

**DRAFT
BASIC ASSESSMENT
REPORT**



The construction of the Proposed Residential Development on Holding 194 of Erand Agricultural Holding Ext 1 and Portion 620 of the farm Randjesfontein No. 405-JR, City of Johannesburg Metropolitan Municipality.

Prepared for:
Zotec Developments (Pty) Ltd)

**A SYSTEMS APPROACH
APPLIED TO YOUR REQUIREMENTS**

PROJECT INFORMATION

Applicant and project information

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Physical address:	90 Bekker Rd Hertford Office Park, Vorna Valley, Midrand, 1686
Project title	The construction of the Proposed Residential Development on Holding 194 of Erand Agricultural Holding Ext 1 and Portion 620 of the farm Randjesfontein No. 405-JR, City of Johannesburg Metropolitan Municipality.
Enterprise name:	Zotec Developments (Pty) Ltd.
Business registration number:	2003/023822/07

Details of the Environmental Assessment Practitioner

Enterprise name:	Exigent Engineering Consultants CC
Contact person:	Jacquette Adam (EAP registration number: 2019/1040)
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Main report contributors and roles:	Madeleine Knoetze (author) Jacquette Adam (Reviewer)

Project information

Gaut ref nr:	GAUT 002/21-22/E3078
Local Municipality:	City of Johannesburg Metropolitan Municipality
Date of distribution on Draft Basic Assessment Report	9 September 2022 – 10 October 2022

EXECUTIVE SUMMARY

Zotec Developments (Pty) Ltd is proposing a residential development (to be known as Erand Gardens Extension 154) with a density of 120 units per hectare on Holding 194 on Erand Agricultural Holdings Ext 1 and portion 620 of the Farm Randjesfontein 405-JR, approximately 3.35 ha in extent. The application is for the clearing of indigenous vegetation as well as the construction of external infrastructure within a wetland system and its associated buffer.

Exigent Engineering Consultants CC have been appointed to oversee all environmental processes regarding the proposed residential development. The current application is lodged in terms of the Environmental Impact Assessment Regulations of 2014, as amended (Government Notice Regulations 326 of 2017), promulgated in terms of Section 24(4) and 25 of the National Environmental Management Act of 1998 (Act No. 107 of 1998). A Basic Assessment process has been followed for activities triggered in terms of Listing Notice 1 of 2014, as amended (Government Notice Regulation 327 of 2017), for listed activities 19, as well as in terms of Listing Notice 3 of 2014, as amended (Government Notice Regulation 324 of 2017), for listed activities 4, 12 and 14.

The following specialist assessments were conducted for the purpose of assessing the proposed residential development area:

- Geotechnical assessment: No rocky outcrops or shallow boulders were identified within the shallow investigations.
- Heritage assessment: No features of historical importance or of heritage significance were identified within the proposed residential development footprint. One dilapidated building was noted on site, however, based on the historical data for the proposed residential development footprint, this building is not older than 60 years. As per the paleontological overlay, the site is located in an area where no further paleontological studies are required.
- Wetland assessment: A channeled valley bottom wetland was identified within the proposed residential development boundary. In addition to this, two existing stormwater dams occur adjacent to the valley bottom area. These stormwater features also contain wetland features. A 30 m buffer has been proposed around the delineated channeled valley bottom wetland. The two existing stormwater attenuation dams had been constructed previously to accommodate the post development stormwater runoff for Erf Re/765, Holdings 194 and Portion 620 Randjesfontein 405-JR, according to the Joburg Stormwater Management By-laws (CJMM, 2010) policy requirements.
- Ecological assessment: As per the National Screening Tool, the proposed residential development site boundary is located within the Egoli Granite Grassland, within a Protected Areas Expansion Strategy Area, a Critical Biodiversity Area, and an Ecological Support Area. The Terrestrial Biodiversity theme was classified as a very high because the theme classified the study area as a Critical Biodiversity Area 2, and Ecological Support Area, and Endangered (EN) ecosystem and within an area identified as part of a Protected Areas Expansion Strategy. The animal theme was classified as medium as the theme indicated that there are five (5) sensitive species which may occur onsite. The specialist assessment observed that due to the amount of transformation of the site, no vegetation structure remnant to the Egoli Granite Grassland was observed. The Protected Areas Expansion Strategy Areas identified within the study area were located within the area protected by the wetland infrastructure. The Critical Biodiversity Areas will be largely outside of the development footprint. The likelihood of occurrence of the animal species listed by the National Screening tool were assessed, and it was concluded that the overall impact on the faunal species would be medium, however this impact would decrease given that a search and rescue mission is carried out on site prior to the commencement of the construction phase. It should be noted that the Gauteng protected species *Hypoxis hemerocallidea* was observed on adjacent properties, but not on the site, should these species be identified on site, appropriate measures for relocation should be implemented. The rescue and relocation of the plants must be done in cooperation with the Gauteng Department of Agriculture and Rural Development – Biodiversity section. The study area was divided into two vegetation communities, the *Typha capensis*-*Cynodon dactylon* wetland and the wooded *Hyperrhenia hirta* grassland.

The impact assessment of the proposed residential development indicated that the main negative impacts of the construction phase of the proposed residential development would be seen in the loss of vegetation, the impact on the wetland and buffer area, probable sedimentation and erosion, infestation of alien invasive plant species and the hydrological impacts. The main negative impacts anticipated for the operational phase of the proposed residential development will be seen in the alien infestation of the wetland area. The positive impacts of the proposed residential development are seen in the creation of job opportunities and additional housing prospects, boosting the local economy, and in turn the provincial economy. A cumulative impact of this project would be additional vegetation clearing and ultimately change in land use required to allow for residential development. However, proper urban designs, which accommodates the natural features of the study area, by means of design and layout, enhances the use of the open space in the proposed development within an urban environment.

The Public Participation Process is a critical of any Environmental Impact Assessment Process. As part of the pre-application consultation process, stakeholders and pre-identified interested and affected parties were notified of the intent of the application process in terms of the National Environmental Management Act of 1998 (Act No. 107 of 1998). The main concerns raised during the pre-application consultation process was the impact of the proposed residential development on the wetland system located within the boundaries of the site. This impact has been mitigated with a 30m buffer around the wetland system.

Based on the findings of the specialist assessments and the impact statement, the Environmental Assessment Practitioner assigned to the proposed residential development is of the opinion that the Environmental Authorisation for the proposed residential development be granted. With the conditions that the Environmental Management Programme as compiled specifically for the proposed residential development, as well as all recommendations as per the various specialist assessments be implemented on site, prior to, during and after the construction phase as stipulated in the respective documents. Furthermore, it is requested that the Environmental Authorisation be valid for 10 years.

LIST OF ABBREVIATIONS

BA	Basic Assessment
BAR	Basic Assessment Report
CA	Competent Authority
CARA	Conservation of Agricultural Resources Act of 1983 (Act No. 43 of 1983)
CBA	Critical Biodiversity Areas
CRR	Comments and Responses Report
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
DWS	Department of Water and Sanitation
EA	Environmental Authorisation
EAP	Environmental Assessment Practitioner
EAPASA	Environmental Assessment Practitioners Association of South Africa
EIA	Environmental Impact Assessment
EMF	Environmental Management Framework
EMPr	Environmental Management Programme
ESA	Ecological Support Areas
GDARD	Gauteng Department of Agriculture and Rural Development
GN	Government Notice
GNR	Government Notice Regulation
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
NEMA	National Environmental Management Act of 1998 (Act No. 107 of 1998)
NEMBA	National Environmental Management: Biodiversity Act of 2004 (Act No. 10 of 2004)
NHRA	National Heritage Resources Act of 1999 (Act No. 25 of 1999)
NWA	National Water Act of 1998 (Act No. 36 of 1998)
PPP	Public Participation Process
SACNASP	South African Council of Natural Scientific Professions
SAHRA	South African Heritage Resources Agency
MSDF	Municipal Spatial Development Framework
WUL	Water Use Licence
WULA	Water Use Licence Application

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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 1/2022)

Kindly note that:

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This template is current as of April 2022. It is the responsibility of the EAP to ascertain whether subsequent versions of the template have been published or produced by the competent authority.
3. A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.
4. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority (uploaded to the EIA online system) empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application. The EIA online system can be accessed at <https://eia.gauteng.gov.za>.**
- 5.
6. **A copy (PDF) of the final report and attachments must be uploaded to the EIA online system. The EIA online system can be accessed at <https://eia.gauteng.gov.za>.**
7. **Draft and final reports submitted in terms of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) must be emailed to environmentsue@gauteng.gov.za.**
8. 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.
9. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
10. An incomplete report may lead to an application for environmental authorisation or Waste Management License being refused.
11. Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorization or Waste Management License being refused.
12. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for environmental authorisation or Waste Management License being refused.
13. The applicant must fill in all relevant sections of this form. Incomplete applications will not be processed. The applicant will be notified of the missing information in the acknowledgement letter that will be sent within 10 days of receipt of the application.
14. 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.
15. 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 Sustainable Utilisation of the Environment (SUE) Branch
P.O. Box 8769
Johannesburg
2000

Ground floor, Umnotho House, 56 Eloff Street, Johannesburg

Administrative Unit telephone number: (011) 240 3051/3052
Department central telephone number: (011) 240 2500

(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.

The Final Basic Assessment Report will be submitted within 90 days of the receipt of the application by the competent authority (CA).

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

No

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

The proposed residential development is a housing and associated infrastructure development which aims to provide housing solutions for this and future generations. Therefore, no closure of the proposed residential development is expected. Should decommissioning of the infrastructure be required in the future, the promulgated regulations at that time will be applicable and will be followed.

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?

Yes

If no, why?

During the pre-application Public Participation Process (PPP), the City of Johannesburg (CoJ) provided comments on the proposed residential development. Should comments be received by any organ of state during the public review phase of the draft Basic Assessment Report (BAR), these comments will be captured, and detailed responses will be captured in the final BAR.

SECTION A: ACTIVITY INFORMATION

1. PROPOSAL OR DEVELOPMENT DESCRIPTION

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

The construction of the Proposed Residential Development on Holding 194 of Erand Agricultural Holding Ext 1 and Portion 620 of the farm Randjesfontein No. 405-JR, City of Johannesburg Metropolitan Municipality.

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 ☐ NO

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

The proposed residential development will require authorisation from the Department of Water and Sanitation (DWS) for civil works within a wetland and a residential development within the 500 m Regulatory Area (as defined by Government Notice (Government Notice (GN) 509 of 2016)) of a wetland. A Water Use Licence (WUL) in terms of Section 21 of the National Water Act (Act No. 36 of 1998), will be required.

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

☐ YES ☐ NO

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

☐ YES ☐ NO

2. APPLICABLE LEGISLATION, POLICIES AND/OR GUIDELINES

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

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
Constitution of the Republic of South Africa (Act No 108 of 1996)	National & Provincial and local government	4 February 1997
National Environmental Management Act, 1998 (NEMA, Act No. 107 of 1998 as amended).	Gauteng Department of Agriculture and Rural Development (GDARD)	27 November 1998
Environmental Impact Assessment (EIA) Regulations of 2014, as amended (Government Notice Regulations (GNR) 326 of 2017)	GDARD	4 December 2014 7 April 2017
National Water Act, 1998 (NWA, Act No 36 of 1998) as amended	Department of Water and Sanitation	26 August 1998 1 October 1998
National Heritage Resources Act of 1999 (NHRA, Act no 25 of 1999)	Provincial Heritage Resources Agency Gauteng (PHRAG)	28 April 1999
The Conservation of Agricultural Resources Act of 1983 (CARA, Act No. 43 of 1983)	National Department of Fisheries, Forestry and Environment (DFFE)	27 April 1983
National Forest Act of 1998 (NFA, Act no. 84 of 1998)	DFFE	20 October 1998
National Environmental Management Biodiversity Act of 2004 (NEMBA, Act No 10 of 2004)	GDARD	31 May 2004
The Development Principles of the Spatial Planning and Land Use Management Act of 2013 (SPLUMA, Act No. 16 of 2013)	CoJ Metropolitan Municipality	4 July 2014
All relevant Provincial regulations, municipal by-laws and ordinances which includes: <ul style="list-style-type: none"> NEMA Regulations 2014 and 2017 Gauteng Environmental Management Framework (2015) The Gauteng Draft Red Data Policy The Gauteng Draft Ridges Policy; Protection of Agricultural Land in Gauteng Revised Policy (June 2006) CoJ Metropolitan Municipality Spatial Development Framework 2040 (MSDF, 2016), as updated 	Listed documents will be consulted and any guidelines and/or restrictions found will be incorporated into this assessment.	Various dates

<ul style="list-style-type: none"> • CoJ Metropolitan Municipality's Open Space Policy • CoJ Integrated Development Plan 2021/22 		
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Description of compliance with the relevant legislation, policy or guideline:

Legislation, policy of guideline	Description of compliance
Constitution of the Republic of South Act (No. 108 of 1996)	This assessment is based on the principle that everyone has 'the right to a healthy environment and the right to have the environment protected' as per Chapter 2, Section 24 of the Constitution.
National Environmental Management Act, 1998 (Act No. 107 of 1998)	The Environmental Authorisation (EA) for the proposed residential development is lawfully applied for in terms of the Environmental Impact Assessment (EIA) Regulations of 2014, as amended (GNR 326 of 2017) promulgated under NEMA. The conditions on the EA, if approved, will be adhered to.
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	The assessment of the site for heritage resources has been undertaken in terms and respect of the National Heritage Resources Act, 1999 (Act No. 25 of 1999) as amended (NHRA).
National Water Act, 1998 (Act no. 36 of 1998) as amended	The proposed residential development will be within 100 m of a delineated watercourse.
National Forest Act, 1998 (Act no. 84 of 1998)	An Ecological Impact Statement (Appendix F1) is attached to the BAR
National Environmental Management Biodiversity Act, 2004 (Act 43 of 1983)	An Ecological Impact Statement (Appendix F1) is attached to the BAR
The Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) (CARA)	No activities triggered in terms of the CARA
The Development Principles of the Spatial Planning and Land Use Management Act, 2013 (Act No. 16 of 2013)	Comply with the principles of Section 7 in terms of spatial planning land development and land use management.
All relevant Provincial regulations, Municipal by-laws and ordinances This includes: <ul style="list-style-type: none"> • NEMA Regulations 2014 and 2017 • Gauteng Environmental Management Framework (2015) • The Gauteng Red Data Policy • The Gauteng Ridges Policy • Protection of Agricultural Land in Gauteng Revised Policy (June 2006) • CoJ Metropolitan Municipality Spatial Development Framework 2040 (MSDF, 2016), as updated • CoJ Metropolitan Municipality's Open Space Policy • CoJ Integrated Development Plan 2021/22 	<ul style="list-style-type: none"> • The GDARD red data policy provides methods of identifying and management of the Red Data species within the province. • The Protection of Agricultural Land in Gauteng Revised Policy provides methods of identifying and management of the agricultural lands within the province; • CoJ Metropolitan Municipality SDF guides the development within the City boundaries. • CoJ Metropolitan Municipality's Open Space Framework guides the development and management of the City open spaces. • CoJ IDP guides the development in terms of operational planning of the city

Description of listed activities triggered for the purpose of the Application in terms of the EIA Regulations of 2014, as amended (GNR326, 2017)

Table 1. Listed activities triggered by the proposed residential development in terms of the EIA Regulations of 2014, as amended.

Indicate the number of the relevant Government Notice:	Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3	Describe each listed activity as per the wording in the listing notices:	Describe each listed activity as per the wording relative to the project:
GN R327 – Listing Notice 1 of 2014, as amended	19	<i>The infilling or depositing of any material of more than 10 cubic metres into: or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse.</i>	The proposed stormwater infrastructure will be connected to the existing stormwater infrastructure located within the boundaries of the site. These structures, although anthropogenic, bear wetland signatures. The area of impact within the area bearing wetland signatures will be approximately 66 m ² , and will therefor require more of 10 m ³ of movement of wetland material.
GN R327 - Listing Notice 1 of 2014, as amended	27	<i>The clearance of an area of one hectares or more, but less than 20 hectares of indigenous vegetation.</i>	The proposed residential development will require the clearance of approximately 3.35 ha of indigenous vegetation.
GN R324 – Listing Notice 3 of 2014, as amended	4	<i>The development of a road wider than 4 metres with a reserve less than 13,5 metres. c. Gauteng in v). Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation Plan or in bioregional plans; v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004).</i>	The internal road network and access road (leading from George Road located on the remaining extent of portion 9 of the Farm Randjesfontein 405-JR) will have a width of approximately 7 m and will be partially located within the Egoli Granite Grassland. The internal infrastructure will be partially located within an Ecological Support Area (ESA) and a Critical Biodiversity Area (CBA) as per the Gauteng Conservation Plan (Gauteng C-Plan V. 3.3).
GN R324 - Listing Notice 3 of 2014, as amended	12	<i>The clearance of an area of 300 square metres or more of indigenous vegetation, in Gauteng i) Within any critically endangered or endangered ecosystem listed in terms of section 52 of the NEMBA or prior to the publication of such a list, within an area that has been identified as critically endangered in the National Spatial Biodiversity Assessment 2004;</i>	The proposed residential development will require the clearance of approximately 3.35 ha of indigenous vegetation which is located within the Endangered Egoli Granite Grassland Ecosystem type, as classified by the NEMBA: Ecosystems list.
GN R324 - Listing Notice 3 of 2014, as amended	14	<i>The development of (xii) infrastructure or structures with a physical footprint of 10 square metres or more; (a) within a watercourse; or (c) if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse in. c. Gauteng iv. Sites identified as Critical Biodiversity Areas (CBAs) or Ecological Support Areas (ESAs) in the Gauteng Conservation</i>	The proposed stormwater infrastructure will be connected to the existing stormwater infrastructure located within the boundaries of the site. These structures, although anthropogenic, bear wetland signatures. The area of impact within the area bearing wetland signatures will be approximately 66 m ² , and will therefor require more of 10 m ³ of

Indicate the number of the relevant Government Notice:	Activity No (s) (relevant notice): e.g. Listing notices 1, 2 or 3	Describe each listed activity as per the wording in the listing notices:	Describe each listed activity as per the wording relative to the project:
		<p><i>Plan or in bioregional plans; and v. Sites identified within threatened ecosystems listed in terms of the National Environmental Management Act: Biodiversity Act (Act No. 10 of 2004).</i></p>	<p>movement of wetland material. The area to be impacted upon by the proposed stormwater structures are located in an ESA and an Endangered Ecosystem type (Egoli Granite Grassland)</p> <p>The sewer infrastructure to be installed as part of the proposed residential development will be located within the 30 m buffer area of the delineated wetland area and will have an area of impact of approximately 72 m².</p> <p>The proposed infrastructure will be located within an area partially classified as a CBA, as well as within an area identified as an Egoli Granite Grassland Ecosystem type.</p>

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

<p>Alternative layouts:</p> <ul style="list-style-type: none"> Alternative layouts were drawn up based on best practice engineering design methods as determined by the engineering and township development team as part of this process. A critical component of the layout assessment is to understand the market within the area where the proposed development will occur in order for the proposed development to respond to the market requirements. <p>Design alternatives:</p> <ul style="list-style-type: none"> The engineers and project team evaluated site and soil conditions of the proposed sewer line in order to optimize the location and alignment. The proposed route alignment also had to consider joining existing services.

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><u>Proposed Layout and site access:</u> The preferred development alternative entails the construction of the Erand Gardens Extension 154 residential township with a density of 120 units per hectare on Holding 194 of Erand Agricultural Holdings Ext 1 and portion 620 of the farm Randjesfontein 405-JR within the City of Johannesburg Metropolitan Municipality. The development will be enhanced by the provision of recreational facilities such as a gym and clubhouse, to provide prospective residents with a relaxing and comfortable lifestyle. A portion (of the proposed residential development area will be used exclusively for public open space aiming to preserve the connectivity of the portion of the wetland community on site with the upstream and downstream sections. The preferred alternative for the proposed project has been selected in such a way so as to present an optimal design (in terms of economic preference) to the developer as well as to ensure the optimal conservation of the sensitive areas identified within the development site boundaries.</p> <p>The site will be accessed via George Road (located on the remainder of portion 9 of the Farm Randjesfontein 405-JR, leading from east to west along the northern boundary of the proposed residential development site.</p> <p>Appendix C of this BAR provides the services detailing for the proposed residential development.</p>

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

<p>Activities alternatives:</p> <ul style="list-style-type: none"> As the site is optimally located for a high density residential development, no other activities have been proposed for the development site. Additionally, the applicant is well versed and has vested it's interests in residential developments, development alternatives were not evaluated.
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Site alternatives:

- No site alternatives have been identified for the proposed residential development as this location have been identified as an optimal position for the activities proposed.
- This development site is located within close proximity/adjacent to numerous other similar housing developments and as such is aligned with the sense of place.

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**)

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Size of the activity:

3.35 ha

Ha/ m²

or, for linear activities:

Proposed activity

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Length of the activity:

m/km

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

Proposed activity

Alternatives:

Alternative 1 (if any)

Alternative 2 (if any)

Size of the site/servitude:

5.23 ha

Ha/m²

5. SITE ACCESS**Proposal**

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

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

Describe the type of access road planned:

YES

NO

34 m

Site access is planned from George Street.

The proposed access road as indicated in Appendix C, has a length of 34 m and will affect approximately 34 m of George Street.

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?

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

Describe the type of access road planned:

YES

NO

m

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

Alternative 2

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

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

Describe the type of access road planned:

YES

NO

m

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

1

Number of time

(only complete when applicable)

1. LAYOUT OR ROUTE PLAN

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

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

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

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

Please refer to Appendix A for the site layout plan and locality map for the proposed residential development. Figure X below provides geographic context to the location of the proposed residential development.

2. SITE PHOTOGRAPHS

Colour photographs from the center of the site must be taken in at least the eight major compass directions with a description of each photograph. Photographs must be attached under the appropriate Appendix. It should be supplemented with additional photographs of relevant features on the site, where applicable.

Please refer to Appendix B for the Site indicative photographs for the proposed residential development site.

3. 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.

Please refer to Appendix C for the Facility illustrations for the proposed residential development and all auxiliary infrastructure.

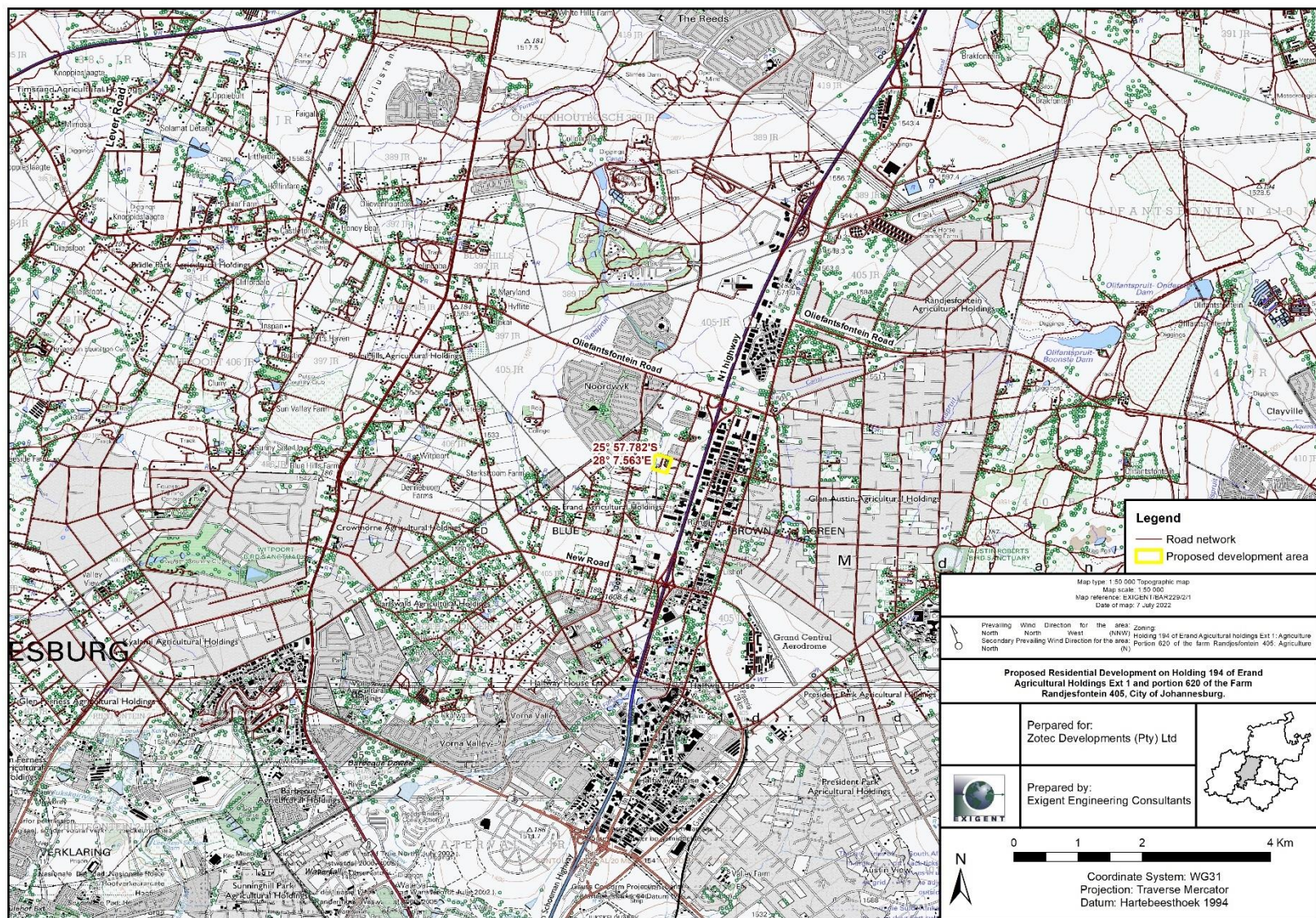


Figure 1. The 1:50 000 Topographic map of the proposed residential development site.

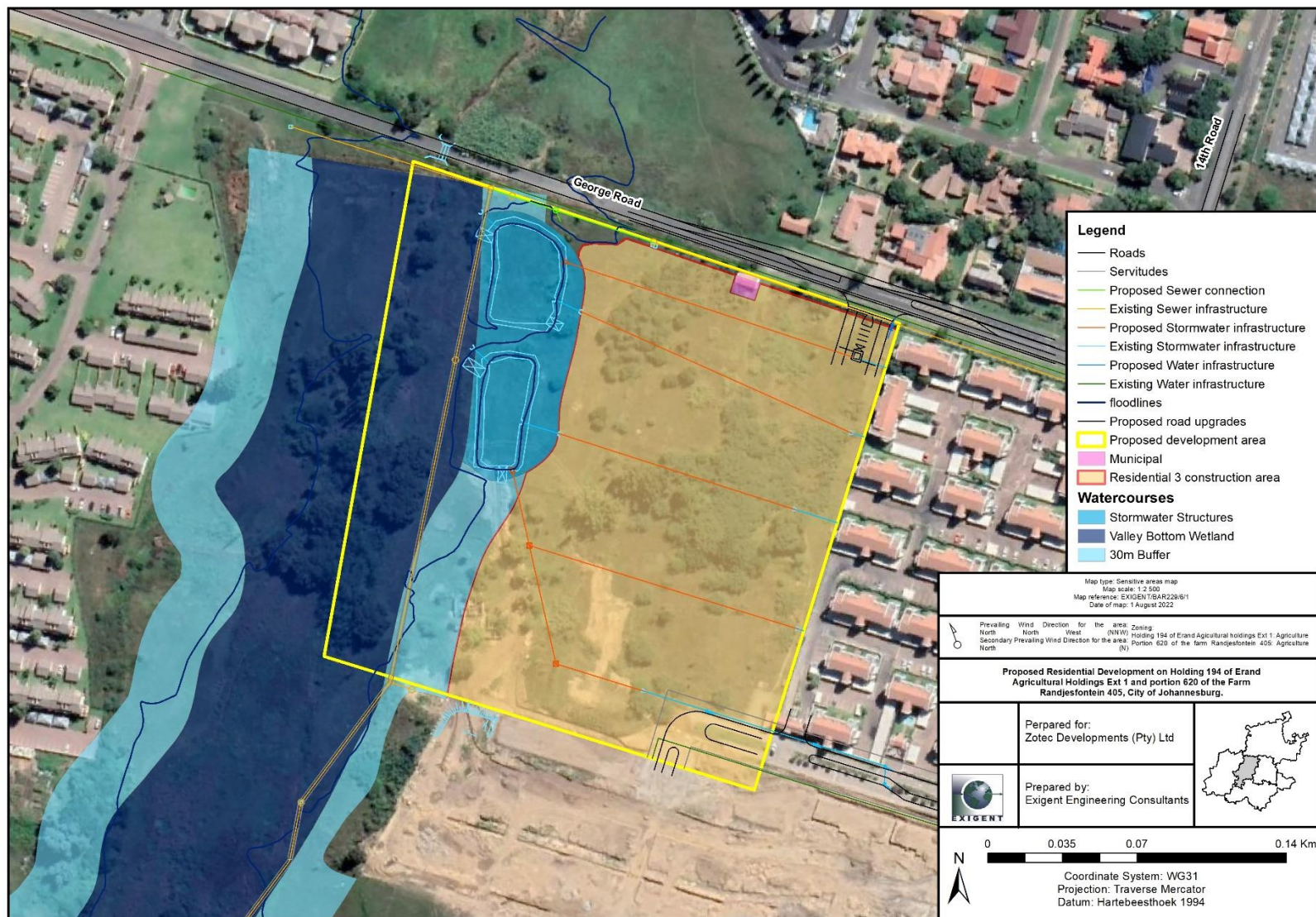


Figure 2. Site layout plan for the proposed residential development indicating all services infrastructure (including water, sewer, electricity, stormwater connections and site access) and sensitive features identified within the proposed residential development site.

SECTION B: DESCRIPTION OF RECEIVING ENVIRONMENT

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

Instructions for completion of Section B for linear activities

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

Section B has been duplicated for sections of the route time

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 time (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.)

- Holding 194 of Erand Agricultural Holdings Ext 1; and
- Portion 620 of the farm Randjesfontein 405-JR.

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):

-25.963141°

28.125679°

In the case of linear activities:

Alternative:

Latitude (S):

Longitude (E):

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

<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>

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	7	8	0	0	0	0	0	1	9	4	0	0	0	0	0
	T	0	J	R	0	0	0	0	0	0	0	0	0	4	5	0	0	0	6	2	0

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
------	--------------------	-------------	-------------	--------------	-------------	------------------

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
-----------	---------	--------------------------	--------	-------	-----------------------------------	-------------

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

YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	NO
YES	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)

YES	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)

YES	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)

YES	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)?

YES	NO
------------	-----------

According to the DEA Screening Tool (As included in Appendix H3 of this BAR, the overall Agricultural sensitivity of the proposed residential development site has been classified as having a Medium Sensitivity. A table containing all of the specialist studies proposed by the screening tool and a summary of the findings or motivation for exemption of specialist studies has been included in Table 2 below.

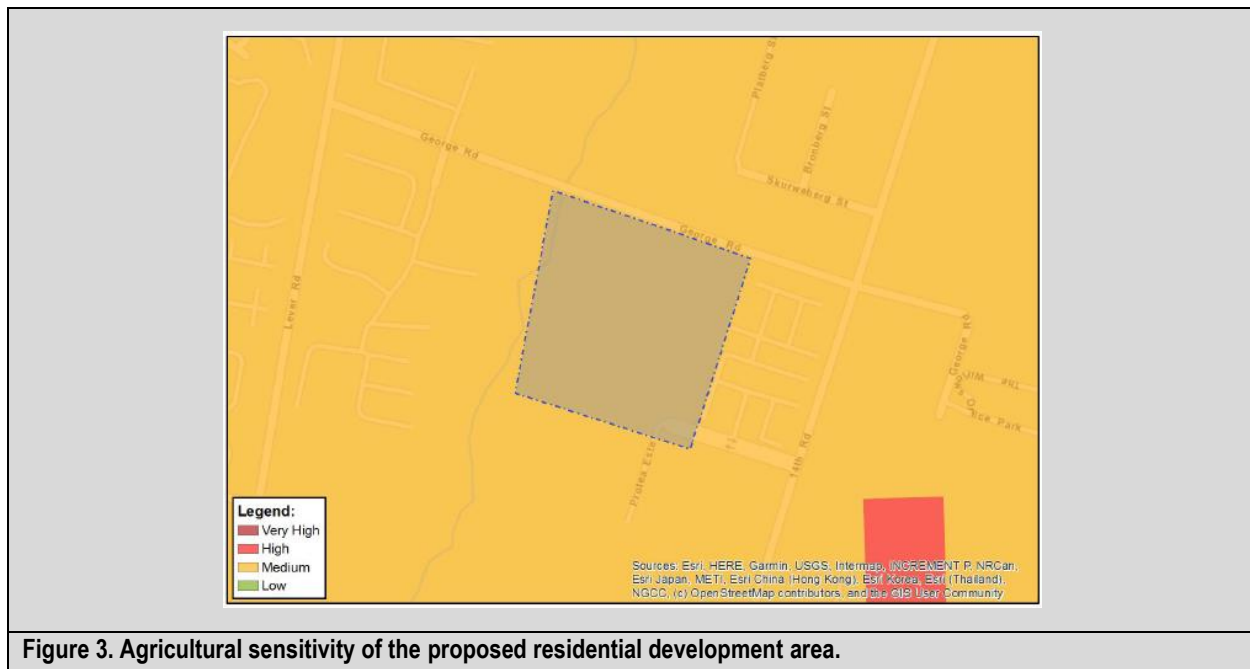


Figure 3. Agricultural sensitivity of the proposed residential development area.

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 % =	Natural veld with scattered aliens % = 85	Natural veld with heavy alien infestation % =	Veld dominated by alien species % =	Landscaped (vegetation) % =
Sport field % =	Cultivated land % =	Paved surface (hard landscaping) % = 3	Building or other structure % = 5	Bare soil % = 7

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:

As part of the site investigations and specialist assessments undertaken for the proposed residential development, a watercourse was identified within the project footprint.


Hydropedology and Wetland Context Report

Was a specialist consulted to assist with completing this section	YES	NO
If yes complete specialist details		
Name of the specialist:	D.J. van der Waals	
Qualification(s) of the specialist:	PhD. Soil Science (Pr.Sci.Nat.)	
Postal address:	P.O. Box 40568, Garsfontein	
Postal code:	0060	
Telephone:	012 993 0969	Cell: 082 570 1297
E-mail:	johan@terrasoil.co.za	Fax: 086 274 6653
Are any further specialist studies recommended by the specialist?	YES	NO
If YES, specify:		
If YES, is such a report(s) attached?	YES	NO
If YES list the specialist reports attached below		

Signature of specialist: **A declaration has been included in the specialist report (Appendix F)** Date: **11 February 2022**

Ecological Impact Statement Report

Was a specialist consulted to assist with completing this section	YES	NO
If yes complete specialist details		
Name of the specialist:	Jacolette Adam	
Qualification(s) of the specialist:	MSc, LLM (Pr. Sci. Nat)	
Postal address:	P.O. Box 11634, Erasmuskloof	
Postal code:	0048	
Telephone:	082 852 6417	Cell: 082 852 6417
E-mail:	jacolette@exigent.co.za	Fax: 086 614 7327
Are any further specialist studies recommended by the specialist?	YES	NO
If YES, specify:		
If YES, is such a report(s) attached?	YES	NO
If YES list the specialist reports attached below		

Signature of specialist:  Date: **20 July 2022**

Geotechnical Investigation Report

Was a specialist consulted to assist with completing this section	YES	NO
If yes complete specialist details		
Name of the specialist:	Anton M Bester	
Qualification(s) of the specialist:	Pr. Sci. Nat	
Postal address:	P.O. Box 73813, Lynnwood Ridge	
Postal code:	0040	
Telephone:		Cell: 083 252 7574
E-mail:	ambgeo@plotnet.net	Fax:
Are any further specialist studies recommended by the specialist?	YES	NO
If YES, specify:		
If YES, is such a report(s) attached?	YES	NO
If YES list the specialist reports attached below		

Signature of specialist: **A signature has been included in the specialist report (Appendix F)** Date: **November 2021**

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. Parking area
Other land uses (describe)*:	Parking area			

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

NORTH				
9	9,12	2, 4	9	13, 14
9	9	2, 4	1	13, 14
9	2,4		9	13, 14
1	2,4	1, 9	1	13, 14
9	2,4	9, 35	13, 14	13, 14
SOUTH				

WEST EAST

= Site

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

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

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

YES	NO
-----	----

Ecological Impact Statement Report Hydrogeology and Wetland Context Report Heritage Impact Assessment Geotechnical Report
--

Please see a summary of the specialist reports which have been attached below. Kindly note that a summary of the Heritage impact assessment has been included in subsection 10 below.

Hydropedology and Wetland Context Report (Appendix F2)

The Hydropedology and Wetland Context Report was commissioned by TerraSoil Science (2022). The findings of the report indicated that the proposed residential development is located within the Land type Bb1 which is limited to the Halfway House Granite Done of the Halfway House Intrusion which is comprised of bleached sandy soils.

The specialist drew his conclusions using the following investigation techniques:

- Study of previous reports compiled for the site and the consideration of existing data for the study area;
- Aerial imagery interpretation of the proposed residential development site;
- Use of historical 1:50 000 topographic maps for interpretation of the historical extent of mapped agricultural activities;
- Contours were used to determine drainage depressions and drainage lines;
- Soil properties on site were thoroughly investigated;
- Vegetation parameters were used as the main aerial photograph signature for the delineation of the wetland/watercourse areas;
- Artificial modifiers of the landscape and wetland area were identified during the different components of the investigation and are addressed in the context of the wetland management plan.

The findings of the investigations above indicated that the proposed residential development sites are characterized by two distinct storm water attenuation structures with wetland vegetation within the structure basins as well as along the stormwater channels identified on site. The stormwater structures have developed wetland signatures since their establishment in line with what is to be expected for water containment structures. This response is interpreted by many as being an indication of wetland conditions but such conditions are due to human activities and therefore excluded from the strict interpretation of the definition of a wetland.

Based on all the data and analysis done (Desktop and on-site), the following artificial modifiers were identified on site:

- Historical agricultural activities on the site;
- Historical land surface alteration on the site in the form of roads and trenches as well as a very distinct area of infill.
- Construction of dedicated stormwater attenuation structures within the stream floodplain.

On Holding 194 the storm water attenuation structures have been established for a long time and the altered ecological infrastructure signature is also quite established. In this regard the structures form part of the existing wetland area and it is recommended that these be maintained as such to function as a storm water structure for any developments contemplated for the adjacent property (. According to the specialist report, a buffer is not required around the stormwater structures for the purpose of the proposed residential development as:

- 1) These structures are in essence a buffer between the development and the downslope wetland,
- 2) There is a distinct land infill signature and
- 3) The activities regarding storm water management have already occurred.

Mitigation and management measures have been included as part of the impact assessment and mitigation measures section below.



Figure 4. Stormwater structures located within the proposed residential development site indicating wetland signatures.

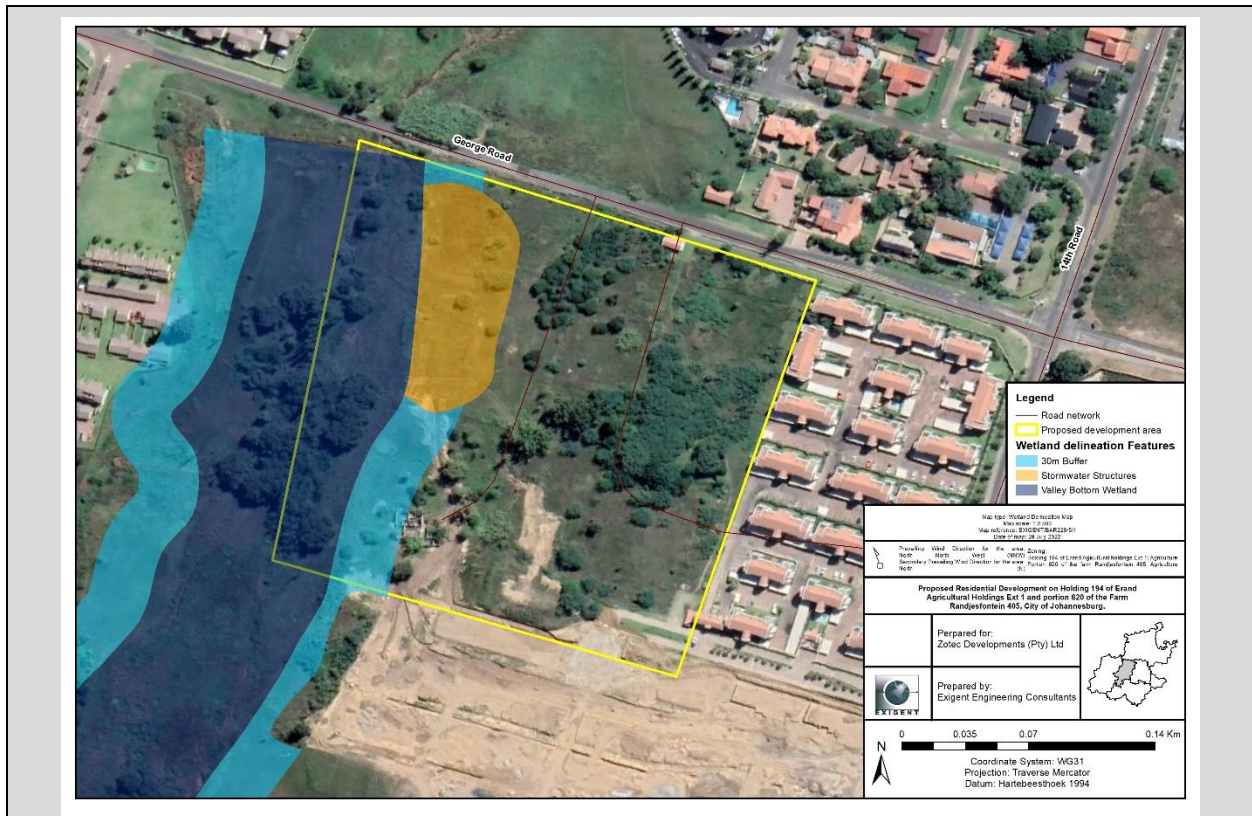


Figure 5. Wetland delineation within the proposed residential development area.

Geotechnical Report

The proposed residential development site is underlain by the granite of the Halfway House Granite Suite. The granite recorded was recorded as slightly ferruginised residual rock to highly weathered rock. No rocky outcrops or indications of large rock 'core stones' were identified within assessment depth (2.5 m from Natural ground level). Nine (9) test pits were evaluated and indicated the site could be divided into two (2) different Zones (A & B). The soil profile can be described as follow:

- The natural soil profile on portion 620, consists of between 600mm – 800mm thick residual- to weathered granite that was dumped and subsequently levelled, between 300mm – 500mm thick silty sand with plant roots (original topsoil and hillwash), average 500mm thick residual granite (clayey sand) followed by slightly ferruginised residual- to weathered granite (ferruginised slightly clayey gravelly sand) from depth ranging between 1,20m and 2,00m below existing ground level.
- The natural soil profile underlying holding 194, consists of between 400mm to 600mm thick, mostly silty sand topsoil and hillwash, followed by more than 2,0m thick residual granite (clayey sand). No very dense ferruginised granite was recorded within the upper 3,0m of the soil profile.

As part of these investigations, it was confirmed that no active clay material underlies this site.

Perched water seepage only occurred in one test pit within zone A. However, the presence of 'hardpan' ferricrete and/or ferruginised granite, is indicative of perched water conditions on this site, and specifically within the zone A. It is therefore essential that a proper sub-surface drain system be installed, to keep the perched water level under control, i.e., so that the perched water does not affect the bearing strength of the soil beneath structural foundations, as well as beneath terraces (if constructed) and internal road ways.

The fact that no water seepage was recorded in test pits 7, 8 and 9 (zone B on holding 194), does not necessary mean that a perched water level is absent. The presence of some ferruginization of the granite, is indicative of perched water movement, be it only during and after the rainy season.

Where appropriate, the recommendations brought forth by this specialist will be incorporated as part of the mitigation measures contained in Section E below.

Ecological Impact Statement Report

The Ecological Impact Statement was conducted by Exigent (2022). The following summarises the findings of the assessment.

Vegetation

As per the desktop assessment conducted for the proposed residential development, it was indicated that the proposed residential development site is located within the Egoli Granite Grassland NEMBA listed Ecosystem Type. The proposed residential development is also partially located within Critical Biodiversity (CBA) and Ecological Support Areas (ESA) as identified by the Gauteng Conservation plan (C-plan) V3.3. The north-western corner of the study area has been identified as a focus area as part of the National Protected Areas Expansion Strategy (NPEAS, 2018).

Based on the findings of the site visits conducted for the proposed residential development, the site has two predominant vegetation communities:

- The *Cynodon dactylon* – *Typha capensis* wetland
- The wooded *Hyparrhenia hirta* grassland

The *Cynodon dactylon* – *Typha capensis* wetland

The wetland vegetation community is located along the western boundary of the proposed residential development site. The anthropogenic activities impacted upon the wetland vegetation community includes the outlet of the temporary stormwater into the stormwater structures as identified by the wetland specialist. The extent of this vegetation community is approximately 0.92 ha with the stormwater structures having an extent of approximately 0.53 ha. The wetland vegetation species include but not limited, *Salix babylonica*, *Tagetes munita*, *Verbena bonariensis*, *Melia azedarach*, *Ziziphus mucronata*, *Widdringtonia nodiflora*, *Solanum panduriforme*, *Acacia tortilis*, *Vernonia cinerea*, *Lippia javanica*, *Pragmites australis*, *Dicoma anomala* and *Salix babylonica*.

This vegetation community has a high sensitivity. As per the specifications of the wetland specialist, a 30 m buffer is required around the channeled valley bottom wetland. No further buffer is required around the stormwater attenuation structures.

The wooded *Hyparrhenia hirta* grassland

This vegetation community has had various impacts including footpaths, localised clearance of vegetation and the construction of a temporary stormwater drainage channel. Additionally, the northern boundary of portion 620 of the farm Randjesfontein has been fenced off by brick faced fencing. The extent of this vegetation community is approximately 4.31 ha. The wooded grassland vegetation is dominated by grasses, trees and alien invasive plant species. The observed various vegetation species within the study area includes: *Searsia lancea*, *Bidens pilosa*, *Cynodon dactylon*, *Datura stramonium*, *Pennisetum clandestinum*, *Melia azedarach*, *Morus sp.*, *Imperata cylindrical*, *Aristida congesta*, *Hyphaene petersiana* and *Verbena bonariensis*. Few individuals of *Hypoxis hemerocallidea* were identified within proximity to the proposed residential development area during the site visits.

Due to location of the project and the historical impacts on it, this vegetation type has a low sensitivity. Appropriate mitigation measures in the form of a search, rescue and relocation mission would however be required in order to ensure the effective removal of the *Hypoxis hemerocallidea* individuals within the grassland community, should they be observed.

Faunal Assessment

During the faunal species review, it was identified that the quaternary degree had, upon previous occasions, seen 93 records for mammal species, 165 records for Aves species, 261 records for lepidoptera, 53 records for Dung beetle species, 14 records for frog species, 45 records for lacewing species, 23 records for Odonata species, 69 records for reptile species, 21 records for a spider species, 5 records for scorpions and 17 records for mushrooms, 11 records for Orchids spotted in the 2528CD quaternary degree square.

Of the records 2 bird, 14 mammal, 1 amphibian and 2 reptile and 1 orchid species were classified as endangered, vulnerable or near threatened no other species identified were of conservation concern.

As per the DEA screening tool, the following species were expected to occur within the extents of the study area, However, based on the level of disturbance and the habitat type identified on site and within proximity to the proposed residential development, the following probabilities were assigned per species:

- *Chrysospalax villosus* (VU): Medium probability – Grassland habitat
- *Crocidura maquassiensis* (LC) Low probability – Rocky habitats
- *Dasymys robertsii* (VU): Medium probability – Marshes and wetland habitats
- *Hydrotis maculicollis* (NT): Low probability – Rivers and lakes
- *Clonia uvarovi* (VU): Medium probability – Woodland Savannah

None of the species of conservation concern were identified on site during the site visits conducted for the proposed residential development.

Overall Terrestrial Ecology Assessment

Based on the findings of the original desktop assessment conducted for the proposed residential development, the site is located in:

- The NEMBA listed Endangered Ecosystem: Egoli Granite Grassland – No vegetation remnant to the Egoli Granite Grassland vegetation type is present on site.
- Portion of the site is located within a CBA and ESA – the greater extent of the CBA areas will be located within the wetland vegetation community, with only 0.003 ha of the CBA area located within a previously identified disturbed area (cleared).
- An area which has the potential of containing 5 species of concern (animals) – Of the 5 species, 3 has a potential of occurring within the study area, based on the habitat analysis. The wetland habitat has been allocated a high sensitivity, whereas the wooded grassland areas habitat type has been allocated a low habitat sensitivity.
- A focus area in terms of the NPEAS - The NPEAS focus area lies in the allocated open space area in its entirety and has therefore been excluded from the proposed residential development construction footprint.

The concluding findings of the Ecological Assessment indicated that the wetland area (including the existing stormwater attenuation areas) are to be considered no-go areas. With the exception of construction works of the external linkage infrastructure required for the proposed residential development. The grassland vegetation community was determined to have a low-medium sensitivity due to the sensitive species that has a probability of occurrence as well as the confirmed presence of the Gauteng protected species *Hypoxis hemerallacidea* within the study area. Various mitigation measures have been proposed in order to ensure these species are relocated prior to the commencement of construction activities (The impacts have been discussed in Section E: Impact Assessment).

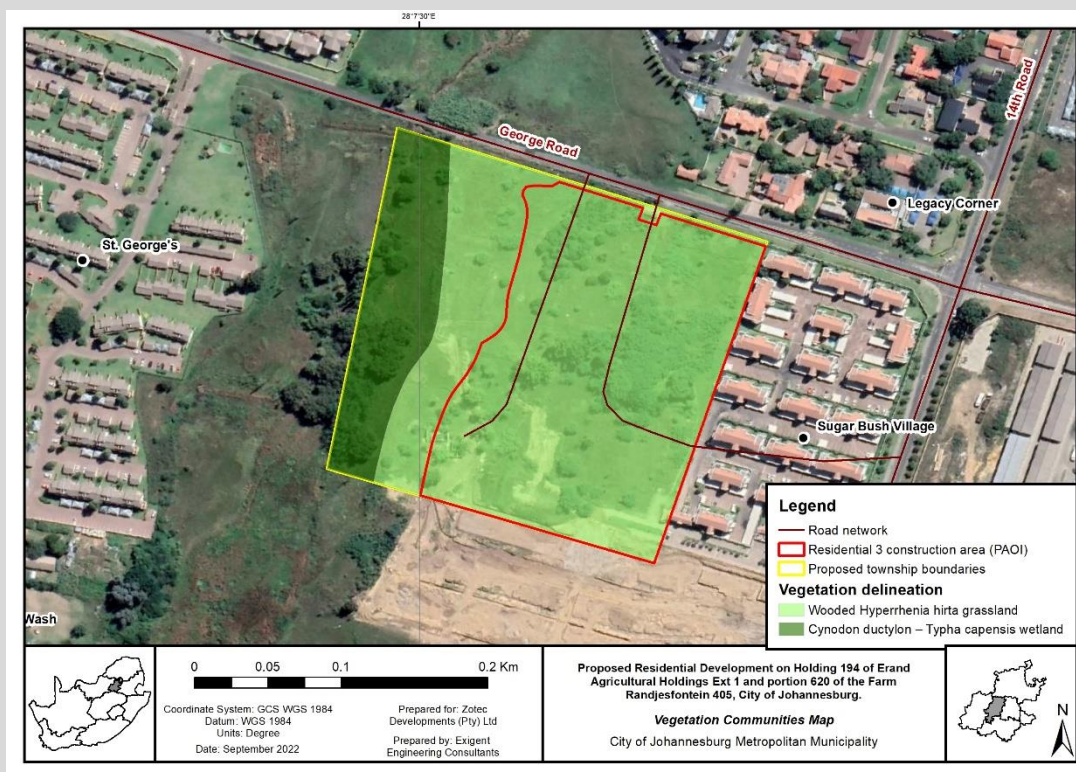


Figure 6. Ecological areas of concern.

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.

City of Johannesburg Metropolitan Municipality Integrated Development Plan (IDP)

The CoJ Metropolitan Municipality is located in the Gauteng Province. Johannesburg is known as the most advanced commercial city in Africa and the engine room of the economy of South Africa and its region (CoJ IDP, 2021/22). The City comprises world-class infrastructure in the fields of transportation, water and power telecommunications, and consists of globally competitive health care and educational facilities (CoJ IDP, 2021/22). The city, however, does consist of a large contrast between both wealthy and poor, global corporations and emerging enterprises, residents and refugees (CoJ IDP, 2021/22).

The city's population has increased to 5.74 million from 4.4 million people in 2011 which is a 20% increase in the last nine years (CoJ IDP, 2021/22). The City struggles with high levels of unemployment, poverty, inequality, sub-standard levels of human development and social exclusion (CoJ IDP, 2021/22). These struggles are further aggravated by long and costly commutes, unequal spatial development and inadequate basic services (CoJ IDP, 2021/22).

It is important that the population's well-being in terms of nutrition, education, health, social capital and safety is greatly enhanced to improve the conditions for social and human development (CoJ IDP, 2021/22). There has been a great decrease from 48.96% in 2008 to 45.85% in 2018 of people living in poverty as a result of the city's implementation of the Human development strategy, which drives the poverty alleviation programmes; amongst others, the Food resilience programme and Expanded Social Package (ESP) (CoJ IDP, 2021/22).

Despite increased growth over the last ten years, and Johannesburg contributing to 16% of South Africa's GDP, the economy of Johannesburg remains as one of the unequal economies in the world (CoJ IDP, 2021/22). The formal employment opportunities have not kept pace with the growth of the GDP as only 12% of formal employment opportunities were located in the metro (CoJ IDP, 2021/22). The City's low level of education and low skills base is incompatible with the current economic structure of the City that is weighted towards high-end financial services that require highly skilled workers (CoJ IDP, 2021/22). Approximately 40% of Johannesburg's formally employed workers are semi-skilled or unskilled, 45% are classified as skilled and of the total working population, only 14% are classified as highly skilled (CoJ IDP, 2021/22). The skills deficit remains a critical challenge in Johannesburg (CoJ IDP, 2021/22). Although South African is still at the early stages of the pandemic, the impact of the lockdown causes more businesses to lose out of revenue and some may not recover leading to more companies being liquidated and as a result more unpreventable job losses (CoJ IDP, 2021/22).

The City's Unemployment is currently at 32.7% and the estimated youth unemployment is over 40% (CoJ IDP, 2021/22). The 211 current number of informal settlements reflects that the people are located in areas far from urban centres which makes it difficult to reverse the spatial planning (CoJ IDP, 2021/22). The provision of basic services to the City's community is comparatively high with the majority of households (both formal and informal) enjoying access to sanitation (96.4%), electricity (92.3%) and piped water (98.8%) (CoJ IDP, 2021/22). There does however especially in the informal settlements continue to be a deficit where less than half of the households have access to basic sanitation (CoJ IDP, 2021/22). There has been an average annual rate of 3% growth from 2007 to 2017 in the number of households in the city which therefore places extra strain on the existing infrastructure (CoJ IDP, 2021/22).

The city of Johannesburg has a poverty and inequality challenge and the City's ability to provide a high quality of life for all, inclusive of social security nets, primarily depends on sustainable economic growth and the distribution of the benefits of such growth (CoJ IDP, 2021/22). It is important that the city grows economically, in order to create jobs and take care of its social obligations for those people who may not be in economically viable situations (CoJ IDP, 2021/22).

10. CULTURAL/HISTORICAL FEATURES

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

38. (1) *Subject to the provisions of subsections (7), (8) and (9), any person who intends to undertake a development categorised as-*
- (a) *the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;*
 - (b) *the construction of a bridge or similar structure exceeding 50m in length;*
 - (c) *any development or other activity which will change the character of a site-*
 - (i) *exceeding 5 000 m² in extent; or*
 - (ii) *involving three or more existing erven or subdivisions thereof; or*
 - (iii) *involving three or more erven or divisions thereof which have been consolidated within the past five years; or*
 - (iv) *the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;*
 - (d) *the re-zoning of a site exceeding 10 000 m² in extent; or*
 - (e) *any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.*

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

YES	NO
-----	----

If YES, explain:

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:

Due to the requirement for a Heritage Impact Assessment requirement being triggered in terms of the National Heritage Resources Act, a specialist was appointed to conduct a site assessment for the proposed residential development site.

The following key findings concludes the findings of the heritage specialist assessment:

- Large sections of the study area have been disturbed by surrounding developments and clearing and earth moving activities. These activities would have impacted on heritage features if any ever occurred in these areas;
- A dilapidated structure was recorded during the survey, the structure is not indicated on historical maps by 1975 and is assumed to be younger than 60 years and of no heritage value,
- The palaeontological sensitivity of the study area is insignificant and no other heritage resources of significance were noted during the survey.

The impact to heritage resources is low and the specialist indicated the project could commence provided that the recommendations in the report are adhered to, based on the South African Heritage Resource Authority (SAHRA) 's approval.

The recommendations raised by the specialist was the implementation of a chance find procedure for the project. This has subsequently been incorporated into the Environmental Management Programme (EMPr) compiled for the proposed residential development.



Figure 7. Photographic representation of the dilapidated building on Holding 194 of Erand Agricultural Holdings Ext 1.

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

YES	NO
YES	NO

SECTION C: PUBLIC PARTICIPATION (SECTION 41)

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

1. LOCAL AUTHORITY PARTICIPATION

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

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

YES	NO
-----	----

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

YES	NO
-----	----

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

As part of the pre-application public participation process, the CoJ requested to be included into the project. Further comment was raised regarding the impacts on the 1:100 year flood line and the wetland buffer located on site. It was indicated that discharge of stormwater should take place within the site boundaries and must be done outside the buffer area of the wetland.

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

--

2. CONSULTATION WITH OTHER STAKEHOLDERS

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

Has any comment been received from stakeholders?

YES	NO
-----	----

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

--

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

No other comments were received by stakeholders throughout the pre-application Public Participation Process. All stakeholders will be afforded a 30-day public review period of the Draft BAR as required by the EIA Regulations of 2014, as amended. All correspondence has been included in Appendix E of this report.

3. 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.

Please refer to Appendix E for the Comments and Response Report for the proposed residential development. Please note that all public participation conducted, and the reporting thereon, has been done in a manner to take into account the Protection of Personal Information Act (POPIA) (Act 4 of 2013). As such, all personal information (including names and all means of contact) has been retracted for the purpose of the public review period. Please see the Exigent Privacy Policy included in Appendix E which provides an indication as to the distribution restrictions and information use of contact details.

4. 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 time (complete only when appropriate)

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

1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

Solid waste management

Will the activity produce solid construction waste during the construction/initiation phase?

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

YES	NO
(Unquantifiable as of the compilation of this report) m ³	

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

During the construction phase of the proposed residential development, general construction rubble will be produced as part of daily works. This will include

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

Will the activity produce solid waste during its operational phase?

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

YES	NO
m ³	

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

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

YES	NO
-----	----

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

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

Can any part of the solid waste be classified as hazardous in terms of the relevant legislation?

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

YES	NO
-----	----

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

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.

YES	NO
-----	----

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

As part

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?

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)?

YES	NO
m ³	
YES	NO

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

Yes	NO
-----	----

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

m³

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:

E-mail:

Cell:

Fax:

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

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?

m³

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

YES NO

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

YES NO

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

Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

YES NO

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

YES NO

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

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

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
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If water is to be extracted from groundwater, river, stream, dam, lake or any other natural feature, please indicate the volume that will be extracted per month:

liters

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

The proposed residential development will require a Water Use Licence in terms of Section 21 (c) and (i) of the National Water Act (Act 36 of 1998), as amended. This will be required as the development of the sewer infrastructure will be located within a watercourse and the proposed residential development will be within the 500 m regulatory area of the watercourse.

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

YES NO

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

YES NO

3. POWER SUPPLY

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

The power supply will be managed by City Power (Municipal power supply).

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

--

4. ENERGY EFFICIENCY

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

--

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

--

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.

CoJ raised concerns regarding the impacts on the 1:100 year flood line and the wetland buffer located on site. It was indicated that discharge of stormwater should take place within the site boundaries and must be done outside the buffer area of the wetland.
Should further comments be received during the public review period of the BAR, they will be included and appropriately responded to.

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):

The layout incorporates the buffers around the wetland. There are existing stormwater structures on the study area, constructed during the development of the adjacent development, Sugarbush village. These facilities have enough capacity to accommodate the current proposed development

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

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

The impacts of the proposed residential development and alternative were assessed according to the criteria in the table below and will include the degree to which these impacts can be reversed, may cause irreplaceable loss of resources and can be avoided, managed or mitigated.

ASPECT	IMPACT RATING
Status of the impact: A statement of whether the impact is positive (a benefit), negative (a cost), or neutral.	
Direct impacts	Impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable.
Indirect impacts	Impacts of an activity are indirect or induced changes that may occur as a result of the activity. These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.
Cumulative impacts	Impacts are impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities. Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

Nature of the impact:

The evaluation of the nature is impact specific. Most negative impacts will remain negative, however, after mitigation, significance should reduce:

- Positive.
- Negative.

Extent:

A description of whether the impact would occur on a scale limited to within the study area (local), limited to within 5 km of the study area (area); on a regional scale i.e. City of Tshwane Metropolitan Municipality & Gauteng (region); or would occur at a national or international scale.

Local	1
Area	2
Region	3
National	4
International	5

Duration:

A prediction of whether the duration of the impact would be Immediate and once-off (less than one month), more than once, but short term (less than one year), regular, medium term (1 to 5 years), Long term (6 to 15 years), Project life/permanent (> 15 years, with the impact ceasing after the operational life of the development or should be considered as permanent).

Immediate	1
Short term	2
Medium term	3
Long term	4
Project life/permanent	5

Severity (extent + duration + intensity)

Intensity: This provides an order of magnitude of whether or not the intensity (magnitude/size/frequency) of the impact would be negligible, low, medium, high or very high. This is based on the following aspects:

- an assessment of the reversibility of the impact (permanent loss of resources, or impact is reversible after project life);
- whether or not the aspect is controversial;
- an assessment of the irreplaceability of the resource loss caused by the activity (whether the project will destroy the resources which are easily replaceable, or the project will destroy resources which are irreplaceable and cannot be replaced);

Negligible	The impact does not affect physical, biophysical or socio-economic functions and processes.	1
Low/potential harmful	The impact has limited impacts on physical, biophysical or socio-economic functions and processes.	2
Medium/slightly harmful	The impact has an effect on physical, biophysical and socio-economic functions and processes, but in such a way that these processes can still continue to function albeit in a modified fashion.	3
High/Harmful	Where the physical, bio-physical and socio-economic functions and processes are impacted on in such a way as to cause them to temporarily or permanently cease.	4
Very high/Disastrous	Where the physical, bio-physical and socio-economic functions and processes are highly impacted on in such a way as to cause them to permanently cease.	5

- the level of alteration to the natural systems, processes or systems.

Incidence (frequency + probability)

Frequency: This provides a description of any repetitive, continuous or time-linked characteristics of the impact: Once Off (occurring any time during construction or operation); Intermittent (occurring from time to time, without specific periodicity); Periodic (occurring at more or less regular intervals); Continuous (without interruption).

Once Off	Once	1
Rare	1/5 to 1/10 years	2
Frequent	Once a year	3
Very frequent	Once a month	4

Continuous	≥ Once a day/ per shift	5							
Probability of occurrence: A description of the chance that consequences of that selected level of severity could occur during the exposure.									
Highly unlikely	The probability of the impact occurring is highly unlikely due to its design or historic experience.	1							
Improbable	The probability of the impact occurring is low due to its design or historic experience.	2							
Probable	There is a distinct probability of the impact occurring	3							
Almost certain	It is most likely that the impact will occur	4							
Definite	The impact will occur regardless of any prevention measures	5							
Risk rating The risk rating is calculated based on input from the above assessments. The incidence of occurrence is calculated by adding the Extent of the impact to the duration of the impact. The Severity of the impact is calculated based on input from the extent of the impact, the duration and the intensity. Risk = Severity (extent +duration + intensity) x Incidence (frequency + probability) Significance: The significance of the risk based on the identified impacts has been expressed qualitatively as follows: <ul style="list-style-type: none">○ low – the impact is of little importance/insignificant, but may/may not require minimal management○ medium - the impact is important, management is required to reduce negative impacts to acceptable levels.○ high - the impact is of great importance, negative impacts could render development options or the entire project unacceptable if they cannot be reduced to acceptable levels and/or if they are not balanced by significant positive impacts, management of negative impacts is essential. <table><tr><td>Low risk</td><td>0 – 50</td></tr><tr><td>Medium risk</td><td>51 – 100</td></tr><tr><td>High risk</td><td>101 - 150</td></tr></table>				Low risk	0 – 50	Medium risk	51 – 100	High risk	101 - 150
Low risk	0 – 50								
Medium risk	51 – 100								
High risk	101 - 150								

In terms of the identification of issues and associated impacts for the proposed project, the following should be noted:

- The issues have been identified by the EAP team, the proponent, landowners and Interested and Affected Parties.
- A broad definition of the “environment” is considered, which includes the natural (biotic and abiotic), social, cultural, economic and built environments.
- Certain issues and associated impacts have been identified as potentially occurring, but their occurrence is not definite. However, they need to be identified to inform decision-making and to enable the relevant parties to proactively address them should they occur, or prevent them from occurring.
- Both negative and positive impacts are identified and described.

The following specialist studies were commissioned:

- Ecological Assessment;
- Archaeological and Heritage Specialist Assessment;
- Hydropedology and wetland assessment

- Geotechnical assessment

These studies were undertaken by independent professionals regarded as specialists in their specific disciplines. The requirements for specialist reports stipulated in Appendix 6 of the R326 of 2017 of NEMA have been complied with.

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 residential development. This must include an assessment of the significance of all impacts.

Table 2. Specialist assessments proposed by the DEA Screening tool for the proposed residential development.

Proposed Assessment	Sensitivity in the screening tool	Sensitivities identified in the Screening Report	EAP's comments on findings of the screening tool
Archaeological and Cultural Heritage Impact Assessment	Low	Low sensitivity in terms of screening report.	An Archaeological and Heritage Specialist Assessment was undertaken to provide an indication towards the sensitivity of the area based on the type of development and the surrounding land uses. In terms of the findings of the assessment, no structures or features of archaeological or heritage significance were identified within the study area.
Terrestrial Biodiversity Impact Assessment	Very High	Features informing sensitivity rating: <ul style="list-style-type: none"> • Critical Biodiversity Area 2 • Ecological Support Area • Endangered Ecosystem • Protected Areas Expansion Strategy 	An Ecological Assessment was compiled for the proposed residential development area. The findings indicated that all construction works will be outside of the area identified as a NPAES focus area. The proposed residential development site is located, within the exception of 0.003 ha in the south-western corner of the site. The ecological support areas located within the study area will be impacted upon.
Aquatic Biodiversity Impact Assessment	Very high	The aquatic sensitivity of the site was low and very high, with the latter being dictated by the interception with the wetland and estuaries database.	A riparian/wetland assessment was conducted in 2016 and was updated with a site compliance statement in 2021. The findings of the site compliance statement have confirmed the status the riparian habitat as high.
Plant Species Assessment	Low	Low sensitivity in terms of screening report.	A riparian/wetland assessment was conducted in 2016 and was updated with a site compliance statement in 2021. Furthermore, an Ecological Assessment in 2022. The findings of the site compliance statement have confirmed the status of the moist tall closed grassland as low and the riparian vegetation as high. The study included the inclusion of the findings of the vegetation on Erf 1743, which was also classified as the moist tall, closed grassland. No species of special concern were identified on site during the various assessments.
Animal Species Assessment	Medium	Species listed to possibly occur and evaluated in the compliance statement: <ul style="list-style-type: none"> • <i>Chrysospalax villosus</i> • <i>Crocidura maquassiensis</i> • <i>Dasymys robertsii</i> • <i>Hydricis maculicollis</i> • <i>Clonia uvarovi</i> 	An Ecological Assessment was compiled for the proposed residential development area. The species of concern were not identified on site during the course of the various assessments.

PREFERRED ALTERNATIVE									
IMPACT	Loss of vegetation and terrestrial habitat								
Vegetation plays an important part in the functioning of ecosystems, as well as maintaining biological processes in the soil. In addition, vegetation reduces the loss of topsoil and nutrients, and also recycles nutrients. The removal of the natural vegetation will result in a loss of habitat for various fauna and flora species. The proposed residential development is located within the Egoli granite grassland vegetation type, however no vegetation indicative of this vegetation type remains. The proposed residential development area contains numerous alien invasive species and has numerous existing impacts exercised upon it. The removal of the remaining natural vegetation will result in a loss of habitat for various fauna and flora species. The study area is approximately 5.2 ha whereas, only approximately 3.34 ha thereof will be developed upon.									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	1	5	1	3	5	56	Medium	Medium
COMMENT/MITIGATION:									
<ul style="list-style-type: none">• Clearance of indigenous vegetation must be kept to a minimum;• Localised removal of alien species;• Topsoil is to be removed separately to subsoil and be safely stockpiled for use in rehabilitation;• Bare surfaces should be grassed as soon as possible after construction to minimise time of exposure. Locally occurring, indigenous grasses should be used.• Progress of vegetation establishment must be monitored regularly by ECO, with slow recovery requiring intervention to ensure site recovery and integrity, as well as physical stability;• No indigenous vegetation may be collected or used for firewood;• In addition to <i>Hypoxis hemerocallidia</i>, if any plants of high conservation value are found on site, a plant 'rescue' operation must be undertaken under the direction of an ecologist/botanist prior to construction, where plants of high conservation value will be impacted by any part of the development. These should be carefully transplanted to a suitable site nearby and watered until established;• The necessary permits for translocation of protected species must be obtained from GDARD prior to relocation; and• No herbicides may be used on indigenous vegetation.									
IMPACT	Loss of wetland habitat								
The proposed residential development is located in close proximity to the delineated wetland boundary located within the proposed residential development, however, the residential development will remain outside of the 30 m wetland buffer, as required by the wetland specialist, as well as the 1:100 year floodline. The following infrastructure will be located within the wetland and buffer area: a) The proposed sewer infrastructure will be connected to a manhole located within the buffer area of the wetland; b) Construction works of the stormwater connection infrastructure will be confined to the area of the existing stormwater structures.									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	1	3	3	3	5	56	Medium	Low
COMMENT/MITIGATION:									
<ul style="list-style-type: none">• As construction in these areas is unavoidable, the development footprint should be kept to minimum.• Construction activities within the wetland areas should take place during the dry season, where possible.• During earthworks, the top 50cm of the wetland topsoil must be removed and stockpiled during the construction period, to be replaced once activities have been completed. This is to maintain the existing seed bed and soil profiles as best as possible.• No construction to occur outside the designated servitude width.• Excavated soils should be placed on the upslope side, minimizing the risk of erosion and excess sediment entering the freshwater ecosystems.• No rubble may be temporarily stockpiled or dumped within the wetland area.• Rehabilitation to take place immediately after construction by using topsoil that was removed and stockpiled for use in rehabilitation.• The crossings should be designed to ensure that flow patterns along the stream/wetland channel are not altered or diverted potentially resulting in stream bed and bank erosion and instability.• The construction footprint must be clearly demarcated and cordoned off in order to ensure no movement of construction workers/vehicles outside of the construction areas.									

PREFERRED ALTERNATIVE									
IMPACT		Potential loss of species of special concern							
During the site visits, numerous individuals of the Gauteng protected species, <i>Hypoxis hemerocallidea</i> , was identified with proximity to the proposed residential development area, however none within the site boundary. None of the faunal species were observed within the study area.									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	2	3	2	2	3	35	LOW	LOW
COMMENT/MITIGATION:									
<ul style="list-style-type: none">In addition to <i>Hypoxis hemerocallidea</i>, if any plants or species of concern identified by in the Ecological Assessment are found on site, a 'rescue' operation must be undertaken under the direction of an ecologist/botanist prior to construction. These species should be carefully relocated to a suitable area nearby.In addition to this species, faunal species were identified with a medium probability of occurring within the residential footprint.									
IMPACT		Historical features and paleontological impacts							
During the site visit conducted by the specialist, no features of historical importance were identified within the project study area. A dilapidated building was identified on site. According to the historic mapping available for the study area, the building is younger than 60 years. As per the paleontological sensitivity of the proposed residential development area, no further studies were required.									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	1	1	1	1	1	6	Low	Low
COMMENT/MITIGATION:									
<ul style="list-style-type: none">Implementation of a chance find procedure for both the archaeological and paleontological components.Monitoring of the construction footprint and servitudes during construction.									
IMPACT		Sedimentation and erosion							
Vegetation clearance may result in sheet erosion. The clearance of vegetation will further reduce the capacity of the land surface to retard the flow of surface water, thus, decreasing infiltration, and increasing both the quantity and velocity of surface water runoff and erosion.									
Impact during Construction phase:									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	2	5	3	3	3	60	MEDIUM	LOW
COMMENT/MITIGATION:									
<ul style="list-style-type: none">Topsoil and subsoil should be stockpiled separately, to not impact on areas outside the servitude;Topsoil storage should not exceed a height of 2 m;During rehabilitation, prompt and progressive reinstatement of bare areas is required. The topsoil layer is to be replaced on top during reinstatement; andChecks must be carried out at regular intervals to identify areas where erosion is occurring;The control of soil erosion and siltation associated with construction is important at all locations on site, and particularly adjacent to riparian area. Both temporary and permanent soil erosion control measures must be used during the construction phase. Any earth-worked areas, which may lay bare for extended periods, should be temporarily grassed.Remedial action, including the rehabilitation of eroded areas and, where necessary, the relocation of the paths causing erosion, is to be undertaken									
IMPACT		Infestation of alien invasive species							
The disturbance of the natural vegetation by the proposed activities may increase the spread of exotic species. Alien and invasive species are already a problem in the project area and utmost care should be taken not to disperse and increase the colonisation of these species.									
Impact during Construction phase:									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	2	5	3	5	5	100	MEDIUM	MEDIUM

PREFERRED ALTERNATIVE									
COMMENT/MITIGATION:									
<ul style="list-style-type: none">A monitoring program should be put in compiled to remove exotic vegetation and maintain open space areas free from exotic invasions during construction; andSuccessful re-vegetation is crucial to stabilize soils and limit infestation by invasive alien plant species. Rehabilitation should be undertaken on a progressive basis in these areas.Natural open spaces outside the development footprint should be left in their undeveloped state and any existing or new exotic vegetation within the development footprint should be eradicated.Within proximity to wetland area, successful re-vegetation is crucial to stabilize soils and limit infestation by invasive alien plant species. Rehabilitation should be undertaken on a progressive basis in these areas.A monitoring program should be put in place to remove exotic vegetation and maintain open space areas free fromAll construction footprints are to be demarcated with a barrier lining in order to prevent construction workers to stray from the designated construction footprint.									
IMPACT	Hydrological impacts								
This refers to any alterations in the quantity, timing and distribution of water inputs and through flows within the drainage line. Construction activities associated with bulk earthworks (such as excavations, stockpiling, reshaping, back-filling and compaction) in the catchment area feeding the wetland can alter natural patterns of surface runoff reaching water resources downslope/downstream. Excavations may impound and redirect water, thus starving downstream water resources. Infilling, compaction and rutting of soils caused by construction vehicles working outside the riparian area also alter the patterns of diffuse surface and sub-surface flows by altering micro-topography and the permeability of soil profiles. Changes in flow patterns reaching aquatic ecosystems does not only affect hydrological functionality and thus ecosystem integrity but may lead to erosion and sedimentation though increased runoff velocities linked to concentrated flow paths created during construction.									
Impact during Construction phase:									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation	After mitigation	
Negative	Direct	2	3	3	3	5	64	Medium	Low
COMMENT/MITIGATION:									
<ul style="list-style-type: none">Bare areas where vegetation has been removed pose a risk of becoming a sediment load into wetland area during heavy rainfall or windy conditions. Bare areas should therefore be covered during such events.Any potential large sediment loads (i.e. stockpiles) must be contained by covering them.Temporary stormwater management structures should be used during construction.									
IMPACT	Pollution of surface and groundwater due to chemical, oil and spillages								
Contaminants such as hydrocarbons, solids and pathogens will be generated from several potential sources (examples include petrol/diesel, oil/grease and other hazardous substances). These contaminants have the capacity to negatively affect ecosystems including sensitive or intolerant species of flora and fauna.									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation	After mitigation	
Negative	Direct	2	2	5	2	2	40	Low	Low
COMMENT/MITIGATION:									
<ul style="list-style-type: none">Extra care must be given to prevent any potentially hazardous substances from entering the wetland areas during rainfall events.The use of all chemicals and potentially hazardous substances must take place on a tray or an impermeable surface;In the event of a spill of chemicals and potentially hazardous substances, this must be addressed immediately and reported to the ECO for the necessary actions and/or reporting.									
IMPACT	Pollution of the wetland system due to raw sewer spills								
Due to the nature of the proposed project, there is a likelihood of sewage spillages due to malfunction of infrastructure, polluting the wetland system during the construction and operational phases. The health risks associated with high <i>E. coli</i> levels are of serious concern.									
Impact during Construction and operational phase:									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation	After mitigation	
Negative	Direct	3	5	5	2	2	52	Medium	Low

PREFERRED ALTERNATIVE									
COMMENT/MITIGATION: <ul style="list-style-type: none"> Preventive measure must be undertaken during the construction of the infrastructures, securing all joints for minimum spillage occurrences. Should a spillage occur, it must be reported to the relevant departments immediately. Where contamination occurs, soil must be immediately removed to prevent further contamination. Records must be kept of sewage spillages during all phases of the proposed residential development. An emergency preparedness plan must be in place for instances where spills occur that can be harmful to people or the receiving environment 									
IMPACT Dust, noise and waste generated during construction (general nuisance)									
Areas of unconsolidated soil will be present during construction, in the construction footprint and areas in close proximity. These sandy soils will be prone to wind erosion with associated generation of dust and windblown sand during high wind velocities.									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	2	3	3	3	3	48	Low	Low
COMMENT/MITIGATION: <ul style="list-style-type: none"> Disturbed areas must be stabilised immediately after final grading has been done in order to limit dust pollution. Structurally sound surface for the development must be maintained, by providing adequate drainage so that erosion, excessive dust and undue surface damage are avoided. Excessive liberation of dust must be controlled by the use of water-spraying or other dust-allaying agents, as required. 									
IMPACT Socio-economic impacts - creation of job opportunities									
A number of temporary employment and skills development opportunities will be created during construction. These opportunities will be of short-term duration and will be limited to the construction requirements of the Contractor, however skills can be transferred which may be used during further opportunities. Future employment opportunities may arise from the resident of this development employing domestic workers.									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Positive	Direct	3	3	4	5	5	100	MEDIUM	No mitigation required
COMMENT/MITIGATION: <ul style="list-style-type: none"> The contractor should, if possible, use local labour to ensure the economic growth of the surrounding area. 									
IMPACT Security/Safety impacts on the surrounding properties/estates									
As part of the proposed residential development, the safety of the surrounding properties and estates are of high concern. During the construction phase, it will be critical that the safety of the residents of the estate not to be compromised as a result of the proposed residential development.									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	1	5	3	4	1	50	Low	LOW
COMMENT/MITIGATION: <ul style="list-style-type: none"> The principal contractor is to provide a detailed security plan aimed towards ensuring the safety of the adjacent estates, during the construction phase of the proposed sewer line. The construction footprint must be demarcated and cordoned off prior to the commencement of the construction works. No construction workers are to be permitted to wander past the boundaries of the demarcated construction footprint. 									
NO-GO ALTERNATIVE									
Potential impacts:		Significance rating of impacts:		Proposed mitigation:		Significance rating of impacts after mitigation:		Risk of the impact and mitigation not being implemented	

PREFERRED ALTERNATIVE				
Sedimentation and erosion	LOW	The site will be left as is. No additional mitigation measures will be implemented.	No mitigation measures will be implemented	The site will be left as is. No additional mitigation measures will be implemented.
Infestation and spread of alien invasive species	MEDIUM	The site will be left as is. No additional mitigation measures will be implemented. Additionally, the infestation of the wetland vegetation area will continue	No mitigation measures will be implemented	The site will be left as is. No additional mitigation measures will be implemented.
Loss of possible job opportunities	HIGH	The site will be left as is. No additional mitigation measures will be implemented.	No additional job opportunities will be created	The site will be left as is. No additional mitigation measures will be implemented

PREFERRED ALTERNATIVE									
IMPACT	Sedimentation and erosion								
Vegetation clearance as part of the construction phase may result in sheet erosion. Where rehabilitation and bank stabilising has not taken place fully by the end of the construction activities, there is a risk of sedimentation and erosion taking place.									
Impact during Operational phase:									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation	After mitigation	
Negative	Direct	1	2	3	2	3	30	LOW	LOW
COMMENT/MITIGATION:									
<ul style="list-style-type: none">• Checks must be carried out at regular intervals to identify areas where erosion is occurring;• The control of soil erosion and siltation associated with operation is important at all locations on site, and particularly adjacent to riparian area. Both temporary and permanent soil erosion control measures must be used during the operation phase.• Remedial action, including the rehabilitation of eroded areas and, where necessary, the relocation of the paths causing erosion, is to be undertaken. These measures include the placement of hay bales• During rehabilitation, prompt and progressive reinstatement of bare areas is required. The topsoil layer is to be replaced on top during reinstatement.									
IMPACT	Infestation of alien invasive species								
The disturbance of the natural vegetation by the proposed activities may increase the spread of exotic species. Alien and invasive species are already a problem in the project area and utmost care should be taken not to disperse and increase the colonisation of these species.									
Impact during Operational phase:									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation	After mitigation	
Negative	Direct	2	2	5	5	5	90	MEDIUM	MEDIUM
COMMENT/MITIGATION:									
<ul style="list-style-type: none">• Successful re-vegetation in all areas is crucial to stabilise soils and limit infestation by invasive alien plant species. Rehabilitation should be undertaken on a progressive basis in these areas.• All maintenance activities outside of the allocated servitude areas must be discouraged.• As part of the maintenance procedures, the Applicant is to ensure that all alien invasive vegetation within the servitude area is to be removed and the area be appropriately rehabilitated by means of clearance, slope stabilization, soil preparation, and seeding (in the form of hydroseeding).									
IMPACT	Hydrological impacts								
This refers to any alterations in the quantity, timing and distribution of water inputs and through flows within the drainage line. Construction activities associated with bulk earthworks (such as excavations, stockpiling, reshaping, back-filling and compaction) in the catchment area feeding the wetland can alter natural patterns of surface runoff reaching water resources downslope/downstream. Excavations may impound and redirect water, thus starving downstream water resources. Infilling, compaction and rutting of soils caused by construction vehicles working outside the riparian area also alter the patterns of diffuse surface and sub-surface flows by altering micro-topography and the permeability of soil profiles. Changes in flow patterns									

PREFERRED ALTERNATIVE									
reaching aquatic ecosystems does not only affect hydrological functionality and thus ecosystem integrity but may lead to erosion and sedimentation though increased runoff velocities linked to concentrated flow paths created during construction.									
Impact during Operational phase:									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	1	2	3	5	3	48	LOW	LOW
COMMENT/MITIGATION:									
<ul style="list-style-type: none">Bare areas where vegetation has been removed pose a risk of becoming a sediment load into wetland system during heavy rainfall or windy conditions. Bare areas which have not recovered from the construction phase, should therefore be covered during such events.Temporary stormwater management structures should be used during operational phase in areas which have not recovered fully from construction activities.Any areas damaged as a result of stormwater runoff from the construction site must be rehabilitated.									
IMPACT	Pollution of the wetland system due to raw sewer spills								
Due to the nature of the proposed project, there is a likelihood of sewage spillages due to malfunction of infrastructure, polluting the wetland system during the operational phase. The health risks associated with high <i>E. coli</i> levels as a result of potential spills are of serious concern. During the operational phase of this project, there is a higher risk of sewer spills due to the possibility of infrastructure malfunction.									
Impact during Operational phase:									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Negative	Direct	3	5	5	1	1	26	Low	LOW
COMMENT/MITIGATION:									
<ul style="list-style-type: none">Preventive measure must be undertaken during the construction of the infrastructures, securing all joints for minimum spillage occurrences.Should a spillage occur, it must be reported to the relevant departments immediately.Where contamination occurs, soil must be immediately removed to prevent further contamination.Monthly monitoring for <i>E-coli</i> must be adhered to for the period of 6 months following the construction phase of the development as to ensure the sufficient functioning of the newly installed infrastructure.Should faulty infrastructure be identified, it must be replaced immediately after discovery. This must form part of a maintenance plan approved by the competent authority.Records must be kept of sewage spillages during both phases, construction and operational.An emergency preparedness plan must be in place for instances where spills occur that can be harmful to people or the receiving environment									
IMPACT	Socio-economic impacts - creation of job opportunities								
A number of temporary and permanent employment and skills development opportunities will be created during operational phase of the proposed residential development. These opportunities will be of short-long term duration and will be limited to the construction requirements of the Contractor, however skills can be transferred which may be used during further opportunities. Future employment opportunities may arise from the resident of this development employing domestic workers.									
Impact	Type	Severity			Incidence		Risk class		
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Positive	Direct	3	3	4	5	5	100	MEDIUM	No mitigation required
COMMENT/MITIGATION:									
<ul style="list-style-type: none">The Home Owners Association should, if possible, use local labour to ensure the economic growth of the surrounding area.									
IMPACT	Socio-economic impacts – economic growth possibilities								
Due to both the provision of additional job opportunities, as well as the availability of additional housing prospects, there will be a degree of regional economic growth.									
Impact	Type	Severity			Incidence		Risk class		

PREFERRED ALTERNATIVE									
		Extent	Duration	Intensity	Frequency	Probability	Before mitigation		After mitigation
Positive	Direct	3	5	3	4	5	99	MEDIUM	No mitigation required
COMMENT/MITIGATION: <ul style="list-style-type: none"> No mitigation measures required. 									
NO-GO ALTERNATIVE									
Sedimentation and erosion		LOW	The site will be left as is. No additional mitigation measures will be implemented.			No mitigation measures will be implemented		The site will be left as is. No additional mitigation measures will be implemented.	
Infestation and spread of alien invasive species		MEDIUM	The site will be left as is. No additional mitigation measures will be implemented. Additionally, the infestation of the wetland vegetation area will continue			No mitigation measures will be implemented		The site will be left as is. No additional mitigation measures will be implemented.	
Loss of possible job opportunities		HIGH	The site will be left as is. No additional mitigation measures will be implemented.			No additional job opportunities will be created		The site will be left as is. No additional mitigation measures will be implemented	

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 specialist reports have been included in Appendix F of the BAR: <ul style="list-style-type: none"> Ecological Assessment Hydrogeology and Wetland Context Report Heritage and Archaeological Assessment Geotechnical Report
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Describe any gaps in knowledge or assumptions made in the assessment of the environment and the impacts associated with the proposed residential development.

<p>To obtain a comprehensive understanding of the vegetation in the study area, a long-term study should be conducted as certain species only flower in certain seasons. However, due to time constraints, such long-term studies were not feasible, and most conclusions have been based on the field surveys that were conducted.</p> <p>Routine maintenance of the proposed external infrastructure needs to be done following the completion of the construction phase. This has been incorporated into the EMP of the proposed project and must be incorporated into the management guidelines of the future residential development as run by the Home Owners Association.</p> <p>The heritage impact assessment indicated that a brief literature review is not exhaustive on the literature of the area. Also, due to the nature of heritage resources and pedestrian surveys, the possibility exists that some features or artefacts may not have been discovered and possible occurrence of graves and other cultural material cannot be excluded. The assessment only dealt with the proposed residential development area and was done in a non-intrusive surveying manner. This study did not assess the impact on medicinal plants and intangible heritage as it is assumed that these components would have been highlighted through the public consultation process, if relevant.</p>
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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 residential development. This must include an assessment of the significance of all impacts.

Proposal
N/A
Alternative 1
N/A

Alternative 2

N/A

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

N/A

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

N/A

4. CUMULATIVE IMPACTS

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

The proposed residential development is located on vacant land, which is owned by the developer (Zotec Developments (Pty) Ltd.).

A cumulative impact of this project would be additional vegetation clearing and ultimately change in land use required to allow for residential development. However, proper urban designs, which accommodates the natural features of the study area, by means of design and layout, enhances the use of the open space in the proposed development within an urban environment.
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Sensitive areas would be protected by implementing mitigation measures as stated in the Environmental Management Programme (EMPr) Report.
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5. ENVIRONMENTAL IMPACT STATEMENT

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

Proposal

The impacts during the construction and operational phase have been identified.
--

The main negative impacts were the impact on the wetland vegetation habitat, the potential hydrological impact during the construction phase and the impact of infestation of alien invasive species.
--

During the operational phase of the proposed residential development, the infestation of the wetland habitat and potential sewage leakages, would be of greatest concern. However, these impacts can be mitigated through early detection and proper mitigation should they occur. When all impacts of both the construction and operational phases are taken into consideration, there will be limited negative impacts on the receiving environment.

Due to the housing need in the area, the general sense of place of the area complements the surrounding land uses, and the highly disturbed nature of the area proposed for the construction footprint, the impact is expected to be limited. The positive impacts are related to the employment opportunities for the surrounding community/area and the additional housing opportunities to be presented, leading to economic growth.
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A cumulative impact of this project would be additional vegetation clearing and ultimately change in land use required to allow for residential development. However, proper urban designs, which accommodates the natural features of the study area, by means of design and layout, enhances the use of the open space in the proposed development within an urban environment.
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No-go (compulsory)

The no-go alternative would mean that the construction and related operation of the proposed residential development and associated infrastructure does not commence. This would in turn limited the additional growth in the area, and the land remain vacant.
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The infestation of alien invasive species will also continue, and no management of the freshwater system would be implemented.

Furthermore, the potential job opportunities which will be created by the proposed residential development would not be presented and the potential housing opportunities in the area would not be created.

6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE

For proposal:

In accordance with the EIA Regulations, the potential impacts due to the construction and operational phases of the proposed residential development has been identified and assessed. An EMPr has been prepared in accordance with Appendix 4 of the EIA Regulations of 2014, as amended (GNR 326 of 2017) in terms of the NEMA and includes information on the proposed management or mitigation measures that was taken to address the environmental impacts that have been identified in the Draft BAR. These impacts include environmental impacts or objectives in respect of planning and design, pre-construction and construction activities, operation or undertaking of the activity and rehabilitation of the natural environment.

Any comments and/or concerns identified by I&APs during the review period of this Draft Basic Assessment review period will be incorporated into the Final BA to be submitted to the GDARD for consideration. Impacts for the construction and operational phases have been identified. The main negative impacts were the impact on the wetland, the potential hydrological impact of the construction phase of the proposed residential development and the impact of infestation of alien invasive species.

During the operational phase of the proposed residential development, there is a possibility that additional sewer spillages may occur into the wetland system.

When all the potential positive and the negative impacts are taken into consideration, it is considered that the proposed residential development will have a limited additional negative impact on the receiving environment. The impact of the proposed residential development on the receiving environment, should appropriate mitigation measures be implemented, would be limited.

For alternative:

No development alternatives were proposed for the proposed residential development, as the Applicant bought the site for the specific purpose of construction of the proposed residential development. Best practice principles were applied for the all concept design and engineering infrastructure so as to ensure limited impacts to the sensitive areas (wetland and its associated buffer area).

Where construction works within the sensitive areas are required (specifically regarding the external services infrastructure), a minimum impact footprint approach must be followed by all members of the construction and operational team. This aims to ensure that minimal impacts on the sensitive features are maintained.

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.

No development alternatives were proposed for the proposed residential development, as the Applicant bought the site for the specific purpose of construction of the proposed residential development. Best practice principles will be applied for the all concept design and engineering infrastructure so as to ensure limited impacts to the sensitive areas (wetland and its associated buffer area as indicated by the wetland specialist). Where construction works within the sensitive areas are required (specifically regarding the external services infrastructure), a minimum impact footprint approach must be followed by all members of the construction and operational team. This aims to ensure that minimal impacts on the sensitive features are maintained.

If this project is authorised, rehabilitation post construction will be implemented as stated in the EMPr. Sensitive areas within the proposed site will be demarcated and the mitigation measures put in place as recommended by specialists.

The project will create jobs in the planning, as well as the construction phase.

7. SPATIAL DEVELOPMENT TOOLS

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

The proposed residential development is located on two properties, holding 194 of the Erand Agricultural Holdings Ext 1 and portion 2 of the farm Randjesfontein 405-JR.

Both properties have been zoned as both zoned as agricultural. The proposed project has considered and is guided by the regions SDF and IDP priorities of the area. The proposed residential development aligns with the principles listed in the SDF vision of “spatial resilience” in which the vulnerability to environmental degradation is reduced by protecting the ecological systems and supporting the transition to environmental sustainability while also supporting the ‘spatial efficiency’ principle through supporting job creation.

8. RECOMMENDATION OF THE PRACTITIONER

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

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

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:

- Mitigation measures which have been identified during the impact assessment phase has been included in the EMPr (As attached in Appendix G of this report).
- As per the various specialist assessments presented for the proposed residential development (included in Appendix F), the wetland vegetation and associated buffer area, as proposed by the specialist, must be considered as a highly sensitive area. However, traversing of the wetland buffer area is unavoidable due to the sewer line connection required for the proposed residential development.
- The wetland delineation and buffer area (as provided by the wetland specialist) was also identified as the highly sensitive area as part of the ecological impact assessment, due to the ecosystem functions of the system. As indicated in the ecological impact statement, a search and rescue for the Gauteng protected species, *Hypoxis hemerocallidea*, as well as the species of concern identified by in the Ecological Impact Statement, prior to the commencement of the construction works on site.

9. THE NEEDS AND DESIRABILITY OF THE PROPOSED RESIDENTIAL DEVELOPMENT (AS PER NOTICE 792 OF 2012, OR THE UPDATED VERSION OF THIS GUIDELINE)

The site for the proposed residential development is located within the CoJ, in the Gauteng Province. Gauteng is the smallest of the nine provinces; however, it comprises the largest share of the South African population which amounts to approximately 13.7 million people which is 24.1% of South Africa’s total population of 56.5 million.

According to the IDPs for the municipality, the City of Johannesburg has a population of 4 435 000 people. The population growth rate is approximately 2.92% increase per annum. This development is necessary to accommodate the growing population of the province as a whole.

The proposed residential development will be located on Holding 194 of Erand Agricultural Holdings Ext and portion 620 of the Farm Randjesfontein 405-JR. The ecological impacts of the proposed residential development is limited to a portion of the proposed residential development site and is located outside of the delineated wetland and buffer area. With the services infrastructure Best environmental practices will be followed throughout the construction and operational phases of the proposed residential development partially transecting these sensitive areas so as to connect to the existing municipal infrastructure. The proposed residential development will be located in within the NEMBA Endangered Ecosystem type, the Egoli Granite Grassland. However, due to numerous historical agricultural activities (as indicated by the Heritage Assessment), the no remnant vegetation of this ecosystem type is remaining, as verified by the ecological assessment. The Gauteng protected species, *Hypoxis hemerocallidea*, was identified within close proximity of the proposed residential development site, a search and rescue mission must be implemented prior to the commencement of the construction phase. As verified by the geotechnical description of the proposed residential development sites, no rocky outcrops were found on site.

As per the Gauteng C-Plan (2011), the site will be partially located in an area classified as a CBAs with the remainder of it being in an Ecological Support Area will be intercepted by the proposed project.

A dilapidated building was identified on site, however, the building is not older than 60 years old. The proposed alignment of the pipelines is not expected to affect any historical buildings or structures. No heritage sites were observed along the route and no further mitigation is required. A chance find protocol as presented by the Heritage Assessment Specialist has been incorporated into the EMPr compiled for the project.

This project will improve the livelihood of the larger area due to the creation of job opportunities and skills

development, and will also allow for an increase in the local economy of the surrounding area by creating much needed housing opportunities.

During the construction phase, preference must be given to the local affected parties when recruiting labourers. These parties must be trained in such a way as to assist with furthering their skills, where possible. The benefits will include additional housing prospects for future inhabitants of the Gauteng province.

The EMPr (Appendix H) provides measures to prevent or minimize the impact of the proposed residential development before, during and after construction. This project will have a minimum impact on additional resources as sustainable engineering designs and methods will be used throughout the development and monthly ECO monitoring will occur. In the long term, positive impacts will occur due to the proposed residential development.

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

The environmental authorisation is required for a period of 10 years.

11. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR) (MUST INCLUDE POST CONSTRUCTION MONITORING REQUIREMENTS AND WHEN THESE WILL BE CONCLUDED.)

If the EAP answers "Yes" to Point 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.