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**PROPOSED TOWNSHIP DEVELOPMENT ON PORTION 131 (A PORTION
OF PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG
PROVINCE (Gaut 002/16-17/E0267)**

Draft BASIC ASSESSMENT REPORT

Prepared for: Tebogo Molokomme
Provincial Heritage Resource Authority of Gauteng
35 Rissik Street
Surrey House
Johannesburg
2000

Prepared by: REC SERVICES (PTY) LTD.
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27 October 2017

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Co. Reg No: 2016/310652/07

Director: PN van der Merwe

BSc (Hons) Environmental Management

- EAP: P.N. van der Merwe (Director)
- Expertise: Environmental Impact Assessments in Land-use and Infrastructure Development.
- Years of experience: 26. Qualifications: B.Sc. Hons. Environmental Management PU for CHE.
- EAP: Rowan van Tonder (Consultant)
- Expertise: Currently involved with various applications for activities under the National Environmental Management Act (NEMA) (Act 107 of 1998), Mineral and Petroleum Recourses Development Act 2002 (Act No. 28 of 2002), and National Environmental Management: Waste Act, 2008 (Act 59 of 2008).
- Years of experience: 10. Qualifications: M.Sc. Botany, B.Sc. Hons. Physical Geography - Environmental Management at TUKS.

CONTACT DETAILS OF ENVIRONMENTAL ASSESSMENT PRACTITIONER:

Pieter van der Merwe / Rowan van Tonder

Rock Environmental Consulting (Pty) Ltd

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PRETORIA

0044

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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)

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form 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 (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. 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.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **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 authorisation being refused.**
10. 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 being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. 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.
13. 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.

DEPARTMENTAL DETAILS

Gauteng Department of Agriculture and Rural Development
Attention: Administrative Unit of the of the Environmental Affairs Branch
P.O. Box 8769
Johannesburg
2000

Administrative Unit of the of the Environmental Affairs Branch
Ground floor Diamond Building
11 Diagonal Street, Johannesburg

Administrative Unit telephone number: (011) 240 3377
Department central telephone number: (011) 240 2500

(For official use only)

NEAS Reference Number:						
File Reference Number:						
Application Number:						
Date Received:						

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.

N/A

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.

This is also not an activity falling under the MPRDA. It is a proposed township development that will have a rehabilitation phase if the proposed development does get decommissioned in the far future.

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.

Have State Departments including the competent authority commented?

NO

If no, why?

Draft BAR is still being circulated for comments.

SECTION A: ACTIVITY INFORMATION

1. PROPOSAL OR DEVELOPMENT DESCRIPTION

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

PROPOSED TOWNSHIP DEVELOPMENT ON PORTION 131 (A PORTION OF PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE

Select the appropriate box

The application is for an upgrade of an existing development

The application is for a new development

Other, specify

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

YES

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

Competent Authority: City of Johannesburg Metropolitan Municipality

- Application is hereby made in terms of Section 26(3)(a) of the City of Johannesburg Municipal Planning By-law, 2016, read with the spatial Planning and Land Use Management Act, 2013, for the establishment of a mixed use township which includes 2 erven zoned "Special" for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail on Portion 131 of the farm Zevenfontein 407 J.R. (Riverside View Extension 76).

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

YES

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

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).	Provincial	27 November 1998
R. 982 National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014	Provincial	4 December 2014
Gauteng Provincial Environmental Management Framework (GPEMF)	Provincial	November 2014

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

Legislation, policy or guideline	Description of compliance
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	R. 982 National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014
R. 982 National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014	R. 983: Listing Notice 1: Activity 27 The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.
Gauteng Provincial Environmental Management Framework (GPEMF)	Environmental Management Framework Report: November 2014. Produced by Environomics. In terms of hydrology, biodiversity, land-use, and SDFs.

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

The following list of alternative types was measured against the proposed township development and then discussed with the applicant to reach proper and valid alternatives where applicable. The no-go option will also be described here to form a baseline against which the impacts of the other alternatives are assessed.

Alternative type:

either alternative: site on property
properties
activity
design
technology
energy
operational

No-Go Alternative

If no township is developed then this plot land will stay vacant. Either way environmental impacts are already being asserted onto this plot of land. Illegal dumping and criminal activities was noticed on-site. A township development will created additional job opportunities and will boost the local economy greatly. This proposed development will also connect with the two large township developments either side and compliment the trend of the area.

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 establishment of a mixed use township which includes 2 erven zoned "Special" for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail on Portion 131 of the farm Zevenfontein 407-JR (Riverside View Extension 76).</p> <p>The township will comprise of 2 erven (to be consolidated), subject to the restrictive measures listed below:</p> <table border="1"> <thead> <tr> <th>Zoning</th> <th>"Special"</th> </tr> </thead> <tbody> <tr> <td>Primary rights</td> <td>High density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail.</td> </tr> <tr> <td>Coverage</td> <td>80%</td> </tr> <tr> <td>Floor area ratio</td> <td>2.7</td> </tr> <tr> <td>Height restriction</td> <td>6 storeys</td> </tr> <tr> <td>Density</td> <td>120 du/ha</td> </tr> </tbody> </table> <p>The application site is highly accessible and situated on the corner of William Nicol Drive (Mobility Spine, Class 2 to function as a BRT route) and Zeven Street.</p>	Zoning	"Special"	Primary rights	High density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail.	Coverage	80%	Floor area ratio	2.7	Height restriction	6 storeys	Density	120 du/ha
Zoning	"Special"													
Primary rights	High density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail.													
Coverage	80%													
Floor area ratio	2.7													
Height restriction	6 storeys													
Density	120 du/ha													

		<p>Although the site is 7.8408 hectares in extent, it is affected by the proposed PWV 5 route, which is excluded from the township and only 2,6384 hectares remains available for the proposed development.</p> <p>The development pressure for this area is supported by the new Steyn City development north of Dainfern Estate, East of Chartwell North and west of William Nicol Drive between William Nicol Drive and Cedar Road (Riverglen Township) and a proposed mixed use residential development on the Riversands Farm which covers the portion of land between Erling Street and Mhandi Road east of William Nicol (Riverside View Extension 15).</p> <p>The City of Johannesburg Metropolitan Municipality investigated the development potential of the area and has earmarked the area east of William Nicol Drive, including the application site as a Specialist SMME Regional Node, promoting high intensity mixed use development. This application is thus in line with the amended Regional Spatial Development Framework for Sub Area 4 (Region A) as approved by the City of Johannesburg Metropolitan Municipality.</p>
2	Property Alternative	<p>The property for the proposed development is owned by the applicant. He does not own any other open property for the development anywhere near this region. This property is also economically placed, because it is on the corner of William Nicol Drive and Zeven Street. <u>The locality alternative will therefore NOT be assessed due to no other site that exists.</u></p>
3	Activity Alternative	<p>An alternative to the proposed development would be to stay with the current zoning of agriculture and do a type of crop or nothing. This is because the property was previously used for crop production. <u>The activity alternative will be assessed.</u></p>
4	Design or Layout Alternative	<p>The site has already been transformed and is now a disturbed/recovered piece of grassland. The layout of this proposed development has been thoroughly thought out taking inconsideration of all the possible environmental sensitivities on-site. All measures of design in this regards were and will still be considered and implemented. <u>The design/layout alternative can NOT be assessed due to the disturbed nature that already took place at this site and will not make a difference how the layout will fit.</u></p>
5	Technology to be used - Alternative	<p>The current electrical power provision is through the municipal network. As an alternative to this part of the technological layout of the proposed development, the provision of electricity through solar energy generation can be considered as an alternative. This can imply the installation of visible solar panels for partial or self- sustaining electricity provision to the proposed development. <u>The technology alternative will be assessed.</u></p>

6	Operational Aspect Alternative	A small to unknown operational aspect is needed for this proposed development due to its small size and varied possible uses for the site. <u>The operational alternative will therefore NOT be assessed.</u>
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In the event that no alternative(s) has/have been provided, a motivation must be included in the table below.

Not applicable

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:
2.6384 Ha

Alternatives:

Alternative 1 (if any)

7.84 Ha
Ha/ m²

Alternative 3 (activity: Agriculture)

or, for linear activities: N/A

Proposed activity

Length of the activity:

Alternatives:

Alternative 1 (if any)

m/km

Alternative 2 (if any)

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

Proposed activity: Portion 131 of the farm Zevenfontein 407-JR (Riverside View Extension 76)

Size of the site/servitude:
7.84 Ha

Alternatives:

Alternative 1 (if any)

7.84Ha
Ha/m²

Alternative 3 (activity: Agriculture)

5. SITE ACCESS

Proposal

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

YES directly from an existing road	
	m

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

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 1

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

YES	NO
	m

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

Describe the type of access road planned:

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 3 (activity: Agriculture)

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

YES directly from an existing road	
	m

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

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

0

Number of times

(only complete when applicable)

6. LAYOUT OR ROUTE PLAN

THE SAME SITE FOOTPRINT WILL BE USED FOR ALL POSSIBLE ALTERNATIVE LAYOUTS

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

THE SAME SITE WILL BE USED FOR ALL POSSIBLE ALTERNATIVES

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.

SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

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

THE RECEIVING ENVIRONMENT IS THE SAME FOR ALL THE ALTERNATIVES, BECAUSE THIS IS THE ONLY SITE AVAILABLE.

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.)

Portion 131 of the farm Zevenfontein 407-JR. The township will be known as Riverside View Extension 76.

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.

Alternative:

Latitude (S):	Longitude (E):
-25.969674°	28.017589°

In the case of linear activities: N/A

Alternative:

- Starting point of the activity
- Middle point of the activity
- End point of the activity

Latitude (S):	Longitude (E):
°	°
°	°
°	°

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	4	0	7	0	0	1	3	1
ALT. 1																					
ALT. 2																					
etc.																					

3. GRADIENT OF THE SITE

Indicate the general gradient of the site.

Flat	1:50 – 1:20	1:20 – 1:15	1:15 – 1:10	1:10 – 1:7,5	1:7,5 – 1:5	Steeper than 1:5
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4. LOCATION IN LANDSCAPE

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

Ridgeline	Plateau	Side slope of hill/ridge	Valley	Plain	Undulating plain/low hills	River front
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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)
- Dolomite, sinkhole or doline areas
- Seasonally wet soils (often close to water bodies)
- Unstable rocky slopes or steep slopes with loose soil
- Dispersive soils (soils that dissolve in water)
- Soils with high clay content (clay fraction more than 40%)
- Any other unstable soil or geological feature
- An area sensitive to erosion

	NO
	NO
	NO
	NO
	NO
	NO
	NO
	NO

(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) NO

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

Latitude (S): _____ Longitude (E): _____

c) are any caves located within a 300m radius of the site(s) NO

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

Latitude (S): _____ Longitude (E): _____

d) are any sinkholes located within a 300m radius of the site(s) NO

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

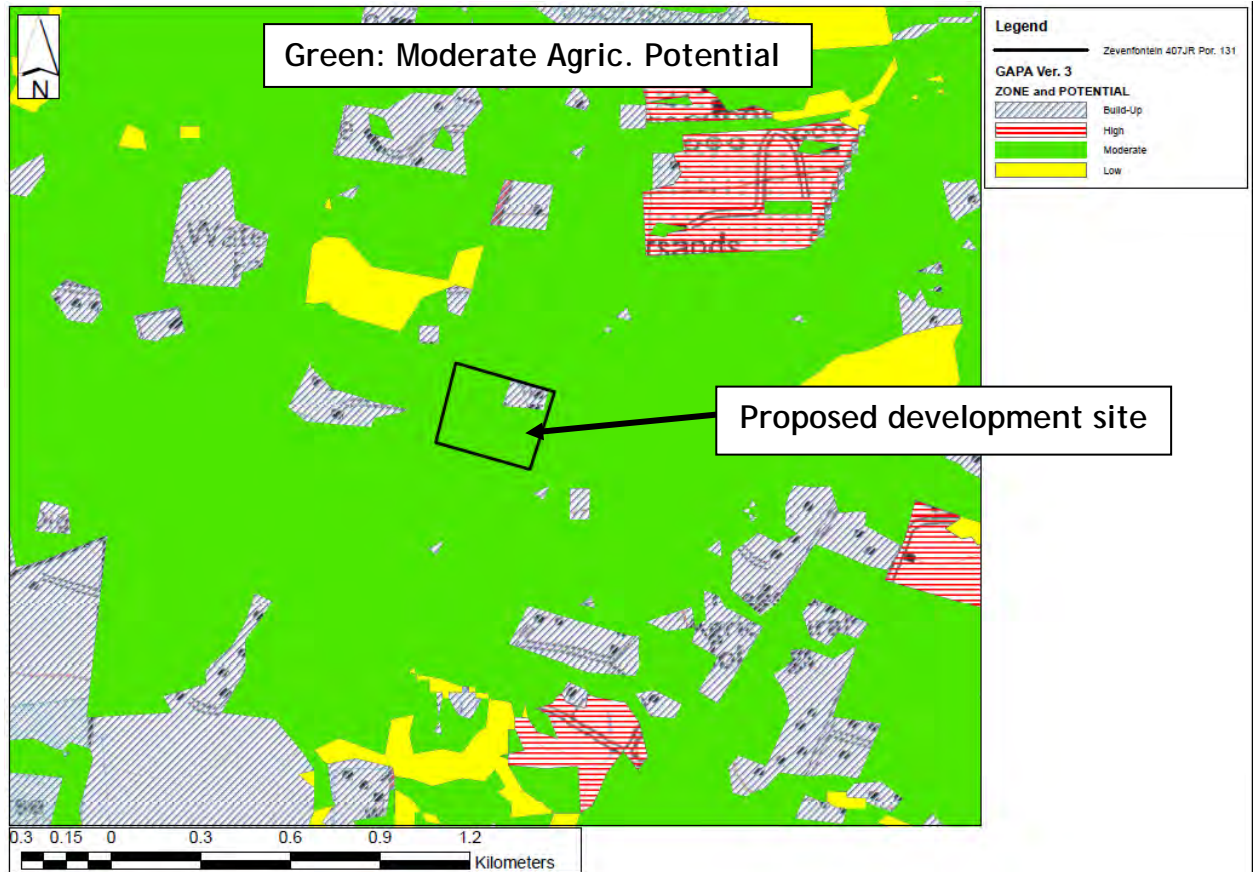
Latitude (S): _____ Longitude (E): _____

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)?

	NO
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Please note: The Department may request specialist input/studies in respect of the above.

7. GROUNDCOVER

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 % = 5	Natural veld with scattered aliens % = 30	Natural veld with heavy alien infestation % = 10	Veld dominated by alien species % = 10	Landscaped (vegetation) % = 5
Sport field % = 0	Cultivated land % = 25	Paved surface (hard landscaping) % = 5	Building or other structure % = 5	Bare soil % = 5

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:

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:

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

 YES NO

If YES, specify and explain:

A small stream flows through the site.

Was a specialist consulted to assist with completing this section NO

If yes complete specialist details

Name of the specialist: _____

Qualification(s) of the specialist: _____

Postal address: _____

Postal code: _____

Telephone: _____ Cell: _____

E-mail: _____ Fax: _____

Are any further specialist studies recommended by the specialist? NO

If YES, specify: _____

If YES, is such a report(s) attached? NO

If YES list the specialist reports attached below

Signature of specialist: _____ Date: _____

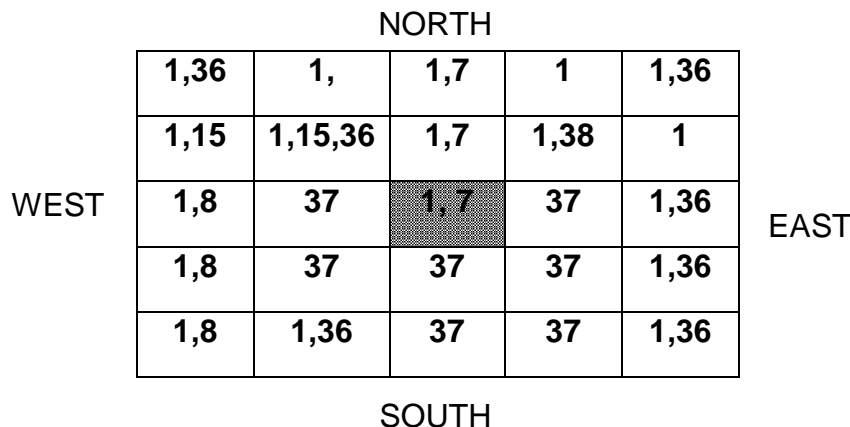
Please note; If more than one specialist was consulted to assist with the filling in of this section then this table must be appropriately duplicated

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 ^{AN}	17. Hospitality facility	18. Church	19. Education facilities	20. Sport facilities
21. Golf course/polo fields	22. Airport ^N	23. Train station or shunting yard ^N	24. Railway line ^N	25. Major road (4 lanes or more) ^N
26. Sewage treatment plant ^A	27. Landfill or waste treatment site ^A	28. Historical building	29. Graveyard	30. Archeological site
31. Open cast mine	32. Underground mine	33. Spoil heap or slimes dam ^A	34. Small Holdings	35. Farm Stead
36. Natural veld	37. Nursery	38. Quarry		
Other land uses (describe):				

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



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

Heritage Impact Assessment

Vegetation Study

Wetland Verification Report

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 on Portion 131 of the farm Zevenfontein 407-JR. The township will be known as Riverside View Extension 76, City of Johannesburg, Gauteng Province. Entrance to the property is on the corner of Zeven St. and the R511 in Kleve AH, just south of Diepsloot and north of Dainfern. Latitude: -25.969693°; Longitude: 28.017640° (entrance to the site). Please refer to the Google Earth image below.



Registered owner:

Portion 131 (a portion of Portion 2) of the farm Zevenfontein No 407, Registration Division J.R. is being held under Deed of Transfer T134845/2007 and it is registered in the name of SILVER LAKE TRADING 511 (PROPRIETARY) LIMITED.

Existing Zoning:

In terms of the Peri Urban Town Planning Scheme, 1975 the zoning of the site is as follows:

Portion 131 of the farm Zevenfontein 407 JT is zoned as “Agriculture”.

Existing Land Use:

The application site is currently undeveloped/vacant.

Surrounding Land uses:

Portion 131 of the farm Zevenfontein 407 J.R. is situated in Sub Area 4, which is characterised by high-density urban residential components and well defined mixed use nodes. The Fourways

regional node, together with several district and neighbourhood nodes spread throughout the sub area provide various services and employment opportunities. A well-defined Strategic Public Transport System (SPTN) connects the sub area to the rest of the City. The majority of non-residential land uses within the sub area are concentrated along William Nicol Drive, Cedar Road and Witkoppen Road, thereby generating high traffic volumes along these three mobility spines. A part of the Greater Kyalami Conservancy (GEKCO) falls within this sub area.

The area immediately east and south of the application site includes the Kleve Agricultural Holdings area. The bulk of the properties in this area are zoned "Agriculture" and have a rural agricultural character, with most of the holdings used for rural residential purposes and small scale farming activities, including tree nurseries.

A commercial park is proposed directly north of the application site. This development will be known as the Riversands Commercial Park and it will be a large, secure complex accommodating a variety of commercial precincts - including retail, office, warehousing and light industrial business premises. Figure 1 below illustrates the proposed development.

FIGURE 1 - RIVERSANDS COMMERCIAL PARK



Steyn City, which is a mixed use development, is being developed west of the application site and this development covers approximately 700 ha of land. The total project has a capacity of some 11 000 residential units, including a championship Golf Course (currently in construction),

some 260 ha of landscaped parkland incorporating pedestrian routes and bridle trails, and a mix of supportive uses including two private schools, office developments, convenience shopping, a retirement village and a private hospital. The proposed Steyn City Development is illustrated in Figure 2.

FIGURE 2 - STEYN CITY



See statistics below (from Stats SA Population Census 2001):

City of Johannesburg - Dainfern

Dainfern was established in 1992 as a residential golfing estate and comprises of an 18-hole golf course that was designed by the famous South African golfer, Gary Player. (GPS coordinates: 25.9855 S, 28.0008 E).

Characteristics	
Total population	6,601
Young (0-14)	25,5%
Working Age (15-64)	70%

Elderly (65+)	4,6%
Dependency ratio	42,9
Sex ratio	86,5
Population density	1617 persons/km2
No schooling aged 20+	0,4%
Higher education aged 20+	61%
Matric aged 20+	22,2%
Number of households	2,151
Average household size	3
Female headed households	34%
Formal dwellings	98,7%
Housing owned/paying off	55,6%
Flush toilet connected to sewerage	99,9%
Weekly refuse removal	99,7%
Piped water inside dwelling	98,8%
Electricity for lighting	99,8%

City of Johannesburg - Dainfern

Diepsloot is Afrikaans for 'deep ditch', 'deep furrow' or 'deep gully'. The township was established in 1995 and was a transit settlement for individuals who had been moved from Zevenfontein. Formal development started in 1999. (GPS coordinates: 25.9379 S, 28.0185 E).

Characteristics

Total population	138,329
Young (0-14)	22%
Working Age (15-64)	77,4%
Elderly (65+)	0,7%
Dependency ratio	29,3
Sex ratio	119,8
Population density	11532 persons/km2
No schooling aged 20+	4,3%
Higher education aged 20+	2,8%
Matric aged 20+	30,7%
Number of households	62,882
Average household size	2,1
Female headed households	28,6%
Formal dwellings	34,5%
Housing owned/paying off	21%
Flush toilet connected to sewerage	74,1%
Weekly refuse removal	91,6%
Piped water inside dwelling	18,4%
Electricity for lighting	61,2%

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?

If YES, explain:

	NO
--	----

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:

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)?

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

	NO
	NO

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	
-----	--

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

	NO
--	----

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

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

Still circulating for comments.

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?

NO

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

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

Still circulating for comments.

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?

YES	
5 m³	

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

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

The solid construction waste such as overburden material will be used as backfilling in areas where necessary and some will be disposed of at the nearest waste disposal site or quarry.

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

At the closest appropriate registered municipal waste disposal site (Randburg or Krugersdorp) by the licensed waste disposal contractor to be appointed by the site contractor.

Will the activity produce solid waste during its operational phase?

YES	
3 m³	

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

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

Solid waste will be collected by municipal services or by a registered solid waste contractor.

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?

	NO
--	----

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

All operational solid waste will always be disposed of at a registered landfill site.

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?

	NO
--	----

If yes, inform the competent authority and request a change to an application for scoping and EIA.

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

	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:

None. But separate recycling bins can be implemented if municipal services allow the pick-up of recycled material.

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?

	NO
--	----

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

	m ³
--	----------------

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

	NO
--	----

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

	NO
--	----

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

--	--

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

--

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:			
Contact person:			
Postal address:			
Postal code:			
Telephone:		Cell:	
E-mail:		Fax:	

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

N/A: See above.

Liquid effluent (domestic sewage)

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

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

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	
	1351.935 m ³
	NO, but The sewer line will connect into the outfall sewer to the east of the site. The discharge from the site will not have any negative impact on the municipal system.

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?

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

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:

YES	
	NO

Vehicles coming into the development will release the normal carbon monoxide gasses and there will be dust generated during the construction phase.

2. WATER USE

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

municipal	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:

0 litres

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

--

N/A

If yes, have you applied for the water use permit(s)? NO
If yes, have you received approval(s)? (attached in appropriate appendix) NO

3. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source
Municipal.

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:
Energy efficient light bulbs (florescent/LED) will be used for all lighting purposes. No other measures are known at this stage. Solar generated applications could also be looked at.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:
None

Section D Alternative No. **3 – Alternative Activity** (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? NO
If yes, what estimated quantity will be produced per month? m³
How will the construction solid waste be disposed of (describe)?
N/A

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

Will the activity produce solid waste during its operational phase? NO
If yes, what estimated quantity will be produced per month? m³
How will the solid waste be disposed of (describe)?
None needed.

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? NO
Where will the solid waste be disposed if it does not feed into a municipal waste stream (describe)?
N/A

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? NO
If yes, inform the competent authority and request a change to an application for scoping and EIA.

Is the activity that is being applied for a solid waste handling or treatment facility? 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:
None. I.

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? NO

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

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

	m ³
	NO

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

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

	NO
--	----

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

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?

If yes, provide the particulars of the facility:

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

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

N/A: See above.

Liquid effluent (domestic sewage)

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

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

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

	NO
	NO

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

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

	NO
--	----

Septic tank system. Will be pumped out by a honey sucker waste disposal company when full and taken to the nearest waste water treatment works.

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

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

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:

YES	NO
	NO

Vehicles coming into the property will release the normal carbon monoxide gasses and there will be dust generated as well during ploughing phases.

2. WATER USE

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

municipal	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:

unknown litres

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?

If yes, list the permits required

YES

For agricultural / commercial purposes. WULA.

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

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

NO
NO

3. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source

Eskom.

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 other measures are known at this stage.

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

None

Section D Alternative No.

5 - Technology
Alternative

(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?

YES

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

5 m³

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

The solid construction waste such as overburden material will be used as backfilling in areas where necessary and some will be disposed of at the nearest waste disposal site or quarry.

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

At the closest appropriate registered municipal waste disposal site (Randburg or Krugersdorp) by the licensed waste disposal contractor to be appointed by the site contractor.

Will the activity produce solid waste during its operational phase?

YES

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

3 m³

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

Solid waste will be collected by municipal services or by a registered solid waste contractor.

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?

NO

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

All operational solid waste will always be disposed of at a registered landfill site.

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?

NO

If yes, inform the competent authority and request a change to an application for scoping and EIA.

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

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:

None. But separate recycling bins can be implemented if municipal services allow the pick-up of recycled material.

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?

NO

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

m³

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

NO

Will the activity produce any effluent that will be treated and/or disposed of on site?
 If yes, what estimated quantity will be produced per month?

NO

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

--

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?
 If yes, provide the particulars of the facility:

NO

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

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

N/A: See above.

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?

1351.935 m ³

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

NO, but The sewer line will connect into the outfall sewer to the east of the site. The discharge from the site will not have any negative impact on the municipal system.

Will the activity produce any effluent that will be treated and/or disposed of on site?
 If yes describe how it will be treated and disposed off.

NO

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?

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:

Vehicles coming into the development will release the normal carbon monoxide gasses and there will be dust generated during the construction phase.

2. WATER USE

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

municipal	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:

0 litres

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? NO

If yes, list the permits required
N/A

If yes, have you applied for the water use permit(s)? NO
If yes, have you received approval(s)? (attached in appropriate appendix) NO

3. POWER SUPPLY

Please indicate the source of power supply eg. Municipality / Eskom / Renewable energy source
Municipal.

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:
Energy efficient light bulbs (florescent/LED) will be used for all lighting purposes. Solar powered roof panels on the development will be investigated in terms of its feasibility. This method is employed in Europe were the whole roof area is under solar panels. This could help in the development to be self-sustaining in terms of electricity in the long-term. But various technical constraints in terms of possible feeding electricity into the national network are still a challenge No other measures are known at this stage.

Describe how alternative energy sources have been taken into account or been built into the design of the activity, if any:
None

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.
1. Sewer connections first have to be established;
2. The site is situated in a sensitive environment i.e. wetlands;
3. Want to see all the specialist studies conducted for this proposed development.

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):

1. Noted. Please see the Infrastructure Outline Scheme Report attached from BSM Baker (Pty) Ltd. (Consulting Engineer)
2. No wetlands were found onsite. See Wetland Verification Report attached for detail.
3. See studies attached to this 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 Significance of Environmental Impacts is to be assessed by means of the following method:
Significance is the product of probability and severity.
Probability describes the likelihood of the impact actually occurring, and is rated as follows:

• Improbable	-	Low possibility of impact to occur either because of design or historic experience.
	Rating	= 2

- Probable - Prominent possibility that impact will occur.
Rating = 3
- Highly probable - Most likely that impact will occur.
Rating = 4
- Definite - Impact will occur regardless of any prevention measures
Rating = 5

The severity rating is calculated from the *factors* given to intensity and duration. Intensity and duration factors are awarded to each impact, as described below.

The Intensity factor is awarded to each impact according to the following method:

- Low intensity - Nature and/or manmade functions not affected and a minor impact may occur.
Factor 1
- Moderate intensity - Environment affected but natural functions and processes can continue though often in a slightly altered manner.
Factor 2
- High intensity - Environment affected to the extent that natural functions are altered to the extent that it will temporarily or permanently cease.
Factor 4

Duration is assessed and a *factor* awarded in accordance with the following:

- Short term - ≤ 1 to 5 years
Factor 2
- Moderate term - 5 - 15 years
Factor 3
- Long term - Impact will only cease after the operational life of the activity, either because of natural process or by human intervention.
Factor 4
- Permanent - Mitigation, either by natural process or by human intervention, will not occur in such a way or in such a time span that the impact can be considered transient.
Factor 5

The severity rating is obtained from calculating a severity factor, and comparing the severity factor to the rating in the table below, for example:

The Severity factor Intensity factor X Duration factor
 $2 \times 3 = 6$

e.g. A Severity factor of 6 (six) equals a Severity Rating of Moderate severity (Rating 3) as per table below:

Table 1: Severity Ratings

	FACTOR
Low Severity (Rating 2)	Calculated values 2 to 4
Moderate Severity (Rating 3)	Calculated values 5 to 8
High Severity (Rating 4)	Calculated values 9 to 12
Very High Severity (Rating 5)	Calculated values 13 to 16 and mo

Severity factors below 3 indicate no impact

A Significance Rating is calculated by multiplying the Severity Rating with the Probability Rating:
 The significance rating should influence the development project as described below:

- Low significance (calculated Significance Rating 4 to 6)
 - Positive impact and negative impacts of low significance should have no influence on the proposed development project
- Moderate significance (calculated Significance Rating ≥ 7 to 12)
 - Positive impact
Should indicate that the proposed project should be approved
 - Negative impact:
 - Should be mitigated or mitigation measures should be formulated before the proposed project can be approved
- High significance (calculated Significance Rating ≥ 13 to 18)
 - Positive impact:
Should point towards a decision for the project to be approved and should be enhanced in final design
 - Negative impact:
 - Should weigh towards a decision to terminate proposal, or mitigation should be formulated and performed to reduce significance to at least low significance rating.
- Very High significance (calculated Significance Rating ≥ 19 to 25 and more)

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.

1 & 5 - Proposal & Technology Alternative - Construction Phase

ENVIRONMENTAL ASPECT	ENVIRONMENTAL COMPONENT	NATURE AND DESCRIPTION OF IMPACTS (in relation to surrounding land uses)/ RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED	MITIGATION MEASURES
1. Establishment of the development, parking areas and other associated infrastructure	Topography	<ul style="list-style-type: none"> ○ The development and associated infrastructure will be established on an undulating terrain and low significant impact on the topography is anticipated. Erosion will be prevalent on steeper slopes. 	<ul style="list-style-type: none"> ○ Please refer to the information provided below the table.
2. Preparation of the site, including the clearance of vegetation	The existing grass layer is to be removed for the establishment of buildings and infrastructure.	<ul style="list-style-type: none"> ○ The removal of vegetation cover, such that the soil surface is exposed, may lead to increased soil erosion in certain areas. ○ Where the removal of surface vegetation is of a temporary nature only, the establishment 	<ul style="list-style-type: none"> ○ The topsoil layer is required to rehabilitate the vegetation in these areas; where surface vegetation has been temporarily

		<p>of weed species is a threat.</p> <ul style="list-style-type: none"> ○ Less natural habitat will be left with continued land development 	<p>removed it must be replaced again.</p>
<p>3. Excavations for the establishment of foundations</p>	<p>Vegetation and soil layers. The closes other land uses is 500 m away and will not be affected.</p>	<ul style="list-style-type: none"> ○ The existing vegetation will be permanently removed to accommodate the foundations for the development. ○ Less natural habitat will be left with continued land development 	<ul style="list-style-type: none"> ○ Please refer to the information provided below the table.
<p>4. Establishment of stock pile areas</p>	<p>Soil and vegetation cover. The closes other land uses is 500 m away and will not be affected.</p>	<ul style="list-style-type: none"> ○ Stock piles cause compaction of soil surfaces, which promotes the establishment of unwanted weed species. ○ The establishment of weeds greatly reduces the quality of the natural vegetation on site. 	<ul style="list-style-type: none"> ○ Please refer to the information provided below the table.
<p>5. Provisions for storm water i.e. storm water drainage.</p>	<p>Soil surfaces, vegetation cover and drainage patterns.</p>	<ul style="list-style-type: none"> ○ Correct and efficient storm water drainage systems must be installed. Poorly designed storm water outlets will result in increased surface run-off volume and speed, which could lead to the creation of erosion gullies. All road surfaces generate storm water, which should be controlled by preventing the storm water from crossing the road. Storm water must be allowed to spread out gradually over a large surface area to protect the soil surface against erosion. 	<ul style="list-style-type: none"> ○ Please refer to the information provided below the table.
<p>6. Generation of construction waste</p>	<p>Soil, vegetation, aesthetic quality of the site and surface water run-off.</p>	<ul style="list-style-type: none"> ○ Polluted surface water run-off may pollute the water resources (streams and wetlands in the vicinity) that could be used by other surrounding land uses. ○ Construction waste that is not removed from site will also be an eye sore in the area and will promote the growth of unwanted weed species. 	<ul style="list-style-type: none"> ○ Please refer to the information provided below the table.
<p>7. Movement of construction vehicles on local road networks</p>	<p>Air quality due to dust generation + Traffic safety aspects.</p>	<ul style="list-style-type: none"> ○ The movement of heavy vehicles (transporting building material) on tar roads and especially on busy main roads like the R511, can impact on traffic safety, due to accidental soiling of the road surface and/or speeds driven by construction vehicles. ○ Access points to the site may create dust which may be a problem to adjacent land 	<ul style="list-style-type: none"> ○ Please refer to the information provided below the table.

		owners and motorists in general.	
8. Maintenance of construction vehicles	Possible soil contamination, which in turn will affect surface water run-off.	<ul style="list-style-type: none"> ○ Soil contamination during construction vehicle maintenance is easily prevented. But in the event of such an occurrence, the impact will be of a temporary nature only, as spills can and should immediately be cleaned up. ○ The quality of surface water may temporarily be negatively affected (streams and wetlands in the vicinity) that could be used by other surrounding land uses. 	○ Please refer to the information provided below the table.
9. Noise generation by operating air compressors, excavators and other heavy machinery.	Ambient noise levels.	<ul style="list-style-type: none"> ○ Noise generation caused by the operation of construction machinery may cause social disturbances, especially close the future 'residential' areas surrounding the of the site. ○ These disturbances are of a temporary nature only (during the construction phase). 	○ Please refer to the information provided below the table.
10. Construction camp establishment	Soil surfaces, vegetation cover and surface water quality.	<ul style="list-style-type: none"> ○ The establishment of construction camps will have a localized impact on the soil and vegetation cover of the site, as well as on the quality of surface water - as a result of construction camp litter, vehicle servicing, fuel storage and other such activities. 	○ Please refer to the information provided below the table.
11. Temporary fuel storage on site	Possible soil and water contamination.	<ul style="list-style-type: none"> ○ There shouldn't be any impacts as a result of this activity. However, in the event of a fuel spill the soil and water may become contaminated, which should be dealt with rapidly. 	○ Please refer to the information provided below the table.
12. Maintenance of construction vehicles	Soil, vegetation and surface water.	<ul style="list-style-type: none"> ○ In the event of on-site repairs and servicing, soil surfaces, vegetation, and run-off may be locally contaminated. Spillage of fuel through faulty bowsers is a possibility, if not controlled. It is anticipated that no fuel storage facilities will occur on the site other than temporary storage of diesel in drums. 	○ Please refer to the information provided below the table.
13. Provision of water for construction on site	Municipal.	<ul style="list-style-type: none"> ○ None. 	○ None
14. Provision of	Site quality (in terms	<ul style="list-style-type: none"> ○ Bottled water will be provided 	○ Please refer to

water for consumption (by workers) on site during the working day	of littering).	to workers on site.	the information provided below the table.
15. Sanitation provision to workers during the working day	Possible contamination of subsurface soil and surface water quality.	<ul style="list-style-type: none"> o Possible contamination as a result of this activity will be of a localized, temporary nature. 	<ul style="list-style-type: none"> o Please refer to the information provided below the table.
16. Heritage resources	No heritage or culturally significant features are visible on site.	<ul style="list-style-type: none"> o None 	<ul style="list-style-type: none"> o None
17. Temporary employment created during the construction phases of the proposed development.	Social aspects	<ul style="list-style-type: none"> o There will be positive impacts in terms of social upliftment and job creation within the broader region. 	<ul style="list-style-type: none"> o Please refer to the information provided below the table.
18. Housing of workers during construction	Aesthetic character, soil and vegetation, quality and social aspects.	<ul style="list-style-type: none"> o The establishment of housing for workers will have a localised impact on the soil and vegetation cover of the chosen site, as well as potentially having a negative impact on the quality of surface water - as a result of domestic waste, and sanitation facilities for example, if these are not properly addressed. o Living conditions must be adequately addressed to reduce potential impacts on human health. o Security could become an issue if not addressed. 	<ul style="list-style-type: none"> o Please refer to the information provided below the table.

MANAGEMENT OF ENVIRONMENTAL IMPACTS (Mitigation measures) (in relation to surrounding land uses):

Management of impacts on vegetation cover and faunal habitats

Clearing/removal of the existing vegetation for the construction of the development will be necessary. Natural vegetation does exist. The size of the site is small in comparison to the surrounding land portions; housing or office development, thus the significance of this impact is rated as low over a larger area.

- o The propagation of exotic species and weeds will need to be controlled during the construction phase, as there are many activities on site that could lead to the establishment of weeds - including compaction of the soil by heavy machinery, construction waste, stockpile areas etc.
- o Weed species should be removed on a four-week basis. The site will not be paved (either as parking areas or access roads) and a large portion will be landscaped/maintained. It is recommended that only indigenous species be used in the landscaping process (if implemented), and that trees are incorporated into the landscaping design.
- o Innovative landscaping of the site towards the end of the construction stage will contribute significantly to the visual and aesthetic attractiveness of the site and will also solve the problems associated with the removal of vegetation cover, including soil erosion, dust generation and the

flourishing of weeds and/or other unwanted exotic species in the long term.

- No specific mitigation measures are deemed necessary with regards to mitigating the impact of the proposed development on the faunal component, because the proposed development area is small. No faunal species was detected on the site. There is also enough space for them to migrate to on this property and next door.

Implementation responsibility: The applicant & main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

Management of impacts on soil (stability and erosion of disturbed surfaces)

Given the flat to hilly topography of the site, sheet and gully erosion (which is typically experienced when construction takes place during the summer rainfall months) is anticipated.

- If surface erosion DOES become prevalent during the construction phase, it should be curbed through control measures such as placing sand bags at the lowest point of water run-off areas to halt the sediment transport and erosion that will otherwise occur.
- Aspects that typically impact on soil conditions are blasting activities, excavations for the founding of foundations, establishment of stockpile areas, removal and/or clearance of vegetation, movement of construction vehicles, and maintenance of construction vehicles, construction camp establishment and sanitation provision to workers during the construction period. Therefore, the following recommendations pertaining to soil conservation practices are made:
 - Topsoil should be stockpiled separately from subsoil. The height of the stockpiles may not exceed 2.5 m and the stockpiles should not be stored for more than a one year period.
 - Topsoil must be stripped from all areas, where construction activities are going to take place, to be re-used in landscaping the site.
 - If any blasting activities occur on site, the blasted rocks and heavy rock material must be transported to an external venue. These rocks are not allowed to rest on site. If the rocks are left on site, the soil will be greatly compacted, which will promote the growth of weeds.
 - Any excess overburden material that is generated may not be dumped in a random manner. Dumping sites should be predefined, agreed upon and adhered to.
 - Any embankments created adjacent to the roads or any drainage lines must be stabilised during construction and re-habilitated afterwards.
 - Generally, surface water must be prevented from damming or creating gully erosion. This can be achieved by placing sandbags along the boundaries of steep working areas where higher intensity surface run-off may occur.
 - All runnels and erosion channels developing during the construction period or during the operational and maintenance period should be backfilled and consolidated immediately.
 - The movement and maintenance of construction vehicles may only take place in pre-determined and delineated areas. Only planned and formal routes for hauling of material should be used.

- Soil contamination during construction vehicle maintenance or as a result of fuel storage on site is easily prevented, but in the event of such an accident, the spill should immediately be cleaned up by absorbing the worst of the fluid with saw dust and then disposing of the saw dust and the first bit of the soil layer.
- Fuel storage areas should be bounded effectively and all applicable safety standards must be adhered to.
- In terms of the stability of excavations, it is strongly recommended that **all excavations exceeding 1.5 m should have proper sidewall protection to ensure the safety of workers.**
- Seepage may result in the destabilising of the soils above the seepage and special precautions may be required.

Implementation responsibility: The applicant & main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

Construction vehicle maintenance

- Construction vehicle maintenance, when necessary, should only be conducted within the boundaries of an area designated for this purpose. Such facilities should be provided with a concrete oil catch-pit. Such a pit should be cleaned thoroughly at the end of the construction period, demolished and removed from the construction site.
- In the event of spills from vehicles, the area should be cleaned immediately using a bioremediation product, such as *Petro-Clean™*.
- The absorbent and soil must be placed in a bin and removed from the site by a certified company and disposed of as a hazardous waste at a licensed hazardous landfill site.
- At the end of the construction period; any contaminated soil must be removed from the site and disposed of at a licensed hazardous landfill site.

Implementation responsibility: The applicant & main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

Stock pile areas and other storage facilities

- All stockpile areas, if situated outside the eventual paved area, should be ripped and ploughed at the end of the construction period to loosen soil surfaces for the natural propagation of vegetation and/or to allow for landscaping of the area.
- The same applies to other temporarily disturbed areas on site, which are vulnerable to the propagation of unwanted species (weeds). It is important that the contractor implements weed control through physical and/or approved chemical eradication methods. Only registered herbicides should be used to curb this problem.
- The temporary storage of construction material and especially fuel must be carefully monitored by the site engineer to prevent the risk of accidental spillage or disposal of any such material that will contaminate soil surfaces, surface and subsurface water.

- All liquid material must, where applicable, be stored on solid concrete surfaces and must be surrounded by bunds.
- Bunding is also applicable to fuel and mechanical oil storage areas. Bunding walls should not be less than 30 cm high.
- Storage containers must be inspected regularly to prevent leaks that could contaminate the site.

Implementation responsibility: The applicant & main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

Community and traffic safety during the construction period

Construction vehicles, including trucks and other heavy machinery, changes in road design and access and other related construction activities affect the safety parameters within the study area.

- Proper sign posting and traffic control measures along the routes utilised by these vehicles, and especially at the intersection of these roads, is crucial throughout the construction period; to warn motorists of any imminent potentially dangerous situations.
- It is necessary to warn motorists of slow moving vehicles to and from the site to reduce the risk of accidents. The access points especially are high risk areas for accidents. Therefore, well posted warning signs are essential.
- Children and unauthorised persons should not have access to the construction site. All workers should be properly attired, with safety hats and clearly visible, reflective clothing - such that they are easily visible to the truck and heavy machinery drivers.
- Soiling of the road surface should be prevented, as this poses a danger to motorists that could skid on the spilled soils. Because the safety of the community and construction workers is of utmost importance, it is recommended that the contractor should discuss construction times and schedules with Emergency Services, the Traffic Department and also with SAPS.

Implementation responsibility: The applicant & main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

Waste management

It is crucial to implement strict and effective waste control and waste management procedures during the construction phase.

- No littering by any personnel is permissible. The site manager/contractor should conduct regular site clean-ups to keep the site litter free - as litter is not only aesthetically displeasing, but it is also harmful to the environment.
- All domestic solid waste produced must be disposed of in waste bins situated on site. The bins should be emptied into a covered skip (for storage) on a regular basis, until its collection and removal to a municipal waste disposal site (preferably on a weekly or bi-weekly basis).
- No liquid waste material should be disposed of on or near the site during construction, or in any non-designated areas. A firm arrangement must be made to place chemical toilets on the construction site (within the construction camp to be erected).

- A sufficient number of chemical toilets need to be provided; in the range of 1 per every 8 workers. These toilets must be well maintained and inspected on a daily basis to ensure that they are clean and functioning properly. The toilets must be within walking distance from the work areas. No person is allowed to use any area, other than the chemical toilets provided, as a toilet.
- No washing of people and/or goods should take place on cleared surfaces, as this water should not be allowed to drain into any adjacent storm water drainage systems.
- In the event of accidental spillage of liquid substances, like paints and resins, it is important to implement the correct emergency procedures and cleaning-up operations. Pollution of surfaces should be limited at all costs.
- The generation of construction waste occurs at every site under development and construction. Due to the costs involved in the disposal of this material at municipal or other licensed waste sites, the contractor or sub-contractor may be tempted to illegally dump waste at concealed locations to save on costs. Therefore, strict control is required from the main contractor on site to control this issue. Proof of disposal of waste material at a registered waste disposal site must be shown after off-loading of each waste load, which should then be logged or registered for control purposes.
- Control measures in terms of the National Building Regulations and standard requirements laid down by the local authority, with regards to spillage and waste disposal, must strictly be adhered to.
- General waste disposal management involves the collection of construction waste at a central collection facility, which should be pre-arranged and implemented. This should include making points available for solid as well as liquid waste - including mechanical fluids disposed of during vehicle maintenance.
- The site should be designed in such a manner that hazardous wastes are not located in close proximity to the permitted fire making area. These areas shall be predetermined and located in areas that are already disturbed. These areas shall not be within 100 m from any 1:100 year flood line or drainage lines (such as the drainage line). This area should be on a concrete base to avoid any possible seepage into the soil.
- All hazardous waste must be stored in sealed and suitably marked containers for removal to a hazardous waste landfill site by the contractor on a bi-weekly basis. Hazardous waste could include used oils and fluorescent light tubes, as examples. The contractor should refer to the relevant Department of Water Affairs (DWA) guidelines for the classification of hazardous waste.

Implementation responsibility: The applicant & main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

Managements of impacts on air quality

Construction activities such as vegetation clearance, blasting activities, excavating soil, topsoil removal, trenching and storage as well as the movement of construction vehicles GENERATE DUST. The dust will influence the air quality in the immediate vicinity of the construction activities. If the air quality exceeds acceptable standards, residents as well as construction workers could experience health problems.

Therefore, the following mitigation measures should be implemented:

- The emissions from run down, old machinery will greatly pollute the air. Therefore, well serviced machines and heavy vehicles that are maintained in a good working order should be used.
- Regular wetting of exposed soil surfaces along routes that will be utilised by heavy vehicles is required at least twice a day to minimise the amount of dust generated by vehicles - this is especially important at the access points to the site.

Implementation responsibility: The applicant & main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

Noise generations

The impact of the on the proposed development ambient noise levels during the construction period is rated to have a moderately significant impact on the social environment of the community. Therefore, noise mitigation measures are required in order to keep the noise generated by construction activities as low as possible - ESPECIALLY given the site's close proximity to other development. This can be achieved by:

- Ensuring that only well-oiled, well maintained machinery is used, as such machinery will produce less noise than poorly serviced machinery. For example, poor maintenance of exhaust systems will produce unnecessary noise pollution.
- Furthermore, working hours for construction should be limited to between 07h00 and 17h00 on week days, as construction outside of these time frames will be a nuisance to adjacent dwellers (in the adjacent residential area). Construction times should be limited to between 08h00 and 12h00 on Saturdays and no construction activities should be allowed on Sundays.

Implementation responsibility: The applicant & main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

Construction camp establishment and decommissioning

- Construction camp establishment can have a significant impact on the environment in terms of water and soil contamination - due to aspects like the storage and handling of hazardous substances (including fuels and lubricants); the storage, movement and possible maintenance of construction vehicles and other heavy machinery; domestic waste production and noise. Therefore, the placement and management of activities within construction camps is important.
- The construction camp should not be established within close proximity to natural drainage lines or water bodies situated within the site. The construction camp should be fenced (with neat, well-maintained fencing that does not cause any unnecessary visual disturbances) to control construction and worker activities within a clearly delineated/designated area.
- It is recommended that workers should NOT be allowed to stay on site overnight during the construction period - in order to limit noise generated and potential safety/crime concerns.
- All temporary erected structures, including the construction camp(s) and or construction office(s)

must be demolished and removed after completion of the construction phase. This includes all fencing, piping, drains and sumps as well as tanks or other containers that were utilised during the construction period.

Implementation responsibility: The applicant & main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

ASSESSMENT OF THE SIGNIFICANCE OF ALL IMPACTS (Construction Phase):

ENVIRONMENTAL AND OTHER COMPONENTS TO BE AFFECTED	Probability value	Intensity value	Duration value	Severity value	Significance rating
1. Impact on the vegetation component of the site	4	2	3	3	12: Moderate (negative)
2. Impact on soil (surface stability)	3	2	2	2	6: Low (negative)
3. Impact on soil (topsoil layer - disturbance and compaction)	3	2	2	2	6: Low (negative)
4. Impact on subsurface soil quality	2	2	2	2	4: Low (negative)
5. Impact on topography	2	2	2	2	4: Low (negative)
6. Impact on surface drainage and existing water bodies	3	2	2	2	6: Low (negative)
7. Impact on surface water run-off quality	3	2	2	2	6: Low (negative)
8. Impact on groundwater resources	3	2	2	2	6: Low (negative)
9. Impact on air quality	4	2	2	2	8: Moderate (negative)
10. Impact on ambient noise levels	4	2	2	2	8: Moderate (negative)
11. Impact on the social environment of the adjacent community	4	2	2	2	8: Moderate (negative)
12. Impact on the social environment of the development	4	2	2	2	8: Moderate (positive)
13. Impact on traffic safety aspects	4	2	2	2	8: Moderate (negative)
14. Impact on land use & agricultural potential	3	2	1	2	6: Low (negative)
15. Impact on visual and aesthetic quality	3	2	2	2	6: Low (negative)
16. Impact on local economy (job creation)	4	2	2	2	8: Moderate (positive)

ASSESSMENT OF THE SIGNIFICANCE OF ALL IMPACTS AFTER MITIGATION:

ENVIRONMENTAL AND OTHER COMPONENTS TO BE AFFECTED	Probability value	Intensity value	Duration value	Severity value	Significance rating
1. Impact on the vegetation component of the site	3	2	2	2	6: Low (negative)
2. Impact on soil (surface stability)	3	2	2	2	6: Low (negative)

3. Impact on soil (topsoil layer - disturbance and compaction)	3	2	2	2	6: Low (negative)
4. Impact on subsurface soil quality	2	2	2	2	4: Low (negative)
5. Impact on topography	2	2	2	2	4: Low (negative)
6. Impact on surface drainage and existing water bodies	3	2	2	2	6: Low (negative)
7. Impact on surface water run-off quality	3	2	2	2	6: Low (negative)
8. Impact on groundwater resources	3	2	2	2	6: Low (negative)
9. Impact on air quality	3	2	2	2	6: Low (negative)
10. Impact on ambient noise levels	3	2	2	2	6: Low (negative)
11. Impact on the social environment of the adjacent community	3	2	2	2	6: Low (negative)
12. Impact on the social environment of the piggery	3	2	2	2	6: Low (negative)
13. Impact on traffic safety aspects	3	2	2	2	6: Low (negative)
14. Impact on land use & agricultural potential	3	2	1	2	6: Low (negative)
15. Impact on visual and aesthetic quality	3	2	2	2	6: Low (negative)
16. Impact on local economy (job creation)	3	2	2	2	6: Low (positive)

1 & 5 - Proposal & Technology Alternative - Operational Phase (in relation to surrounding land uses)			
ENVIRONMENTAL / SOCIAL ASPECT	ENVIRONMENTAL / SOCIAL COMPONENT	NATURE AND DESCRIPTION OF IMPACTS / RISK OF THE IMPACT AND MITIGATION NOT BEING IMPLEMENTED	MITIGATION MEASURES
1. Dust generated from the development	Surrounding public and land uses	Dust from vehicles entering and exiting the site.	Regular wetting of exposed soil surfaces along routes that will be utilised by vehicles is required at least twice a day to minimise the amount of dust generated by vehicles - this is especially important at the two access points to the site.
2. Noise from the development.	Ambient noise levels	Possible loud music and hooting from the development.	No loud music is permitted after 10 o'clock in the evenings. Hooting must be prohibited.
3. Ground / Surface water contamination	Health, soil and water	Possible contamination of ground / surface water, from faulty or un-serviced sewage package plant, further afield that could lead to habitat destruction and health issues for animals and humans.	Once a week inspections should be conducted on the functionality of the SCARAB™ package plant. Bi-monthly water quality

			monitoring is needed up and down stream of the development.
4. Maintenance of storm water management systems	Soil surfaces, drainage patterns and surface water.	Erosion could occur in the storm water outlets are not implemented correctly.	Maintenance of storm water outlets is required to ensure that they don't get blocked (i.e. no longer fulfil their function) or result in erosion. The necessary / correct storm water outlet structure must be implemented to prevent erosion from occurring.
5. General structure maintenance	Visual quality, also surface water quality and vegetation cover.	The design and nature of the development will determine the impact of the proposed development on the visual quality of the study area. Maintenance of the development as a whole will prevent a further negative impact on the visual quality of the study area. The disposal of rubble (both during construction and maintenance) causes impacts on the natural environment (including faunal ecology, surface water and vegetation) if disposed of illegally. Compaction of soil surfaces and the propagation of weeds are typical impacts.	Maintenance of all structures is critical in upholding or improving on the visual impact on the area. Weed / exotic vegetation control must be implemented regularly to protect the natural environment.

ASSESSMENT OF THE SIGNIFICANCE OF ALL IMPACTS (Operational Phase):

ENVIRONMENTAL AND OTHER COMPONENTS TO BE AFFECTED (during mostly the operational phase)	Probability value	Intensity value	Duration value	Severity value	Significance rating
1. Dust generated from the development	4	2	2	2	8: Moderate (negative)
2. Noise from the development.	3	4	4	5	15: High (negative)
3. Ground / Surface water contamination	4	2	2	2	8: Moderate (negative)
4. Maintenance of storm water management systems	4	2	2	2	8: Moderate (negative)
5. General structure maintenance	4	2	2	2	8: Moderate (negative)

ASSESSMENT OF THE SIGNIFICANCE OF ALL IMPACTS AFTER MITIGATION (Operational Phase):

ENVIRONMENTAL AND OTHER COMPONENTS TO BE AFFECTED	Probability value	Intensity value	Duration value	Severity value	Significance rating
1. Dust generated from the development	3	2	2	2	6: Low (negative)
2. Noise from the development.	3	2	2	2	6: Low (negative)
3. Ground / Surface water contamination	3	2	2	2	6: Low (negative)
4. Maintenance of storm water	3	2	2	2	6: Low (negative)

management systems					
5. General structure maintenance	3	2	2	2	6: Low (negative)

3 - ACTIVITY ALTERNATIVE (AN AGRICULTURE ENTITY)

Potential impacts:	Significance rating of impacts:	Significance rating of impacts after mitigation:
<p>Impacts on vegetation cover and faunal habitats: Clearing/removal of the existing disturbed vegetation for cropland.</p> <p>Proposed Mitigation:</p> <ul style="list-style-type: none"> o Very little can be done. The site should be rehabilitated afterwards if no agricultural practice continues. o No specific mitigation measures are deemed necessary with regards to mitigating the impact on the faunal component, as it is largely non-existent on the site. 	Moderate - Negative	Low - Negative
<p>Impacts on soil (stability and erosion of disturbed surfaces):</p> <p>Agricultural aspects that typically impact on soil conditions are ploughing and spraying of pesticides and crop enhancers.</p> <p>Proposed mitigation:</p> <p>The following recommendations pertaining to soil conservation practices are made:</p> <ul style="list-style-type: none"> o Generally, surface water must be prevented from damming or creating gully erosion. This can be achieved by placing sandbags along the boundaries of steep working areas where higher intensity surface run-off may occur. o All runnels and erosion channels developing during the operational period should be backfilled and consolidated immediately. o The movement and maintenance of vehicles may only take place in pre-determined and delineated areas. Only planned and formal routes for hauling of material should be used. o Soil contamination during vehicle maintenance or as a result of fuel storage on site is easily prevented, but in the event of such an accident, the spill should immediately be cleaned up by absorbing the worst of the fluid with saw dust and then disposing of the saw dust and the first bit of the soil layer. o Fuel storage areas should be bounded effectively and all applicable safety standards must be adhered to. 	Moderate - Negative	Low - Negative
<p>Potential for surface water pollution:</p> <p>It is possible that oil and fuel leaks from vehicles and chemicals sprayed could pollute the surface water.</p> <p>Proposed mitigation:</p> <ul style="list-style-type: none"> o Generally, surface water must be prevented from 	Moderate - Negative	Low - Negative

<p>damming or creating gully erosion. This can be achieved by placing sandbags along the boundaries of steep working areas where higher intensity surface runoff may occur.</p> <ul style="list-style-type: none"> o No surface water from the cropland may enter drainage lines and streams. 		
<p><u>Waste generation:</u></p> <p>Disposal of waste on the site will have an impact on the whole surrounding area. This impact will be on the physical, biological and social environment.</p> <p>Proposed mitigation:</p> <ul style="list-style-type: none"> o It is crucial to implement strict and effective waste control and waste management procedures during the operational phase. o No littering by any personnel is permissible. The foreman should conduct regular site clean-ups to keep the site litter free - as litter is not only aesthetically displeasing, but it is also harmful to the environment. o All solid waste produced must be disposed of in waste bins/drums situated on site or close to the site. The bins should be emptied into a covered skip (for storage) on a regular basis, until its collection and removal to a municipal waste disposal site (preferably on a weekly or bi-weekly basis). 	Moderate - Negative	Low - Negative
<p><u>Impacts due to fires:</u></p> <p>Runaway fires may cause serious damage to areas surrounding the site. Fires may accidentally be started by the farm workers.</p> <p>Proposed mitigation:</p> <ul style="list-style-type: none"> o No fires should be allowed on site. 	Moderate - Negative	Low - Negative
<p><u>Cultural / Historical elements on site:</u></p> <p>No features of heritage significance were identified on site. A specialists recommendations would be as follows:</p> <ul style="list-style-type: none"> o Should any hidden human remains (highly unlikely) be disturbed, exposed or uncovered during site clearing and excavations, these should immediately be reported to an archaeologist. Burial remains should not be disturbed or removed until inspected by an archaeologist. o Site clearing and excavation activities must be monitored for the occurrence of any hidden archaeological material and similar chance finds (such as historic middens and foundations) and if any are exposed, this should be reported to an archaeologist so that an investigation and evaluation of the finds can be made. 	Low - Negative	Low - Negative

<p><u>Air pollution:</u></p> <p>The negative air pollution impacts caused by the agricultural activities will include vehicle exhaust emissions and dust.</p> <p>Activities such as clearing and ploughing are all activities that are likely to generate dust. The dust will influence the air quality in the immediate vicinity of the construction activities. One again, this is only a temporary impact.</p> <p>Proposed mitigation:</p> <ul style="list-style-type: none"> o The emissions from run down, old machinery will greatly pollute the air. Therefore, well serviced machinery and vehicles that are maintained in a good working order should be used. 	Low - Negative	Low - Negative
<p><u>Traffic impact:</u></p> <p>The traffic impact of the proposed agricultural entity would be created by the movement of farm vehicles and other vehicles to and from the site.</p> <p>Proposed mitigation:</p> <ul style="list-style-type: none"> o Proper sign posting and traffic control measures along the routes utilized by farm vehicles, is crucial throughout the operational period; to warn motorists of the presence of these vehicles and potentially dangerous situations. o It is necessary to warn motorists of slow moving vehicles to and from the site to reduce the risk of accidents. The access points especially are high risk. 	Moderate - Negative	Low - Negative
<p><u>Employment opportunities:</u></p> <p>A significant impact is the short-term wealth expectation created by any development.</p>	Moderate -Positive	Low - Positive

NO GO ALTERNATIVE - THIS WILL BE THE SAME AS THE ALTERNATIVE ACTIVITY OF AN EQUESTRIAN ESTATE. THIS IS ALREADY THE CASE.

Potential impacts:	Significance rating of impacts:
<p><u>Impacts on vegetation cover and faunal habitats:</u></p> <ul style="list-style-type: none"> o Status quo. 	Low - Negative
<p><u>Impacts on soil (stability and erosion of disturbed surfaces):</u></p> <ul style="list-style-type: none"> o Status quo. 	Low - Negative
<p><u>Potential for surface water pollution:</u></p> <ul style="list-style-type: none"> o Status quo. 	Low - Negative

<u>Potential for groundwater pollution:</u> o Status quo.	Low - Negative
<u>Waste generation:</u> o Status quo.	Low - Negative
<u>Impacts due to fires:</u> o Status quo.	Low - Negative
<u>Noise pollution:</u> o Status quo.	Low - Negative
<u>Visual impact:</u> o Status quo.	Low - Negative
<u>Cultural / Historical elements on site:</u> o Status quo.	Low - Negative
<u>Air pollution:</u> o Status quo.	Low - Negative
<u>Traffic impact:</u> o Status quo.	Low - Negative
<u>Employment opportunities:</u> Thus status quo will continue. No jobs will be created.	Low - Negative

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

The following will be included in the draft and if not in the final Basic Assessment report for a decision:

- Heritage Impact Assessment (HIA)
- Vegetation Study
- Wetland Verification Report

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

There was no knowledge gaps identified due to the fact that all relevant parties (I & APs and Specialists) were consulted and valuable information was received and recommendations made.

No assumptions were made also because the necessary studies were conducted and the information was made available to relevant stakeholders and these studies were incorporated into the planning and design of this development.

Uncertainties will always be part of any development when it comes to the actual degree of impact it will have on the immediate environment, because no project is identical. Any and real results can only be recorded after the development has started and finished.

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

1 - Proposal & 3 - Activity Alternative

Potential impacts:	Significance rating of impacts:	Proposed mitigation:	Significance rating of impacts after mitigation:
Visual impact. The site may become a derelict "eye sore" if the remaining structures are allowed to physically deteriorate.	Medium	Use of land for alternative land use. It is advisable to determine beforehand what would be done in future with the land on which the development is established for this application.	Low
Squatters may use the site and its structures as a place to dwell. This poses a potential environmental threat in terms of uncontrolled domestic waste and sewage disposal on site.	Medium	<p>If the development operations ends and no other land-use / development are planned for this area, then all structure will have to be removed form site. This will have to be done by the owner of the land together with a licensed contractor to dispose of all waste to licensed landfill sites.</p> <p>The site will have to be rehabilitated by ripping the compacted areas and where possible bring in topsoil from the area to help establish natural vegetation on-site again.</p> <p>Weed control need to be done on a monthly basis until the natural vegetation has re-established.</p> <p>Proper fencing should be in place to prevent squatters settling on the vacant land.</p>	Low
<p>If the development is transferred from the current owner to a new owner then the new owner must also comply with all the requirements set out in the EMPr and Environmental Authorisation for this development. The new owner will also have to maintain the same or higher levels of operations set out by the previous owner.</p>			

The following will be included in the draft and if not in the final Basic Assessment report for a decision:

- Heritage Impact Assessment (HIA)
- Vegetation Study
- Wetland Verification Report

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:

According to the definition in relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area. No high significantly potential cumulative impacts are identified.

Cumulative impact on other physical components such as natural vegetation (none existing) and animal life, air quality and visual impact is regarded at this stage as of high significance, due to the out natural and spacious nature of the landscape.

Possible cumulative impacts foreseen could be the loss of agricultural land, although this area is not of high potential. All impacts from the construction phase of the development should be continually mitigated. Thus potentially no high significant cumulative impacts are predicted.

The possible cumulative impacts from the nearby developments in the local area will be assessed in the table below.

ENVIRONMENTAL ASPECT AND PROJECT STAGE C: construction stage O: operational phase	ENVIRONMENTAL COMPONENT THAT MAY BE AFFECTED	NATURE AND DESCRIPTION OF THE POTENTIAL <u>CUMULATIVE</u> IMPACT IN ASSOCIATION WITH THE SURROUNDING AREA
Vegetation clearance for the footprint/foundation of the development (C).	Soil layers, soil surface.	Seen at a wider scale the additional developments are physically connected, but the removal of vegetation cover, such that the soil surface is exposed, may lead to increased soil erosion in the area. Where the removal of agricultural land is of a temporary nature it may add to a bigger combined loss of agricultural land in local area, as well as loss of natural habitat.
Excavations for the foundations of the development, as listed above (C).	Soil layers and faunal habitat.	The existing vegetation will be permanently removed to accommodate the foundations of the necessary structures. Faunal habitat will also be affected in combination with the surrounding developments. Soil layers affected will be a localised impact and not cumulative.
Stockpiling of excavated material (C)	Soil and vegetation cover.	Stockpiles cause compaction of the soil, which promotes the establishment of weed species. This impact is of a temporary nature and not cumulative.
Stockpiling building materials (C)	Soil and vegetation cover.	Stockpiles will need to be established for the storage of aggregate, bricks and cement, etc. As mentioned, stockpiles cause compaction of the soil surface, which leads to the growth of unwanted weed species. This impact is of a temporary nature and not cumulative.
Provisions for storm water	Soil surfaces,	Correct and efficient storm water

ENVIRONMENTAL ASPECT AND PROJECT STAGE C: construction stage O: operational phase	ENVIRONMENTAL COMPONENT THAT MAY BE AFFECTED	NATURE AND DESCRIPTION OF THE POTENTIAL <u>CUMULATIVE</u> IMPACT IN ASSOCIATION WITH THE SURROUNDING AREA
i.e. storm water drainage (C)	vegetation cover and drainage patterns.	drainage systems must be installed. Poorly designed storm water outlets will result in increased surface run-off volume and speed, which could lead to the creation of erosion gullies. All road and hard surfaces generate storm water, which should be controlled by preventing the storm water from crossing the roads. Storm water must be allowed to spread out gradually over a large surface area to protect the soil surface against erosion. The surrounding developments may contribute to more erosion due to more cleared and open surfaces found at these developments.
Generation of construction waste (C)	Soil, vegetation, aesthetic quality of the site and surface water run-off, water and ground water resources.	Waste, such as building rubble and empty cement bags can be a greater negative visual impact, with the additional construction waste of the staff courters, if not collected and disposed of correctly. Further to littering the site and adjacent areas, poor control and illegal dumping of construction waste can pollute surface water run-off, as well as lead to the promulgation of weed species.
General structure maintenance (O)	Visual quality, also surface water quality and vegetation cover.	The design and nature of the development will determine the impact of the proposed development on the visual quality of the study area. Maintenance of the development as a whole will prevent a further negative impact on the visual quality of the study area. The disposal of construction rubble (both during construction and maintenance of the development and staff courters) causes impacts on the natural environment (including faunal ecology, surface water and vegetation) if disposed of illegally. Compaction of soil surfaces and the propagation of weeds are typical impacts, but temporary.
Road maintenance (O)	Vegetation and soil surface conditions.	Poorly maintained access road cause abnormal soil erosion. Therefore, road maintenance is essential to ensure an effective and usable road to the development. Erosion combined with other erosion site in the areas will create a greater loss of topsoil.
Collection and disposal of solid domestic waste (C)	Aesthetic quality, surface water run-off, subsurface and	Poor waste collection and handling on all the developments in and around the proposed development will pollute

ENVIRONMENTAL ASPECT AND PROJECT STAGE C: construction stage O: operational phase	ENVIRONMENTAL COMPONENT THAT MAY BE AFFECTED	NATURE AND DESCRIPTION OF THE POTENTIAL <u>CUMULATIVE</u> IMPACT IN ASSOCIATION WITH THE SURROUNDING AREA
	groundwater quality, vegetation and fauna.	the environment (affecting fauna, groundwater, surface water and aesthetic environment). No illegal dumping of domestic waste will be tolerated. Untidy collection points and windblown refuse can cause human / animal conflicts, as foul odours from such areas will attract wild animals and cause other problems (pests / diseases), as well as water pollution.
Collection and disposal of construction waste (C)	Aesthetic quality, subsurface and ground water quality, vegetation and fauna.	No construction waste may be illegally dumped into the surrounding areas, as the effects of illegal dumping on the environment are devastating. Poor waste collection and handling on all the developments in and around the proposed development will have a negative impact on several environmental aspects. A waste collection agreement between the applicant and the local authority will be essential.
Long term employment opportunities and wealth to be generated by the proposed development (O)	Social aspects	There will be a positive impact in terms of social upliftment and job creation within the broader region.
Transportation of workers to and from the development site (C)	Air quality, soil surface and social aspects (including traffic and worker safety).	Poorly maintained vehicles will have a negative impact on air quality in terms of dust and emission. The residents and tourists moving through the area will also add to the negative impact on air quality.
Construction camp establishment (c)	Aesthetic impacts, social aspects, subsurface and groundwater quality, generation of domestic waste, vegetation removal, soil surface compaction and faunal impacts.	The generation of domestic waste, as well as the provision of sewage facilities, within the construction camp could potential impact on the aesthetics of the site as well as the quality of subsurface and groundwater if not properly managed and implemented. Soil surfaces would become compacted as a result of activities within the camp. These impacts will also add to the negative impact other close by developments has on the local area, but only during the construction phase.
Movement of construction vehicles on site (C)	Air quality, soil.	Movement will cause limited or localised disturbances and temporary soil compaction, which promotes the establishment of weed species. Dust will be generated by vehicular movements on site. The tipper trucks from the nearby quarry will also add to the negative impact on air quality, but only during the construction

ENVIRONMENTAL ASPECT AND PROJECT STAGE C: construction stage O: operational phase	ENVIRONMENTAL COMPONENT THAT MAY BE AFFECTED	NATURE AND DESCRIPTION OF THE POTENTIAL <u>CUMULATIVE</u> IMPACT IN ASSOCIATION WITH THE SURROUNDING AREA
		phase.
Traffic safety on the main road (C and O)	Social aspects.	The access point to the site is via the R511; therefore motorists using the main road may be negatively impacted on by slow moving construction vehicles. The tipper trucks from the nearby quarry will also add to traffic impact, but only during the construction phase.
Noise generation by operating air compressors, excavators and other heavy machinery. Noise is also generated by the construction workers (C)	Impacts on faunal species and surrounding land owners.	Excessive noise levels on site may negatively impact upon the behaviour and movements of site fauna. Surrounding land owners may also potentially be negatively impacted upon by excessive noise levels on site during construction. The tipper trucks and excavators from the nearby quarry will also add to the noise impact, but only during the construction phase.

5. COMPARATIVE ASSESSMENT BETWEEN THE PROPOSED DEVELOPMENT AND AN AGRICULTURAL ENTITY

Environmental Aspects	Proposed development	Agricultural Entity (Crop Production)
Geology	No Impact.	No impact.
Topography	Low impact.	No impact.
Soil, Land Capability and Land Use	Soil compaction. Possible soil erosion due to removed vegetation. Surface disturbance and topsoil removal.	Possible soil erosion due to removed vegetation.
Flora	Stripping of surface vegetation during construction.	Stripping of surface vegetation.
Fauna	Removal of surface vegetation thereby depleting natural food sources. Human presence resulting in emigration of animals. The disturbances of the vegetation cover and natural habitat will have a limited impact on the wildlife. However, it should be viewed against the background of the disturbances by human movement and activities through the area.	Removal of surface vegetation thereby depleting natural food sources. Human presence resulting in emigration of animals. The disturbances of the vegetation cover and natural habitat will have a limited impact on the wildlife. However, it should be viewed against the background of the disturbances by human movement and activities through the area.
Surface Water	Impacts on the streams and wetlands could be caused by the construction activities.	Possible pollution of surface water if proper chemical management is not implemented.

Environmental Aspects	Proposed development	Agricultural Entity (Crop Production)
	Possible pollution of surface water if proper effluent management is not implemented.	
Ground Water	<p>Potential environmental impact predicted.</p> <p>Temporary toilets (chemical) left unmanaged can leak raw sewage and effluent into the soil, surface and even ground water sources, during the construction phase.</p> <p>Possible pollution of ground water if proper effluent management is not implemented.</p>	Could have an impact on the ground water table.
Air Quality	<p>Low potential environmental impact during operational phase. This is due to the new methods and technology implemented in handling effluent.</p> <p>During the construction phase; dust could cause problems for nearby human settlements. During the operational phase the air quality will be the same as it currently is.</p>	Low potential environmental impact during operational phase.
Noise	<p>Moderate potential environmental impact.</p> <p>Noise from the development activities will be an inconvenience to a certain extent for some existing closer by properties adjacent to the site.</p>	No impact
Visual	<p>No significant impact.</p> <p>Waste, such as building rubble and empty cement bags can be a negative visual impact if not collected and disposed of correctly.</p>	No significant impact.
Sensitive Landscapes	<p>Low significant impact.</p> <p>Possible pollution of surface water (stream and wetland) if proper effluent management is not implemented.</p>	Low significant impact.
Sites of Archaeological and Cultural Interest	No significant impact.	No significant impact
Socio-economic	Positive impact on the regional socio-economic structure through its support to the community, like:	Positive impact on the regional socio-economic structure through its support to the community, like:

Environmental Aspects	Proposed development	Agricultural Entity (Crop Production)
	<ul style="list-style-type: none"> ⤴ Job opportunities during the construction phase. ⤴ Local economic boost. 	<ul style="list-style-type: none"> ⤴ Job opportunities during the construction phase. ⤴ Local economic boost.
Interested and Affected Parties	<p>Main concern are:</p> <ul style="list-style-type: none"> • Noise from the development; • Privacy; • Safety; • Maintenance of Access road; • Reduction in water quantity and quality could close nearby businesses; • Relevant specialist studies must be conducted. 	Status Quo.
Cumulative	<p>The cumulative impact of the development on the social environment is positive & negative.</p> <ul style="list-style-type: none"> • Possibility of more noise • Stimulation of local economy <p>Cumulative impact on other physical components such as natural vegetation and animal life, air quality and visual impact is regarded as moderate to high significance.</p>	Status Quo.

COMPARATIVE ASSESSMENT BETWEEN MUNICIPAL POWER AND SOLAR POWER

Environmental Aspects	Proposed Development - Municipal power	Development - Solar power
Geology	No Impact.	No impact.
Topography	No impact.	No impact.
Soil, Land Capability and Land Use	No impact.	<p>Soil compaction for power storage structures.</p> <p>Possible soil erosion due to removed vegetation.</p> <p>Surface disturbance and topsoil removal.</p>
Flora	No impact.	Stripping of surface vegetation during construction.
Fauna	No impact.	<p>Removal of surface vegetation thereby depleting food sources.</p> <p>The disturbances of the vegetation cover and natural habitat will have a limited impact on the wildlife.</p>

Environmental Aspects	Proposed Development - Municipal power	Development - Solar power
		However, it should be viewed against the background of the disturbances by human movement and activities through the area.
Surface Water	No impact.	No impact.
Ground Water	No impact.	No impact.
Air Quality	No impact.	No impact.
Noise	No impact.	No impact.
Visual	No significant impact.	No significant impact.
Sensitive Landscapes	No impact.	No impact.
Sites of Archaeological and Cultural Interest	No impact.	No significant impact
Socio-economic	No impact.	Positive impact on the regional socio-economic structure through its support to the community, like: ▲ Job opportunities during the construction phase.
Interested and Affected Parties	No impact.	No impact.
Cumulative	Additional strain put on the power grid.	Positive impact. Could take pressure of the power grid.

6. 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

The proposed development will result in predominantly low negative environmental impacts if the appropriate mitigation measures are put into place for the duration of the proposed activities on site.

Impacts with the highest negative significance will occur during the construction phase of the proposed development. These impacts are however of a temporary nature.

Provided that the impact mitigation measures in the Environmental Management Programme as summarised in this Basic Assessment Report, are implemented, the mitigation of these and other identified impacts will be adequate and should not pose any environmental flaws that could prevent the authorisation of the proposed development.

Specialist information that will assist GDARD in making a decision are as follows:

- **Heritage Impact Assessment (HIA)**
- **Vegetation Study**
- **Wetland Verification report**

3 - Activity Alternative

The impacts significance will be mostly the same as above but lower in certain aspects. The potential negative impacts associated with this alternative have been deemed to be of a low negative significance (once mitigated), according to the impact significance rating methodology used. Although the impact will be over a larger area.

No-go (compulsory)

If the status quo is maintained:

If the status quo is maintained, the current impacts will still be existing on the proposed area, i.e. illegal dumping and criminal elements hiding in the area. No additional soil erosion or vegetation clearance would occur. No additional noise and extra lighting could nuisance the neighbours. The land will stay unproductive under the current non-activity.

On the other hand, no job opportunities will be created and no contribution will be made to the upliftment of the community and infrastructure development.

7. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

- Impacts on soil (stability and erosion of disturbed surfaces)
- Potential for surface and groundwater pollution
- Waste generation
- Noise pollution
- Air pollution
- Visual pollution
- Traffic safety issues
- Employment opportunities created is more.

For alternative:

Status quo:

- Impacts on soil (stability and erosion of disturbed surfaces)
- Potential for surface
- Air pollution
- Greater loss of natural habitat

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 identification and description of the potential or anticipated impacts (herein referred to as environmental aspects) was the result of an assessment of the relevant environmental conditions and the issues identified during the public participation exercise, terrain assessments, specialist studies and desk research. An objective rating of the significance of the potential impacts resultant of the proposed development revealed that impacts were predominantly low (negative) and with two moderate (positive) impact anticipated (local economy and social impact) - during the construction and operational phases respectively. This means that it is possible for the project to proceed, providing that the impact mitigation measures provided are strictly implemented in the design, construction and operational phases of the development.

This process revealed that no fatal environmental flaws were identified that should prevent the approval of the proposed development. In summary, the main environmental aspects that need to be addressed during project implementation are:

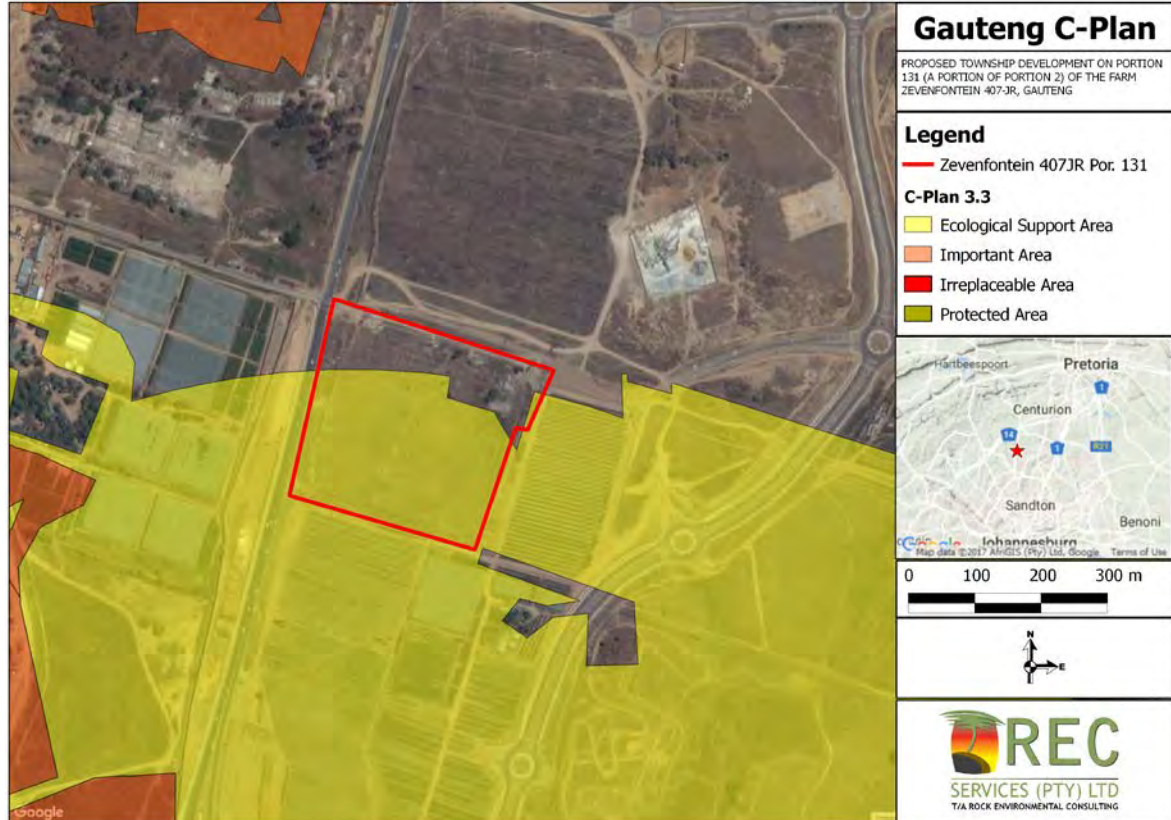
- Design stage: the proposed development position layout should be well thought out, in terms of the proposed site.
- Construction stage: addressing general social and traffic safety, air quality, noise generated, waste management, construction and restoration/landscaping of the site.
- Operational stage: maintaining all services on a regular basis and promoting jobs.

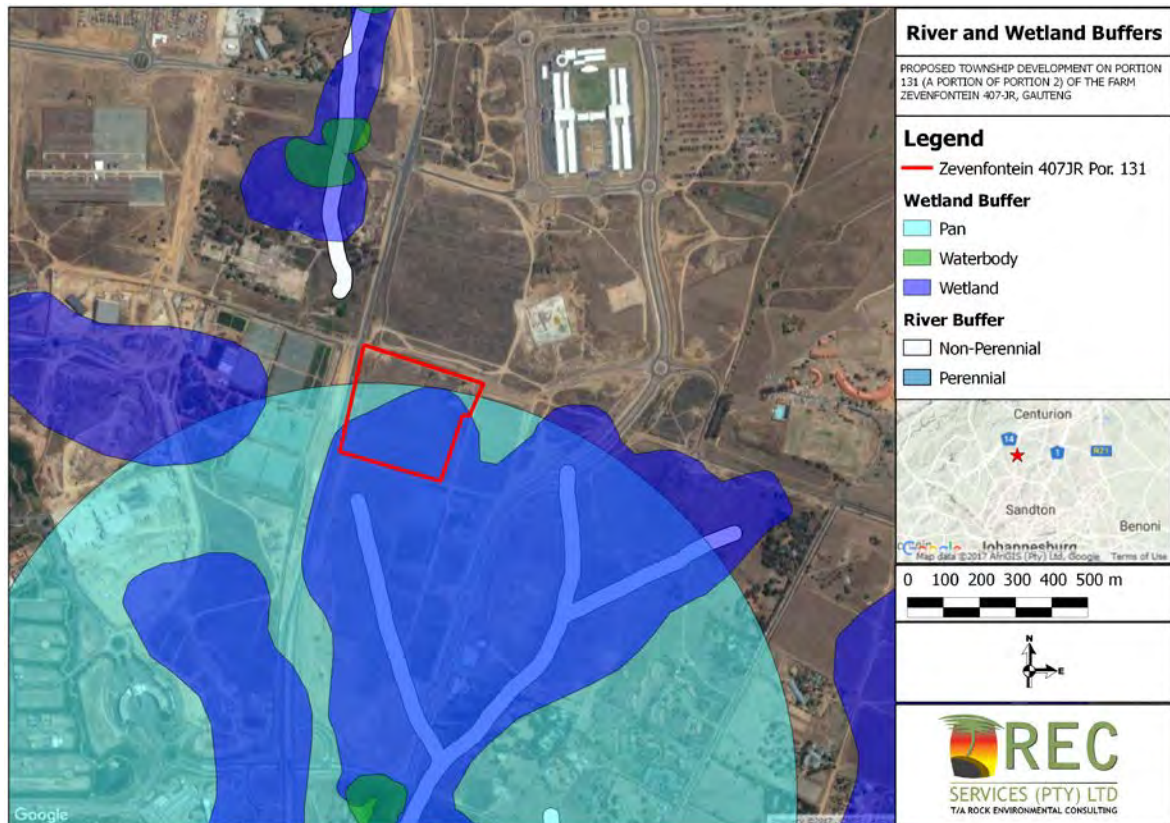
The ultimate approval of this project lies with the ruling of GDARD. However, this EAP (REC Services (Pty) Ltd. is of the independent opinion that the EIA process has determined that there are no fatal environmental flaws that would constitute the refusal of authorisation of the project. It is trusted that this environmental impact assessment report gives a balanced view of the anticipated environmental impacts associated with the proposed development and that the environmental management program attached herewith will adequately mitigate the impacts

8. SPATIAL DEVELOPMENT TOOLS

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

The Gauteng Provincial Environmental Management Framework (GPEMF) was consulted with the Tshwane Spatial development Framework as well as the Gauteng conservation plan (version 3.3) to determine the land use and environmental sensitivities in and around this farm. This area according to the EMF the site falls inside an agricultural land use area. The following GIS map indicates the sensitivities of the site according to C-Plan 3.3, Rivers, Wetlands and information received from the EIA Unit in terms of biodiversity studies:





From GDARD’s Biodiversity section:

With regard to the above project, specialist biodiversity studies are required to investigate the following aspects (Please refer to the specialist studies in this regards):

- Vegetation;
- Wetland.

9. 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	
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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):

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:

Recommendations:

It is recommended that the preferred proposal is approved, subject to the following conditions:

General conditions proposed:

- ◇ All mitigation measures as described in this report should be adhered to by the developer (these measures will be made part of the EMPr).
- ◇ The conditions of the Record of Decision from GDARD should be written into the EMPr and be implemented as such.

- ◇ The recommendations of the specialist studies, as listed and to be attached in the appropriate appendices of the Final Basic Assessment Report must be implemented.
- ◇ The EMP as attached to this document should be made part of the contractual documents of contractors. The project manager must also account for the cost of this document's implementation before construction takes place.
- ◇ The impact mitigation measures recommended in the Basic Assessment Report should be adhered to. Service provision to the proposed development should be granted by the local authority prior to the commencement of any construction activities on site.

In the opinion of the consultant, there are no environmental impacts that have been identified that will be detrimental to the environment to such an extent that the proposed development should not be permitted, nor were any sensitive environmental components or fatal environmental flaws identified within the proposed development area. Great care was taken when determining the layout of the proposed development to ensure that areas with high environmental sensitivity were avoided.

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

Please see the Motivation letter attached from the Applicant in Appendix I.

MOTIVATION FOR THE PROPOSED TOWNSHIP

Factors for determining reasonableness include:

- Size of area and its particular characteristics:
- Relation to comprehensive plan
- Degree of change in uses allowed
- Relative harm and benefit to owner, neighbours, and the community

With regards to the factors mentioned above, the following confirms the reasonableness of the proposed township:

- a) The application site is affected by the proposed PWV 5 route and although the site is 7.8408 hectares in extent it will only be possible to develop a portion of 2,6384 hectares of the site. The proposed mixed use development, including high density residential, educational, medical, light industrial and commercial uses is in line with not only the future development proposals for the area, but also with current development trends:
 - In terms of the amended Sub Regions 3 and 4 RSDP, the application site is situated in an area earmarked as a "High Intensity Mixed Use Zone". Land uses allowed in this zone include high density residential, educational, medical, light industrial and commercial uses.
 - Directly north of the application site the Riversands Commercial Park is planned and will accommodate a variety of commercial precincts - including retail, office, warehousing and light industrial business premises.
 - Steyn City, a mixed use development is proposed west of the application site and will accommodate 11 000 residential units, including a championship Golf Course, parkland and a mix of supportive uses including two private schools, office developments, convenience shopping, a retirement village and a private hospital.
- b) Benefit to the owner will include the increase of his property value, while the advantages of the proposed development do not only include the provision of much needed residential, educational, medical, commercial and industrial uses, but will also contribute to the overall aesthetics and property values of the surrounding area. The proposed development will have the following effects on the surrounding community:
 - The development will create temporary job opportunities during the

construction phase and temporary and permanent job opportunities during the operational phase. Should the local community not benefit from these opportunities, it could lead to an influx of people from other areas. Only employing people from the local community could mitigate the potential adverse impact.

- Traffic increase during the construction and operational phases of the development will have an impact on traffic flow and the tranquillity of the area. The impact of additional traffic during the construction phase, especially heavy construction vehicles that can slow traffic down, can be mitigated to a certain extent by not allowing construction vehicles to use public roads during peak traffic times, as well as to avoid construction activities on public roads during peak traffic times.

Desirability of the application is motivated as follows:

- a. Sub Area 4 is characterised by high-density urban residential components and well defined mixed use nodes. The Fourways regional node, together with several district and neighbourhood nodes spread throughout the sub area provide various services and employment opportunities. A well-defined Strategic Public Transport System (SPTN) connects the sub area to the rest of the City. The majority of non-residential land uses within the sub area are concentrated along William Nicol Drive.
- b. As mentioned earlier in this report the application site is situated on the south-eastern corner formed by William Nicol Drive (K46) and the planned PWV 5 route. The K46 is currently the central spine linking this sub-area to the rest of Johannesburg. The intersection of the planned PWV 5 with the K46 provides opportunities for higher order nodal development, comprising local and regional employment opportunities, social amenities and shopping destinations. The freeway will provide regional and visual access, whereas the K46 will provide the necessary public transportation access.
- b) With regards to engineering services, it can be mentioned that all the availability of the necessary engineering services and the capacity of the existing engineering services will be confirmed by the different service departments during the circulation and comments process of the application.

Need of the application is motivated as follows:

- a) Like other city regions worldwide, the province faces rapid urbanization alongside massive immigration to Gauteng from other parts of the country as well as from other parts of the continent and the world. While this poses significant challenges and is putting pressure on social amenities, infrastructure, state resources and services, it also has exciting possibilities in attracting skills and innovation, creating new and viable markets and in making Gauteng a dynamic, diverse innovative and productive urban hub. In South Africa it is said that approximately 55% of the population live in urban areas. Past census figures indicate that the process of urbanization is escalating and this has been demonstrated most vividly by the 20% increase in the Gauteng population. According to the Diepsloot Development Framework 2020, the entire northern region of
- b) Johannesburg, stretching from Midrand in the east to Lanseria in the west, requires approximately 4 900 ha of land for urban expansion up to the year 2020, and an additional 4 300 ha of land for urban expansion up to the year 2040. The Central Sub-Region, of which the application site forms part, requires approximately 2 000 ha of land for urban expansion up to the year 2020, and an additional 2 400 ha of land for urban expansion up to the year 2040.

11. THE PERIOD FOR WHICH THE ENVIRONMENTAL AUTHORISATION IS REQUIRED (CONSIDER WHEN THE ACITIVITY IS EXPECTED TO BE CONCLUDED)

3 years: 2017 to 2020 for construction.

12. 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.


Appendix A: Site plan(s) with Specialist Sensitivity Maps

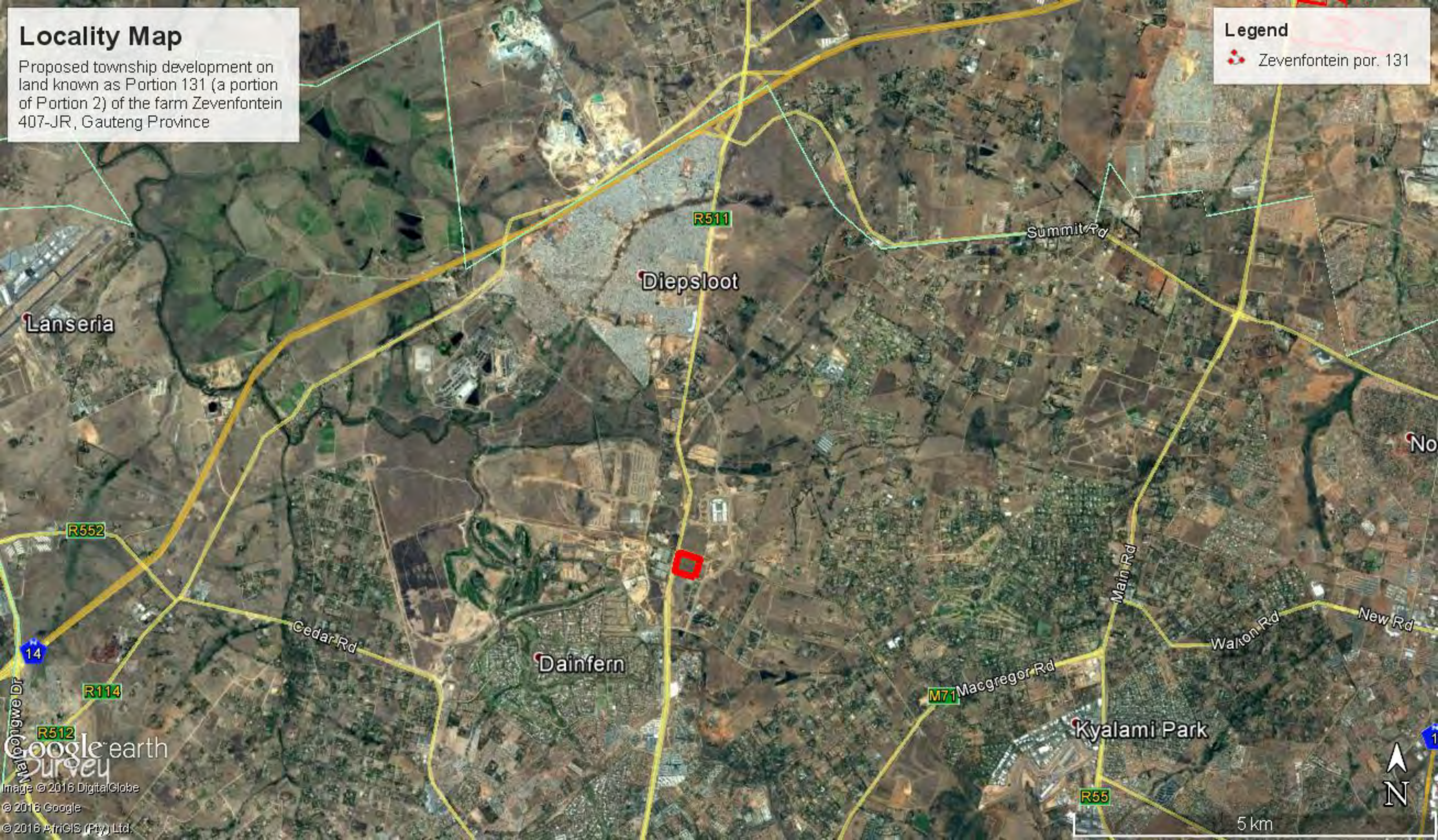
Attached

Locality Map

Proposed township development on land known as Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR, Gauteng Province

Legend

-  Zevenfontein por. 131




5 km

Site Map

Proposed township development on land known as Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR, Gauteng Province

Legend

 Zevenfontein 407JR Por. 131



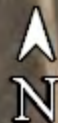
Google earth
Survey

Image © 2016 DigitalGlobe

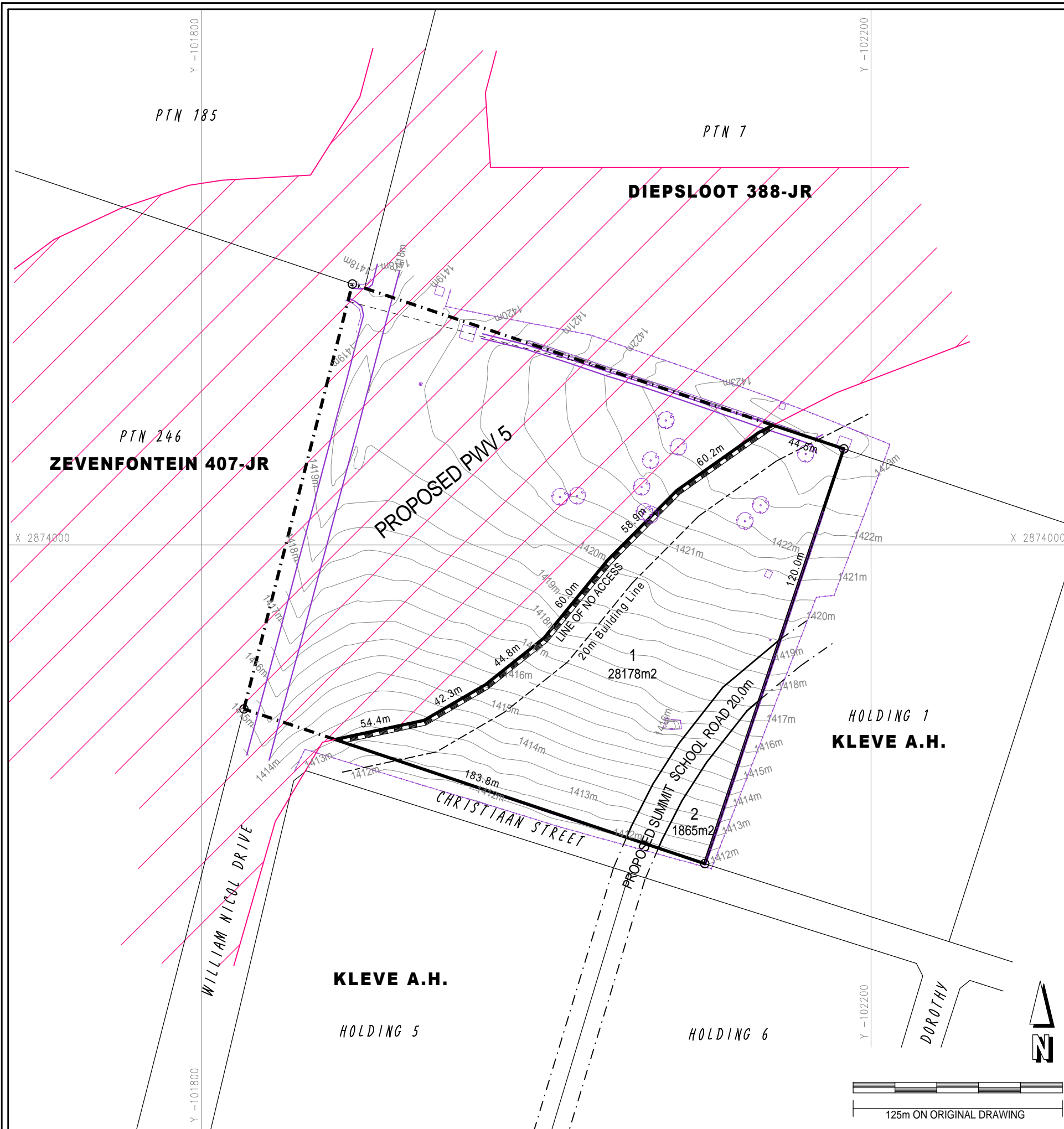
© 2016 Google

© 2016 AfriGIS (Pty) Ltd.

R511



200 m



PROPOSED TOWNSHIP
RIVERSIDE VIEW EXTENSION 76
 SITUATED ON PORTION 131 OF THE FARM
 ZEVENFONTEIN 407 JR
 IN THE AREA OF JURISDICTION OF
 CITY OF JOHANNESBURG
 PROVINCE GAUTENG

LAND USE TABLE / NOTES

	ERF No.	NO. OF	AREA (Ha)	%
SPECIAL	1, 2	2	3,0043	92,1
ROADS			0,2592	7,9
TOTAL		2	3,2635	100

"SPECIAL" for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail.
 Coverage 60%, Height 6 storeys, Density 85 du/ha, FAR 2,4

Geological - This is to certify that the township layout on this plan is in accordance with the provisions and recommendations as set out in the Engineering Geological Report.
 Name: (Pr. Nat)
 Reg No:
 Date:

Floodwater - It is certified that the project area is not affected by floodwater in terms of the specifications laid down by Section 144 of the National Wateract, Act 36 of 1998.
 Name: RJ RAMALOPE (Pr Tech Eng)
 Reg No: 200970265
 Date: 03/11/2016

Contours are in accordance with the standards laid down in regulation 18(2) and (3) of the Town Planning and Townships regulations, 1986 Contours are in 0,5m intervals
 Surveyed by Andre van der Walt & Associates in October 2016 System S-360-LO29-WGS

LOCALITY PLAN

- NOTES:
1. Ruling site size ism².
 2. Minimum site size ism².
 3. Standard dimensions of sites are ... xm.
 4. Minimum width of sites arem.
 5. Minimum width of panhandles are 3m.
 6. Splays on roads are 3 x 3m unless otherwise indicated.
 7. Maximum slope on roads 1:
 8. Minimum slope on roads 1:
 9. Total length of streets arem.
 10. All dimensions and areas are approximate and subject to final survey.

CONSULTANT:
TERRAPLAN ASSOCIATES
 TOWN AND REGIONAL PLANNERS AND
 URBAN DEVELOPMENT CONSULTANTS





PO BOX 1903
 KEMPTON PARK 1620
 TEL: (011)394-1418/9
 FAX: (011)975-3716
 jhb@terraplan.co.za

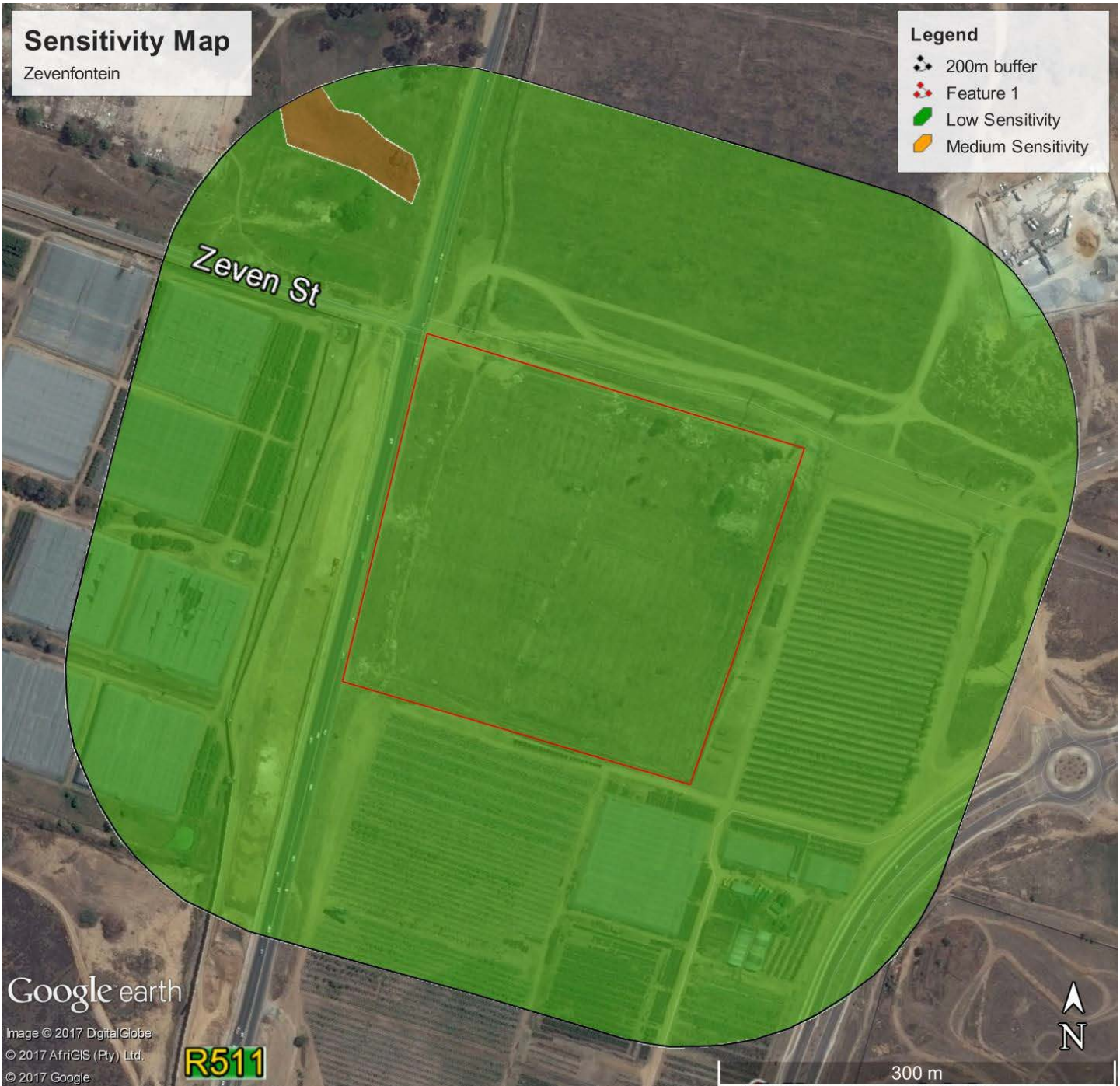
REVISIONS:	CONSULTANT DWG No	DP896
1.	DATE	15/03/2017
	DESIGNED/CHECKED	SR
	DRAWN	EV
	SCALE	1:2500 (a3)

Sensitivity Map

Zevenfontein

Legend

-  200m buffer
-  Feature 1
-  Low Sensitivity
-  Medium Sensitivity



Google earth

Image © 2017 DigitalGlobe
© 2017 AfriGIS (Pty) Ltd.
© 2017 Google

R511

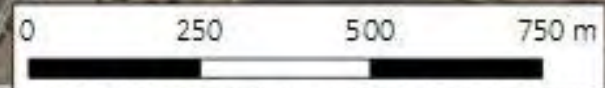
300 m



Riverside View Ext 76: Sensitivity Mapping

Legend

- Portion 131 of Zevenfontein 407 JR
- 500 m Extended Study Area
- Non-perennial drainage lines
- Low Sensitivity
- Moderate Sensitivity



Appendix B: Photographs

Attached

SITE PHOTOS OF PROPOSED TOWNSHIP ESTABLISHMENT

Map where photos were taken:



Photo set 1:





View to the Northeast



View to the East





View to the Southwest



View to the West



View to the Northwest

Additional Photos:



Dumping on site



Dumping on site



Dumping on site

Appendix C: Facility illustration(s)

None.

Appendix D: Route position information

None

Appendix E: Public participation information

Attached

Appendix 1 - Proof of site notice

NOTICE: ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED TOWNSHIP DEVELOPMENT ON LAND KNOWN AS PORTION 131 (A PORTION OF PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE.

Notice is hereby given in terms of Regulation 41 of the Regulations published in Government Notice 982 of 4 December 2014 - Chapter 6 of the National Environmental Management Act, 1998 (Act no. 107 of 1998), for an application submitted for the following activities:

Government Notice No.	Activity Numbers
R 983 of 4 December 2015 (Listing 1)	27

PROJECT DESCRIPTION:

The establishment of a mixed use township which includes 2 erven zoned "Special" for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail on Portion 131 of the farm Zevenfontein 407-JR (Riverside View Extension 76).

PROJECT LOCATION:

The site is located on the corner of Zeven St. and the R511 in Kleve AH, just south of Diepsloot and north of Dainfern; within the City of Johannesburg Municipality. The locality of the proposed development is on Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR: Latitude: -25.969693°; Longitude: 28.017640° (entrance to the site).



APPLICANT:

Silverlakes Trading 511 (Pty) Ltd.

ENVIRONMENTAL CONSULTANT:

Rock Environmental Consulting (Pty) Ltd

PO Box 40541, Moreleta Park, 0044

Tel: (012) 997 4742

Fax: (012) 997 0415

Email: rock.rowan@lantic.net

Contact Person (s): Rowan van Tonder / Pieter van der Merwe



In order to register as an interested and/or affected party, or to obtain more information on the proposed development, please submit your name, contact details and interest in the matter within 30 days of the date of this notice: **1 February 2017**

Handing out of background information documents:

1 February 2017

Proof of Site Notice



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

PROPOSED TOWNSHIP DEVELOPMENT ON LAND KNOWN AS PORTION 131 (A PORTION OF PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE.



PROOF OF RECEIPT-BID: 1 February 2017

IBAP'S NAME / DESIGNATION / ORGANISATION	ADDRESS	TEL. / CELL NO.	FAX. NO.	EMAIL ADDRESS	SIGNATURE
Scribante Concrete	Steyn City.	0835678872	—	—	
Kenny Matzelke	Century ^{appts} dev.	0874107480	—	—	
Gary Houghes	Steyn City	0836130508	—	garyh@steyncity.co.za	
Lerato Ndlabi	Riversands incubation ^{property} hub	0731549859	—	rudoipm@riversandsihub.com	
GAT Steyn	Century ^{property} development	0113008700	—	—	



BACKGROUND INFORMATION DOCUMENT

PROPOSED TOWNSHIP DEVELOPMENT ON PORTION 131 (A PORTION OF PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE

THIS BACKGROUND INFORMATION DOCUMENT SERVES TO INFORM THE PUBLIC OF THE APPLICATION LODGED IN TERMS OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT 107 OF 1998 (NEMA) AS AMENDED.

APPLICANT: Silverlakes Trading 511 (Pty) Ltd Mr Marco Gerazounis PO Box 262 Kayalami Boulevard Kayalami 1684 Tel: (011) 463 0989 Cell: 063 121 5350 E-Mail: mgerazou@hotmail.com	ENVIRONMENTAL CONSULTANT: REC Services (Pty) Ltd Mr Rowan van Tonder / Pieter van der Merwe P.O. BOX 40541 MORELETA PARK 0044 Tel: (012) 997 4742 Fax: (012) 997 0415 E-mail: rock.rowan@lantic.net
---	--

1 FEBRUARY 2017

1. PURPOSE OF THIS BACKGROUND INFORMATION DOCUMENT

The purpose of this document is to:

- Notify the identified Interested and Affected Parties (I&APs) of the Environmental Impact Assessment (EIA) Regulations in accordance with stipulations made in Government Notice R. 982 of 4 December 2014 published in terms of chapter 6 of the National Environmental Management Act (Act No. 107 of 1998) as amended.
- Present stakeholders with an overview of the perceived environmental, biophysical and social impacts of the proposed development.
- Provide I&APs with a Locality Map (Appendix 1) indicating the proposed development.
- Obtain issues and concerns from the I&APs regarding the environmental assessment process and proposed activity, which will be addressed for the planning, construction and operational phases of the proposed development.

2. INTRODUCTION AND STATEMENT OF INDEPENDENCE

2.1 INTRODUCTION

REC Services (Pty) Ltd (REC) was approached by TERRAPLAN ASSOCIATES for the Environmental Impact Assessment and application process in terms of the National Environmental Management Act (Act 107 Of 1998), pertaining to the proposed township development on land known as Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407 JR, Gauteng Province.

The public participation process aims to provide an opportunity for I&APs to comment on the proposed activity, such that relevant information exchanges will enable the EIA process to focus the study on reasonable and relevant issues, predominantly relating to environmental impacts that the proposed activity may have. The Environmental Impact Assessment Report to be compiled by REC will focus on the possible issues and impacts associated with the proposed development, and where negative impacts are identified, recommendations will be made to mitigate such impacts.

REC and its environmental assessment practitioners have no connection with the applicant. REC is not a subsidiary, legally or financially of the applicant. Remuneration for services pertaining to this assessment and application is not linked to approval by decision-making authorities responsible for authorizing the proposed activities. REC and its environmental assessment practitioners have no interest in secondary or downstream developments as a result of the authorisation of the proposed activities.

3. KEY LEGISLATION APPLICABLE TO THIS NOTICE

3.1 NATIONAL ENVIRONMENTAL MANAGEMENT ACT 108 OF 1998 AS AMENDED

Listed activity triggered in the 2014 NEMA regulations:

R. 983, 4 DECEMBER 2014- Basic assessment Activities	
Activity No	Listed Activity Description:
27	The clearance of 1 ha or more, but less than 20 ha of indigenous vegetation, except where such clearance of indigenous vegetation is required for - i) the undertaking of a linear activity; or ii) maintenance purposes undertaken in accordance with the maintenance management plan

4. PROJECT INFORMATION

4.1 PROPOSED ACTIVITY

Proposed township development on land known as Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR, Gauteng Province.

4.2 BASIC PROJECT DESCRIPTION

The establishment of a mixed use township which includes 2 erven zoned "Special" for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail on Portion 131 of the farm Zevenfontein 407-JR (Riverside View Extension 76).

The township will comprise of 2 erven (to be consolidated), subject to the restrictive measures listed below:

Zoning	"Special"
Primary rights	High density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail.
Coverage	80%
Floor area ratio	2.7
Height restriction	6 storeys
Density	120 du/ha

4.3 LOCALITY

The site is located on the corner of Zeven St. and the R511 in Kleve AH, just south of Diepsloot and north of Dainfern; within the City of Johannesburg Municipality. The locality of the proposed development is on Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR: Latitude: -25.969693°; Longitude: 28.017640° (entrance to the site). Please refer to the Google Earth image below. The detailed locality plan is presented in Appendix 1 of this notice.



4.4 CONSIDERATION OF ALTERNATIVE SITES

No feasible alternatives can be considered at this stage. The layout could be altered, but at this stage the current locality is the only option available to the applicant. Technology wise, only the most efficient technology, in this case, will be used.

5. ENVIRONMENTAL STUDY PROCESS

The Environmental Impact Assessment process consists of two main components, namely (i) the technical/biophysical process and (ii) the public participation process.

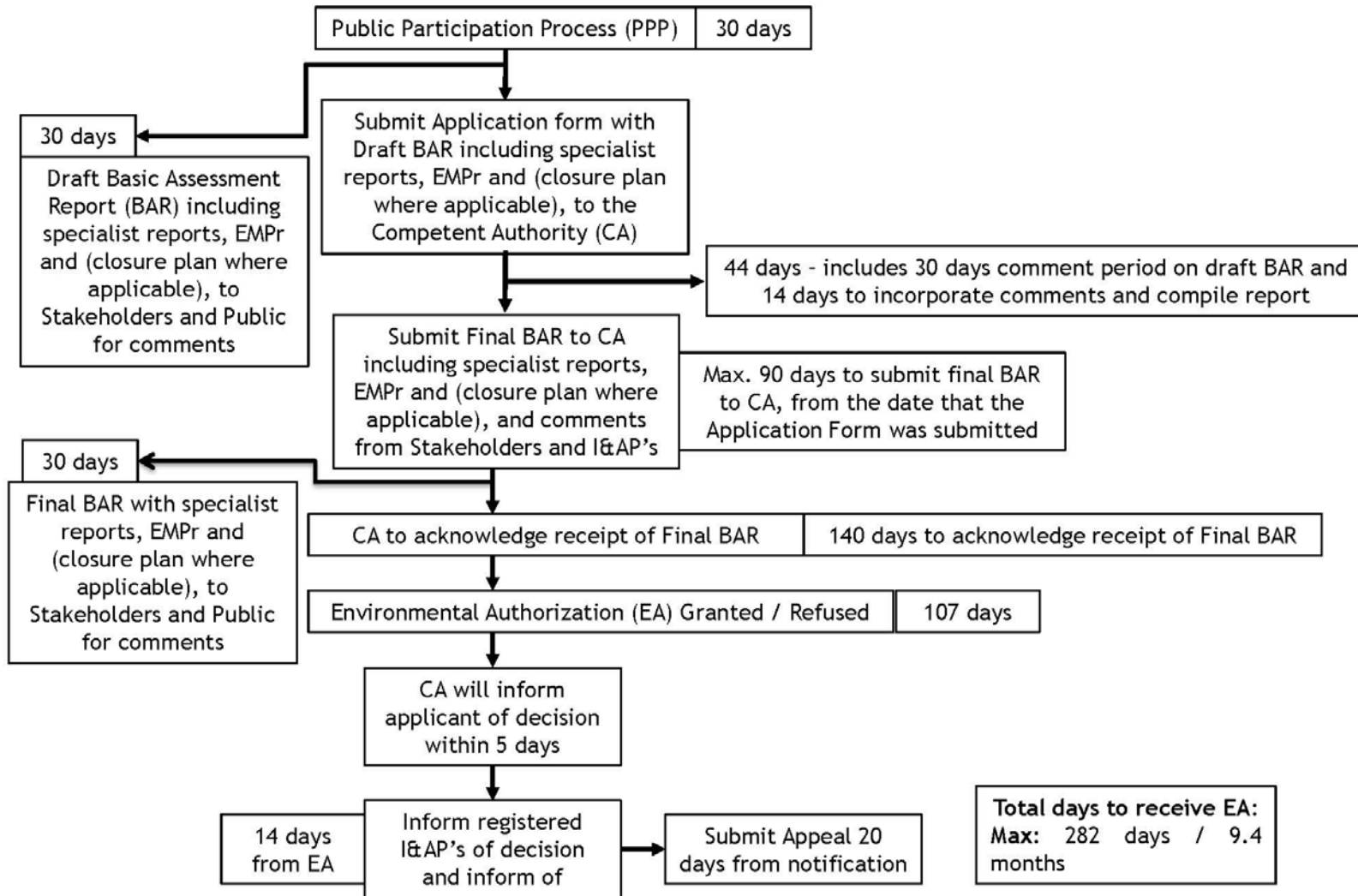
- The technical process includes, but is not limited to, the following aspects:
 - Terrain investigations;
 - Specialist Studies;
 - The identification and assessment of biophysical elements within the study area;

- Compilation of a Basic Environmental Impact Assessment Report with Environmental Management Programme.
- The public participation process includes:
 - Compilation of a database of stakeholders and Interested and Affected Parties;
 - Legal notices of the environmental process (press advertisement and on-site);
 - Dissemination of information to stakeholders and I&APs;
 - Identification of environmental, as well as social issues and concerns, as raised by I&APs or other relevant stakeholders, and
 - Addressing all concerns raised by I&APs.

The public participation process is conducted in parallel with the Environmental Impact Assessment process (technical/biophysical process). The public participation process does not aim to promote agreement amongst I&APs or quell possible opposition against a project. The process is made open and transparent to all those involved. Additionally, it is considered important to involve I&APs as early in the Environmental Impact Assessment process as possible, to ensure informed decision-making and effective participation throughout the study.

The Environmental Impact Assessment Process contains the following steps (Basic Assessment):

The Basic Assessment Process and time frames



6. PRELIMINARY ENVIRONMENTAL RELATED ISSUES IDENTIFIED

The following steps are identified on a preliminary basis:

- Dust generation from construction during construction phase.
- Possible hazardous (Diesel, oil) fluids being spilled during construction phase.
- Removal of vegetation (natural and alien).
- Traffic Safety during construction phase.

7. COMMENTS / OBJECTIONS

Kindly submit the attached Registration and Comment Sheet, to register as an Interested and Affected Party, with possible issues and concerns relating to the proposed development, as well as any additional I&APs that you would like to be involved in the process, to the **Environmental Consultant** (refer to the contact details given above).

The Registration and Comment Sheet should reach us no later than 30 days (excluding public holidays) from the date of this BID.

We thank you for your interest and for taking the time to read through this document.

REGISTRATION AND COMMENT SHEET:

**PROPOSED TOWNSHIP DEVELOPMENT ON LAND KNOWN AS PORTION 131 (A
PORTION OF PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG
PROVINCE.**

Please complete and return as soon as possible, but no later than 3 March 2017 to:

Mr. Rowan van Tonder, PO Box 40541, Moreleta Park, 0044

Tel: (012) 997 4742 Fax: (012) 997 0415 e-mail: rock.rowan@lantic.net

Title_____Initials_____Surname_____

Organisation/Firm/Position/Nature of Involvement in the project e.g. property
owner:

Street / Physical Address:

Postal address:

Postal Code: _____

Telephone Work: _____ Telephone Home: _____

Cell phone: _____ Fax: _____

E-mail: _____

COMMENTS:

It would be useful if you could answer the questions below but please feel free to provide any comments you would like to raise. Please continue on additional paper if required.

1. What are the primary concerns faced by you/ your community/ your organisation with regards to the proposed development?

2. Do you know of any other individual or organisation that you feel would want to register as a stakeholder and receive information. Please provide names and contact information below.

Thank you for your participation

Appendix 1: Locality Maps


NEXT PAGE

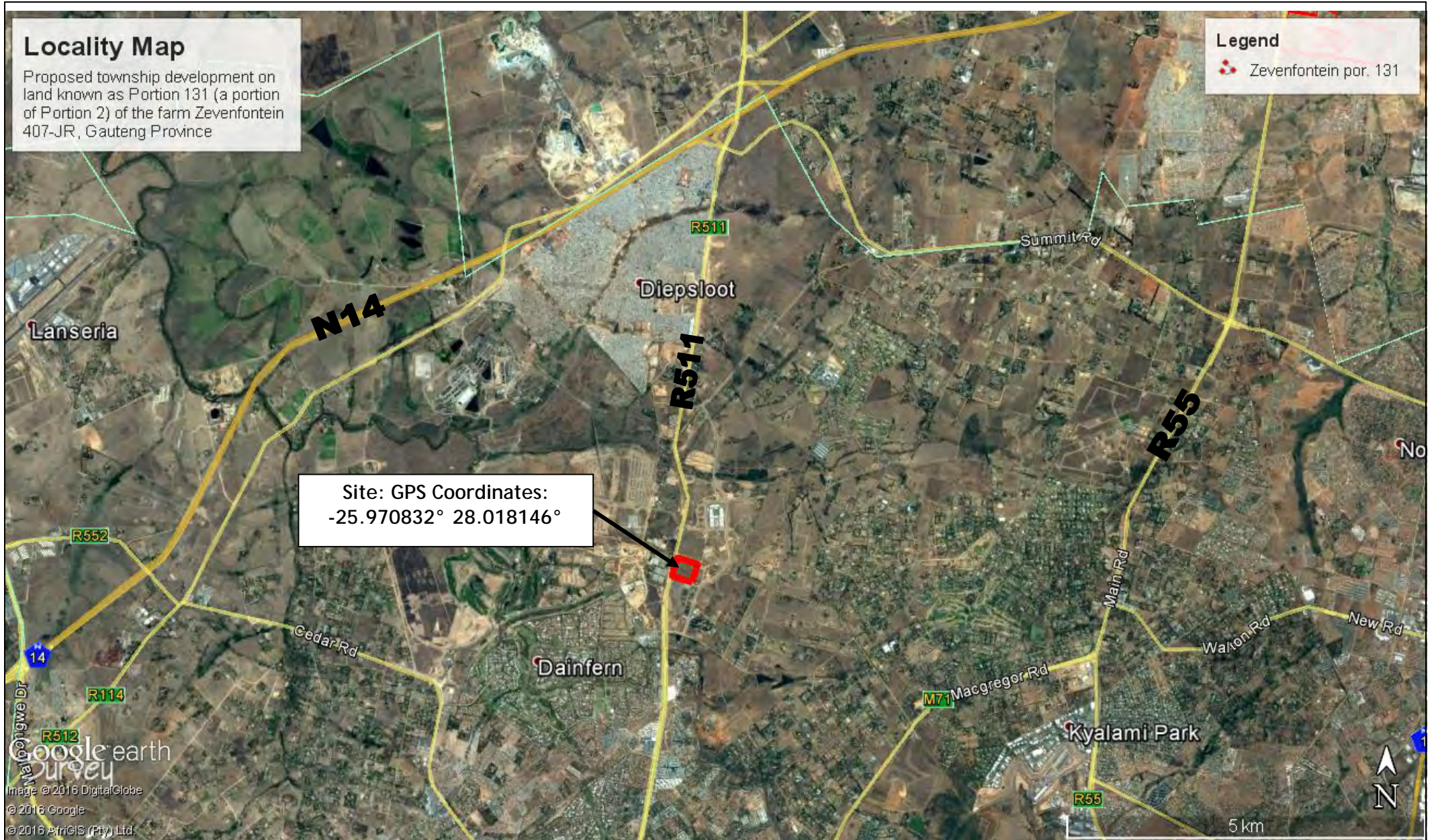


Locality Map

Proposed township development on land known as Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR, Gauteng Province

Legend

 Zevenfontein por. 131



Appendix 3 - Proof of newspaper advertisements

SUSAN (ZIM)
seeks domestic work on a part-time basis.
Ref 082-551-3659.
Direct 072-366-2205
—S1051977

TENDAYI
seeks full-time work as a domestic, child minder with accom. Ref 071 832 8626
071 842 8929
—ST000547

THABISENI (MWN)
seeks domestic/ office cleaner work Mon, Tues, Wed, Fri.
Direct 083-398-2322
—S1051902

THOBKILE (ZIM)
seeks domestic work on a full-time basis with accom. Has references.
Direct 072-358-2045
—S1051947

THULISILE
Requires full-time domestic employment. Has references.
063-142-2572
—FW001584

XOLILE
seeks domestic/ office cleaner work Mon, Wed, Friday.
Ref 082-780-6214.
Direct 079-455-7630
—S1051959

0897 GARDENER EMPLOYMENT WANTED

A brilliant, reliable and hardworking Malawian gardener CLEMENT is looking for part-time work on Wed and Fri. Ref Judy 083-379-6592.
Direct 073-965-0182
—S1051980

BENNET
seeks gardener/ driver work full-time Mon to Fri. Code 10. Ref 079-811-8964.
Direct 081-846-8130
—S1051928

BRIAN (MWN) seeks gardener/ painter/ houseman/ caregiver/ frail care/ office cleaner work full-time.
Direct 063-012-1952
—S1051870

FRANCE (MWN) seeks gardener/ houseman work part/ full-time. with 8 yrs exp.
Ref Mrs Grant 083-307-9273 or 011-883-2890.
Direct 073-781-8172
—S1051840

FRANK (MWN)
seeks gardener/ houseman/ cooks work full-time, accom.
Ref 071-382-5905.
Direct 078-964-6072
—S1051904

JULIUS (MWN)
seeks gardener/ houseman work full-time or part-time with accom. Ref 076-910-5879.
Direct 078-889-3575
—S1051898

NAMELY (MWN)
seeks gardener/ houseman work full-time with accom. Ref 072-369-7640.
Direct 071-043-4062
—S1051930

PATRICK (MWN)
seeks gardener work Mon, Wed, Fri, Saturday. Honest, hardworker.
Direct 064-046-2895
—S1051829

STANLEY
seeks gardening work Tues, Fri, Sat. Ref 083-214-6296 / 082-720-4621.
Direct 073-420-2763
—S1051835

WILLIAM (MWN)
seeks gardener/ houseman work full-time Mon to Fri.
Ref 073-100-1978.
084-489-2047 / 073-550-9058
—S1051659

WINNER
seeks gardener / houseman work Saturday and Sunday.
Ref 011-795-3264.
Direct 071-923-2311
—S1051974

WISEMAN MALAWIAN
a gardener and houseman available Mon to Fri, require accom. Honest, hardworking with 8yrs exp. Speak Eng.
Ref 082-879-3570 or 083-448-6949.
Ph 063-038-3171
—S1051984

WYMAN the Malawian gardener/ painter/ houseman/ office cleaner is looking for part-time work Mon, Wed, Thur and Fri with 8 yrs exp. Ref Piero 079-026-0121.
Direct 084-268-5262
—S1051945

0899 DOMESTIC EMPLOYMENT AVAILABLE

Accredited Domestic Worker Training - DOMESTIC BLISS
0114475517/ 0835254992
Staff Placements
0118804647 / 0766834100
—SD014432

legals
● auctioneers
● legal notices
● tenders

0950 LEGAL NOTICES

NOTICE FOR AN ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

PROPOSED TOWNSHIP DEVELOPMENT ON LAND KNOWN AS PORTION 131 (A PORTION OF PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE.

Notice is hereby given in terms of Regulation 41 of the Regulations published in Government Notice 982 of 4 December 2014 - Chapter 6 of the National Environmental Management Act, 1998 (Act no. 107 of 1998), for an application submitted for the following activity:

PROPOSED ACTIVITY:
Government Notice No. R 983 of 4 December 2015 (Listing 1): Activity Numbers: 27

PROJECT DESCRIPTION:
The establishment of a mixed use township which includes 2 erven zoned 'Special' for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail on Portion 131 of the farm Zevenfontein 407-JR (Riverside View Extension 76).

PROJECT LOCATION:
The site is located on the corner of Zeven St. and the R511 in Kleve AH, just south of Diepsloot and north of Dainfern; within the City of Johannesburg Municipality. The locality of the proposed development is on Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR; Latitude: -25.969693°; Longitude: 28.017640° (entrance to the site).

APPLICANT:
Silverlakes Trading 511 (Pty) Ltd.

ENVIRONMENTAL CONSULTANT:
Rock Environmental Consulting (Pty) Ltd
PO Box 40541,
Moreleta Park,
0044
Tel: (012) 997-4742
Fax: (012) 997-0415
Email: rock.rowan@lantic.net
Contact Person(s): Rowan van Tonder / Pieter van der Merwe

In order to register as an interested and/or affected party, or to obtain more information on the proposed development, please submit your name, contact details and interest in the matter within 30 days of the date of this press advertisement.

Placement of the site notice:
1 February 2017
Handing out of background information documents:
1 February 2017

—ML024562

Place your legal notices in your local newspaper.

Contact 087 285 0575




SABC group executive for sport, Sully Motsweni and Extreme Fighting Championship (EFC) president, Cairo Howarth.

EFC goes live on SABC

SIPHOSISO
siphos@cxaton.co.za

Lovers of the Extreme Fighting Championship (EFC) will, for the first time, be able to watch their favourite fighters live on SABC following the conclusion of a two-year agreement between the two parties.

This was announced at a press conference at the Sandton gym of the EFC at the Sandhurst Centre by the SABC group executive for sport, Sully Motsweni and EFC president Cairo Howarth.

Though they would not disclose how much money has been earmarked for the deal, Motsweni described the conclusion of the agreement as 'a big day for SABC sport and the SABC as millions of EFC fans in more than 110 countries will, for the first time, be able to watch their favourite fighting stars live on the box'.

The screenings will begin on 11 February on SABC 3 and Motsweni said they were delighted to be able to bring on board a new genre of sport as opposed to the traditional sporting codes such as athletics, boxing, cricket, football and rugby.

Through the broadcasts, Motsweni said they hoped to build the profiles of individuals and entities behind the sport as well. They hope to build the sport in the country and other parts of the African continent that will be tuned in, and this should bring new members into the fold. Howarth said his mixed martial arts organisation, which is a leader on the African continent, was delighted with the deal as it would not only raise the profile of the fighters and the sport, but would also rake in potential sponsors for the fighters and the sport in general.

The new partnership will see hours of dedicated EFC programming every week on SABC 3, as well as 10 live EFC event broadcasts per year, where SABC 3 will broadcast two hours of exciting EFC programming every Saturday evening from 9pm.

The best bouts from the EFC will be featured along with premium programming building up to each new live championship event. On the evening of every EFC event, SABC 3 will broadcast the full three-hour live event, featuring the five main-card bouts. Topping the major events of the EFC calendar will be the all-important fight taking place at Carnival City on 4 March, known as the EFC 57. The fight will feature two champions, Newcastle-born fighter, now Alberton resident and reigning flyweight champion Nkazimulo Zulu, and Sunninghill resident and interim flyweight champion, JP Buys in a title unification bout.

This will be the first live broadcast of the EFC fights to come.

Sri Lanka wins second T20

NICHOLAS ZAAL
nicholasz@cxaton.co.za

South Africa's second-string team could not hold back a determined Sri Lankan side that finally showed its class on its tour to South Africa after the visitors narrowly won a nail-biting T20 game at the Bidvest Wanderers Stadium by three wickets.

This means the KFC T20 International series is level at 1-1 with the final T20 on 25 January in Cape Town.

Sri Lanka went into the game having it all to play for and proved the better team in batting, bowling and fielding.

The Bidvest Wanderers Stadium played host to an enormous crowd of passionate South African supporters, spurring their team on, eager to see the Proteas win. But the Sri Lanka bowlers took advantage of a shaky batting start by the South Africans, with Nuwan Kulasekara taking the wicket of JJ Smuts for just four runs. Isuru Udana then had Theunis de Bruyn out for seven, and the Proteas found themselves at 13/2.

Wickets fell periodically through the innings, with spinner Lakshan Sandakan proving almost unplayable and earning the best figures of the innings - 4/23 in four overs.

South Africa's collapse proved unpreventable and they were all out for 113 with three balls left in their allotted 20 overs. Heino Kuhn top-scored with 29 off 20 balls.

Were it not for Lungi Ngidi's destructive pace bowling, South Africa's loss would have been worse. He took the first three Sri Lanka wickets early on and finished with figures of 4/19 in his four overs.

Yet, Dinesh Chandimal and Angelo Matthews constructed a fine partnership for the Lions, playing the ball in gaps in the

field that should not have existed in such a low-scoring game. After Chandimal fell, caught behind off Ngidi for 22 runs off 28 balls, Matthews had to play a captain's innings when wickets continued to fall around him.

Smuts bowled the final over and Matthews hit two sixes to bring up his fifth T20 half-century and the Sri Lanka victory.

Sri Lankan family, Manoja, Thivina and Narada Jayasuriya, liked what they saw. "Sri Lanka have played much better than they did before. I think the young team has performed well," said Narada.

Proteas supporter, Aiden Smits (8) said, "I guess we scored enough runs but it would have been nice to see AB de Villiers play. He would have scored even more." Jesse Mayers (9) said two of his favourite players were Farhaan Behardien and David Miller, and it would have been nice to see them bat for longer.

Schoolchildren who were the guard of honour and the ball boys and girls at the game were from Maragon Primary School.



Manoja Jayasuriya spurs Sri Lanka on.

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Appendix 4 -Communications to and from interested and affected parties



Gauteng Department of Agricultural and Rural Development
Deputy Director: Environmental Planning & Assessment
PO Box 8769
JOHANNESBURG
2000

Ref No.: Obj-Ptn131Zevenfontein
Date: 8 February 2017

Attention: Tsholofelo Mere
By E-mail: tsholofelo.mere@gauteng.gov.za

Dear Madam,

BACKGROUND INFORMATION DOCUMENT FOR TOWNSHIP SITUATED ON PORTION 131 OF THE FARM ZEVENFONTEIN 407-JR, MIDRAND AREA

Century Letting Agents CC, Evangeline Gaye Corbett, Veal Michelle Genevieve and Fairways Enterprises CC are the owners of most of the surrounding properties and wish to lodge an objection against the proposal to apply for Environmental approval for a mix use township establishment. Mark Arthur Corbett, being a member of Fairway Enterprises CC requested us to lodge the objection and also to register as an Interested and Affected Party.

1. We herewith lodge an objection opposing Environmental approval and Township Establishment situated on Portion 131 of the Farm Zevenfontein 407-JR.
2. We will now subsequently deal with this matter in the following manner:
 - 2.1 At the outset, we wish to disclose that:
 - 2.1.1 the content hereof is neither exclusive nor exhaustive of our submissions and our rights to entertain this matter more comprehensively at the appropriate time when more information and documentation are available, remain reserved;
 - 2.1.2 the submissions herein contained shall in no way prejudice our position in any future decisions in terms of *inter alia* NEMA or any other applicable legislation.
3. The proposed application does not comply with the principals, pre-requisites and provisions contained in *inter alia* the:
 - 3.1 applicable Town Planning Scheme;
 - 3.2 City of Johannesburg Municipal Planning By-Law, 2016; and
 - 3.3 applicable Environmental Legislation.
4. Water bourne sewerage is currently not available to service the rights as proposed and sewer servitudes will have to be registered over properties belonging to third parties and Environmental approval must be obtained prior to approval of the Basic Assessment because of sensitive wetland and flood line areas that has to be crossed to connect to the existing sewer line which will require approval from Gauteng Department of Agricultural and Rural Development and Department of Water Affairs.
5. The property is located in a rural residential area and the land is subject to significant wetlands according to the City of Johannesburg Natural Resources Unit. Figure 1 shows the wetlands that are applicable to

the site according to the website.



Figure 1: Wetlands associated with Portion 131 of the Farm Zevenfontein 407-JR

- 6. GDARD shows that this area is an important Ecological Support area that provides for the links of wetlands in the area. Figure 2 shows the CPlan 3

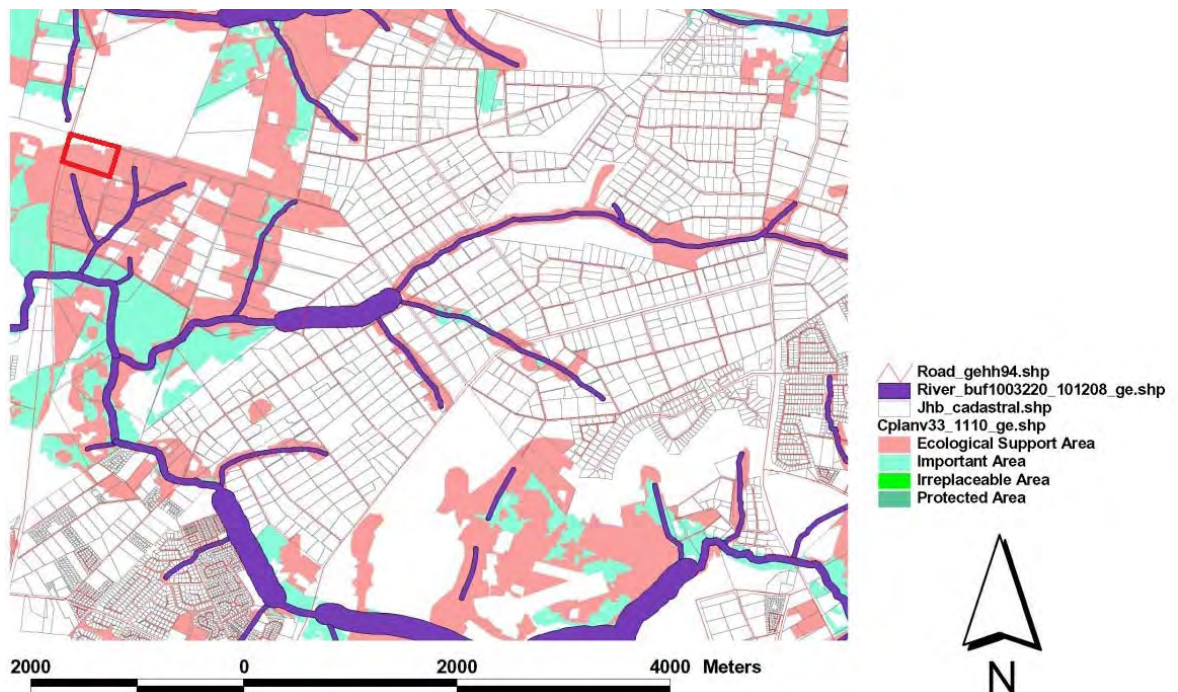
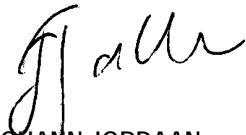


Figure 2: CPlan 3.3 from GDARD

7. The development and sensitivity of the property must be evaluated in a holistic way and need to be evaluated in conjunction with the entire Kleve, Treesbank and Riversands area to enable the Department to make an informative decision.
8. Apart from the objection herein disclosed, we request that a complete copy of the application including all specialist studies accompanying the application, be made available for collection within 30 days from date hereof, failing receipt of which an application will be lodged in terms of the Promotion of Access to Information Act, 2 of 2000.
9. On receipt of the application as requested in paragraph 7 above, full consideration will be given to the content thereof and upon which we may provide further submissions.
10. We trust that the aforesaid meets with your approval, however please don't hesitate to contact us should any further assistance be required.
11. Insofar as it may be necessary, our rights remain reserved *in toto*.

Yours faithfully



JOHANN JORDAAN

CC REC Services (Pty) Ltd t/a Rock Environmental Consulting
Attention: Mr Rowan van Thonder
By Email: rock.rowan@lanic.net

Rowan van Tonder

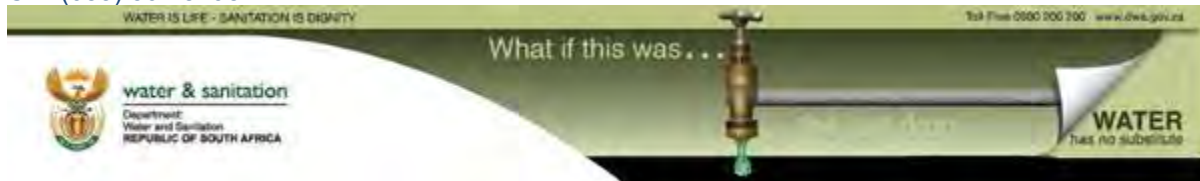
From: Mhinga Vongani (GAU) <MhingaV@dws.gov.za>
Sent: Thursday, February 2, 2017 8:48 PM
To: rock.rowan@lantic.net
Cc: Siwelane Lilian (GAU)
Subject: RE: Zevenfontein 131: Background Information Document (BID)

Good day Rowan,

Please submit the EIA report for the proposed development to the Department for commenting.



Vongani Mhinga
Institutional Establishment
Department of Water and Sanitation
North West Regional Office
Private Bag X995, Pretoria, 0001
15 th floor, Bothongo Plaza-east, 285 Franscis Baard Street
Tel: (012) 392 1503
Fax:(012) 392 1486
Cell:(083) 304 8198



From: Siwelane Lilian (GAU)
Sent: 02 February 2017 09:59 AM
To: Mhinga Vongani (GAU)
Subject: FW: Zevenfontein 131: Background Information Document (BID)

Good day Vongani

Please take note of the proposed development, ask the consultant to send us an environmental report once it is ready.

Regards

Lillian

From: Khorommbi Konanani (GAU)
Sent: 01 February 2017 05:23 PM
To: Siwelane Lilian (GAU); Matseba Ephraim Mogale (GAU)
Cc: lebomol@joburg.org.za; Tebogo.Molokomme@gauteng.gov.za; david.foley@bcx.co.za
Subject: FW: Zevenfontein 131: Background Information Document (BID)

Dear colleagues

For your attention in accordance with the locality of the project.

Regards

Konanani Khorommbi (D-Tech Adventure Tourism Management)
Acting Chief Executive Officer: Vaal Proto CMA
Department of Water and Sanitation
Gauteng Provincial Office
Private Bag X 995
PRETORIA
0001

Tel: 012 3921427
Fax: 012 3921486
Cell: 082 806 5305
khorombik@dws.gov.za



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 **water & sanitation**
Department
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

From: Rowan van Tonder [<mailto:rock.rowan@lantic.net>]
Sent: Wednesday, February 01, 2017 2:51 PM
To: lebomol@joburg.org.za; Tebogo.Molokomme@gauteng.gov.za; Khorommbi Konanani (GAU); david.foley@bcx.co.za
Subject: Zevenfontein 131: Background Information Document (BID)

To Whom It May Concern:

Rock Environmental Consulting (Pty) Ltd was recently appointed by Silverlakes Trading 511 (Pty) Ltd. to conduct the EIA process. A proposed mix use township development is on Portion 131 (a portion of Portion 2) of the Farm Zevenfontein 407-JR, Gauteng Province. The public participation exercise commenced on 1 February 2017.

We have also attach the BID for your information. Please read through it.

Kind Regards/Groete,



ROWAN VAN TONDER

Environmental Consultant

B. Sc. **Environmental Science** | B. Sc. (Hons) **Physical Geography** | M.Sc. **Botany**

t: 0129974742 f: 0129970415

P.O. Box 40541, Moreleta Park, 0044

601 Rubenstein Dr, Moreleta Park, 0181

rock.rowan@lantic.net † www.rockeco.co.za

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REGISTRATION AND COMMENT SHEET:

PROPOSED TOWNSHIP DEVELOPMENT ON LAND KNOWN AS PORTION 131 (A PORTION OF PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE.

Please complete and return as soon as possible, but no later than 3 March 2017 to:

Mr. Rowan van Tonder, PO Box 40541, Moreleta Park, 0044

Tel: (012) 997 4742 Fax: (012) 997 0415 e-mail: rock.rowan@lantic.net

Title ~~Mr~~ Mr Initials MP Surname phalanda

Organisation/Firm/Position/Nature of Involvement in the project e.g. property owner:

City of Johannesburg - EISA

Street / Physical Address:

118 Jorissen Street, Trading Building, 6th floor, Braamfontein

Postal address:

Same as above

Postal Code: _____

Telephone Work: 0115874201 Telephone Home: 0115874238

Cell phone: 081 716 6148 Fax: _____

E-mail: mukundniap@joburg.org.za

COMMENTS:

It would be useful if you could answer the questions below but please feel free to provide any comments you would like to raise. Please continue on additional paper if required.

1. What are the primary concerns faced by you/ your community/ your organisation with regards to the proposed development?

Please do send us the copy of Report to City of Johannesburg - EISA for review.

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

N/A

Appendix 6 - Comments and Responses Report

PROPOSED TOWNSHIP DEVELOPMENT ON PORTION 131 (A PORTION OF PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE



COMMENTS & RESPONSE SHEET

Name & Surname	Designation / Organisation	Physical & Postal Address	Contact Details	Comments	Response
Mr. MP Phalandwa Senior Specialist: Impact Management and Compliance Monitoring	City of Johannesburg Municipality - EISD	118 Jorisson St. Trading Building 6 th floor Braamfontein 2000	Cell: 081 716 6148 Tel: 011 587 4238 Email: MukundwaP@joburg.org.za	Please do send us the copy of the report to city of Johannesburg - EISD for review.	Noted. Will do.
Vongani Mhinga Institutional Establishment	Department of Water and Sanitation North West Regional Office	Private Bag X995 Pretoria 0001 15 th floor Bothongo Plaza- east 285 Franscis Baard Street	Tel: 012 392 1503 Fax: 012 392 1486 Cell: 083 304 8198 Email: MhingaV@dws.gov.za	Please submit the EIA report for the proposed development to the Department for commenting.	Noted. Will do.
Mr. Johann Jordaan On behalf of: Century Letting Agents CC, Evangeline Gaye Corbett, Veal Michelle Genevieve and Fairways Enterprises CC	Century Property Developments (Pty) Ltd. Town and Regional Planner	Holding 5 Lynx Rd. Treesbank Midrand PO Box 70406 Bryanston 2021	Tel: 011 300-8739 Fax: 0866 9399 73 Cell: 082 499 1474 Email: johann@century.co.za	"3. The proposed application does not comply with the principals, pre-requisites and provisions contained in inter alia the: 3.1 applicable Town Planning Scheme; 3.2 City of Johannesburg Municipal Planning By-Law, 2016; and	3.1 The township establishment application has not yet been submitted or advertised. Any objection to the township establishment is premature. The town planning application is not yet submitted. This statement is generic and ungrounded. 3.2 The township establishment application has not yet been submitted or advertised. Any

Name & Surname	Designation / Organisation	Physical & Postal Address	Contact Details	Comments	Response
				<p>3.3 applicable Environmental Legislation.</p> <p>4. Water bourne sewerage is currently not available to service the rights as proposed and sewer servitudes will have to be registered over properties belonging to third parties and Environmental approval must be obtained prior to approval of the Basic Assessment because of sensitive wetland and flood line areas that has to be crossed to connect to the existing sewer line which will require approval from Gauteng Department of Agricultural and Rural Development and Department of Water Affairs.</p> <p>5. The property is located in a rural residential area and the land is subject to significant wetlands according to the City of Johannesburg Natural Resources Unit. Figure 1 shows the wetlands that are applicable to the site according to the website.</p> <p>6. GDARD shows that this area is an important Ecological Support area that provides for</p>	<p>objection to the township establishment is premature. The town planning application is not yet submitted. This statement is generic and ungrounded.</p> <p>3.3 All the regulation set out in NEMA is have been complied with.</p> <p>4. Please refer to the studies conducted in terms of Services, Wetland and Vegetation in Appendix G & I.</p> <p>5. Please refer to Appendix G for the Wetland verification study.</p> <p>6. Noted. This was the initial starting point from which the relevant specialists were</p>

Name & Surname	Designation / Organisation	Physical & Postal Address	Contact Details	Comments	Response
				<p>the links of wetlands in the area. Figure 2 shows the CPlan 3.</p> <p>7. The development and sensitivity of the property must be evaluated in a holistic way and need to be evaluated in conjunction with the entire Kleve, Treesbank and Riversands area to enable the Department to make an informative decision.</p> <p>8. Apart from the objection herein disclosed, we request that a complete copy of the application including all specialist studies accompanying the application, be made available for collection within 30 days from date hereof, failing receipt of which an application will be lodged in terms of the Promotion of Access to Information Act, 2 of 2000.</p> <p>9. On receipt of the application as requested in paragraph 7 above, full consideration will be given to the content thereof and upon which we may provide further submissions.</p> <p>10. We trust that the aforesaid meets with your approval, however please don't hesitate to contact us should any further assistance be required.</p> <p>11. Insofar as it may be</p>	<p>employed to conduct their studies for the applicant to abide by.</p> <p>7. Noted. Thank you.</p> <p>8. Noted. All registered I&APs will receive a copy (electronically) of the BAR, containing all the information, to comment upon. A hard copy will also be available at Rivonia Public Library.</p> <p>9. Noted.</p> <p>10. Noted.</p> <p>11. Noted.</p>

Name & Surname	Designation / Organisation	Physical & Postal Address	Contact Details	Comments	Response
				necessary, our rights remain reserved in toto."	

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

None yet

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

N/A

Appendix 9 - Copy of the register of I&APs

List of all Stakeholders and I&APs of where the draft report will be submitted:

State Department	Contact Person	Postal/Physical address
City of Johannesburg Municipality -EISD	Mr. MP Phalandwa Senior Specialist: Impact Management and Compliance Monitoring Cell: 081 716 6148 Tel: 011 587 4238 Email: MukundwaP@joburg.org.za	118 Jorisson St. Trading Building 6th floor Braamfontein 2000
Department of Water and Sanitation North West Regional Office	Vongani Mhinga Institutional Establishment Tel: 012 392 1503 Fax: 012 392 1486 Cell: 083 304 8198 Email: MhingaV@dws.gov.za	285 Schoeman street Bothongo Plaza East PRETORIA 0001 P/Bag X995 PRETORIA
Provincial Heritage Resource Authority of Gauteng	Mr. Tebogo Molokomme Tel: 011 355 2545 Email: Tebogo.Molokomme@gauteng.gov.za	35 Rissik Street Surrey House Johannesburg 2000
City of Johannesburg Municipality: Ward Councilor 94	Mr David Foley Cell: 082 902 5003 E-mail: david.foley@bcx.co.za	To Email address.
GDARD	Admin	Admin
Registered Interested and Affected Parties:		
Rivonia Public Library	Reception Tel: 011 803 1227	Rivonia Blvd Rivonia Johannesburg 2191

<p>Century Property Developments (Pty) Ltd.</p> <p>Town and Regional Planner</p>	<p>Mr. Johann Jordaan</p> <p>On behalf of: Century Letting Agents CC, Evangeline Gaye Corbett, Veal Michelle Genevieve and Fairways Enterprises CC</p> <p>Tel: 011 300-8739 Fax: 0866 9399 73 Cell: 082 499 1474 Email: johann@century.co.za</p>	<p>Holding 5 Lynx Rd. Treesbank Midrand</p> <p>PO Box 70406 Bryanston 2021</p>
--	--	--

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

None yet

Appendix G: Specialist reports

- Heritage Impact Assessment (HIA)
- Vegetation Study
- Wetland Verification

**PROPOSED TOWNSHIP DEVELOPMENT ON PORTION 131 (A PORTION OF
PORTION 2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE**



Leonie Marais-Botes
Heritage Practitioner

868 Endeman Street
Wonderboom South
Pretoria
0084
Mobile: 082 576 6253
E-mail: leoniembotes@gmail.com

*BA (Cultural History and Archaeology) (UP), BA (Hons)
Cultural History (UP), Post Grad Dip Museology (UP), Cert
Conservation of Traditional Buildings (Univ of Canberra)
Post Grad Dip: Heritage (Wits)*

*Accredited member: SA Society for Cultural
History (CH002)*

For:

REC SERVICES (PTY) LTD
TA AS ROCK ENVIRONMENTAL CONSULTING
P.O. BOX 40541
MORELETA PARK
0044

September 2017

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Leonie Marais-Botes Heritage Practitioner.

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It may only be used for the purposes it was commissioned for by the client.

DISCLAIMER:

Although all possible care is taken to identify/find all sites of cultural importance during the initial survey of the study area, the nature of archaeological and historical sites are as such that it is always possible that hidden or sub-surface sites could be overlooked during the study. Leonie Marais-Botes Heritage Practitioner will not be held liable will not be held liable for such oversights or for the costs incurred as a result thereof.

ACKNOWLEDGEMENTS

Australia ICOMOS. *The Burra Charter*.

Bergh, J.S. Geskiedenis Atlas van Suid-Afrika. Die vier Noordelike Provinsies. Van Schaik Uitgewers, 1998.

Beyers C.J. (Editor-in-Chief). Dictionary of South African Biography (Vol I – V). Pretoria, 1987.

Coertze, P.J. & Coertze, R.D. Verklarende vakwoordeboek vir Antropologie en Argeologie. Pretoria, 1996.

Huffman, T.N. A Handbook to the Iron Age: The Archaeology of Pre- Colonial Farming Societies in Southern Africa. University of KwaZulu-Natal Press, 2007

Human Tissues Act (Act 65 of 1983 as amended)

Government Printers. 1: 50 000

National Heritage Resources Act (Act 25 of 1999)

National Environmental Management Act (Act 107 of 1998)

Ordinance on Exhumations (no 12 of 1980)

Potgieter, D.J. (editor-in-chief) Standard Encyclopaedia of Southern Africa. London 1971.

Rosenthal E. (Editor) Encyclopaedia of Southern Africa, London and New York 1973

The National Archives of South Africa databases.

Contents page

<u>Contents</u>	<u>Page</u>
ABOUT THIS REPORT	5
DEFINITION OF TERMS	6
EXECUTIVE SUMMARY	9
1. INTRODUCTION	10
1.1 WHY A PHASE 1 HIA IS REQUIRED	10
1.1.1 METHOD	10
1.2 HISTORY OF THE STUDY AREA	10
1.3 LOCATION AND PHOTOGRAPHICAL RECORD OF STUDY AREA	11
2. FINDINGS	18
2.1 Pre-Colonial Heritage Sites	18
2.2 Historical Period Heritage sites	18
2.3 Original Landscape	18
2.4 Intangible Heritage	19
3. CATEGORIES OF HERITAGE VALUE	19
3.1 HERITAGE VALUE WEIGHED AGAINST CULTURAL SIGNIFICANCE CATEGORIES	20
3.2 SPECIFIC CATEGORIES INVESTIGATED AS PER SECTION 3 (1) AND (2) OF THE NATIONAL HERITAGE LEGISLATION (ACT 25 OF 1999)	21
4. DISCUSSION	23
5. RECOMMENDATIONS	23
6. WAY FORWARD	23

ABOUT THIS REPORT

The heritage report must reflect that consideration has been given to the history and heritage significance of the study area and that the proposed activities is sensitive towards the heritage resources and does not significantly alter or destroy the heritage significance of the study area.

The heritage report must refer to the heritage resources currently in the study area.

The opinion of an independent heritage consultant is required to evaluate if the proposed work generally follows a good approach that will ensure the conservation of the heritage resources.

The National Heritage Resources Act (Act 25 of 1999), the National Environmental Management Act (Act 107 of 1998), Ordinance on Exhumations (no 12 of 1980) and the Human Tissues Act (Act 65 of 1983 as amended) are the guideline documents for a report of this nature.

Leonie Marais-Botes was appointed by REC SERVICES (PTY) LTD (trading as Rock Environmental Consulting) to carry out a Phase 1 Heritage Impact Assessment (HIA) for the proposed Residential Township Development on Portion 131 (a portion of Portion 2) of the Farm Zevenfontein 407-JR, Gauteng Province. The site visit took place on 28 May 2017.

DEFINITION OF TERMS:

“alter” means any action affecting the structure, appearance or physical properties of a place or object, whether by way of structural or other works, by painting, plastering or other decoration or any other means.

“archaeological” means—

(a) material remains resulting from human activity which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures;

(b) rock art, being any form of painting, engraving or other graphic representation on a fixed rock surface or loose rock or stone, which was executed by human agency and which is older than 100 years, including any area within 10m of such representation;

(c) wrecks, being any vessel or aircraft, or any part thereof, which was wrecked in South Africa, whether on land, in the internal waters, the territorial waters or in the maritime culture zone of the Republic, as defined respectively in sections 3, 4 and 6 of the Maritime Zones Act, 1994 (Act No. 15 of 1994), and any cargo, debris or artefacts found or associated therewith, which is older than 60 years or which SAHRA considers to be worthy of conservation; and

(d) features, structures and artefacts associated with military history which are older than 75 years and the sites on which they are found.

“conservation”, in relation to heritage resources, includes protection, maintenance, preservation and sustainable use of places or objects so as to safeguard their cultural significance.

“cultural significance” means aesthetic, architectural, historical, scientific, social, spiritual, linguistic or technological value or significance.

“development” means any physical intervention, excavation, or action, other than those caused by natural forces, which may in the opinion of a heritage authority in any way result in a change to the nature, appearance or physical nature of a place, or influence its stability and future well-being, including—

(a) construction, alteration, demolition, removal or change of use of a place or a structure at a place;

(b) carrying out any works on or over or under a place;

(c) subdivision or consolidation of land comprising, a place, including the structures or airspace of a place;

(d) constructing or putting up for display signs or hoardings;

(e) any change to the natural or existing condition or topography of land; and

(f) any removal or destruction of trees, or removal of vegetation or topsoil; object that is specifically designated by that state as being of importance.

“grave” means a place of interment and includes the contents, headstone or other marker of such a place, and any other structure on or associated with such place.

“heritage resource” means any place or object of cultural significance.

“heritage resources authority” means the South African Heritage Resources Agency, or in respect of a province, a provincial heritage resources authority.

“heritage site” means a place declared to be a national heritage site by SAHRA or a place declared to be a provincial heritage site by a provincial heritage resources authority.

“improvement”, in relation to heritage resources, includes the repair, restoration and rehabilitation of a place protected in terms of Act 25 of 1999.

“living heritage” means the intangible aspects of inherited culture, and may include—

(a) cultural tradition;

- (b) oral history;
- (c) performance;
- (d) ritual;
- (e) popular memory;
- (f) skills and techniques;
- (g) indigenous knowledge systems; and
- (h) the holistic approach to nature, society and social relationships.

“local authority” means a municipality as defined in section 10B of the Local Government Transition Act, 1993 (Act No. 209 of 1993).

“management”, in relation to heritage resources, includes the conservation, presentation and improvement of a place protected in terms of Act 25 of 1999.

“meteorite” means any naturally-occurring object of extraterrestrial origin.

“object” means any movable property of cultural significance which may be protected in terms of any provisions of Act 25 of 1999, including—

- (a) any archaeological artefact;
- (b) palaeontological and rare geological specimens;
- (c) meteorites; and
- (d) other objects.

“palaeontological” means any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

“place” includes—

- (a) a site, area or region;
- (b) a building or other structure which may include equipment, furniture, fittings and articles associated with or connected with such building or other structure;
- (c) a group of buildings or other structures which may include equipment, furniture, fittings and articles associated with or connected with such group of buildings or other structures;
- (d) an open space, including a public square, street or park; and
- (e) in relation to the management of a place, includes the immediate surroundings of a place.

“presentation” includes—

- (a) the exhibition or display of;
- (b) the provision of access and guidance to;
- (c) the provision, publication or display of information in relation to; and
- (d) performances or oral presentations related to, heritage resources protected in terms of Act 25 of 1999.

“public monuments and memorials” means all monuments and memorials—

- (a) erected on land belonging to any branch of central, provincial or local government, or on land belonging to any organisation funded by or established in terms of the legislation of such a branch of government; or
- (b) which were paid for by public subscription, government funds, or a public-spirited or military organisation, and are on land belonging to any private individual.

“site” means any area of land, including land covered by water, and including any structures or objects thereon.

“structure” means any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith.

“victims of conflict” means—

- (a) certain persons who died in any area now included in the Republic as a direct result of any war or conflict as specified in the regulations, but excluding victims of conflict covered by the Commonwealth War Graves Act, 1992 (Act No. 8 of 1992);
- (b) members of the forces of Great Britain and the former British Empire who died in active service in any area now included in the Republic prior to 4 August 1914;
- (c) persons who, during the Anglo-Boer War (1899-1902) were removed as prisoners of war from any place now included in the Republic to any place outside South Africa and who died there; and
- (d) certain categories of persons who died in the “liberation struggle” as defined in the regulations, and in areas included in the Republic as well as outside the Republic.

EXECUTIVE SUMMARY

Leonie Marais-Botes Heritage Practitioner was requested by Rock Environmental Consulting (Pty) Ltd to carry out a Phase 1 Heritage Impact Assessment (HIA) for the proposed Residential Township Development on Portion 131 (a portion of Portion 2) of the Farm Zevenfontein 407-JR, Gauteng Province.

A field survey was conducted after which a survey of literature was undertaken.

Remnants of a structure older than 60 years were identified on site.

No other heritages sites are situated on the area earmarked for development.

It should be noted that the sub-surface archaeological and/or historical deposits and graves are always a possibility. Care should be taken during any work in the entire area and if any of the above is discovered, an archaeologist/heritage practitioner should be commissioned to investigate.

1. INTRODUCTION

The project entails the establishment of a mixed-use township which includes 2 erven zoned "Special" for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail on Portion 131 of the farm Zevenfontein 407-JR (Riverside View Extension 76).

The township will comprise of 2 erven (to be consolidated).

1.1 WHY A PHASE 1 HERITAGE IMPACT ASSESSMENT IS REQUIRED?

This project may potentially impact on any types and ranges of heritage resources that are outlined in Section 3 of the National Heritage Resources Act (Act 25 of 1999). Subsequently a Phase 1 Heritage Impact Assessment (HIA) was commissioned by Rock Environmental Consulting (Pty) Ltd and conducted by Leonie Marais-Botes.

1.1.1 METHOD

The objective of this Phase 1 Heritage Impact Assessment (HIA) was to gain an overall understanding of the heritage sensitivities of the area and indicate how they may be impacted on through development activities. The site survey took place on 28 May 2017.

In order to establish heritage significance the following method was followed:

- Investigation of primary resources (archival information)
- Investigation of secondary resources (literature and maps)
- Physical evidence (site investigation)
- Determining Heritage Significance.

1.2 HISTORY OF THE STUDY AREA

The study area is part of the Kleve Agricultural Holdings. The history of the area is associated with the natural expansion of the City of Johannesburg. No significant history associated with the site could be found.

1.3 LOCATION AND PHOTOGRAPHIC RECORD OF STUDY AREA

The site is located on the corner of Zeven St. and the R511 in Kleve AH, just south of Diepsloot and north of Dainfern; within the City of Johannesburg Municipality. The locality of the proposed development is on Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR: Latitude: -25.969693°; Longitude: 28.017640°.

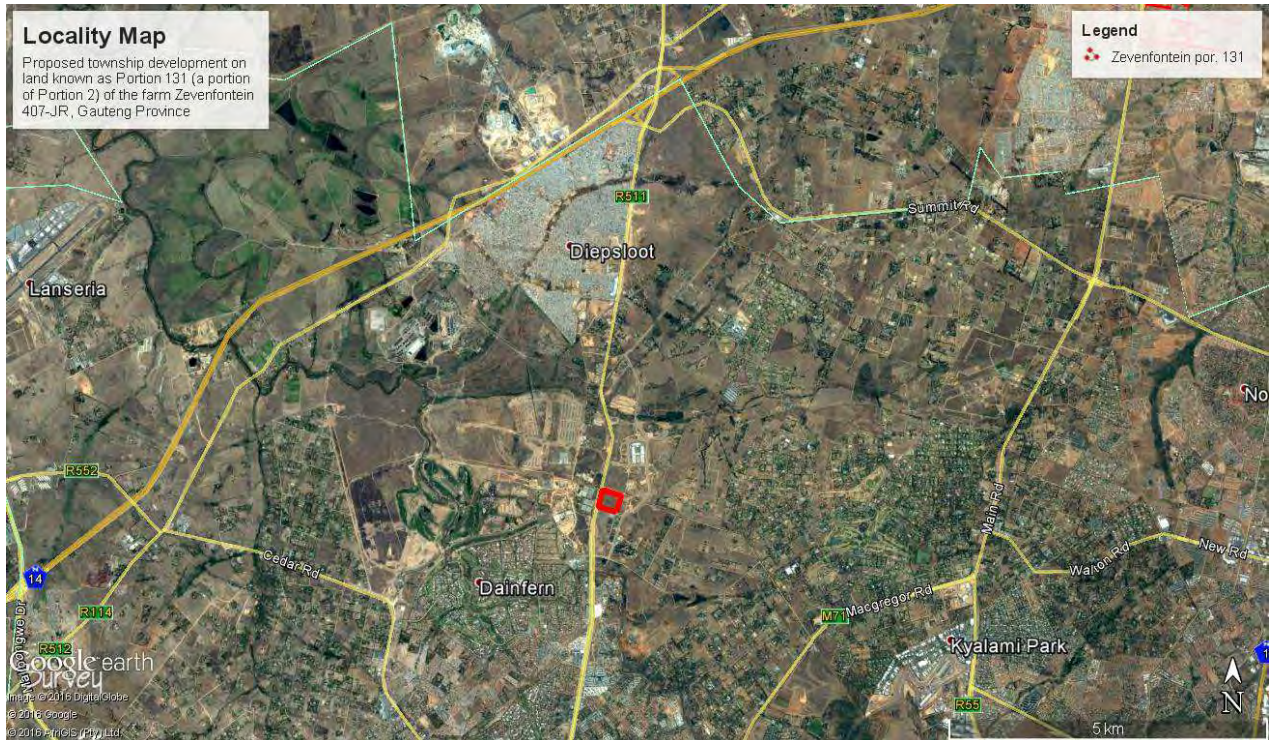


Figure 1: Location of study area



Figure 2: Location of study area



Figure 3: Photograph positions



Figure 4: Site Characteristics (A)



Figure 5: Site Characteristics (B)



Figure 6: Site Characteristics (B)



Figure 7: Site Characteristics (B)



Figure 8: Site Characteristics (C)



Figure 9: Site Characteristics (D)



Figure 9: Site Characteristics (D)



Figure 10: Site Characteristics (E)



Figure 11: Site Characteristics (E)

Co-ordinates

- A:**
25°58'11.75"S
28° 1'3.64"E
- B:**
25°58'14.10"S
28° 1'7.14"E
- C:**
25°58'20.30"S
28° 1'9.86"E
- D:**
25°58'13.83"S
28° 1'12.00"E
- E:**
25°58'12.90"S
28° 1'10.04"E

2. FINDINGS

2.1 PRE-COLONIAL HERITAGE SITES

Possibilities: Greater study area taken into account.

Stone Age

The Stone Age is the period in human history when stone material was mainly used to produce tools¹. In South Africa the Stone Age can be divided in three periods²;

- Early Stone Age 2 000 000 – 150 000 years ago
- Middle Stone Age 150 000 – 30 000 years ago
- Late Stone Age 40 000 years ago - +/- 1850 AD

Iron Age

The Iron Age is the period in human history when metal was mainly used to produce artefacts³. In South Africa the Iron Age can be divided in three periods;

- Early Iron Age 250-900 AD
- Middle Iron Age 900-1300 AD
- Late Iron Age 1300-1840 AD⁴

There are no pre-colonial heritage sites evident in the study area. This can be attributed to previous infrastructure development activities in the study area.

2.2 HISTORICAL PERIOD HERITAGE SITES

Possibilities: Greater study area taken into account.

- Pioneer sites;
- Sites associated with early mining;
- Structures older than 60 years;
- Graves (Graves younger than 60 years, graves older than 60 years, but younger than 100 years, graves older than 100 years, graves of victims of conflict or of individuals of royal descent).

Remnants (see Figure 10) of a structure older than 60 years were identified on the site earmarked for development.

2.3 ORIGINAL LANDSCAPE

Farming activities and infrastructure development have altered the original landscape in the study area.

¹ P. J. Coertze & R.D. Coertze, Verklarende vakwoordeboek vir Antropologie en Argeologie.

² S.A. Korsman & A. Meyer, *Die Steentydperk en rotskuns* in J.S. Bergh (red) Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies.

³ P.J. Coertze & R.D. Coertze, Verklarende vakwoordeboek vir Antropologie en Argeologie.

⁴ M.M. van der Ryst & A Meyer. *Die Ystertydperk* in J.S. Bergh (red) Geskiedenisatlas van Suid-Afrika. Die vier noordelike provinsies and T.N Huffman, A Handbook to the Iron Age: The Archaeology of Pre-Colonial Farming Societies in Southern Africa.

2.4 INTANGIBLE HERITAGE

The intangible heritage of the greater study area can be found in the stories of past and present inhabitants.

3 CATEGORIES OF HERITAGE VALUE (ACT 25 OF 1999)

The National Heritage Resources Act (Act 25 of 1999) identifies the following categories of value under section 3(1) and (2) of the Act under the heading "National Estate":

- "3 (1) For the purpose of this Act, those heritage resources of South Africa which are of cultural significance or other special value for the present community and for future generations must be considered part of the national estate and fall within the sphere of operations of heritage resources authorities.
- (2) Without limiting the generality of subsection (1), the national estate may include-
- (a) places, buildings, structures and equipment of cultural significance;
 - (b) places which oral traditions are attached or which are associated with living heritage;
 - (c) historical settlements and townscapes;
 - (d) landscapes and natural features of cultural significance;
 - (e) geological sites of scientific or cultural importance;
 - (f) archaeological and palaeontological sites;
 - (g) graves and burial grounds, including-
 - (i) ancestral graves;
 - (ii) royal graves and graves of traditional leaders;
 - (iii) graves of victims of conflict;
 - (iv) graves of individuals designated by the Minister by notice in the Gazette
 - (v) historical graves and cemeteries; and
 - (vi) other human remains which are not covered in terms of the Human Tissue Act, 1983 (Act No. 65 of 1983);
 - (h) sites of significance relating to the history in South Africa;
 - (i) movable objects, including-
 - (i) objects recovered from the soil or waters of South Africa including archaeological and palaeontological objects and material, meteorites and rare geological specimens;
 - (ii) objects to which oral traditions are attached or which are associated with living heritage;
 - (iii) ethnographic art and objects;
 - (iv) military objects
 - (v) objects of decorative or fine art;
 - (vi) objects of scientific or technological interests; and
 - (vii) books, records, documents, photographic positives and negatives, graphic, film or video material or sound recordings, excluding those that are public records as defined in section I (xiv) of the National Archives of South Africa Act, 1996 (Act No. 43 of 1996).
- (3) Without limiting the generality of the subsections (1) and (2), a place or object is to be considered part of the national estate if it has cultural significance or other special value because of-
- (a) Its importance in the community, or pattern of South Africa's history;
 - (b) Its possession of uncommon, rare or endangered aspects of South Africa's natural or cultural heritage;

- (c) Its potential to yield information that will contribute to an understanding of South Africa's natural or cultural heritage;
- (d) Its importance in demonstrating the principal characteristics of a particular class of South Africa's natural or cultural objects;
- (e) Its importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- (f) Its importance in demonstrating a high degree of creative or technical achievement at a particular period;
- (g) Its strong or special association with a particular community or cultural group for social, cultural or spiritual reasons;
- (h) Its strong or special association with the life and work of a person, group or organisation of importance in the history of South Africa; and
- (i) Sites of significance relating to the history of slavery in South Africa."

3.1 HERITAGE VALUE OF WEIGHED AGAINST CULTURAL SIGNIFICANCE CATEGORIES

3.1.1 Spiritual value

During the site visit/field work no indication of any spiritual activity was observed on/near the proposed site. Thus no sites of spiritual value will be impacted on by the proposed project.

3.1.2 Scientific value

No sites of scientific value were observed on or near the site earmarked for development.

3.1.3 Historical value

No historical value associated with the site could be found in primary and secondary sources.

3.1.4 Aesthetic value

No heritage item with exceptional aesthetic (architectural) value was identified in the study area.

3.1.5 Social value

Social value is attributed to sites that are used by the community for recreation and formal and informal meetings regarding matters that are important to the community. These sites include parks, community halls, sport fields etc. None of the said evident in the immediate study area.

3.2 SPECIFIC CATEGORIES INVESTIGATED AS PER SECTION 3 (1) AND (2) OF THE NATIONAL HERITAGE LEGISLATION (ACT 25 OF 1999)

3.2.1 Does the site/s provide the context for a wider number of places, buildings, structures and equipment of cultural significance?

The study area does not provide context for a wider number of places, buildings, structures and equipment of cultural significance. The reason being the low density of heritage items in the study area.

3.2.2 Does the site/s contain places to which oral traditions are attached or which are associated with living heritage?

Places to which oral traditions are attached or associated with living heritage are usually found in conjunction with traditional settlements and villages which still practise age old traditions. None of these are evident near or on the proposed site.

3.2.3 Does the site/s contain historical settlements?

No historical settlements are located on or near the proposed site.

3.2.4 Does the site/s contain landscapes and natural features of cultural significance?

Due to infra-structure development and farming activities the original character of the landscape has been altered significantly in the study area. There the site does not contain natural features of cultural significance.

3.2.5 Does the site/s contain geological sites of cultural importance?

Geological sites of cultural importance include meteorite sites (Tswaing Crater and Vredefort Dome), fossil sites (Karoo and Krugersdorp area), important mountain ranges or ridges (Magaliesburg, Drakensberg etc.). The proposed site is not located in an area known for sites of this importance.

3.2.6 Does the site/s contain a wide range of archaeological sites?

The proposed site does not contain any surface archaeological deposits, a possible reason is previous farming activities on site.

The possibility of sub-surface findings always exists and should be taken into consideration in the Environmental Management Programme.

If sub-surface archaeological material is discovered work must stop and a heritage practitioner preferably an archaeologist contacted to assess the find and make recommendations.

3.2.7 Does the site/s contain any marked graves and burial grounds?

The site does not contain any marked graves or burial grounds.

The possibility of graves not visible to the human eye always exists and this should be taken into consideration in the Environmental Management Plan.

It is important to note that all graves and cemeteries are of high significance and are protected by various laws. Legislation with regard to graves includes the National Heritage Resources Act (Act 25 of 1999) whenever graves are 60 years and older. Other legislation with regard to graves includes those when graves are exhumed and relocated, namely the Ordinance on Exhumations (no 12 of 1980) and the Human Tissues Act (Act 65 of 1983 as amended).

If sub-surface graves are discovered work should stop and a professional preferably an archaeologist contacted to assess the age of the grave/graves and to advice on the way forward.

3.2.8 Does the site/s contain aspects that relate to the history of slavery?

This is not an area associated with the history of slavery like the Western Cape Province.

3.2.9 Can the place be considered as a place that is important to the community or in the pattern of South African history?

In primary and secondary source material the proposed site is not described as important to the community or in the pattern of South African history.⁵

3.2.10 Does the site/s embody the quality of a place possessing uncommon or rare endangered aspects of South Africa's natural and cultural heritage?

The proposed site does not possess uncommon, rare or endangered aspects of South Africa's natural and cultural heritage. These sites are usually regarded as Grade 1 or World Heritage Sites.

3.2.11 Does the site/s demonstrate the principal characteristics of South Africa's natural or cultural places?

The proposed site does not demonstrate the principal characteristics of South Africa's natural or cultural places. These characteristics are usually associated with aesthetic significance.

3.2.12 Does the site/s exhibit particular aesthetic characteristics valued by the community or cultural groups?

This part of the greater study area does not exhibit particular aesthetic characteristics valued by the community or cultural groups. The reason being the low density of heritage buildings and structures located in the greater study area.

⁵ Standard Encyclopaedia of Southern Africa and the TAB database at the National Archives of South Africa;

J.S. Bergh (red), Geskiedenisatlas van Suid-Afrika. Die Vier Noordelike Provinsies.

3.2.13 Does the site/s contain elements, which are important in demonstrating a high degree of creative technical achievement?

The site does not contain elements which are important in demonstrating a high degree of creative technical achievement. Reason being none of the above are evident on site.

3.2.14 Does the site/s have strong and special associations with particular communities and cultural groups for social, cultural and spiritual reasons?

The proposed site does not have a strong or special association with particular communities and cultural groups for social, cultural and spiritual reasons. No comment in this regard was received during the public participation period.

3.2.15 Does the site/s have a strong and special association with the life or work of a person, group or organisation?

No indication of the above could be found in primary and secondary research sources.⁶

4. DISCUSSION

- The remnants of the structure older than 60 years (see figure 10) identified on site did not belong to a structure worthy of conservation.

5. RECOMMENDATIONS

- There are no visible restrictions or negative impacts in terms of heritage associated with the site.
- In terms of heritage this project can proceed.
- The discovery of subsurface archaeological and/or historical material as well as graves must be taken into account in the Environmental Management Programme. See 3.2.6 and 3.2.7.

6. WAY FORWARD

Submit this report as a Section 38 application in term of the National Heritage Resources Act (Act 25 of 1999) to the Provincial Heritage Resources Authority of Gauteng (PHRA-G) for comment/approval.

⁶ Dictionary of South African Biography (vol I-V) and the TAB database at the National Archives of South Africa

VEGETATION ASSESSMENT

For the

TOWNSHIP DEVELOPMENT ON PORTION 131 (A PORTION OF PORTION 2) OF THE
FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE

Report by

Enviflora



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Report for

Silverlakes Trading 511 (Pty) Ltd

1 October 2017


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TABLE OF CONTENTS:

TABLE OF CONTENTS: iii

LIST OF TABLES AND FIGURES: iv

1 INTRODUCTION 1

 1.2 Assumptions, limitations and gaps in knowledge 1

 1.3 Importance of / Reasoning behind Proposed Development 1

 1.4 Study Approach 1

2 METHODOLOGY 2

 2.1 Red data plants 3

 2.2 Protected trees 4

 2.3 Protected ecosystems 5

 2.4 Sensitivity Analysis 6

 2.5 Impact Assessment 8

3. THE STUDY SITE 9

 3.1 Locality 9

 3.2 Current Land Use 9

 3.3 Regional Vegetation and Environmental Parameters 10

 3.4 Legislative Requirements 11

4 RESULTS AND EVALUATION 13

 4.1 Broad vegetation types 13

 4.2 Vegetation of the Study Area 14

 4.2.1 Transformed area 16

 4.2.2 Indigenous and natural vegetation of the study site 18

 4.1.3 Red data plant species- confidential information not to be published 20

 4.1.5 Alien and Invasive plant species 24

 4.2 Sensitivity Analysis 25

 4.2.1 Sensitivity Mapping 26

 4.3 Impact Assessment 28

 4.3.1 Impacts of indigenous natural vegetation 28

 4.3.2 Impacts on threatened plants 30

 4.3.2 Impacts of Alien invasive plants 31

5 CONCLUSION 32

6 RECOMMENDATIONS 33

7 REFERENCES 34

LIST OF FIGURES:

Figure 1: Classifications of vegetation types in accordance with their ecological status (Driver et al., 2005). 5

Figure 2: Impact Assessment methodology..... 8

Figure 3: Study site indicated in red. 9

Figure 4: Vegetation Unit of the study site from Mucina and Rutherford (2006). 10

Figure 5: GDARD C-Plan 3.3. 14

Figure 6: GDARD Threatened Ecosystem map..... 15

Figure 7: Areas clearly identifiable from Google earth as being transformed in purple. 16

Figure 8: Transformed vegetation due to sloping 17

Figure 9: Transformed vegetation due to dumping and sloping 17

Figure 10: Transformed vegetation due to dumping..... 18

Figure 11: Transformed vegetation due to dumping..... 18

Figure 10: Areas containing natural vegetation in yellow. 19

Figure 13: Sensitivity map..... 27

LIST OF TABLES:

Table 1: Explanation of IUCN Ver. 3.1 categories (IUCN, 2001), and Orange List categories (Victor & Keith, 2004). 4

Table 2: Likelihood of occurrence. 4

Table 3: Explanation of sensitivity ratings. 6

Table 4: Red data species historically in the 2528CC..... 20

TABLE 5: Checklist of Vegetation found onsite during March 2017. 23

1 INTRODUCTION

Enviflora has been commissioned to compile a Vegetation assessment for the proposed Township Development on Portion 131 (A Portion of Portion 2) of Zevenfontein 407 JR, Gauteng Province.

1.1 Terms of Reference

The terms of reference for the Vegetation Assessment are as follows:

- Determine the sensitivity of the site
- Determine the presence and potential habitat of red and orange data species within the proposed study area and close proximity, including the inventory of such species found on site.
- Provide a map indicating the location and photographic means of identified species which should be relocated before the start of construction.
- Provide an Impact Assessment
- Provide a species list of plants occurring on site, as well as any declared invasive plants

On 16 September 2017, Enviflora undertook a site visit and corresponding vegetation survey. The findings of the study are based on a desktop assessment of the study area, analysis of aerial imagery and a field survey of the site.

1.2 Assumptions, limitations and gaps in knowledge

Red and orange list species are, by their nature, sometimes very rare and difficult to locate.

1.3 Importance of / Reasoning behind Proposed Development

The study site has been identified for the development of residential properties.

1.4 Study Approach

The study approach was adopted and modified in accordance with the methods described by David Hoare from David Hoare Consulting CC (Full credit) and Beryl Wilson (Full credit) at the McGregor Museum. The methods and approach has been modified to adhere to the specialized assessment for the study site as described.

2 METHODOLOGY

In order to describe the overall site characteristics, Google earth imagery and 1:50 000 topographical maps were used and examined. The guidelines in terms of the “*GDARD Requirements for Biodiversity Assessments Version 3 of 2014*” by the Gauteng Department of Agriculture and Rural Development Biodiversity Directorate forms the basis of the methodology followed to ensure that the study adheres to the minimum requirements set for Vegetative assessments and to ensure that the assessment conducted, can contribute to the development of an environmental management programmes.

Many parts of South Africa contain high levels of biodiversity at species and ecosystem level. At any single site there may be large numbers of species or high ecological complexity. Sites also vary in their natural character and uniqueness and the level to which they have been previously disturbed. Assessing the impacts of a proposed project often requires evaluating the conservation value of the site relative to other natural areas of the site in terms of biodiversity conservation. A simple approach to evaluating the relative importance of a site and the species found within it includes assessing the following:

- Is the site unique in terms of natural or biodiversity features?
- Is the protection of biodiversity features on site of national/provincial importance?
- Would development of the site lead to contravention of any international, national or provincial legislation, policy, convention or regulation?
- Is the site modified/disturbed in any way?

Thus, the general approach and angle adopted for this type of study is to identify any potential flora species that may be affected by the proposed study site. This means that the focus of this report will be on rare, threatened, protected and conservation-worthy species, as well as clearance of indigenous vegetation. A species list will be provided for the plants species found on site. Rare, threatened, protected and conservation-worthy species and habitats are considered to be the highest priority, the presence of which is most likely to result in significant negative impacts on the ecological environment. The focus on national and provincial priorities and critical biodiversity issues is in line with National legislation protecting environmental and biodiversity resources.

2.1 Red data plants

South Africa has adopted the IUCN Red List Categories and Criteria to provide an objective, rigorous, scientifically founded system to identify Red List species. A published list of the Red List species of South African plants (Raimondo et al. 2009) contains a list of all species that are considered to be at risk of extinction. This list is updated regularly to take new information into account, but these are not published in book/paper format. Updated assessments are provided on the SANBI website (<http://redlist.sanbi.org/>). According to the website of the Red List of Southern African Plants (<http://redlist.sanbi.org/>), *the conservation status of plants indicated on the Red List of South African Plants Online represents the status of the species within South Africa's borders. This means that when a species is not endemic to South Africa, only the portion of the species population occurring within South Africa has been assessed. The global conservation status, which is a result of the assessment of the entire global range of a species, can be found on the International Union for the Conservation of Nature (IUCN) Red List of Threatened Species: <http://www.iucnredlist.org>.* The South African assessment is used in this study. An explanation of the conservation categories is provided in Table 1.

The purpose of listing Red List plant species is to provide information on the potential occurrence of species at risk of extinction in the study area that may be affected by the proposed infrastructure. Species appearing on these lists can then be assessed in terms of their habitat requirements in order to determine whether any of them have a likelihood of occurring in habitats that may be affected by the proposed infrastructure.

Lists were compiled specifically for any species at risk of extinction (Red List species) previously recorded in the area. Historical occurrences of threatened plant species were obtained from GDARD biodiversity Directorate for the quarter degree square/s within which the study area is situated (2528CC). Habitat information for each species was obtained from various published sources. The probability of finding any of these species will then be assessed by comparing the habitat requirements with those habitats that occur on site.

Table 1: Explanation of IUCN Ver. 3.1 categories (IUCN, 2001), and Orange List categories (Victor & Keith, 2004).

IUCN / Orange List category	Definition	Class
EX	Extinct	Extinct
CR	Critically Endangered	Red List
EN	Endangered	Red List
VU	Vulnerable	Red List
NT	Near Threatened	Orange List
Declining	Declining taxa	Orange List
Rare	Rare	Orange List
Critically Rare	Rare: only one subpopulation	Orange List
Rare-Sparse	Rare: widely distributed but rare	Orange List
DDD	Data Deficient: well-known, not enough information for assessment	Data Deficient
DDT	Data Deficient: taxonomic problems	Data Deficient
DDX	Data Deficient: unknown species	Data Deficient
LC	Least Concern	Least Concern

For all listed plant species that occur in the general geographical area of the site, a rating of the likelihood of it occurring on site is given as indicated in Table 2 below.

Table 2: Likelihood of occurrence.

Rating of likelihood	Definition
LOW	No suitable habitats on site / habitats on site do not match habitat description for species;
MEDIUM	Habitats on site match general habitat description for species (e.g. grassland), but detailed microhabitat requirements (e.g. rocky grassland on shallow soils overlying dolomite) are absent on the site or are unknown from the descriptions given in the literature or from the authorities;
HIGH	Habitats found on site match very strongly the general and microhabitat description for the species (e.g. rocky grassland on shallow soils overlying dolomite);
DEFINITE	Species found on site.

2.2 Protected trees

Regulations published for the National Forests Act (Act 84 of 1998) as amended, provide a list of protected tree species for South Africa. The species on site and surrounding the site was checked against the list provided. The protected species list was also referenced against historical recorded data for the quarter degree grid cell to see if any of the species have been recorded historically.

2.3 Protected ecosystems

A literature review was conducted to investigate previous vegetation classification studies carried out on / near the study site. These studies were investigated before the field visit. To describe broad vegetation patterns within the study area, Mucina and Rutherford (2006) were used.

To describe the conservation status of the vegetation units occurring within the study area, Mucina and Rutherford (2006), The National List of Ecosystems that are in need of Protection (NEMBA, 2004) and the method described in Strelitzia 17 (Driver et al., 2005) is used. This method classifies vegetation types into four categories, according to the percentage of untransformed natural habitat remaining (See Figure 1).

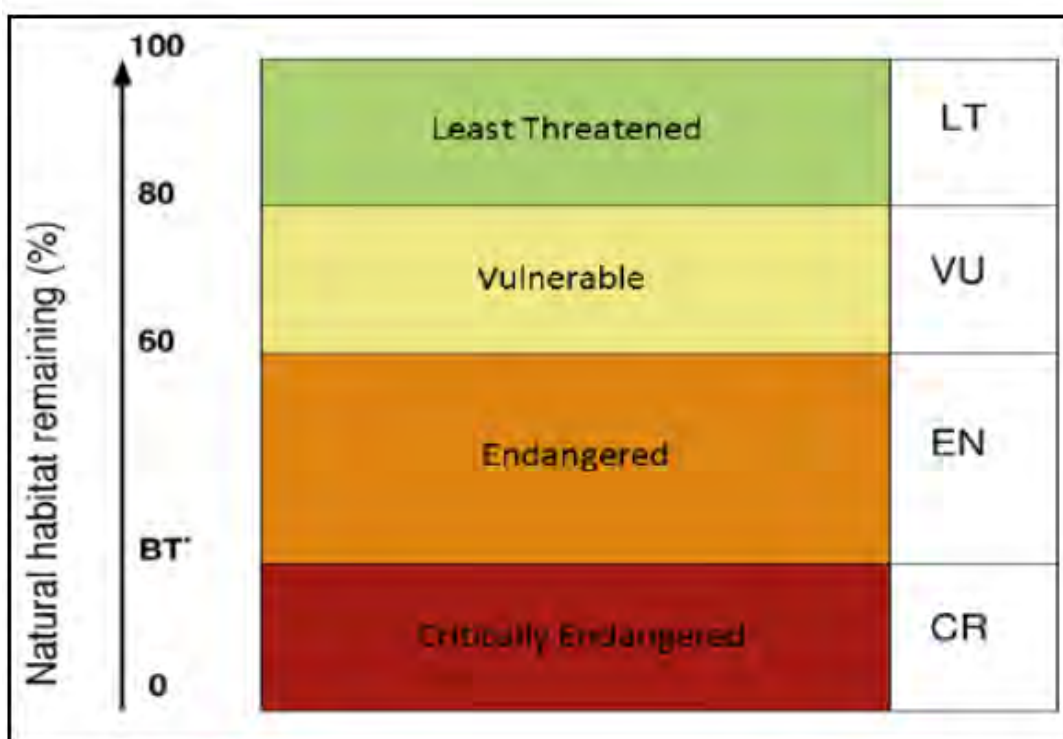


Figure 1: Classifications of vegetation types in accordance with their ecological status (Driver et al., 2005).

A survey was conducted on rare and protected plants that might possibly occur in the study area. For this investigation the South African National Biodiversity Institute (SANBI), PRECIS and SIBIS websites and databases were consulted. The possible and actual presence of rare and protected species were recorded during the field visit.

2.4 Sensitivity Analysis

The location of potentially sensitive features in the study area was determined by taking the following into consideration:

- Satellite imagery/Google Earth imagery was used to determine natural state of land cover against areas already transformed.
- Habitat in which sensitive plants occur was deemed as sensitive.

Sensitivity rating intensities are given in Table 3 below. Areas containing untransformed natural vegetation of conservation concern, high diversity or habitat complexity, Red List organisms or systems vital to sustaining ecological functions are considered potentially sensitive. In contrast, any transformed area that has no importance for the functioning of ecosystems is considered to potentially have low sensitivity.

Table 3: Explanation of sensitivity ratings.

Rating	Factors contributing to sensitivity	Examples of qualifying features
VERY HIGH	<p>Indigenous natural areas that are highly positive for any of the following:</p> <ul style="list-style-type: none"> • <u>Presence of threatened species</u> (Critically Endangered, Endangered, Vulnerable) and/or habitat critical for the survival of populations of threatened species. • <u>High conservation status</u> (low proportion remaining intact, highly fragmented, habitat for species that are at risk). • <u>Protected habitats</u> (areas protected according to national / provincial legislation, e.g. National Forests Act, Draft Ecosystem List of NEM:BA, Integrated Coastal Zone Management Act, Mountain Catchment Areas Act, Lake Areas Development Act) 	<ul style="list-style-type: none"> • CBA 1 areas. • Remaining areas of vegetation type listed in Ecosystem List of NEM:BA as Critically Endangered, Endangered or Vulnerable. • Protected forest patches. • Confirmed presence of populations of threatened species.
HIGH	<p>Indigenous natural areas that are positive for any of the following:</p> <ul style="list-style-type: none"> • High <u>intrinsic</u> biodiversity value (moderate/high species richness and/or turnover). • Presence of <u>habitat highly suitable</u> for threatened species (Critically Endangered, Endangered, Vulnerable species). 	<ul style="list-style-type: none"> • CBA 2 “critical biodiversity areas”. • Habitat where a threatened species could potentially occur (habitat is suitable, but no confirmed records).

	<ul style="list-style-type: none"> Moderate ability to respond to disturbance (moderate resilience, dominant species of intermediate age). Moderate conservation status (moderate proportion remaining intact, moderately fragmented, habitat for species that are at risk). Moderate to high value ecological goods & services (e.g. water supply, erosion control, soil formation, carbon storage, pollination, refugia, food production, raw materials, genetic resources, cultural value). <p>And may also be positive for the following:</p> <ul style="list-style-type: none"> Protected habitats (areas protected according to national / provincial legislation, e.g. National Forests Act, Draft Ecosystem List of NEM:BA, Integrated Coastal Zone Management Act, Mountain Catchment Areas Act, Lake Areas Development Act) 	<ul style="list-style-type: none"> Confirmed habitat for species of lower threat status (near threatened, rare). Habitat containing individuals of extreme age. Habitat with low ability to recover from disturbance. Habitat with exceptionally high diversity (richness or turnover). Habitat with unique species composition and narrow distribution. Ecosystem providing high value ecosystem goods and services.
MEDIUM-HIGH	Indigenous natural areas that are positive for one or two of the factors listed above, but not a combination of factors.	<ul style="list-style-type: none"> CBA 2 “corridor areas”. Habitat with high diversity (richness or turnover). Habitat where a species of lower threat status (e.g. (near threatened, rare) could potentially occur (habitat is suitable, but no confirmed records).
MEDIUM	Other indigenous natural areas in which factors listed above are of no particular concern. May also include natural buffers around ecologically sensitive areas and natural links or corridors in which natural habitat is still ecologically functional.	N/A
MEDIUM-LOW	Degraded or disturbed indigenous natural vegetation. May also include secondary vegetation in an advanced state of development in which habitat is still ecologically functional.	N/A
LOW	No natural habitat remaining.	N/A

2.5 Impact Assessment

Impacts were assessed using the following matrix:

SIGNIFICANCE RANKING MATRIX					
RANKING	MAGNITUDE	REVERSIBILITY	EXTENT	DURATION	PROBABILITY
5	Very high/ don't know	Irreversible	International	Permanent	Certain/inevitable
4	High		National	Long term (impact ceases after operational life of asset)	Almost certain
3	Moderate	Reversibility with human intervention	Provincial	Medium term	Can occur
2	Low		Local	Short term	Unusual but possible
1	Minor	Completely reversible	Site bound	Immediate	Extremely remote
0	None		None		None

Significance= Consequence (Magnitude+ Duration+ Extent + Reversibility) X Probability wherein the following meaning applies:

Figure 2: Impact Assessment methodology

- Low > 30
- Medium: 30 – 50
- High: > 50

Potential issues relevant to the potential impacts on the ecology include the following:

- Impacts on biodiversity- This includes any impacts on populations of individual species of concern, including protected species and species richness
- Impact on sensitive habitats- These include any impacts on sensitive or protected habitats, including indigenous forests, woodlands, and wetlands.
- Impacts on ecosystem function- These include impacts that affect the maintenance of ecosystem health and character.

3. THE STUDY SITE

3.1 Locality

The study site is located on Portion 131 (a portion of portion 2) of the Farm Zevenfontein 407-JR, Gauteng Province, within the 2528CC quarter degree grid cell. The study site is 7 ha in extent.



Figure 3: Study site indicated in red.

3.2 Current Land Use

The site is vacant.

3.3 Regional Vegetation and Environmental Parameters

The study area falls within the Grassland Biome. Mucina and Rutherford described the vegetation as Egoli Granite Grassland (See Figure 4).

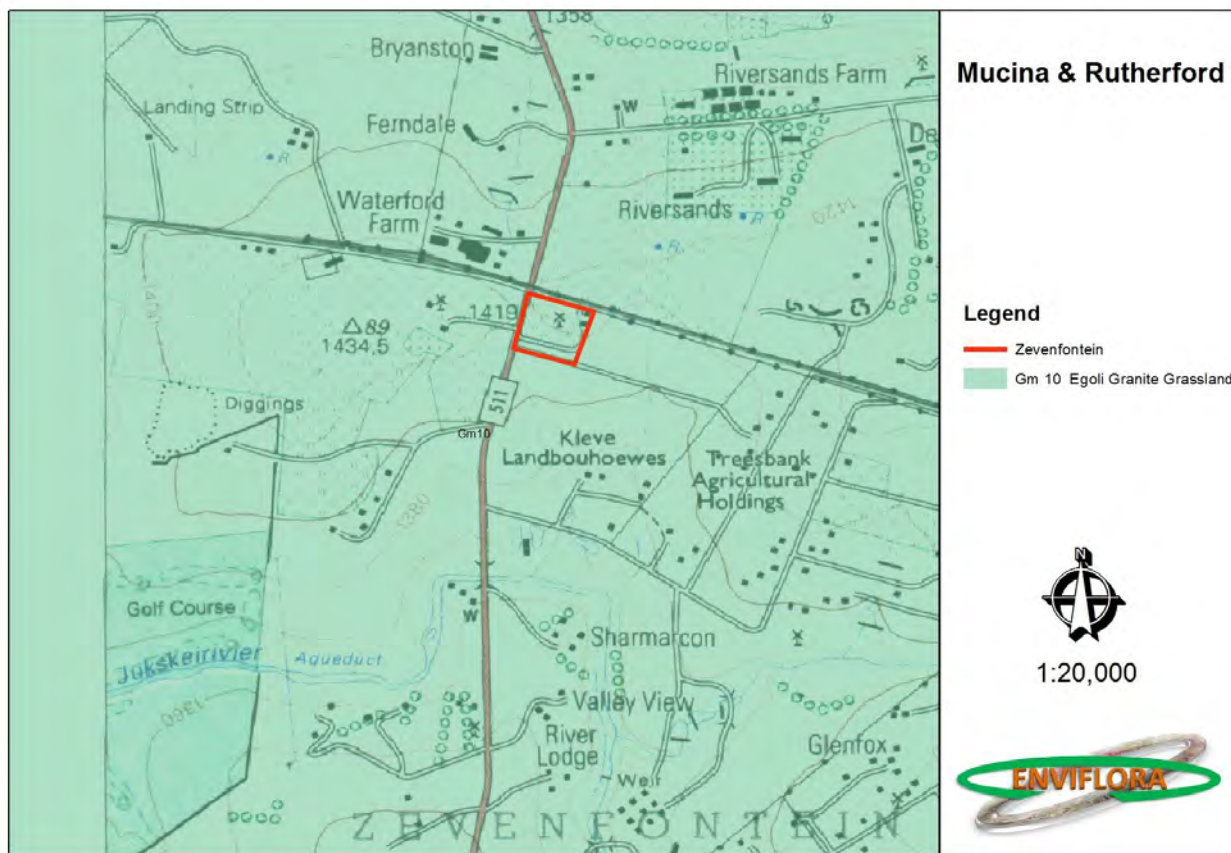


Figure 4: Vegetation Unit of the study site from Mucina and Rutherford (2006).

In terms of the National list of ecosystems that are threatened and in need of protection (GN. No. 1002 of 2011), the study site falls within the Endangered Egoli Granite Grassland.

3.4 Legislative Requirements

National Environmental Management Act (NEMA), 107 of 1998

NEMA requires that:

- “development must be socially, environmentally, and economically sustainable”,
- “disturbance of ecosystems and loss of biological diversity are avoided, or, where they cannot be altogether avoided, are minimised and remedied”, and
- “a risk-averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions”

NEMA states that “the environment is held in public trust for the people, the beneficial use of environmental resources must serve the public interest and the environment must be protected as the people’s common heritage”.

National Environmental Management: Biodiversity Act (NEMBA), 10 of 2004

In terms of NEMBA, the developer has a responsibility for:

- The conservation of endangered ecosystems and restriction of activities according to the categorisation of the area (not just by listed activity as specified in the EIA regulations),
- Promotion of the application of appropriate environmental management tools in order to ensure integrated environmental management of activities thereby ensuring that all development within the area are in line with ecological sustainable development and protection of biodiversity, and
- Limiting further loss of biodiversity and conserving endangered ecosystems.
- Adhering to all regulations and legislation promulgated as a result of the National Environmental Management: Biodiversity Act (NEMBA), 10 of 2004.

Furthermore, a person may not carry out a restricted activity involving a specimen of a listed threatened or protected species without a permit issued as per Chapter 7 of NEMBA.

Alien and Invasive Species Regulations, 2014 (NEMBA)

Alien and Invader plant species in South Africa are categorised according to one of the following categories:

- Prohibited Species: May not be introduced into the country.
- Category 1a Listed Invasive Species: those species that must be combatted or eradicated.
- Category 1b Listed Invasive Species: those species that must be controlled.
- Category 2 Listed Invasive Species: those species that require a permit to carry out a restricted activity within an area, as specified in the act / regulations.
- Category 3 Listed Invasive Species: those species that are subject to certain exemptions and prohibitions, as specified in the act / regulations.

National Water Act, 36 of 1998

The National Water Act provides for the protection of water resources, including protecting aquatic and associated ecosystems and their biodiversity and reducing and preventing pollution and degradation of water resources.

National List of Ecosystems that are threatened and in need of Protection, No 1002 of 2011.

A national list of threatened terrestrial ecosystems and provides supporting information to accompany the list, including the purpose and rationale for listing ecosystems, the criteria used to identify listed ecosystems, the implications of listing ecosystems, and summary statistics and national maps of listed terrestrial ecosystems. It also includes individual maps and detailed information for each listed ecosystem.

4 RESULTS AND EVALUATION

4.1 Broad vegetation types

For this purpose, information from Mucina and Rutherford (2006) were used. The study site falls within the Egoli Granite Grassland (Gm10). Tall grasses, usually *Hyparrhenia hirta* dominated grassland, with some woody species on rocky outcrops or rock sheets. The rocky habitats show a high diversity of woody species, which occur in the form of scattered shrub groups or solitary small tree

A list of expected common and dominant species in undisturbed vegetation includes the following (those with a "d" are considered to *be dominant*)

Graminoids: *Aristida canescens* (d), *A. congesta* (d), *Cynodon dactylon* (d), *Digitaria monodactyla* (d), *Eragrostis capensis* (d), *E. chloromelas* (d), *E. curvula* (d), *E. racemosa* (d), *Heteropogon contortus* (d), *Hyparrhenia hirta* (d), *Melinis repens subsp. repens* (d), *Monocymbium ceresiiforme* (d), *Setaria sphacelata* (d), *Themeda triandra* (d), *Tristachya leucothrix* (d), *Andropogon eucomus*, *Aristida aequiglumis*, *A. diffusa*, *A. scabrivalvis subsp. borumensis*, *Bewsia biflora*, *Brachiaria serrata*, *Bulbostylis burchellii*, *Cymbopogon caesius*, *Digitaria tricholaenoides*, *Diheteropogon amplexens*, *Eragrostis gummiflua*, *E. sclerantha*, *Panicum natalense*, *Schizachyrium sanguineum*, *Setaria nigristrostris*, *Tristachya rehmannii*, *Urelytrum agropyroides*.

Herbs: *Acalypha angustata*, *A. peduncularis*, *Becium obovatum*, *Berkheya insignis*, *Crabbea hirsuta*, *Cyanotis speciosa*, *Dicoma anomala*, *Helichrysum rugulosum*, *Justicia anagalloides*, *Kohautia amatymbica*, *Nidorella hottentotica*, *Pentanisia prunelloides subsp. latifolia*, *Pseudognaphalium luteo-album*, *Senecio venosus*.

Geophytic Herbs: *Cheilanthes deltoidea*, *C. hirta*. **Small Tree:** *Vangueria infausta*.

Tall Shrub: *Rhus pyroides*.

Low Shrubs: *Anthospermum hispidulum*, *A rigidum subsp. pumilum*, *Gnidia capitata*, *Helichrysum kraussii*, *Ziziphus zeyheriana*.

Succulent Shrub: *Lopholaena coriifolia*.

4.2 Vegetation of the Study Area

The study area is situated within the Egoli Granite Grassland (Endangered) in accordance with data from Mucina and Rutherford of 2006. The vegetation unit was adopted into the Government Notice 1002 National list of Threatened Ecosystems (2011) as described as Endangered.

The study site was found to comprise of transformed areas due to human intervention and demolished houses. The Entire study site has been transformed. Figure 5 below indicates the C-Plan 3.3 sourced from GDARD for the study site indicating it to be in Ecological Supported Area.

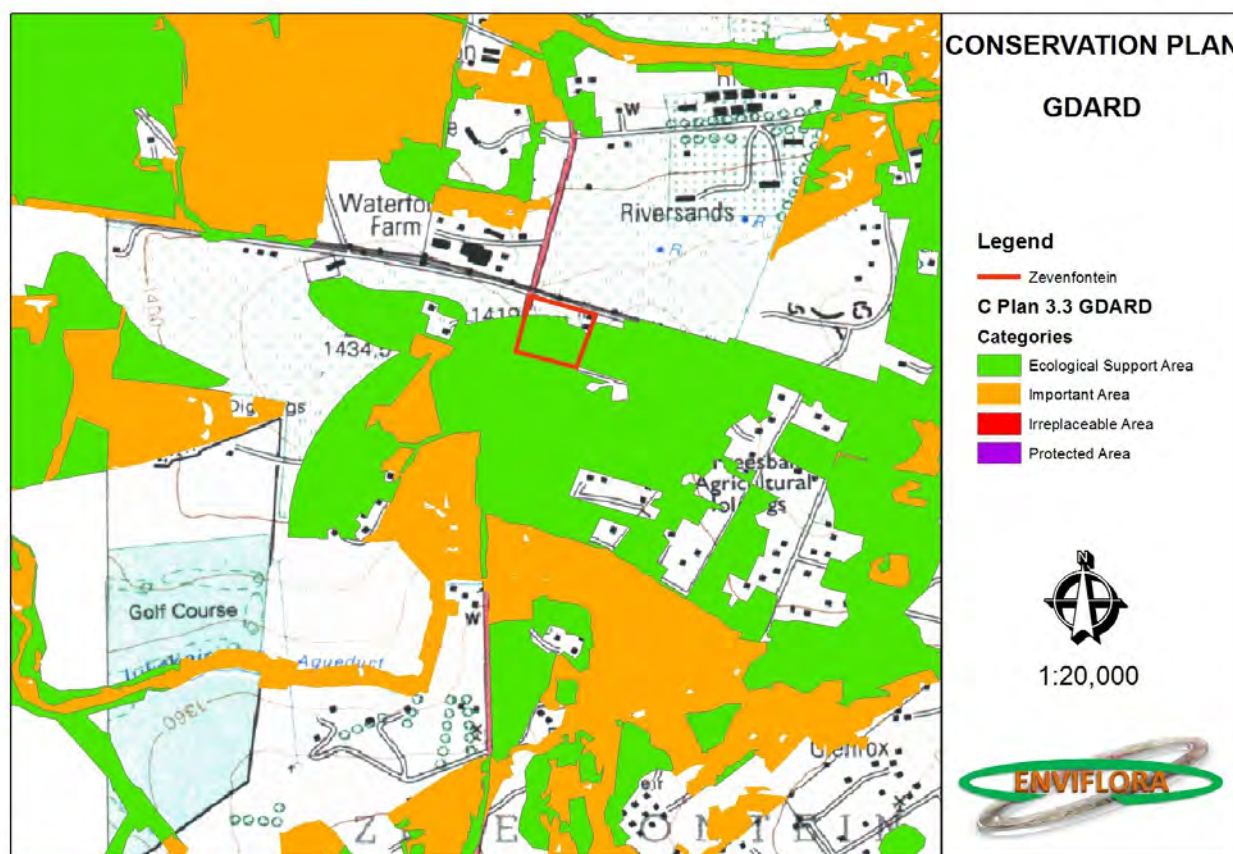


Figure 5: GDARD C-Plan 3.3.

Figure 6 below indicates the remaining extend of the endangered Egoli Granite Grassland as sourced from GDARD.

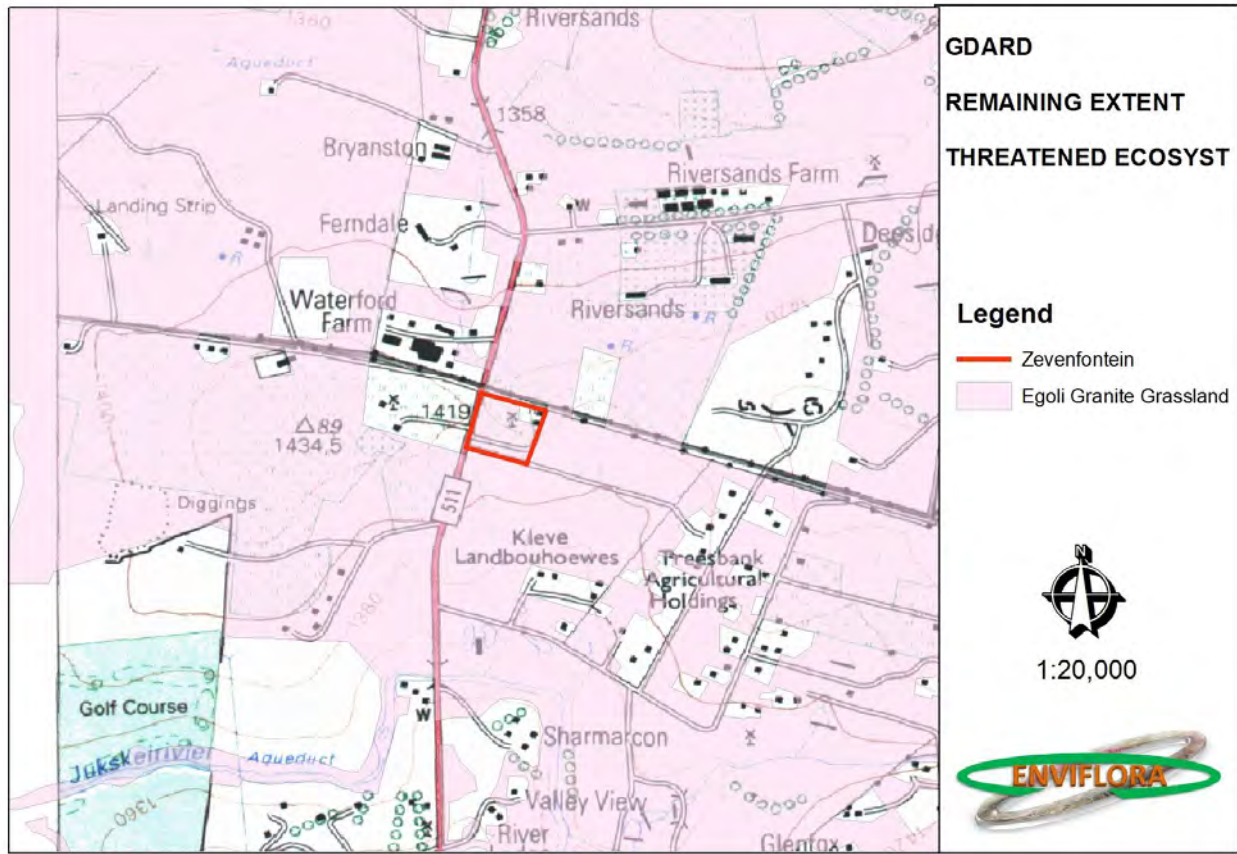


Figure 6: GDARD Threatened Ecosystem map

4.2.1 Transformed area

For the analysis of the study area, satellite imagery was used to identify areas clearly visibly transformed. Transformed areas for this study site comprises of areas no longer representing natural species and includes gardens, cultivated lands, houses and roads. Figure 7 below illustrates the transformed areas as seen from Google earth, as well as areas identified as transformed form the site visit.

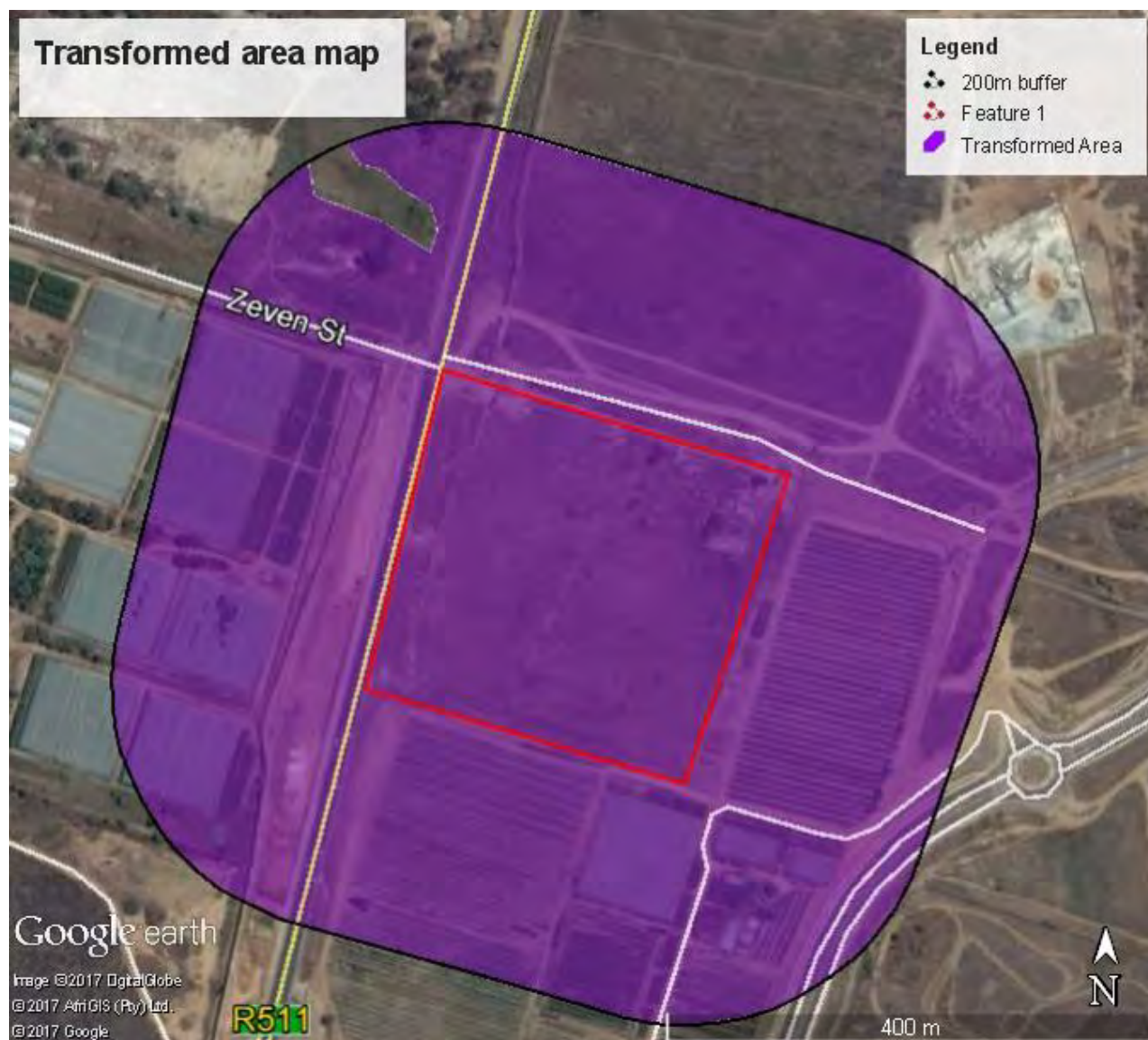


Figure 7: Areas clearly identifiable from Google earth as being transformed in purple.

As can be seen from Figure 8 and Figure 9 below, the historical transformation of the site, as indicated in purple in Figure 7, is the result of historic clearance for housing, gardening and infrastructure.



Figure 8: Transformed vegetation due to sloping



Figure 9: Transformed vegetation due to dumping and sloping



Figure 10: Transformed vegetation due to dumping



Figure 11: Transformed vegetation due to dumping

4.2.2 Indigenous and natural vegetation of the study site

None of the vegetation on site can be associated with the Egoli Granite Grassland vegetation unit. Only a small area in the buffer area has vegetation associated with the Egoli Granite Grassland. Vegetation cover is secondary vegetation.



Figure 12: Areas containing natural vegetation in yellow.

4.1.3 Red data plant species- confidential information not to be published

To determine the possibility of occurrence of red data or threatened plant species, historical data collected for the quarter degree grid was used as sourced from GDARD. **Error! Not a valid bookmark self-reference.** indicates species historically observed within 5 km from the study in green and occurrences of red data plants within the quarter degree cell in blue. The table also included the plants global IUCN category as well as the likelihood of occurrence of these plants to our specific study site, in terms of suitability. Orange data plants found on site is highlighted in Orange

Table 4: Red data species historically in the 2528CC

TAXON	FLOWERING SEASON	HABITAT DESCRIPTION	LATEST CONSERVATION STATUS **	PROBABILITY OF OCCURRENCE ***
<i>Adromischus umbraticola</i> subsp. <i>umbraticola</i>	September-January	Rock crevices on rocky ridges, usually south-facing, or in shallow gravel on top of rocks, but often in shade of other vegetation.	Near Threatened	Low –no rock crevices or rocky ridges ,
<i>Boophane disticha</i>	October – January	Dry grassland and rocky areas.	Declining	Low Site transformed
<i>Bowiea volubilis</i> subsp. <i>volubilis</i>	September-April	Shady places, steep rocky slopes and in open woodland, under large boulders in bush or low forest.	Vulnerable	Low – no steep rocky slopes onsite.
<i>Brachycorythis conica</i> subsp. <i>transvaalensis</i>	January-March	Short grasslands, hillsides, on sandy gravel overlying dolomite, sometimes also on quartzites; occasionally open woodland; 1000 - 1705m.	Vulnerable	Low – No Hillside
<i>Callilepis leptophylla</i>	August-January, May	Grassland or open woodland, often on rocky outcrops or rocky hillslopes.	Declining	Low – No rocky hillslopes and outcrops
<i>Ceropegia decidua</i> subsp. <i>pretoriensis</i>	November-April	Direct sunshine or shaded situations, rocky outcrops of the quartzitic Magaliesberg mountain series, in pockets of soil among rocks, in shade of shrubs and low trees, can be seen twining around grass spikes.	Vulnerable	Low –no rocky outcrops onsite, trees available for shade. Yet, very little grass.
<i>Cheilanthes deltoidea</i> subsp. <i>Silicola</i>	November-June	Southwest-facing soil pockets and rock crevices in chert rock.	Vulnerable	Low- No chert rock

TAXON	FLOWERING SEASON	HABITAT DESCRIPTION	LATEST CONSERVATION STATUS **	PROBABILITY OF OCCURRENCE ***
<i>Cleome conrathii</i>	March-May; December-January	Stony quartzite slopes, usually in red sandy soil, grassland or open to closed deciduous woodland, all aspects.	Near Threatened	Medium- No red sandy soils, grasslands and some woodland vegetation
<i>Crinum macowanii</i>	October-January	Grassland, along rivers, in gravelly soil or on sandy flats.	Declining	Medium – no grassland and rivers
<i>Dicliptera magaliesbergensis</i>	??	Forest, Savanna - Riverine forest and bush	Vulnerable	Low- Recorded in Onderstepoort nature reserve. No riverine areas
<i>Drimia sanguinea</i>	August-December	Open veld and scrubby woodland in a variety of soil types.	Near Threatened	Moderate.
<i>Eucomis autumnalis</i>	November-April	Damp, open grassland and sheltered places.	Declining	Low – No open grasslands, no damp areas.
<i>Gunnera perpensa</i>	October-March	In cold or cool, continually moist localities, mainly along upland stream banks.	Declining	Low – no wetland / grassland onsite. Needs permanent valley bottom wetland conditions
<i>Habenaria barbertoni</i>	February-March	In grassland on rocky hillsides.	Near Threatened	Medium- Rocky hillside on site
<i>Habenaria kraenzliniana</i>	February-April	Terrestrial in stony, grassy hillsides, recorded from 1000 to 1400m.	Near Threatened	Medium- Rocky hillside on site
<i>Habenaria mossii</i>	March-April	Open grassland on dolomite or in black sandy soil.	Endangered	Low- no open grassland, no black soils
<i>Holothrix randii</i>	September-January	Grassy slopes and rock ledges, usually southern aspects.	Near Threatened	Low- No rock ledges, no grassy slopes.

TAXON	FLOWERING SEASON	HABITAT DESCRIPTION	LATEST CONSERVATION STATUS **	PROBABILITY OF OCCURRENCE ***
<i>Hypoxis hemerocallidea</i>	September-March	Occurs in a wide range of habitats, from sandy hills on the margins of dune forests to open rocky grassland; also grows on dry, stony, grassy slopes, mountain slopes and plateaux; appears to be drought and fire tolerant.	Declining	Medium- various
<i>Ilex mitis var. mitis</i>	October-December	Riverbanks, streambeds, evergreen forests.	Declining	Medium – no forests onsite.
<i>Melolobium subspicatum</i>	September-May	Undulating grasslands in damp, moist areas; the plants grow in full sun in damp depressions, near pans or on the edges of streams; grassland, riverbanks, vleis.	Vulnerable	Low-, no damp depressions, no pans
<i>Pearsonia bractiata</i>	December-April	Plants in Gauteng and North West occur in gently sloping Highveld grassland, while those in the Wolkberg were collected from steep wooded slopes and cliffs in river valleys.	Near Threatened	Low- no Sloping grasslands

** Conservation Status in accordance with IUCN Version 3.1 and / or GDARD Red List and Orange List Plant Species Recorded in Gauteng (February 2009) and / or National Red List of South African Plants (February 2009).

*** Probability of Occurrence as follows: LOW – no suitable habitats occur on site / habitats on site do not match habitat description for species. MODERATE – habitats on site match general habitat description for species (e.g. grassland), but microhabitat requirements are absent (e.g. rocky grassland on shallow soils overlying dolomite). HIGH – habitats on site match very strongly the general and microhabitat description for the species, DEFINITE – species found on site.

From the 21 species historically recorded from the quarter degree grid cell, 0 of them are deemed to have a High probability of occurrence on the study site. 7 species had a moderate probability of occurrence. This does not mean that the others cannot occur on site as these species are all season bound. Some of the species are small and inconspicuous, especially during their dormant season, and their presence cannot be ruled out, especially since 2016 has been a dry year.

4.1.4 Vegetation found on site

Species encountered on site and directly adjacent is listed below.

TABLE 5: Checklist of Vegetation found onsite during March 2017.

GROWTH FORM	SCIENTIFIC NAME	COMMENT(S)
Trees	<i>Celtis africana</i>	
	<i>Melia azedarach</i>	NEMBA Category 1b
	<i>Pinus Pinaster</i>	NEMBA Category 2
	<i>Prunus persica</i>	
Shrub	<i>Asparagus sp.</i>	
	<i>Morus alba</i>	NEMBA Category 3
Herbs	<i>Seriphium plumosum</i>	
	<i>Argemone ochroleuca</i>	NEMBA Category 1b
	<i>Bidens pilosa</i>	Black Jack
	<i>Cosmos bipinnatus</i>	
	<i>Conyza canadensis</i>	
	<i>Conyza bonariensis</i>	Flax-leaf fleabane
	<i>Datura stamonium</i>	NEMBA Category 1b
	<i>Gomphrena celosiodes</i>	Mierbossie
	<i>Helichrysum nudifolium</i>	
	<i>Hypoxis iridifolia</i>	
	<i>Hypoxis rigidula</i>	
	<i>Iledebouria ovatifolia</i>	
	<i>Pseudognaphalium luteo-album</i>	Jersey cudweed
	<i>Tagetes minuta</i>	
	<i>Verbena bonariensis</i>	
Grasses, Reeds and Sedges	<i>Eragrostis curvula</i>	
	<i>Hyparrhenia hirta</i>	
	<i>Hyparrhenia tamba</i>	

The above mentioned species were recorded within the study site and directly adjacent to the site. Out of the 24 species observed on the site, 5 of the plants were NEMBA listed plants and are subject to actions as stipulated under the NEMBA Act. Please note that the species count is deemed Low and is a result of the study site being **transformed and burned**. This had a large effect on species composition.

4.1.5 Alien and Invasive plant species

The list of Alien and Invasive plant species are presented. A total of 5 plants were identified on and around the site that is listed in the Alien and Invasive Species Regulations of 2014 (NEMBA) which is in need of management.

- 3 NEMBA Category 1b plants were identified and must be controlled.
- 1 NEMBA Category 2 plants were identified and must be controlled and if not eradicated, require a permit to carry out a restricted activity within an area, as specified in the act / regulations.
- 1 NEMBA Category 3 plants were found in and around the site which need to be controlled

4.2 Sensitivity Analysis

Areas containing untransformed natural vegetation of conservation concern, high diversity, habitat complexity, red list organisms and / or systems vital to sustaining ecological function are considered sensitive. In contrast, areas that are transformed and have little importance for ecological functioning are considered to be of low sensitivity.

For the sensitivity analysis, the following is of importance:

- The study site is not situated in any centres of endemism (Van Wyk and Smith, 2001).
- The study site is not located within a provincial protected area.
- The study site is situated in an area classified as endangered ecosystems if still intact and untransformed.
- The initial survey determined and confirmed that none of the protected tree species are present on site: *Acacia erioloba*, *Boscia albitrunca*, *Combretum imberbe*, *Pittosporum viridiflorum*, *Prunus Africana* and *Sclerocarya birrea subsp. caffra*.
- Areas already transformed by historical activities within the proposed footprint area are a result of housing, agriculture, dumping, sloping and roads.
- GDARD biodiversity Guidelines stipulates that all good condition natural vegetation must be designated as ecologically sensitive. The location and extent of all primary grassland (even if it is in a poor/degraded condition) must be mapped and designated as ecologically sensitive.

Using the methodology as indicated in Table 1 in Section 2.6, a sensitivity rating of Medium was given for the northern most part of the study site. A sensitivity rating of Medium to low sensitivity was given to the rest of the site. This is due to the following:

Medium to low:

- Degraded or disturbed indigenous natural vegetation. May also include secondary vegetation in an advanced state of development in which habitat is still ecologically functional.

4.2.1 Sensitivity Mapping

The sensitivity map was drawn up for the site to determine areas of more sensitivity. The map corresponds with the methods of determining the sensitivity of the site as described in Section 2.6, Table 3 of this report.

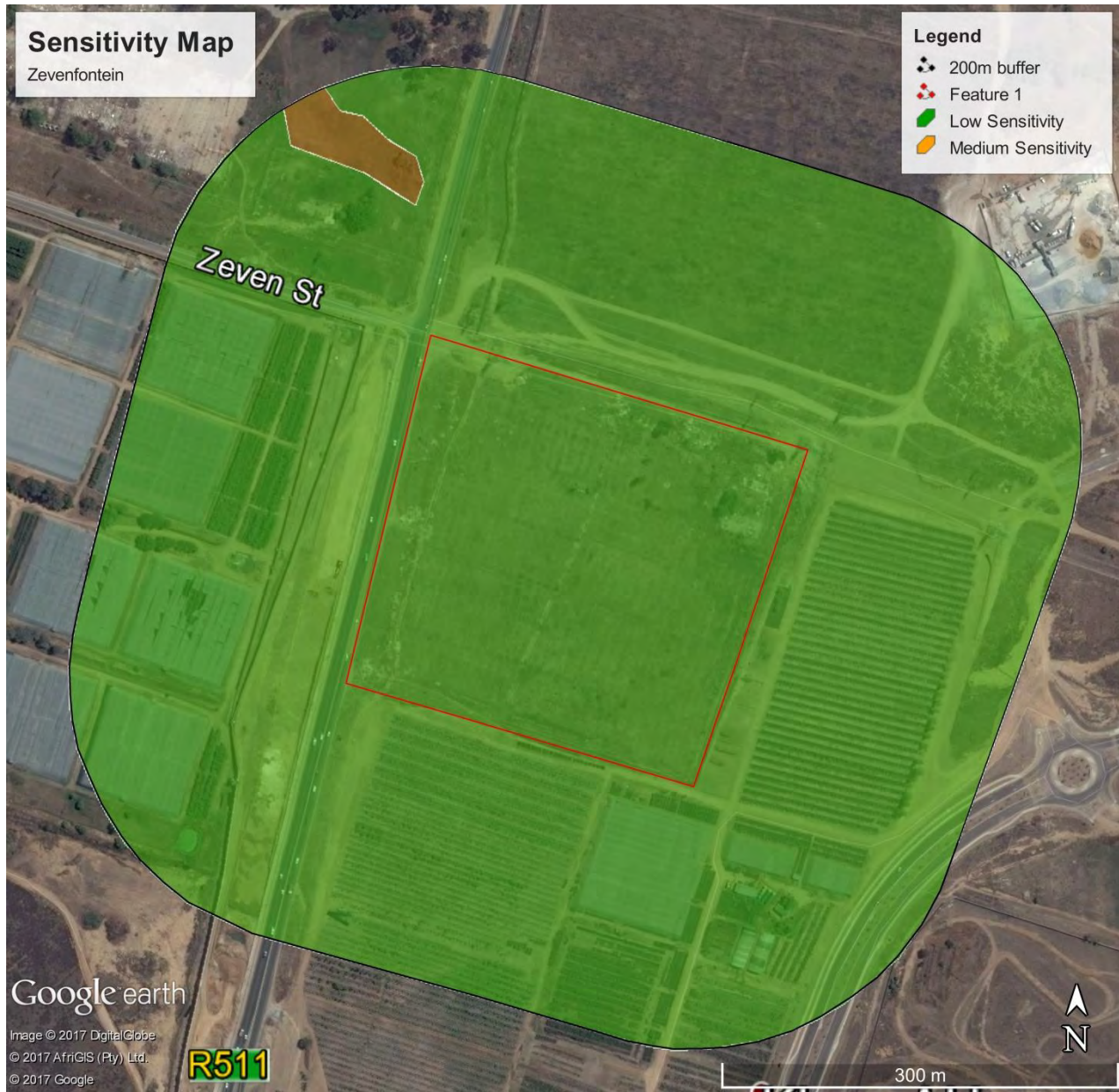


Figure 13: Sensitivity map

4.3 Impact Assessment

Risks identified that would result from the **construction phase** would be:

- Clearance of land for construction purposes;
- Fencing;
- Construction camps;
- Storage of materials.

Risks identified that is associated with the **operational phase** are as follows:

- Future need for extensions.

4.3.1 Impacts of indigenous natural vegetation

The vegetation type on site is classified as endangered and has a wide distribution. High sensitivity areas exist within the study area and the 200m buffer around the study site, as well as some areas of medium sensitivity.

IMPACT		MAGNITUDE	REVERSIBILITY	EXTENT	DURATION	PROBABILITY	SIGNIFICANCE (E+D+M+R)(P)
Removal of sensitive vegetation on project footprint	Pre-mitigation	1	3	1	3	3	24 Low
	Post-mitigation	1	3	1	3	3	24 Low
Removal of sensitive vegetation in the 200m buffer	Pre-mitigation	3	5	2	4	3	42 Moderate
	Post-mitigation	1	3	1	3	3	24 Low
Vegetation removal and soil disturbance caused by general construction activities on site	Pre-mitigation	3	3	1	3	4	40 Moderate
	Post-mitigation	1	3	1	3	3	24 Low

Vegetation destruction and disturbance during maintenance.	Pre-mitigation	2	3	1	4	1	10 Low
	Post-mitigation	2	3	1	4	1	10 Low
Soil contamination, vegetation loss and vegetation disturbance due to fuel spills	Pre-mitigation	2	2	1	4	4	36 Moderate
	Post-mitigation	2	2	1	4	3	27 Low
Vegetation and habitat disturbance due to the accidental introduction of alien species	Pre-mitigation	2	3	1	4	3	30 Moderate
	Post-mitigation	2	2	1	4	3	27 Low

Proposed Mitigation measures

- Limit clearance of vegetation as far as possible within the medium sensitivity areas.
- The unnecessary clearance of indigenous vegetation should be avoided as far as possible
- Maintenance should not extend beyond the proposed study site.
- Storage of fuel and servicing of construction vehicles should be done off site, on a cement slab.
- Declared alien species should be prevented from occurring on site, as disturbance in natural habitat and compaction of soil usually leads to the establishment of alien plant species.

4.3.2 Impacts on threatened plants

Plants are vulnerable to development as they cannot move out of the way of construction activities. Threatened species include those classified as critically endangered, endangered or vulnerable. For any other species, the loss of individuals will not lead to the conservation status of such species. In the case of threatened plant species, loss of populations or individuals could lead to a change in conservation status. No threatened plants occur on site. There is no orange or red data species on site.

IMPACT		MAGNI-TUDE	REVERSI-BILITY	EXTENT	DURATION	PROBA-BILITY	SIGNIFICANCE (E+D+M+R)(P)
Removal / destruction of protected species	Pre-mitigation	2	3	1	5	2	22 Low
	Post-mitigation	2	3	1	5	2	22 Low

Proposed Mitigation measures

- The unnecessary clearance of indigenous vegetation should be avoided.
- Maintenance should not extend beyond the proposed study site.
- No clearance of any areas containing vegetation around the site not directly affected by the proposed development.
- No clearance of vegetation within the medium sensitivity areas as these areas is more likely to contain red and orange listed plants.

4.3.2 Impacts of Alien invasive plants

Indigenous plants are easily replaced or outcompeted by alien invasive plant species. This is mostly the case where either ornamental plants are introduced into an area or where human transformation of indigenous vegetation occurred. This is clear on this site where 5 Alien and invasive plants were recorded.

IMPACT		MAGNI-TUDE	REVERSI-BILITY	EXTENT	DURATION	PROBA-BILITY	SIGNIFICANCE (E+D+M+R)(P)
Presence and continue presence of alien invasive plant species	Pre-mitigation	5	4	4	4	3	51 High
	Post-mitigation	2	3	1	5	2	22 Low

Proposed Mitigation measures

- The unnecessary clearance of indigenous vegetation should be avoided.
- Maintenance should not extend beyond the proposed study site.
- Development of an Alien Invasive Management plan after the Construction phase has been completed.
- Implementation of the Alien and Invasive plant management plan.

5 CONCLUSION

After the site visits was conducted on the site, it was clear that a large part of the site has been degraded due to housing, agriculture and development of access roads. 100% of the site has been irreversibly transformed from the Egoli Granite Grassland and vegetation on site is predominantly alien and invasive plants, and secondary vegetation.

None of the vegetation on site resembles vegetation associated with the endangered Egoli Granite Grassland vegetation and is rated as having a Medium to Low sensitivity as per the GDARD guidelines and Assessment methodology presented in Section 2.6 of this report.

The area that contains indigenous vegetation associated with the Egoli Granite Grassland is isolated as per the sensitivity map presented in Figure 13 and is outside the proposed development area.

A total of 5 plants were identified on and around the site that is listed in the Alien and Invasive Species. These plants need to be controlled in accordance with an Alien Invasive Plant management plan.

6 RECOMMENDATIONS

The following recommendations are made with regards to the proposed development:

- (i) An Environmental Control Officer must be appointed to oversee mitigation measures during construction and will be responsible for the monitoring and auditing of the contractor's compliance.
- (ii) Areas to be disturbed by construction activity as well as areas for ancillary activities such as stock piles, storage yards or site offices must be clearly demarcated in already disturbed areas or areas where they will cause minimal disturbance. The extent of the areas must be minimised and demarcated by preferably using steel droppers and nylon rope between the markers.
- (iii) Construction activities and materials must at all times be contained within the demarcated sites.
- (iv) Vegetation clearance of indigenous vegetation should be limited.
- (v) Areas of medium sensitivity to be avoided.
- (vi) Only indigenous plant species, preferably species that are indigenous to the natural vegetation of the area, should be used for landscaping in communal areas. As far as possible, plants naturally growing on the development site, but would otherwise be destroyed during clearing for development purposes, should be incorporated into landscaped areas.

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SPECIALIST REPORT

A WETLAND VERIFICATION

PROPOSED RIVERSIDE VIEW EXTENTION 76 TOWNSHIP DEVELOPMENT
ON PORTION 131 (A PORTION OF PORTION 2) OF THE FARM
ZEVENFONTEIN 407 JR

Prepared for

Silverlakes Trading 511 (Pty) Ltd

Prepared by



Author: C. Muller

Review: A. van den Berg

DATE: SEPTEMBER 2017



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TABLE OF CONTENTS

LIST OF TABLES	ii
LIST OF FIGURES	ii
LIST OF ABBREVIATIONS AND UNITS OF MEASURE	ii
1 INTRODUCTION AND LOCALITY	1
2 SCOPE OF WORK	1
3 LIMITATIONS AND ASSUMPTIONS	1
4 FINDINGS AND RESULTS	3
4.1 SITE DESCRIPTION	3
4.2 VERIFICATION OF WETLANDS ON SITE	3
4.3 DESKTOP REVIEW OF WETLANDS IN THE BROADER AREA	4
4.4 SENSITIVITY MAPPING	4
5 CONCLUSIONS AND RECOMMENDATIONS.....	5

LIST OF TABLES

Table 1: Buffer Requirements as per GDARD, 2014	5
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LIST OF FIGURES

Figure 1: Regional Locality of the proposed township development site.....	2
Figure 2: Typical representation of the study site	3
Figure 3: Dumping of building rubble on site	4
Figure 4: Surface Water Features surrounding the study site	6
Figure 5: Aquatic sensitivity of the study site	7

LIST OF ABBREVIATIONS AND UNITS OF MEASURE

DWAF	Department of Water Affairs and Forestry
EMP	Environmental Management Plan
GDARD	Gauteng Department of Agriculture and Rural Development
m	Metres
NFEPA	National Freshwater Ecosystem Priority Areas
SMME	Small, Medium and Micro Enterprise

1 INTRODUCTION AND LOCALITY

The Proponent proposes to establish a Township Development on Portion 131 (a portion of Portion 2) of the Farm Zevenfontein 407 JR. The proposed development falls within the jurisdiction of the City of Johannesburg Metropolitan Municipality and is situated on the corner of William Nicol Drive and Christiaan Street. **Figure 1** provides an indication of the property boundaries within its regional setting. The Township Development, which will be known as Riverside View Extension 76, will comprise the establishment of a mixed use township which includes 2 erven zoned “Special” for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail.

2 SCOPE OF WORK

The Proponent has appointed ENVIFLORA, as independent specialists, to undertake a Wetland Verification Study for the proposed development project. As the potential exists for any development to impact on its surrounding water environment an appropriate assessment to determine sensitive water receptors (if any) is required as part of the Environmental Authorisation Process.

The Scope of Work followed for this assessment included the following aspects:

- Desktop review of available information;
- Site investigation to confirm desktop review findings;
- Delineation of aquatic features, if identified;
- Assessment of potential impacts to the surface water environment; and
- Recommendation of mitigation measures.

3 LIMITATIONS AND ASSUMPTIONS

While every care is taken to ensure that the data presented is qualitatively adequate, inevitably conditions are never of such a nature that the data is entirely satisfactory. It should be noted that the findings of this study were largely based on a single site visit within which to identify wetland indicators. Visibility of wetland indicators vary throughout seasons and it is therefore noted that, if in future, any further indicators are found on site, the author cannot be held liable for conclusions deducted in good faith based on the available resources and information provided at the time of the study. Furthermore, this study, only outlines the surface water environment directly related to the study site on which development will take place and does not include wetlands or drainage lines outside of this scope. It is important that this report be viewed and acted upon with these limitations and assumptions in mind.

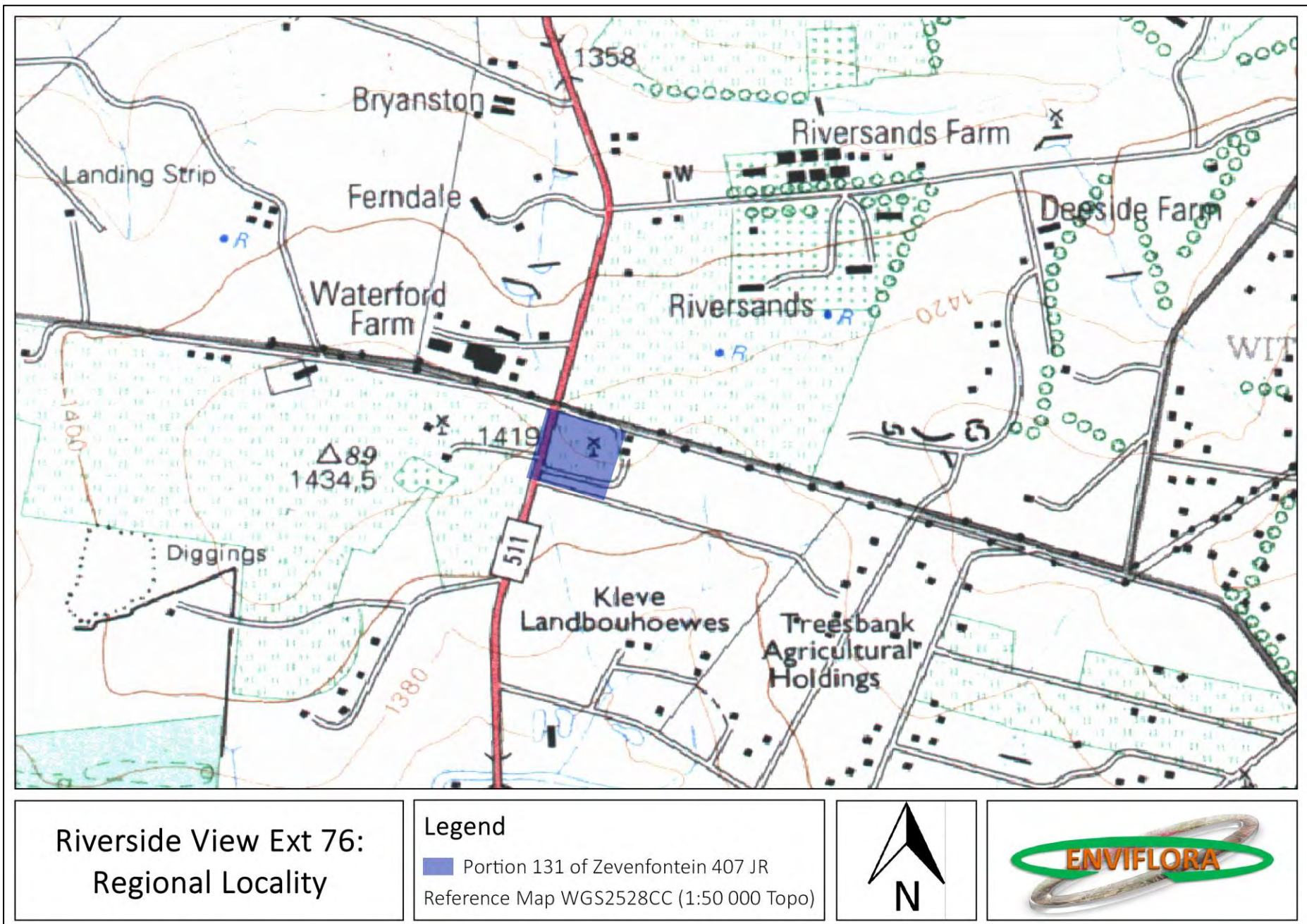


Figure 1: Regional Locality of the proposed township development site

4 FINDINGS AND RESULTS

4.1 SITE DESCRIPTION

The greater area surrounding the study site is characterised by development projects with extensive construction already underway in the area. As indicated in the Township Application for the proposed development, the City of Johannesburg Metropolitan Municipality have investigated the development potential of the area and has earmarked the area east of William Nicol Drive, including the application site as a Specialist SMME Regional Node, promoting high intensity mixed use development.

The proposed development site has significantly been impacted on and has, recent to the site investigation, been completely burnt. Evidence of a recently established informal living configuration on the vacant site were observed. The old homestead has been broken down into rubble. Dumping of building rubble and other solid waste is evident on site. The entire site is characterised by groovelike rows, which seems to have been scraped this way by machinery. The purpose of this however is unknown.

4.2 VERIFICATION OF WETLANDS ON SITE

No evidence of wetland (or alternative surface water features) were found on site. Contrary to its proposed name, Riverside View Ext 76 completely lacks surface water features. The figures below provide an indication of the study site.



Figure 2: Typical representation of the study site



Figure 3: Dumping of building rubble on site

4.3 DESKTOP REVIEW OF WETLANDS IN THE BROADER AREA

As already mentioned, no wetland areas or other surface water features are found within the study site (Portion 131 of the Farm Zevenfontein 407 JR). A desktop review of the greater area furthermore revealed that no wetland areas are found within a 500 m radius from the study site. However, non-perennial drainage lines are indeed found within this extended study area. These non-perennial drainage ways have significantly been impacted on by anthropogenic activity within the area. **Figure 4** provides an indication of wetland and drainage areas found within the greater region.

4.4 SENSITIVITY MAPPING

Portion 131 of the Farm Zevenfontein 407 JR is not sensitive in terms of wetland receptors. Neither is the 500 m extended study area. The drainage lines found within the 500 m extended study area is non-perennial in nature and not considered pristine based on existing impacts to these drainage lines. For the purpose of this study they have thus been considered to have a moderate sensitivity.

The GDARD (Gauteng Department of Agriculture and Rural Development) Minimum Requirements for Biodiversity Assessments (GDARD, 2014) specifies certain sensitivity mapping rules for Biodiversity Assessments. Indicated in **Table 1** below are the buffer requirements as per the GDARD minimum requirements.

Table 1: Buffer Requirements as per GDARD, 2014

	Wetlands	Riparian Areas
Inside urban edge	30 m	32 m
Outside urban edge	50 m	100 m

Based on the above table, the non-perennial drainage lines within the extended 500 m study area should be provided with a 32 m buffer zone. However, a 50 m buffer zone is possible and has therefore been indicated as such in **Figure 5**.

5 CONCLUSIONS AND RECOMMENDATIONS

A summary of the main findings is listed below:

- The greater area surrounding the study site is characterised by development projects with extensive construction already underway in the area.
- The proposed development site has significantly been impacted on and has, recent to the site investigation, been completely burnt.
- No evidence of wetland (or alternative surface water features) were found on site.
- A desktop review of the greater area furthermore revealed that no wetland areas are found within a 500 m radius from the study site.
- However, non-perennial drainage lines are indeed found within this extended study area. These non-perennial drainage ways have significantly been impacted on by anthropogenic activity within the area.
- Portion 131 of the Farm Zevenfontein 407 JR is not sensitive in terms of wetland receptors.
- Neither is the 500 m extended study area, except for the non-perennial drainage lines which are deemed to have a moderate sensitivity.

Although no permanent wetland/drainage areas occur within the study site, it is recommended that appropriate Storm Water Management be implemented as part of development. Storm Water Management structures should be designed to maximise the return of clean storm water towards the natural drainage areas within the extended 500 m study area.

The Environmental Management Plan (EMP) for the proposed development should address good waste management practices, guidelines for the storage, handling, use and disposal of waste, etc. This should be done to ensure that runoff generated on site stays clean, thus preventing contaminated runoff from reaching natural drainage ways within the extended 500 m study site.

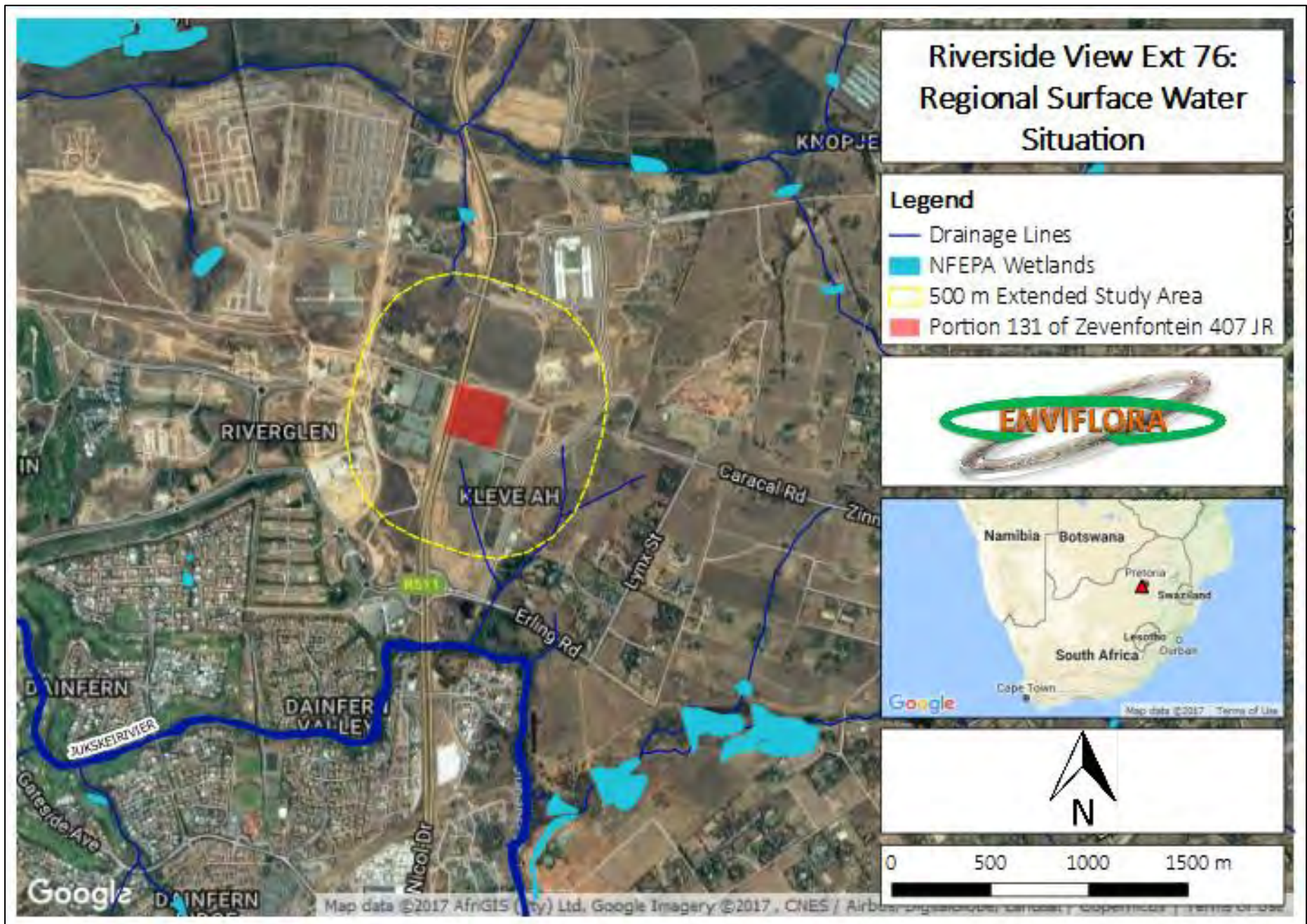


Figure 4: Surface Water Features surrounding the study site

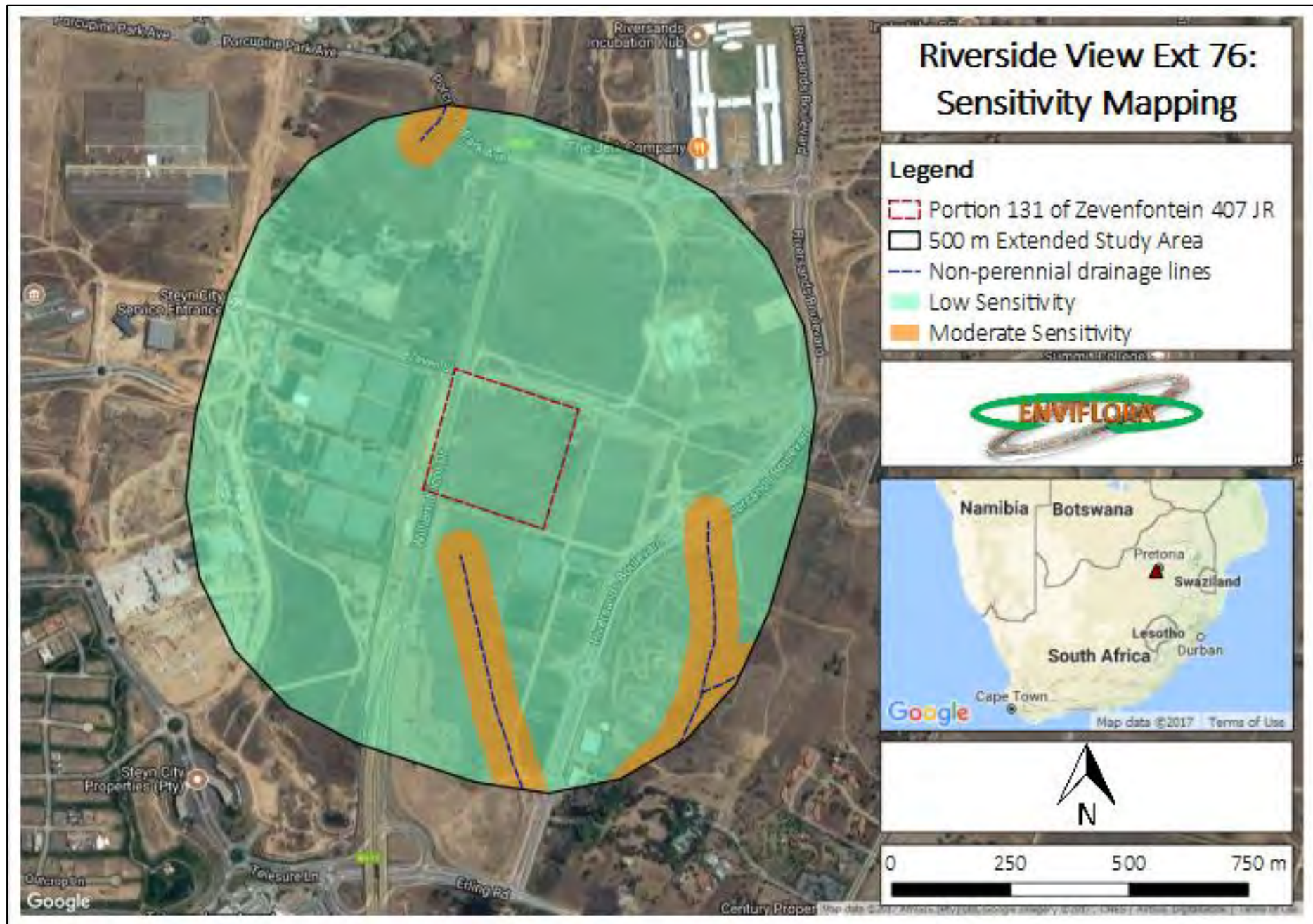


Figure 5: Aquatic sensitivity of the study site

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Appendix H: EMPR

Attached



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PROPOSED TOWNSHIP DEVELOPMENT ON PORTION 131 (A PORTION OF PORTION
2) OF THE FARM ZEVENFONTEIN 407-JR, GAUTENG PROVINCE
(Gaut 002/16-17/E0267)

ENVIRONMENTAL MANAGEMENT PROGRAMME

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- EAP: P.N. van der Merwe (Director)**
- Expertise: Environmental Impact Assessments in Land-use and Infrastructure Development.
 - Years of experience: 25. Qualifications: B.Sc. Hons. Environmental Management PU for CHE.
- EAP: Rowan van Tonder**
- Expertise: Currently involved with various applications for activities under the National Environmental Management Act (NEMA) (Act 107 of 1998), Mineral and Petroleum Recourses Development Act 2002 (Act No. 28 of 2002), and National Environmental Management: Waste Act, 2008 (Act 59 of 2008).
 - Years of experience: 9. Qualifications: M.Sc. Botany (Conservation Management), B.Sc. Hons. Physical Geography - Environmental Management at TUKS. (For Extended Details, See Appendix 6 - EAP CV).

GENERAL TERMS AND ABBREVIATIONS:

Audit	Regular inspection and verification of implementation of the EMPr
Bund	A sealed enclosure under or around a storage facility to contain any spillage
Batch plant	Concrete or plaster mixing facility and associated equipment and materials
Contractor	Principal persons or company undertaking the construction of the development
Development site	Boundary and extent of development works and infrastructure
Engineer	Person who represents the client and is responsible for enforcing the technical and contractual requirements of the project
ECO	Environmental Control Officer: - Person tasked with monitoring implementation of the EMPr during construction
Emergency situation	An incident, which potentially has the ability to significantly impact on the environment, and which could cause irreparable damage to sensitive environmental features. Typical situations amongst others are: <ul style="list-style-type: none"> • Large spills of petroleum products and lubricants on site, • Potential damage, erosion and slumping of unstable slopes, • Indiscriminate dumping of construction waste on site, and accessing exclusion zones
RE/PM	Resident Engineer/Project Manager: Person representing the Engineer on site
BAR	Basic Assessment Report
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EMPr	Environmental Management Program
GDARD	Gauteng Department of Agriculture and Rural Development
NEMA	National Environmental Management Act, 1998 (Act 107 of 1998)

TABLE OF CONTENTS

1. INTRODUCTION.....	6
2. PROJECT DESCRIPTION	7
3. DESCRIPTION OF THE ENVIRONMENTAL ASPECTS OF THE ACTIVITY	7
4. SENSITIVITY MAP.....	15
5. DESCRIPTION OF THE IMPACT MANAGEMENT OBJECTIVES FOR ALL PHASES OF THE DEVELOPMENT.....	17
5.1 Recommendations applicable to the planning and design stage:	17
5.1.1 Contamination of surface water/soil through storm water run-off from hard or paved surfaces	18
5.1.2 Visual and aesthetic impacts of the building structure	18
5.1.3 Waste management on site	19
5.2 Impact mitigation during the construction phase:	19
5.2.1 Management of impacts on vegetation cover and faunal habitats.....	21
5.2.2 Soil stability and storm water management.....	22
5.2.3 Visual and aesthetic quality.....	25
5.2.4 Stockpiles and general storage of building material and equipment.....	26
5.2.5 Community or public safety.....	27
5.2.6 Waste disposal and management.....	28
5.2.7 Dust suppression	29
5.2.8 Noise	30
5.2.9 Vehicle Maintenance and Fuel Storage	30
5.2.10 Archaeology and Cultural Sites	31
5.2.11 Construction camp establishment	32
5.2.12 General rehabilitation of the construction site.....	33
5.2.13 Stockpile Areas	33
5.2.14 Rehabilitation of Construction Camps.....	33
5.2.15 Re-vegetation Process.....	34
5.3 Operational phase:.....	35
5.3.1 Waste Management of domestic solid waste	35
5.3.2 Water usage	35
5.3.3 Noise impact management	36
5.3.4 Compliance to standards	36
5.3.5 General provisions.....	36
5.3.6 Erosion Control	37
5.4 Closure phase.....	37
6. PROPOSED MECHANISMS FOR MONITORING	37



7. ENVIRONMENTAL AWARENESS PLAN 40

 7.1 Training programmes: 40

 7.2 Monitoring of awareness 40

8. RECOMMENDATION FROM SPECIALISTS & STAKEHOLDERS..... 40

 8.1 Heritage Impact Assessment:..... 40

 8.2 Vegetation Survey: 42

 8.3 Wetland Verification:..... 43

9. A TABULAR VERSION OF ENVIRONMENTAL ASPECTS, IMPACTS, MITIGATION AND PERSONS RESPONSIBLE..... 45

10. COMPLYING, REMEDYING, AND CONTROLLING ENVIRONMENTAL POLLUTION INCIDENTS AND CAUSES..... 70

1. INTRODUCTION

This Environmental Management Programme (EMPr) describes impact mitigation measures to be implemented during the construction and operation phases of the proposed township development (known as the 'Development' from here on) to be established on Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR, Gauteng Province.

The careful implementation and management of activities on site, during the entire process of project construction and operation, is vitally important. Focus should be placed on the activities to occur on the site of the proposed development; however, consideration of the adjacent environment (socially and ecologically) is equally important. The mitigation measures represented in this EMPr should not be seen as static measures, but rather as methodologies that can be updated and improved during implementation, as and when site conditions become clearer. However, this EMPr sufficiently serves to provide the most practicable methods to promote sound environmental management during the construction and operational phases of the development.

The measures and principles are provided to assist placing impacts identified in another perspective - more towards the firm potential of mitigating the impacts during the development and implementation of the project. But this, as already mentioned, also implies that during the course of the project certain adaptations can be made or will be eminent during the construction implementation period. These adaptations will be the result of the EMPr monitoring exercise that is planned to take place during the construction period. The EMPr subsequently is an on-site working and dynamic document.

This section of the report provides recommendations on matters relating to the impact of the development on the physical environment, the biological environment and the social environment (of the site and study area) by describing mitigation measures that are to be implemented.

The following applicable legislation, policies and/or guidelines were considered in the Basic Environmental Impact Assessment Report and helped to formulate this EMPr:

- National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended);
- R. 982 National Environmental Management Act (107/1998): Environmental Impact Assessment Regulations, 2014;

- Gauteng Provincial Environmental Management Framework (GPEMF).

2. PROJECT DESCRIPTION

The site is located on the corner of Zeven St. and the R511 in Kleve AH, just south of Diepsloot and north of Dainfern; within the City of Johannesburg Municipality. The locality of the proposed development is on Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407-JR: Latitude: -25.969693°; Longitude: 28.017640° (entrance to the site).

The establishment of a mixed use township which includes 2 erven zoned "Special" for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail on Portion 131 of the farm Zevenfontein 407-JR (Riverside View Extension 76).

The township will comprise of 2 erven (to be consolidated), subject to the restrictive measures listed below:

Zoning	"Special"
Primary rights	High density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail.
Coverage	80%
Floor area ratio	2.7
Height restriction	6 storeys
Density	120 du/ha

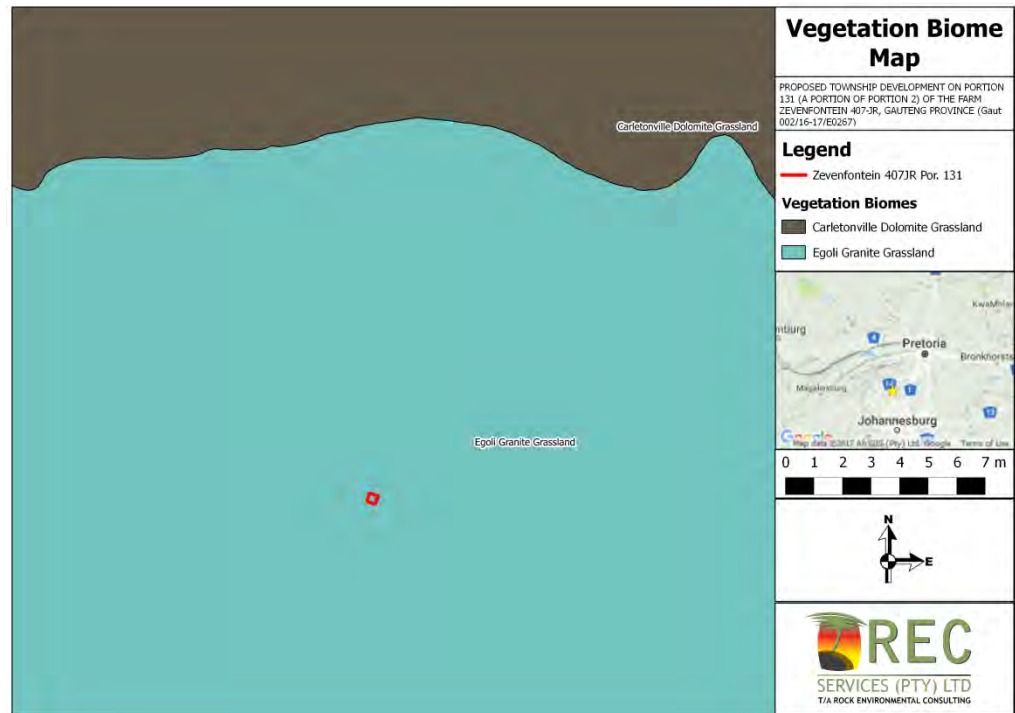
3. DESCRIPTION OF THE ENVIRONMENTAL ASPECTS OF THE ACTIVITY

Environmental Aspects	Proposed Development
Geology	<p>The site is underlined by Archaean granite and gneiss of the Halfway House Granite with typical leached, shallow, coarsely grained, sandy soil which is poor in nutrients (Mucina & Rutherford, 2006).</p> <p>The site us underlain by granite-gneiss bedrock of the Johannesburg-</p>

	<p>Pretoria granite inlier. The residual soils of these Basement Complex granites are typically silty and clayey sands and sandy silts frequently open-textured and having collapse potential:</p> <p>Sub-angular joint blocks and weathered core-stores are also a common feature in Basement Complex granites.</p> <p>The surficial colluvial materials contain thin horizons of hardpan ferricrete. Degrees of ferruginisation are also present in the underlying residual silty and clayey sands that originate from decomposition of the granite-gneiss bedrock</p> <p><u>Impacts:</u></p> <p>Blasting/Drilling of geology to accommodate foundations of the development.</p>
<p>Topography</p>	<p>No sensitive features were identified on-site. There is however a buffer zone falling over the site of nearby wetlands/drainagelines.</p> <div> </div> <p>The 'terrain type' of the area is classified as plains with open low hills or ridges. The terrain contains some distinct topographical sections, namely:</p> <ul style="list-style-type: none"> • The site slopes from north to south. <p>The site falls within the Jukskei Quaternary catchment area (A21C)</p>

	<p>catchment).</p> <p><u>Impacts:</u> Blasting/Drilling of geology to accommodate foundations may alter the topography slightly.</p>
<p>Soil, Land Capability and Land Use</p>	<p>The land potential, and specifically the agricultural potential of a site, is determined by the combination of climate, soil conditions and slope prevailing in that region or site, resulting in the classification of areas with similar agricultural land potential. These land potential classes range from “High Potential” to “Low Potential”. The Agricultural Geo-Referenced Information System (AGIS) has mapped the agricultural potential of SA. Using this mapping shapefiles, it can be seen that the site as well as areas towards the east and south; the agricultural potential is classified as marginal potential arable land.</p> <p>The site is currently zoned as “Agricultural”. This allows the property to be used for agricultural buildings and agricultural land.</p> <p>The site is currently not in uses. The land uses are:</p> <ul style="list-style-type: none"> • Agricultural • Quarrying • Low to high density residential components • Vacant land <p><u>Impacts:</u> Soil compaction. Possible soil erosion due to removed vegetation. Surface disturbance and topsoil removal.</p>
<p>Flora</p>	<p>The study area lies in the Egoli Granite Grassland (Gm 10), which is found in the Gauteng Province. This type of grassland occurs mainly in the Johannesburg Dome between northern Johannesburg in the south, Lanseria Airport and Centurion (south of Pretoria) to the north, westwards to Muldersdrif and eastwards to Tembisa. The landscape consists of moderately undulating plains and low hills. The vegetation consists of tall,</p>

usually *Hyparrhenia hirta*-dominated grassland, with some woody species on rocky outcrops or rock sheets. The rocky habitats show a high diversity of woody species, which occur in the form of scattered shrub groups or solitary small trees (Mucina and Rutherford, 2006).



A Threatened species and Species of Conservation Concern list for the Grid 2528CC was obtained from the Plants of South Africa (POSA) database on the South African National Biodiversity Institute (SANBI) website. Threatened species are those that are facing high risk of extinction, indicated by the categories Critically Endangered, Endangered and Vulnerable. Species of Conservation Concern include the Threatened Species, but additionally contain the categories Near Threatened, Data Deficient, Critically Rare, Rare and Declining. This is in accordance with the new Red List for South African Plants (Raimondo et al. 2009). However, the POSA list is based on herbarium specimens housed in the National Herbarium of SANBI; therefore many plant species that do occur in the area are not listed.

The following possible red data plant species (by the categories Critically Endangered, Endangered and Vulnerable) could occur in the areas surrounding the study area (according to the POSA database for grid

	<p>2528CB):</p> <ul style="list-style-type: none"> • <i>Dicliptera magaliesbergensis</i> K. Balkwill; • <i>Melolobium subspicatum</i> Conrath; • <i>Bowiea volubilis</i> Harv. ex Hook. f. subsp. <i>volubilis</i>; • <i>Brachycorythis conica</i> (Summerh.) Summerh. subsp. <i>transvaalensis</i> Summerh.; • <i>Habenaria mossii</i> (G. Will.) J.C. Manning; <p><u>Impacts:</u> Stripping of surface vegetation during construction.</p>																		
<p>Fauna</p>	<p>The study area is stretched over a relatively small area. No Red Data Book Species were encountered.</p> <p>Possible smaller mammals that would commonly occur in the wider surrounding area are: Multimammate Mice (<i>Mastomys</i>), Southern African Mole-rat (<i>Cryptomys hottentotus</i>) and Natal Long-fingered Bat (<i>Miniopterus natalensis</i>). No Red Data Book species were recorded. There are also one record of red data (Critically Endangered, Endangered and Vulnerable) mammals for the wider area (2528CC):</p> <ul style="list-style-type: none"> • Southern African Hedgehog (<i>Atelerix frontalis</i>) <p>According to available literature, approximately 360 bird species occur in the Silverton quarter degree grid cell (2528CC). No Red Data species were recorded.</p> <p>According to Barnes (2000) and South African Bird Atlas Project 2, the following bird species are threatened in the wider area:</p> <p>List of possible red date avifauna on or near the site:</p> <table border="1"> <thead> <tr> <th>SCIENTIFIC NAME</th> <th>COMMON NAME</th> </tr> </thead> <tbody> <tr> <td><i>Ciconia nigra</i></td> <td>Black Stork</td> </tr> <tr> <td><i>Mycteria ibis</i></td> <td>Yellow-billed Stork</td> </tr> <tr> <td><i>Gyps coprotheres</i></td> <td>Cape Vulture</td> </tr> <tr> <td><i>Hieraaetus ayresii</i></td> <td>Ayres Hawk-Eagle</td> </tr> <tr> <td><i>Polemaetus bellicosus</i></td> <td>Martial Eagle</td> </tr> <tr> <td><i>Circus ranivorus</i></td> <td>African Marsh-Harrier</td> </tr> <tr> <td><i>Falco biarmicus</i></td> <td>Lanner Falcon</td> </tr> <tr> <td><i>Anthropoides paradiseus</i></td> <td>Blue Crane</td> </tr> </tbody> </table>	SCIENTIFIC NAME	COMMON NAME	<i>Ciconia nigra</i>	Black Stork	<i>Mycteria ibis</i>	Yellow-billed Stork	<i>Gyps coprotheres</i>	Cape Vulture	<i>Hieraaetus ayresii</i>	Ayres Hawk-Eagle	<i>Polemaetus bellicosus</i>	Martial Eagle	<i>Circus ranivorus</i>	African Marsh-Harrier	<i>Falco biarmicus</i>	Lanner Falcon	<i>Anthropoides paradiseus</i>	Blue Crane
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<i>Ciconia nigra</i>	Black Stork																		
<i>Mycteria ibis</i>	Yellow-billed Stork																		
<i>Gyps coprotheres</i>	Cape Vulture																		
<i>Hieraaetus ayresii</i>	Ayres Hawk-Eagle																		
<i>Polemaetus bellicosus</i>	Martial Eagle																		
<i>Circus ranivorus</i>	African Marsh-Harrier																		
<i>Falco biarmicus</i>	Lanner Falcon																		
<i>Anthropoides paradiseus</i>	Blue Crane																		

	<table border="1"> <tr> <td><i>Podica senegalensis</i></td> <td>African Finfoot</td> </tr> <tr> <td><i>Eupodotis senegalensis</i></td> <td>White-bellied Korhaan</td> </tr> <tr> <td><i>Tyto capensis</i></td> <td>African Grass-Owl</td> </tr> <tr> <td><i>Alcedo semitorquata</i></td> <td>Half-collared Kingfisher</td> </tr> <tr> <td><i>Mirafra cheniana</i></td> <td>Melodious (Latakoo) Lark</td> </tr> </table> <p>No Red Data species was recorded. And no amphibians or reptiles were encountered on site. This might be due to the lack of suitable or specialised searching techniques that is required, as well as the history of anthropogenic activities on site.</p> <p>List of herpetofauna possibly on site or rather in the wider area:</p> <table border="1"> <thead> <tr> <th>SCIENTIFIC NAME</th> <th>COMMON NAME</th> </tr> </thead> <tbody> <tr> <td><i>Pyxicephalus adspersus</i></td> <td>Giant Bull Frog</td> </tr> <tr> <td><i>Sclerophrys gutturalis</i></td> <td>Guttural Toad</td> </tr> <tr> <td><i>Cacosternum boettgeri</i></td> <td>Common Caco</td> </tr> <tr> <td><i>Boaedon capensis</i></td> <td>Brown House Snake</td> </tr> <tr> <td><i>Aparallactus capensis</i></td> <td>Black-headed Centipede-eater</td> </tr> <tr> <td><i>Trachylepis varia</i></td> <td>Variable Skink</td> </tr> </tbody> </table> <p><u>Impacts:</u></p> <ul style="list-style-type: none"> • Removal of surface vegetation thereby depleting food sources. • Human presence resulting in emigration of animals. • The disturbances of the nearby vegetation cover and natural habitat will have a limited impact on the wildlife. However, it should be viewed against the background of the disturbances by human movement and activities through the area. 	<i>Podica senegalensis</i>	African Finfoot	<i>Eupodotis senegalensis</i>	White-bellied Korhaan	<i>Tyto capensis</i>	African Grass-Owl	<i>Alcedo semitorquata</i>	Half-collared Kingfisher	<i>Mirafra cheniana</i>	Melodious (Latakoo) Lark	SCIENTIFIC NAME	COMMON NAME	<i>Pyxicephalus adspersus</i>	Giant Bull Frog	<i>Sclerophrys gutturalis</i>	Guttural Toad	<i>Cacosternum boettgeri</i>	Common Caco	<i>Boaedon capensis</i>	Brown House Snake	<i>Aparallactus capensis</i>	Black-headed Centipede-eater	<i>Trachylepis varia</i>	Variable Skink
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Surface Water	<p>There are surface waterbodies onsite. The terrain contains some distinct topographical sections, namely:</p> <ul style="list-style-type: none"> • The slope of the land fall in altitude from north to south towards a drainage line south of the property; <p>The flow of water over the area might be altered by the development through hard surfaces and the channelling of stormwater.</p> <p><u>Impacts:</u></p> <p>Poorly implemented storm water system will result in increased surface run-</p>																								

	<p>off volume and speed, which could lead to the creation of erosion gullies. Storm water must be allowed to spread out gradually over a large surface area to protect the soil surface against erosion. Inadequate designed storm water outlets can lead to flooding of the development area & road surface, adding unnecessary volume to other waterbodies downstream which is dangerous. Impacts on the wetland could be caused by the construction and operational phase.</p>
Ground Water	<p>Use of municipal water resources is anticipated.</p> <p><u>Impacts:</u> Moderate potential environmental impact predicted. Temporary toilets (chemical) left unmanaged can leak raw sewage and effluent into the soil, surface and even ground water sources, during the construction phase. Possible contamination of ground water from faulty or unmanaged package plant.</p>
Air Quality	<p>Dust will be generated by vehicular movements on site, the construction & operational phase.</p> <p><u>Impacts:</u> Low potential environmental impact. During the construction phase; dust could cause problems for nearby human settlements. During the construction phase the air quality will be the same as it currently is.</p>
Noise	<p>Noise generation by operating air compressors, excavators and other heavy machinery. Noise is also generated by the construction workers.</p> <p><u>Impacts:</u> Low potential environmental impact. Noise from the farm traffic will be an inconvenience to a certain extent for some existing properties nearby.</p>
Visual	<p>Visual and aesthetic elements are important. This proposed development will alter the visual landscape from agriculture / natural veld to a more structured area.</p> <p><u>Impacts:</u></p>

	<p>Low negative significant impact. The study area is already transformed by the equestrian facilities.</p> <p>Waste, such as building rubble and empty cement bags can be a negative visual impact if not collected and disposed of correctly.</p>
Sensitive Landscapes	<p>No sensitive landscapes/features identified. Only further south of the property.</p> <p><u>Impacts:</u> Moderate negative significant impact. Human presence resulting in possible emigration of animals. The movement of water to drainage lines further afield could be altered by construction activities.</p>
Sites of Archaeological and Cultural Interest	<p>During the site investigations, focus was also placed on the presence of any stone built structure, ruins, grave sites, complete built structures and the presence of artefacts. Based on preliminary observations no such features occur within the proposed area of development. It is therefore not identified as an issue at this stage.</p> <p>A Heritage Impact Assessment (HIA), as part of the Environmental Impact Assessment stage of the application process, was conducted in accordance with the National Heritage Resources Act (Act 25 of 1999).</p> <p>A summary of the HIA investigations follows:</p> <ul style="list-style-type: none"> • There are no visible restrictions or negative impacts in terms of heritage associated with the site. • In terms of heritage this project can proceed. • The discovery of subsurface archaeological and/or historical material as well as graves must be taken into account. <p><u>Impacts:</u> No significant impact.</p>
Socio-economic	<p>This development will have a positive impact on the regional socio-economic structure through its support of the development industry, better local services support, job creation and the skills development of its employees and local community.</p>

	<p>This fully integrated development offers the shareholders the opportunity to assist in local upliftment through the following:</p> <ul style="list-style-type: none"> • Involvement of local contractors, • Job opportunities, • Skills training and development, • Social upliftment <p><u>Impacts:</u> Positive impact on the regional socio-economic structure through its support to the community, like: Job opportunities during the construction phase. Local economic boost.</p>
<p>Interested and Affected Parties</p>	<ol style="list-style-type: none"> 1. Possible impacts on wetlands in the area; 2. Where will the services come from; 3. Relevant specialist studies must be conducted.
<p>Cumulative</p>	<p>The cumulative impact of the development on the social environment is positive. More job possibilities and economic boost for the local area.</p> <p>Seen at a wider scale the additional developments are not physically connected, but the removal of vegetation cover, such that the soil surface is exposed, may lead to increased soil erosion in the area and loss of habitat.</p>

4. SENSITIVITY MAP

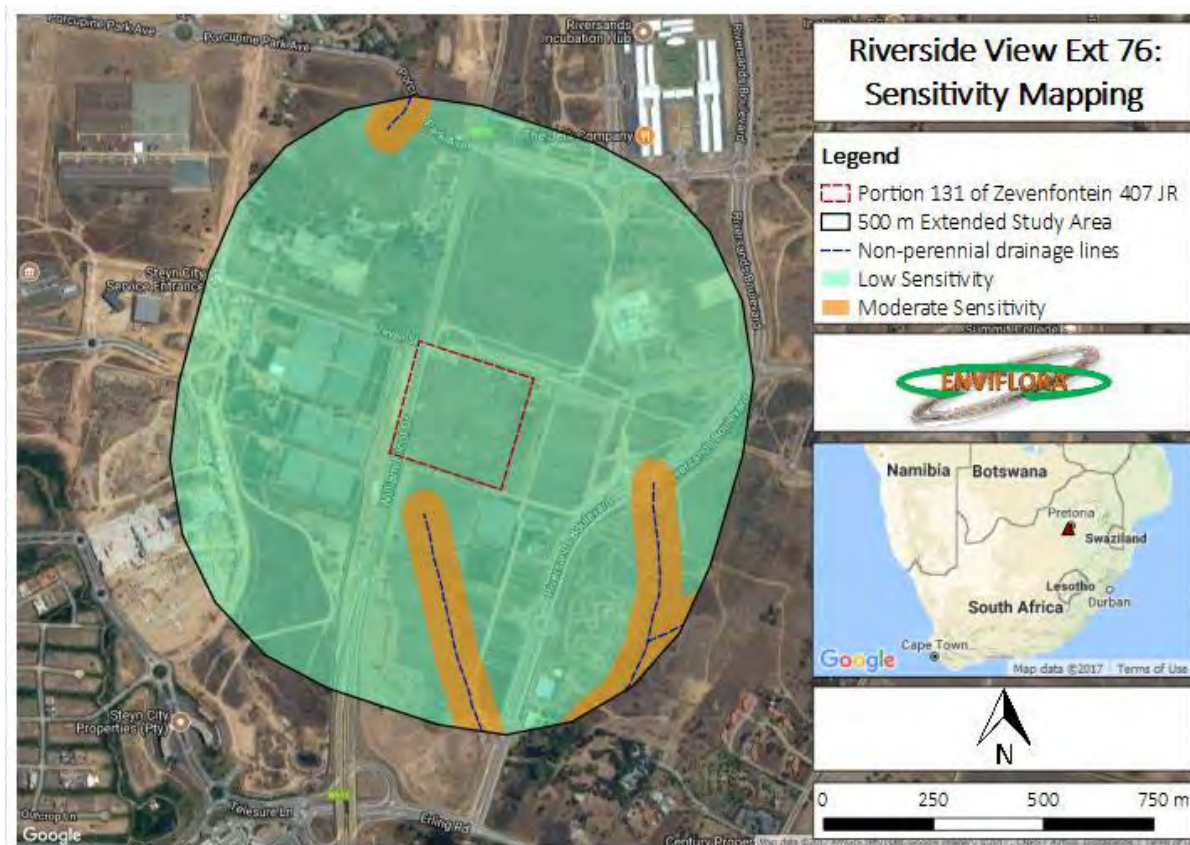
Also refer to Appendix A of the BAR.

The following maps show the sensitivity of the study area in terms of vegetation and wetlands. The sensitivity maps to follow:

Vegetation sensitivity map



Aquatic Sensitivity



5. DESCRIPTION OF THE IMPACT MANAGEMENT OBJECTIVES FOR ALL PHASES OF THE DEVELOPMENT

5.1 Recommendations applicable to the planning and design stage:

Time frame: 1 Month

There are a number of potential impacts that can be mitigated through careful design of technical/physical project components. The following design components are relevant in this regard:

- Address the potential contamination of surface run-off and soil through storm water drainage;
- Ensuring effective effluent management - to prevent potential contamination of soil and groundwater resources, as a result of insufficient or incorrect waste management systems by point source pollution;
- Visual and aesthetic impacts of the proposed development on the surrounding environment - landscaping will be an important component in this regard, as will the type and intensity of lighting used; and

- Waste management on site, including handling, storage and collection of solid waste and disposal of treated effluent.

5.1.1 Contamination of surface water/soil through storm water run-off from hard or paved surfaces

It is recommended that the storm water management system, leading from the paved surfaces be designed in such a manner that no direct link or piping be established into the natural drainage course.

Other precautions to be implemented in order to prevent storm water pollution are:

- Cover any wastes that are likely to wash away or contaminate storm water;
- Build a bund around waste storage area to stop overflow into storm water;
- Storm water outflows will not enter directly into a drainage line;
- Energy dissipaters (gabions/grass bales etc.) must be installed at all potential large flow volume areas, especially during the construction phase where large areas will be open soil;
- Natural storm water must not be piped other than in areas where it runs perpendicularly cross a roadway;

Storm water design (as per civil engineers) for all hard surfaces will ensure the proper management and precautionary measures are taken into account.

5.1.2 Visual and aesthetic impacts of the building structure

The proposed development is built relatively close to residential (townships) and commercial entities further away, which could be unattractive and undesirable in to such an environment. The proposed development, however, is situated in an agricultural/natural veld setting. However, the character of the site and its location makes the proposed development acceptable and compatible with the aesthetics of the study area. Nevertheless, careful attention will be placed on various design elements associated with the proposed development, including attention to aspects that will enhance the aesthetic quality of this development, such as landscaping.

Poor maintenance of the facility as a whole will affect the visual and aesthetic quality of the area. Therefore, general building maintenance on a regular basis will form a crucial component of the operational phase of the proposed development. Therefore, to pay

special attention to “blending” the development to the environment is relevant exercise. In terms of the level and nature of night illumination, carefully placed and downward shining lights are recommended to reduce this impact sufficiently. No high flood-lights should be installed on the site.

5.1.3 Waste management on site

Poorly designed waste collection/storage facilities have a significantly negative impact in terms of surface pollution, possible water pollution and negative impacts on the visual quality of an area. Therefore, practical design and efficiency is essential in this regard. The location of the refuse areas/waste collection area must be carefully planned and located so as not to cause a visual nuisance, as wind-blown refuse is often a problem. It is suggested that large black bins, which are secured in place, are distributed frequently at strategic locations across the site to discourage littering. The dustbins should be secured to prevent them from being knocked over or carried away. The lids should also be suspended permanently above the dustbins, to ensure that the waste disposed of is efficiently contained. The waste from these bins should be collected on a weekly basis and stored in a refuse collection yard (which should be contained within a walled fence), until such a time that a certified/registered contractor collects the waste - on a weekly basis - to be disposed of at a registered waste disposal site or when the farmer see fit to do it himself.

<p>Implementation responsibility: The site engineer / applicant will be responsible for the implementation of the above measures as an on-going process during construction phase.</p>

5.2 Impact mitigation during the construction phase:

Timeframe: 4 Months

The following recommendations are proposed to assist as basic environmental management steps and to be implemented during the construction phase of the project:

The construction stage of the proposed development will cause minor impacts on the biophysical and social environment. Although these impacts are short-term and low significance in nature, it still is essential to address them as sufficiently as possible.

This stage represents the period immediately after site hand over. The contractor must be made aware of the contents of the EMPr, even if there are sections in the tender documentation which referred to environmental impact management measures to be budgeted for and implemented.

The following “rules” must be implemented to make the document relevant and handy on site:

- ❖ The EMPr shall not be removed from the site office
- ❖ The EMPr shall be updated when necessary
- ❖ The EMPr shall be readily available to the Resident Engineer/Project Manager, and the site manager
- ❖ The ECO shall monitor the state/condition of the document and how it is kept on site. He will provide new printed copied when the EMPr is updated or adapted.
- ❖ The EMPr shall be available on site to any Interested and affected party but shall not be removed or copied to such a party or person.

The Environmental Policy that can be put forward for the proposed development should be read as follow and should be pinned up at the Construction office.

The objective and aim of the final product of this development is the creation of an environmentally sound development that will be seen and function as an environmental asset in biophysical and socio-economic terms. The objective will be achieved through careful implementation of all measures pertaining to the protection of the environment during construction and operational stages of the project.

This policy will be conveyed to the appointed main contractor and his team by the Resident Engineer during the construction phase.

The following elements must be considered and addressed when the construction stage of the development commences:

- The locality of the construction camp and site offices (if used). Limited accommodation will be provided for construction workers. Staff will be limited to security personnel after normal working hours.

- The locality of stock pile areas must be confirmed and discussed with the appointed contractor before construction activities commence.
- Specified areas of access and movement by construction vehicles during the construction period are essential.

5.2.1 Management of impacts on vegetation cover and faunal habitats

Clearing/removal of the existing vegetation (which consists predominantly of disturbed natural vegetation) for the construction of the buildings will be necessary, however, due to the indigenous and some non-indigenous vegetation and size of the site, the significance of this impact is rated as moderate.

The propagation of exotic species and weeds will need to be controlled during the construction phase, as there are many activities on site that could lead to the establishment of weeds - including compaction of the soil by heavy machinery, construction waste, stockpile areas etc. Weed species should be removed on a four-week basis. Much of the site will be paved (either as parking areas or access roads) and a large portion will be landscaped. It is recommended that only indigenous species be used in the landscaping process, and that trees are incorporated into the landscaping design, if possible.

Weed species should be removed on a four-week basis. The site will not be paved and a large portion will be landscaped / maintained. It is recommended that only indigenous species be used in the landscaping process (if implemented), and that trees are incorporated into the landscaping design on the boundary of the development.

Innovative landscaping or re-vegetation of the site towards the end of the construction stage will contribute significantly to the visual and aesthetic attractiveness of the site and will also solve the problems associated with the removal of vegetation cover, including soil erosion, dust generation and the flourishing of weeds and/or other unwanted exotic species in the long term.

Disturbance to the wetland during construction should be avoided. A plan for the immediate rehabilitation of damage caused to wetlands should be compiled by a specialist registered in accordance with the Natural Scientific Professions Act (No. 27 of 2003) in the field of Ecological Science. This rehabilitation plan should form part of the EMPr and a

record book should be maintained on site to monitor and report on the implementation of the plan. Engineering measures are recommended to lower the risk of spillages into any wetlands located within 200 m of the site.

No specific mitigation measures are deemed necessary with regards to mitigating the impact of the proposed development on the faunal component, because the proposed area is small. No mammal species were detected on the site. Avifaunal species were plenty.

Where possible, work should be restricted to one area at a time, as this will give the smaller birds, mammals and reptiles a chance to weather the disturbance in an undisturbed zone close to their natural territories.

The ECO must be alerted to the fact that the snaring or hunting of wild animals often takes place in the vicinity of construction sites. This must be punished if there is proof that such a practice is conducted by members of the construction team. The contractor must ensure that no fauna is disturbed, trapped, hunted or killed during the construction phase. Conservation-orientated clauses should be built into contracts for construction personnel, complete with penalty clauses for non-compliance. It is suggested that where work is to be done close to the wetland, these areas be fenced off during construction, to prevent heavy machines and trucks from trampling the plants, compacting the soil and dumping in the system. During the construction phase, noise must be kept to a minimum to reduce the impact of the development on the fauna residing on the site. Alien and invasive plants must be removed.

<p>Implementation responsibility: The main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.</p>

5.2.2 Soil stability and storm water management

If construction is to take place during the summer months, the terrain will be susceptible to sheet and gully erosion as a result of the steep angle of the terrain. However, in the event that additional access routes are required (at this stage such a requirement is highly unlikely), the physical layout of the access routes should follow the contours of the site wherever possible.

Aspects that typically impact on soil conditions are blasting activities, excavations for the founding of foundations, establishment of stockpile areas, removal and/or clearance of vegetation, movement of construction vehicles, and maintenance of construction vehicles, construction camp establishment and sanitation provision to workers during the construction period. Therefore, the following recommendations pertaining to soil conservation practices are made:

- Topsoil should be stockpiled separately from subsoil. The height of the stockpiles may not exceed 2.5 m and the stockpiles should not be stored for more than a one year period.
- Topsoil must be stripped from all areas, where construction activities are going to take place, to be re-used in landscaping the site.
- If any blasting activities occur on site, the blasted rocks and heavy rock material must be transported to an external venue. These rocks are not allowed to rest on site. If the rocks are left on site, the soil will be greatly compacted, which will promote the growth of weeds.
- Any excess overburden material that is generated may not be dumped in a random manner. Dumping sites should be predefined, agreed upon and adhered to.
- Any embankments created adjacent to the roads or any drainage lines must be stabilised during construction and re-habilitated afterwards.
- Generally, surface water must be prevented from damming or creating gully erosion. This can be achieved by placing sandbags along the boundaries of steep working areas where higher intensity surface run-off may occur.
- All rills and erosion channels developing during the construction period or during the operational and maintenance period should be backfilled and consolidated immediately.
- The movement and maintenance of construction vehicles may only take place in pre-determined and delineated areas. Only planned and formal routes for hauling of material should be used.
- Soil contamination during construction vehicle maintenance or as a result of fuel storage on site is easily prevented, but in the event of such an accident, the spill should immediately be cleaned up by absorbing the worst of the fluid with saw dust and then disposing of the saw dust and the first bit of the soil layer.

- Fuel storage areas should be bounded effectively and all applicable safety standards must be adhered to.

In terms of the stability of excavations, it is strongly recommended that all excavations exceeding 1.5 m should have proper sidewall protection to ensure the safety of workers. Seepage may result in the destabilising of the soils above the seepage and special precautions may be required. The contractor is responsible for the implementation of suitably designed support systems. Constructed embankments exceeding 1.5 m, or as deemed necessary by the design engineer, can be stabilised/protected by means of retaining walls. Embankments should be adequately compacted and protected from erosion.

The proposed development site is sloped; however, abnormal transportation of sediment during construction activities is possible. The following management measures must be implemented during construction. Abnormal soil erosion plays an important role in the siltation of watercourses and the loss of valuable topsoil. The following suitable storm water management and mitigation measures may therefore be necessary:

- Storm water run-off must be guided through appropriate drainage structures where needed. The engineering design will address the proper run-off of storm water and run-off must be handled in such a way that flooding of the access roads will not occur.
- Erosion control during construction is the responsibility of the contractor. The contractor will monitor the formation of erosion channels and repair as required to limit erosion damage to the works and the natural environment.
- The buildup of loose soil must be managed and limited, where possible, to reduce dust emissions. This can be achieved through the regular cleaning of road surfaces by sweeping these areas when necessary.
- Upon completion of construction at the site, all disturbed areas, not paved or landscaped, must be ripped and ploughed to enhance the establishment of natural grasses.

In addition to the above, the following restrictions will be enforced:-

- No borrow pit or quarry will be opened on site (highly unlikely). All imported material will be obtained from commercial borrow pits or quarries.

- The footprint of the various structures will be staked out prior to commencement of construction activities.
- No moving or removal of stones, plants or any other natural specimens will be allowed outside the staked construction area.

The construction of engineering services including any water, sewerage and underground electricity lines will require trenching and backfilling as per the engineering design. Where possible, all excavations of trenches shall be done by hand to limit the impact of excavators on site.

The following will be applicable where excavation done by hand is conducted:-

- Excavated material from the trenches along the driveways and walkways will be placed on the road surface or within the future road surface area and will not be allowed to be stockpiled in a nearby veld or adjacent vegetation.
- Trenches will only be as deep as required and be backfilled as soon as possible.
- The contractor will check all open trenches every morning for trapped animals.
- All open trenches will be demarcated clearly with danger tape, or as otherwise instructed by the Engineer.

The top 150 mm of backfilling will not be compacted and will comprise topsoil stripped from the area prior to opening of the trench.

<p>Implementation responsibility: The main contractor and project engineer will be responsible for the implementation of the above measures as an on-going process during construction phase.</p>
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5.2.3 Visual and aesthetic quality

Currently the study area comprises mostly natural & landscaped vegetation. The visual quality of the area may be negatively affected, considering that the proposed development is an above-ground level development. However, to reduce the visibility of the structures, the following techniques should be implemented:

- Lamp posts and directional lighting is advised. Security lights should face away from neighbouring properties.

- Replacement of topsoil where necessary.
- Construction vehicles are not permitted to turn/drive into areas that are not designated for this purpose.
- No additional access routes may be established in the vicinity of any area where construction action is taking place.

Implementation responsibility: The site engineer will be responsible for the implementation of the above measures as an on-going process during construction phase. Hydro-seeding can be done by a contractor in this field.

5.2.4 Stockpiles and general storage of building material and equipment

Special care must be exercised when selecting the location of temporary material storage areas.

- Any excess soil or overburden material must be stockpiled to reduce visibility.
- Excess material that is not used during construction activities should be removed from the site to be used by other users in the construction industry.
- It is essential to place enough sand bags along the toe line of any loose material stockpiled and for the storage of building material.
- In the event of soil and overburden being removed from its locality, it should be stockpiled in a suitable place where, if possible, surfaces are already disturbed and where the natural vegetation will not be covered by this material to a significant extent.
- Overburden or stock-piled material must only be stockpiled temporarily. No soil may be left exposed after construction activities have ceased.
- In the event of soil and overburden being removed from its locality, it must be suitably stockpiled away from any drainage ways.
- Overburden soil can alternatively be re-used in landscaping depending on the need.
- No material must in any event be dumped in any place in the surrounding region. Written proof of disposal at a waste disposal site must be given to the applicant and site manager on every load of construction waste removed from the site.
- No vehicle and equipment parking areas may be established within 20m of any natural drainage ways.

All stockpile areas should be ripped and ploughed at the end of the construction period to loosen soil surfaces for the natural propagation of vegetation and/or to allow for landscaping of the area. The same applies to other temporarily disturbed areas on site, which are vulnerable to the propagation of unwanted species (weeds). It is important that the contractor implements weed control through physical and/or approved chemical eradication methods. Only registered herbicides should be used to curb this problem.

The temporary storage of construction material and especially fuel must be carefully monitored by the site engineer to prevent the risk of accidental spillage or disposal of any such material that will contaminate soil surfaces, surface and subsurface water. All liquid material must, where applicable, be stored on solid concrete surfaces and must be surrounded by bunds. Bunding is also applicable to fuel and mechanical oil storage areas. Bunding walls should not be less than 30 cm high. Bunding walls must be able to contain 110% of the "unit's" capacity stored within it. Storage containers must be inspected regularly to prevent leaks that could contaminate the site.

Implementation responsibility: The main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

5.2.5 Community or public safety

The study area is situated in a rural area. Large construction vehicles, including trucks and other heavy machinery, will impact on road safety circumstances on the roads they use and it is the duty of the contractor to ensure that safety measures are implemented and adhered to.

The safety of the community throughout the construction period is of utmost importance. As road safety awareness is imperative, the following important actions must be noted that will assist in the management of safety during the construction phase where necessary:

- Adequate and correct caution signage and road marking during construction in accordance with the requirements of the South African Road Traffic Signs Manual and the CSRA / CUTA Road Signs Note 13. (Workers with red flags, visible workers and vehicles etc.)
- No soiling of road surfaces, causing accidents.

- A maximum of fifteen workers (if any) may be housed on-site, mainly to guard material and machinery. This will assist in managing and maintaining safety and security at appropriate levels.
- Names and identification numbers of each worker housed on-site must be provided by the contractor.

Implementation responsibility: The main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

5.2.6 Waste disposal and management

It is crucial to implement strict and effective waste control and waste management procedures during the construction phase. No littering by any personnel is permissible. The site manager/contractor should conduct regular site clean-ups to keep the site litter free - as litter is not only aesthetically displeasing, but it is also harmful to the environment. All domestic solid waste produced must be disposed of in waste bins situated on site. The bins should be emptied into a covered skip (for storage) on a regular basis, until its collection and removal to a municipal waste disposal site (preferably on a weekly or bi-weekly basis).

No liquid waste material should be disposed of on or near the site during construction, or in any non-designated areas. A firm arrangement must be made to place chemical toilets on the construction site (within the construction camp to be erected). A sufficient number of chemical toilets need to be provided; in the range of 1 per every 8 workers. These toilets must be well maintained and inspected on a daily basis to ensure that they are clean and functioning properly. The toilets must be within walking distance from the work areas. No person is allowed to use any area, other than the chemical toilets provided, as a toilet. No washing of people and/or goods should take place on cleared surfaces, as this water should not be allowed to drain into any of the adjacent storm water canal.

In the event of accidental spillage of liquid substances, like paints and resins, it is important to implement the correct emergency procedures and cleaning-up operations. Pollution of surfaces should be limited at all costs.

The generation of construction waste occurs at every site under development and construction. Due to the costs involved in the disposal of this material at municipal or

other licensed waste sites, the contractor or sub-contractor may be tempted to illegally dump waste at concealed locations to save on costs. Therefore, strict control is required from the main contractor on site to control this issue. Proof of disposal of waste material at a registered waste disposal site must be shown after off-loading of each waste load, which should then be logged or registered for control purposes. Control measures in terms of the National Building Regulations and standard requirements laid down by the local authority, with regards to spillage and waste disposal, must strictly be adhered to.

General waste disposal management involves the collection of construction waste at a central collection facility, which should be pre-arranged and implemented. This should include making points available for solid as well as liquid waste - including mechanical fluids disposed of during vehicle maintenance.

The site should be designed in such a manner that hazardous wastes are not located in close proximity to the permitted fire making area. These areas shall be predetermined and located in areas that are already disturbed. This area should be on a concrete base to avoid any possible seepage into the soil. All hazardous waste must be stored in sealed and suitably marked containers for removal to a hazardous waste landfill site by the contractor on a bi-weekly basis. Hazardous waste could include used oils and fluorescent light tubes, as examples. The contractor should refer to the relevant Department of Water Affairs (DWA) guidelines for the classification of hazardous waste.

Implementation responsibility: The resident engineer and contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

Removal of waste from the terrain will be the responsibility of a certified waste contractor.

5.2.7 Dust suppression

During the initial construction phase it is anticipated that the generation of dust may occur. The management of dust generation during construction is of particular importance. Therefore dust suppression, as a normal daily practice, is essential. This can be achieved by:

- Watering and compacting of exposed surfaces where dust is generated. This must be conducted and strictly monitored. Such surfaces also include construction areas and unpaved access roads as part of the construction site.
- On rainy days this should obviously not be implemented to avoid access mud generation and water accumulation.
- In dry hot weather conditions water spraying must be applied twice a day on surfaces.

Implementation responsibility: The main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

5.2.8 Noise

Another important aspect is the control of noise pollution. This is achieved by implementing the following measures:

- Ensuring that machinery and trucks are well-oiled and maintained; this will make less noise than poorly serviced construction equipment.
- Silencers can be fitted to exhausts of heavy vehicles to limit the noise they produce.
- Lastly, construction hours should be confined to daylight hours of a normal working day, specifically from 7 am to 5 pm in the summer and 7.30 am to 5 pm in the winter.
- No activities should take place on Saturdays after 14:00 and no actions must take place on Sundays.

Implementation responsibility: The main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

5.2.9 Vehicle Maintenance and Fuel Storage

- Lubricants and mechanical oils or mechanical fluids must be collected in separate containers or drums to be collected by waste contractors for disposal at hazardous waste sites.
- Used oils that can be refined must be made available to companies for collection.
- These containers must not be placed in close proximity to any drainage ways.

- In the event of construction vehicle breakdowns or during routine maintenance checks, care must be taken to avoid oil, grease or any mechanical fluid spills within the study area. Vehicles may not be serviced in or adjacent to the road reserve of the study area, thus servicing must be limited to the designated areas or workshops.
- No temporary fuel storage tanks or containers may be erected near drainage courses and refueling must be done by means of a fuel bowser.
- Fuel storage areas must be bunded effectively and all applicable safety standards have to be adhered to. The bunded area around the fuel storage areas should be able to contain 110% of the volume of the fuel container inside it.
- All fuel storage areas must be fenced and secured.

Implementation responsibility: The main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

5.2.10 Archaeology and Cultural Sites

- Should archaeological objects of any nature (including fossils, graves or remains of structures) be found, the developer will stop all construction activity, and notify Rock Environmental Consulting (PTY) Ltd. immediately. The Provincial Heritage Resources Agency (PHRA), will be consulted for further investigation and clarification.
- All finds of human remains must be reported to the nearest police station.
- Human remains or any burial ground or part thereof that are deemed to be of cultural significance may not be destroyed, damaged, altered, exhumed or removed from their original positions without a permit from the PHRA.
- Work in areas where artefacts are found must cease immediately.
- Under no circumstances must the Contractor, his/her employees, his/her sub-contractors or his/her sub-contractors' employees remove, destroy or interfere with archaeological artefacts. Any person who causes intentional damage to archaeological or historical sites and/or artefacts could be penalised or legally prosecuted in terms of the National Heritage Resources Act, 25 of 1999.
- A fence at least 2 m outside the extremities of the site must be erected to protect archaeological sites.

- All known and identified archaeological and historical sites must be left untouched.
- Work in the area can only be resumed once the site has been completely investigated. The Project Manager will inform the Contractor when work can resume.

Implementation responsibility: The main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

5.2.11 Construction camp establishment

- Workers that are allowed to live on-site should be kept to minimal numbers. Those workers present at night should be on site only to look after construction equipment and to take register of the workers present on site to eliminate crime in the area.
- Any temporary structures will be soundly built and will not pose a danger to personnel.
- The contractor must supply cooking facilities (preferably gas) if labourers are to be housed at the site.
- No fires will be permitted outside the construction camp and adequate firefighting equipment, which complies with fire and safety regulations, must be available at the construction camp site at all times (at least one all-purpose 12,5 kg extinguisher)
- Chemical toilets to be supplied at the construction camp for labourers accommodated on site. They may also use existing facilities on site.
- Welding, gas cutting or cutting of metal will only be permitted inside the construction camp.
- The contractor will supply 210 litre drums at the construction camp, as well as at the construction site, for the storage of domestic waste.
- Recyclable waste including glass, paper and plastic shall be separated at the construction camp, stored and recycled (where economically feasible).
- Waste must be removed on a weekly basis to a registered waste disposal facility, or through the utilisation of existing municipal waste removal systems.
- As far as possible, local labour should be employed during the construction period.

Implementation responsibility: The main contractor will be responsible for the implementation of the above measures as an on-going process during construction phase.

5.2.12 General rehabilitation of the construction site

It is important that rehabilitation will commence as soon as feasible on each of the construction areas to run concurrent with the construction phase and not to be left until completion of the works. This will increase the chances of successful rehabilitation.

All areas disturbed by development activities will be rehabilitated on completion of the construction phase. The following general procedure will be followed:-

- Removal of all construction facilities and materials from site, cleaning up of any remaining oil or other spills and removal of all construction waste from site;
- Shaping of the disturbed areas to blend with the surrounding landscape;
- Placing of topsoil on all disturbed areas (minimum depth 150 mm);
- Organic fertilizers must be added to the topsoil prior to seeding (if required).
- Re-vegetation of all areas where topsoil is placed using a mixture of indigenous grasses and bushes;
- Maintenance of these areas until an acceptable cover has been established. Acceptable cover shall mean 75% ground cover with no gaps exceeding 500 mm. Maintenance may include watering, mowing and weeding as well as preventing the development of erosion channels or, backfilling where they have occurred.

5.2.13 Stockpile Areas

Once stockpiles have been removed the ground surface is to be inspected for compaction. Should it be required, the surface is then to be ripped and the prescribed re-vegetation process followed.

5.2.14 Rehabilitation of Construction Camps

Rehabilitation will be necessary in the following areas:

- Concrete and compacted earth platforms;
- Removal of fuel storage tanks;

- Removal of chemical toilets; and
- Access roads running into and through the camps.

Concrete platforms will need to be broken up and rubble removed. The prescribed re-vegetation process must then be followed.

5.2.15 Re-vegetation Process

The basic re-vegetation steps which will be implemented where and if required are detailed below:

Step 1: Prepare the area to be re-vegetated for top-soiling - this may require soil ripping, scarifying and/or digging of steps or terraces. The scarification should take place to a minimum depth of 150 mm. If ridges are formed, they should be approximately 100 mm high and 400 mm wide.

Step 2: Stockpiled topsoil must be placed on areas to be re-vegetated to a minimum depth of 100 mm, spread when dry by means of hand raking or mechanical means to a uniform thickness.

Step 3: If required when sodding or hydro seeding, appropriate organic fertilisers must be applied and worked into the soil to a minimum depth of 150 mm.

Step 4: Fresh, good quality seed - which is certified by the supplier and free from contamination by seeds of other species - can be used for the re-vegetation process, although seed harvested from site is preferable. The rehabilitation grass seed mix will be seeded at a minimum density of 30 kg/ha, utilising a mixture of suitable species. The mixture must also always include at least one legume species.

Step 5: Mulch should be applied to protect the seeded area from erosion. The mulch should be composed of straw or other cellulose-rich material and free of undesirable seeds. The mulch must not be excessively fresh and green or in an advanced state of decomposition as it could smother growth. It must be applied to a depth and density that will prevent erosion by wind and water, but not completely block out the access of sunlight to the soil or prevent penetration by young plants.

Step 6: Re-vegetated areas are to be enclosed within an erected safety barrier to prevent excessive trampling and any other factors that might cause erosion or compaction. No road building equipment, trucks or other heavy equipment will be permitted onto re-vegetated areas.

Step 7: Re-vegetated areas must be irrigated on a regular basis, or as required.

Step 8: An appropriate maintenance and monitoring program must be implemented. This program will include monitoring of the success of seed germination, growth of the plants, removal of invasive weeds, replanting of areas where re-vegetation has not been successful once the cause of the inhibiting factor has been identified and remedied, and repair of any funnels or erosion channels.

5.3 Operational phase:

Timeframe: 20 years plus

Responsibility: The applicant will be responsible for the implementation of the measures as an on-going process during operational phase.

Mitigation of impacts during the operational phase is of great importance, as there are long-term issues that are of relevance.

5.3.1 Waste Management of domestic solid waste

- General waste generated during the operation of the development must be collected in waste bins that are emptied on a regular basis into a central waste collection facility.
- General waste is to be collected on a regular basis to be emptied at the nearest municipal solid waste disposal site. The products that will typically be generated are general refuse such as empty food cans, leftover foods, paper, plastic and bottles.
- Recycling is always desirable and if the separation of waste can be encouraged and implemented, this would be highly beneficial.

5.3.2 Water usage

- The water used that is supplied from onsite bore holes should be carefully managed to

ensure that water extraction does not exceed the maximum amount allowable as indicated on the water licence application.

- The water to the ablutions should be under regular inspections to ensure sufficient water supply and to prevent any loss of water.

5.3.3 Noise impact management

The location of the proposed development is adjacent to various farming practises or just houses. The significance of the noise impact associated with the proposed development during the operational phase is moderately negative. Noise will be generated by the movement of vehicles such as tourists and the odd maintenance vehicle. The following noise impact mitigation measures can be implemented:

- ⇒ The security gate entrance should be well-oiled at all times to prevent excessive noise.
- ⇒ Speed limits should be enforced within the development (speed bumps are one way of ensuring this), not only in terms of reducing noise levels, but also to ensure the safety of workers and visitors.
- ⇒ Deliveries and pick-ups with large trucks should be limited to as when needed only.
- ⇒ No loud music after 10 pm.

5.3.4 Compliance to standards

Compliance to all relevant regulatory standards and codes of practice is essential. An assurance that the development will comply with the relevant regulatory standards and codes of practice will be enforced by the Environmental Authorization to be issued by the GDARD, providing that authorisation for the proposed development is granted and also in terms of NHBRC guidelines, to which all building and services will comply.

Implementation responsibility: The applicant will be responsible for the implementation of the above measures as an on-going process during operational phase.

5.3.5 General provisions

Disposal of hazardous waste should be separately handled from domestic waste. This will help to prevent water and soil pollution. Hazardous waste includes substances such as paint, chemicals, razorblades, needles etc.

Implementation responsibility: The applicant will be responsible for the implementation of the above measures as an on-going process during operational phase.

5.3.6 Erosion Control

All road fill, ridge cuttings and drainage structures have to be checked and maintained on regular intervals to ensure that no erosion takes place along these surfaces. Sedimentation needs to be prevented from entering the stream and wetland areas.

Implementation responsibility: The applicant will be responsible for the implementation of the above measures as an on-going process during operational phase.

5.4 Closure phase

Timeframe: 5 months

Responsibility: The applicant will be responsible for the implementation of the measures as an on-going process during closure phase.

- The physical and chemical stability of the remaining structures on site should be appropriately secured.
- The site should be securely fenced off and all remaining structures securely locked up.
- The physical integrity of the remaining structures on site should under no circumstances be allowed to deteriorate to an extent that makes the site visually unpleasant.

6. PROPOSED MECHANISMS FOR MONITORING

It is recommended by the Environmental Practitioner that an Environmental Control Officer (ECO) be appointed by the applicant. The ECO will be the person involved with the development of the project and also be responsible for the monitoring of the implementation of the EMPr. It may be different parties during the different phases of the project.

- This person may be appointed by the appointed engineer or indirectly by the applicant/client. It must, however, be a person with adequate technical and environmental knowledge to understand and implement this management programme.
- The ECO may not be someone appointed by the contractor.
- The ECO must report to the applicant on a regular basis or frequency.
- The ECO has the authority to stop works during construction if in his opinion there is a serious threat to, or impact on the environment caused directly from the construction operations. This authority is to be limited to emergency situations (see definitions) where consultation with the engineer or developer is not immediately possible. In all such work stoppage situations the ECO is to inform the engineer and developer of the reasons for the stoppage as soon as possible.
- Upon failure by the contractor or his employees to show adequate consideration to the environmental aspects of this contract, the ECO may recommend to the engineer to have the contractor's representative or any employee(s) removed from the site or work suspended until the matter is remedied. No extension of time will be considered in the case of such suspensions and all costs will be borne by the contractor.

Monitoring will be done on monthly, weekly or quarterly basis and a report will be submitted to the relevant authority for checking compliance with the EMPr. This report will give a point scale of implementation measures. This may be the construction site manager, contractor, safety officer, and engineer.

CONSTRUCTION PHASE

MONITORING TYPE	FREQUENCY			
	DAILY	WEEKLY	MONTHLY	QUARTERLY
WEED ERADICATION			X	
EROSION CONTROL			X	
WASTE MANAGEMENT		X		
DUST CONTROL	X			
NOISE MONITORING	X			
SAFETY	X			
BOREHOLE (if used)				X
HAZARDOUS SUBSTANCE			X	

Compliance with the EMPr was rated according to the system detailed below:

SCORE	COMPLIANCE RATING	DEFINITION
4	Full Compliance	All requirements and conditions have been addressed.
3	Substantial Compliance	Between 75 and 100% met
2	Broad Compliance	Between 25 and 75% met
1	Partial Compliance	Less than 25% met
0	Non Compliance	None of the requirements and conditions has been addressed.

Outlined below are a number of steps, relating to increasing severity of environmental problems, which will be implemented. The principle is to keep as many issues within the first few steps as possible.

Step 1: The ECO discusses the problem with the contractor or guilty party, and they work out a solution together. The ECO records the discussion and the solution implemented. This detection together with the solution will be included in the monthly monitoring report.

Step 2: The ECO observes a more serious infringement, and notifies the guilty party in writing, with a deadline by which the problem must be rectified. All costs will be borne by the contractor. This incident will be included in the monthly monitoring report.

Step 3: The ECO shall order the contractor to suspend part, or all, the works. The suspension will be enforced until such time as the offending party (ies), procedure or equipment is corrected and/or remedial measures put in place if required. No extension of time will be granted for such delays and all cost will be borne by the contractor. The Department of Environmental Affairs shall be involved and penalties will be allocated. In this time the department can decide to submit a pre compliance notice and has authority to withdraw the Record of Decision.

7. ENVIRONMENTAL AWARENESS PLAN

7.1 Training programmes:

1. Occupational Health and Safety (OHS) - Done internally by Health of Officer.
2. Personal Protection Equipment (PPE) - Done internally by Safety Officer.
3. Environmental training
 - a. program 1 - Introduction to Environment, Ecosystems and Habitats. Including symbiotic interactions.
 - b. program 2 - Environmental Degradation, Soil, Air, Noise, Water and Ground water Pollution. Erosion.

Programmes 1 and 2, the OHS and PPE training is something that is done either annually or bi-annually depending on the need identified by management of the development. The environmental training and awareness will be implemented a.s.a.p. before the construction phase begins. Management will also arrange for training bi-annually for 2 to 4 hour sessions at a time. Training will either be done internally or externally. Internal training will be done by the Environmental Management Department and externally training providers will be sourced as approved by the owner of the site.

7.2 Monitoring of awareness

Bi-monthly Health and Safety meetings are held where relevant issues regarding health, safety and environment are discussed and feedback is given. Environmental awareness should be incorporated into the compulsory 'Tool box talks' that include health and safety issues. These should be done on a monthly basis.

8. RECOMMENDATION FROM SPECIALISTS & STAKEHOLDERS

8.1 Heritage Impact Assessment:

According to the heritage specialist:

Historical value:

No historical value associated with the site could be found in primary and secondary sources.

Social value:

Social value is attributed to sites that are used by the community for recreation and formal and informal meetings regarding matters that are important to the community. These sites include parks, community halls, sport fields etc. None of the said is evident in the immediate study area.

Does the site/s contain a wide range of archaeological sites?

The proposed site does not contain any surface archaeological deposits; a possible reason is previous infra-structure development and farming activities in the greater study area. The possibility of sub-surface findings always exists and should be taken into consideration in the Environmental Management Plan. If sub-surface archaeological material is discovered work must stop and a heritage practitioner preferably an archaeologist contacted to assess the find and make recommendations.

Does the site/s contain any marked graves and burial grounds?

The site does not contain any marked graves or burial grounds. The possibility of graves not visible to the human eye always exists and this should be taken into consideration in the Environmental Management Plan. It is important to note that all graves and cemeteries are of high significance and are protected by various laws. Legislation with regard to graves includes the National Heritage Resources Act (Act 25 of 1999) whenever graves are 60 years and older. Other legislation with regard to graves includes those when graves are exhumed and relocated, namely the Ordinance on Exhumations (no 12 of 1980) and the Human Tissues Act (Act 65 of 1983 as amended). If sub-surface graves are discovered work should stop and a professional preferably an archaeologist contacted to assess the age of the grave/graves and to advice on the way forward.

RECOMMENDATIONS

- There are no visible restrictions or negative impacts in terms of heritage associated with the site. In terms of heritage this project can proceed.
- The discovery of subsurface archaeological and/or historical material as well as graves must be taken into account.

8.2 Vegetation Survey:

All impacts of the development were rated as low to moderate significance. The same level of rating was awarded towards the sensitivity of the site.

Mitigation measures were proposed for the following:

Mitigation measures for Impact on indigenous natural vegetation:

- Limit clearance of vegetation as far as possible within the medium sensitivity areas.
- The unnecessary clearance of indigenous vegetation should be avoided as far as possible
- Maintenance should not extend beyond the proposed study site.
- Storage of fuel and servicing of construction vehicles should be done off site, on a cement slab.
- Declared alien species should be prevented from occurring on site, as disturbance in natural habitat and compaction of soil usually leads to the establishment of alien plant species.

Mitigation measures for Loss of individual or threatened plants:

- The unnecessary clearance of indigenous vegetation should be avoided.
- Maintenance should not extend beyond the proposed study site.
- No clearance of any areas containing vegetation around the site not directly affected by the proposed development.
- No clearance of vegetation within the high and medium sensitivity areas as these areas is more likely to contain red and orange listed plants.

Mitigation measures for alien invader plants:

- The unnecessary clearance of indigenous vegetation should be avoided.
- Maintenance should not extend beyond the proposed study site.
- Development of an Alien Invasive Management plan after the Construction phase has been completed.
- Implementation of the Alien and Invasive plant management plan.

The following recommendations are made with regards to the proposed development:

- (i) An Environmental Control Officer must be appointed to oversee mitigation measures during construction and will be responsible for the monitoring and auditing of the contractor's compliance.

- (ii) Areas to be disturbed by construction activity as well as areas for ancillary activities such as stock piles, storage yards or site offices must be clearly demarcated in already disturbed areas or areas where they will cause minimal disturbance. The extent of the areas must be minimised and demarcated by preferably using steel droppers and nylon rope between the markers.
- (iii) Construction activities and materials must at all times be contained within the demarcated sites.
- (iv) Vegetation clearance of indigenous vegetation should be limited.
- (v) Areas of medium sensitivity to be avoided.
- (vi) Only indigenous plant species, preferably species that are indigenous to the natural vegetation of the area, should be used for landscaping in communal areas. As far as possible, plants naturally growing on the development site, but would otherwise be destroyed during clearing for development purposes, should be incorporated into landscaped areas.

After the site visits was conducted on the site, it was clear that a large part of the site has been degraded due to housing, agriculture and development of access roads. 100% of the site has been irreversibly transformed from the Egoli Granite Grassland and vegetation on site is predominantly alien and invasive plants, and secondary vegetation.

None of the vegetation on site resembles vegetation associated with the endangered Egoli Granite Grassland vegetation and is rated as having a Medium to Low sensitivity as per the GDARD guidelines and Assessment methodology presented in Section 2.6 of this report.

The area that contains indigenous vegetation associated with the Egoli Granite Grassland is isolated as per the sensitivity map presented in Figure 13 and is outside the proposed development area.

A total of 5 plants were identified on and around the site that is listed in the Alien and Invasive Species. These plants need to be controlled in accordance with an Alien Invasive Plant management plan.

8.3 Wetland Verification:

A summary of the main findings is listed below:

- The greater area surrounding the study site is characterised by development projects with extensive construction already underway in the area.
- The proposed development site has significantly been impacted on and has, recent to the site investigation, been completely burnt.
- No evidence of wetland (or alternative surface water features) were found on site.
- A desktop review of the greater area furthermore revealed that no wetland areas are found within a 500 m radius from the study site.
- However, non-perennial drainage lines are indeed found within this extended study area. These non-perennial drainage ways have significantly been impacted on by anthropogenic activity within the area.
- Portion 131 of the Farm Zevenfontein 407 JR is not sensitive in terms of wetland receptors.
- Neither is the 500 m extended study area, except for the non-perennial drainage lines which are deemed to have a moderate sensitivity.

Although no permanent wetland/drainage areas occur within the study site, it is recommended that appropriate Storm Water Management be implemented as part of development. Storm Water Management structures should be designed to maximise the return of clean storm water towards the natural drainage areas within the extended 500 m study area.

The Environmental Management Plan (EMP) for the proposed development should address good waste management practices, guidelines for the storage, handling, use and disposal of waste, etc. This should be done to ensure that runoff generated on site stays clean, thus preventing contaminated runoff from reaching natural drainage ways within the extended 500 m study site.

9. A TABULAR VERSION OF ENVIRONMENTAL ASPECTS, IMPACTS, MITIGATION AND PERSONS RESPONSIBLE

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
Establishment of the development, parking areas and other associated infrastructure (c) (o)	Topography.	Not applicable to a specific locality.	The development and associated infrastructure will be established on undulating terrain and low significant impact on the topography is anticipated. Erosion will be prevalent on steep slopes	<p>If surface erosion DOES become prevalent during the construction phase, it should be curbed through control measures such as placing sand bags at the lowest point of water run-off areas to halt the sediment transport and erosion that will otherwise occur.</p> <p>Aspects that typically impact on soil conditions are blasting activities, excavations for the founding of foundations, establishment of stockpile areas, removal and/or clearance of vegetation, movement of construction vehicles, and maintenance of construction</p>

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
				<p>vehicles, construction camp establishment and sanitation provision to workers during the construction period. Therefore, the following recommendations pertaining to soil conservation practices are made:</p> <ul style="list-style-type: none"> • Topsoil should be stockpiled separately from subsoil. The height of the stockpiles may not exceed 2.5 m and the stockpiles should not be stored for more than a one year period. • Topsoil must be stripped from all areas, where construction activities are going to take place, to be re-used in landscaping the site.

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
				<ul style="list-style-type: none"> • If any blasting activities occur on site, the blasted rocks and heavy rock material must be transported to an external venue. These rocks are not allowed to rest on site. If the rocks are left on site, the soil will be greatly compacted, which will promote the growth of weeds. • Any excess overburden material that is generated may not be dumped in a random manner. Dumping sites should be predefined, agreed upon and adhered to. • Any embankments created adjacent to the roads or any

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
				<p>drainage lines must be stabilised during construction and re-habilitated afterwards.</p> <ul style="list-style-type: none"> • Generally, surface water must be prevented from damming or creating gully erosion. This can be achieved by placing sandbags along the boundaries of steep working areas where higher intensity surface run-off may occur. • All runnels and erosion channels developing during the construction period or during the operational and maintenance period should be backfilled and consolidated immediately. • The movement and maintenance

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
				<p>of construction vehicles may only take place in pre-determined and delineated areas. Only planned and formal routes for hauling of material should be used.</p> <ul style="list-style-type: none"> • Soil contamination during construction vehicle maintenance or as a result of fuel storage on site is easily prevented, but in the event of such an accident, the spill should immediately be cleaned up by absorbing the worst of the fluid with saw dust and then disposing of the saw dust and the first bit of the soil layer. • Fuel storage areas should be

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
				<p>bounded effectively and all applicable safety standards must be adhered to.</p> <ul style="list-style-type: none"> • In terms of the stability of excavations, it is strongly recommended that all excavations exceeding 1.5 m should have proper sidewall protection to ensure the safety of workers. • Seepage may result in the destabilising of the soils above the seepage and special precautions may be required. <p>Responsible Person: Applicant / Developer</p>
Preparation of the site, including the	The existing grass layer, shrubs and trees	The development and other	The removal of vegetation cover, such that the soil surface is	It is advisable that only vegetation be removed where and when it is

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
clearance of vegetation (c)	are to be removed for the establishment of buildings and infrastructure.	associated infrastructure footprint, and parking areas.	exposed, may lead to increased soil erosion in certain areas. Where the removal of surface vegetation is of a temporary nature only, the establishment of weed species is a threat. The topsoil layer is required to rehabilitate the vegetation in these areas; where surface vegetation has been temporarily removed it must be replaced again.	necessary. After removal of vegetation, landscaping needs to be incorporated by re-establishing natural grassland/vegetation where appropriate. No red data plant species were recorded during the site visits conducted. Responsible Person: Applicant / Developer
Excavations for the establishment of foundations (c)	Vegetation and soil layers.	The development and other associated infrastructure footprint, and parking areas.	The existing vegetation will be permanently removed to accommodate the development and other associated infrastructure footprint, and parking area foundations, which will be approximately the size of the built footprint.	It is advisable that only vegetation be removed where and when it is necessary. After removal of vegetation, landscaping needs to be incorporated by re-establishing natural grassland/vegetation where appropriate. No red data plant species were recorded during the

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
				<p>site visits conducted.</p> <p>Responsible Person: Applicant / Developer</p>
Establishment of stock pile areas (c)	Soil and vegetation cover.	Locations still to be determined; the impacts on soil and vegetation will occur wherever stockpiles are established.	<p>Stockpiles will need to be established for the storage of aggregate, bricks and cement. Stock piles cause compaction of soil surfaces, which promotes the establishment of unwanted weed species. The establishment of weeds greatly reduces the quality of the natural vegetation on site.</p> <p>Correct and efficient storm water drainage systems must be installed. Poorly designed storm water outlets will result in increased surface run-off volume and speed, which could</p>	<p>Building material stockpiles must not be stockpiles within 50m of wetlands and drainage lines areas. Any alien vegetation that established itself because of disturbance need to be eradicated. Erosion control measure must be implanted where necessary.</p> <p>Responsible Person: Applicant / Developer / Contractor</p>

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
			lead to the creation of erosion gullies. All road surfaces generate storm water, which should be controlled by preventing the storm water from crossing the road. Storm water must be allowed to spread out gradually over a large surface area to protect the soil surface against erosion.	
Generation of construction waste (c)	Soil, vegetation, aesthetic quality of the site and surface water run-off.	The site and its directly adjacent areas.	Waste, such as building rubble and empty cement bags can be a negative visual impact if not collected and disposed of correctly. Polluted surface water run-off may pollute the water resources (both the underground resources and other drainage areas in the vicinity). Construction waste that is not	Building rubble has to be collected at a centralized area and preferably in skip waste bins. No illegal dumping may be allowed in the construction phase and this will have to be checked and monitored by the appointed Environmental Control Officer.

ENVIRONMENTAL ASPECT AND PROJECT STAGE	ENVIRONMENTAL COMPONENT POTENTIALLY TO BE AFFECTED	LOCALITY / APPLICABLE ZONE OF THE IMPACT	NATURE AND DESCRIPTION OF THE POTENTIAL IMPACT/ISSUE	MITIGATION MEASURES AND PERSON/S RESPONSIBLE
			removed from site will also be an eye sore in the area and will promote the growth of unwanted weed species.	Responsible Person: Applicant / Developer / Contractor
Movement of construction vehicles on all local road networks (c)	Air quality due to dust generation. Traffic safety aspects. Soil and vegetation cover.	Wherever construction vehicles travel. Potential impacts may be eminent over a wide area if not carefully managed and restricted.	The movement of heavy vehicles (transporting building material) on tar roads and especially busy main roads, can impact on traffic safety, due to accidental soiling of the road surface and/or speeds driven by construction vehicles. Access points to the site are dirt; therefore, dust generation may be a problem to adjacent land owners and motorists in general. Movement will cause limited or localised disturbances and temporary soil compaction, which promotes the establishment of weed	Alien plant species need to be controlled and it must be ensured that weeds are removed. Dust depression measures such as watering the bare surfaces need to be implemented. Responsible Person: Applicant / Developer / Contractor

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			species.	
Maintenance of construction vehicles (c)	Possible soil contamination, which in turn will affect surface water run-off. Vegetation.	Location of the construction camp, if established temporarily on the development site is still to be determined.	In the event of on-site repairs and servicing, soil surfaces, vegetation, and run-off may be locally contaminated. Soil contamination during construction vehicle maintenance is easily prevented. But in the event of such an occurrence, the impact will be of a temporary nature only, as spills can and should immediately be cleaned up. The quality of surface water may temporarily be negatively affected.	The construction camp has to be identified and communicated to the ECO as soon as its position is available. Any fuel depot areas have to be bunded and where fuel hoses will operate, absorbing gravel needs to be provided. This area can also be lined with a small piece of plastic below the gravel. As soon as any spillages occur, the gravel has to be collected and disposed of as hazardous waste. Responsible Person: Applicant / Developer / Contractor
Noise generation by operating air	Ambient noise levels.	Areas on and surrounding site at	Noise generation caused by the operation of construction machinery	Noise mitigation measures are required in order to keep the noise

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compressors, excavators and other heavy machinery (c) (o)		which construction activities take place.	causes social disturbances. These disturbances are of a temporary nature only (during the construction phase). Noise from tourists stay over.	generated by construction activities as low as possible - given the site's relatively close proximity to some residential areas. This can be achieved by ensuring that only well-oiled, well maintained machinery is used, as such machinery will produce less noise than poorly serviced machinery. For example, poor maintenance of exhaust systems will produce unnecessary noise pollution. Furthermore, working hours for construction should be limited to between 07h00 and 17h00 on week days, as construction outside of these time frames will be a nuisance to adjacent dwellers.

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				<p>No loud music after 10pm and non on Sundays.</p> <p>Responsible Person: Applicant / Developer / Contractor</p>
Construction camp establishment (c)	Aesthetic impacts, social aspects, subsurface and groundwater quality, generation of domestic waste, vegetation removal, soil surface compaction and faunal impacts.	Locations of the construction camps still to be determined - will be within the least sensitive areas.	The establishment of construction camps will have a localised impact on the soil and vegetation cover of the site, as well as on the quality of surface water - as a result of construction camp litter, vehicle servicing, fuel storage and other such activities.	<p>Proper management of any temporary toilets need to be undertaken on a strict schedule. The construction camp must be more than 100 metres away from any water bodies.</p> <ul style="list-style-type: none"> Workers that are allowed to live on-site should be kept to minimal numbers. Those workers present at night should be on site only to look after construction equipment and to take register of the

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				<p>workers present on site to eliminate crime in the area.</p> <ul style="list-style-type: none"> • Any temporary structures will be soundly built and will not pose a danger to personnel. • The contractor must supply cooking facilities (preferably gas) if labourers are to be housed at the site. • No fires will be permitted outside the construction camp and adequate firefighting equipment, which complies with fire and safety regulations, must be available at the construction camp site at all times (at least one all-purpose 12,5 kg extinguisher)

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				<ul style="list-style-type: none"> • Chemical toilets to be supplied at the construction camp for labourers accommodated on site. They may also use existing facilities on site. • Welding, gas cutting or cutting of metal will only be permitted inside the construction camp. • The contractor will supply 210 litre drums at the construction camp, as well as at the construction site, for the storage of domestic waste. • Recyclable waste including glass, paper and plastic shall be separated at the construction camp, stored and recycled (where economically feasible).

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				<ul style="list-style-type: none"> Waste must be removed on a weekly basis to a registered waste disposal facility, or through the utilisation of existing municipal waste removal systems. As far as possible, local labour should be employed during the construction period. <p>Responsible Person: Applicant / Developer / Contractor</p>
Temporary fuel storage on site (c)	Possible soil and water contamination.	This will occur in the construction camp(s) established and their localities are still to be determined.	There shouldn't be any impacts as a result of this activity. However, in the event of a fuel spill the soil and water may become contaminated, which should be dealt with rapidly.	<ul style="list-style-type: none"> No temporary fuel storage tanks or containers may be erected near drainage courses and refuelling must be done by means of a fuel bowser. Fuel storage areas must be bunded effectively and all

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				<p>applicable safety standards have to be adhered to. The bunded area around the fuel storage areas should be able to contain 110% of the volume of the fuel container inside it.</p> <ul style="list-style-type: none"> All fuel storage areas must be fenced and secured. <p>Responsible Person: Applicant / Developer / Contractor</p>
Provision of water for construction on site (c)	None. Municipal water source to be used. Bottled water will be given.	None.	The only impact would be if there is not enough water to be allocated to this construction phase from the municipality.	<p>Do not use more water than allocated by the municipality.</p> <p>Responsible Person: Applicant / Developer / Contractor</p>
Provision of water for consumption (by	Site quality (in terms of littering).	The site.	Bottled water will be provided to workers on site.	None.

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workers) on site during the working day (c)				Responsible Person: Applicant / Developer / Contractor
Sanitation provision to workers during the working day (c)	Possible contamination of subsurface soil and surface water quality.	Still to be determined, but if provided, will be within the construction camp to be established.	Insufficient chemical toilets will have a health impact. Subsurface soil contamination and contamination of surface / subsurface water quality could occur if the ablution facilities provided are not according to standard. A temporary impact is possible; however, it can easily be prevented.	Sufficient chemical toilets should be provided for workers, in the range of 1 per every 8 workers, within walking distance of all construction activities. These toilets must be well maintained and inspected on a daily basis to ensure that they are clean and functioning properly. No washing of people and/or goods should take place on cleared surfaces, as this water should not be allowed to drain into any adjacent storm water canals or drainage lines.

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				Responsible Person: Applicant / Developer / Contractor
Waste disposal and handling of solid waste and sewage associated with the development and waste disposal by consumers (o)	The aesthetic quality of the site, social impacts (health of workers and adjacent communities within the study area), possible surface water run-off and groundwater resource contamination, as well as air pollution.	The site and directly surrounding areas.	Poor design and layout of waste collection / storage facility sites will have a negative impact in terms of surface pollution and aesthetic quality. Practical design and efficiency is essential in this regard. Untidy collection facilities and wind-blown refuse is often a problem associated with these developments. Incorrect management of solid waste and the waste water treatment plant can cause air pollution (in the form of foul odours), health problems (pests and other diseases) and water pollution.	Therefore, practical design and efficiency is essential in this regard. The location of the refuse areas/waste collection area must be carefully planned and located so as not to cause a visual nuisance, as wind-blown refuse is often a problem. It is suggested that large black bins, which are secured in place, are distributed frequently at strategic locations across the site to discourage littering. The dustbins should be secured to prevent them from being knocked over or carried away. The lids should also be suspended permanently above the

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				<p>dustbins, to ensure that the waste disposed of is efficiently contained. The waste from these bins should be collected on a weekly basis and stored in a refuse collection yard (which should be contained within a walled fence), until such a time that a certified/registered contractor collects the waste - on a weekly basis - to be disposed of at a registered waste disposal site or when the applicant see fit to do it himself.</p> <p>Sewage should be collected through a municipal network.</p> <p>Responsible Person: Applicant /</p>

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				Developer / Contractor
Cleaning and maintenance of surfaces (o)	Surface water run-off (into the storm water system) and water quality within the study area.	Storm water systems and natural drainage areas.	Chemicals used in the routine cleaning of surfaces (and possible oil and fuel spill clean-ups) can result in polluted surface water run-off, which enters the storm water systems, thereby affecting the quality of the storm water that may eventually end up contaminating the natural drainage system.	Any chemicals or effluent must always be collected in closed containers / sumps when cleaning surfaces. No chemicals or effluent must enter storm water drainage systems or natural veld. Responsible Person: Applicant / Developer / Contractor
Impact on prevailing ambient noise levels (o)	Adjacent landowners.	The area directly adjacent to the development.	Noise will be generated by the movement of vehicles associated with the development activities.	<ul style="list-style-type: none"> • Ensuring that machinery and trucks are well-oiled and maintained; this will make less noise than poorly serviced construction equipment. • Silencers can be fitted to exhausts of heavy vehicles to limit the noise they produce.

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				<ul style="list-style-type: none"> • Lastly, construction hours should be confined to daylight hours of a normal working day, specifically from 7 am to 5 pm in the summer and 7.30 am to 5 pm in the winter. • No activities should take place on Saturdays after 14:00 and no actions must take place on Sundays. • No loud music after 10pm and non on Sundays. <p>Responsible Person: Applicant / Developer</p>
Impact of illumination produced at night (o)	Visual and aesthetic quality, social environment of	Areas directly adjacent to the development.	Night illumination will be required. The light produced could cause a disturbance to adjacent landowners.	Therefore, to pay special attention to “blending” the development to the environment is not a practical

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	adjacent community.		However, light illumination is usually not a problem associated with these developments. Light orientation will be important in this regard.	exercise. In terms of the level and nature of night illumination, carefully placed and downward shining lights are recommended to reduce this impact sufficiently. No high flood-lights should be installed on the site. Responsible Person: Applicant / Developer
Impact on storm water quality during the operation of the development and in the event of accidental spillage (o)	Storm water run-off, natural drainage courses and areas in the vicinity of the study area.	Storm water canals and the area surrounding the site of the proposed development.	Should surface water run-off be contaminated it may run through the storm water systems into the natural drainage course. This will occur under circumstances where no anti-pollution measures are designed and installed. The design of the storm water system, to drain the	Maintenance of storm water outlets is required to ensure that they don't get blocked (i.e. no longer fulfil their function) or result in erosion. The custodian of the development has to perform regular checks and maintenance.

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			premises, must be such that it prevents the risk of storm water pollution or abnormal soil erosion at its outlets.	Responsible Person: Applicant / Developer
Impact of the proposed development on future land use (o)	Land use options and agricultural potential of the site.	Within the study area, which is agricultural land.	The sites agricultural potential, rated as marginal potential arable land. Therefore, this is not a significant impact.	None. Small development on moderate potential agricultural land.
General building maintenance (o)	Visual and aesthetic quality, also surface water quality and vegetation cover.	The study area at large.	The design and nature of the development will determine the impact of the proposed development on the visual quality of the study area. Maintenance of the development as a whole will prevent a further negative impact on the visual quality of the study area. The disposal of rubble (both during	Maintenance of all structures is critical in upholding or improving on the visual impact on the area. Weed / exotic vegetation control must be implemented regularly to protect the natural environment. Responsible Person: Applicant / Developer

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			<p>construction and maintenance) causes impacts on the natural environment (including faunal ecology, surface water and vegetation) if disposed of illegally. Compaction of soil surfaces and the propagation of weeds are typical impacts.</p>	

10. COMPLYING, REMEDYING, AND CONTROLLING ENVIRONMENTAL POLLUTION INCIDENTS AND CAUSES

If there is an environmental incident, like oil or diesel spills, or any other form of pollution during the construction phase then the applicant/contractor/engineer should consult with the appointed Environmental Control Officer (ECO) for the project. The ECO should then respond immediately on the incident at hand with the appropriate mitigation measure as practically as possible.

An environmental awareness plan should be communicated to the workers and contractors via a training session before the construction phase starts. All risks should be put forward in terms of pollution and environmental degradation. The environmental awareness plan can be compiled by the ECO or environmental practitioner for the training session before the construction phase.

Appendix I: Other information

- Infrastructure Outline Scheme Report
- Townplanning Memorandum

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INFRASTRUCTURE OUTLINE SCHEME REPORT

OF A PROPOSED A NEW DEVELOPMENT IN RIVERSIDE VIEW EXTENSION 76

Revision A: September 2017

Project No.: C6849

CLIENT
Terraplan Gauteng CC

CONSULTING ENGINEER:
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Contents

1. Introduction.....	1
2. Site Description	1
3. Design Standards.....	2
4. Water Reticulation	2
Water Connection	2
Water Demand	3
Impact on Capacity.....	3
Internal Reticulation.....	3
5. Sewer Reticulation	4
Sewer Connection	4
Sewerage Discharge	4
Impact on Capacity.....	5
6. Roads	5
Access	5
7. Stormwater Management.....	5
8. Drawings.....	6

1. Introduction

A Portion 131 (a portion of Portion 2) of the farm Zevenfontein 407 J.R. is to be rezoned for "Mixed Use" development. The township will be known as Riverside view Extension 76.

The total area of the development will be 3.0043 hectares and the development will comprise of high density residential buildings, residential buildings, educational, hospital, light industrial, commercial and warehouse retail.

Terraplan Gauteng CC has appointed BSM Baker (Pty) Ltd to attend to the design of the civil engineering services for the development.

This report addresses the sewer and water connection requirements and capacities for the new development and summarizes the proposed road access and stormwater management principals to be adopted.

This report is submitted for re-Zoning approval purposes.

2. Site Description

The site is located on the corner of William Nicol Drive and Christiaan Street. The site is bordered by the remained of portion 7 of the farm Diepsloot 388 J.R. to the north, Holding 1 Kleve Agricultural Holdings to the east, Christiaan Street to the south, and William Nicol drive to the west.

The site slopes down at a gradient of 4.3% from North to South. The highest point is the North east corner at an elevation of 1423.5m MSL and the lowest point is the Southern boundary at an elevation of 1412m MSL.



Figure 1: site location

3. Design Standards

The following design standards will be applicable:

- Guidelines for human settlement planning and design, compiled for the Department of housing by the CSIR (Red Book)
- Johannesburg Water Guidelines & Standards for the Design and maintenance of Water and Sanitation Services – January 2013

4. Water Reticulation

Water Connection

The access to the development will be off the proposed Summit School Road which will split the site into two sites. These two sites will connect into the water mains that will run in Summit School Road. This section of water connection will be a 250mm diameter Class 12 uPVC pipe for ERF 1 and a 160mm diameter Class 12 uPVC pipe for ERF 2. This connection will feed both domestic water and fire reticulation. The construction of the connection and water main will be in accordance with Johannesburg Water and SABS 1200 Specifications.

Water Demand

The water demand for the development was estimated using the Johannesburg Water Guidelines for the Design and Maintenance of Water and Sanitation Services. Due to the development still in the planning stages, it is assumed that the development will be mainly comprised of industrial areas, thus using Table 4 for industrial, and based on the site area and the proposed FAR of 2.7, the average daily water demand for the entire development will be as follows:

For Erf 1

2.8178 hectares at 25 kilolitres per hectare: Average Daily Demand: 70.445 kl

Based on a peak factor of 4 the maximum peak flow demand will be 3.26 liters per second.

For Erf 2

0.1865 hectares at 25 kilolitres per hectare: Average Daily Demand: 4.6625 kl

Based on a peak factor of 4 the maximum peak flow demand will be 0.22 liters per second.

The total demand from both erven will be 3.48 liters per second.

Impact on Capacity

Due to Summit School road been planned to be constructed in the future, there is no water lines close to the site to conduct a water pressure flow test. However a flow water pressure test will be conducted and submitted to Johannesburg water closer to construction.

It is foreseen that the peak demand will have no negative impact on the surrounding municipal water reticulation system.

Internal Reticulation

The internal water pipes will remain the property of the development and will not be taken over by Johannesburg Water. The domestic internal water reticulation system will be of Class 12 UPVC pipes of up to 110mm diameter. Minimum cover to water mains will be 800mm.

Fire Hydrants will be provided to ensure a maximum distance (180m) to a hydrant from the furthest point of any building within the development.

The reticulation system will be designed to provide for a minimum residual head of 24m under peak domestic flow conditions, and 15m under peak domestic plus fire flow conditions.

Construction of all watermains and connections will be in accordance with Johannesburg Water and SABS 1200 specifications.

5. Sewer Reticulation

Sewer Connection

The natural topography of the site falls to the southern cadastral border, thus the sewer connection will be constructed in the South East corner for ERF 1 and South West corner for ERF 2. A sewer will need to be provided in the Summit School Road reserve and connect into the closest existing sewer system to the south of the development.

The section of sewer connection will be a 160mm diameter class 400 uPVC and the manhole will be a 1000mm diameter precast concrete to Johannesburg Water standards.

Sewerage Discharge

The sewerage discharge for the development was estimated using the Johannesburg Guidelines for the Design and Maintenance of Water and Sanitation Services. The discharge at this point can only be assumed as the development is still in the planning stages, thus using table 12 of the guidelines for industrial, and based on the site area and the proposed FAR of 2.7, the average daily sewerage discharge for the entire development will be as follows:

For Erf 1

2.8178 hectares at 15 kilolitres per hectare: Average Daily Discharge: 42.267 kl

Based on a peak factor of 2.3 and allowing for a 15% infiltration of water from other sources, the maximum peak flow discharge will be 1.29 litres per a second.

For Erf 2

0.1865 hectares at 15 kilolitres per hectare: Average Daily Discharge: 2.7975 kl

Based on a peak factor of 2.3 and allowing for a 15% infiltration of water from other sources, the maximum peak flow discharge will be 0.0856 litres per a second.

A total peak discharge for both erven will be 1.38 litres per second.

Impact on Capacity

The sewer line will connect into the outfall sewer to the east of the site. The discharge from the site will not have any negative impact on the municipal system.

6. Roads

Access

The access to the site will be taken off the proposed Summit School Road. The access to the development will be designed according to the standards to the Johannesburg Roads Agency.

7. Stormwater Management

At detailed design stage a stormwater management system will be designed and submitted to the Johannesburg Roads Agency for approval.

The system will incorporate stormwater attenuation in order to limit outflow under the developed state to the estimated existing discharge rates for the 5 year and 25 year storm situation.

As no site planning has been completed, no details of attenuation can be provided at this stage. The site will be split into two ereven due to a proposed road going through the site. Therefore ERF 1 will have an area of 28178m² and Erf 2 will have an area of 1865m². Erf1 will require a stormwater attenuation pond with a volume of approximately 986m³. However with Erf 2 only has an area of 1865m² which is less than 8500m², therefore no attenuation is required for erf 2.

Due to the nature of the topography, the attenuation pond will most likely be positioned on the southern border of the site, and the attenuated outflow will be discharged into the new stormwater system in Summit School Drive.

Construction of all manholes and installation of stormwater pipes will be in accordance with Johannesburg Roads Agency. All designs will be submitted to the JRA at SDP stage and prior to construction.

8. Drawings

The following drawing is attached:

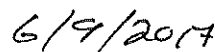
- C6849-S01-RevA : Stormwater, Sewer and water connection layout and detail.

Report done by:

Byron Kouwenhoven



Signed



Date

Township Establishment Application
On Portion 131 (a portion of Portion 2) of the farm
Zevenfontein 407 J.R.
(Proposed Riverside View Extension 76)



Application in terms of Section 26 of the City of Johannesburg Municipal Planning By-law, 2016, read with the Spatial Planning and Land Use Management Act, 2013



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Prepared in October 2016

Our ref: DP 896

Contents

DEVELOPMENT SUMMARY	3
1. BACKGROUND INFORMATION	3
2. TOWN PLANNING CONSIDERATIONS	4
2.1 LOCALITY	4
2.2 EXTENT OF THE PROPERTY	4
2.3 DEED OF TRANSFER	4
2.4 PRESENT ZONING	5
2.5 PRESENT LAND USE	5
2.6 SURROUNDING ZONING AND LAND USES	5
3. PHYSICAL INFORMATION.....	7
3.1 TOPOGRAPHY.....	7
3.2 FLOODLINES	8
3.3 GEOLOGICAL / GEOTECHNICAL INFORMATION.....	8
3.4 PROPOSED ROADS.....	8
3.5 OTHER INFRASTRUCTURE SERVICES.....	9
4. LAND USE MANAGEMENT POLICY.....	9
4.1 NATIONAL LEVEL	9
4.1.1 NATIONAL DEVELOPMENT PLAN	9
4.1.2 SPLUMA: GENERAL PRINCIPLES FOR LAND DEVELOPMENT	9
4.1.3 NATIONAL ENVIRONMENTAL MANAGEMENT ACT 107 OF 1998	10
4.2 PROVINCIAL LEVEL	11
4.2.1 GAUTENG PLANNING AND DEVELOPMENT ACT – (NO 3 OF 2003)	11
4.2.2 GAUTENG SPATIAL DEVELOPMENT FRAMEWORK, 2011 (GSDF)	12
4.3 LOCAL LEVEL.....	13
4.3.1 COJ GROWTH AND DEVELOPMENT STRATEGY, 2040 (GDS).....	14
4.3.2 COJ GROWTH MANAGEMENT STRATEGY	14
4.3.3 CITY OF JOHANNESBURG: 2012/16 INTEGRATED DEVELOPMENT PLAN: 2013/14 REVIEW	14
4.3.4 CITY OF JOHANNESBURG SPATIAL DEVELOPMENT FRAMEWORK	15
4.3.5 CITY OF JOHANNESBURG REGIONAL SPATIAL DEVELOPMENT FRAMEWORK – REGION A (SUB AREA 4)	16
4.3.6 PERI URBAN TOWN PLANNING SCHEME, 1975.....	17
5. PROPOSED TOWNSHIP	18
6. MOTIVATION FOR THE PROPOSED TOWNSHIP.....	20
7. CONCLUSION.....	23

List of Annexures

1. Locality Plan
2. Surrounding Zonings
3. Surrounding Land Uses
4. Layout Plan

DEVELOPMENT SUMMARY

This memorandum is submitted in support of the application in terms of in terms of Section 26(3)(a) of the City of Johannesburg Municipal Planning By-law, 2016, read with the Spatial Planning and Land Use Management Act, 2013, for the establishment of a mixed use township which includes 2 erven zoned “Special” for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail on Portion 131 of the farm Zevenfontein 407 J.R. (Riverside View Extension 76).

The township will comprise of 2 erven (to be consolidated), subject to the restrictive measures listed below:

Zoning	“Special”
Primary rights	High density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail.
Coverage	80%
Floor area ratio	2.7
Height restriction	6 storeys
Density	120 du/ha

1. BACKGROUND INFORMATION

This memorandum is submitted in support of the application for the establishment of a “Mixed Use” township on Portion 131 of the farm Zevenfontein 407 J.R. (hereafter referred to as “the site”). The township will be known as Riverside View Extension 76.

The application site is highly accessible and situated on the corner of William Nicol Drive (Mobility Spine, Class 2 to function as a BRT route) and Christiaan Street. Although the site is 7,8408 hectares in extent, it is affected by the proposed PWV 5 route, which is excluded from the township and only 2,6384 hectares remains available for the proposed development.

The development pressure for this area is supported by the new Steyn City development north of Dainfern Estate, East of Chartwell North and west of William Nicol Drive between William Nicol Drive and Cedar Road (Riverglen Township) and a proposed mixed use residential development on the Riversands Farm which covers the portion of land between Erling Street and Mnandi Road east of William Nicol (Riverside View Extension 15).

The City of Johannesburg Metropolitan Municipality investigated the development potential of the area and has earmarked the area east of William Nicol Drive, including the application site as a Specialist SMME Regional Node, promoting high intensity mixed use development. This application is thus in line with the amended Regional Spatial Development Framework for Sub Area 4 (Region A) as approved by the City of Johannesburg Metropolitan Municipality.

These aspects, as well as other matters motivating the “need” and “desirability” of this proposed township establishment, will be discussed in detail later on in this memorandum.

2. TOWN PLANNING CONSIDERATIONS

2.1 LOCALITY

The locality of the site is indicated on Annexure 1.

Portion 131 of the farm Zevenfontein 407 J.R. is situated in Sub-Area 4 of Region A. Region A is located on the northern periphery of the City of Johannesburg Metropolitan area. The application site is located on the corner of William Nicol Drive and Christiaan Street and is bordered by:

- The Remainder of Portion 7 of the farm Diepsloot 388 J.R. (proposed Riversands Farm Development) to the north,
- Holding 1, Kleve Agricultural Holdings to the east,
- Christiaan Street to the south, and
- William Nicol Drive to the west.

2.2 EXTENT OF THE PROPERTY

According to the title deed the property is 7,8408 hectares in extent. The site is however affected by the proposed PWV 5 and the portion remaining to accommodate the proposed development is only 2,6384 hectares in extent.

2.3 DEED OF TRANSFER

Portion 131 (a portion of Portion 2) of the farm Zevenfontein No 407, Registration Division J.R. is being held under Deed of Transfer **T134845/2007** and it is registered in the name of **SILVER LAKE TRADING 511 (PROPRIETARY) LIMITED**.

The restrictive measures as contained in the Title Deed, attached for information purposes, refer to the following:

A. SUBJECT to the following provisions of Act 21/1940 as follows-

1. The land may not be subdivided without the written approval of the Controlling Authority as defined in Act 21/1940.
2. Not more than one-dwelling house together with such outbuildings as ordinarily required to be used in connection therewith, shall be erected on the land except with the approval of the Controlling Authority as defined in Act 21/1940.
3. The land shall be used for residential and agricultural purposes and no store or place of business or industry whatsoever may be opened or conducted on the land without the written approval of the Controlling Authority as defined in Act 21/1940.
4. No building or any structure whatsoever shall be erected within a distance of 37,78 metres from the centre line of the road without the written approval of the Controlling Authority as defined in Act 21/1040.

B. FURTHER SUBJECT to Notarial Deed of Servitude No 354/1959 S registered on the 8th day of April 1959 whereby the right in perpetuity to convey electricity across the property aforesaid by means of wires and/or cables or other appliances underground or overhead has been

granted to the ELECTRICITY SUPPLY COMMISSION as well as will more fully appear from the said Notarial Deed and Diagram L.G. No A5025/58 thereto annexed.

In terms of Act 21 of 1940 (Advertising on Roads and Ribbon Development) the controlling authority is the provincial department's responsible for provincial roads. The primary purpose of Act 21 of 1940 was never to regulate the use of land per se, but rather to protect the integrity, the role and function of the provincial roads in certain areas, against land use practices and advertising which may negatively affect the same.

These conditions allow for the consent and approval of the "controlling authority" here being the Gauteng Department of Roads and Transport. The application will be referred to the Gauteng Department of Roads and Transport as part of the external referral process.

A **servitude** for an underground electrical cable is located on the northern boundary of Portion 131 of the farm Zevenfontein 407 J.R., which is excluded from the township area and thus does not affect the application due to its locality.

Lastly, it needs to be stated that **no bond** is registered against Portion 131 of the farm Zevenfontein 407 J.R.

2.4 PRESENT ZONING

In terms of the Peri Urban Town Planning Scheme, 1975 the zoning of the site is as follows:

Portion 131 of the farm Zevenfontein 407 JT is zoned as "Agriculture" subject to the following development conditions:

Use Zone	AGRICULTURE
Primary Rights	Dwelling House and Agricultural Buildings
Secondary Rights	Places of public worship, Places of instruction, Institutions and Special buildings
Density	N/A
Coverage	5%
Floor area ratio	N/A
Height	2 storeys
Building lines	Farm portions: 30 meters from the boundary of any road in respect of which a building line has not already be fixed and 5 m from any other boundary.

2.5 PRESENT LAND USE

The application site is currently undeveloped/vacant.

2.6 SURROUNDING ZONING AND LAND USES

The surrounding zoning and land uses are indicated on Annexures 2 and 3.

Portion 131 of the farm Zevenfontein 407 J.R. is situated in Sub Area 4, which is characterised by high-density urban residential components and well defined mixed use nodes. The Fourways regional node, together with several district and neighbourhood nodes spread throughout the sub

area provide various services and employment opportunities. A well-defined Strategic Public Transport System (SPTN) connects the sub area to the rest of the City. The majority of non-residential land uses within the sub area are concentrated along William Nicol Drive, Cedar Road and Witkoppen Road, thereby generating high traffic volumes along these three mobility spines. A part of the Greater Kyalami Conservancy (GEKCO) falls within this sub area.

The area immediately east and south of the application site includes the Kleve Agricultural Holdings area. The bulk of the properties in this area are zoned "Agriculture" and have a rural agricultural character, with most of the holdings used for rural residential purposes and small scale farming activities, including tree nurseries.

A commercial park is proposed directly north of the application site. This development will be known as the Riversands Commercial Park and it will be a large, secure complex accommodating a variety of commercial precincts – including retail, office, warehousing and light industrial business premises. **Figure 1** below illustrates the proposed development.

FIGURE 1 - RIVERSANDS COMMERCIAL PARK



Steyn City, which is a mixed use development, is being developed west of the application site and this development covers approximately 700 ha of land. The total project has a capacity of some 11 000 residential units, including a championship Golf Course (currently in construction), some 260 ha of landscaped parkland incorporating pedestrian routes and bridle trails, and a mix of supportive uses including two private schools, office developments, convenience shopping, a retirement village and a private hospital. The proposed Steyn City Development is illustrated in **Figure 2**.

FIGURE 2 - STEYN CITY



3. PHYSICAL INFORMATION

3.1 TOPOGRAPHY

The total application site is 7.8408ha in extent. The site slopes downwards to the south with a 10m fall over the length of the property (262 m). The slope is sufficient to allow for natural storm water drainage as well as for the installation of essential services. The topographical characteristics will have no detrimental effect on the development potential of the site.

3.2 FLOODLINES

In terms of the requirements of Section 144 of the National Water Act, 1998 (Act 36 of 1998) this proposed township is not affected by a flood line with an expected frequency of 1:50 years or 1:100 years. The layout plan has been endorsed by [REDACTED] Consulting Engineers to this respect.

3.3 GEOLOGICAL / GEOTECHNICAL INFORMATION

A Geotechnical Investigation and Dolomite Stability Investigation were conducted for the application site. A copy of the report is attached to the covering letter to this application. The proposed layout plan also reflects the findings of the geotechnical investigation (endorsed by [REDACTED], a professional Geotechnical Engineer).

3.4 PROPOSED ROADS

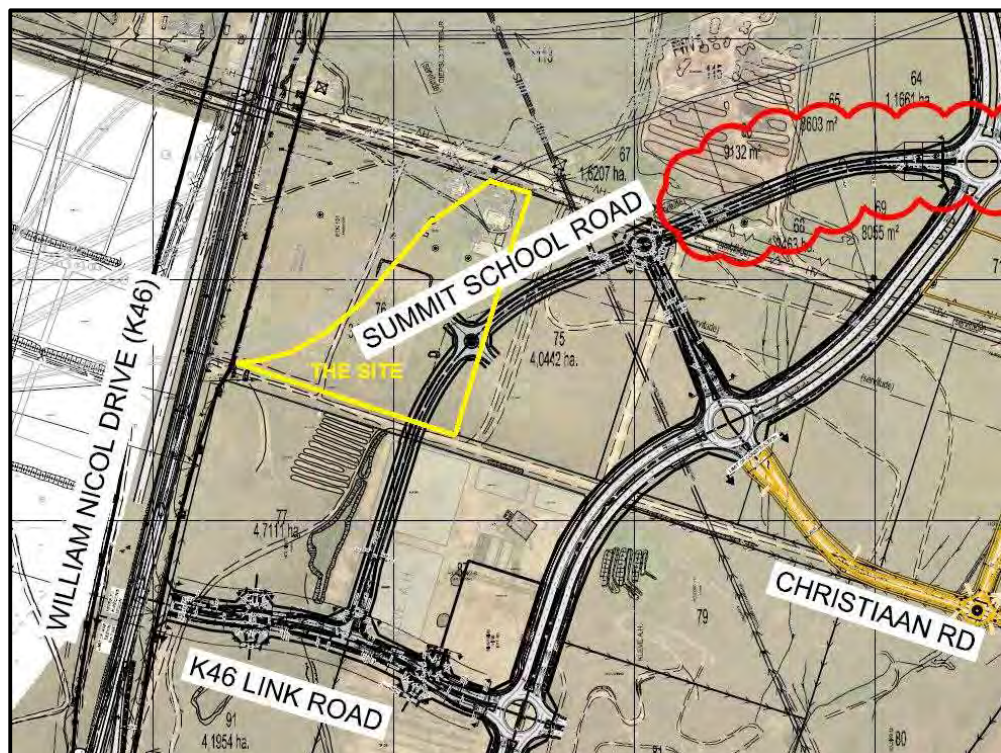
- Regional Accessibility (present and future)

The proposed township is situated in the northern section of the City of Johannesburg Metropolitan area adjacent to William Nicol Drive. The north western portion of the site is affected by the proposed PWV 5 and the south eastern portion of the site is affected by the proposed Summit School Road, which forms part of the Riversands Development.

- Access to the site

Access to the site will be from the proposed Summit School Road which encroaches onto the property on the eastern boundary (as indicated in **Figure 3**). Access to the site will however be subject to the approval of the Johannesburg Roads Agency.

FIGURE 3 – ACCESS TO THE SITE



3.5 OTHER INFRASTRUCTURE SERVICES

The availability and the installation / linking / connections will be addressed in the Services Agreement to be entered into between the Developer and the Local Authority.

4. LAND USE MANAGEMENT POLICY

4.1 NATIONAL LEVEL

4.1.1 NATIONAL DEVELOPMENT PLAN

In 2012, a major strategic document adopted by the government was the National Development Plan (NDP) Vision for 2030 (NDP 203024). The NDP 2030 is the narrative for a new growth and development trajectory for South Africa. The NDP 2030 is an integrated vision statement for South Africa. In summary, the vision sets out that South Africa in 2030 will have:

- An economy that will create more jobs;
- Improved infrastructure;
- Transitioned to a low-carbon economy;
- An inclusive and integrated rural economy;
- Reversed the spatial effects of apartheid;
- Improved quality of education, training and innovation;
- Quality health care for all;
- Social protection;
- Built safer communities;
- Reformed the public service;
- Fought corruption; and
- Transformed society and united the country.

We believe that the vision as set out in the NDP is being promoted by the proposed development as it will strengthen the economy, create employment opportunities and will supply much needed affordable housing. The development will also intensify land uses within an identified densification corridor that will promote a more efficient urban form and better support of public transport.

4.1.2 SPLUMA: GENERAL PRINCIPLES FOR LAND DEVELOPMENT

The application complies with the general principles for land development as:

- *The site will be put to its most economic and best use.*
- *The development of the site will optimise the use of existing resources and infrastructure (land, bulk infrastructure, roads and transportation).*
- *It will promote land development in locations that are sustainable and it will limit urban sprawl (densification).*
- *It will result in communities that are sustainable.*

Pertaining the SPLUMA Principles, it can be stated that:**Spatial Justice**

- The application is in line with the Spatial Planning for the area with special reference that the area is earmarked for High Intensity Mixed Use Zone.

Spatial Sustainability

- It needs to be stated that the site is situated within the demarcated “urban development boundary / urban edge”. It is believed that this application would further the objective of promoting land development in locations that create sustainable human settlements and limit urban sprawl. The proposed development will optimise the use of existing resources (bulk infrastructure / tar roads) and as it is seen as infill development within an existing urban area, no valuable agricultural land will be lost or any environmental sensitive area will be affected.

Efficiency

- The principle of efficiency is being promoted, as it is believed that the mixed used development will promote land development that makes optimum use of existing resources and promotes the principle of the sharing of costly infrastructure through the principle of intensifying land uses adjacent to activity streets, public transport infrastructure, etc. Clustering of mixed developments adjacent to each other and in close proximity of access streets will facilitate the sharing of resources between facilities, and enable a number of users needs to be satisfied in a single trip.

Spatial resilience

- The application brings flexibility into the Spatial Plan and Policy and will accommodate and extend / intensify land uses that are direly needed in the area.

Good Administration

- As proposed land use application is prepared in terms of the provisions of the Spatial Planning and Land Use Management Act, 2013 the principle of good administration is being promoted.

4.1.3 NATIONAL ENVIRONMENTAL MANAGEMENT ACT 107 OF 1998

The Environmental Impact Assessment Regulations promulgated under Section 24(5) of the National Environmental Management Act (Act 107 of 1998) provides a list of activities which are subject to environmental authorization.

In terms of the Regulations Authorisation, approval from the relevant environmental authority is required, which in this case is the Department of Agricultural and Rural Development, for specific types of activities/development.

According to the Environmental Impact Assessment Regulations made under Section 24(5) of the National Environmental Management Act (Act 107 of 1998) published in Government Notice R982, R983, R985 and R984 and which came into effect on the 8th of December 2014 it is required that authorisation for and approval be obtained from the relevant environmental authority, which in

this case is the Gauteng Department of Agricultural and Rural Development (GDARD) for specific types of activities/development.

In terms of the Environmental Impact Assessment Regulations (R983) the following listed activities that requires environmental authorisation are applicable to the proposed development, namely:

- Listed Activity 27 (R983) environmental authorization is required for the clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation.
- Listed Activity 28 (R983), environmental authorization is required for residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.

We are of the opinion that listed activity 28 is not applicable as the developable area of the site is smaller than 5 hectares (2,6384 ha) and is situated within the Urban Edge of the City of Johannesburg Metropolitan Municipality. The only listed activity that may require environmental authorization is listed activity 27 that deals with indigenous vegetation.

_____ Environmental Consultants were appointed by the developer to assess the proposed development in terms of the Environmental Impact Assessment Regulations. If the proposed development does not require any environmental authorisation, _____ Environmental Consultants will obtain a letter from the Gauteng Department of Agriculture and Rural Development (GDARD) confirming the aforesaid. However, if the proposed development requires environmental authorisation, the necessary environmental authorisation will be obtained from GDARD.

4.2 PROVINCIAL LEVEL

4.2.1 GAUTENG PLANNING AND DEVELOPMENT ACT – (NO 3 OF 2003)

This Provincial Act provides a spatial development framework for the entire Gauteng Province, and focuses on growth and development on a broad level. The GSDF also lists so-called interventions of which the following are applicable to the proposed Riverside View Extension 76.

Development should promote spatial restructuring and development. Key amongst these is that the Province shall encourage development and land uses which “...*promote the more compact development of urban areas and the limitation of urban sprawl and the protection of agricultural resources*” and development that “*results in the use and development of land that optimises the use of existing resources such as engineering services and social facilities...*”

In summary, the key objectives that are pursued in the existing and proposed legal and policy framework are:

- Minimise urban sprawl;
- The promotion of a compact town as the dominant model of development;
- Densification of settlements and ensure filling in and mixing of land uses;
- Develop and strengthen public transport-orientated activity corridors (which can only function with a minimum critical mass of users);
- Increase economic efficiency and productivity of urban form and functions.

4.2.2 GAUTENG SPATIAL DEVELOPMENT FRAMEWORK, 2011 (GSDF)

The anticipated population projections for the GCR (Gauteng City Region) show that by 2055 a possible 28 million people could reside within its boundaries. There is often a spontaneous reaction to projections such as these that the GCR will have no option but to continue to expand outwards into its rural hinterland and, indeed, eventually subsume all that space. It must be remembered however, that the GCR is characterized by only very moderate densities in world-city terms (Johannesburg/East Rand are only ranked 100th on the citymayors.com list at a gross density of 2500 people/km²).

The intention of the GSDF is to continue to restrict unnecessary and unwanted horizontal urban sprawl (as opposed to urban consolidation and compaction) within the GCR. In this regard, the following is to be noted in policy terms:

- Directing urban growth is defined in more complex ways than previously applied and is rather more zonal in its intentions subject to performance criteria and the urban structure merit of development proposals;
- Restrictions on outward sprawl will be applied rigorously and with the determination to increase urban development intensities within the existing urban footprint as the primary priority;
- Intensification will be:
 - (a) through the application of higher intensities on new developments within the GCR as directed by urban structure;
 - (b) through selective intensification of existing urban and suburban fabric as directed by urban structure; and
 - (c) through infill development within the GCR and as directed by urban structure.
- Intensification within the GCR is undertaken without threat to the natural ecosystems and open space structure as defined and such systems and space assume a fundamental logic in the patterning of intensification;
- Proposals to sprawl the urban system beyond the zone of general urban consolidation noted in the GSDF will be considered only in terms of stringent due diligence and merit evaluation; and
- As and when the urban system is expanded to receive growth into the medium and longer terms as intensification within the urban system has been achieved, the emphasis will continue

to be that restrictions on urban sprawl are to be directed by urban structure rather than as an amorphous 'opening of the flood-gates' into the city region's rural hinterland.

The approach to densification is summarized as follows:

- The activity spines of these districts are to form the basis for redevelopment and densification;
- Properties in these districts that are located on identified urban activity spines that can accommodate public transport are to be regarded as favourable for urban intensification and/or redevelopment at higher densities and at appropriate land uses and at heights of 2 to 4 storeys;
- Properties that do not face directly onto the activity spines but form a contiguous zone abutting those properties that do face directly onto activity spines can be redeveloped at increased densities;
- Properties fronting onto local parks or onto public open space are also to be targeted for densification purposes; and
- Areas that do not form part of the above criteria are to be targeted for selective densification and should retain the inherent character of the existing area.

4.3 LOCAL LEVEL

The following figure illustrates the different City plans that are applicable to different scales. This range of plans is complimented by the Regional Urban Management Plans (RUMPS) that focuses on addressing urban management issues per administrative region.

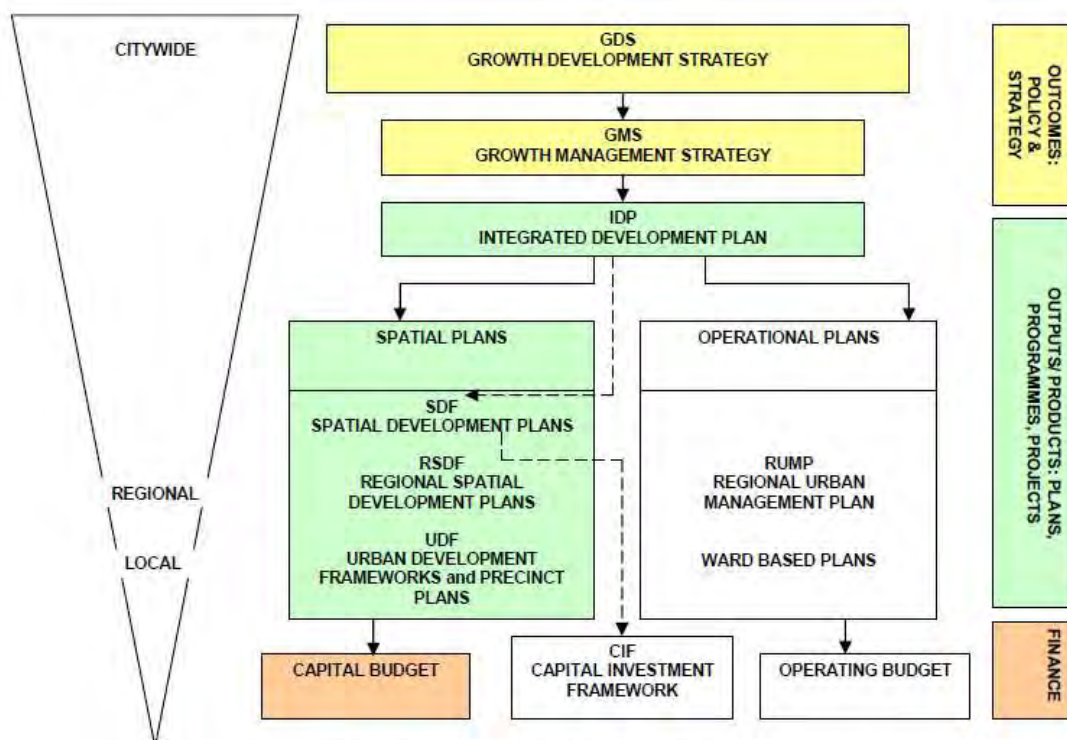


Figure 1: Hierarchy of City Plans

4.3.1 COJ GROWTH AND DEVELOPMENT STRATEGY, 2040 (GDS)

The 2040 GDS paradigm provides a base for analysis, interpretation and action. The City's statement of six clear guiding principles, originally articulated in the 2006 GDS, supports this framework further. Despite the time that has passed since the definition of these principles in 2006, they are still relevant and are as follows:

- Principle 1: Eradicating poverty
- Principle 2: Building and growing an inclusive economy
- Principle 3: Building sustainable human settlements
- Principle 4: Ensuring resource security and environmental sustainability
- Principle 5: Achieving social inclusion through support – and enablement
- Principle 6: Promoting good governance

This application promotes the above mentioned principles of the GDS.

4.3.2 COJ GROWTH MANAGEMENT STRATEGY

The following principles are included in the Growth Management Strategy:

- Encouraging re-investment rather than flight to 'new' nodes;
- Ensuring adequate levels of infrastructure to support development.
- Limit future development rights in infrastructure hotspots; and
- Establish monitoring and evaluation mechanisms.

4.3.3 CITY OF JOHANNESBURG: 2012/16 INTEGRATED DEVELOPMENT PLAN: 2013/14 REVIEW

A detailed set of long-term outcomes and outputs were identified in the Joburg 2040 Strategy to realize the City's long term vision. Johannesburg's five year IDP translates these long term objectives into implementable programs for the specific term of office. The priorities identified and included in the IDP are as follows:

- **Financial Sustainability and Resilience** - Prioritizing the City's financial position is to ensure that finances are at all times *sustained* so that the City has the *resilience* to recover easily and immediately from unexpected, unfavourable occurrences that may have a severe impact on the City's operations.
- **Agriculture and Food Security** - The key objective for this programme is to address poverty and income inequality through food security and the promotion of urban agriculture.
- **Sustainable Human Settlements** - The key objective for this programme is to address spatial inequality and provide or enable housing and related infrastructure for sustainable human settlements. This can assist to create the conditions for economic growth with a focus on strengthening the middle and lower middle classes. Sustainable human settlements includes enabling or ensuring:
 - Accessibility of housing to social and economic opportunities;
 - Integrated spaces for people to live, work and play;
 - Economic opportunities in the development of such settlements including sustainable human settlements that are more than just dormitory towns;
 - High levels of public transport use, walking and cycling;

- Range of housing options;
 - Social and open space amenities; and
 - Social cohesion.
- **SMME and Entrepreneurial Support** - The key objective for this programme is to address income poverty and inequality through support for entrepreneurship and enabling SMME development.
 - **Engaged Active Citizenry** - The strategic intent of the programme is to ensure that citizens of Johannesburg take an active role in their communities, are engaged as members of a community and participate as involved members of society. This will enable and support social change and social cohesion.
 - **Resource Sustainability** - Economic growth is strongly interrelated with the demand for water, electricity, liquid fuel and mining. Managing limited natural resources as well as the consequences of using these natural resources and de-linking economic growth from natural resource extraction is therefore very important. With due regard to climate change and the possibility of 'black swan' events such as the Japanese Tsunami, there is a need for the City to increase its capacity to be resilient.
 - **Smart City** - Building a Smart City will result in:
 - Economic development and creation of jobs.
 - Promoting resource efficiency and mitigating climate change.
 - Providing a greater place to live and work.
 - Running the CoJ more efficiently.
 - Supporting communities.
 - Usage of digital technologies for better connectivity, user experience, and improved service delivery.
 - **Investment Attraction, Retention and Expansion** - The strategic intent of this programme is to enable investment through the levers that the City has such as land, services such as electricity and water and provision of infrastructure such as roads and ICT. For Johannesburg to grow and have sufficient revenue to provide for all its residents, it needs to work to boost investor confidence and ensure that investors are well serviced.
 - **Green Economy** - The strategic objective of this programme is to support sectors and initiatives that can create jobs and income generating opportunities while at the same time contributing to the reduction of carbon emissions and the increased use of renewable resources.
 - **Safer Cities** - The objective of this priority is the creation of a safe, secure and resilient City that protects and serves, builds and empowers communities.

4.3.4 CITY OF JOHANNESBURG SPATIAL DEVELOPMENT FRAMEWORK

To accelerate the delivery of developments that support a desired urban form, the following strategies have been developed and refined to support medium- to long-term objectives. A brief overview of each strategy is presented below:

Strategy 1: Supporting an efficient movement system

The desired urban form for this strategy includes multi-modal transportation and land-use patterns that support public transport and pedestrian movement and focusing development (especially higher density residential uses) at existing public transport infrastructure.

Strategy 2: Ensuring strong viable nodes

The desired urban form for this strategy includes a managed hierarchy of nodes within the City. Non-residential uses are limited to existing and emerging, managed nodal points and an increased profile of the pedestrian and public-transport aspects of the nodes.

Strategy 3: Supporting sustainable environmental management

The desired urban form for this strategy includes emphasis on public space, i.e. the pedestrian environment, public parks and facilities and the protection of wetland systems, priority habitats and biodiversity areas.

Strategy 4: Initiating and implementing corridor development

The desired urban form for this strategy is primarily based on the facilitation of two inter-city development corridors on an East/West and North/South axis via focused infrastructure delivery and a series of specific goals and objectives.

Strategy 5: Managing urban growth and delineating an urban development boundary

The desired urban form for this strategy includes infill, “brown-fields” developments, the abatement of urban sprawl on the periphery of the City and conservation of the rural character of areas beyond the urban development boundary.

Strategy 6: Increased densification of strategic locations

The desired urban form for this strategy includes higher densities and clustered activities in identified strategic locations and coordinated investment in infrastructure to support densification initiatives.

Strategy 7: Facilitating sustainable housing environments in appropriate locations

The desired urban form for this strategy is based on differentiated housing typologies in accessible locations (i.e. in proximity to social amenities, jobs and transportation networks) and supporting a mix of income groups. The approach is strongly linked to other Development Strategies, as it places a premium on infill, “brown-fields” developments and locations within the Development Corridors of the City and requires an emphasis on a densified urban form.

4.3.5 CITY OF JOHANNESBURG REGIONAL SPATIAL DEVELOPMENT FRAMEWORK – REGION A (SUB AREA 4)

Interventions and guidelines applicable to this application include:

Interventions	Guidelines
<p>Support strategic densification (where services are available) along the SPTN</p> <ul style="list-style-type: none"> o Witkoppen Road, William Nicol Drive and Cedar Road have been classified as Mobility Spines. o Further William Nicol Drive and Witkoppen Road are part of the proposed future BRT Network. o The sub area is affected by future proposed roads – K33, K56 and PWV5 	<ol style="list-style-type: none"> 1. Residential densities of between 50-70 du/ha will be supported on Mobility Spines. No direct access to be taken off Mobility Spines. However, due consideration may be given to increased densities of up to 90du/ha along the proposed BRT route. 2. Support residential densities ranging between 30–50 du/ha, within 200m radius of William Nicol Drive. 3. Applications along future proposed roads should take into consideration the impact of such roads.

The Council amended the RSDF for Sub Areas 3 and 4 on 28 November 2013 and the application site is located within a Mixed Use SMME node in an area earmarked for High Intensity Mixed Use Zone.

The following land uses are supported within this zone:

Broad Land Use Category	High Intensity Mixed Use Zone
Residential	High Density
	Medium Density
	Accommodation
Community	Educational
	Medical
	Religious
	Social
Business	Retail
	Entertainment
	Motor Trade
	Offices
Institutional	Municipal
	Government
Industrial	Light
	Commercial
	Warehousing
Open Space	Active
	Passive
Minimum FAR	0.5
Maximum FAR	2.4
Maximum Coverage	60%
Maximum Height	6 storeys
Minimum Residential Density	N/A
Maximum Residential Density	N/A

In view of the aforesaid the proposed mixed use development is in line with the land use policy for the area.

4.3.6 PERI URBAN TOWN PLANNING SCHEME, 1975

The Peri Urban Town Planning Scheme, 1975 that manages and controls land use was established, in terms of Section 36 of the Town Planning and Townships Ordinance, 1965.

As the purpose of the application is to amend the Peri Urban Town Planning Scheme, 1975 the amendment is aligned with the general purposes of a town planning scheme in that:

- The proposed amendment is generally in line with the local land use management policies for the metro and area which seeks to promote co-ordinated and harmonious development, and
- The proposed amendment is not expected to have a negative effect on the health, safety, good order, amenity, convenience or general welfare of the area as the proposed land use

is a land use that is compatible and supportive with the future intended land uses and is generally compatible with good planning principles, and

- The proposed amendment has the potential to promote efficiency and economy through the need for the development as well as the potential social-economic benefits that will be created.

5. PROPOSED TOWNSHIP

The layout plan is attached as Annexure 4.

As mentioned earlier, this application is in terms of Section 26 of the City of Johannesburg Municipal Planning By-law, 2016, read with the Spatial Planning and Land Use Management Act, 2013, for the establishment of a mixed use township which include 2 erven zoned “Special” for high density residential and residential buildings, educational, hospital, light industrial, commercial purposes and warehouse retail on Portion 131 of the farm Zevenfontein 407 J.R. (Riverside View Extension 76).

The township will comprises of 2 erven, subject to the restrictive measures listed below:

1	Use Zone	X: Special
2	Uses permitted	High density residential, Residential Buildings, Educational, Hospital, Light Industrial, Commercial Purposes and Warehouse Retail
3	Use with consent	Uses not in columns (3) and (5)
4	Uses not permitted	Noxious industries, scrap yards, panel beaters, spray painting.
5	Definitions	<p>Commercial purposes: Means a building and / or land designed for use or used for distribution centres, wholesale trade, warehouses, storage, computer centres, removal and transport services, laboratories, cash management centres, builders yards, coal yards, building material storage and all uses which are ancillary, directly related to or subservient to the main use such as a caretaker’s accommodation.</p> <p>Medical</p> <p>Clinic: Means a place for the diagnosis and treatment of human illness or the improvement of human health, which has limited facilities and an emphasis on outpatients, with no overnight facilities. A clinic includes medical consulting rooms, outpatients’ centre and a wellness centre with associated uses.</p> <p>Hospital: Means a place for the diagnosis and treatment of human illness; with integrated facilities such as operating theatres and live-in accommodation for patients; and includes a clinic and medical consulting rooms.</p> <p>Medical consulting rooms: Means a building</p>

		<p>designed for use or a building or land which is used for the following consulting practices associated with restoring or preserving health but excluding overnight or operating facilities: Medical practitioner; dentist or dental hygienist; psychologist, optometrist; podiatrist; occupational, speech and dental therapist; physiotherapist; radiographer; audiologist; dietician; orthoptist; medical orthoptist; and prosthetist; veterinarian; chiropractor; homeopath; naturopath; osteopath and herbalist; Provided that where the Council adds to such list such additions shall also be deemed to be included in the above definition. This use falls under the ambit of business purposes unless separately defined.</p> <p>Education: Means a place for education at pre-school, school or post school levels, including a crèche, nursery school, primary school, secondary school, college, technical institute, university, research institute, lecture hall; or a civic facility for the promotion of knowledge to the community such as a public library, public art gallery, museum; and associated uses such as boarding hostels, monastery, convent and all uses which are ancillary, directly related to and subservient to the main use.</p>
6	Density	120 units per hectare
7	Coverage	80%
8	Height	6 storeys
9	Floor area ratio	2.7
10	Site development plan and landscape development plan	<p>(1) Such Site Development Plan shall be drawn at a scale of 1:500 or such other scale as may be required by the Council, and shall be approved by the Council before any building plan in connection with the proposed development may be considered by the Council. 7.</p> <p>(2) Unless the Council requires less information, a Site Development Plan shall show at least the following:</p> <ol style="list-style-type: none"> a. The siting, height, floor area and coverage of all buildings; b. Open spaces, children's play areas and landscaping of the site; c. Entrances and exits to the erf or site; d. If the erf or site is to be subdivided, the proposed subdivision lines; e. Access to buildings and parking areas and to and from the erf or site; f. Building delimitation areas (if any),

		<p>boundary walls, fences, screening;</p> <p>g. Parking areas, and where required by the Council, circulation of vehicular and pedestrian traffic;</p> <p>h. Elevational treatment of all buildings;</p> <p>i. If it is not proposed to develop the whole erf or site simultaneously, the grouping of the dwelling units and the programming of the development thereof, must be clearly indicated on the plan;</p> <p>j. Steps to be taken to control stormwater runoff;</p> <p>k. Landscaping including existing, mature vegetation on the site or erf;</p> <p>l. Contours; m. Surrounding developments and their relation with the proposed development.</p> <p>n. And any other additional information if so required by the Council.</p>
11	Building lines	(1) In terms of Clause 5.
12	Parking requirements	(1) In terms of Clause 12
13	Access to the erf	<p>(1) Entrances to and exits from the erf shall be sited, constructed and maintained to the satisfaction of the Municipality.</p> <p>(2) Any panhandle must be at least 3 metres wide.</p>
14	Outdoor advertising	(1) Advertisements and / or sign boards shall not be erected or displayed on the erf without the approval of the Municipality first being obtained in terms of municipal by-laws for outdoor advertising.
15	Other: Erf 1 and 2 to be consolidated	

6. MOTIVATION FOR THE PROPOSED TOWNSHIP

6.1 Factors for determining *reasonableness* include:

- Size of area and its particular characteristics:
- Relation to comprehensive plan
- Degree of change in uses allowed
- Relative harm and benefit to owner, neighbours, and the community

With regards to the factors mentioned above, the following confirms the reasonableness of the proposed township:

- a) The application site is affected by the proposed PWV 5 route and although the site is 7,8408 hectares in extent it will only be possible to developed a portion of 2,6384 hectares of the site. The proposed mixed use development, including high density residential, educational, medical, light industrial and commercial uses is in line with not only the future development proposals for the area, but also with current development trends:

- In terms of the amended Sub Regions 3 and 4 RSDF, the application site is situated in an area earmarked as a “High Intensity Mixed Use Zone”. Land uses allowed in this zone include high density residential, educational, medical, light industrial and commercial uses.
 - Directly north of the application site the Riversands Commercial Park is planned and will accommodate a variety of commercial precincts – including retail, office, warehousing and light industrial business premises.
 - Steyn City, a mixed use development is proposed west of the application site and will accommodate 11 000 residential units, including a championship Golf Course, parkland and a mix of supportive uses including two private schools, office developments, convenience shopping, a retirement village and a private hospital.
- b) Benefit to the owner will include the increase of his property value, while the advantages of the proposed development do not only include the provision of much needed residential, educational, medical, commercial and industrial uses, but will also contribute to the overall aesthetics and property values of the surrounding area. The proposed development will have the following effects on the surrounding community:
- The development will create temporary job opportunities during the construction phase and temporary and permanent job opportunities during the operational phase. Should the local community not benefit from these opportunities, it could lead to an influx of people from other areas. Only employing people from the local community could mitigate the potential adverse impact.
 - Traffic increase during the construction and operational phases of the development will have an impact on traffic flow and the tranquillity of the area. The impact of additional traffic during the construction phase, especially heavy construction vehicles that can slow traffic down, can be mitigated to a certain extent by not allowing construction vehicles to use public roads during peak traffic times, as well as to avoid construction activities on public roads during peak traffic times.

6.2 *Desirability* of the application is motivated as follows:

- a) Sub Area 4 is characterised by high-density urban residential components and well defined mixed use nodes. The Fourways regional node, together with several district and neighbourhood nodes spread throughout the sub area provide various services and employment opportunities. A well-defined Strategic Public Transport System (SPTN) connects the sub area to the rest of the City. The majority of non-residential land uses within the sub area are concentrated along William Nicol Drive.
- b) As mentioned earlier in this report the application site is situated on the south-eastern corner formed by William Nicol Drive (K46) and the planned PWV 5 route. The K46 is currently the central spine linking this sub-area to the rest of Johannesburg. The intersection of the planned PWV 5 with the K46 provides opportunities for higher order nodal development, comprising local and regional employment opportunities, social amenities and shopping destinations. The freeway will provide regional and visual access, whereas the K46 will provide the necessary public transportation access.
- c) With regards to engineering services, it can be mentioned that all the availability of the necessary engineering services and the capacity of the existing engineering services will be confirmed by the different service departments during the circulation and comments process of the application.

6.3 Need of the application is motivated as follows:

- a) Like other city regions worldwide, the province faces rapid urbanization alongside massive immigration to Gauteng from other parts of the country as well as from other parts of the continent and the world. While this poses significant challenges and is putting pressure on social amenities, infrastructure, state resources and services, it also has exciting possibilities in attracting skills and innovation, creating new and viable markets and in making Gauteng a dynamic, diverse innovative and productive urban hub. In South Africa it is said that approximately 55% of the population live in urban areas. Past census figures indicate that the process of urbanization is escalating and this has been demonstrated most vividly by the 20% increase in the Gauteng population.
- b) According to the Diepsloot Development Framework 2020, the entire northern region of Johannesburg, stretching from Midrand in the east to Lanseria in the west, requires approximately 4900ha of land for urban expansion up to the year 2020, and an additional 4 300 ha of land for urban expansion up to the year 2040. The Central Sub-Region, of which the application site forms part, requires approximately 2 000 ha of land for urban expansion up to the year 2020, and an additional 2 400 ha of land for urban expansion up to the year 2040.

6.4 The proposed development can be seen as **co-ordinated and harmonious** and may have impact or promote to the following in the surrounding area:

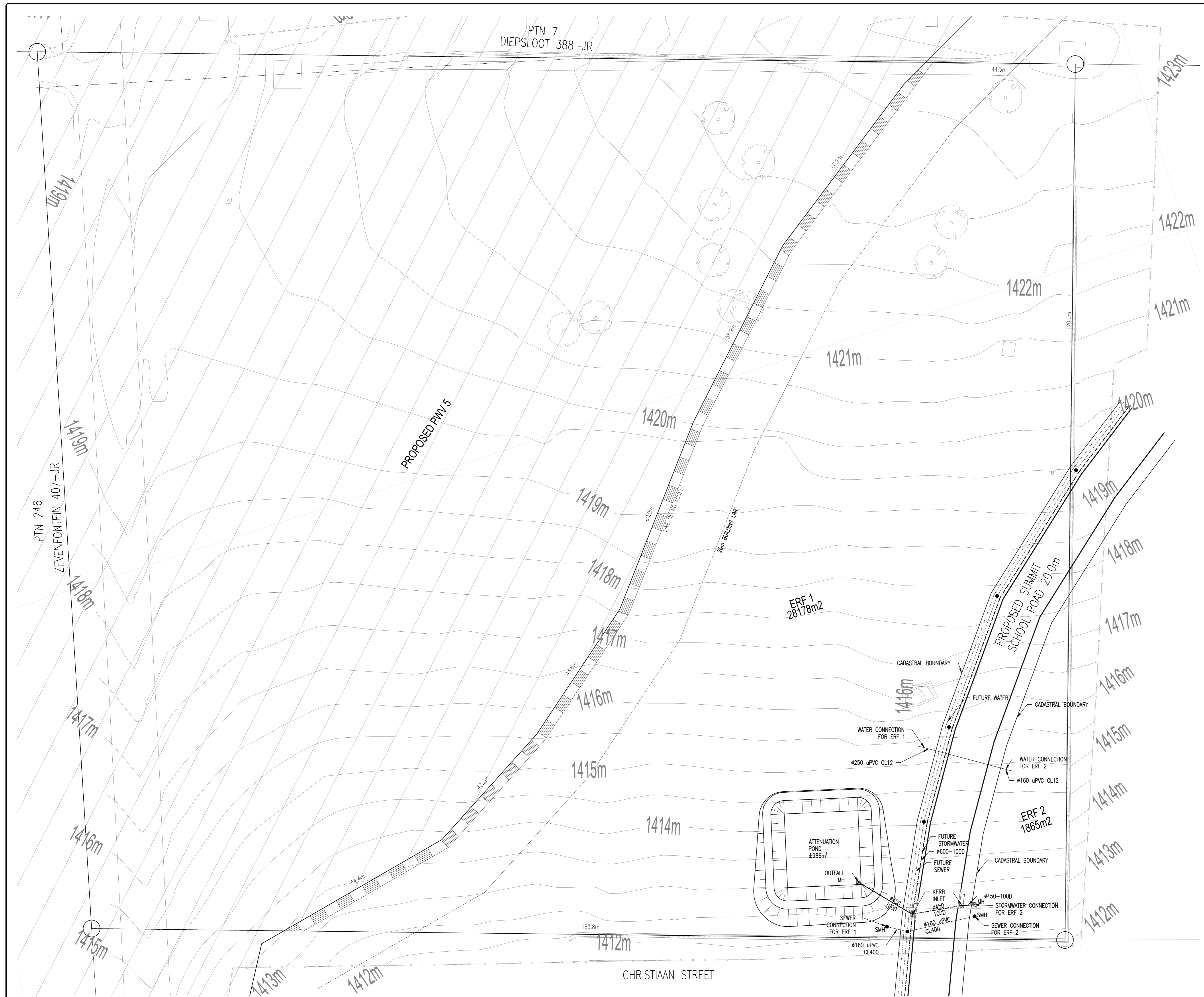
- a) Demographic impacts include the number of new permanent residents or seasonal residents associated with the development, the density and distribution of people and any changes in the composition of the population, (e.g., age, gender, ethnicity, wealth, income, occupational characteristics, educational level, health status).
- b) Development invites growth in new jobs in a community and draws new workers and their families into the community, either as permanent or temporary residents. When this occurs, the incoming population affects the social environment in various ways including increased demand for housing and social services (e.g., health care, day care, education, recreational facilities).
- c) The proposed mixed use development will attract a variety of new commercial developments including both free-standing stores and neighbourhood or community shopping centres. These developments provide a community with products, services and conveniences important to the quality of life of local residents.
- d) Development directly influences changes in employment and income opportunities in communities. Such changes may be more or less temporary (e.g., construction projects, or seasonal employment) or may constitute a permanent change in the employment and income profile of the community should the development project bring long-term job opportunities for community residents (e.g., establishment of a light industrial, manufacturing, or commercial establishment).
- e) Impacts on the aesthetic quality of a community are often the most obvious sign of development and have a significant impact on the social well-being of the community and resident perceptions about the quality of life in the community.

7. CONCLUSION

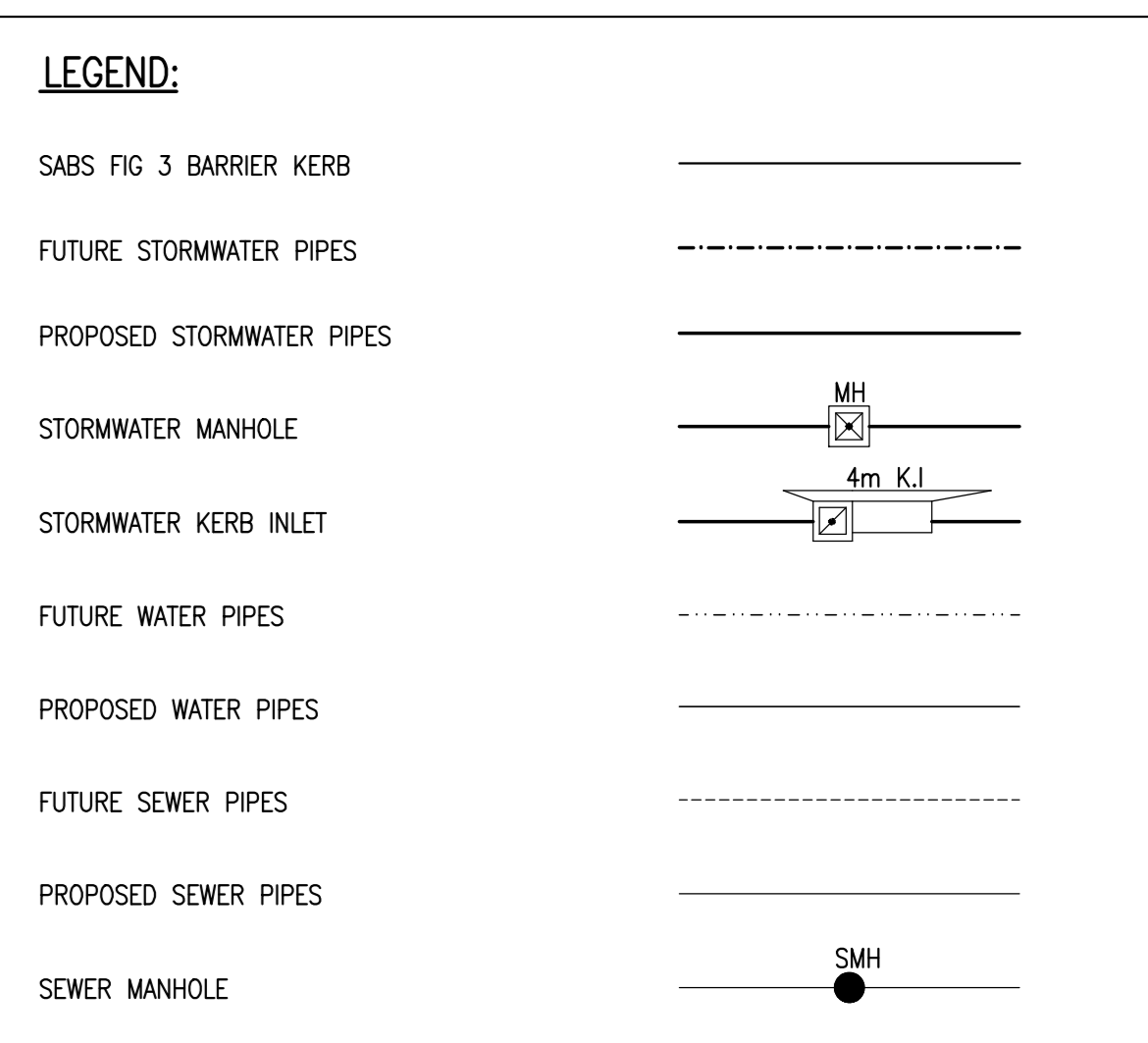
The proposed development will supply in the existing need for mixed land uses in the area. It will also result in job creation which is urgently needed within the municipal area.

From the discussions above, it is clear that the proposed development is desirable in terms of need, viability, accessibility, planning guidelines, engineering services, and environmental impact.

Therefore it is recommended that this application be favourably considered by the Local Authority.

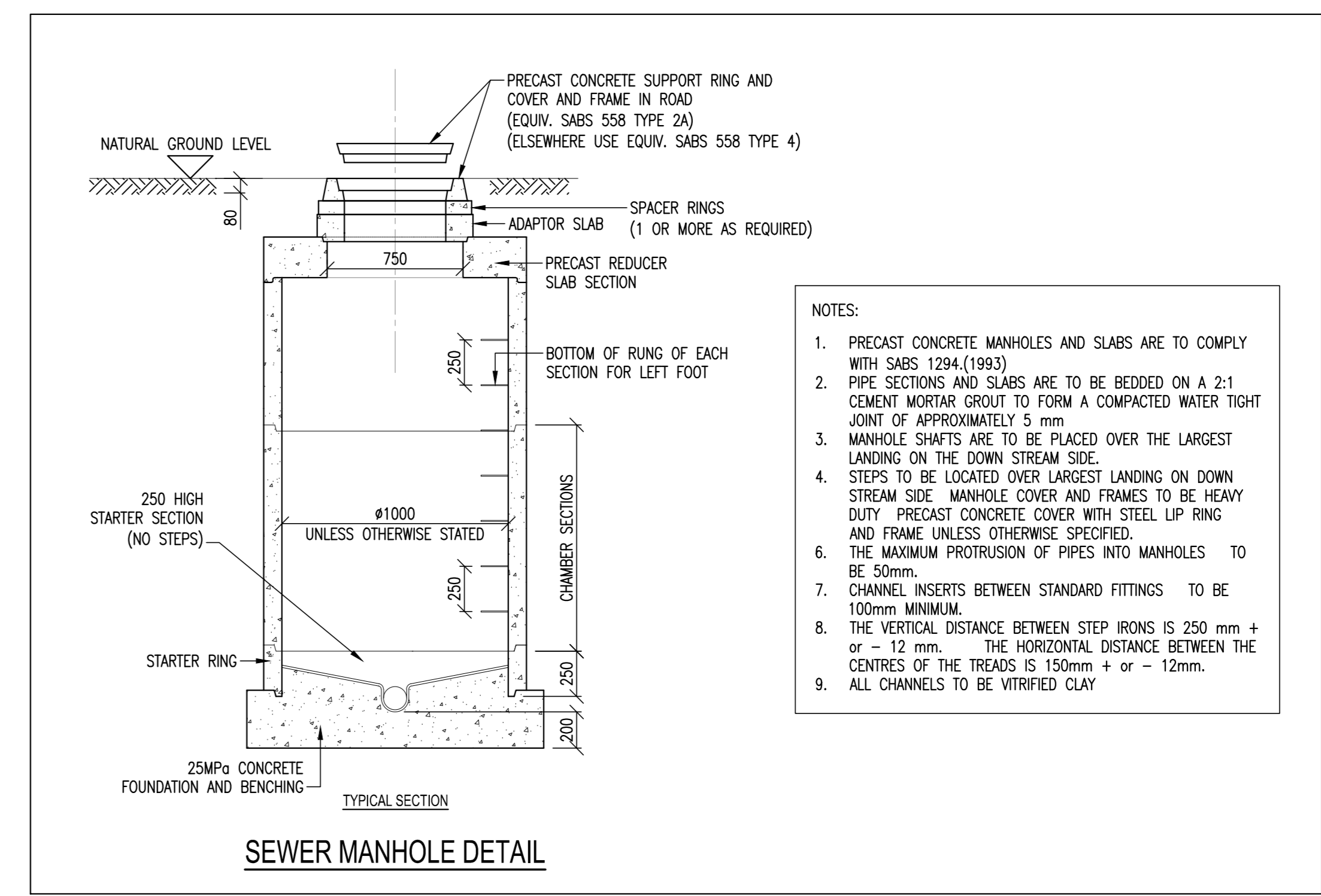
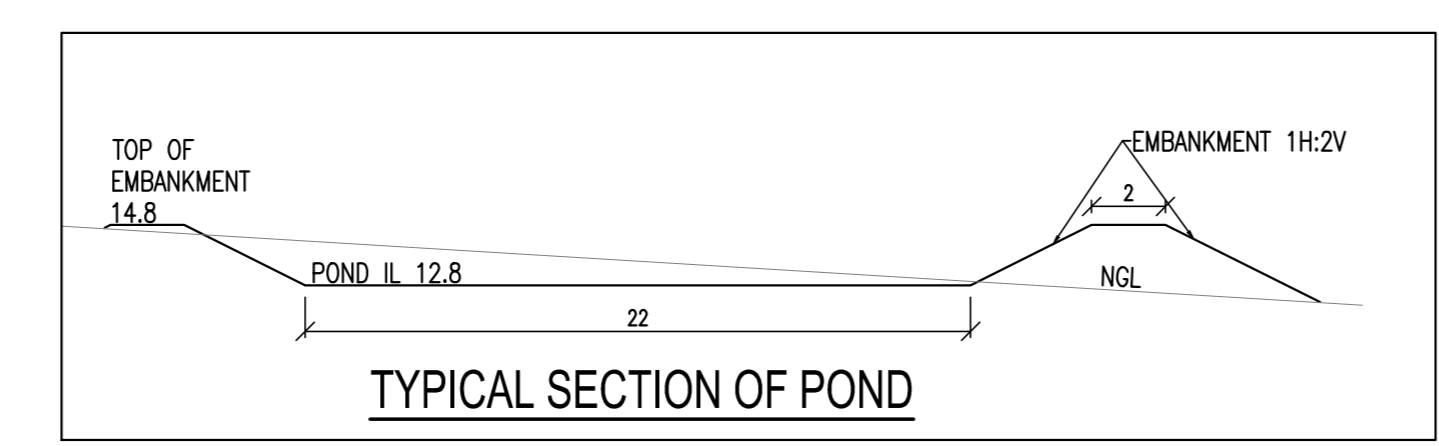
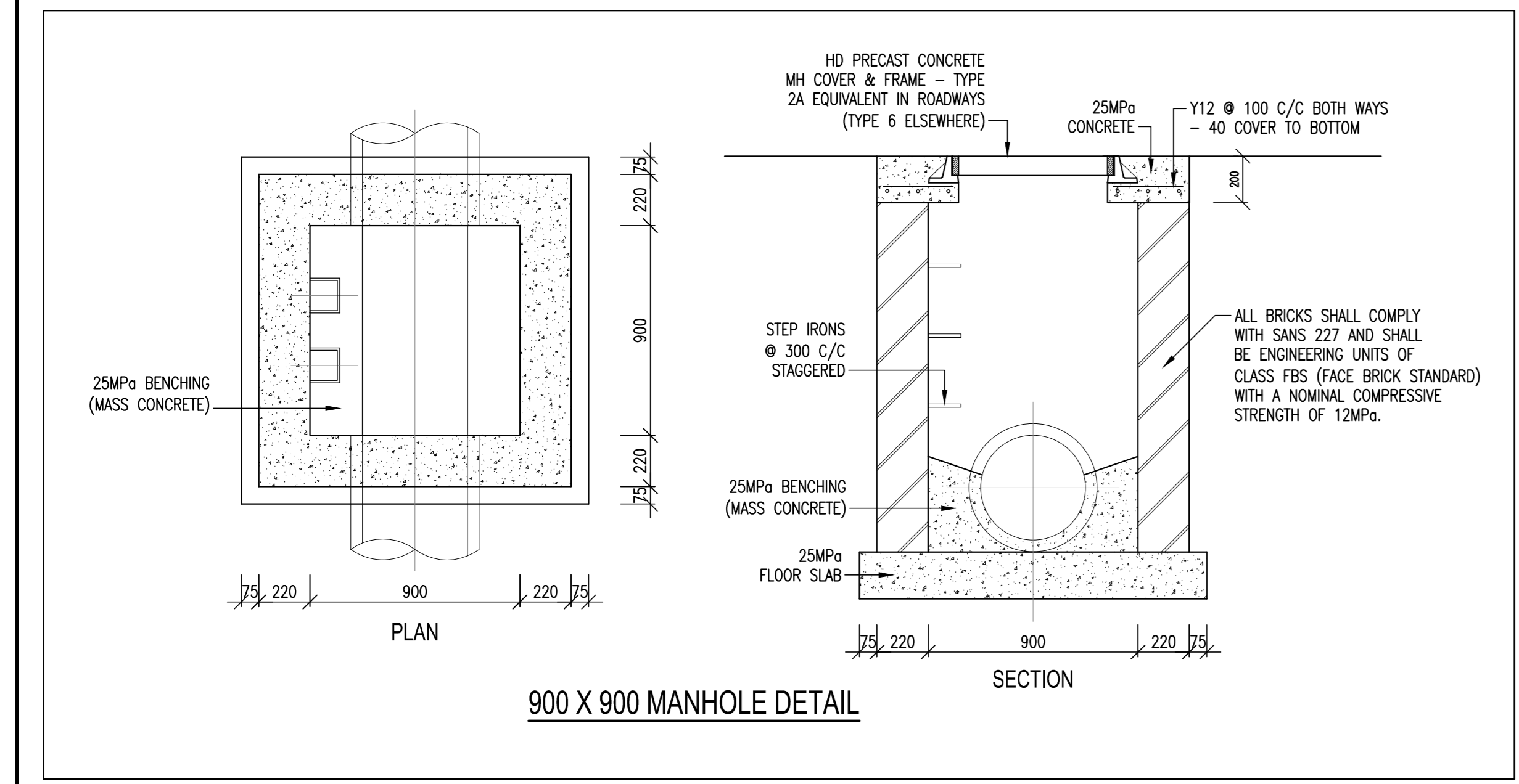


- NOTES : STORMWATER**
1. ALL CONSTRUCTION AND MATERIALS TO BE IN ACCORDANCE WITH SABS 1200 SPECIFICATIONS.
 2. ALL KERB INLETS AND MANHOLES TO BE STANDARD PROJECT DETAILS.
 3. CONTRACTOR TO ACQUIRE ALL NECESSARY WAYLEAVES PRIOR TO CONSTRUCTION OF EXTERNAL WORKS.



- NOTES : SEWER**
1. SEWERS TO BE 160mm uPVC CLASS 400
 2. MINIMUM COVER TO SEWER TO BE 1.4m UNDER ROADS, 1.0m ELSEWHERE.
 3. PIPE BEDDING TO BE IN ACCORDANCE WITH S.A.B.S. 1200 LB DETAIL LBZ (FOR FLEXIBLE PIPE)
 4. ALL CONSTRUCTION TO BE TO S.A.B.S. 1200 SPECIFICATIONS
 5. CONSTRUCTION DETAILS TO BE IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARD DETAILS

- NOTES : WATER**
1. TIE IN CONNECTION TO EXISTING MAIN TO BE UNDERTAKEN BY LOCAL MUNICIPAL COUNCIL.
 2. WATERMANS TO BE CLASS 12 UPVC WITH Z-LOK COUPLINGS
 3. MINIMUM COVER TO BE 900mm
 4. PIPE BEDDING TO BE IN ACCORDANCE WITH S.A.B.S. 1200 LB DETAIL LBZ (FOR FLEXIBLE PIPE)
 5. ALL CONSTRUCTION TO BE TO S.A.B.S. 1200 SPECIFICATIONS
 6. CONSTRUCTION DETAILS TO BE IN ACCORDANCE WITH EKURHULENI STANDARD DETAILS



- NOTES:**
1. PRECAST CONCRETE MANHOLES AND SLABS ARE TO COMPLY WITH SABS 1294 (1993)
 2. PIPE SECTIONS AND SLABS ARE TO BE BEDDED ON A 2:1 CEMENT MORTAR GROUT TO FORM A COMPACTED WATER TIGHT JOINT OF APPROXIMATELY 5 mm
 3. MANHOLE SHAFTS ARE TO BE PLACED OVER THE LARGEST LANDING ON THE DOWN STREAM SIDE
 4. STEPS TO BE LOCATED OVER LARGEST LANDING ON DOWN STREAM SIDE. MANHOLE COVER AND FRAMES TO BE HEAVY DUTY PRECAST CONCRETE COVER WITH STEEL LIP RING AND FRAME UNLESS OTHERWISE SPECIFIED
 5. THE MAXIMUM PROTRUSION OF PIPES INTO MANHOLES TO BE 30mm.
 6. CHANNEL INSERTS BETWEEN STANDARD FITTINGS TO BE 100mm MINIMUM.
 7. THE VERTICAL DISTANCE BETWEEN STEP IRONS IS 250 mm + or - 12 mm. THE HORIZONTAL DISTANCE BETWEEN THE CENTRES OF THE TREADS IS 150mm + or - 12mm.
 8. ALL CHANNELS TO BE VITRIFIED CLAY

REV	DATE	BY	REVISION/NOTES
A	06/09/17	BK	ISSUED FOR APPROVAL

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PROJECT: **RIVERSIDE VIEW EXT 76**

DRAWING: **STORMWATER, SEWER AND WATER CONNECTION LAYOUT AND DETAIL**

DESIGNED	BK
DRAWN	BK
CHECKED	BK
SCALE	1:500
SHEET SIZE	A0