 5) of the development to supply water and to complete a ring feed connecting in a similar manner with the more northern Phase 4 across the wetland. An additional connection directly to the Randwater bulk water supply pipeline will have to be constructed for the exclusive use of the proposed hospital.

No link services are currently available in the immediate surrounds of the proposed development. Link Services will accordingly be required to be constructed from Phases 3 and 4 to service the hospital site.

The internal reticulation systems should be designed once the hospital layout has been finalised and must comply with the requirements of Emfuleni Local Municipality's Engineering Department. The requirements of on-site water storage facilities for emergency and fire-fighting facilities must be investigated and incorporated into the final design.

### ***Sewerage***

The expected Sewerage flows for the hospital are preliminarily calculated in accordance with Table 9 of SANS 10252 Part 2 is as follows:

Table 1: Expected sewerage flows

Expected sewage flow	500 l/bed/day
	40 l/employee
Proposed number of beds	800

Expected flow from beds	400 kl/day
Assumed number of employees	800
Expected flow from employees	32 kl/day
Total expected sewage flow	432 kl/day

The Quaggasfontein Bulk Foul Sewer Main is located on the western side of the hospital site and will serve the proposed development. The internal reticulation system should be designed once the hospital layout has been finalised and must comply with the requirements of Emfuleni Local Municipality.

### **Stormwater**

The portion of the Quaggasfontein ERF being used for Phase 5 of the development has a natural gradient from northeast to southwest with an average gradient of +/- 4% with Waterdal Road intercepting the southern portion and the existing wetland on the western boundary and an Eskom Servitude on the eastern boundary. There is no bulk municipal stormwater infrastructure in the hospital site area. The stormwater from the hospital site can therefore not connect to any existing underground network in the area. The surface area of the site will have to be reworked to facilitate effective drainage towards the environmentally sensitive area. Catchment areas and runoff calculations were conducted by CEDS Engineering, and a Stormwater Management Plan was produced and discussed/approved by Emfuleni Local Municipality. The internal stormwater network for the hospital site should be designed once the layout has been finalized and must comply with the requirements of Emfuleni Local Municipality.

### **Electrical**

Usizo Engineering has been appointed to compile an electrical report for the proposed development. The 20MVA 11kV electrical bulk supply to the Lethabong Mixed Housing Development (LMHD) has been designed as 2 x 11kV Chickadee conductor overhead powerlines, on double circuit concrete monopoles, from the Eskom-Emfuleni Sonland 40MVA 88/11kV substation, along Waterdal road to the Lethabong development.

The first 11kV Chickadee overhead powerline will provide a 10MVA bulk supply to Lethabong MHD Phases 1, 2, 3 and 4. The second 11kV Chickadee overhead powerline will provide another 10MVA bulk supply to Phase 5 residential and the Hospital site. Both these 2 x 11kV overhead powerlines will be strung as a double circuit on the same concrete monopoles. The attached drawing shows how and from where the electrical bulk medium voltage (MV) supply will be brought to Phase 5 residential and the Hospital site, as explained below:

The MV electrical bulk supply overhead line to Hospital site, erf 3379 will start from the main Phase 5 residential MV supply line, coming from point 3 in Phase 2. This overhead MV link line will be built next to the access road. See attached sketch. Usizo Engineering further confirm that the second 11kV Chickadee overhead powerline will provide enough electrical power bulk supply for the Hospital site.

### **Traffic**

A Traffic Impact Assessment (TIA) was compiled by Moyeni Professional Engineering. This TIA deals with the major roads in the study area.

### Existing Situation

The township is currently accessed from the intersection of Waterdal Road and Main Road, Phase 1 to the south and Phases 2-4 to the north. Phase 5 is planned to have links over the river providing access to Main Road via Road 19 and Road 29.

### Planned Situation

In the **very long term**, Main Road will provide access to the north to Vereeniging Road in the form of a hard-surfaced route (currently a low-standard gravel road).



### Trip Distribution

The development trips were distributed and assigned to the adjacent road network based on the expected origins and destinations to and from the development as well as existing traffic counts.

The road network, trip distribution assignment and the development framework information of the study area are shown on schematic diagrams as required in TMH 16 South African Traffic Impact and Site Traffic Assessment Manual, Version 1.0, August 2012.

Table 2: Trip Distribution.

DIRECTION OF ORIGIN	PERCENTAGE (%) (AM / PM peak hour periods)		ROUTE FOLLOWED
	From	To	
From / to the north-west	40 / 45	35 / 30	<i>Moshoeshoe Street</i>
From / to the south-west	40 / 35	35 / 40	<i>Sebe Street</i>
From / to the east	20 / 20	30 / 30	<i>Main Road</i>
TOTAL	100 / 100	100 / 100	

The performance of intersections in urban road networks is defined by the level of service (LOS) for each approach to the intersection. These levels of service have been defined in the Highway Capacity Manual (HCM). During the peak hours, the road infrastructure capacity provided should ensure that the intersection approach level of service should *ideally* not exceed LOS D.

Table 3: Level of Service.

Level of Service	Average Approach Delay (d) for Signalised Intersections (seconds)	Average Approach Delay (d) for Priority Intersections (seconds)
A	$d \leq 10$	$d \leq 10$
B	$10 < d \leq 20$	$10 < d \leq 15$
C	$20 < d \leq 35$	$15 < d \leq 25$
D	$35 < d \leq 55$	$25 < d \leq 35$
E	$55 < d \leq 80$	$35 < d \leq 50$
F	$80 < d$	$50 < d$

### Non-motorised Transport

The provision of non-motorised transport facilities forms an integral part of transport planning and should be considered during the planning phases. Non-motorised transport facilities include pedestrian walkways, pedestrian crossings and cycling lanes. The following facilities should be taken into account when undertaking the Site development plan. In terms of good practice, all new developments require 2,0m walkways/footpaths to be provided on one side of the road where pedestrian demand is expected to be high. The following is relevant:

Pedestrian walkways- paved sidewalks do not exist within the study area and are now included on the east side of Main Road and associated portions of the side roads; Pedestrian crossings: Not required as all pedestrians are expected to cross at the intersections.

### Public Transport

Road-based public transport such as mini-bus taxis and buses are subject to the same road operating conditions as private vehicles.

In the context of the type of expanded development for the Site, thorough planning will be required to accommodate the following factors relating to public transport:

- Taxi routes
- Bus routes
- Non-motorised transport

The above factors are therefore pivotal in the provision of an adequate public transport system.

- As surveyed during the counting period and as expected, the existing public transport routes are mainly along Waterdal Road.
- No public transport drop-off/loading areas have been constructed along these routes

Calculations show that 362 and 20 additional minibus and bus vehicles are required to service this development. It is proposed that the permit system in the area be revised to include this demand in the future.

### Conclusion:

Based on the capacity analysis the required road upgrades to be implemented for the proposed hospital development are as follows:

- The Springbok Street intersection on Waterdal Road (previously Houtkop Road) is required to be signalised
- The access street towards the Springbok Street is required to form the front access road to the hospital.
- A secondary access from Road 13A is possible across the stream if required.

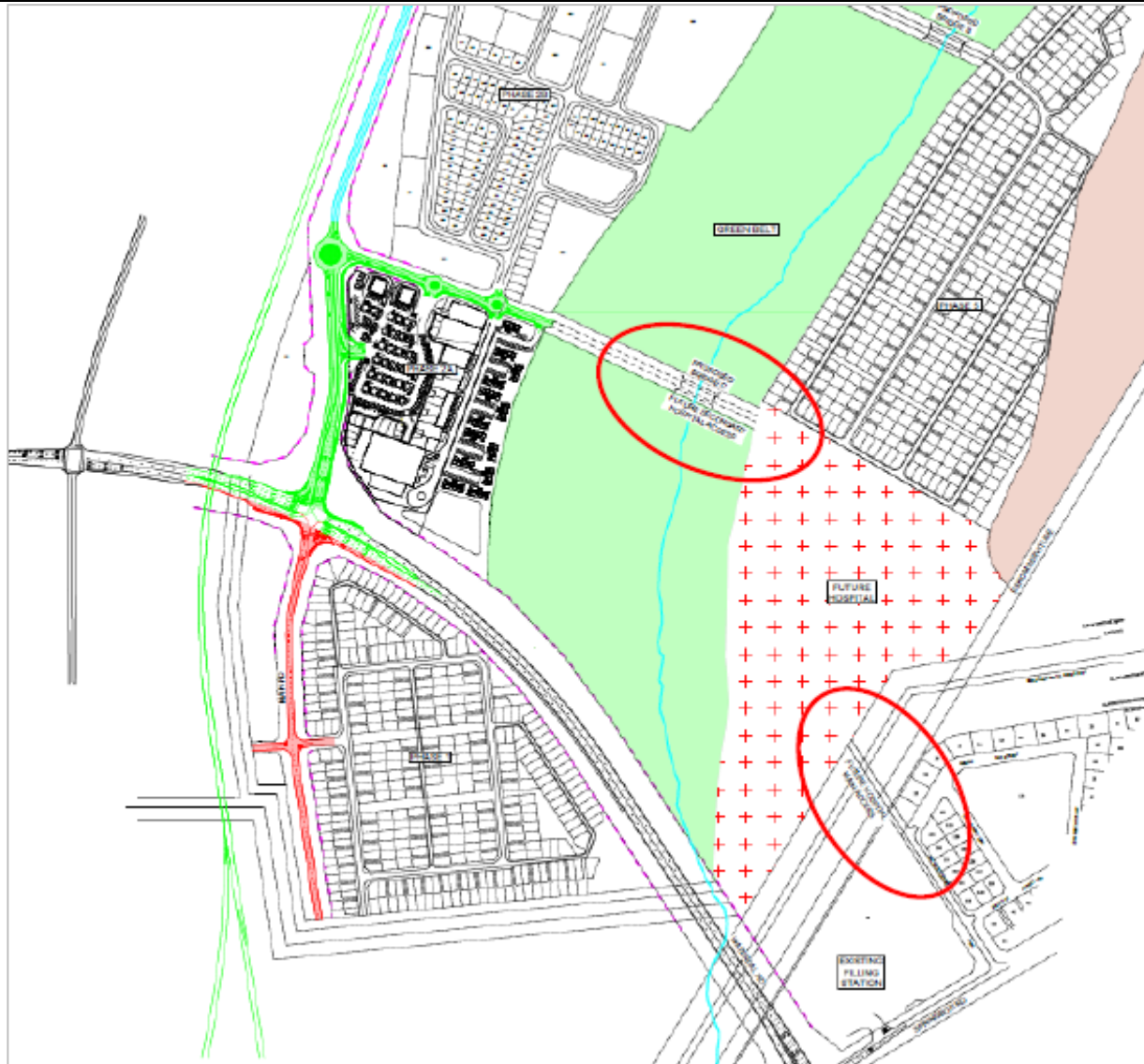


Figure 2: Proposed access points to the proposed hospital (circled in red).

## **ECOLOGICAL**

### **Vegetation**

The site corresponds to the Grassland Biome and more particularly to the Mesic Grassland Bioregion as defined by Mucina & Rutherford (2006). It comprehends an ecological type known as Soweto Highveld Grassland (Mucina & Rutherford, 2006). Soweto Highveld Grassland is a short, dense grassland type occurring on gently to moderately undulating landscapes. The vegetation type when in a climax state, is dominated by a rich assemblage of gramnoid species, most notably *Themeda tiandra*. Soweto Highveld Grassland is a threatened (Endangered) ecosystem with only a few remaining patches of untransformed grassland being statutorily conserved.

### **Gauteng Regional Plans & Ridges**

The site is located immediately adjacent to Class 1 and Class 3 ridge system (Gauteng Ridges Guideline, 2017). According to the Gauteng Ridges Guideline (2017), Class 1 ridges are ridges in respect of which 5% or less of the area has been transformed by human activity and Class 3 ridges are ridges of which that have been transformed as a result of human activity by 35% or more but by less than 65%. For any Class 1 ridge, the following land use and development guidelines are applicable (GDARD, 2017):

- Only low impact activities with an ecological footprint of 5% or less in the 200-metre buffer zone of the ridge will be supported, no development on the ridge itself will be supported.

For any Class 3 ridge, the following land use and development guidelines are applicable (GDARD, 2017):

- Development activities and uses that have a high environmental impact on the Class 3 ridge will not be permitted on areas that have not been significantly impacted by human activities;
- Low impact development activities, such as tourism facilities, which comprises of an ecological footprint of 5% or less of the property may be supported on natural areas.
- Low impact development activities on a ridge will not be supported where it is feasible to undertake the development on a portion of the property abutting the ridge.



Figure 3: Map illustrating the ridges and conservation classes (GDARD, 2017).  
The purple area is the proposed hospital development site.

	Class 1
	Class 2
	Class 3
	Hospital site

Due to the extensive human activities on the site which ranges from mining along the identified Class 3 ridge to the recent illegal dumping stemming from the unlawful occupation of the site it is GNEC's professional opinion that the ridge systems have been significantly compromised and should thus be re-classified. A Terrestrial Biodiversity Impact Assessment to determine the ecological function and relative ecological importance of the habitat on site as well as recommendations regarding the appropriate ridge buffer, will form part of the **application phase** Basic Assessment Report.

## WATERCOURSES

Scientific Aquatic Services (SAS) was appointed to conduct a watercourse ecological assessment as part of the Environmental Impact Assessment (EIA) and Authorisation Process into the Water Use License Application (WULA) for the proposed development on the remaining extent of the farm Quaggasfontein Alias Lapdoorn 548 IQ, Gauteng Province.

To identify all possible watercourses that may potentially be impacted by the proposed development, a 500 m “zone of investigation” around the study area in accordance with General Notice (GN) 509 of 2016 as it relates to the National Water Act, 1998 (Act No. 36 of 1998) (NWA) was used as a guide in which to assess possible sensitivities of the receiving environment. The purpose of this report is to define the ecology of the area in terms of watercourse characteristics, including mapping of the watercourses, defining areas of increased Ecological Importance and Sensitivity (EIS), and to define the Present Ecological State (PES) of the watercourses associated with the proposed development. Additionally, a watercourse assessment report aims to define the socio-cultural and ecological service provision of the watercourses and provide the Recommended Management Objectives (RMO), Best Attainable State (BAS) and Recommended Ecological Category (REC) for the watercourses. It is a further objective of the assessment to provide detailed information to be considered during the construction and operation of the proposed development in the vicinity of the watercourses, to ensure the ongoing functioning of the ecosystems such that local and regional conservation requirements and the provision of ecological services in the local area are supported, while considering the need for sustainable economic development.

Upon conducting a site visit (March 2020), the freshwater specialist identified a single wetland comprising a large unchanneled valley bottom (UCVB) HGM (hydrogeomorphic) unit located from north to south of the study area and two seep HGM units feeding into the UCVB were delineated on the site. Desktop assessment of historical imagery of the study area shows that a large portion of the study area (approximately 65%) was previously utilised for crop cultivation as far back as the 1970s. As a result of these historic agricultural activities, the vegetation composition and diversity within the wetland was considered to have been severely altered and can best be described as a secondary grassland which is considered to have undergone extensive modification and a fundamental shift from their original state. Indiscriminate disposal of foreign soil material was observed within the delineated UCVB and seep HGM units. Where infilling with foreign material has occurred, the natural topographical setting has been impacted, resulting in altered overland flow patterns and formation of preferential flow areas as water moves through paths of least resistance. Excavated trenches were observed within the wetland, in addition to impacting on the natural surface runoff patterns, this has the potential to result in increased erosion and sedimentation of the wetland as well as a loss of water retention and distribution profiles, draining of the wetland, and ultimately a lowering of the natural water table at this point.

The Seep 1 HGM unit has been impacted hydrologically as a result of impacts related to soil compaction and disturbance and well as historical excavations, resulting in some desiccation and alteration of the natural water distribution and retention profiles at this point. Areas where vegetation clearing, and surface compaction has occurred were identified within the study area. Within the delineated UCVB, an informal road traversing the lower reach was identified during the assessment. These impacts increase runoff potential, and in addition have the potential to alter the natural transportation and deposition of sediment.

The integrity of the wetland delineated within the study area has been impacted as a result of historical agricultural activities, clearing of vegetation, infilling and compaction associated with the development of informal settlements and catchment hardening activities linked to urbanisation. Despite their decreased ecological integrity, these systems can still be considered important for their ecological role particularly from a hydrological and geomorphological perspective (erosion control, flood attenuation, streamflow regulation and assimilation of nutrients and toxicants).

Based on the findings of the watercourse ecological assessment, it is the opinion of the freshwater ecologist that the proposed development poses a **moderate risk** to the freshwater systems present. Impacts associated with ground-breaking activities, installation of sewer lines and construction of access roads within the wetland are anticipated to pose

the highest risk to the ecological integrity and functional extent of the wetland although it is acknowledged that the sensitivity of the wetland has been reduced to a degree. Adherence to cogent, well-conceived and ecologically sensitive site development plans, the mitigation measures provided in this report, as well as general good construction practice and ongoing management, maintenance and monitoring, are essential if the significance of the perceived impacts are to be reduced to limit further degradation to the freshwater environment.

It is the opinion of the specialist that the proposed development can be considered ***acceptable on the provision that strict adherence to mitigation measures is enforced to ensure that the ecological integrity of the freshwater environment is not further compromised.*** In addition, it is highly recommended that where possible, new roads which are proposed to be constructed within the wetland must be minimised as far as possible, ideally, no new roads be constructed within the wetland. Should this be unavoidable, careful planning and consideration of the design should take place to ensure free flow of water and to ensure that no upstream inundation, downstream desiccation, and the creation of preferential flow paths takes place. The appropriate design of the access roads and rehabilitation of the areas associated with the roads and stormwater infrastructure are likely to not only avoid impacts on the wetland but assist in enhancing the functionality of the wetland. Similarly, given that the sewer line needs to tie into the existing municipal infrastructure, it is considered inevitable that this infrastructure will encroach within the boundaries of the wetland, but it is considered critical that this is done in an ecologically sensitive manner which does not further compromise the already impacted integrity of the wetland.

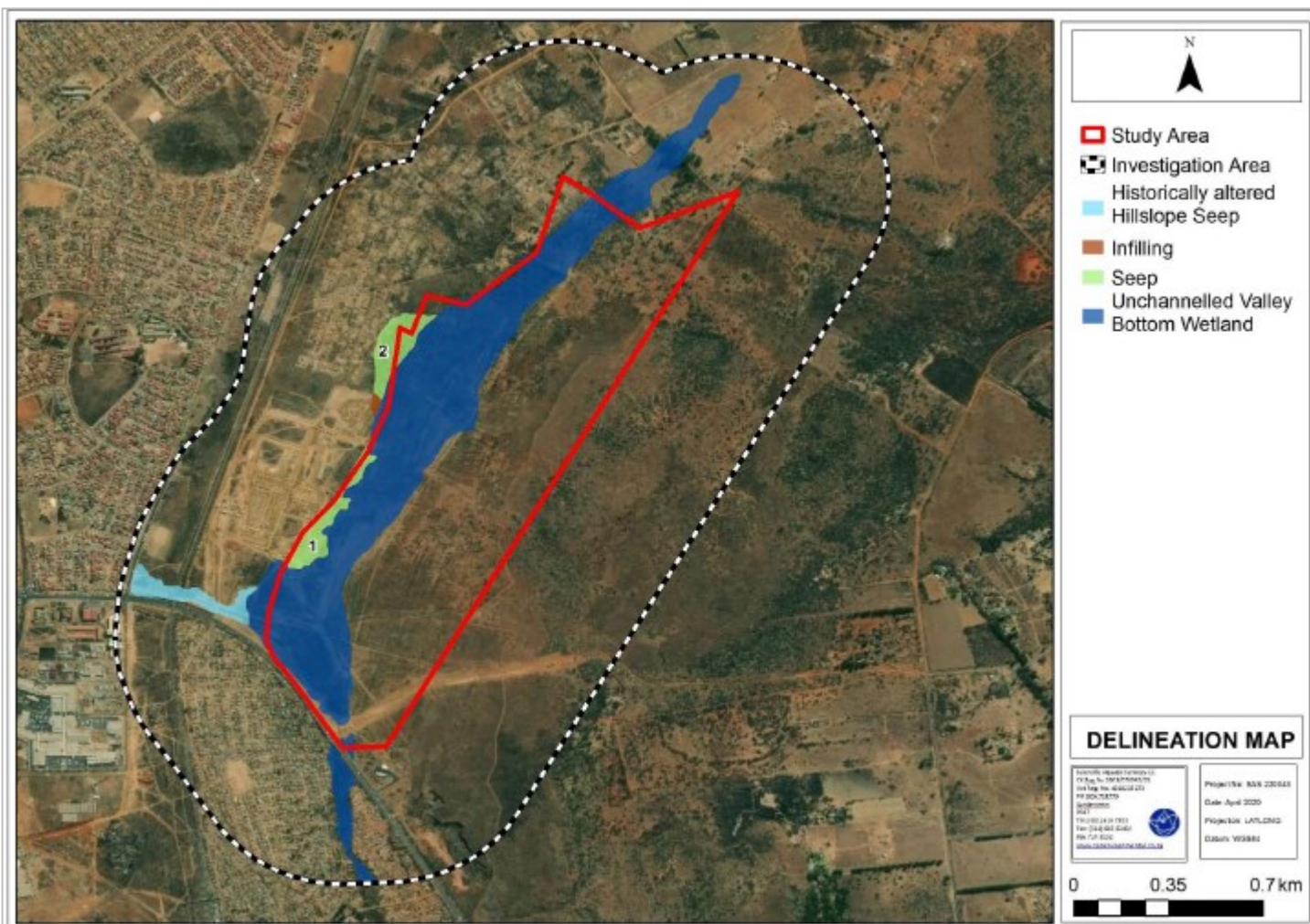


Figure 4: Water delineation map (SAS, 2020).

## **HYDROPEDOLOGICAL**

Digital Soils Africa were appointed to conduct a Hydropedological Report for the proposed development. Hydropedology is the relatively new, interdisciplinary research field which focuses on the interactive relationship between soils and water. Soil physical properties, such as the hydraulic conductivity and porosity, have an important impact on the occurrence and rates of hydrological processes. In turn, hydrological processes play an important role on the formation of soil morphological properties such as colour, mottles, macropores and carbonate accumulations. The assessment was conducted in accordance with the Department of Water and Sanitation guidelines for hydropedological studies. The aim of the Hydropedological study is to characterise the hydraulic properties of the underlying soil and determine the impacts on water resources.

A desktop survey which included obtaining the land type information as well the collection of environmental covariates for the site and the surrounding area. These layers included Landsat 8 image and the 30 m Shuttle Radar Topography Mission (SRTM) Digital Elevation Model (DEM) courtesy of the U.S. Geological Survey. Secondary covariate layers were derived from the Landsat 8 and DEM layers in SAGA-GIS. A field survey was conducted in August 2020 where test pits of 2.5 m were dug or to a limiting layer on the eastern side while excavations of the nearby building project was used for observations on the western side of the site.

The soil forms observed in the study site are Glenrosa, Mispah, Bainsvlei, Rensburg, Longlands, Westleigh, Constantia and Tukululu. On the eastern side of the wetland, the main soil distribution was Glenrosa on the top of the hill, within the dolerite outcrops, changing into Bainsvlei on the midslopes and Rensburg in the Wetland.

A small area in the south eastern part of the site had a soil distribution of Glenrosa all the way down to the wetland, with the rock type changing from dolerite to shale halfway down the hillslope. On the western slope, two different soil distribution patterns were observed. In the north west, Glenrosa occurs at the top of the site, which is just below the crest of the hillslope. The soil form changes to Longlands on the midslope and Rensburg again in the wetland. In the south west, the Longlands soil form in the midslope changes to a Constantia at the top of the site.

The site consists of shallow recharge soils on the crest, interflow soils on the midslopes and a responsive wet soil in the valley bottom.

The simulated hydropedological processes in the catchment are dominated by evapotranspiration (ET) (67.1%) and surface runoff (24.3%). The increase in the surface area under development will result in a marked increase in the surface runoff (25.3% increase). At basin scale the yearly average available soil water content is likely to decline by 8.5%. Surface runoff is likely to increase by >70%, making up 28% of rainfall received. Percolation, lateral flow and transpiration is likely to reduce significantly, whilst the evaporation will increase with around 40 mm/year. These changes in the water balance are directly caused by the larger area which are sealed by the development i.e., roofs, roads and pavements.

The simulated impact on the wetlands is a loss of 5.8% in the topsoil and 9% in total of the available water content in the wetland. If the mitigation of preventing recharge and erosion control is practiced as recommended by the Hydropedological specialist, then risks of the development are manageable.

## **HERITAGE**

The proposed development will trigger Section 38 of the NHRA. A Notice of Intent to Develop (NID) will be submitted to SAHRA (as the responsible authority) to determine whether a Heritage Impact Assessment should be conducted as part of the proposed development.

## **NEMA LISTED ACTIVITIES**

<b>Activity No(s):</b>	<b>The relevant Basic Assessment Activity(ies) as set out in Listing Notice</b>	<b>The portion of the proposed development to which the applicable listed activity relates.</b>
	<b>1</b>	

<p><b>9</b></p>	<p>The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water—</p> <ul style="list-style-type: none"> <li>(i) with an internal diameter of 0,36 metres or more; or</li> <li>(ii) with a peak throughput of 120 litres per second or more;</li> </ul> <p>Excluding where –</p> <ul style="list-style-type: none"> <li>(a) such infrastructure is for bulk transportation of water or storm water drainage inside a road reserve or railway line reserve; or</li> <li>(b) where such development will occur within an urban area.</li> </ul>	<p>Construction of water and stormwater infrastructure through the UCVB wetland.</p>
<p><b>10</b></p>	<p>The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes –</p> <ul style="list-style-type: none"> <li>(i) with an internal diameter of 0,36 metres or more or</li> <li>(ii) with a peak throughput of 120 litres per second or more;</li> </ul> <p>Excluding where –</p> <ul style="list-style-type: none"> <li>(a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or</li> <li>(b) where such development will occur within an urban area.</li> </ul>	<p>Construction of sewer pipelines through the UCVB wetland.</p>
<p><b>12</b></p>	<p>The development of –</p> <ul style="list-style-type: none"> <li>(i) dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 100 square metres; or</li> <li>(ii) infrastructure or structures with a physical footprint of 100 square metres or more;</li> </ul> <p>where such development occurs –</p>	<p>The construction of roadways and services in the identified UCVB wetland.</p>



	<p>a) within a watercourse;  b) in front of a development setback; or  c) if no development setback exists, within 32m of a watercourse, measured from the edge of a watercourse; - excluding –</p> <p>aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour;</p> <p>bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies;</p> <p>cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies;</p> <p>dd) where such development occurs within an urban area.</p> <p>ee) where such development occurs within roads, road reserves or railway line reserves; or</p> <p>ff) the development of temporary infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p>	
<p><b>19</b></p>	<p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse;</p> <p>but excluding where such infilling, depositing, dredging, excavation, removal or moving—</p>	<p>The construction of roadways and services in the identified UCVB wetland.</p>

	<p>(a) will occur behind a development setback;</p> <p>(b) is for maintenance purposes undertaken in accordance with a maintenance management plan;</p> <p>(c) falls within the ambit of activity 21 in this Notice, in which case that activity applies;</p> <p>(d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or</p> <p>(e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	
<b>24</b>	<p>The development of a road—</p> <p>(i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or</p> <p>(ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road—</p> <p>(a) which is identified and included in activity 27 in Listing Notice 2 of 2014;</p> <p>(b) where the entire road falls within an urban area; or</p> <p>(c) which is 1 kilometre or shorter.</p>	Roadways associated with the proposed hospital development.
<b>27</b>	<p>The clearance of an area of 1 hectare or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for –</p> <p>(i) The undertaking of a linear activity; or</p>	The clearance of approximately 12 hectares of possible indigenous vegetation in extent for the proposed development. To be confirmed by the appointed terrestrial biodiversity specialist.

	Maintenance purposes undertaken in accordance with a maintenance management plan.	
28	<p>Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes, afforestation on or after 01 April 1998 and where such development:</p> <p>(i) Will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or</p> <p>(ii) Will occur outside an urban area, where the total land to be developed is bigger than 1 hectare;</p> <p>Excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.</p>	The development of a hospital (institutional) on land previously utilised for agricultural purposes. To be confirmed by the appointed terrestrial biodiversity specialist.
<b>Activity No(s):</b>	<b>The relevant Basic Assessment Activity(ies) as set out in Listing Notice 3</b>	<b>The portion of the proposed development to which the applicable listed activity relates.</b>
4	<p>The development of a road wider than 4 metres with a reserve less than 13,5 metres.</p> <p><b>c. Gauteng</b></p> <p>i. A protected area identified in terms of NEMPAA, excluding conservancies;</p> <p>ii. National Protected Area Expansion Strategy Focus Areas.</p> <p>iii. Gauteng Protected Area Expansion Priority Area;</p> <p>iv. Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans;</p> <p>v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004);</p>	Roadways associated with the proposed hospital development.

	<p>vi Sensitive areas identified in an environmental management framework adopted by the relevant environmental authority;</p> <p>vii. Sites or areas identified in terms of an international convention;</p> <p>viii. Sites managed as protected areas by provincial authorities, or declared as nature reserves in terms of the Nature Conservation Ordinance (Ordinance 12 of 1983) or the NEMPAA;</p> <p>ix. Sites designated as nature reserves in terms of municipal Spatial Development Frameworks; or</p> <p>x. Sites zoned for conservation use or public open space or equivalent zoning.</p>	
<p><b>12</b></p>	<p>The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.</p> <p><b>c. <u>Gauteng</u></b></p> <p>i Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</p> <p>ii Within Critical Biodiversity Areas or Ecological Support Areas identified in the Gauteng Conservation Plan or bioregional plans; or</p> <p>iii On land, where, at the time of the coming into effect of this Notice or thereafter such land was zoned open</p>	<p>Possible clearance of endangered indigenous vegetation.</p>

space, conservation or had an equivalent zoning.

### **BASIC ASSESSMENT PROCESS**

The pre-application public participation period commenced on the 14<sup>th</sup> of November 2022 until the 14<sup>th</sup> of December 2022. The 1<sup>st</sup> Draft pre-application Basic Assessment Report (BAR) was made available to all relevant State Departments and Interested and Affected Parties. The 1<sup>st</sup> Draft pre-application BAR was uploaded on the GNEC's website for easy access at [www.gnec.co.za](http://www.gnec.co.za).

Select the appropriate box

The application is for an upgrade of an existing development

The application is for a new development

Other, specify

N/A

Does the activity also require any authorisation other than NEMA EIA authorisation?

**YES** | NO

If yes, describe the legislation and the Competent Authority administering such legislation

Water Use Licence Authorisation – Department of Water and Sanitation  
Town Planning Process for re-zoning – Emfuleni Local Municipality  
Heritage Impact ROD/Comment – South African Heritage Resources Agency (SAHRA)

If yes, have you applied for the authorisation(s)?

If yes, have you received approval(s)? (Attach in appropriate appendix)

YES	NO
YES	NO

## **2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES**

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

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	27 November 1998
National Heritage Resources Act 25 of 1999	National & Provincial	1999
National Water Act 36 of 1998	National & Provincial	1998
National Development Plan	National	2013
National Environmental Management Biodiversity Act 10 of 2004	National & Provincial	2004
Gauteng Provincial Environmental Management Framework	Provincial	2014
Sedibeng District Municipality Spatial Development Framework	District	2019
Emfuleni Local Municipality Spatial Development Framework	Local	2020
Sedibeng Growth Development Strategy (GDS)	Provincial	2017
Spatial Planning and Land use Management Act, 2013 (SPLUMA)	Provincial	2013

Description of compliance with the relevant legislation, policy or guideline:

**Legislation, policy of guideline**

**Description of compliance**

National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998 as amended)	An application for Environmental Authorisation for the proposed development is submitted
National Water Act, 1998 (Act 36 of 1998)	An application for a Water Use License for the proposed development has been submitted to the Department of Water and Sanitation.
National Development Plan (NDP)	<p>The South African Government through the Presidency has published a National Development Plan. The Plan aims to eliminate poverty and reduce inequality by 2030. The Plan has the target of developing people's capabilities to improve their lives through education and skills development, health care, better access to public transport, jobs, social protection, rising income, housing and basic services, and safety. It proposes to implement the following strategies to address the above goals.</p> <p>The proposed development is therefore in line with the NDP.</p>
National Heritage Resources Act, 1999 (Act 25 of 1999).	The proposed development triggers Section 38 (1) (c) (i) as it will effect a change in character of a site larger than 5 000 m <sup>2</sup> . An application for the proposed development will be submitted to SAHRA than 5 000 m <sup>2</sup> to SAHRA to determine whether any further action under section 38 of the National Heritage Resources Act, 1999 is required.
National Environmental Management: Biodiversity Act 10 of 2004	The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) as amended (NEMBA) including all the pertinent legislation published in terms of this act was considered in undertaking this Basic Assessment process. This included the determination and assessment of the fauna and flora prevailing in the proposed project and the handling thereof in terms of NEMBA.
Gauteng Provincial Environmental Management Framework	The majority (80%) of the study area is situated within the urban development zone. The proposed development is thus deemed to be in line with the Gauteng Provincial Environmental Framework.
Sedibeng District Municipality Spatial Development Framework (SDF)	<p>The SDF responds to the policy and legislative parameters established by National and Provincial Government and take cognisance of the municipal space economy in the context of the provincial and national space economies.</p> <p>More specifically, the Sedibeng District SDF will aim towards achieving the following objectives:</p>

	<p>Provide a strategic spatial development vision for the district in line with the broad development objectives of the National and Provincial policies;</p> <p>Provide a clear and comprehensive Spatial Framework for the district which will inform, improve and guide cross-sectoral policy alignment and project implementation and integration;</p> <p>Indicate in as much detail as possible to stakeholders the desired future spatial form for the district; Highlight planning, environmental, infrastructural and institutional issues that gave rise to the proposals contained in the final document;</p> <p>Provide all stakeholders an opportunity to participate during the process of formulating the SDF;</p> <p>Provide a spatial reflection of the needs and priorities established in the district integrated development plan and identify specific issues which are unique to the district;</p> <p>Address rural development issues such as the integration with urban areas, the provision of social facilities and the provision of infrastructure to rural communities;</p> <p>Identify areas for economic opportunities, particularly in the industrial, commercial, agricultural and tourism sectors; Identify infrastructure needs and services constraints and bring forward tangible solutions to address these;</p> <p>Accommodate the growing housing needs taking into account the current backlogs and the projected need for development of various housing methodologies (e.g., "Gap Housing", Social Housing, FLISP, etc.);</p> <p>Protect the natural environment, and more specifically hydrological and topographical resources, biodiversity areas, and high potential agricultural land.</p> <p>The proposed development is therefore in line with the Sedibeng District Municipality Spatial Development Framework (SDF).</p>
<p>Emfuleni Local Municipality Spatial Development Framework</p>	<p>The following objectives needed to be met by the SDF:</p> <p>To provide a strategic development vision for Emfuleni in line with the EGDS and the IDP;</p>

	<p>To draft a comprehensive spatial development framework for Emfuleni;</p> <p>To address specific developmental issues and challenges in Emfuleni;</p> <p>To provide a strategic context for the integration and implementation of existing studies applicable to Emfuleni;</p> <p>To identify specific interventions to realise the vision; and to ensure sustainable integrated development.</p> <p>The proposed development is therefore aligned with the goals of the Emfuleni SDF.</p>
Sedibeng Growth Development Strategy (GDS)	<p>The Sedibeng Growth Development Strategy (GDS) presents a multi-stakeholder framework to develop Sedibeng up to 2030 by focusing on the following principles:</p> <p>Eradicating poverty, providing access to basic and essential services, providing all forms of income that are readily accessible, preparing people with relevant skills, and growing employment and business opportunities.</p> <p>Creating an economy that is diverse, robust and growing, ensuring that the benefits of growth are shared, ensuring the SMME sector continues to grow and flourish, and making Sedibeng an attractive destination for direct investment.</p> <p>Ensuring human settlements have mixed housing typologies and mixed uses, it is easy and safe to move around, and ensuring good governance.</p> <p>Building on the region's competitive advantages and engaging the private sector in joint local economic development initiatives.</p>
Spatial Planning and Land use Management Act, 2013 (SPLUMA)	SPLUMA will be taken into consideration during the town planning application.



### 3. ALTERNATIVES

Describe the proposal and alternatives that are considered in this application. Alternatives should include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the 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.

The no-go option must in all cases be included in the assessment phase as the baseline against which the impacts of the other alternatives are assessed. Do not include the no go option into the alternative table below.

**Note:** 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 it is clear that realistic alternatives have not been considered to a reasonable extent.

Please describe the process followed to reach (decide on) the list of alternatives below

One of the objectives of an EIA is to investigate alternatives to the proposed project. The IEM procedure stipulates that the environmental investigation needs to consider feasible alternatives for any proposed development. Therefore, possible proposals or alternatives for accomplishing the same objectives should be identified and investigated. In order to ensure that the proposed development enables sustainable development, feasible alternatives must be explored.

However, no feasible alternatives were identified at this stage due to the need for the hospital (activity) in this area and this site being the only one available for the Department of Health. Furthermore, and as mentioned before, the site has been negatively impacted by human activities.

Provide a description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other (provide details of "other")	Description
1	Proposal	<p>The applicant proposes a provincial hospital with an approximate gross leasable area (GLA) of 50 000m<sup>2</sup> on an area of approximately 12,37 hectares in extent. The proposed hospital will consist of approximately 800 beds.</p> <p><b>Access:</b> The main access will be taken off Waterdal Road (Houtkop Road) at the corner of Springbok Street.</p> <p><b>Potable Water</b> An existing 1000 mm diameter Randwater bulk supply line is located adjacent Waterdal Road that has been utilised for supplying the current Phase 2 of the Development. The connecting 355mm diameter link watermain was sized in an appropriate manner to make ample allowance for the balance of the proposed development. To service the Phase 5 and the hospital site, the 355mm dia watermain from Phase 2 will be extended across the wetland (within the planned road servitude crossing the wetland) to the eastern portion (Phase 5) of the development to supply water and to complete a ring feed connecting in a similar manner with the more northern Phase 4 across the wetland. An additional connection directly to the Randwater bulk water supply pipeline will have to be constructed for the exclusive use of the proposed hospital.</p>

No link services are currently available in the immediate surrounds of the proposed development. Link Services will accordingly be required to be constructed from Phases 3 and 4 to service the hospital site. The internal reticulation systems should be designed once the hospital layout has been finalised and must comply with the requirements of Emfuleni Local Municipality's Engineering Department. The requirements of on-site water storage facilities for emergency and fire-fighting facilities must be investigated and incorporated into the final design.

***Sewerage***

The Quaggasfontein Bulk Foul Sewer Main is located on the western side of the hospital site and will serve the proposed development. The internal reticulation system should be designed once the hospital layout has been finalised and must comply with the requirements of Emfuleni Local Municipality.

***Stormwater***

The portion of the Quaggasfontein ERF being used for Phase 5 of the development has a natural gradient from northeast to southwest with an average gradient of +/- 4% with Waterdal Road intercepting the southern portion and the existing wetland on the western boundary and an Eskom Servitude on the eastern boundary. There is no bulk municipal stormwater infrastructure in the hospital site area. The stormwater from the hospital site can therefore not connect to any existing underground network in the area. The surface area of the site will have to be reworked to facilitate effective drainage towards the environmentally sensitive area. Catchment areas and runoff calculations were conducted by CEDS Engineering, and a Stormwater Management Plan was produced and discussed/approved by Emfuleni Local Municipality. The internal stormwater network for the hospital site should be designed once the layout has been finalized and must comply with the requirements of Emfuleni Local Municipality.

***Electrical***

The 20MVA 11kV electrical bulk supply to the Lethabong Mixed Housing Development (LMHD) has been designed as 2 x 11kV Chickadee conductor overhead powerlines, on double circuit concrete monopoles, from the Eskom-Emfuleni Sonland 40MVA 88/11kV substation, along Waterdal road to the Lethabong development.

The first 11kV Chickadee overhead powerline will provide a 10MVA bulk supply to Lethabong MHD Phases 1, 2, 3 and 4. The second 11kV Chickadee overhead powerline will provide another 10MVA bulk supply to Phase 5 residential and the Hospital site. Both these 2 x

		<p>11kV overhead powerlines will be strung as a double circuit on the same concrete monopoles.</p> <p>The attached drawing shows how and from where the electrical bulk medium voltage (MV) supply will be brought to Phase 5 residential and the Hospital site, as explained below:</p> <p>The MV electrical bulk supply overhead line to Hospital site, erf 3379 will start from the main Phase 5 residential MV supply line, coming from point 3 in Phase 2. This overhead MV link line will be built next to the access road. See attached sketch. We further confirm that the second 11kV Chickadee overhead powerline will provide enough electrical power bulk supply for the Hospital site.</p>
2	Alternative 1	N/A
3	Alternative 2	N/A
	Etc.	N/A

In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

No feasible alternatives were identified at this stage due to the need for the hospital (activity) in this area and this site being the only one available for the Department of Health. Furthermore, and as mentioned before, the site has been negatively impacted by human activities.

#### 4. PHYSICAL SIZE OF THE ACTIVITY

Indicate the total physical size (footprint) of the proposal as well as alternatives. Footprints are to include all new infrastructure (roads, services etc), impermeable surfaces and landscaped areas:

Proposed activity (**Total environmental (landscaping, parking, etc.) and the building footprint**)

**Size of the activity:**

20 ha (5ha)

**Alternatives:**

Alternative 1 (if any)

N/A

Alternative 2 (if any)

N/A

Ha/ m<sup>2</sup>

or, for linear activities:

Proposed activity

**Length of the activity:**

N/A

**Alternatives:**

Alternative 1 (if any)

N/A

Alternative 2 (if any)

N/A

m/km

Indicate the size of the site(s) or servitudes (within which the above footprints will occur):

Proposed activity

**Size of the site/servitude:**

N/A

**Alternatives:**

Alternative 1 (if any)

N/A

Alternative 2 (if any)

N/A

Ha/m<sup>2</sup>

#### 5. SITE ACCESS

**Proposal**

Does ready access to the site exist, or is access directly from an existing road?

**YES**    **NO**

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

m

Describe the type of access road planned:

Based on the capacity analysis of the TIA, the required road upgrades to be implemented for the proposed hospital development are as follows:

- The Springbok Street intersection on Waterdal Road (previously Houtkop Road) is required to be signalised
- The access street towards the Springbok Street is required to form the front access road to the hospital.
- A secondary access from Road 13A is possible across the stream if required.

Please refer to Figure 2.

Include the position of the access road on the site plan (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

**Alternative 1**

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
-----	----

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

N/A
-----

Describe the type of access road planned:

N/A

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

**Alternative 2**

Does ready access to the site exist, or is access directly from an existing road?

YES	NO
-----	----

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

N/A
-----

Describe the type of access road planned:

N/A

Include the position of the access road on the site plan. (if the access road is to traverse a sensitive feature the impact thereof must be included in the assessment).

## PLEASE NOTE: Points 6 to 8 of Section A must be duplicated where relevant for alternatives

Section A 6-8 has been duplicated  Number of times  
(only complete when applicable)

### 6. LAYOUT OR ROUTE PLAN

A detailed site or route (for linear activities) plan(s) must be prepared for each alternative site or alternative activity. It must be attached to this document. The site or route plans must indicate the following:

- the layout plan is printed in colour and is overlaid with a sensitivity map (if applicable);
- layout plan is of acceptable paper size and scale, e.g.
  - A4 size for activities with development footprint of 10sqm to 5 hectares;
  - A3 size for activities with development footprint of > 5 hectares to 20 hectares;
  - A2 size for activities with development footprint of >20 hectares to 50 hectares);
  - A1 size for activities with development footprint of >50 hectares);
- The following should serve as a guide for scale issues on the layout plan:
  - A0 = 1: 500
  - A1 = 1: 1000
  - A2 = 1: 2000
  - A3 = 1: 4000
  - A4 = 1: 8000 (±10 000)
- shapefiles of the activity must be included in the electronic submission on the CD's;
- the property boundaries and Surveyor General numbers of all the properties within 50m of the site;
- the exact position of each element of the activity as well as any other structures on the site;
- the position of services, including electricity supply cables (indicate above or underground), water supply pipelines, boreholes, sewage pipelines, septic tanks, storm water infrastructure;
- servitudes indicating the purpose of the servitude;
- sensitive environmental elements on and within 100m of the site or sites (including the relevant buffers as prescribed by the competent authority) including (but not limited thereto):
  - Rivers and wetlands;
  - the 1:100 and 1:50 year flood line;
  - ridges;
  - cultural and historical features;
  - areas with indigenous vegetation (even if it is degraded or infested with alien species);
- Where a watercourse is located on the site at least one cross section of the water course must be included (to allow the position of the relevant buffer from the bank to be clearly indicated)

#### FOR LOCALITY MAP (NOTE THIS IS ALSO INCLUDED IN THE APPLICATION FORM REQUIREMENTS)

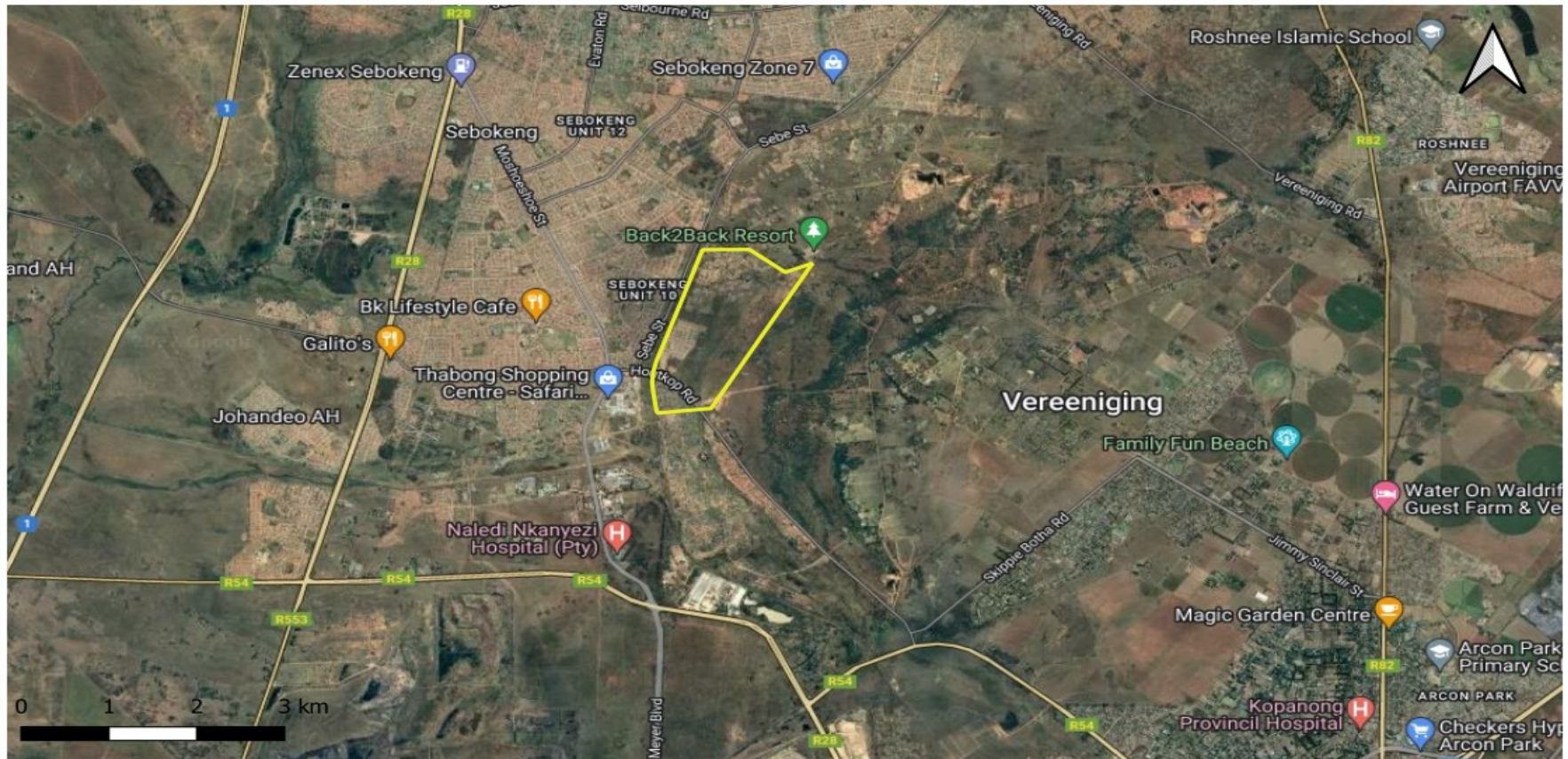
- the scale of locality map must be at least 1:50 000. For linear activities of more than 25 kilometres, a smaller scale e.g. 1:250 000 can be used. The scale must be indicated on the map;
- the locality map and all other maps must be in colour;
- locality map must show property boundaries and numbers within 100m of the site, and for poultry and/or piggery, locality map must show properties within 500m and prevailing or predominant wind direction;
- for gentle slopes the 1m contour intervals must be indicated on the map and whenever the slope of the site exceeds 1:10, the 500mm contours must be indicated on the map;
- areas with indigenous vegetation (even if it is degraded or infested with alien species);
- locality map must show exact position of development site or sites;
- locality map showing and identifying (if possible) public and access roads; and
- the current land use as well as the land use zoning of each of the properties adjoining the site or sites.

### 7. SITE PHOTOGRAPHS

Colour photographs from the center 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 the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

### 8. FACILITY ILLUSTRATION

A detailed illustration of the activity must be provided at a scale of 1:200 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 to be attached in the appropriate Appendix.

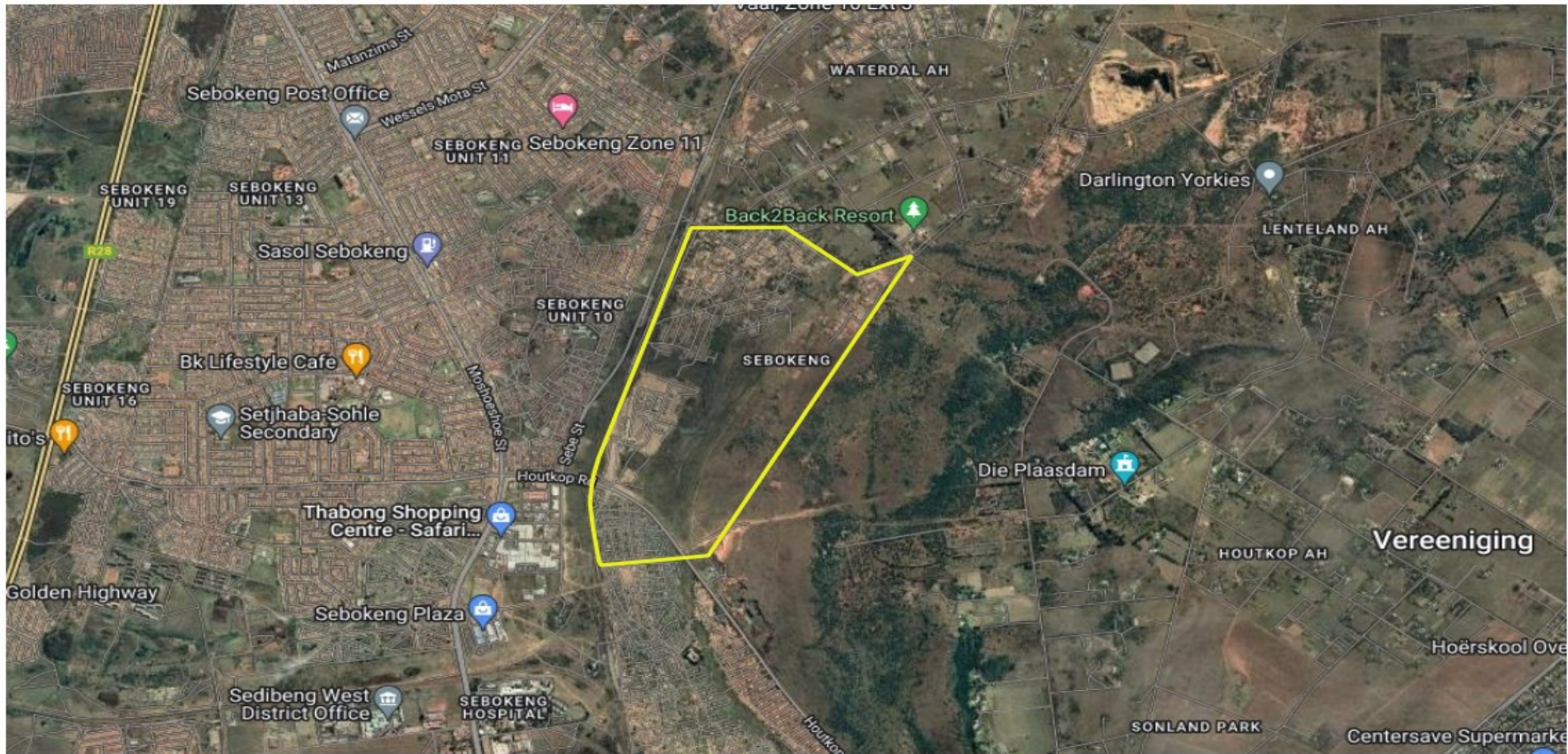


PROPOSED DEVELOPMENT ON THE REMAINING EXTENT OF FARM QUAGGASFONTEIN ALIAS LAPDOORN 548 IQ, SEBOKENG, VEREENIGING, GAUTENG.

Locality Map



Figure 5: Locality map of the remaining extent of Farm Quaggasfontein Alias Lapdoorn 548 IQ, Sebokeng, Vereeniging, Gauteng.



PROPOSED RESIDENTIAL DEVELOPMENT ON THE REMAINING EXTENT OF FARM QUAGGASFONTEIN ALIAS LAPDOORN 548 IQ, SEBOKENG, VEREENIGING, GAUTENG.

Aerial Image



Figure 6: Aerial image of the remaining extent of Farm Quaggasfontein Alias Lapdoorn 548 IQ, Sebokeng, Vereeniging, Gauteng.

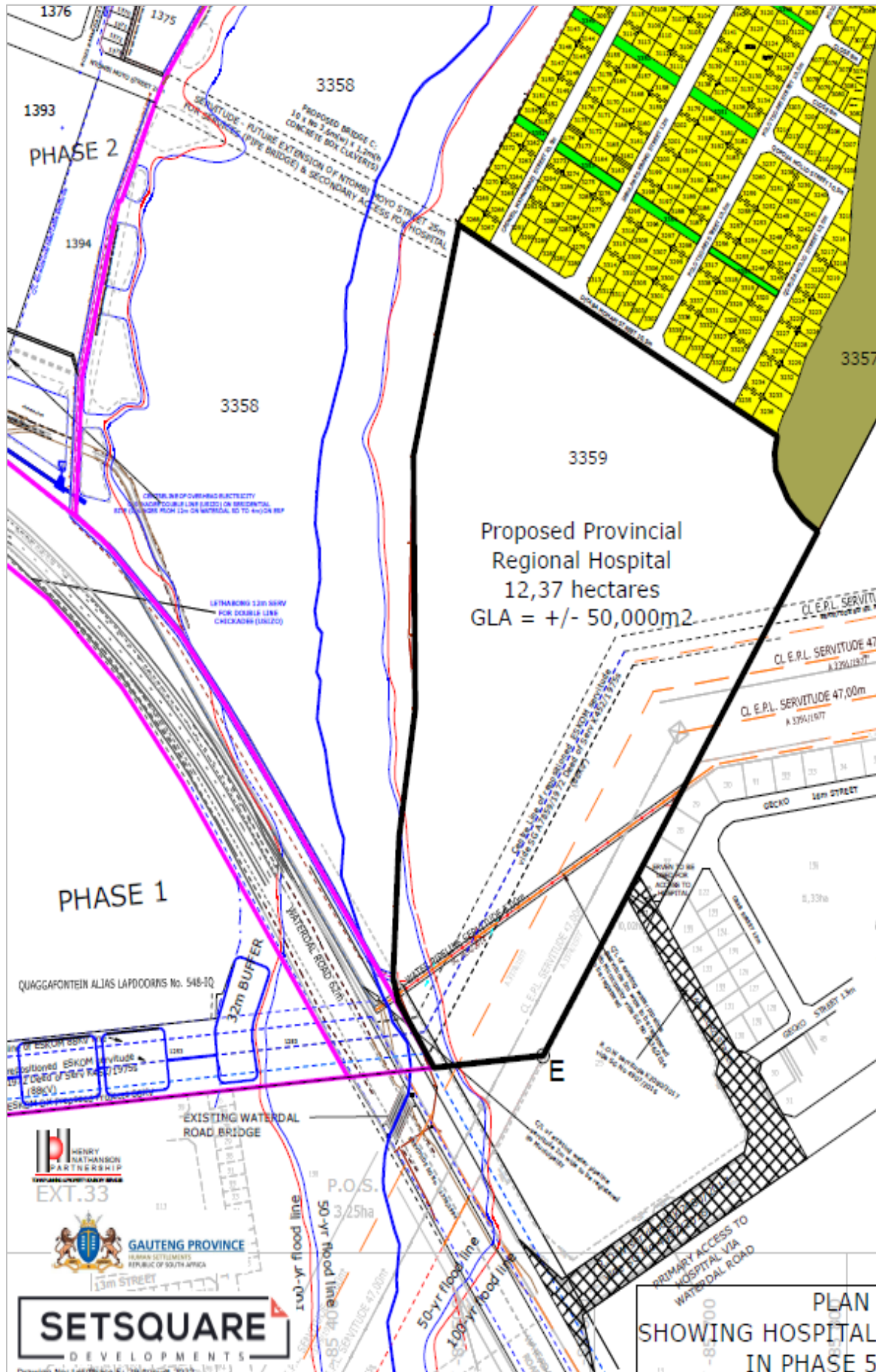


Figure 7: Preferred layout.



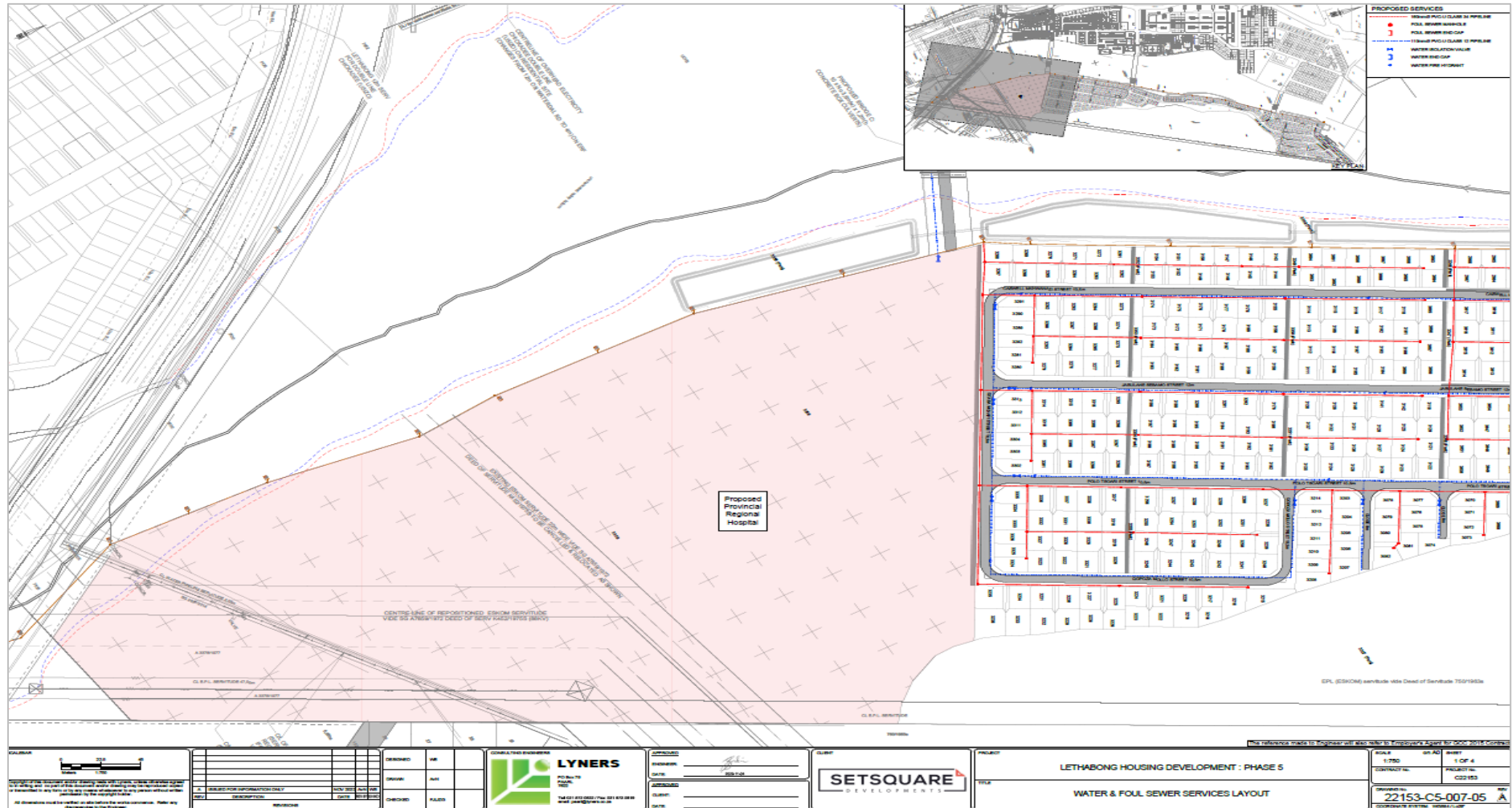


Figure 8: Water and foul sewer layout (Lyners, 2022).

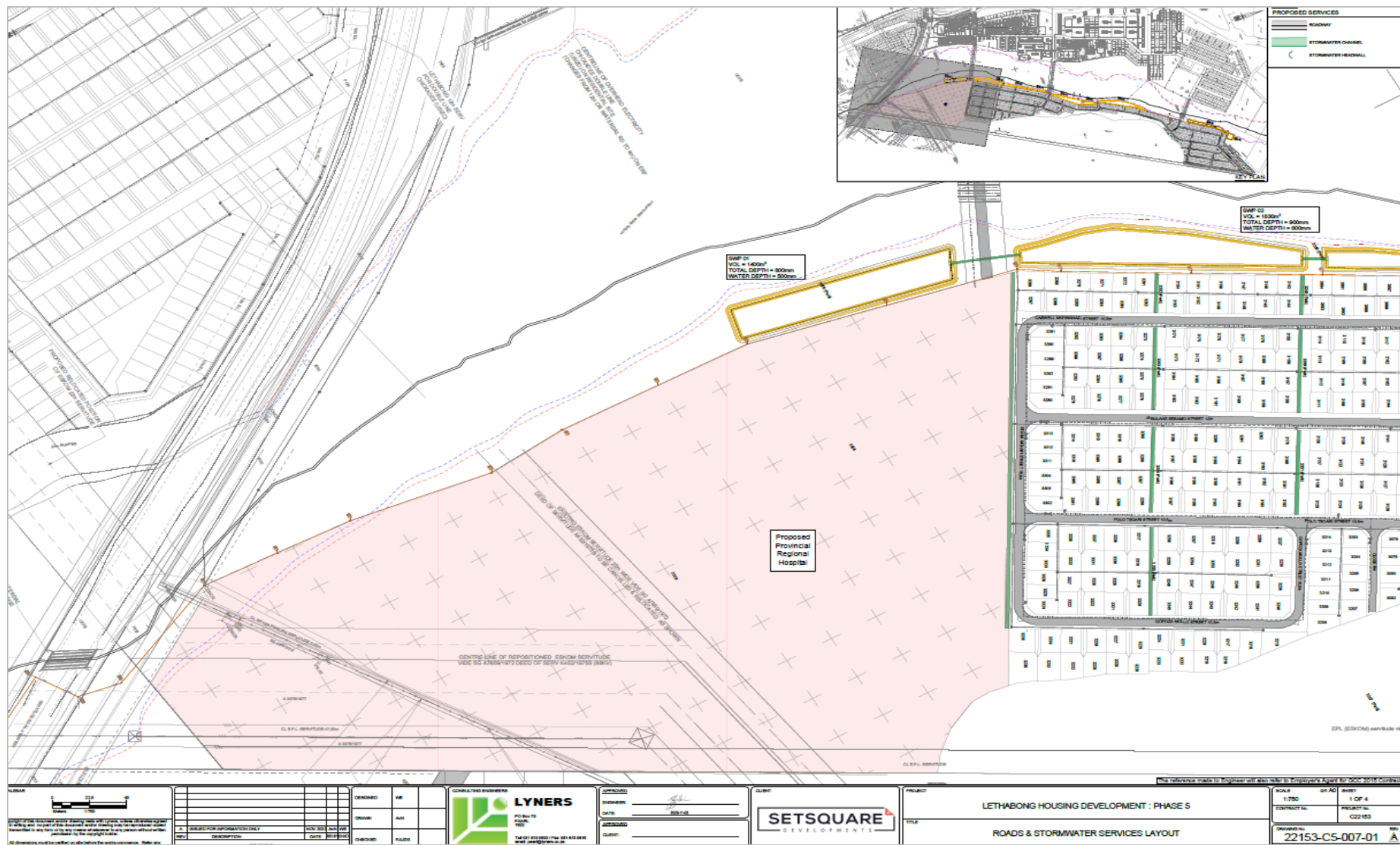


Figure 9: Roads and Stormwater layout (Lyners, 2022).

# SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

**Note:** Complete Section B for the proposal and alternative(s) (if necessary)

## Instructions for completion of Section B for linear activities

- 1) For linear activities (pipelines etc) it may be necessary to complete Section B for each section of the site that has a significantly different environment.
- 2) Indicate on a plan(s) the different environments identified
- 3) Complete Section B for each of the above areas identified
- 4) Attach to this form in a chronological order
- 5) Each copy of Section B must clearly indicate the corresponding sections of the route at the top of the next page.

Section B has been duplicated for sections of the route  times

## Instructions for completion of Section B for location/route alternatives

- 1) For each location/route alternative identified the entire Section B needs to be completed
- 2) Each alternative location/route needs to be clearly indicated at the top of the next page
- 3) Attach the above documents in a chronological order

Section B has been duplicated for location/route alternatives  times (complete only when appropriate)

## Instructions for completion of Section B when both location/route alternatives and linear activities are applicable for the application

Section B is to be completed and attachments order in the following way

- All significantly different environments identified for Alternative 1 is to be completed and attached in a chronological order; then
- All significantly different environments identified for Alternative 2 is to be completed and attached chronological order, etc.

Section B - Section of Route  (Complete only when appropriate for above)

Section B – Location/route Alternative No.  (Complete only when appropriate for above)

## 1. PROPERTY DESCRIPTION

**Property description:**  
(Including Physical Address and Farm name, portion etc.)

The remaining extent of Farm Quaggasfontein Alias Lapdoorn  
548 IQ, Lethabong, Sebokeng, Gauteng.

## 2. ACTIVITY POSITION

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 decimal degrees. The degrees should have at least six decimals to ensure adequate accuracy. The projection that must be used in all cases is the WGS84 spheroid in a national or local projection.

<b>Alternative:</b>	<b>Latitude (S):</b>	<b>Longitude (E):</b>
	26°35'41.12"	27°51'32.36"

**In the case of linear activities:**

<b>Alternative:</b>	<b>Latitude (S):</b>	<b>Longitude (E):</b>
• Starting point of the activity	N/A	N/A
• Middle point of the activity	N/A	N/A
• End point of the activity	N/A	N/A

For route alternatives that are longer than 500m, please provide co-ordinates taken every 250 meters along the route and attached in the appropriate Appendix

Addendum of route alternatives attached

The 21 digit Surveyor General code of each cadastral land parcel

PROPOSAL	T	0	J	R	0	0	0	0	0	0	0	0	0	3	4	0	0	0	5	4	8
ALT. 1																					
ALT. 2																					
etc.																					

### 3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat	1:50—1:20	<b>1:20 – 1:15</b>	1:15—1:10	1:10—1:7,5	1:7,5—1:5	Steeper than 1:5
------	-----------	--------------------	-----------	------------	-----------	------------------

### 4. LOCATION IN LANDSCAPE

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

Ridgeline	Plateau	<b>Side slope of hill/ridge</b>	Valley	Plain	Undulating plain/low hills	<b>River front</b>
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### 5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE

a) Is the site located on any of the following?

Shallow water table (less than 1.5m deep)

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

Dolomite, sinkhole or doline areas

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

Seasonally wet soils (often close to water bodies)

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

Unstable rocky slopes or steep slopes with loose soil

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

Dispersive soils (soils that dissolve in water)

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

Soils with high clay content (clay fraction more than 40%)

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

Any other unstable soil or geological feature

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

An area sensitive to erosion

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

(Information in respect of the above will often be available at the planning sections of local authorities. Where it exists, the 1:50 000 scale Regional Geotechnical Maps prepared by Geological Survey may also be used).

b) are any caves located on the site(s)

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

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	N/A	<b>Longitude (E):</b>	N/A
----------------------	-----	-----------------------	-----

c) are any caves located within a 300m radius of the site(s)

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

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	N/A	<b>Longitude (E):</b>	N/A
----------------------	-----	-----------------------	-----

d) are any sinkholes located within a 300m radius of the site(s)

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

If yes to above provide location details in terms of latitude and longitude and indicate location on site or route map(s)

<b>Latitude (S):</b>	N/A	<b>Longitude (E):</b>	N/A
----------------------	-----	-----------------------	-----

If any of the answers to the above are "YES" or "unsure", specialist input may be requested by the Department

### 6. AGRICULTURE

Does the site have high potential agriculture as contemplated in the Gauteng Agricultural Potential Atlas (GAPA 4)?

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

**Please note:** The Department may request specialist input/studies in respect of the above.

### 7. GROUNDCOVER

A large portion of the study area (approximately 65%) was previously utilised for crop cultivation as far back as the 1970s. As a result of these historic agricultural activities, the vegetation composition and diversity within the wetland was considered to have been severely altered and can best be described as a secondary grassland which is considered to have undergone extensive modification and a fundamental shift from their original state. Due to the extent of vegetation clearance which has taken place as a result of informal settlements north-west of the study area, soil disturbances and dumping as well as current construction activities (including trenching), the vegetation community composition and hydrology has been notably transformed in addition to the historical agricultural activities.

To be noted that the location of all identified rare or endangered species or other elements should be accurately indicated on the site plan(s).

Indicate the types of groundcover present on the site and include the estimated percentage found on site

Natural veld – good condition %=	Natural veld with scattered aliens %=	<b>Natural veld with heavy alien infestation % = 60</b>	Veld dominated by alien species %=	Landscaped (vegetation) %=
Sport field %=	Cultivated land %=	Paved surface (hard landscaping) %=	<b>Building or other structure % = 40</b>	Bare soil %=

**Please note:** The Department may request specialist input/studies depending on the nature of the groundcover and potential impact(s) of the proposed activity/ies.

Are there any rare or endangered flora or fauna species (including red list species) present on the site

YES	NO
-----	----

If YES, specify and explain:

Uncertain, a Terrestrial Biodiversity Impact Assessment to determine the ecological function and relative ecological importance of the habitat on site as well as recommendation regarding the appropriate ridge buffer, will form part of the **application phase Basic Assessment Report.**

Are there any rare or endangered flora or fauna species (including red list species) present within a 200m (if within urban area as defined in the Regulations) or within 600m (if outside the urban area as defined in the Regulations) radius of the site.

YES	NO
-----	----

If YES, specify and explain:

Uncertain, a Terrestrial Biodiversity Impact Assessment to determine the ecological function and relative ecological importance of the habitat on site as well as recommendation regarding the appropriate ridge buffer, will form part of the **application phase Basic Assessment Report.**

Are there any special or sensitive habitats or other natural features present on the site?

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

If YES, specify and explain:

The site is located immediately adjacent to Class 1 and Class 3 ridge system (Gauteng Ridges Guideline, 2017). According to the Gauteng Ridges Guideline (2017), Class 1 ridges are ridges in respect of which 5% or less of the area has been transformed by human activity and Class 3 ridges are ridges of which that have been transformed as a result of human activity by 35% or more but by less than 65%. For any Class 1 ridge, the following land use and development guidelines are applicable (GDARD, 2017):

- Only low impact activities with an ecological footprint of 5% or less in the 200-metre buffer zone of the ridge will be supported, no development on the ridge itself will be supported.

For any Class 3 ridge, the following land use and development guidelines are applicable (GDARD, 2017):

- Development activities and uses that have a high environmental impact on the Class 3 ridge will not be permitted on areas that have not been significantly impacted by human activities;
- Low impact development activities, such as tourism facilities, which comprises of an ecological footprint of 5% or less of the property may be supported on natural areas.

Low impact development activities on a ridge will not be supported where it is feasible to undertake the development on a portion of the property abutting the ridge.

As mentioned before, a Terrestrial Biodiversity Impact Assessment to the determine the ecological function and relative ecological importance of the habitat on site as well as recommendation regarding the appropriate ridge buffer, will form part of the application phase Basic Assessment Report.

During the field assessment, the Freshwater Specialist identified a single wetland comprising a large unchanneled valley bottom (UCVB) HGM (hydrogeomorphic) unit located from north to south of the study area and two seep HGM units feeding into the UCVB were delineated on the site. Desktop assessment of historical imagery of the study area shows that a large portion of the study area (approximately 65%) was previously utilised for crop cultivation as far back as the 1970s. As a result of these historic agricultural activities, the vegetation composition and diversity within the wetland was considered to have been severely altered and can best be described as a secondary grassland which is considered to have undergone extensive modification and a fundamental shift from their original state. Indiscriminate disposal of foreign soil material was observed within the delineated UCVB and seep HGM units. Where infilling with foreign material has occurred, the natural topographical setting has been impacted, resulting in altered overland flow patterns and formation of preferential flow areas as water moves through paths of least resistance. Excavated trenches were observed within the wetland, in addition to impacting on the natural surface runoff patterns, this has the potential to result in increased erosion and sedimentation of the wetland as well as a loss of water retention and distribution profiles, draining of the wetland, and ultimately a lowering of the natural water table at this point.

The Seep 1 HGM unit has been impacted hydrologically as a result of impacts related to soil compaction and disturbance and well as historical excavations, resulting in some desiccation and alteration of the natural water distribution and retention profiles at this point. Areas where vegetation clearing, and surface compaction has occurred were identified within the study area. Within the delineated UCVB, an informal road traversing the lower reach was

identified during the assessment. These impacts increase runoff potential, and in addition have the potential to alter the natural transportation and deposition of sediment.

The integrity of the wetland delineated within the study area has been impacted as a result of historical agricultural activities, clearing of vegetation, infilling and compaction associated with the development of informal settlements and catchment hardening activities linked to urbanisation. Despite their decreased ecological integrity, these systems can still be considered important for their ecological role particularly from a hydrological and geomorphological perspective (erosion control, flood attenuation, streamflow regulation and assimilation of nutrients and toxicants).

Was a specialist consulted to assist with completing this section

YES	NO
-----	----

If yes complete specialist details

Name of the specialist:	Stephen van Staden			
Qualification(s) of the specialist:	MSc (Environmental Management) (University of Johannesburg) BSc (Hons) Zoology (Aquatic Ecology) (University of Johannesburg) BSc (Zoology, Geography and Environmental Management) (University of Johannesburg)			
Postal address:	29 Arterial Road West, Oriel, Bedfordview			
Postal code:	2007			
Telephone:	011 616 7893	Cell:	083 415 2356	
E-mail:	stephen@sasenvgroup.co.za	Fax:	011 615 6240/ 086 724 3132	

Are any further specialist studies recommended by the specialist?

YES	NO
-----	----

If YES, specify:

N/A
-----

If YES, is such a report(s) attached?

YES	NO
-----	----

If YES list the specialist reports attached below

N/A
-----

Signature of specialist: \_\_\_\_\_ Date: 

N/A
-----

**Please note;** If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

## 8. LAND USE CHARACTER OF SURROUNDING AREA

Using the associated number of the relevant current land use or prominent feature from the table below, fill in the position of these land-uses in the vacant blocks below which represent a 500m radius around the site

1. Vacant land	2. River, stream, wetland	3. Nature conservation area	4. Public open space	5. Koppie or ridge
6. Dam or reservoir	7. Agriculture	8. Low density residential	9. Medium to high density residential	10. Informal residential
11. Old age home	12. Retail	13. Offices	14. Commercial & warehousing	15. Light industrial
16. Heavy industrial <sup>AN</sup>	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport <sup>N</sup>	23. Train station or shunting yard <sup>N</sup>	24. Railway line <sup>N</sup>	25. Major road (4 lanes or more) <sup>N</sup>
26. Sewage treatment plant <sup>A</sup>	27. Landfill or waste treatment site <sup>A</sup>	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam <sup>A</sup>	34. Small Holdings	
Other land uses (describe):	N/A			

**NOTE: Each block represents an area of 250m X 250m, if your proposed development is larger than this please use the appropriate number and orientation of hashed blocks**

NORTH					
WEST	INFORMAL SETTLEMENT	INFORMAL SETTLEMENT	INFORMAL SETTLEMENT	CLASS 1 RIDGE	CLASS 1 RIDGE
	PHASE 2 AND 3 DEVELOPMENT	UCVB WETLAND	VACANT LAND	CLASS 3 RIDGE	CLASS 3 RIDGE
	PHASE 2 AND 3 DEVELOPMENT	UCVB WETLAND		CLASS 3 RIDGE	CLASS 3 RIDGE
	INFORMAL SETTLEMENT	UCVB WETLAND	UNCHANNELLED VALLEY BOTTOM WETLAND	CLASS 3 RIDGE	CLASS 3 RIDGE
	INFORMAL SETTLEMENT	WATERDIAL ROAD	WATERDIAL ROAD	CLASS 3 RIDGE	CLASS 3 RIDGE
SOUTH					

= Site

**Note:** More than one (1) Land-use may be indicated in a block

**Please note:** The Department may request specialist input/studies depending on the nature of the land use character of the area and potential impact(s) of the proposed activity/ies. Specialist reports that look at health & air quality and noise impacts may be required for any feature above and in particular those features marked with an "A" and with an "N" respectively.

Have specialist reports been attached  
If yes indicate the type of reports below

YES	NO
-----	----

Freshwater Impact Assessment Report
Hydrogeology Impact Assessment Report
Civil Services Report
Electrical Services Report
Traffic Impact Assessment



## 9. SOCIO-ECONOMIC CONTEXT

Describe the existing social and economic characteristics of the area and the community condition as baseline information to assess the potential social, economic and community impacts.

The site is situated within Ward 36 of the Emfuleni Local Municipality jurisdiction. The Emfuleni Local Municipality (previously Lekoa) is one of three Local Municipalities comprising the Sedibeng District Municipality situated in Vanderbijlpark, Gauteng, South Africa.

It is the Western-most Local Municipality of the District, which covers the entire southern area of the Gauteng province extending along a 120 kilometers axis from east to west. It covers an area of 987.45 km<sup>2</sup>. The Vaal River forms the southern boundary of the Emfuleni Local Municipality and its strategic location affords it many opportunities for tourism and other forms of economic development. Emfuleni shares boundaries with Metsimaholo Local Municipality in the Free State to the south, Midvaal Local Municipality to the east, City of Johannesburg metropolitan area to the north and Westonaria and Potchefstroom (in North West Province) Local Municipalities to the west.

Emfuleni population was calculated using Census 2011. As depicted by the Table above, Emfuleni housed a population of approximately 721,000 people by the year 2011. It was estimated that this population had increased to approximately 750,000 people by the year 2017. The number of households that resided in Emfuleni area by 2011 was estimated to be approximately 232,000. This figure was estimated to have increased to an estimated 242,000 by 2017. Emfuleni currently has approximately 44,000 informal households living in informal settlements within Emfuleni and approximately 70,000 informal households living within backyard shacks within Emfuleni.

Most of the people (61%) in Emfuleni are at school or have not completed Grade 12. In total, 25% of the residents living within Emfuleni have completed secondary school or Grade 12. Less than 5% of the population has no education and 10% of the population has a post scholastic educational qualification. Higher education levels are usually associated with higher income levels and certain employment categories, such as professional and managerial positions.

As per the Census data from 2011 it indicates a relatively high unemployment levels within Emfuleni, with 39% of the economically active population being unemployed or discourage to continue looking for work. In total, 61% of the economically active population in Emfuleni are employed.

Emfuleni's existing infrastructure is overburdened, largely due to population growth and the poor state of the infrastructure within Emfuleni. In addition, the replacement, rehabilitation and preventative maintenance of existing infrastructure has suffered due to a persistent focus on the extension of infrastructure and ad hoc repairs. To address this problem in part, the Municipality is planning a Regional Sewer Scheme that is aimed at addressing the sewer problems of the Sedibeng district municipal area and its locals: Emfuleni, Midvaal and Lesedi. Once started, the project will be constructed over a period of five years, and it is estimated that the project will cost approximately R2 billion to construct.

## 10. CULTURAL/HISTORICAL FEATURES

Please be advised that if section 38 of the National Heritage Resources Act 25 of 1999 is applicable to your proposal or alternatives, then you are requested to furnish this Department with written comment from the South African Heritage Resource Agency (SAHRA) – Attach comment in appropriate annexure

38. (1) Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-

- (a) the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- (b) the construction of a bridge or similar structure exceeding 50m in length;
- (c) any development or other activity which will change the character of a site-
  - (i) exceeding 5 000 m2 in extent; or
  - (ii) involving three or more existing erven or subdivisions thereof; or
  - (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
  - (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;
- (d) the re-zoning of a site exceeding 10 000 m2 in extent; or
- (e) any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

Are there any signs of culturally (aesthetic, social, spiritual, environmental) or historically significant elements, as defined in section 2 of the National Heritage Resources Act, 1999, (Act No. 25 of 1999), including archaeological or palaeontological sites, on or close (within 20m) to the site?

YES	NO
-----	----

If YES, explain:

N/A. A Notice of Intent to Develop will however be submitted to SAHRA to determine whether any specialist heritage related studies are required.

If uncertain, the Department may request that specialist input be provided to establish whether there is such a feature(s) present on or close to the site.

Briefly explain the findings of the specialist if one was already appointed:

N/A. A Notice of Intent to Develop will however be submitted to SAHRA to determine whether any specialist heritage related studies are required.

Will any building or structure older than 60 years be affected in any way?  
Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

YES	NO
YES	NO

If yes, please attached the comments from SAHRA in the appropriate Appendix

## SECTION C: PUBLIC PARTICIPATION (SECTION 41)

1. The Environmental Assessment Practitioner must conduct public participation process in accordance with the requirement of the EIA Regulations, 2014.

### 2. LOCAL AUTHORITY PARTICIPATION

Local authorities are key interested and affected parties in each application and no decision on any application will be made before the relevant local authority is provided with the opportunity to give input. The planning and the environmental sections of the local authority must be informed of the application at least thirty (30) calendar days before the submission of the application to the competent authority.

Was the draft report submitted to the local authority for comment?

YES NO

If yes, has any comments been received from the local authority?

YES NO

If "YES", briefly describe the comment below (also attach any correspondence to and from the local authority to this application):

N/A.

If "NO" briefly explain why no comments have been received or why the report was not submitted if that is the case.

The pre-application Basic Assessment Report was submitted to GDARD en die munisipaliteit (local authority), and this section will be updated on completion of the 1<sup>st</sup> pre-application public participation period.

### 3. CONSULTATION WITH OTHER STAKEHOLDERS

Any stakeholder that has a direct interest in the activity, site or property, such as servitude holders and service providers, should be informed of the application at least **thirty (30) calendar days** before the submission of the application and be provided with the opportunity to comment.

Has any comment been received from stakeholders?

YES NO

If "YES", briefly describe the feedback below (also attach copies of any correspondence to and from the stakeholders to this application):

N/A.

If "NO" briefly explain why no comments have been received

The pre-application Basic Assessment Report was submitted to GDARD, and this section will be updated on completion of the 1<sup>st</sup> pre-application public participation period.

### 4. GENERAL PUBLIC PARTICIPATION REQUIREMENTS

The Environmental Assessment Practitioner must ensure that the public participation process is adequate and must determine whether a public meeting or any other additional measure is appropriate or not based on the particular nature of each case. Special attention should be given to the involvement of local community structures such as Ward Committees and ratepayers associations. Please note that public concerns that emerge at a later stage that should have been addressed may cause the competent authority to withdraw any authorisation it may have issued if it becomes apparent that the public participation process was flawed.

The EAP must record all comments and respond to each comment of the public / interested and affected party before the application report is submitted. The comments and responses must be captured in a Comments and Responses Report as prescribed in the regulations and be attached to this application.

### 5. APPENDICES FOR PUBLIC PARTICIPATION

All public participation information is to be attached in the appropriate Appendix. The information in this Appendix is to be ordered as detailed below

Appendix 1 – Proof of site notice

Appendix 2 – Written notices issued as required in terms of the regulations

Appendix 3 – Proof of newspaper advertisements

Appendix 4 – Communications to and from interested and affected parties

Appendix 5 – Minutes of any public and/or stakeholder meetings

Appendix 6 - Comments and Responses Report

Appendix 7 –Comments from I&APs on Basic Assessment (BA) Report

Appendix 8 –Comments from I&APs on amendments to the BA Report

Appendix 9 – Copy of the register of I&APs

## SECTION D: RESOURCE USE AND PROCESS DETAILS

**Note:** Section D is to be completed for the proposal and alternative(s) (if necessary)

### Instructions for completion of Section D for alternatives

- 1) For each alternative under investigation, where such alternatives will have different resource and process details (e.g. technology alternative), the entire Section D needs to be completed
- 4) Each alternative needs to be clearly indicated in the box below
- 5) Attach the above documents in a chronological order

Section D has been duplicated for alternatives  times  
(complete only when appropriate)

Section D Alternative No.  (complete only when appropriate for above)

### 1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

#### 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
Uncertain at this stage	

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

Building rubble will be produced during the construction phase if the proposed development. Construction material (e.g., cement and raw materials) will be stored in designated areas on the site, in a neat and orderly manner. Such areas for the storage of construction material are to be ratified by the appointed Environmental Control Officer (ECO) and are to be secured for security purposes. The volumes of raw construction material to be stored cannot be estimated at this stage.

The solid waste produced during the construction phase, will be taken and collected from site by means of skip waste containers and thereafter disposed of at the nearest appropriate licenced waste disposal site. This will be the responsibility of the developer.

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

Waste will be disposed of at an appropriate licenced landfill site.

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

YES	NO
Uncertain at this stage	

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

Operational domestic waste will be disposed of at an appropriate landfill site.

Has the municipality or relevant service provider confirmed that sufficient air space exists for treating/disposing of the solid waste to be generated by this activity?

YES	NO
-----	----

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

The local municipality will be provided an opportunity to comment on its capacity to handle additional solid waste from the development.

**Note:** 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, 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 relevant legislation?  
If yes, inform the competent authority and request a change to an application for scoping and EIA.

YES	NO
-----	----

Medical waste will stem from the proposed development and a private contractor will be appointed to deal with the waste. More details regarding the medical waste will be provided in the application phase Basic Assessment Report.

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

YES	NO
-----	----

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.

Describe the measures, if any, that will be taken to ensure the optimal reuse or recycling of materials:

N/A
-----

**Liquid effluent (other than domestic sewage)**

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

YES	NO
-----	----

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

N/A

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the liquid effluent to be generated by this activity(ies)?

YES	NO
-----	----

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

Yes	NO
-----	----

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

N/A

If yes describe the nature of the effluent and how it will be disposed.

N/A
-----

Note that if effluent is to be treated or disposed on site the applicant should consult with the competent authority to determine whether it is necessary to change to an application for scoping and EIA

Will the activity produce effluent that will be treated and/or disposed of at another facility?

YES	NO
-----	----

If yes, provide the particulars of the facility:

Facility name:	N/A		
Contact person:	N/A		
Postal address:	N/A		
Postal code:	N/A		
Telephone:	N/A	Cell:	N/A
E-mail:	N/A	Fax:	N/A

Describe the measures that will be taken to ensure the optimal reuse or recycling of waste water, if any:

No measures to ensure optimal reuse and recycling of wastewater has been taken into account at this stage of the proposal.
--

**Liquid effluent (domestic sewage)**

Will the activity produce domestic effluent that will be disposed of in a municipal sewage system?

YES	NO
-----	----

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

Not known at this stage

If yes, has the municipality confirmed that sufficient capacity exist for treating / disposing of the domestic effluent to be generated by this activity(ies)?

YES	NO
-----	----

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

YES	NO
-----	----

If yes describe how it will be treated and disposed off.

N/A
-----

**Emissions into the atmosphere**

Will the activity release emissions into the atmosphere?

YES	NO
-----	----

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

YES	NO
-----	----

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.

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

N/A
-----

## 2. WATER USE

Indicate the source(s) of water that will be used for the activity

<b>municipal</b>	Directly from water board	groundwater	river, stream, dam or lake	other	the activity will not use water
------------------	---------------------------	-------------	----------------------------	-------	---------------------------------

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:

N/A

If yes, please attach proof of assurance of water supply, e.g. yield of borehole, in the appropriate Appendix

Does the activity require a water use permit from the Department of Water Affairs?

**YES** NO

If yes, list the permits required

A Water Use License application in terms of Section 21 of the National Water Act, 1998, has been lodged at the Department of Water and Sanitation.

If yes, have you applied for the water use permit(s)?

**YES** NO

If yes, have you received approval(s)? (attached in appropriate appendix)

YES **NO**

## 3. POWER SUPPLY

Please indicate the source of power supply e.g., Municipality / Eskom / Renewable energy source)

Municipality

If power supply is not available, where will power be sourced from?

N/A

## 4. ENERGY EFFICIENCY

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

No design measures to ensure energy efficiency has been designed at this stage.

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

No alternative energy sources were investigated as part of the design of the hospital. It is however expected that due to the nature of the proposed development (hospital) that back up generator will form part of electrical infrastructure. This will however be determined during the detailed design phase.

# SECTION E: 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 as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

## 1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

To be updated in the application phase Draft BAR/2<sup>nd</sup> Draft BAR.

Summary of response from the practitioner to the issues raised by the interested and affected parties (including the manner in which the public comments are incorporated or why they were not included)

(A full response must be provided in the Comments and Response Report that must be attached to this report):

To be updated in the application phase Draft BAR/2<sup>nd</sup> Draft BAR.

## 2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

Briefly describe the methodology utilised in the rating of significance of impacts

The criteria for the description and assessment of environmental impacts were drawn from the National Environmental Management Act, 1998 (Act No.107 of 1998).

The level of detail was somewhat fine-tuned by assigning specific values to each impact. In order to establish a coherent framework within which all impacts could be objectively assessed it is necessary to establish a rating system, which is consistent throughout all criteria. For such purposes each aspect was assigned a value, ranging from 1-5, depending on its definition.

### **Potential Impact**

This is an appraisal of the type of effect the proposed activity would have on the affected environmental component. Its description should include what is being affected and how it is being affected.

### **Extent**

The physical and spatial scale of the impact is classified as:

#### Local

The impacted area extends only as far as the activity, e.g. a footprint.

#### Site

The impact could affect the whole, or a measurable portion of the site.

#### Regional

The impact could affect the area including the neighbouring erven and/or farms, the transport routes and the adjoining towns.

### **Duration**

The lifetime of the impact, which is measured in relation to the lifetime of the proposed base.

#### Short term

The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than any of the phases.

#### Medium term

The impact will last up to the end of the phases, where after it will be entirely negated.

#### Long term

The impact will continue or last for the entire operational lifetime of the Development, but will be mitigated by direct human action or by natural processes thereafter.

#### Permanent

This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.

### **Intensity**

The intensity of the impact is considered here by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself. These are rated as:

#### Low

The impact alters the affected environment in such a way that the natural processes or functions are not affected.

#### Medium

The affected environment is altered, but functions and processes continue, albeit in a modified way.

#### High

Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.

This will be a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

### **Probability**

This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:

#### Improbable

The possibility of the impact occurring is none, due either to the circumstances, design or experience.

#### Possible

The possibility of the impact occurring is very low, due either to the circumstances, design or experience.

#### Likely

There is a possibility that the impact will occur to the extent that provisions must therefore be made.



#### Highly Likely

It is most likely that the impacts will occur at some stage of the Development. Plans must be drawn up before carrying out the activity.

#### Definite

The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on.

#### **Determination of Significance – Without Mitigation**

Significance is determined through a synthesis of impact characteristics, and is an indication of the importance of the impact in terms of both physical extent and time scale. The significance of the impact “without mitigation” is the prime determinant of the nature and degree of mitigation required. Where the impact is positive, significance is noted as “positive”. Significance is rated on the following scale:

#### No significance

The impact is not substantial and does not require any mitigation action.

#### Low

The impact is of little importance but may require limited mitigation.

#### Medium

The impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.

#### High

The impact is of great importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

#### **Determination of Significance – With Mitigation**

Significance is determined through a synthesis of impact characteristics. It is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. In this case the prediction refers to the foreseeable significance of the impact after the successful implementation of the suggested mitigation measures. Significance with mitigation is rated on the following scale:

#### No significance

The impact will be mitigated to the point where it is regarded to be insubstantial.

#### Low

The impact will be mitigated to the point where it is of limited importance.

#### Low to medium

The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels.

#### Medium

Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impacts to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw.

Medium to high

The impact is of great importance. Through implementing the correct mitigation measures the negative impacts will be reduced to acceptable levels.

High

The impact is of great importance. Mitigation of the impact is not possible on a cost-effective basis. The impact continues to be of great importance, and, taken within the overall context of the project, is considered to be a fatal flaw in the project proposal. This could render the entire development option or entire project proposal unacceptable.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10
Determine the consequence of the impact by summation (1+2+3)				Determine the severity of the Impact by summation (5+6)			Product of consequence and severity determines significance Without Mitigation (4x7)	Sufficiency of the proposed mitigation	Product of Column 8 and Column 9 determines significance With Mitigation (8x9)
Extent of impact	Duration of impact	Intensity of impact	Sum	Probability		Sum	Significance rating (WOM)	Mitigation efficiency (ME)	Mitigated aspects (WM)
				Frequency of impact	Weighting Factor				
Footprint = 1	Short = 1	Low = 1	Sum of Column 1-3	Almost never = 0.1	Low = 0.1	Sum of Column 5-6	Low = 0-2.9	High = 0.2	Low = 0-2.9
Site = 2	Short to Medium = 2	Low to Medium = 2	Sum of Column 1-3	Improbable = 0.2	Low to Medium = 0.2	Sum of Column 5-6	Low to Medium = 3-5.9	Medium to High = 0.4	Low to Medium = 3-5.9
Regional = 3	Medium = 3	Medium = 3	Sum of Column 1-3	Probable = 3	Medium = 0.3	Sum of Column 5-6	Medium = 6-8.9	Medium = 0.6	Medium = 6-8.9
National = 4	Medium to Long = 4	Medium to High = 4	Sum of Column 1-3	Highly Probable = 0.4	Medium to High = 0.4	Sum of Column 5-6	Medium to High = 9-11.9	Low to Medium = 0.8	Medium to High = 9-11.9
International = 5	Long = 5	High = 5	Sum of Column 1-3	Definite = 0.5	High = 0.5	Sum of Column 5-6	High = 12-15	Low = 1	High = 12-15

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the construction phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

Preferred Alternative:	Freshwater
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>	
<b>Potential impact and risk:</b>	<b>Site clearing prior to commencement of construction activities. Ground-breaking: excavation of foundations, earthworks and building activities</b>
Nature of impact:	Removal of vegetation and associated disturbances to soils; and possible indiscriminate driving through the wetland by construction vehicles; Excavation of soil and creation of stockpiles; Compaction of soils as a result of movement of construction vehicles; Construction of houses and other infrastructure associated with the development; Disposal of construction-related waste; Movement of construction equipment adjacent to the delineated wetland; Increased likelihood of dust generation due to exposed soils;
Extent and duration of impact:	<b>Short term and local</b>
Consequence of impact or risk:	<b>Medium</b>
Probability of occurrence:	<b>Likely</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Medium</b>
Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>Low</b>
Cumulative impact prior to mitigation:	<b>Medium</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>Medium</b>
Degree to which the impact can be managed:	<b>High</b>
Degree to which the impact can be mitigated:	<b>High</b>
Proposed mitigation:	<b>As per freshwater report and EMPr</b>
Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>Medium</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
<b>OPERATIONAL PHASE</b>	
<b>Potential impact and risk:</b>	<b>Increased impermeable surfaces within the study area and the wetland's surrounding catchment areas; Potential risk of contaminated runoff from the increased impermeable surfaces (parking areas and access roads).</b>
Nature of impact:	Potential change in surface runoff patterns due to increased impermeable surfaces; Impacts on the habitats and biota within the receiving environment; and a reduction in water quality of water and soil.
Extent and duration of impact:	<b>Long term and local</b>
Consequence of impact or risk:	<b>Medium</b>
Probability of occurrence:	<b>Likely</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Medium</b>
Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>Low</b>
Cumulative impact prior to mitigation:	<b>Medium</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>Medium</b>
Degree to which the impact can be managed:	<b>High</b>
Degree to which the impact can be mitigated:	<b>High</b>
Proposed mitigation:	<b>As per freshwater report and EMPr</b>
Residual impacts:	<b>None</b>

Cumulative impact post mitigation:	<b>Medium</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
<b>DECOMMISSIONING AND CLOSURE PHASE</b>	
<b>Potential impact and risk:</b>	<b>N/A</b>
Nature of impact:	<b>N/A</b>
Extent and duration of impact:	<b>N/A</b>
Consequence of impact or risk:	<b>N/A</b>
Probability of occurrence:	<b>N/A</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>N/A</b>
Degree to which the impact can be reversed:	<b>N/A</b>
Indirect impacts:	<b>N/A</b>
Cumulative impact prior to mitigation:	<b>N/A</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>
Degree to which the impact can be avoided:	<b>N/A</b>
Degree to which the impact can be managed:	<b>N/A</b>
Degree to which the impact can be mitigated:	<b>N/A</b>
Proposed mitigation:	<b>N/A</b>
Residual impacts:	<b>N/A</b>
Cumulative impact post mitigation:	<b>N/A</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>

<b>Preferred Alternative</b>	<b>Hydropedology</b>
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>	
<b>Potential impact and risk:</b>	<b>Loss of topsoil, lower infiltration</b>
Nature of impact:	<b>Low groundwater levels; lower water content in wetlands</b>
Extent and duration of impact:	<b>Short term &amp; Local</b>
Consequence of impact or risk:	<b>Medium</b>
Probability of occurrence:	<b>Probable</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Low</b>
Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>Medium</b>
Cumulative impact prior to mitigation:	<b>Low</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
Degree to which the impact can be avoided:	<b>Medium</b>
Degree to which the impact can be managed:	<b>Medium</b>
Degree to which the impact can be mitigated:	<b>Medium</b>
Proposed mitigation:	<b>As per the hydropedology specialist</b>
Residual impacts:	<b>Low</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
<b>OPERATIONAL PHASE</b>	
<b>Potential impact and risk:</b>	<b>Loss of recharge, interflow interception; soil erosion; soil compaction; chemical and soil pollution</b>
Nature of impact:	<b>Low groundwater levels; lower water content in wetlands</b>
Extent and duration of impact:	<b>Short term &amp; Local</b>
Consequence of impact or risk:	<b>Medium</b>
Probability of occurrence:	<b>Probable</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Low</b>

Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>Medium</b>
Cumulative impact prior to mitigation:	<b>Low</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
Degree to which the impact can be avoided:	<b>Medium</b>
Degree to which the impact can be managed:	<b>Medium</b>
Degree to which the impact can be mitigated:	<b>Medium</b>
Proposed mitigation:	<b>As per the hydrogeology specialist</b>
Residual impacts:	<b>Low</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
<b>DECOMMISSIONING AND CLOSURE PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>N/A</b>
Extent and duration of impact:	<b>N/A</b>
Consequence of impact or risk:	<b>N/A</b>
Probability of occurrence:	<b>N/A</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>N/A</b>
Degree to which the impact can be reversed:	<b>N/A</b>
Indirect impacts:	<b>N/A</b>
Cumulative impact prior to mitigation:	<b>N/A</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>
Degree to which the impact can be avoided:	<b>N/A</b>
Degree to which the impact can be managed:	<b>N/A</b>
Degree to which the impact can be mitigated:	<b>N/A</b>
Proposed mitigation:	<b>N/A</b>
Residual impacts:	<b>N/A</b>
Cumulative impact post mitigation:	<b>N/A</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>

<b>Preferred Alternative</b>	<b>Botanical</b>
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Impacts on indigenous vegetation</b>
Extent and duration of impact:	<b>Local and Short term</b>
Consequence of impact or risk:	<b>The loss of indigenous vegetation during the construction phase</b>
Probability of occurrence:	<b>Highly likely</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>High</b>
Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>None</b>
Cumulative impact prior to mitigation:	<b>Medium</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>Low</b>
Degree to which the impact can be managed:	<b>Medium</b>
Degree to which the impact can be mitigated:	<b>Medium</b>
Proposed mitigation:	<b>None</b>
Residual impacts:	<b>Medium</b>

Cumulative impact post mitigation:	<b>Medium</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
<b>OPERATIONAL PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Impacts on indigenous vegetation</b>
Extent and duration of impact:	<b>Local and Long term</b>
Consequence of impact or risk:	<b>Loss of indigenous vegetation</b>
Probability of occurrence:	<b>Highly likely</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>High</b>
Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>None</b>
Cumulative impact prior to mitigation:	<b>Medium</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>Low</b>
Degree to which the impact can be managed:	<b>High</b>
Degree to which the impact can be mitigated:	<b>High</b>
Proposed mitigation:	<b>None</b>
Residual impacts:	<b>Medium</b>
Cumulative impact post mitigation:	<b>Medium</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
<b>DECOMMISSIONING AND CLOSURE PHASE</b>	
<b>Potential impact and risk:</b>	<b>N/A</b>
Nature of impact:	<b>N/A</b>
Extent and duration of impact:	<b>N/A</b>
Consequence of impact or risk:	<b>N/A</b>
Probability of occurrence:	<b>N/A</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>N/A</b>
Degree to which the impact can be reversed:	<b>N/A</b>
Indirect impacts:	<b>N/A</b>
Cumulative impact prior to mitigation:	<b>N/A</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>
Degree to which the impact can be avoided:	<b>N/A</b>
Degree to which the impact can be managed:	<b>N/A</b>
Degree to which the impact can be mitigated:	<b>N/A</b>
Proposed mitigation:	<b>N/A</b>
Residual impacts:	<b>N/A</b>
Cumulative impact post mitigation:	<b>N/A</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>

<b>Preferred Alternative</b>	<b>Noise</b>
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Noise Pollution</b>
Extent and duration of impact:	<b>Local and Short term</b>
Consequence of impact or risk:	<b>Noise nuisance from trucks and construction during construction period</b>
Probability of occurrence:	<b>High</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Highly unlikely</b>

Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>None</b>
Cumulative impact prior to mitigation:	<b>Noise pollution at all hours of the day and night</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>High</b>
Degree to which the impact can be avoided:	<b>Medium</b>
Degree to which the impact can be managed:	<b>Medium</b>
Degree to which the impact can be mitigated:	<b>Medium</b>
Proposed mitigation:	<b>Confine construction during working hours. No construction allowed on public holidays</b>
Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
<b>OPERATIONAL PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Noise pollution as a result of road traffic on the R101</b>
Extent and duration of impact:	<b>Local and Long term</b>
Consequence of impact or risk:	<b>Noise pollution</b>
Probability of occurrence:	<b>Highly likely</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Low</b>
Degree to which the impact can be reversed:	<b>Low</b>
Indirect impacts:	<b>Nuisance caused to future and current employees in the surrounding area.</b>
Cumulative impact prior to mitigation:	<b>Nuisance caused to future and current employees in the surrounding area.</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
Degree to which the impact can be avoided:	<b>Low</b>
Degree to which the impact can be managed:	<b>Low</b>
Degree to which the impact can be mitigated:	<b>Low</b>
Proposed mitigation:	<b>No mitigation measure required</b>
Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
<b>DECOMMISSIONING AND CLOSURE PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>N/A</b>
Extent and duration of impact:	<b>N/A</b>
Consequence of impact or risk:	<b>N/A</b>
Probability of occurrence:	<b>N/A</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>N/A</b>
Degree to which the impact can be reversed:	<b>N/A</b>
Indirect impacts:	<b>N/A</b>
Cumulative impact prior to mitigation:	<b>N/A</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>
Degree to which the impact can be avoided:	<b>N/A</b>
Degree to which the impact can be managed:	<b>N/A</b>
Degree to which the impact can be mitigated:	<b>N/A</b>
Proposed mitigation:	<b>N/A</b>
Residual impacts:	<b>N/A</b>
Cumulative impact post mitigation:	<b>N/A</b>

Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
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<b>Preferred Alternative</b>	<b>Traffic</b>
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Impact on traffic due to construction activities</b>
Extent and duration of impact:	<b>Local and Short-term</b>
Consequence of impact or risk:	<b>Increased traffic from trucks during the construction phase.</b>
Probability of occurrence:	<b>High</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Low</b>
Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>Increased traffic.</b>
Cumulative impact prior to mitigation:	<b>Increased traffic.</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>Low</b>
Degree to which the impact can be managed:	<b>Low</b>
Degree to which the impact can be mitigated:	<b>Medium</b>
Proposed mitigation:	<b>Recommendations in accordance with the TIA</b>
Residual impacts:	<b>Low</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
<b>OPERATIONAL PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Increase in traffic</b>
Extent and duration of impact:	<b>Local and Long term</b>
Consequence of impact or risk:	<b>Increase in traffic</b>
Probability of occurrence:	<b>High</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Low</b>
Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>Nuisance to future and existing employees.</b>
Cumulative impact prior to mitigation:	<b>Traffic not expected to influence the performance of the intersections on the broader network in the vicinity.</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>Low</b>
Degree to which the impact can be managed:	<b>Low</b>
Degree to which the impact can be mitigated:	<b>Medium</b>
Proposed mitigation:	<b>As recommended in the TIA</b>
Residual impacts:	<b>Low</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
<b>DECOMMISSIONING AND CLOSURE PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>N/A</b>
Extent and duration of impact:	<b>N/A</b>
Consequence of impact or risk:	<b>N/A</b>
Probability of occurrence:	<b>N/A</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>N/A</b>
Degree to which the impact can be reversed:	<b>N/A</b>



Indirect impacts:	N/A
Cumulative impact prior to mitigation:	N/A
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A
Degree to which the impact can be avoided:	N/A
Degree to which the impact can be managed:	N/A
Degree to which the impact can be mitigated:	N/A
Proposed mitigation:	N/A
Residual impacts:	N/A
Cumulative impact post mitigation:	N/A
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	N/A

<b>Preferred Alternative</b>	<b>Visual</b>
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Impacts on visual character</b>
Extent and duration of impact:	<b>Local and Short term</b>
Consequence of impact or risk:	<b>Visual contrast to the surrounding environment may occur during the construction phase and yellow vehicles may be clearly noticeable during this phase.</b>
Probability of occurrence:	<b>High</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Low</b>
Degree to which the impact can be reversed:	<b>Low</b>
Indirect impacts:	<b>Dust as a result of construction especially windy days.</b>
Cumulative impact prior to mitigation:	<b>Construction vehicles may be clearly noticeable; dust</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>Low</b>
Degree to which the impact can be managed:	<b>Low</b>
Degree to which the impact can be mitigated:	<b>Low</b>
Proposed mitigation:	<b>Construction will only be allowed during normal business hours; dust suppression methods to be implemented as outlined in the legally binding EMPr.</b>
Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
<b>OPERATIONAL PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Visual impacts on the surrounding environment</b>
Extent and duration of impact:	<b>Local and Long term</b>
Consequence of impact or risk:	<b>Loss of visual resources</b>
Probability of occurrence:	<b>Medium</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Medium</b>
Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>None expected</b>
Cumulative impact prior to mitigation:	
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
Degree to which the impact can be avoided:	<b>Low</b>
Degree to which the impact can be managed:	<b>Low</b>
Degree to which the impact can be mitigated:	<b>Low</b>
Proposed mitigation:	<b>Non</b>

Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
<b>DECOMMISSIONING AND CLOSURE PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>N/A</b>
Extent and duration of impact:	<b>N/A</b>
Consequence of impact or risk:	<b>N/A</b>
Probability of occurrence:	<b>N/A</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>N/A</b>
Degree to which the impact can be reversed:	<b>N/A</b>
Indirect impacts:	<b>N/A</b>
Cumulative impact prior to mitigation:	<b>N/A</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>
Degree to which the impact can be avoided:	<b>N/A</b>
Degree to which the impact can be managed:	<b>N/A</b>
Degree to which the impact can be mitigated:	<b>N/A</b>
Proposed mitigation:	<b>N/A</b>
Residual impacts:	<b>N/A</b>
Cumulative impact post mitigation:	<b>N/A</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>

<b>Preferred Alternative</b>	<b>Dust</b>
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Dust generated from construction activities</b>
Extent and duration of impact:	<b>Local and Short term</b>
Consequence of impact or risk:	<b>Dust nuisance from trucks during construction.</b>
Probability of occurrence:	<b>High</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Low</b>
Degree to which the impact can be reversed:	<b>Medium</b>
Indirect impacts:	<b>None</b>
Cumulative impact prior to mitigation:	<b>Dust pollution at all hours of the day and night</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>High</b>
Degree to which the impact can be avoided:	<b>Medium</b>
Degree to which the impact can be managed:	<b>Medium</b>
Degree to which the impact can be mitigated:	<b>Medium</b>
Proposed mitigation:	<p><b>Confine construction during working hours. No construction allowed on public holidays.</b></p> <p><b>Stockpiled construction sand should be closed with netting or similar impermeable material in a manner that is wind resistant.</b></p> <p><b>The use of soil stabilisers such as straw for large open ground surfaces, screening with shade cloth on perimeter fencing and the suspension of dust generating activities under high wind conditions as options warranted.</b></p>
Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>

<b>OPERATIONAL PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Dust pollution</b>
Extent and duration of impact:	<b>Long term</b>
Consequence of impact or risk:	<b>Dust pollution</b>
Probability of occurrence:	<b>Highly unlikely</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Highly unlikely</b>
Degree to which the impact can be reversed:	<b>Low</b>
Indirect impacts:	<b>None expected</b>
Cumulative impact prior to mitigation:	<b>None expected</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
Degree to which the impact can be avoided:	<b>Low</b>
Degree to which the impact can be managed:	<b>Low</b>
Degree to which the impact can be mitigated:	<b>Low</b>
Proposed mitigation:	<b>No mitigation required</b>
Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>Low</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Low</b>
<b>DECOMMISSIONING AND CLOSURE PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>N/A</b>
Extent and duration of impact:	<b>N/A</b>
Consequence of impact or risk:	<b>N/A</b>
Probability of occurrence:	<b>N/A</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>N/A</b>
Degree to which the impact can be reversed:	<b>N/A</b>
Indirect impacts:	<b>N/A</b>
Cumulative impact prior to mitigation:	<b>N/A</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>
Degree to which the impact can be avoided:	<b>N/A</b>
Degree to which the impact can be managed:	<b>N/A</b>
Degree to which the impact can be mitigated:	<b>N/A</b>
Proposed mitigation:	<b>N/A</b>
Residual impacts:	<b>N/A</b>
Cumulative impact post mitigation:	<b>N/A</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>

<b>Preferred Alternative</b>	<b>Socio-economic</b>
<b>PLANNING, DESIGN AND DEVELOPMENT PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Impacts on Employment Opportunities</b>
Extent and duration of impact:	<b>Short term</b>
Consequence of impact or risk:	<b>Potential Employment Opportunities</b>
Probability of occurrence:	<b>Definite</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Do not want to mitigate positive impacts</b>
Degree to which the impact can be reversed:	<b>Do not want to mitigate positive impacts</b>
Indirect impacts:	<b>Economic growth for local municipality</b>
Cumulative impact prior to mitigation:	<b>Do not want to mitigate positive impact</b>

Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>Do not want to mitigate positive impacts</b>
Degree to which the impact can be managed:	<b>Do not want to mitigate positive impacts</b>
Degree to which the impact can be mitigated:	<b>Do not want to mitigate positive impacts</b>
Proposed mitigation:	<b>Do not want to mitigate positive impacts</b>
Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>High</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>High</b>
<b>OPERATIONAL PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>Impacts on Employment Opportunities &amp; Basic healthcare</b>
Extent and duration of impact:	<b>Long term</b>
Consequence of impact or risk:	<b>Potential Employment Opportunities &amp; Basic healthcare</b>
Probability of occurrence:	<b>Definite</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Do not want to mitigate positive impacts</b>
Degree to which the impact can be reversed:	<b>Do not want to mitigate positive impacts</b>
Indirect impacts:	<b>Economic growth for the local municipality</b>
Cumulative impact prior to mitigation:	<b>Do not want to mitigate positive impact</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>Do not want to mitigate positive impacts</b>
Degree to which the impact can be managed:	<b>Do not want to mitigate positive impacts</b>
Degree to which the impact can be mitigated:	<b>Do not want to mitigate positive impacts</b>
Proposed mitigation:	<b>Do not want to mitigate positive impacts</b>
Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>High</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>High</b>
<b>DECOMMISSIONING AND CLOSURE PHASE</b>	
<b>Potential impact and risk:</b>	
Nature of impact:	<b>N/A</b>
Extent and duration of impact:	<b>N/A</b>
Consequence of impact or risk:	<b>N/A</b>
Probability of occurrence:	<b>N/A</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>N/A</b>
Degree to which the impact can be reversed:	<b>N/A</b>
Indirect impacts:	<b>N/A</b>
Cumulative impact prior to mitigation:	<b>N/A</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>
Degree to which the impact can be avoided:	<b>N/A</b>
Degree to which the impact can be managed:	<b>N/A</b>
Degree to which the impact can be mitigated:	<b>N/A</b>
Proposed mitigation:	<b>N/A</b>
Residual impacts:	<b>N/A</b>
Cumulative impact post mitigation:	<b>N/A</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>N/A</b>

<b>No-Go Alternative:</b>	
<b>PLANNING, DESIGN, DEVELOPMENT PHASE AND OPERATIONAL PHASE</b>	

<b>Potential impact and risk:</b>	
Nature of impact:	<b>Not implementing the proposal would represent a lost opportunity to support the development of the healthcare sector in the area. The employment and investment opportunities associated with the construction and operational phase would be foregone.</b>
Extent and duration of impact:	<b>Long-term</b>
Consequence of impact or risk:	<b>Low</b>
Probability of occurrence:	<b>Very high</b>
Degree to which the impact may cause irreplaceable loss of resources:	<b>Low</b>
Degree to which the impact can be reversed:	<b>High</b>
Indirect impacts:	<b>None</b>
Cumulative impact prior to mitigation:	<b>None</b>
Significance rating of impact prior to mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>
Degree to which the impact can be avoided:	<b>High</b>
Degree to which the impact can be managed:	<b>High</b>
Degree to which the impact can be mitigated:	<b>High</b>
Proposed mitigation:	<b>None</b>
Residual impacts:	<b>None</b>
Cumulative impact post mitigation:	<b>None</b>
Significance rating of impact after mitigation (e.g. Low, Medium, Medium-High, High, or Very-High)	<b>Medium</b>

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

Freshwater Impact Assessment

Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed development.

An Ecological Impact Assessment is in the process of being conducted. A NID will be submitted to SAHRA who will determine whether any heritage related studies are required. These specialist studies will be included in the 2<sup>nd</sup> Draft BAR.

### 3. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE

Briefly describe and compare the potential impacts (as appropriate), significance rating of impacts, proposed mitigation and significance rating of impacts after mitigation that are likely to occur as a result of the decommissioning and closure phase for the various alternatives of the proposed development. This must include an assessment of the significance of all impacts.

#### Proposal

Potential impacts:	Significance rating of impacts(positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
N/A	N/A	N/A	N/A	N/A

#### Alternative 1

Potential impacts:	Significance rating of impacts(positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
N/A	N/A	N/A	N/A	N/A

#### Alternative 2

Potential impacts:	Significance rating of impacts (positive or negative):	Proposed mitigation:	Significance rating of impacts after mitigation:	Risk of the impact and mitigation not being implemented
N/A	N/A	N/A	N/A	N/A

List any specialist reports that were used to fill in the above tables. Such reports are to be attached in the appropriate Appendix.

N/A

Where applicable indicate the detailed financial provisions for rehabilitation, closure and ongoing post decommissioning management for the negative environmental impacts.

N/A

#### 4. CUMULATIVE IMPACTS

Describe potential impacts that, on their own may not be significant, but is significant when added to the impact of other activities or existing impacts in the environment. Substantiate response:

The anticipated impacts resulting from the proposed development could potentially result in a cumulative negative impact when taking the following into consideration:

- The proposal will add to existing road users in the area however should the recommendation by the Traffic Engineer be implemented the impacts are not expected to negatively impact traffic flow in the vicinity.
- Impacts associated with ground-breaking activities, installation of sewer lines and construction of access roads within the wetland are anticipated to pose the highest risk to the ecological integrity and functional extent of the wetland although it is acknowledged that the sensitivity of the wetland has been reduced to a degree. However, it is the opinion of the specialist that the proposed development can be considered acceptable on the provision that strict adherence to mitigation measures is enforced to ensure that the ecological integrity of the freshwater environment is not further compromised.
- The construction and subsequent operational activities will be the source of various waste streams which must be managed appropriately and in accordance with the appended Environmental Management Programme (EMPr).
- Possible increase in crime during construction activities.

Positive cumulative impacts that will result from the proposed development include:

- Provision of basic healthcare in the area.
- Temporary employment opportunities.
- Permanent employment opportunities.
- Utilisation of underutilised and degraded land.

#### 5. ENVIRONMENTAL IMPACT STATEMENT

Taking the assessment of potential impacts into account, please provide an environmental impact statement that sums up the impact that the proposal and its alternatives may have on the environment after the management and mitigation of impacts have been taken into account with specific reference to types of impact, duration of impacts, likelihood of potential impacts actually occurring and the significance of impacts.

##### Proposal

Guillaume Nel Environmental Consultants (GNEC) were appointed by Set Square Developments (Pty) Ltd to facilitate the Basic Assessment process for the proposed provincial hospital development on the remaining extent of Farm Quaggasfontein Alias Lapdoorn 548

IQ, Lethabong, Sebokeng, Gauteng, in accordance with the National Environmental Management Act of 1998 (Act 107 of 1998) (NEMA), as amended.

Set Square Development (Pty), conducted an Environmental Impact Assessment (EIA) application during 2015/16 for the proposed Phase 1 to 4 Lethabong Mixed Housing Development situated on the remaining extent of the farm Quaggasfontein Alias Lapdoorn 548 IQ. The Environmental Authorisation (EA) for the application was received from the Gauteng Department of Agriculture and Rural Development (GDARD) on 30 June 2016. The application covered an area of 224 ha and the intention is to develop approximately 5715 residential units. Civil construction commenced for phase 2 in October 2017 and was shortly thereafter put on hold. A new civil contractor was appointed in November 2018 to date, continuing with the construction work associated with the western portion for the study area. The 2016 environmental authorization only assessed the construction of internal engineering services in the form of roads, electricity, sewage and water provision, required as part the original development footprint. No external services, outside of the study areas were included in the environmental application. Another EIA application (for the authorisation of civil services) was consequently lodged with the EA received in 2022.

The proposed development is located on the remaining extent of the farm Quaggasfontein Alias Lapdoorn 548 IQ. The site is located in Sebokeng approximately km west of the R82 and north off Waterdal Road (Houtkop Road). The surrounding land-use is characterized by high density informal and low-income communities. Sebokeng Unit 10 is situated approximately 500m to the east of the site, and vacant land borders the site to the west. Thabong Shopping Centre is approximately 500m to the southeastern side of the site.

Informal settlement occurs widespread throughout the area with the largest informal settlements within Sebokeng being located around Bophelong, Polomiet, Sonderwater, Lybia, Waterval, Sicelo and Impumelelo.

The applicant proposes a provincial hospital with an approximate gross leasable area (GLA) of 50 000m<sup>2</sup> on an area of approximately 12,37 hectares in extent. The proposed hospital will consist of *approximately* 800 beds.

#### *Impact on Hydropedology*

The Hydropedology Assessment was conducted in accordance with the Department of Water and Sanitation guidelines for hydropedological studies. The aim of the Hydropedology study is to characterise the hydraulic properties of the underlying soil and determine the impacts on water resources.

A desktop survey which included obtaining the land type information as well the collection of environmental covariates for the site and the surrounding area. These layers included Landsat 8 image and the 30 m Shuttle Radar Topography Mission (SRTM) Digital Elevation Model (DEM) courtesy of the U.S. Geological Survey. Secondary covariate layers were derived from the Landsat 8 and DEM layers in SAGA-GIS. A field survey was conducted in August 2020 where test pits of 2.5 m were dug or to a limiting layer on the eastern side while excavations of the nearby building project was used for observations on the western side of the site.

The soil forms observed in the study site are Glenrosa, Mispah, Bainsvlei, Rensburg, Longlands, Westleigh, Constantia and Tukulu. On the eastern side of the wetland, the main soil

distribution was Glenrosa on the top of the hill, within the dolerite outcrops, changing into Bainsvlei on the midslopes and Rensburg in the Wetland.

A small area in the south eastern part of the site had a soil distribution of Glenrosa all the way down to the wetland, with the rock type changing from dolerite to shale halfway down the hillslope. On the western slope, two different soil distribution patterns were observed. In the north west, Glenrosa occurs at the top of the site, which is just below the crest of the hillslope. The soil form changes to Longlands on the midslope and Rensburg again in the wetland. In the south west, the Longlands soil form in the midslope changes to a Constantia at the top of the site.

The site consists of shallow recharge soils on the crest, interflow soils on the midslopes and a responsive wet soil in the valley bottom.

The simulated hydro-pedological processes in the catchment are dominated by evapotranspiration (ET) (67.1%) and surface runoff (24.3%). The increase in the surface area under development will result in a marked increase in the surface runoff (25.3% increase). At basin scale the yearly average available soil water content is likely to decline by 8.5%. Surface runoff is likely to increase by >70%, making up 28% of rainfall received. Percolation, lateral flow and transpiration is likely to reduce significantly, whilst the evaporation will increase with around 40 mm/year. These changes in the water balance are directly caused by the larger area which are sealed by the development i.e., roofs, roads and pavements.

The simulated impact on the wetlands is a loss of 5.8% in the topsoil and 9% in total of the available water content in the wetland. If the mitigation of preventing recharge and erosion control is practiced as recommended by the Hydro-pedology specialist, then risks of the development are manageable.

#### *Impact on Freshwater resources*

The integrity of the wetland delineated within the study area has been impacted as a result of historical agricultural activities, clearing of vegetation, infilling and compaction associated with the development of informal settlements and catchment hardening activities linked to urbanisation. Despite their decreased ecological integrity, these systems can still be considered important for their ecological role particularly from a hydrological and geomorphological perspective (erosion control, flood attenuation, streamflow regulation and assimilation of nutrients and toxicants).

Based on the findings of the watercourse ecological assessment, it is the opinion of the freshwater ecologist that the proposed development poses a moderate risk to the freshwater systems present. Impacts associated with ground-breaking activities, installation of sewer lines and construction of access roads within the wetland are anticipated to pose the highest risk to the ecological integrity and functional extent of the wetland although it is acknowledged that the sensitivity of the wetland has been reduced to a degree. Adherence to cogent, well-conceived and ecologically sensitive site development plans, the mitigation measures provided in this report, as well as general good construction practice and ongoing management, maintenance and monitoring, are essential if the significance of the perceived impacts are to be reduced to limit further degradation to the freshwater environment.

It is the opinion of the specialist that the proposed development can be considered acceptable on the provision that strict adherence to mitigation measures is enforced to ensure that the ecological integrity of the freshwater environment is not further compromised. In addition, it



is highly recommended that where possible, new roads which are proposed to be constructed within the wetland must be minimised as far as possible, ideally, no new roads be constructed within the wetland. Should this be unavoidable, careful planning and consideration of the design should take place to ensure free flow of water and to ensure that no upstream inundation, downstream desiccation, and the creation of preferential flow paths takes place. The appropriate design of the access roads and rehabilitation of the areas associated with the roads and stormwater infrastructure are likely to not only avoid impacts on the wetland but assist in enhancing the functionality of the wetland. Similarly, given that the sewer line needs to tie into the existing municipal infrastructure, it is considered inevitable that this infrastructure will encroach within the boundaries of the wetland, but it is considered critical that this is done in an ecologically sensitive manner which does not further compromise the already impacted integrity of the wetland

#### *Impacts on Heritage resources*

The proposed development will trigger Section 38 of the NHRA. A Notice of Intent to Develop (NID) will be submitted to SAHRA (as the responsible authority) to determine whether a Heritage Impact Assessment should be conducted as part of the proposed development.

#### *Ecological Impacts*

##### *Vegetation:*

The site corresponds to the Grassland Biome and more particularly to the Mesic Grassland Bioregion as defined by Mucina & Rutherford (2006). It comprehends an ecological type known as Soweto Highveld Grassland (Mucina & Rutherford, 2006). Soweto Highveld Grassland is a short, dense grassland type occurring on gently to moderately undulating landscapes. The vegetation type when in a climax state, is dominated by a rich assemblage of graminoid species, most notably *Themeda tiandra*. Soweto Highveld Grassland is a threatened (Endangered) ecosystem with only a few remaining patches of untransformed grassland being statutorily conserved.

##### *Gauteng Regional Plans & Ridges:*

The site is located immediately adjacent to Class 1 and Class 3 ridge system (Gauteng Ridges Guideline, 2017). According to the Gauteng Ridges Guideline (2017), Class 1 ridges are ridges in respect of which 5% or less of the area has been transformed by human activity and Class 3 ridges are ridges of which that have been transformed as a result of human activity by 35% or more but by less than 65%. For any Class 1 ridge, the following land use and development guidelines are applicable (GDARD, 2017):

- Only low impact activities with an ecological footprint of 5% or less in the 200-metre buffer zone of the ridge will be supported, no development on the ridge itself will be supported.

For any Class 3 ridge, the following land use and development guidelines are applicable (GDARD, 2017):

- Development activities and uses that have a high environmental impact on the Class 3 ridge will not be permitted on areas that have not been significantly impacted by human activities.
- Low impact development activities, such as tourism facilities, which comprises of an ecological footprint of 5% or less of the property may be supported on natural areas.

- Low impact development activities on a ridge will not be supported where it is feasible to undertake the development on a portion of the property abutting the ridge.

#### *Socio Economic Impacts*

The proposed residential development will contribute to the local economy during both the construction and operational phases as local labourers will be employed. Increased productivity as a result of the impact will lead to the creation of employment opportunities and skills development in the area. The impact will be of temporal nature during the construction phase and permanent for the operational phase. The probability of this impact occurring is high and as such a potential high positive impact.

The evaluation of the potential impacts of the proposed Development on the environment, reveals that construction activities will have the most significant impact. With the effective implementation of the management and mitigation measures recommended by the various specialist, the proposed development is not expected to cause unacceptable biophysical impacts.

#### **Alternative 1**

N/A

#### **Alternative 2**

N/A

#### **No-go (compulsory)**

The No-Go alternative was also assessed as an alternative and was not considered as a feasible alternative in the light of the impacts that would result. Retaining the present state of the proposed site would be considered a lost opportunity for the following reasons:

- The underutilized land will remain as such.
- No permanent and temporary employment opportunities will occur.
- Should the No-Go alternative be approved, the site will more than likely be degraded through unlawful occupation.
- No provision of basic healthcare services.

## **6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE**

For proposal:

The applicant Set Square Development (Pty) Ltd proposes a provincial hospital with an approximate gross leasable area (GLA) of 50 000m<sup>2</sup> on an area of approximately 12,37 hectares in extent. The proposed hospital will consist of *approximately* 800 beds.

A single wetland comprising a large unchanneled valley bottom (UCVB) Hydrogeomorphic (HGM) unit located from north to south of the study area and two seep HGM units feeding into the UCVB were delineated on the site. The delineated wetland has been impacted by historical agricultural activities, disturbances of soils and dumping of foreign materials, infilling, proliferation of alien and invasive species, construction and excavation activities within the wetland, compaction, encroachment of informal settlements and by urbanisation within the greater catchment. From a wetland and hydrological perspective, the wetland rehabilitation project will result in improved Present Ecological State with maintained subsurface flow, wetland seepage, species diversity and improved runoff quality and quantity.

The applicant should implement plant species and wetland rehabilitation plan (**authorised in the services EA**).

A Terrestrial Biodiversity Impact Assessment to determine the ecological function and relative ecological importance of the habitat on site as well as recommendation regarding the appropriate ridge buffer, will form part of the application phase (2<sup>nd</sup> Draft) Basic Assessment Report.

The environmental assessment should consider a holistic view of environmental management, that balances the imperatives of urbanization to sustain livelihoods and contribute to socio-economic development with the need to protect and minimise significant impacts on the natural environment and maintain ecosystem services. The proposed layout recommended in this draft Basic Assessment report, assists in balancing these competing requirements of urbanisation, livelihoods and conservation.

For alternative:

N/A

Having assessed the significance of impacts of the proposal and alternative(s), please provide an overall summary and reasons for selecting the proposal or preferred alternative.

The proposal will form part of the Gauteng Human Settlements Mega Projects and are located within the strategic framework of integrated development and represent the actualization of the social and economic imperatives that seeks to proactively promote the establishment of socially and economically mixed integrated sustainable human settlements with a sense of neighbourhood living environment to address poverty alleviation and economic decline. This proposal will therefore contribute to creating an integrated development to compliment the residential development in the vicinity.

The proposed development will contribute to the utilization of the site by formalizing acceptable land use in accordance with the development framework for the area. The need and desirability of the proposed development is motivated in terms of the site context, surrounding approved land uses, as well as in terms of the relevant planning policies. The need and desirability is furthermore demonstrated through compliance with the various proposals of the planning policies and development controls.

The management of the negative impacts will require the implementation of the necessary mitigatory measures detailed in the Environmental Management Programme (EMPr) of this report. Should the proposed development be approved and the mitigation measures are implemented, it is not expected that the proposal will reduce the risk the development could have on the environment.

## 7. SPATIAL DEVELOPMENT TOOLS

Indicate the application of any spatial development tool protocols on the proposed development and the outcome thereof.

Gauteng Environmental Management Zones, GEMF 2015: in terms of Regulation 5(4) of the Environmental Management Framework Regulations, 2010, published under Government Notice R547 in Gazette 33306 on 18 June 2010.

Gauteng Environmental Management Framework (EMF) (2015) indicates that the study area falls

within (please see figure 9 below):

- Urban Development Zone 1 (High Control Zone) and;
- Inside Zone 1 (Zone 2)

The majority (80%) of the study area is situated within the urban development zone [EMF Zone 1] and the remaining portion of the study area falls within the high control zone (inside zone 1) [EMF Zone 2] according to the Gauteng Environmental Management Framework (2014).

EMF Zone 1: The intention with this zone is to streamline urban development activities in it and to promote development infill, densification and concentration of urban development, in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas.

EMF Zone 2: This zone is sensitive to development activities. Only conservation should be allowed in this zone. Related tourism and recreation activities must be accommodated in areas surrounding this zone.

## 8. RECOMMENDATION OF THE PRACTITIONER

Is the information contained in this report and the documentation attached hereto sufficient to make a decision in respect of the activity applied for (in the view of the Environmental Assessment Practitioner as bound by professional ethical standards and the code of conduct of EAPASA).

YES	NO
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If "NO", indicate the aspects that require further assessment before a decision can be made (list the aspects that require further assessment):

A Terrestrial Biodiversity Impact Assessment to determine the ecological function and relative ecological importance of the habitat on site as well as recommendation regarding the appropriate ridge buffer, will form part of the application phase (2<sup>nd</sup> Draft) Basic Assessment Report. Furthermore, a Heritage Impact Assessment may be concluded after consultation with SAHRA.

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:

N/A

## 9. THE NEEDS AND DESIREBILITY OF THE PROPOSED DEVELOPMENT (as per notice 792 of 2012, or the updated version of this guideline)

Set Square Development (Pty), conducted an Environmental Impact Assessment (EIA) application during 2015/16 for the proposed Phase 1 to 4 Lethabong Mixed Housing Development situated on the remaining extent of the farm Quaggasfontein Alias Lapdoorn 548 IQ. The Environmental Authorisation (EA) for the application was received from the Gauteng Department of Agriculture and Rural Development (GDARD) on 30 June 2016. The application covered an area of 224 ha and the intention is to develop approximately 5715 residential units. Civil construction commenced for phase 2 in October 2017 and was shortly thereafter put on hold. A new civil contractor was appointed in November 2018 to date, continuing with the construction work associated with the western portion for the study area. The 2016 environmental authorization only assessed the construction of internal engineering services in the form of roads, electricity, sewage and water provision, required as part the original development footprint. No external services, outside of the study areas were included in the environmental application. Another EIA application (for the authorisation of civil services) was consequently lodged with the EA received in 2022.

This application will thus address a need for basic healthcare taking into consideration an increase in the formal residential opportunities within the immediate surroundings.

The study area is located within the strategic framework of integrated development and represent the actualization of the social and economic imperatives that seeks to proactively promote the establishment of socially and economically mixed integrated sustainable human settlements with a sense of neighbourhood living environment to address poverty alleviation and economic decline. The proposed hospital is thus in line with this needs for this area as it will integrate into the existing, authorised development.

**10. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED**  
(CONSIDER WHEN THE ACITIVTY IS EXPECTED TO BE CONCLUDED)

The authorisation should be valid for a period of 10 years. The applicant intends to commence with construction activities as soon as the EA and land use rights are in hand. Construction activities must be accompanied by an Environmental Control Officer.

**11. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)** (must include post construction monitoring requirements and when these will be concluded.)

If the EAP answers "Yes" to Point 7 above then an EMP is to be attached to this report as an Appendix

EMPr attached

Yes

# SECTION F: APPENDIXES

The following appendixes must be attached as appropriate (this list is inclusive, but not exhaustive):

It is required that if more than one item is enclosed that a table of contents is included in the appendix

Appendix A: Site plan(s) – *(must include a scaled layout plan of the proposed activities overlain on the site sensitivities indicating areas to be avoided including buffers)*

Appendix B: Photographs

Appendix C: Facility illustration(s)

Appendix D: Route position information

Appendix E: Public participation information

Appendix F: Water use license(s) authorisation, SAHRA information, service letters from municipalities, water supply information

Appendix G: Specialist reports

Appendix H: EMPr

Appendix I: Other information

## CHECKLIST

To ensure that all information that the Department needs to be able to process this application, please check that:

- Where requested, supporting documentation has been attached;
- All relevant sections of the form have been completed.