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## **DRAFT BASIC ASSESSMENT REPORT -**

## **PEACH TREE EXTENSION 28 TOWNSHIP DEVELOPMENT**

**FOR THE DEVELOPMENT OF A TOWNSHIP AND ASSOCIATED SERVICES ON PORTIONS 814, 815 AND 816  
OF THE FARM KNOPJESLAAGTE 385 JR, GAUTENG PROVINCE**

Submitted in terms of the Environmental Impact Assessment Regulations, 2014 promulgated in terms of the National  
Environmental Management Act, 1998 (Act No. 107 of 1998)

**NOVEMBER 2021**

**GDARD Reference: 002/20-21/E2866**

*Environmental Safety & Sustainability Specialists*

**Elemental Sustainability Propriety Limited**

**Directors:** Y Pillay, D Wilken

**Registration Number:** 2017/252593/07

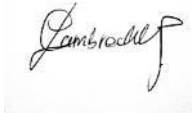

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## DOCUMENT CONTROL

<b>Report</b>	Draft Basic Assessment Report for the Peach Tree Ext 28 Township Development on portions 814, 815 and 816 of the farm Knopjeslaagte 385 JR, Gauteng Province		
<b>Client</b>	Applicants: Mr Josef Lewis Mrs Petro Smith Mr Marius du Plessis		
<b>Responsible Person</b>	Applicants/Clients– Owners of the land	<a href="mailto:kilosand@mweb.co.za">kilosand@mweb.co.za</a> ; mariusdp@tshwane.gov.za	
<b>Report Number</b>	KS-BAR-REP-061_2021	<b>Report Status</b>	Draft for PPP
		<b>Report Date</b>	11 November 2021

## DOCUMENT REVIEW

Responsible person	Date	Position	Responsibility	Signature
Corlien Lambrechts Pr.Sci.Nat. (No. 009135) EAPASA. (No. 2020-935)	2021/10/31	Environmental Consultant	Author	
DuToit Wilken Pr.Sci.Nat. (No. 118911)	2021/10/31	Director / Senior EAP	Reviewer / Sign - off	

## DISCLAIMER

*This document has been prepared by Elemental Sustainability with reasonable skill, care and diligence, and taking account of the manpower, timescales and resources devoted to it in accordance with the appointment from the applicant.*

*In addition, this report has been compiled in line with the requirements of the National Environmental Management Act, 1998 (No. 107 of 1998) (NEMA) and EIA regulations (2014), as amended. Information reported herein may be based on the interpretation of public domain data collected by Elemental Sustainability (Pty) Ltd, and/or information supplied by the applicant and/or its other advisors and associates. The data has been accepted in good faith as being accurate and valid. This document may contain information of a specialised and/or highly technical nature and the reader is advised to seek clarification on any elements which may be unclear to it.*

## REPORT CITATION:

Elemental-S (2021). Draft Basic Assessment Report for the Peach Tree Ext 28 Township Development on portions 814, 815 and 816 of the farm Knopjeslaagte 385 JR, Gauteng Province.

## ENVIRONMENTAL ASSESSMENT PRACTITIONER

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NAME:	QUALIFICATION & EXPERTISE
<b>Corlien Lambrechts</b> Senior EAP	<ul style="list-style-type: none"> <li>• B.Sc Hons – University of Pretoria</li> <li>• Pr.Sci.Nat. (No. 009135)</li> <li>• EAPASA. (No. 2020-935)</li> <li>• 8+ years' experience in the environmental management field</li> </ul>
<p><b>Corlien Lambrechts</b> is an Environmental Scientist with 8 years of applicable experience in the relevant field of Environmental Management and has qualifications in Environmental Management and Zoology. She is a Professional Natural Scientist with the South African Council of Natural Scientific Professions (Pr.Sci.Nat: 009135) and has been registered and accredited by Environmental Assessment Practitioners Association of South Africa (EAPASA), Registration number: 2020/935.</p> <p>After consulting for a number of years, she enrolled for her Honors degree in Zoology at the University of Pretoria in 2015 where she completed a project in the Cathedral Peak Drakensberg Mountain range studying differences in community structures of invertebrate species between natural grasslands and grasslands subjected to rehabilitation by South African Environmental Observation Network (SAEON) and in association with the University of Pretoria Centre of Invasion Biology (CIB). During her career within the Environmental management field, she has been involved in a wide variety of Ecological and Environmental applications and compilation of reports, which include as relevant to the compilation of this report: Basic Assessment Reports, Scoping and Environmental Impact Assessment Reports and Environmental Management Plans, Environmental Audit Reports, Water-Use Application Reports and Mining Right Applications.</p>	
<b>DuToit Wilken</b> Project Reviewer	<ul style="list-style-type: none"> <li>• M.Sc. University of Pretoria,</li> <li>• Pr.Sci.Nat. (118911)</li> <li>• 10+ years' experience in the environmental management field</li> </ul>
<p><b>DuToit Wilken</b> is an Environmental Scientist with more than 12 years of experience in applying the principles of Integrated Environmental Management, and in applying the Environmental Legislation to a number of development projects and initiatives in Southern Africa. He is registered as a Pr.Sci.Nat. (SACNASP), Natural Scientist, Registration number 118911. He has co-ordinated and managed number of diverse projects and programs related to the Environment and Mining within both the public and private sectors and for national, multi-national and international companies. His interpersonal and organisational skills have enabled him to efficiently direct these projects from initiation to implementation.</p> <p>A significant element of public participation is required throughout the life cycle of an EIA process. DuToit has successfully liaised with interested and affected parties, ensuring that all communication procedures and dialogues are open and transparent, and that capacity building is conducted where necessary. His proficient report-writing skills have been utilised for the compilation of a wide variety of reports, which include but is not limited to Basic Assessment Reports, Scoping and Environmental Impact Assessment Reports, Environmental Management Plans (Planning, Construction, Operation and Closure), Environmental Audit Reports, Opportunities and Constraints Analyses, Waste License Applications, Water-Use Application Reports and Mining Right Applications.</p>	

REFER TO APPENDIX I-1: CVs of Specialists

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## ABBREVIATIONS

<b>BA</b>	Basic Assessment
<b>BAR</b>	Basic Assessment Report
<b>DAFF</b>	Department of Agriculture, Forestry and Fisheries (now DFFE)
<b>DEA</b>	Department of Environmental Affairs
<b>DEFF</b>	Department of Environment, Forestry and Fisheries
<b>DFFE</b>	Department of Forestry, Fisheries and Environment
<b>DWS</b>	Department of Water and Sanitation
<b>EAP</b>	Environmental Assessment Practitioner
<b>EIA</b>	Environmental Impact Assessment
<b>EMPr</b>	Environmental Management Programme
<b>GDARD</b>	Gauteng Department of Agriculture and Rural Development
<b>HIA</b>	Heritage Impact Assessment
<b>I&amp;APs</b>	Interested and Affected Parties
<b>IDP</b>	Integrated Development Plan
<b>NEMA</b>	National Environmental Management Act, Act No. 107 of 1998
<b>NEM:WA</b>	National Environmental Management: Waste Act, Act No. 59 of 2008
<b>NHRA</b>	National Heritage Resources Act, Act No. 25 of 1999
<b>NWA</b>	National Water Act, Act No. 36 of 1998
<b>SAHRA</b>	South African Heritage Resources Agency
<b>SAHRIS</b>	South African Heritage Resources Information System
<b>SDF</b>	Spatial Development Framework
<b>WUL</b>	Water Use Licence
<b>WULA</b>	Water Use Licence Application

**REQUIREMENTS ACCORDING TO APPENDIX 1 OF GNR 326 OF 4 DECEMBER 2014 (AS AMENDED APRIL 2017) – SCOPE OF ASSESSMENT AND CONTENT OF BAR:**

<b>SCOPE OF ASSESSMENT AND CONTENT OF BAR</b>		<b>SECTION IN BAR</b>
1)	A basic assessment report must contain all the information that is necessary for the competent authority to consider and come to a decision on the application, and must include –	
	(a) details of –	
	i. the EAP who prepared the report; and	Page 3
	ii. the expertise of the EAP, including a curriculum vitae;	Appendix I
	(b) the location of the activity, including:	
	i. the 21-digit Surveyor General code of each cadastral land parcel;	Section B
	ii. where available, the physical address and farm name;	Appendix A
	iii. (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties;	
	(c) a plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; or, if it is –	
	i. a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or	Appendix A
	ii. on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	
	(d) a description of the scope of the proposed activity, including –	
	i. all listed and specified activities triggered and being applied for; and	Section A
	ii. a description of the activities to be undertaken including associated structures and infrastructure;	
	(e) a description of the policy and legislative context within which the development is proposed including –	
	i. an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are applicable to this activity and have been considered in the preparation of the report; and	Section A2
	ii. how the proposed activity complies with and responds to the legislation and policy context, plans, guidelines, tools frameworks, and instruments;	Section E7
	(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location;	Section A3 Section B9 Section E9
	(g) a motivation for the preferred site, activity and technology alternative;	Section A4
	(h) a full description of the process followed to reach the proposed preferred alternative within the site, including:	
	i. details of all the alternatives considered;	Section A4
	ii. details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;	Appendix E
	iii. a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them;	Section B
	iv. the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	Appendix G
	v. the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts-	Section E
		Appendix F



<ul style="list-style-type: none"> <li>aa) can be reversed</li> <li>bb) may cause irreplaceable loss of resources; and</li> <li>cc) can be avoided, managed or mitigated;</li> <li>vi. the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives;</li> <li>vii. positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;</li> <li>viii. the possible mitigation measures that could be applied and level of residual risk;</li> <li>ix. the outcome of the site selection matrix;</li> <li>x. if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such; and (xi) a concluding statement indicating the preferred alternatives, including preferred location of the activity;</li> </ul>	
<p>(i) a full description of the process undertaken to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including -</p> <ul style="list-style-type: none"> <li>i. a description of all environmental issues and risks that were identified during the environmental impact assessment process; and</li> <li>ii. an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;</li> </ul>	<p>Section E Appendix G Appendix H</p>
<p>(j) an assessment of each identified potentially significant impact and risk, including -</p> <ul style="list-style-type: none"> <li>i. cumulative impacts;</li> <li>ii. the nature, significance and consequences of the impact and risk;</li> <li>iii. the extent and duration of the impact and risk;</li> <li>iv. the probability of the impact and risk occurring;</li> <li>v. the degree to which the impact and risk can be reversed;</li> <li>vi. the degree to which the impact and risk may cause irreplaceable loss of resources; and</li> <li>vii. the degree to which the impact and risk can be avoided, managed or mitigated;</li> </ul>	<p>Section E Appendix G</p>
<p>(k) where applicable, a summary of the findings and impact management measures identified in any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final report;</p>	<p>Appendix H</p>
<p>(l) an environmental impact statement which contains -</p> <ul style="list-style-type: none"> <li>i. a summary of the key findings of the environmental impact assessment;</li> <li>ii. a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers; and</li> <li>iii. a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;</li> </ul>	<p>Section E Appendix A Appendix G</p>
<p>(m) based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr;</p>	<p>Section E Appendix G Appendix H</p>

(n) any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;	Appendix G
(o) a description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed;	Section E Appendix G
(p) a reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;	Section E8 Appendix G
(q) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised;	N/A
(r) an undertaking under oath or affirmation by the EAP in relation to: <ul style="list-style-type: none"> <li>i. the correctness of the information provided in the reports;</li> <li>ii. the inclusion of comments and inputs from stakeholders and I&amp;APs;</li> <li>iii. the inclusion of inputs and recommendations from the specialist reports where relevant; and</li> <li>iv. any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties;</li> </ul>	Appendix I Section C Appendix E
(s) where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	N/A
(t) any specific information that may be required by the competent authority; and	N/A
(u) any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A

**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)**

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**Kindly note that:**

1. This **Basic Assessment Report** is the standard report required by GDARD in terms of the EIA Regulations, 2014.
2. This application form is current as of 8 December 2014. It is the responsibility of the EAP to ascertain whether subsequent versions of the form have been published or produced by the competent authority.
3. **A draft Basic Assessment Report must be submitted, for purposes of comments within a period of thirty (30) days, to all State Departments administering a law relating to a matter likely to be affected by the activity to be undertaken.**
4. **A draft Basic Assessment Report (1 hard copy and two CD's) must be submitted, for purposes of comments within a period of thirty (30) days, to a Competent Authority empowered in terms of the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended to consider and decide on the application.**
5. Five (5) copies (3 hard copies and 2 CDs-PDF) of the final report and attachments must be handed in at offices of the relevant competent authority, as detailed below.
6. The report must be typed within the spaces provided in the form. The size of the spaces provided is not necessarily indicative of the amount of information to be provided. The report is in the form of a table that can extend itself as each space is filled with typing.
7. Selected boxes must be indicated by a cross and, when the form is completed electronically, must also be highlighted.
8. An incomplete report may lead to an application for environmental authorisation being refused.
9. **Any report that does not contain a titled and dated full colour large scale layout plan of the proposed activities including a coherent legend, overlain with the sensitivities found on site may lead to an application for environmental authorisation being refused.**
10. The use of "not applicable" in the report must be done with circumspection because if it is used in respect of material information that is required by the competent authority for assessing the application, it may result in the application for environmental authorisation being refused.
11. No faxed or e-mailed reports will be accepted. Only hand delivered or posted applications will be accepted.
12. Unless protected by law, and clearly indicated as such, all information filled in on this application will become public information on receipt by the competent authority. The applicant/EAP must provide any interested and affected party with the information contained in this application on request, during any stage of the application process.
13. Although pre-application meeting with the Competent Authority is optional, applicants are advised to have these meetings prior to submission of application to seek guidance from the Competent Authority.

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**DEPARTMENTAL DETAILS**

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

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

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

(For official use only)

NEAS Reference Number:

File Reference Number:

Application Number:

Date Received:

GAUT 002/20-21/E2866					

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

N/A - The submission of the Basic Assessment Report (BAR) to the Competent Authority is within the 90 days from submission of the Application. An extension letter was submitted to the Department on the 5<sup>th</sup> of August 2021 and extension was granted to enable specialist assessment of aspects identified during the initial screening, such as the wastewater treatment facility.

Afterwards, additional extension was communicated with the Department to enable the finalisation and 30-day PPP required. Refer to **Appendix I** for proof of GDARD extension granted and communication discussed delays on the project.

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

NO

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

This application is for the development of a township development, which will exist for the foreseeable future. Should the Applicant decide to discontinue the township and decommission for any reason, a new application for closure and decommissioning will be submitted to the Competent Authority. Otherwise, a closure phase is not envisaged as normally township developments are a permanent development in an area.

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

YES

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

YES

If no, state reasons for not attaching the list.

N/A

Have State Departments including the competent authority commented?

NO

If no, why?

This is a Draft BA Report and is currently being released for a 30-day review period. Following the review period any comments received from State Departments (including the Competent Authority) will be incorporated into the Final BA Report which will be submitted to Gauteng Department of Agriculture and Rural Development for decision-making. An application for EA as well as the relevant public participation actions (i.e., newspaper advertisement) accompany the release of this Draft BA Report and will be included in the Final Document.

## SECTION A: ACTIVITY INFORMATION

### A1. PROPOSAL OR DEVELOPMENT DESCRIPTION

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

Basic Assessment Report for the Peach Tree Township Development on Portions 814, 815 and 816 of the Farm Knopjeslaagte 385 JR, Gauteng Province.

Select the appropriate box

The application is for an upgrade of an existing development

☐

The application is for a new development

☒

Other, specify

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

**YES**

**NO**

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

A WUL Application needs to be launched in the future by the client before the development can be implemented but will not form part of this EA application at present due to the area currently subjected to mining (which needs to apply for closure accompanied with this EA as final land use if granted) and agriculture activities.

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

**NO**

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

**NO**

### A2. 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:

**Table 1: Applicable Legislation**

Title of legislation, policy or guideline:	Administering authority:	Promulgation Date:
Constitution of South Africa, 1996 (Act No. 108 of 1996) [as amended]	National	18 December 1996
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	National & Provincial	27 November 1998
NEMA Environmental Impact Assessment Regulations as amended, GNR 326	National & Provincial	7 April 2017
NEMA Procedures for the assessment and minimum criteria for reporting on identified environmental themes in terms of sections 24(5)(a) and (h) and 44 of the NEMA, 1998, when applying for environmental authorisation, GNR 320	National & Provincial	20 March 2020
National Water Act, 1998 (Act No. 36 of 1998) as amended	National & Provincial	26 August 1998
National Environmental Management Waste Act, 2009 (Act No. 59 of 2008)	National & Provincial	10 March 2009
National Environmental Management Waste Act GNR 921	National & Provincial	29 November 2013
National Environmental Management Waste Act GNR 633	National & Provincial	24 July 2015
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	National & Provincial	7 June 2204
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	National & Provincial	28 April 1999
National Development Plan: A Vision for 2030	National	19 February 2013
Department of Environmental Affairs Guidelines on Public Participation	National & Provincial	10 October 2012
National Health Act, 2003 (Act No.61 of 2003)	National & Provincial	23 July 2004

Animal Health Act, 2002 (Act No. 7 of 2002)	National	30 July 2002
Spatial Planning Land Use Management Act, 2013 (Act No. 16 of 2013)	National	6 August 2013
Gauteng Provincial Environmental Framework, 2014	Provincial	November 2014

**Table 2: Description of compliance with the relevant legislation**

Description of compliance with the relevant legislation, policy or guideline:	
Legislation, policy of guideline	Description of compliance
<p>Constitution of South Africa, 1996 (Act No. 108 of 1996) [as amended] Section 24 Environment: Everyone has the right-</p> <ul style="list-style-type: none"> <li>(a) <i>to an environment that is not harmful to their health or well-being; and</i></li> <li>(b) <i>to have the environment protected, for the benefit of present and future generations through reasonable legislative and other measures that-</i> <ul style="list-style-type: none"> <li>(I) <i>prevent pollution and ecological degradation;</i></li> <li>(II) <i>promote conservation; and</i></li> </ul> </li> </ul> <p>Secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.</p>	<p>The proposed development has the potential to harm the environment and could potentially poses a risk to the health and wellbeing of people (same with all developments). The Applicant has the overall responsibility to ensure that the rights of people in terms of Section 24 of the Constitution are protected in terms of the proposed development activity.</p>
<p>National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).</p> <ul style="list-style-type: none"> <li>• <i>Section 28 (1)</i></li> </ul> <p><i>Duty of Care and responsibilities to minimise and remediate environmental degradation.</i></p>	<p>The Applicants are the developers and overall responsibility of the development rests with them, especially in terms of liabilities associated with the operational phase.</p> <p>The Environmental Authorisation for the proposed development is lawfully applied for in terms of the EIA Regulations, 2014 (as amended in 2017), promulgated under NEMA. The conditions on the Environmental Authorisation, if approved, will be adhered to.</p>
<p>GNR 326 of NEMA EIA Regulations, 7 April 2017 Listing Notice 1 &amp; 3</p>	<p>To promote integrated environmental management, contents of this BAR adhere to the requirements of the EIA Regulations. Appendix H includes the Environmental Management Programme that the project will adhere to if authorisation is received.</p> <p>All the triggered activities as per National Environmental Management Act (Act No. 107 of 1998) have been listed in this document.</p>
<p>EIA Regulations, 2014 (Government Notices 982 - 984) (as amended) by GNR 324 – 327 in 2017.</p> <p><i>Chapter 6: Regulation 39 to 44: Public Participation;</i> <i>Chapter 4: Application for Environmental Authorisation:</i> <i>Part 2 Basic Assessment</i> <i>Appendix 1: Basic Assessment Report</i> <i>Appendix 4: Environmental Management Programme</i> <i>Appendix 5: Closure Plan</i> <i>Appendix 6: Specialist Reports</i></p>	<p>The EIA Regulations, 2014 [as amended] prescribes inter alia:</p> <p>The manner in which public participation needs to be conducted as well as the requirements of a basic assessment process and the content of a basic assessment report and environmental management programme.</p> <p>The content of specialist reports is also provided.</p>



<p>National Heritage Resources Act, 1999 (Act No. 25 of 1999)</p> <ul style="list-style-type: none"> <li>Section 44 (1);</li> </ul> <p><i>Preservation and protection of heritage resources;</i></p> <ul style="list-style-type: none"> <li>Section 3 Types and ranges of heritage resources (i) (i);</li> </ul> <p><i>Objects recovered from the soil or waters of South Africa, including archaeological and palaeontological objects and material, meteorites and rare geological specimens.</i></p>	<p>The proposed project has been submitted to the South African Heritage Resources Agency (SAHRA) online platform South African Heritage Resources Information System (SAHRIS).</p> <p>Protection of indigenous heritage resources on the property.</p> <p>A specialist heritage investigation was conducted for the proposed site, and heritage aspects were found to occur on-site and is shown within this report along with the buffer zone recommended.</p>
<p>National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)</p> <ul style="list-style-type: none"> <li>Section 9</li> </ul> <p><i>Norms and standards</i></p> <ul style="list-style-type: none"> <li>Section 27</li> </ul> <p><i>Delegation of power and duties</i></p> <ul style="list-style-type: none"> <li>Section 30</li> </ul> <p><i>Financial accountability</i></p> <ul style="list-style-type: none"> <li>Section 43</li> </ul> <p><i>Biodiversity management plans.</i></p>	<p>The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) as amended (NEMBA) including all the pertinent legislation published in terms of this act was considered in undertaking this Basic Assessment process. This included the determination and assessment of the fauna and flora prevailing in the proposed project and the handling thereof in terms of NEMBA.</p> <p>Indigenous vegetation needs to be protected and managed in accordance with management measures set out in the management plans.</p> <p>A specialist ecological scan and wetland assessment has been conducted for the project area; and the findings is represented within this report.</p>
<p>National Environmental Management Waste Act, 2008 (Act No. 59 of 2008)</p>	<p>The Waste Management practices has been assessed in respect of the National Environmental Management: Waste Act (Regulations published in GNR 921 (as amended by National Environmental Management Waste Act GNR 633 issued on 24 July 2015) as amended NEM: WA. However, it should be noted that the WWTW (for sewage) does not require a WML as such, but does trigger activities in terms of EIA Regulations.</p> <p>Sections of legislation published under this act will be applicable and adhered to.</p>
<p>National Water Act, 1998 (Act 36 of 1998)</p>	<p>An application for a Water Use Licence Application (WULA) will need to be lodged. However, it is not done concurrently with this application as the current land uses such as the mining operation (Kilo Sands (Pty) Ltd) present on the property needs to apply for closure and aims to do this accompanied with the EA (if granted) showing final land use as the township development.</p>
<p>National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004)</p>	<p>Impacts on surrounding landowners need to be managed through dust mitigation measures during construction.</p> <p>No significant air quality impacts are expected as a result of the township development. Dust is currently monitored on-site, since it is currently a sand mine with surrounding agriculture activities.</p>
<p>National Environmental Management: Air Quality Act, 2004 (Act No. 39 of 2004) [as amended].</p> <p>In terms of section 21 of the NEM: AQA a list of scheduled processes was published in GNR893 (November 2013).</p>	<p>Impacts on surrounding landowners need to be managed through dust mitigation measures during construction.</p>

	No significant air quality impacts are expected as a result of the township development. Dust is currently monitored on-site, since it is currently a sand mine with surrounding agriculture activities.
<p>Veld and Forest Fire Act, 1998 (Act No. 101 of 1998) [as amended]</p> <ul style="list-style-type: none"> <li>Section 12 (1)</li> </ul> <p><i>Duty of the landowner to prevent fire from spreading to neighbouring properties.</i></p>	<p>Cautionary steps in avoiding the spread of fires to and from neighbouring properties. This will specifically be important since township developments will hold a significant risk to the residents if a fire breaks out as human lives could be at stake.</p>
<p>Alien and Invasive Species Regulations (Government Notice 598 of 2014) and Alien and Invasive Species List, 2014 in terms of NEMBA (Government Notice 599 of 2014)</p> <ul style="list-style-type: none"> <li>Notice 2</li> </ul> <p><i>Exempted Alien Species in terms of Section 66 (1)</i></p> <ul style="list-style-type: none"> <li>Notice 3</li> </ul> <p><i>National Lists of Invasive Species in terms of Section 70(1) – List 1, 3-9 &amp; 11</i></p> <ul style="list-style-type: none"> <li>Notice 4</li> </ul> <p><i>Prohibited Alien Species in terms of Section 67 (1) – List 1, 3-7, 9-10 &amp; 12</i></p>	<p>It is the responsibility of the Applicants to ensure that all prohibited plant and animal species are eradicated as far as possible.</p> <p>A specialist ecological scan and wetland assessment has been conducted for the project area; limited natural indigenous vegetation is present on the area.</p>
<p>Conservation of Agricultural Resources Act (no. 43 of 1983)</p> <ul style="list-style-type: none"> <li>Section 5: Prohibition of spreading of weeds</li> <li>Section 12: Maintenance of soil conservation works and maintenance of certain states of affairs</li> </ul> <p>Section 16: Regional Conservation Committees</p>	<p>Listed invader/alien plants occurring on site which requires management measures to be implemented.</p>
<p>Hazardous Substances Act, 1973 (Act 15 of 1973) [as amended]</p> <ul style="list-style-type: none"> <li>Section 2: Declaration of grouped hazardous substances;</li> <li>Section 4: Licensing;</li> <li>Section 16: Liability of employer or principle</li> <li>Section 9 (1): Storage and handling of hazardous chemical substances;</li> <li>Section 18: Offences</li> </ul>	<p>The Applicant must ensure the safety of people working with hazardous chemicals (specifically fuels), as well as safe storage, use and disposal of containers during the on-site operational phase together with the associated liability should non-compliance be at the order of the day.</p>
<p>National Dust Control Regulations, 2013 (Government Notice 827 of 2013)</p> <ul style="list-style-type: none"> <li>Section 3</li> </ul> <p><i>Dust fall standard</i></p> <ul style="list-style-type: none"> <li>Section 4</li> </ul> <p><i>Dust fall monitoring program</i></p> <ul style="list-style-type: none"> <li>Section 6</li> </ul> <p><i>Measures for control of dust</i></p>	<p>Impacts on surrounding landowners need to be managed through dust mitigation measures during construction.</p> <p>No significant air quality impacts are expected as a result of the township development. Dust is currently monitored on-site, since it is currently a sand mine with surrounding agriculture activities.</p>

<ul style="list-style-type: none"> <li>• Section 7</li> </ul> <p>Ambient air quality monitoring (<math>PM_{10}</math>)</p> <ul style="list-style-type: none"> <li>• Section 8</li> </ul> <p>Offences</p> <ul style="list-style-type: none"> <li>• Section 9</li> </ul> <p>Penalties</p>	
<p>National Ambient Air Quality Standard (NAAQS) (29 June 2012 (No. 35463)).</p>	<p>Standard for ambient air quality in South Africa. Monitoring requirements, limits and standards.</p> <p>Impacts on surrounding landowners need to be managed through dust mitigation measures during construction.</p> <p>No significant air quality impacts are expected as a result of the township development. Dust is currently monitored on-site, since it is currently a sand mine with surrounding agriculture activities.</p>
<p>SANS 1929: Ambient Air Quality – Limits for Common Pollutants</p> <p>SANS 1137: Standard test method for the collection and measurement of dust fall (settleable particulate matter).</p> <p>ASTM d 1739, 1970 or equivalent approved protocol for dust monitoring.</p>	<p>Impacts on surrounding landowners need to be managed through dust mitigation measures during construction.</p> <p>No significant air quality impacts are expected as a result of the township development. Dust is currently monitored on-site, since it is currently a sand mine with surrounding agriculture activities.</p>
<p>National Development Plan: A Vision for 2030</p>	<p>The South African Government through the Presidency has published a National Development Plan. The Plan aims to eliminate poverty and reduce inequality by 2030. The Plan has the target of developing people's capabilities to be to improve their lives through education and skills development, health care, better access to public transport, jobs, social protection, rising income, housing and basic services, and safety. It proposes the following strategies to address the above goals:</p> <ol style="list-style-type: none"> <li>1. Creating jobs and improving livelihoods;</li> <li>2. Expanding infrastructure;</li> <li>3. Transition to a low-carbon economy;</li> <li>4. Transforming urban and rural spaces;</li> <li>5. Improving education and training;</li> <li>6. Providing quality health care;</li> <li>7. Fighting corruption and enhancing accountability;</li> <li>8. Transforming society and uniting the nation.</li> </ol>
<p>Public Participation guideline in terms of NEMA EIA Regulations, Department of Environmental Affairs, 2017</p>	<p>This guideline has informed the public participation process for the project.</p>
<p>Hazardous Chemical Substances Regulations, 1995 (Government Notice 1179 of 1995)</p> <ul style="list-style-type: none"> <li>• Section 4: Duties of persons who may be exposed to hazardous chemical substances</li> <li>Section 9A (1): Penalties</li> </ul>	<p>No Hazardous substances will be stored on the site.</p>

<ul style="list-style-type: none"> <li>• Relevant South African National Standards: <ul style="list-style-type: none"> <li>○ <b>SANS 10400:</b> The application of National Building Regulations;</li> <li>○ <b>SANS 5667:</b> Water quality</li> <li>○ <b>SANS 10103:</b> The measurement and rating of environmental noise with respect to annoyance and to speech communication</li> </ul> </li> </ul>	Adherence to all necessary standards to ensure safety and minimal risk of development.
SANS 10228:2006 The Identification and Classification of Dangerous Goods for Transport	All dangerous goods to be transported to and from the site need to be managed according to these standards during construction. No permanent presence or storage is proposed and may only be required during construction of the township.
National Development Plan 2030 (2012)	Land use planning.
National Strategy for Sustainable Development and Action Plan 2011 – 2014 (NSSD 1) (2011)	Land use planning.
Development Guidelines for Ridges (GDARD)	Ridges have been identified and delineated within the Gauteng Province by GDARD. Based on the specialist findings, no identified ridges are located within the area or within 200m of the site.
Gauteng Conservation Plan: Version 3.3	Identifies Critical Biodiversity Areas, Ecological Support Areas, and irreplaceable, protected, and important areas. Planning Tool utilised during the Terrestrial Ecology assessment. The data as presented in the plan was verified during the field assessment. The area does have areas of importance in terms of the C-Plan including sensitive areas identified in the ecological assessment conducted.
Gauteng Department of Agriculture and Rural Development (GDARD) Minimum Requirements for Biodiversity Assessments (2014).	The biodiversity assessment undertaken was completed in terms of the requirements. Refer to Appendix G.
National Spatial Development Perspectives (NSDP)	<p>The NSDP (2006) provides a framework for a focused intervention by the State in equitable and sustainable development. It represents a key instrument in the State's drive towards ensuring greater economic growth, buoyant and sustained job creation, and the eradication of poverty. It provides:</p> <ul style="list-style-type: none"> <li>• a set of principles and mechanisms for guiding infrastructure investment and development decisions;</li> <li>• description of the spatial manifestations of the main social, economic and environmental trends that should form the basis for a shared understanding of the national space economy; and</li> <li>• an interpretation of the spatial realities and the implications for government intervention.</li> </ul>

	The project has taken municipal-level spatial planning into account where possible.
New Growth Path (2010)	<p>South Africa has embarked on a new economic growth path in a bid to create 5 million jobs and reduce unemployment from 25% to 15% over the next ten (10) years. The plan aims to address unemployment, inequality and poverty by unlocking employment opportunities in South Africa's private sector and identifies seven job drivers. These job drivers have the responsibility to create jobs on a large scale. The seven key economic sectors or "job drivers" for job creation are listed below:</p> <ul style="list-style-type: none"> <li>• infrastructure development and extension: Public works and housing projects;</li> <li>• agricultural development with a focus on rural development and specifically</li> <li>• Agro-Processing;</li> <li>• mining value chains;</li> <li>• manufacturing and industrial development (IPAP);</li> <li>• knowledge and green economy;</li> <li>• tourism and services; and</li> <li>• informal sector of economy.</li> </ul> <p>Employment opportunities, direct and in-direct will be provided by the proposed activity.</p>
National Framework for Sustainable Development (2008)	<p>The purpose of the National Framework on Sustainable Development is to enunciate South Africa's national vision for sustainable development and indicate strategic interventions to re-orientate South Africa's development path in a more sustainable direction. It proposes a national vision, principles and areas for strategic intervention that will enable and guide the development of the national strategy and action plan.</p>
National Spatial Development Perspective (2006)	<p>The NSDP 2006 provides a framework for a focused intervention by the State in equitable and sustainable development. It represents a key instrument in the State's drive towards ensuring greater economic growth, buoyant and sustained job creation and the eradication of poverty.</p> <p>Employment opportunities, direct and in-direct will be provided by the proposed activity.</p>
Gauteng 10-Pillar Programme of Transformation, Modernisation and Re-industrialisation	<p>The 10-Pillar Programme for the economic, social and spatial transformation of Gauteng, includes the two pillars most relevant to the project which are "decisive spatial transformation" and "modernisation of human settlements and urban development". To achieve radical and decisive spatial transformation will require key elements, including:</p> <ul style="list-style-type: none"> <li>• Transforming the Apartheid spatial economy and human settlement patterns to integrate economic opportunities, transport corridors and human settlements.</li> <li>• Revitalising and mainstreaming the township economy.</li> </ul>

	<ul style="list-style-type: none"> <li>Enhancing the competitiveness of strategic economic sectors.</li> <li>Significant investment in economic infrastructure.</li> </ul>
Gauteng Employment and Growth Strategy (GEGDS) (2009 to 2014)	<p>The strategy was formulated by the Department Economic Development. The strategy is based on innovation, green growth and an inclusive economy.</p> <ul style="list-style-type: none"> <li>Increased economic equity and ownership: SMME development, access to quality education, support cooperatives, procurement support.</li> </ul> <p>The township will contribute to SMME development and provide employment opportunities, direct and in-direct, but will also provide housing and services and as a result general development of the area in question.</p>
City of Tshwane Spatial Development Framework	<p>The City of Tshwane Spatial Development Framework states that the purpose of the designated agricultural land is to conserve the high potential agricultural areas and to promote food security. The SDF is clear that the supported land uses in the project area include agriculture, agricultural product beneficiation, agricultural schools, agro-processing, farmers market, commercial farming, and related activities.</p>
City of Tshwane - The Land and Legislation and Application Management (LULAM)	<p>The Land and Legislation and Application Management (LULAM)</p> <ul style="list-style-type: none"> <li>the management and maintenance of the Tshwane Town-planning Scheme 2008</li> <li>the process relation to the land-use application and</li> <li>the naming of public places and street names.</li> </ul> <p>The Section manages and maintains the Tshwane Town-planning Scheme of 2008 and the information planning to land-use rights (zonings, consent uses and permissions) which forms a critical component of the valuation system.</p> <p>To assist the public and consultants in submitting land use application in accordance with the correct legislation and to advise them on the documentation that must accompany these applications, the Section has manuals available on all the types of land use application. It must be noted that various sets of legislation regulate the submission of land-use applications. The Section revises the tariffs and documents related to these applications each year and ensures that the application process proceed smoothly and expeditiously. A new electronic processing system for the administration of land-use applications is being developed.</p>
Regional Development Framework (RSDF 2018) - City of Tshwane – Metropolitan Spatial Development Framework 2012 (Chapter 1)	<p>The development falls into “<u>Region 4 (Ward 48)</u>”: “This region is to be found in the south-western corner of the COT. The following opportunities are to be found within the region:</p> <ul style="list-style-type: none"> <li>Centurion Metropolitan core</li> <li>Gautrain Station</li> </ul>



	<ul style="list-style-type: none"> <li>• Highveld Technopark</li> <li>• N1 Commercial Development Corridor</li> <li>• Samrand commercial and industrial node</li> <li>• Potential development along R21 towards OR Tambo International Airport</li> <li>• Olievenhoutbosch NDPG programme</li> <li>• Centurion Lake</li> </ul> <p>This region is one of the more affluent regions of the municipality. Its strategic location along the border of Johannesburg has meant that it has progressively developed further towards the south as the growing attraction to the convenience and economic sense of its location has grabbed the attention of many investors. The Highveld Technopark is one such development that is testament to this.</p> <p>Other predominant land uses of strategic significance include the Zwartkop and Waterkloof Military Airports, Centurion CBD, Sunderland Ridge Industrial Area, N1 Corridor (commercial development), Louwlandia Commercial and Industrial area and Samrand. The Gautrain Station will add impetus to the development in and around the area.</p> <p>Apart from infrastructure requirements and development trends, the low densities are also influenced by the underlying dolomite in the area. Vacant areas within the suburban environment have recently developed extensively with densities varying from 60 units per hectare. There still exists an opportunity to extend residential developments in the westerly direction (Monavoni and surrounds).</p> <p>Though well serviced, the provision of bulk services is lagging behind the rapid population growth. Existing infrastructure requires upgrading and maintenance."</p> <p>Therefore, a township development will suit the Region and its needs in terms of rapid population growth. However, the area is marked as "Extensive general agriculture hinterland in the GSDF 2010</p>
<p>Gauteng Province Environmental Management Framework, 2014 (GPEMF) Zone 1</p>	<p>A Section of the Peach Tree Ext 28 township development falls within Zone 1 as identified by the GPEMF:</p> <p>The Gauteng Provincial Environmental Management Framework has been used to assist in the determination of land use zones and to guide sustainable land use management.</p> <p>The study area where the activity is proposed, is located within the Gauteng Province. The area is located within Zone 1: Urban development zone, of the GPEMF. The intention with this zone is to streamline urban development activities in it and to promote development infill, densification, and concentration of urban development, in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas.</p>

In terms of the National Environmental Management Act (NEMA) EIA Regulations published in GNR 327, 325 and 324 of December 2014 (as amended on 7 April 2017), Government Gazette Number 40772, a Basic Assessment (BAR) process is required as the project applies to the following listed activities (detailed in the Table below).

**Table 3: Listed Activities**

Relevant Notices:	Activity No (s) (in terms of the relevant notice):	Description of each listed activity as per the Government Notice:	Description of each listed activity as per the project description
GN R327	<b>Listing Notice 1</b>		
	Listing Notice 1 Activity 9	The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water — (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where — (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	More than 1000m length of storm water channels and water reticulation system, 3m wide is proposed alongside all the roads proposed to be developed and also at the edge of the property.  Pipes ranging between 250mm – 600mm proposed for both systems.
	Listing Notice 1 Activity 10	The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) with a peak throughput of 120 litres per second or more; excluding where — (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	Sewage management will form part of the township development with a Sewerage Treatment Facility as an alternative to municipal treatment provision. See Appendix G: Engineering Services Report.  This will be handled in the Water Use License Application, which needs to be approved before the development will take place.  Sewerage networks and services are included in the services layout by the Engineer.
	Listing Notice 1 Activity 11	The development of facilities or infrastructure for the transmission and distribution of electricity — (i) outside urban areas or industrial complexes with a capacity of more than 33 but less than 275 kilovolts; or (ii) inside urban areas or industrial complexes with a capacity of 275 kilovolts or more; excluding the development of bypass infrastructure for the transmission and distribution of electricity where such bypass infrastructure is — (a) temporarily required to allow for maintenance of existing infrastructure; (b) 2 kilometres or shorter in length; (c) within an existing transmission line servitude; and (d) will be removed within 18 months of the commencement of development.	The Proposed Development could be supplied by building a new Switching Substation on the border of the Proposed Development. The Switching Substation could be supplied by installing 4 x 150mm <sup>2</sup> 3-core, 11 kV PILC insulated copper cables from the Mnandi Substation towards the north east of the Proposed Development.  The Proposed Development could then be supplied from the Mnandi Substation with 6 x 70mm <sup>2</sup> , 3-core, 11 kV PILC insulated copper cables.
	Listing Notice 1 Activity 12	The development of — (i) dams or weirs, where the dam or weir, including infrastructure and water surface area, exceeds 100 square metres; or (ii)	Crossings, culverts/storm water management and roads will be developed and widened impacting within 32 m of the

		<p>infrastructure or structures with a physical footprint of 100 square metres or more; where such development occurs — (a) within a watercourse; (b) in front of a development setback; or (c) if no development setback exists, within 32 metres of a watercourse, measured from the edge of a watercourse; — excluding —</p> <p>(aa) the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour; (bb) where such development activities are related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies; (cc) activities listed in activity 14 in Listing Notice 2 of 2014 or activity 14 in Listing Notice 3 of 2014, in which case that activity applies; (dd) where such development occurs within an urban area; (ee) where such development occurs within existing roads, road reserves or railway line reserves; or (ff) the development of temporary infrastructure or structures where such infrastructure or structures will be removed within 6 weeks of the commencement of development and where indigenous vegetation will not be cleared.</p>	<p>Swartbooispruit. A calculated buffer of 20m had been prescribed by the specialists.</p>
	<p>Listing Notice 1 Activity 19</p>	<p>The infilling or depositing of any material of more than 10 cubic metres into, or the dredging, excavation, removal or moving of soil, sand, shells, shell grit, pebbles or rock of more than 10 cubic metres from a watercourse; but excluding where such infilling, depositing, dredging, excavation, removal or moving — (a) will occur behind a development setback; (b) is for maintenance purposes undertaken in accordance with a maintenance management plan; (c) falls within the ambit of activity 21 in this Notice, in which case that activity applies; (d) occurs within existing ports or harbours that will not increase the development footprint of the port or harbour; or (e) where such development is related to the development of a port or harbour, in which case activity 26 in Listing Notice 2 of 2014 applies.</p>	<p>Crossings, culverts/storm water management and roads will be developed and widened impacting within 32 m of the Swartbooispruit. These activities may require infilling or excavations from the watercourse (within 32).</p> <p>A calculated buffer of 20m had been prescribed by the specialists.</p>
	<p>Listing Notice 1 Activity 24</p>	<p>The development of a road — (i) for which an environmental authorisation was obtained for the route determination in terms of activity 5 in Government Notice 387 of 2006 or activity 18 in Government Notice 545 of 2010; or (ii) with a reserve wider than 13,5 meters, or where no reserve exists where the road is wider than 8 metres; but excluding a road — (a) which is identified and included in activity 27 in Listing Notice 2 of 2014; (b) where the entire road falls</p>	<p>Roads up to 25 m will be created and a large existing road reserve (K52) falls within the development, this reserve is existing, but no road has been established as of yet.</p>

		within an urban area; or (c) which is 1 kilometre or shorter.	
	Listing Notice 1 Activity 25	The development and related operation of facilities or infrastructure for the treatment of effluent, wastewater or sewage with a daily throughput capacity of more than 2000 cubic metres but less than 15000 cubic meters	The Engineering Services Report propose a Sewerage Treatment Facility (STF) as an alternative B to the proposed Alternative A: Municipal bulk connection. The STF is to process 4500 cubic meters of effluent daily.
	Listing Notice 1 Activity 26	Residential, retail, recreational, tourism, commercial or institutional developments of 1 000 square metres or more, on land previously used for mining or heavy industrial purposes; — excluding — (i) where such land has been remediated in terms of part 8 of the National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008) in which case the National Environmental Management: Waste Act, 2008 applies; or (ii) where an environmental authorisation has been obtained for the decommissioning of such a mine or industry in terms of this Notice or any previous NEMA notice; or (iii) where a closure certificate has been issued in terms of section 43 of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) for such land.	<p>The farm portions are 108 hectares and a large section of this had previously been used as mining (Kilo Sands (Pty) Ltd. A closure certificate still needs to be issued to Kilo Sands and as part of the applicants for the Peach Tree Ext 28 Application, Kilo Sands wishes to submit the EA (if granted) as part of its final land use plan.</p> <p>The erven to be developed measure 68.18 hectares (erven). The remainder make out roads and storm water sections.</p> <p>A section of the properties also falls within the exemption zones of Zone 1 as identified by the GPEMF. The area is located within Zone 1: Urban development zone, of the GPEMF. The intention with this zone is to streamline urban development activities in it and to promote development infill, densification, and concentration of urban development, in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas.</p>
	Listing Notice 1 Activity 27	The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for — (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	<p>Clearance is required, but indigenous vegetation is limited/impacted due to existing agricultural and mining land uses, but present. The area of indigenous vegetation to be cleared measure less than 20 hectares, because most of it is pasture (planted grass for feed) or sand mining activities or the dams, which will not be cleared within the prescribed buffer zones.</p> <p>A section of the properties also falls within the exemption zones of Zone 1 as identified by the GPEMF. The area is located within Zone 1: Urban development zone, of the GPEMF. The intention with this zone is to streamline urban development activities in it and to promote development infill, densification, and concentration of urban development,</p>

			in order to establish a more effective and efficient city region that will minimise urban sprawl into rural areas.
	Listing Notice 1 Activity 28	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	Sections of the area is utilised as agriculture and will now be developed to a residential and commercial development.
GNR324	<b>Listing Notice 3</b>		
	Listing Notice 3 Activity 2	The development of reservoirs, [for bulk water supply] excluding dams, with a capacity of more than 250 cubic metres.	A 12 Megalitre (12 000m <sup>3</sup> ) Reservoir is proposed
	Listing Notice 3 Activity 4	The development of a road wider than 4 metres with a reserve less than 13,5 metres.	Roads up to 25 m will be created and a large existing road reserve (K52) falls within the development, but this reserve is existing, but no road has been established as off yet.
	Listing Notice 3 Activity 12	The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in accordance with a maintenance management plan.	Clearance is required, but indigenous vegetation is limited/impacted due to existing agricultural and mining land uses.
	Listing Notice 3 Activity 14	The development of—(i)dams or weirs, where the dam or weir, including infrastructure and water surface area exceeds 10 square metres; or (ii)infrastructure or structures with a physical footprint of 10 square metres or more; where such development occurs—(a)within a watercourse; (b)in front of a development setback; or (c)if no development setback has been adopted, within 32 metres of a watercourse, measured from the edge of a watercourse; excluding the development of infrastructure or structures within existing ports or harbours that will not increase the development footprint of the port or harbour.	Crossings, culverts/storm water management and roads will be developed and widened impacting within 32 m of the Swartbooispruit. These activities may require infilling or excavations from the watercourse (within 32).  A 20m buffer had been prescribed by the specialists for the Swartbooispruit.

### A3. 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

A proposed design alternative was drawn up and it had been changed through the process to accommodate the buffers as prescribed to the specialists. There are no additional locational alternatives for this proposed project.

Provide a description of the alternatives considered

**Table 4: Alternatives**

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other (provide details of "other")	Description
1	Proposal (Initial alternative)	<p>The proposed township initially consisted of a total of 31 erven, just over 108 hectares, including residential, business, open spaces, private and public roads.</p> <p>The proposed township development land use will be as follow:</p> <ul style="list-style-type: none"> <li>• Residential – 24 Erven at a total of 56.6 hectares (55.1%).</li> <li>• Business – 1 Erf at a total of 6.7 hectares (6.2%).</li> <li>• Private open space – 4 Erven at a total of 25.2 hectares (23.3%).</li> <li>• Private roads – 2 Erven at a total of 4 hectares (3.8%) – a private road is planned to be constructed over the watercourses at the southern and northern borders of the project footprint.</li> <li>• Public roads – 12.5 hectares (11.6%).</li> </ul>
	Preferred	<p>The proposed township initially consisted of a total of 31 erven, just over 108 hectares, including residential, business, open spaces, private and public roads.</p> <p>The proposed township development land use will be as follow:</p> <ul style="list-style-type: none"> <li>• Residential – 24 Erven at a total of 59.65 hectares.</li> <li>• Business – 1 Erf at a total of 6.7 hectares.</li> <li>• Private open space – 4 Erven at a total of 25.2 hectares.</li> <li>• Private roads – 2 Erven at a total of 4 hectares – a private road is planned to be constructed over the watercourses at the southern and northern borders of the project footprint.</li> <li>• Public roads – 12.5 hectares.</li> </ul>
2	Property Alternative	<p>Since there are existing activities on the site, and the applicants own the land, this is the preferred alternative and will also aim to provide the final land use to the current mining operations on the property. It would not be economically feasible for the applicants to find and or purchase new property. The applicant is the owner of the property. Therefore, no alternate properties have been investigated in the Basic Assessment.</p>
3	Activity Alternative	<p>There are no other proposed future activities on the property as a new township development within an area with high housing requirements and service backlogs, this is an ideal development for the area.</p>



4	Design or Layout Alternative	<p>The proposed design and layout have been changed throughout the planning phase to accommodate the buffers as delineated by the specialists. This will ensure the environmental features are protected as best possible.</p> <p>The density of the township was also refined and reduced after the Traffic Impact Assessment findings showed that massive road upgrades and developments will be required for the draft/initial layouts proposed. Thereafter the density was reduced and more public roads had also been added. See Figure 3 Proposed Layout</p>
5	Technology to be used	<p>Building standards and requirements that are governed by SANS has taken the most appropriate engineering/architectural designs into consideration which reduces the environmental impacts.</p>

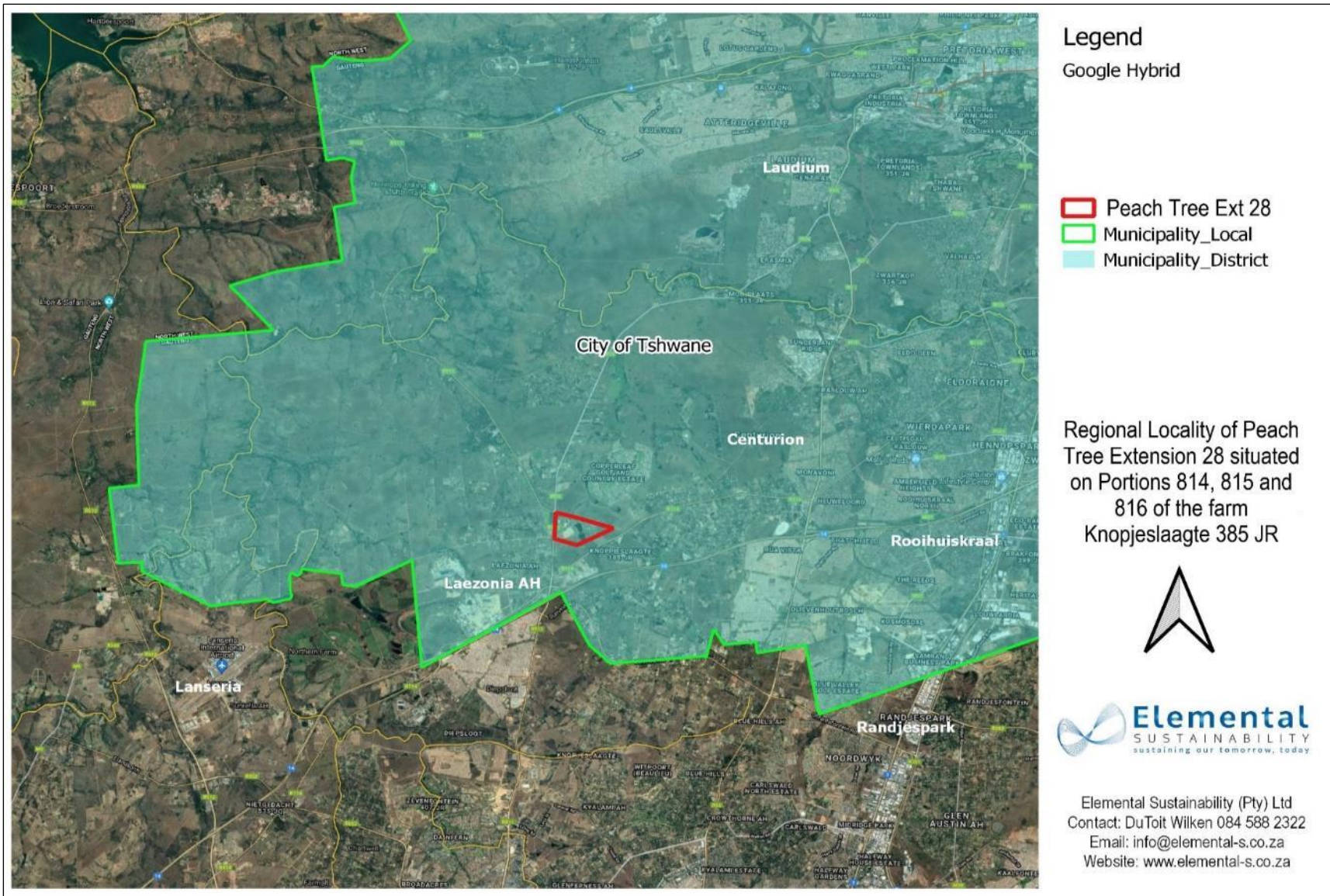
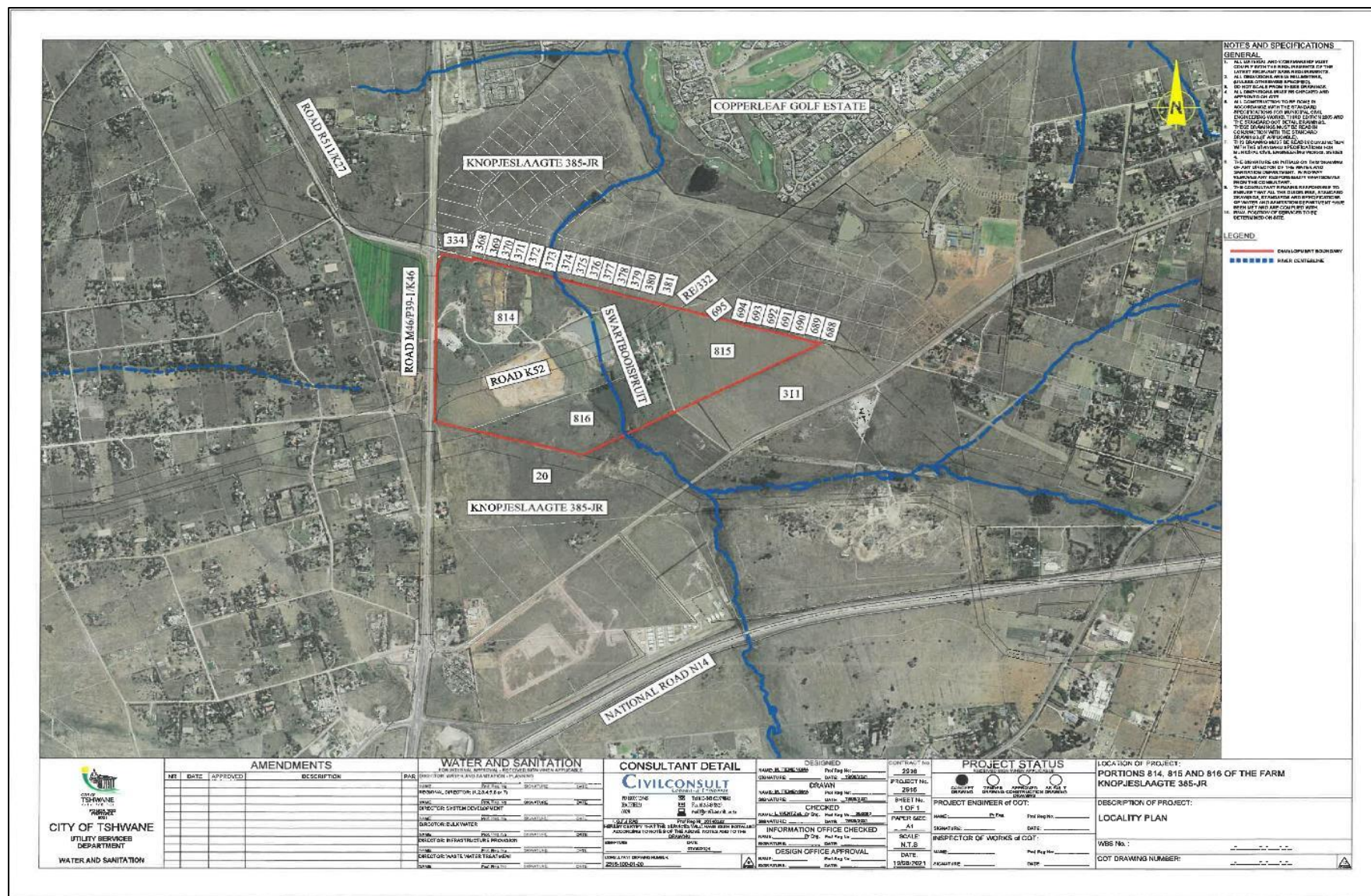


Figure 1: Site location of the preferred alternative (proposal)







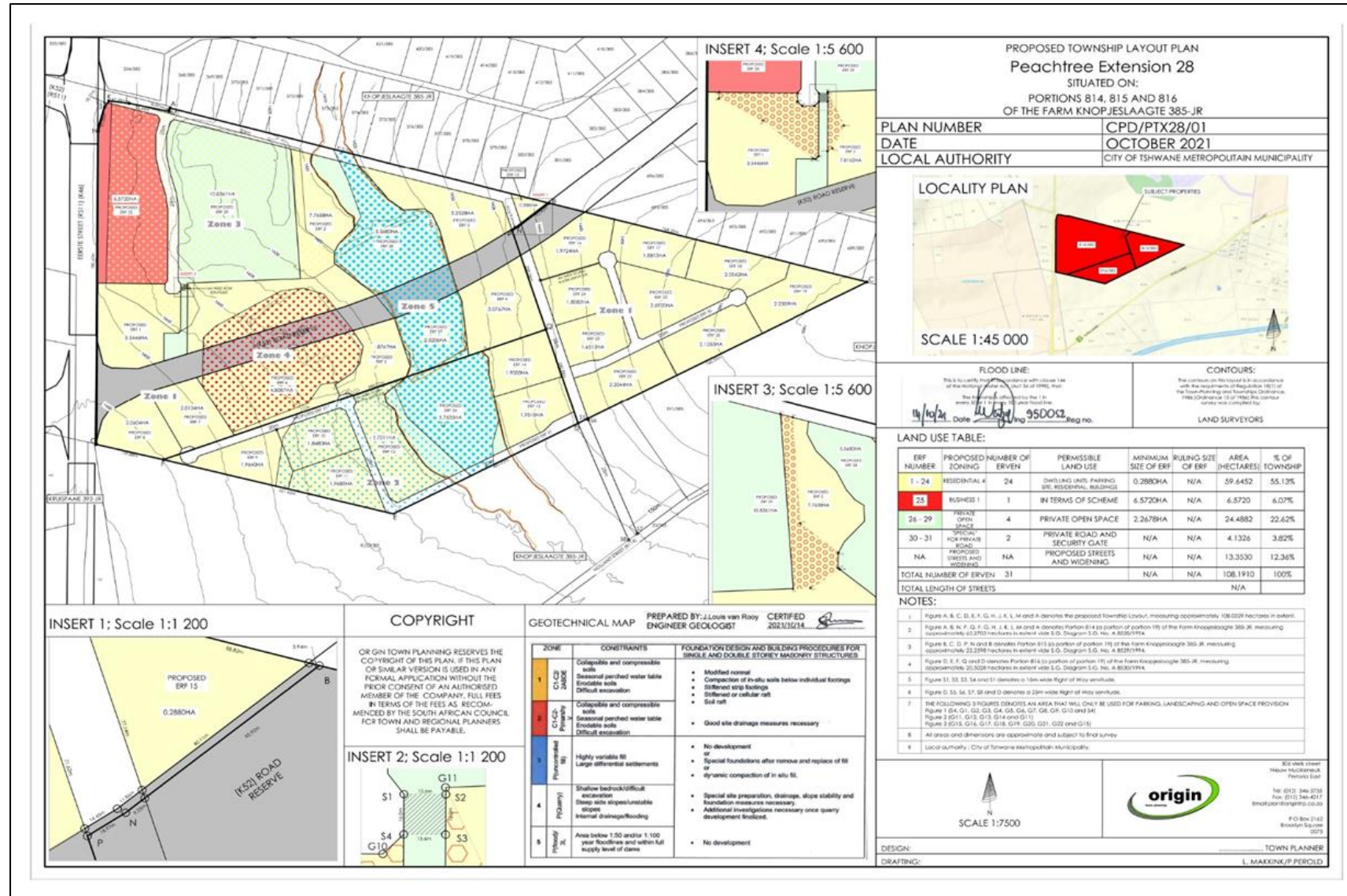


Figure 3: Site layout of the preferred alternative (proposal)

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

**Table 5: Alternative Motivation**

<p><b>MOTIVATION:</b></p> <p><b>Site location and layout alternatives</b></p> <p>Alternative properties or locations for the proposed activity have not been identified, due to the fact it is a site is owned by the applicants and aims to also provide a final land use for the existing mining operations on the properties. It should be noted however that layout options had been adapted and changed to accommodate the findings of the specialists. Therefore, no alternate properties have been investigated in the Basic Assessment.</p> <p><b>Activity Alternative</b></p> <p>As stated, the layout had been changed based on recommendations made by the specialists to ensure the best suited environmental options are reflected within this report and applied for as the only feasible and best option.</p> <p><b>Design &amp; Technology Alternatives</b></p> <p>The design and development of the township will be based on best practice guidelines and SANS guidelines regarding building standards and these will be implemented and incorporated by professional town planners and service providers, who drafted the layouts and plans for the township.</p>
--

#### A4. 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:

<p>Proposed activity (<b><i>Total environmental (landscaping, parking, etc.) and the building footprint</i></b>)</p> <p><b>Alternatives:</b></p> <p>Alternative 1 (if any)</p> <p>Alternative 2 (if any)</p>	<p><b>Size of the activity:</b></p> <p>Approximately 108 ha</p>
<p>or, for linear activities:</p> <p>Proposed activity</p> <p><b>Alternatives:</b></p> <p>Alternative 1 (if any)</p> <p>Alternative 2 (if any)</p>	<p><b>Length of the activity:</b></p> <p>N/A</p>
<p>Indicate the size of the site(s) or servitudes (within which the above footprints will occur):</p> <p>Proposed activity</p> <p><b>Alternatives:</b></p> <p>Alternative 1 (if any)</p> <p>Alternative 2 (if any)</p>	<p><b>Size of the site/servitude:</b></p> <p>108 ha</p>

**A5. 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

**YES**

**However, new roads will be built/upgrades to intersections – refer to Traffic Engineering Report**

Describe the type of access road planned:

Several private roads are proposed since it is a township development, and a large public road reserve (12.5 hectares) also falls within the site.

A formal Traffic Engineering Assessment (EDL Consulting Engineers (Pty) Ltd, September 2021) had been undertaken and the following findings are provided:

Based on the content of this Traffic Impact Assessment report, the following key conclusions and recommendations are relevant:

■ Traffic counts were undertaken in May of 2021, at the five (5) key intersections as requested by the City of Tshwane Metropolitan Municipality, as also mentioned in Chapter 3.

■ It is estimated that the proposed development will generate approx. 2414vph trips (total 'In' plus 'Out') during the Weekday morning (AM) and 3033vph trips (total 'In' plus 'Out') during the Weekday afternoon (PM) peak hours.

■ Latent Rights included Peach Tree X15& 16 and also Peach Tree X21-25. Implemented rights (already built and occupied) were subtracted from the latent rights traffic.

■ SIDRA 9™ Intersection Capacity Analyses were undertaken and were carried out for the peak periods at the key intersections and as per Chapter 8, several upgrades are proposed for the following intersections:

- M26 & R511
- M26 & R114
- R114 & Boundary Road
- R114 & Southern Access Road.

■ Regarding public transport, formal facilities are available at the proposed northern access at the intersection of the M26 & R511. Formal facilities are proposed at the proposed Southern Access at the R114 intersection.

■ A 1.8m wide paved walkway is proposed between any public transport facilities and the nearest pedestrian gate to the development.

It is therefore recommended that the proposed development situated on Portions 814, 815 and 816 (Portions of Portion 19) of the Farm Knopjeslaagte 385-JR is supported from a traffic engineering perspective, provided that the intersection and road upgrades, as well as the accesses, as proposed in this report be implemented as set out on the attached drawings and to the relevant standards of the Tshwane Metropolitan Municipality and Gautrans.

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).

**TRAFFIC IMPACT ASSESSMENT REPORT ATTACHED SHOWING ALL THE ROUTE UPGRADES PROPOSED AS PART OF THE DEVELOPMENT – THERE IS NO ROUTE ALTERNATIVES – REFER APPENDIX G**

**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

**YES****N/A**

Describe the type of access road planned:

N/A

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



## Alternative 2

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

YES

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

N/A

Describe the type of access road planned:

N/A

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

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

Section A 6-8 has been duplicated

0

Number of times

(only complete when applicable)

## A6. 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.

Site Plans and Locality map depicting the proposed development site has been included as Appendix A.

#### A7. 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.

Site photographs in the eight major compass directions have been included below and as Appendix B.



Figure 4: Photograph (North)



Figure 5: Photograph (North-East)



Figure 6: Photograph (East)



Figure 7: Photograph (South-East)



**Figure 8: Photograph (South)**



**Figure 9: Photograph (South-West)**



**Figure 10: Photograph (West)**



**Figure 11: Photograph (North-West)**

Photographs indicating sensitive features on site can also be found in the Wetland Assessment Report, Surface water and Aquatic Ecology, Archaeological Report, and the Terrestrial Biodiversity Assessment Report attached as Appendix G. Several other general characteristics for the site is provided below as additional photographs.





**Figure 12: Current mining activities**



**Figure 13: Runoff surface water on site**



**Figure 14: Dams on the property currently utilised for mining**



**Figure 15: The property targeted for future pig pens**



**Figure 16: Swartbooispruit**



**Figure 17: Dams in Swartbooispruit**



**Figure 18: Farming and pasture on site**



**Figure 19: Pasture recently cut**



**Figure 20: More natural land found on property**



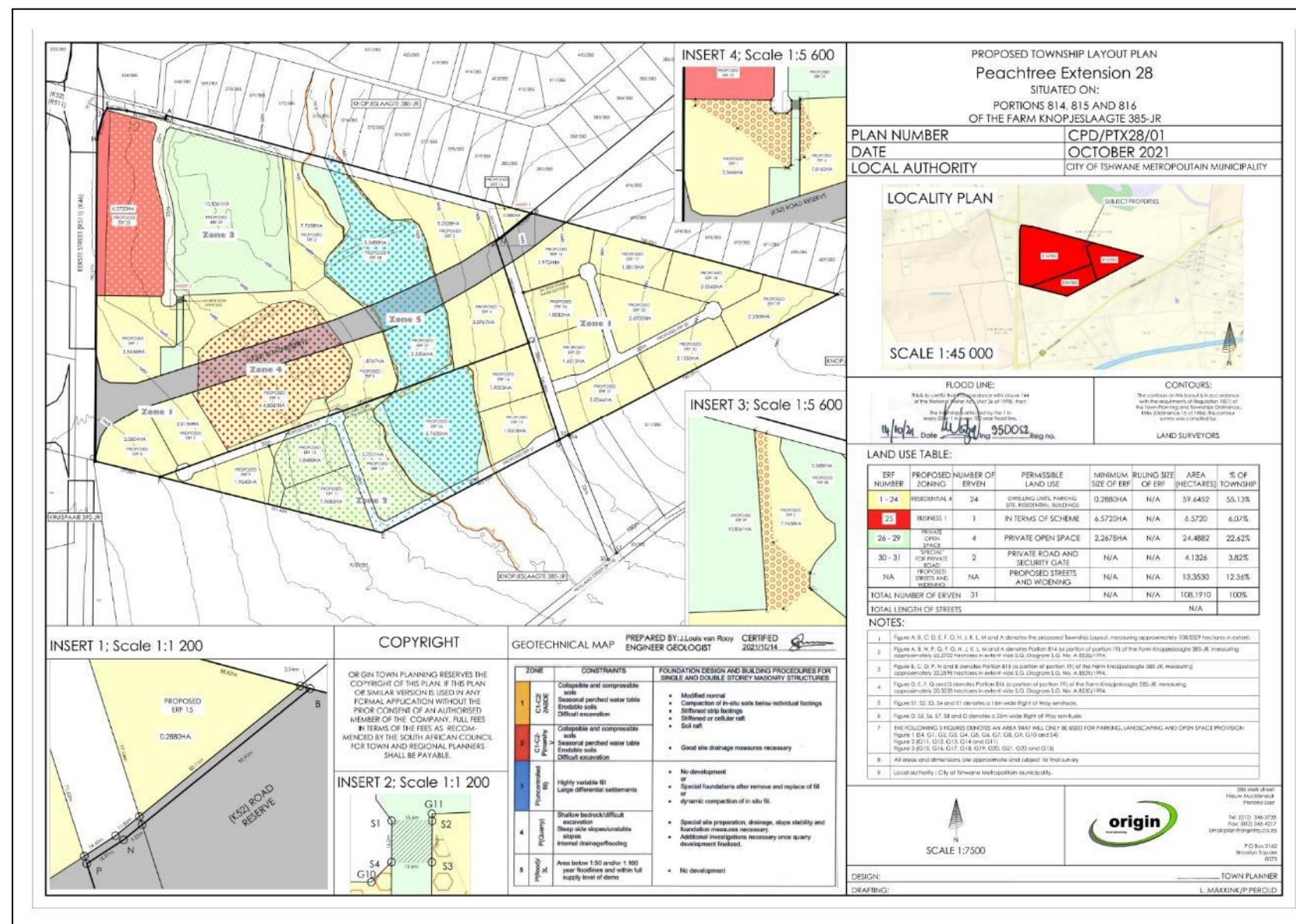
**Figure 21: Northern section of the proposed property**

#### **A8. FACILITY ILLUSTRATION**

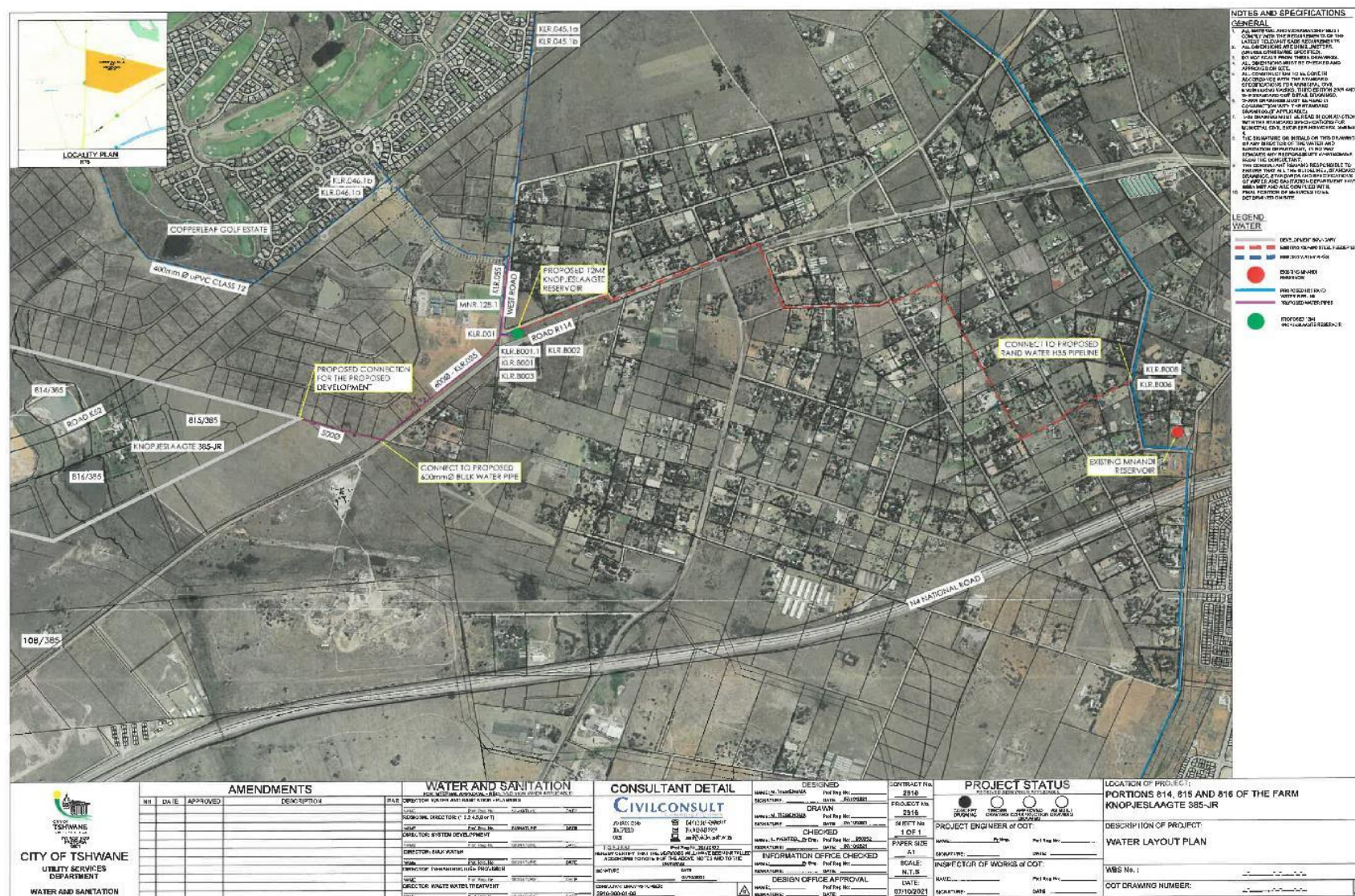
A detailed illustration of the activity must be provided at a scale of 1:200 for activities that include structures. The illustrations must be to scale and must represent a realistic image of the planned activity. The illustration must give a representative view of the activity to be attached in the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

Illustrations of proposed activities on site has been included as Appendix C. The Site Plan has been included in Appendix A as well.











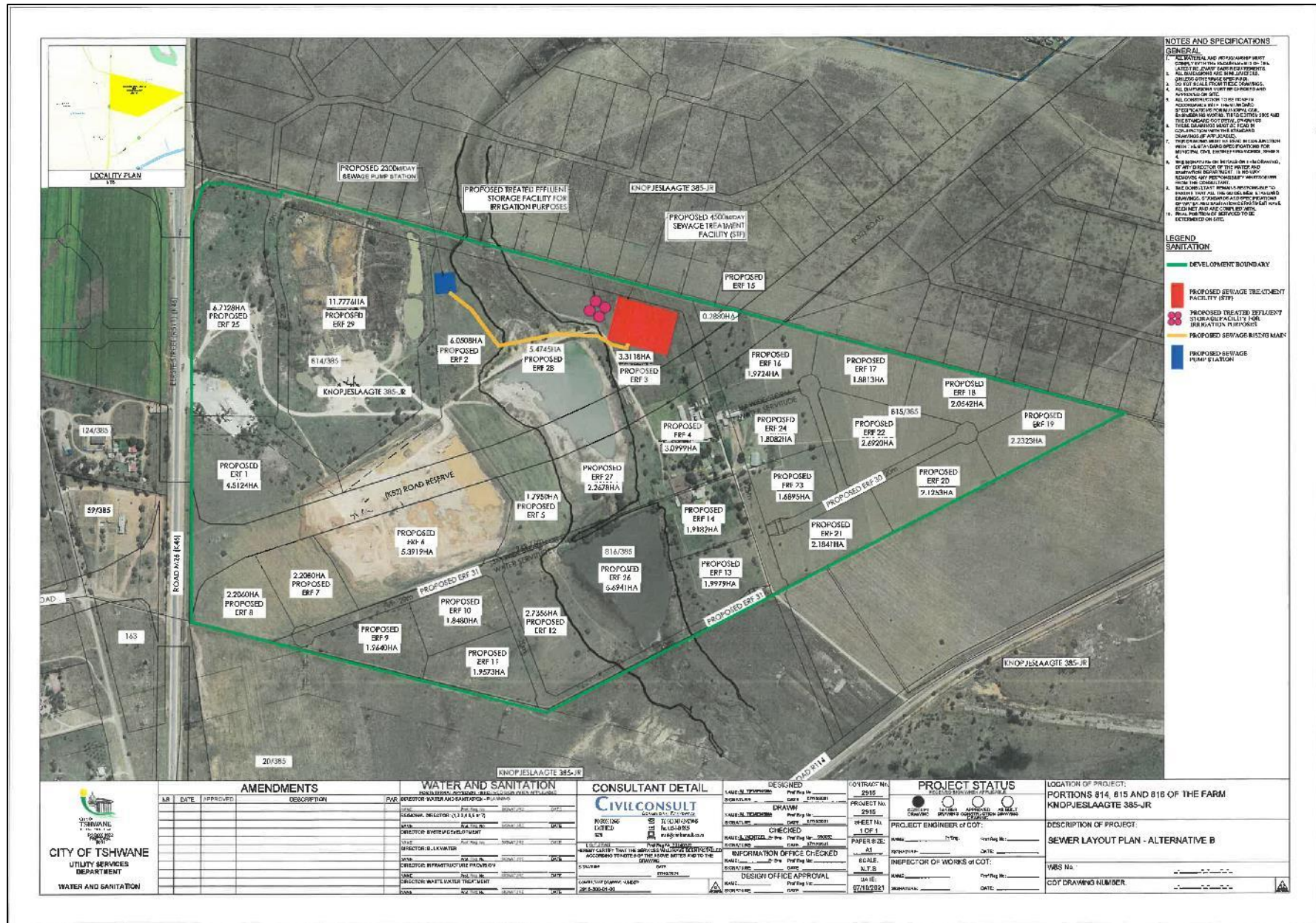


Figure 24: Other images available: Sewer Layout Plan – Alternative B (Interim if existing services cannot be obtained)

## 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

0

times

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

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

Section B has been duplicated for location/route alternatives

0

times

(complete only when appropriate)

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

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

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

Section B - Section of Route

N/A

(complete only when appropriate for above)

Section B – Location/route Alternative No.

N/A

(complete only when appropriate for above)

## B1. PROPERTY DESCRIPTION

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

Portions 814, 815 and 816 of Knopjeslaagte 385 JR, Gauteng Province.

## B2. 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°53'35.29"S

28° 2'4.20"E

**In the case of linear activities:**

**Alternative:**

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

**Latitude (S):****Longitude (E):**

N/A	N/A
o	o
o	o

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

Addendum of route alternatives attached

N/A

The 21-digit Surveyor General code of each cadastral land parcel

PROPOSAL	T	0	J	0	0	0	0	0	0	0	0	0	0	3	8	5	0	0	8	1	4
	T	0	J	0	0	0	0	0	0	0	0	0	0	3	8	5	0	0	8	1	5
	T	0	J	0	0	0	0	0	0	0	0	0	0	3	8	5	0	0	8	1	6
ALT. 1																					
ALT. 2																					
etc.																					

**TRAFFIC IMPACT ASSESSMENT REPORT ATTACHED SHOWING ALL THE ROUTE AND INTERSECTION UPGRADES PROPOSED AS PART OF THE DEVELOPMENT – THERE IS NO ROUTE ALTERNATIVES OR SPECIFIC LINEAR ACTIVITIES ON THE PROPERTIES IN QUESTION**

**B3. GRADIENT OF THE SITE**

Indicate the general gradient of the site.

1:15 – 1:10

**B4. LOCATION IN LANDSCAPE**

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

Plain

Undulating  
plain/low hills

**B5. GROUNDWATER, SOIL AND GEOLOGICAL STABILITY OF THE SITE**

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

- Shallow water table (less than 1.5m deep)
- Dolomite, sinkhole or doline areas
- Seasonally wet soils (often close to water bodies)
- Unstable rocky slopes or steep slopes with loose soil
- Dispersive soils (soils that dissolve in water)
- Soils with high clay content (clay fraction more than 40%)
- Any other unstable soil or geological feature
- An area sensitive to erosion

	NO
	NO
YES	
	NO
	NO
	NO
	NO
	NO

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

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

NO

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

Latitude (S):

Longitude (E):

N/A

N/A

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

NO

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

Latitude (S):

Longitude (E):

N/A

N/A

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

NO

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

Latitude (S):

Longitude (E):

N/A

N/A

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

Specialist reports were conducted to ensure the wetlands and surface water environment were adequately assessed and is reflected within this report. No groundwater assessment had been conducted or is deemed necessary for this specific development.

## B6. AGRICULTURE

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

YES

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

According to the Tshwane Metropolitan Spatial Development Framework 2012, the area is located within an area described as "Extensive general agricultural hinterland" and in terms of 2018 RSDF, it has been noted as "High Potential Agriculture" and a "Biodiversity Zone" and falls within AH (Agricultural Holdings as surrounding land users), but according to the information available, it does not fall within an Agricultural hub, which is located mostly to the east of Pretoria. Agricultural sensitivity is however reflected in the Screening Tool Report, but not correct since the area is currently mined with accompanying stormwater and silt dams, consist of a river system and the remainder utilised as pasture and areas previously rehabilitated by the mine.



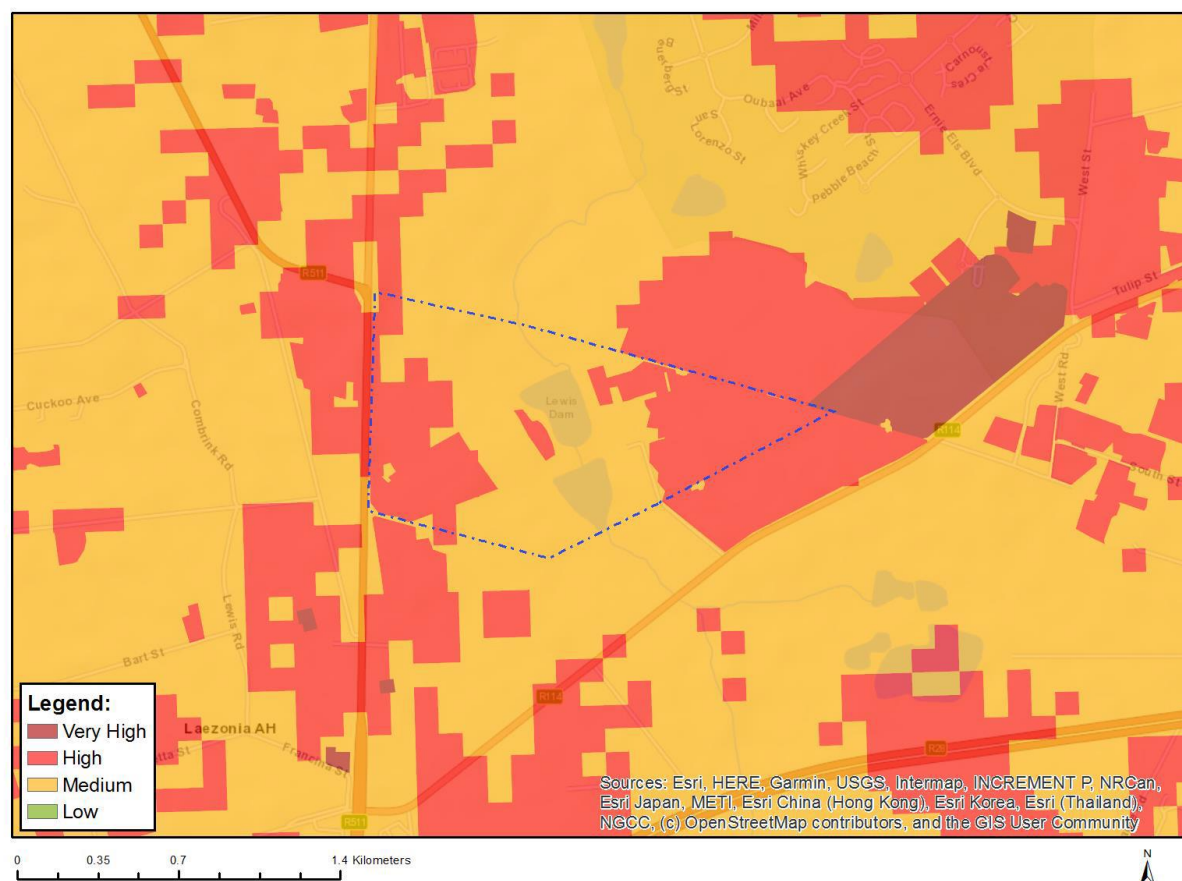


Figure 25: Map of Relative Agriculture Sensitivity according to the DEA Screening Tool

## B7. 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 % = 10			Veld dominated by alien species % = 15	
	Cultivated land % = 35	Paved surface (Hard landscaping) % = 5	Building or other structure % = 5	Bare soil % = 30

**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

NO

If YES, specify and explain:

N/A – There is a Provincially protected species found during the Desktop assessment, but none found during field assessment or within the buffers surrounding the property.

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.

NO

If YES, specify and explain:

N/A – There is no Species of Conservation Concern found during the field assessment and the area had been found to be impacted based on current land uses, but sensitive features such as the Swartbooispruit and associated wetland present. Buffers had been prescribed for the dams, the river and the wetlands.

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

YES

If YES, specify and explain:

The Swartbooispruit and associated Channelled Valley Bottom Wetland

Was a specialist consulted to assist with completing this section

YES

If yes complete specialist details

Name of the specialist:

Red Kite Environmental Consultants (Pty) Ltd: Nicole Upton

Qualification(s) of the specialist:

Refer to Specialist Report in Appendix G for a full outline of qualifications and Specialist reports.

B.Sc. (Hons) Animal, Plant and Environmental Sciences

B.Sc. (Hons) Environmental Management, Zoology

Postal address:

Post Net Suite 0111, Private Bag X37,  
Lynwood Ridge, 0040

Postal code:

0040

Telephone:

0795552433

Cell:

0795552433

E-mail:

nicole@redkiteconsulting.co.za

Fax:

None- please email

Are any further specialist studies recommended by the specialist?

NO

If YES, specify:

N/A

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

NO

If YES list the specialist reports attached below

N/A

Signature of specialist:

See note below.

Date:

N/A – See note below

Please see the Specialist Declarations as per Appendix 6 of the NEMA EIA Regulations attached in Appendix G within the reports as required.

**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

Was a specialist consulted to assist with completing this section

YES

If yes complete specialist details

Name of the specialist:

Elemental Sustainability (Pty) Ltd: Liezl Landman

Qualification(s) of the specialist:

Refer to Specialist Report in Appendix G for a full outline of qualifications and Specialist reports.

M.Sc. Environmental Ecology, University of Pretoria, Submitted 2020 – Pending Results.  
B.Sc. Honours Wildlife Management, University of the Free State, 2011. B.Sc. Zoology, University of the Free State, 2010

Postal address:

323 Brooks Street, Pretoria, South Africa, South Africa

Postal code:

0184

Telephone:

082 442 2604

Cell:

082 442 2604

E-mail:

liezl@elemental-s.co.za

Fax:

None- please email

Are any further specialist studies recommended by the specialist?

NO

If YES, specify:

N/A

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

NO

If YES list the specialist reports attached below

N/A

Signature of specialist:

See note below.

Date:

N/A – See note below

Please see the Specialist Declarations as per Appendix 6 of the NEMA EIA Regulations attached in Appendix G within the reports as required.

**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

## B8. 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

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

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



NORTH									
	1	1	2	7	7				
	1	1	2	7	34				
WEST	34, 10	34	SITE LAND USE: OPENCAST SAND MINE AND AGRICULTURE 108 HA	7	7			EAST	
	34, 10	7	2	1; 7	7				
	34, 10	7	2	7	34				
SOUTH									

**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.

## B9. SPECIALIST STUDIES CODUCTED TO DETERMIE BASELINE CHARACTER OF SURROUNDING AREA

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

YES

The Specialist Reports and Findings thereof are detailed below.

### Terrestrial Biodiversity Assessment – June 2021

Red Kite Environmental Solutions (Pty) Ltd (Red Kite Environmental Solutions (Pty) Ltd, 2021) was appointed by Elemental Sustainability (Pty) Ltd to conduct a Terrestrial Ecology Assessment for the proposed Peachtree Ext 28 township development. The ecological findings (desktop and site survey) identified the following features:

Currently sand mining and associated activities are being undertaken on the western section of the project area. Run-off is directed away from the quarry in order to prevent flooding of the pit. Water is directed to the settling dams, this water is reused for wetting of roads and other exposed surfaces to prevent dust pollution as well as recycled to use in the washing process.

As part of the final land use planned for the mining right area, a township development is proposed. The proposed township will consist of a total of 31 erven, just over 108 hectares, including residential, business, open spaces, private and public roads.

The project footprint falls within the Egoli Granite Grassland, which is listed as Endangered in the "National List of Ecosystems that are Threatened and need of protection", and as Critically Endangered by the 2018 National Biodiversity Assessment.

Information on plant species previously recorded for the project area was extracted from the POSA online database hosted by SANBI. The results indicate that 34 plant species have been recorded in the area queried, of which one was an endemic species, two have medicinal uses and four are exotic species. Of the 34 species previously recorded for the area, none are Species of Conservation Concern (SCC) in terms of their Red List status. Two species were listed for the project area in the Environmental Screening Tool Report:

- *Melolobium subspicatum* is listed as Vulnerable in the SANBI Red List. *M. subspicatum* is a rare and localized species endemic to Gauteng Province in South Africa. It grows exclusively in grassland on dolomite and is known from only three localities. Due to the current activities taking place on site, this species is unlikely to occur on most of the project footprint, but may have a low likelihood of occurrence in the eastern section of the project footprint.
- Sensitive species 1248 is indicated potentially occurring on the project footprint and is considered as having moderate sensitivity in the Screening Tool Report.

One flora species recorded on POSA for the area are listed as protected in the TNCO, i.e. *Orbea lutea*.

A desktop study was conducted to establish whether any potentially sensitive faunal species or species of conservation concern may possibly occur on site. The following faunal species that are of conservation concern were found during the desktop study:

- Mammals: ninety-three (93) mammal species were found to possibly occur, of which thirteen (13) are SCC, however these species are not likely to occur on the specific footprint since a large area of the proposed project footprint is currently utilised for mining and agricultural related land uses, but could still possibly utilise the wider region as part of their range.
- Avifaunal: 273 bird species are listed for the pentad in which the project area is located. Ten (10) avifaunal SCC have been indicated for the specific pentad relevant to the development. All of these birds are also listed in Schedule 2 of TNCO (Provincially protected game).
- Butterflies: 255 butterfly species are listed for the QDS in which the project area is located, all of which are categorized as Least Concern.
- Other Invertebrates: 53 species of Dung beetles, 45 Lacewing, 23 Odonata, 20 Spider and four Scorpion were recorded for the QDS, all not listed on the IUCN Red list. It should be noted that Baboon spiders and Burrowing scorpions are included in the ToPs list.
- Reptiles: 69 reptile species were recorded for the QDS. Two of the species have a national red listed status. All species of snakes are listed in Schedule 2 of the TNCO as Protected game.
- Amphibians: 14 amphibian species were listed, of which one is red listed.

A site visit was conducted on the 7<sup>th</sup> of April 2021.

The majority of the proposed project footprint is located on natural veld used for intensive livestock grazing. The Swartbooispruit River flows through the project centre site from south to north, with two farm dams in the river course. Four settling dams can be found to the north-west of the project area. These dams are utilised by the current sand mining operation. Three of the settling dams are no longer in use and have been rehabilitated and revegetated.

The following broad classification of Vegetation Units (VU) were found to occur on the proposed project footprint:

1. Natural grassland (VU1);
2. Rehabilitated grassland (VU2);
3. Riparian zones (VU3);
4. Riparian vegetation of rehabilitated settling dams (VU4); and
5. Transformed areas (VU5).

Seventy-two (72) plant species were identified as occurring on the project footprint during the site survey. Of this number seven have medicinal uses and 20 are exotic, ten of which are categorised as AIP in terms NEMBA.

No protected plant species or SCC identified on the project footprint.

Thirty-eight (38) fauna species were encountered during the field assessment of which 17 species have a provincial conservation status as protected game, ordinary game or protected wild animals (such as the waterbirds sighted and all reptiles also enjoy protection). No species that have been found to occur has a national SCC status.

The study area contains the following biodiversity classes from the Gauteng Conservation Plan:

- CBA: Sections of the development footprint are located on areas categorised as CBA. The CBA areas are largely located on areas associated with the river and dams and areas which appear as secondary grassland, toward the centre of the footprint. These areas were most likely denoted as a CBA due to the appearance of the presence of habitat for red listed species, wetland / riparian conditions and natural grassland. Although the riparian areas (VU3 in this report) have been

impacted and are moderately disturbed, the specialist does not dispute the designation of the areas categorised as CBA. However, it is the specialist's opinion that the grassland areas (VU1 in this report), adjacent to VU3, would more accurately fall within the description of ESAs.

- **ESA:** The eastern and western section of the project footprint have been categorised as ESA by the Gauteng Conservation Plan. These areas were most likely designated as ESA as they border CBA areas and may, at the time of the Gauteng Conservation Plan assessment, have had a more natural character and therefore acted as ecological support and buffers to the CBA areas. However, some of these areas have been transformed by recent mining activities VU4 and VU5 in this report), whilst others are used for intensive livestock grazing. It is, therefore, the specialist's opinion that VU4 and VU5, as described and delineated in this report, no longer fulfil the functions of ESAs, as they are contemplated in the Gauteng Conservation Plan.

A number of areas protected in terms of the NEMPAA are situated within 10 km west of the project footprint. The Crocodile River Doornrandje Nature Reserve Cluster is located 2.6 km west of the project area. The Vaal Grasslands NPAES area is situated 3.2 km west of the project footprint.

The western half of the project footprint is situated within the buffer zone of the Magaliesberg Biosphere, whilst the eastern half is situated within the transitional zone of the Magaliesberg Biosphere Reserve (MBR). The MBR is also indicated as an Important Bird Area.

The project footprint has been assigned the following sensitivity ratings in terms of terrestrial ecology aspects:

1. VU1 (indigenous grassland) is classified as having a Moderate sensitivity.
2. VU2 (rehabilitated grassland) is classified as having a Low sensitivity.
3. VU3 (riparian associated with Swartbooispruit) is considered High sensitivity.
4. VU4 (riparian associated with rehabilitated settling dam) is rated as having Low sensitivity.
5. VU5 (transformed areas) is classified as having a low sensitivity.

It is the opinion of the specialist that the development may continue if all mitigation measures are implemented and all areas of high sensitivity are avoided where feasibly possible. The wetland buffers as delineated and recommended by the wetland specialist should be sufficient in terms of also protecting ecological integrity.

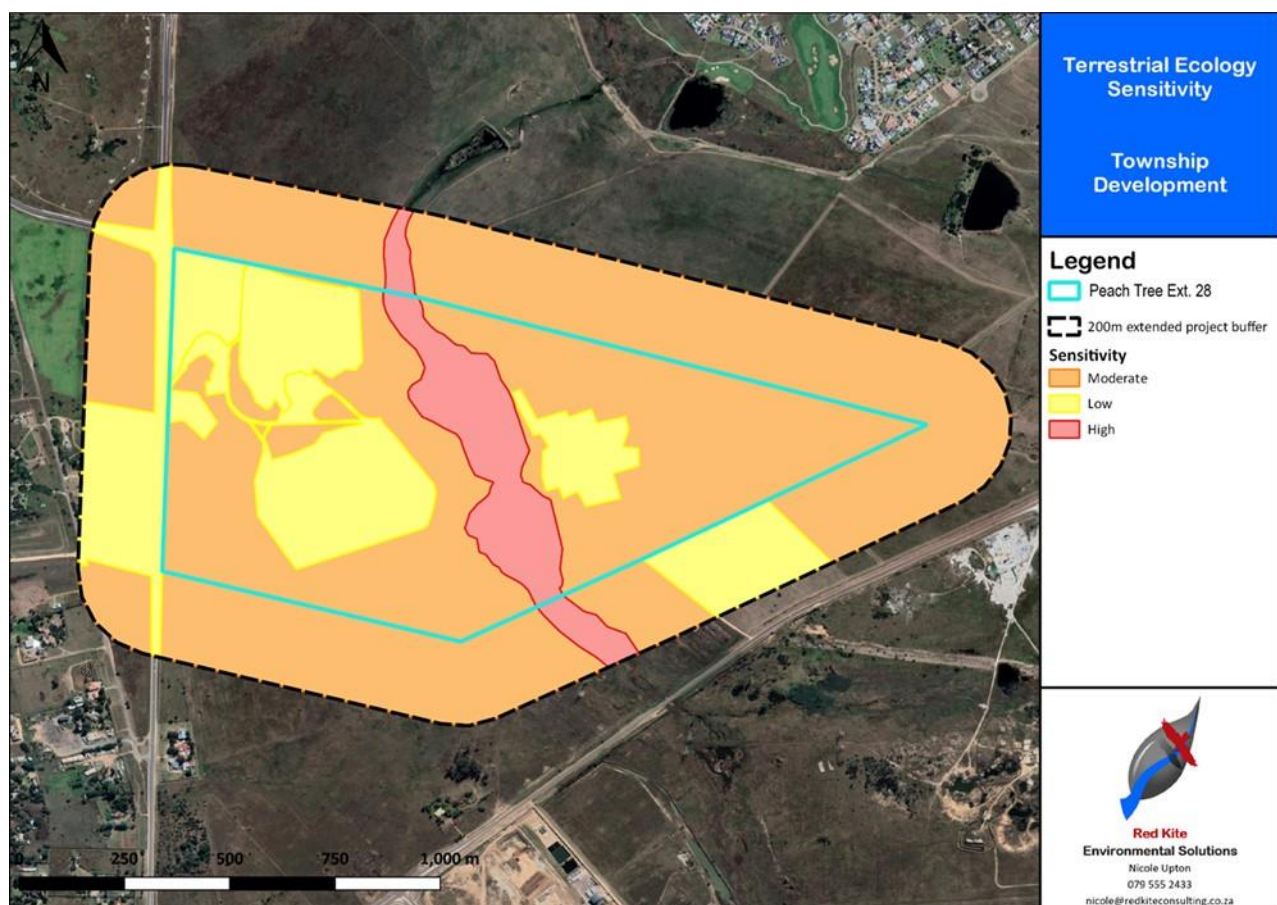


Figure 26: Ecological Sensitivity

### **Wetland Delineation and Functional Assessment Report, (June 2021)**

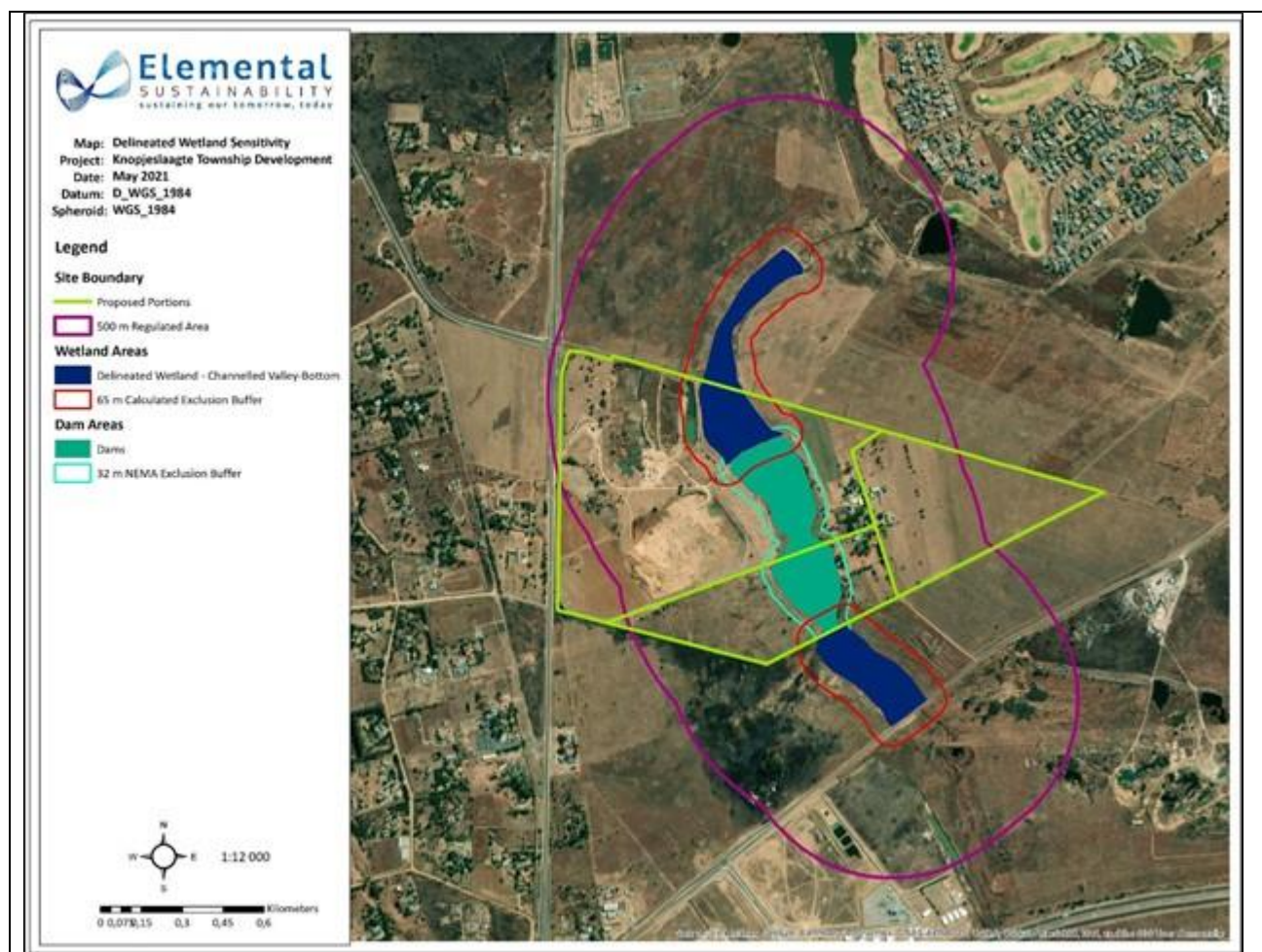
According to the specialist wetland report (Elemental Sustainability (Pty) Ltd, 2021), a site visit was undertaken on the 16th of March 2021 to assess the present ecological status of the area and to determine the impacts, if any, on the receiving environment. A baseline ecological desktop assessment was undertaken of all available data. The farm falls within the Topographical Quarter Degree Squares of 2528CC. Google Earth images were studied in order to determine the position of possible wetlands and/or riparian zones in the study area. All possible wetlands were subsequently surveyed in order to determine the delineation thereof. The method described by the Department of Water Affairs and Forestry (DWAF, 2005) was followed in the delineation of the wetlands and riparian zones in the study area.

The site consists of cultivated fields, sand mining activities and cattle farming, with sections of grassland and bushveld scattered throughout the area. The Swartbooi Spruit traverses the site with two large instream dams. The study site falls within the Limpopo Water Management Area and is situated within Quaternary Catchment A21B. According to the National Wetland Map (NWM) (2018) database, the study area overlaps with one natural inland Channelled Valley-bottom wetland.

Following the results of the site assessment, one (1) wetland type was identified, namely Channelled Valley-bottom. The overall PES Category for the wetland is an E which means that the functionality has been Seriously Modified. The change in ecosystem processes and loss of natural habitat and biota is great, but some remaining natural habitat features are still recognizable. The loss of ecological integrity within the wetland may be attributed to the instream damming, change in hydrological functioning and the influx of alien vegetation. The results are summarised in the table below:

<b>Classification</b>	<b>Scientific Buffer</b>	<b>PES</b>	<b>EIS</b>	<b>REC</b>
Channelled Valley-bottom Wetland	65 m	E	Moderate	C
<b>Gauteng Conservation Plan (2014)</b>	The study site is classed as an Ecological Support Area (ESA), with all wetland features classed as Important Areas			
<b>NEMA Impact Assessment</b>	The impacts associated with the activities range from Medium-High to Low prior to mitigation taking place. With mitigation fully implemented, the significance of most impacts can be reduced to Very Low or Low.			
<b>DWS Risk Assessment</b>	All aspects of the activities fall within the Medium risk category. Therefore, a Water Use Licence is required.			
<b>Does the Specialist support the Application?</b>	<p>Based on the findings made in the report the impact can be mitigated to an acceptable level and the specialist can support the application if all mitigation measures provided in this report as well as general good practice, are strictly adhered to.</p> <ul style="list-style-type: none"> <li>• Any activities that take place within 500 meters of a wetland will require a Water Use Licence in terms of the National Water Act (Act 36 of 1998).</li> <li>• Site clearance should take place outside of the 65 m exclusion buffer zone. All existing infrastructure within the 65 m buffer area should be removed. Public open space and Low impact activities, including birding and hiking, can be allowed within the 65 m buffer.</li> <li>• A 32 m buffer area has been placed around the dam areas; all infrastructure should be placed outside of buffer lines.</li> </ul>			





**Figure 27: Wetland Delineated, Buffers and Sensitivity**

#### Surface water and Aquatic Assessment (Red Kite Environmental Solutions (Pty) Ltd, 2021)

Currently sand mining and associated activities are being undertaken on the western section of the project area. Run-off is directed away from the quarry in order to prevent flooding of the pit. Water is directed to the settling dams, this water is reused for wetting of roads and other exposed surfaces to prevent dust pollution as well as recycled to use in the washing process.

As part of the final land use planned for the mining right area, a township development is proposed.

The proposed township will consist of a total of 31 erven, just over 108 hectares, including residential, business, open spaces, private and public roads. The below diagram provides a depiction of the proposed layout.

The proposed township development project site falls within the Limpopo WMA. Major rivers in the WMA include the Limpopo River, Matlabas River, Mokolo River, Lephalala River, Mogalakwena River, Sand River and Nzhelele River. Many dams are present within the Limpopo WMA.

The proposed township development falls within the A21B quaternary catchment, and the A21 (Crocodile River) tertiary catchment. The primary river in for the tertiary catchment is the Jukskei River that converges and continues as the Crocodile River to the north-east. The Swartbooispruit River flows through the project site and drains into the Hennops River (secondary river) to the north, that in turn converges with the Crocodile to the west.

Apart from the above the Swartbooispruit perennial river (Section "C" watercourse), no other prominent perennial or non-perennial drainage lines are visible within the proposed development and extended buffer area. Two large farm dams are found in the Swartbooispruit watercourse, on the project site. Four settling dams can be found to the north-west of the project area. These dams are utilised by the current sand mining operation. Three of the settling dams are no longer in use and have been rehabilitated and revegetated.

The main receiving watercourse for potential surface water impacts, related to the proposed development, is the Swartbooispruit and from there the Hennops River. The watercourses draining the proposed project area, and greater surroundings have been significantly altered through infrastructure, development, agriculture, and multiple farm dams.

The PES and REC for the A21B quaternary catchment is D, largely modified, with the EIS yet to be determined by the DWS. A21B falls within the Water Resource Class III for IUA 1, indicating sustainable, minimal protection and high utilisation of the water resource.

Water quality data was benchmarked against the RWQO for the quaternary catchment A21B. All levels recorded fall within acceptable levels apart from the high number of *Escherichia coli* (*E. coli*) counts per 100 ml. These results will form the baseline for future monitoring results.

The current classes as per Biomonitoring are as follows:

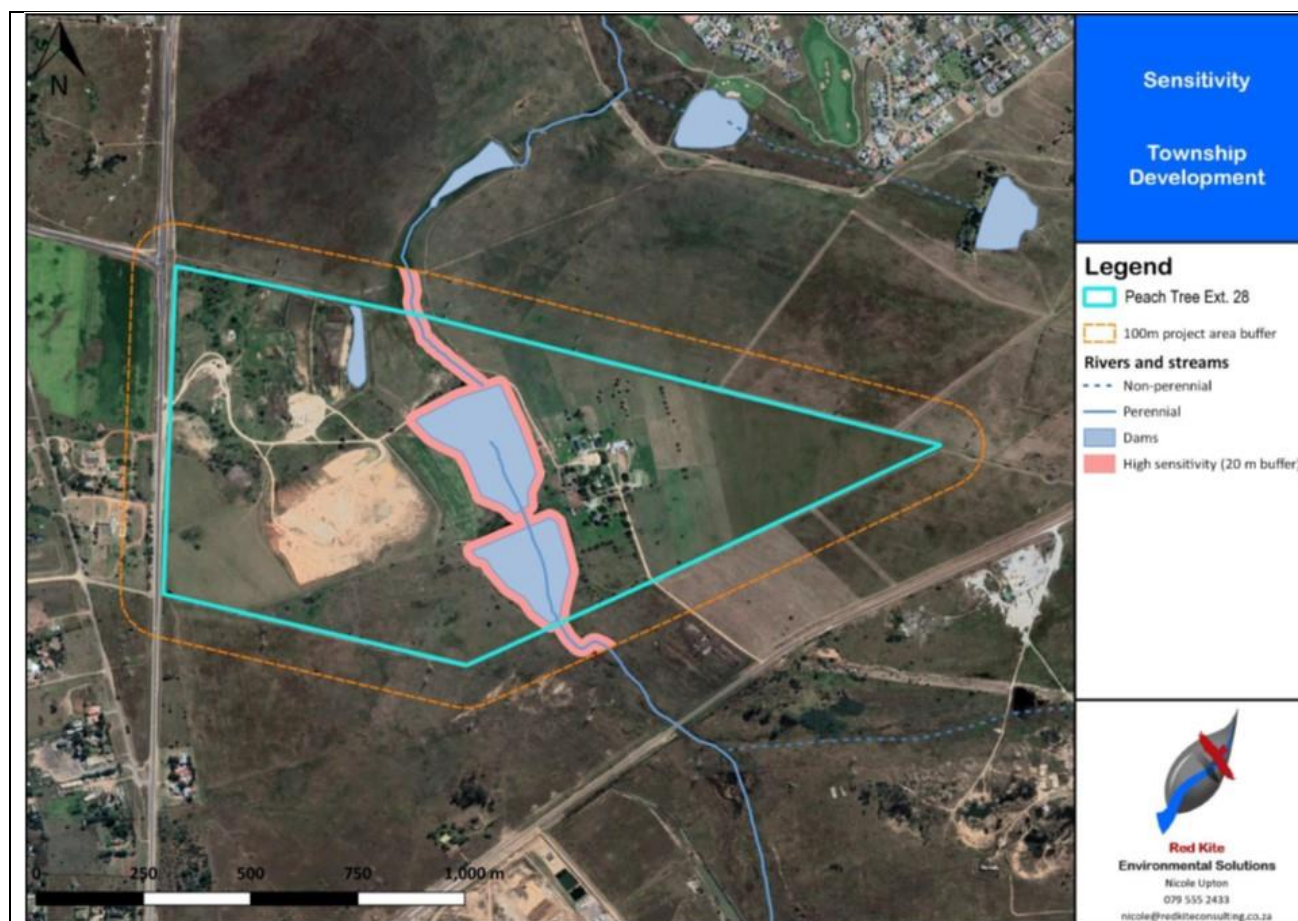
- US 1: Point should be sampled during future sampling events. This point could be feasible for SASS at a later stage during the High flow season when more water is present in the watercourses.
- DS 1: Class C – Moderately Modified, condition above the PES reference score for the Reach, which match the 1999 PES Condition for the main river, however, this class was scored as Class E in the 2018 National Biodiversity Assessment, indicating a drop in ecological condition within the area.

A 20 m buffer is recommended for the Swartbooispruit and associated in-stream dams in regard to the proposed development.

The primary aquatic ecology and surface water impacts associated with the proposed project are the potential impacts on water quality, habitat and biota degradation due to domestic waste, sedimentation, wastewater discharges, flow quantity and velocity alterations during the construction phase and continued operation.

It is important that the project aim to limit impacts on the aquatic resources as far as possible in order to maintain its current basic ecosystem functions. All activities should aim at improving and maintaining the health class of the affected streams to a Class D.

It is the opinion of the specialist that the development may continue without severe ecological impacts in terms of the surface water environment identified in the framework of the study. Management of impacts should be initiated from the onset of the project. All management features as set out in this report, the EMPr and the wetland assessment should also be adhered to.



**Figure 28: Surface water and Aquatic Sensitivity**

#### Heritage Assessment (June 2021)

According to the specialist heritage report (Coetzee, T, May 2021), one cemetery (B07), four demolished sites (B01, B03, B05, B06), one contemporary site (B08) and two altered and potentially historic buildings (B04) were located.

Demolished sites B01, B03 and B05 are located on Portions 814 and 816 and might be associated with subsurface culturally significant material. Care should be exercised during the construction phase of the project when developing within the demarcated boundaries of these sites.

Site B02, a disused mine/quarry, was identified on historical topographical maps and recorded via photographic record. The site is not regarded as significant from a cultural perspective.

Two of the buildings located at the main residence (Site B04) might exceed 60 years of age. However, these buildings have significantly been altered in more recent times. The cultural significance of these buildings are therefore considered to be low.

Site B07, a cemetery that is no longer in use, might be impacted by the proposed township development. Therefore, the following recommendations are made: A fenced-off conservation buffer of 30 m, a plaque indicating the presence of the cemetery, as well as monitoring by the Environmental Control Officer (ECO) during the construction phase. Alternatively, the graves may be relocated by a professional graves relocation unit.

Site B08, a windpump with associated cement structure, as well the remaining contemporary buildings associated with the study area are of recent origin and are not significant from a cultural perspective.

Subject to adherence to the recommendations and approval by SAHRA (South African Heritage Resources Agency), the proposed Peachtree Ext 28 Township Development as per the indicated boundary may continue. Should skeletal remains be exposed during development and construction phases, all activities must be suspended, and the relevant heritage resources authority contacted (See National Heritage and Resources Act, 25 of 1999 section 36 (6)). Also, should culturally significant material be discovered during the course of the said development, all activities must be suspended pending further investigation by a qualified archaeologist.



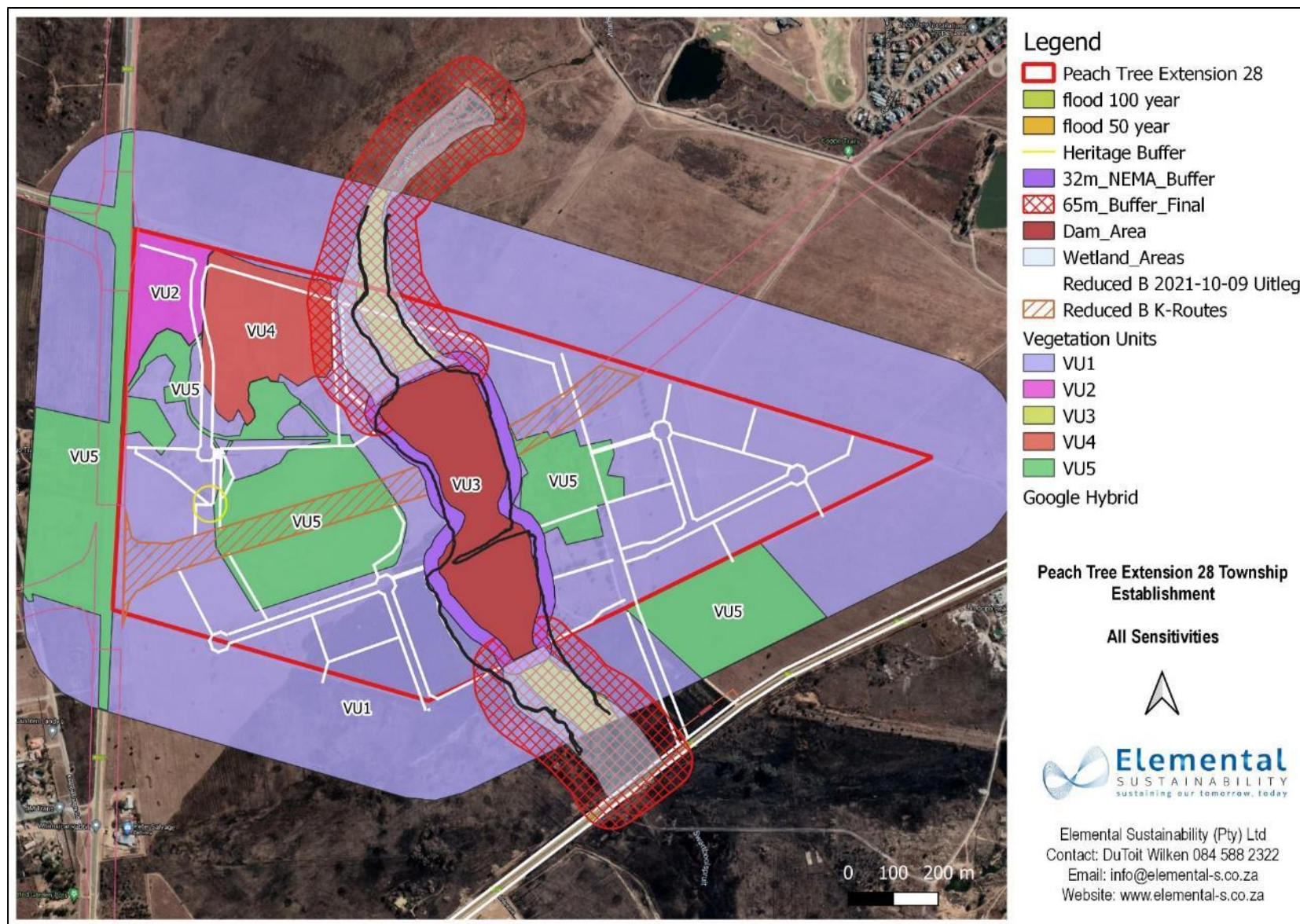


Figure 29: All Environmental Features with Site Layout

### **Paleontological Assessment (April 2021)**

In my capacity as a professional palaeontologist, I am requesting exemption for palaeontological impact assessment in terms of the National Heritage Resources Act (Act 25 of 1999) and the National Environmental Management Act (Act 107 of 1998) which requires that the proposed development must be preceded by the relevant impact assessment, in this case for palaeontology.

The proposed construction of a residential township and associated amenities on the Kilo Sands property that has been greatly disturbed, and partially reclaimed, is on ancient granite-gneiss rocks of the Archaean Granitoids that are about 3340-million-year-old. These rocks forming the Johannesburg Dome are part of the Kaapvaal Craton and represent some of the oldest crustal rocks in the world (Robb et al., 2006). Such rocks are volcanic in origin, have been partly metamorphosed (ibid). There is no chance at all of any fossils being preserved in these rocks, and this is confirmed by the grey colour (insignificant to zero) in the SAHRIS palaeosensitivity map.

Therefore, we request that no palaeontological impact be required, and that as far as the palaeontology is concerned, the proposed project may proceed.

### **Traffic Impact Assessment (Town Planner Engineering Studies)** (EDL Consulting Engineers (Pty) Ltd, September 2021)

Several private roads are proposed since it is a township development, and a large public road reserve (12.5 hectares) also falls within the site.

A formal Traffic Engineering Assessment (EDL Consulting Engineers (Pty) Ltd, September 2021) had been undertaken and the following findings are provided:

Based on the content of this Traffic Impact Assessment report, the following key conclusions and recommendations are relevant:

- Traffic counts were undertaken in May of 2021, at the five (5) key intersections as requested by the City of Tshwane Metropolitan Municipality, as also mentioned in Chapter 3.
- It is estimated that the proposed development will generate approx. 2414vph trips (total 'In' plus 'Out') during the Weekday morning (AM) and 3033vph trips (total 'In' plus 'Out') during the Weekday afternoon (PM) peak hours.
- Latent Rights included Peach Tree X15& 16 and also Peach Tree X21-25. Implemented rights (already built and occupied) were subtracted from the latent rights traffic.
- SIDRA 9™ Intersection Capacity Analyses were undertaken and were carried out for the peak periods at the key intersections and as per Chapter 8, several upgrades are proposed for the following intersections:
  - M26 & R511
  - M26 & R114
  - R114 & Boundary Road
  - R114 & Southern Access Road.
- Regarding public transport, formal facilities are available at the proposed northern access at the intersection of the M26 & R511. Formal facilities are proposed at the proposed Southern Access at the R114 intersection.
- A 1.8m wide paved walkway is proposed between any public transport facilities and the nearest pedestrian gate to the development. It is therefore recommended that the proposed development situated on Portions 814, 815 and 816 (Portions of Portion 19) of the Farm Knopjeslaagte 385-JR is supported from a traffic engineering perspective, provided that the intersection and road upgrades, as well as the accesses, as proposed in this report be implemented as set out on the attached drawings and to the relevant standards of the Tshwane Metropolitan Municipality and Gautrans.



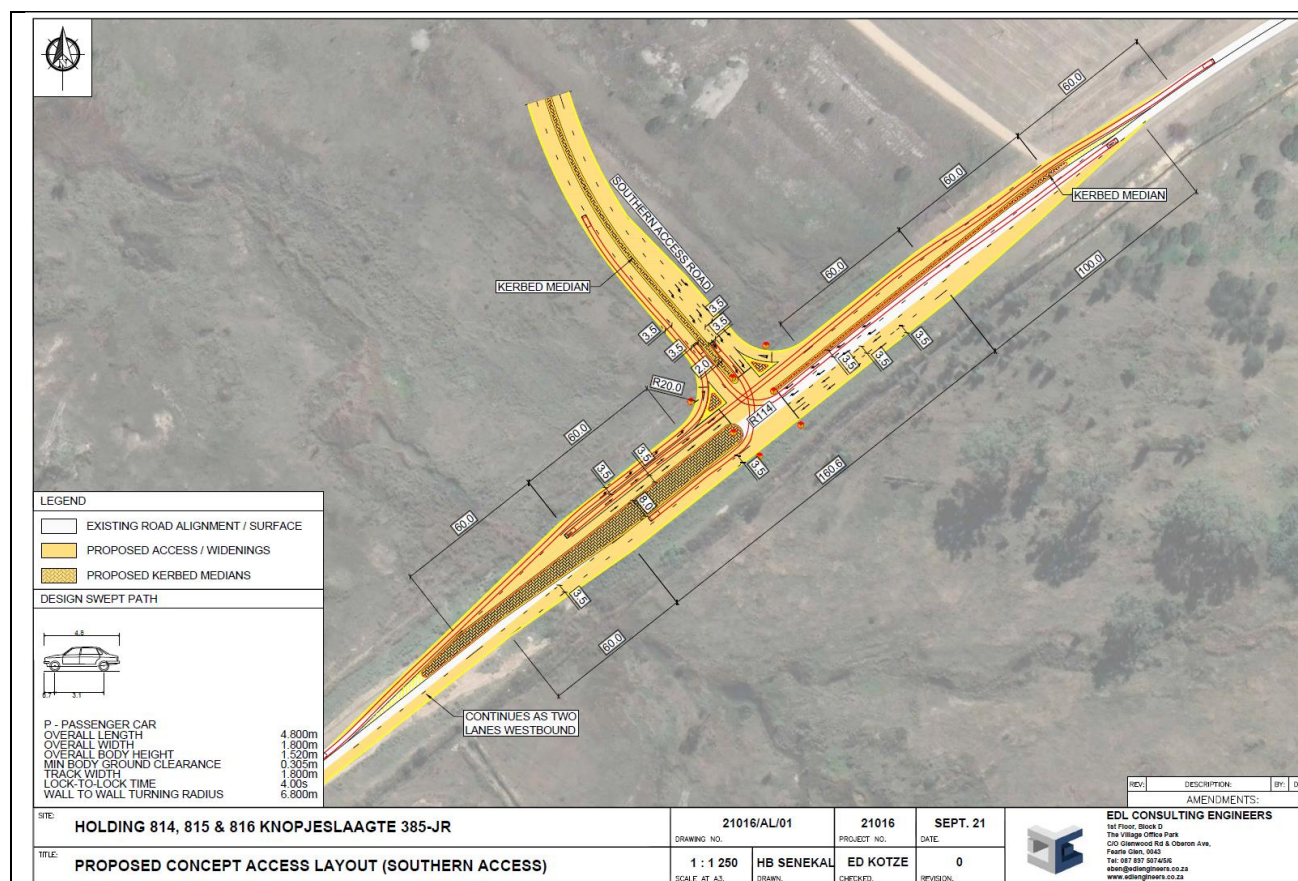


Figure 30: Southern Access Upgrades

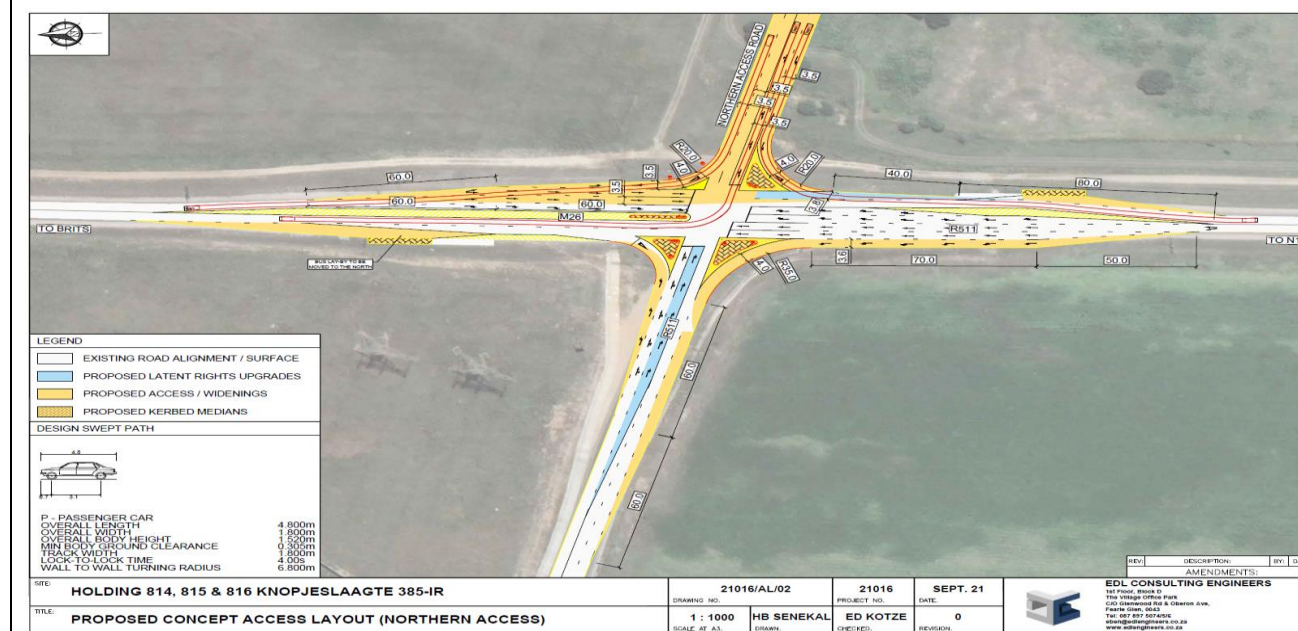


Figure 31: Northern Access Upgrades

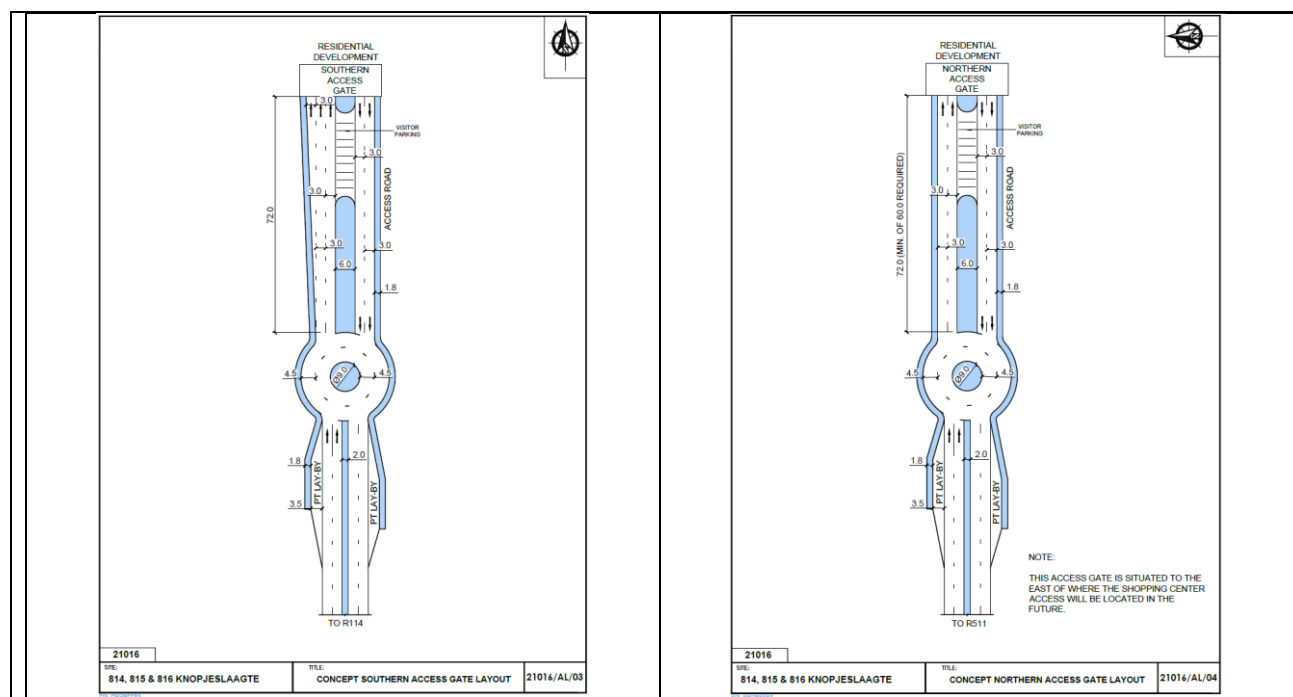


Figure 32: Concept Southern and Northern Gate Layout

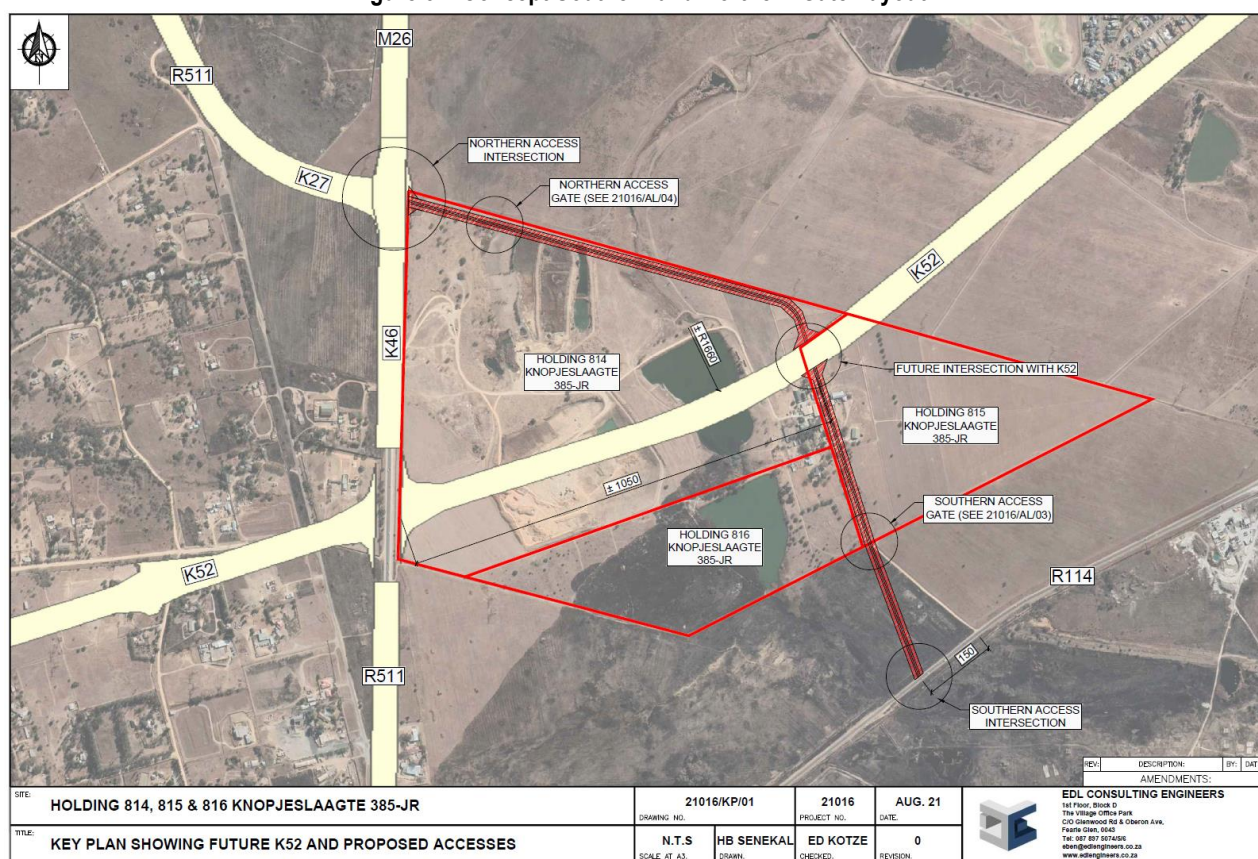


Figure 33: Key Plan Showing Future K52 and Proposed Accesses

### Engineering Services Report (Geotech, Water, Electricity and Power)

These Engineering Services Report had been conducted by CivilConsult Consulting Engineers (CivilConsult Consulting Engineers (Pty) Ltd, 2021).

Refer to Section **SECTION D: RESOURCE USE AND PROCESS DETAILS**



## B10. SOCIO-ECONOMIC CONTEXT

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

The CoT Metropolitan Spatial Development Framework 2012 states: Our communities are categorized by low, middle to upper income groups. Due to past policies, these communities have been accommodated in neighbourhoods based on either/both their income group and/or racial classification. Socio-economic integration redresses that imbalance by creating places of residence whereby communities are mixed and integrated through provision of different housing typologies for various income groups, with supporting social facilities that are essential for livelihoods such as government institutions, clinics, libraries, shops, transport facilities, places of employment and communal spaces such as parks and public squares.

Region 4 is characterised by the following aspects: This region is to be found in the south-western corner of the CoT. The following opportunities are to be found within the region:

- Centurion Metropolitan core
- Gautrain Station
- Highveld Technopark
- N1 Commercial Development Corridor
- Samrand commercial and industrial node
- Potential development along R21 towards OR Tambo International Airport
- Olievenhoutbosch NDPG programme
- Centurion Lake

This region is one of the more affluent regions of the municipality. Its strategic location along the border of Johannesburg has meant that it has progressively developed further towards the south as the growing attraction to the convenience and economic sense of its location has grabbed the attention of many investors. The Highveld Technopark is one such development that is testament to this.

Other predominant land uses of strategic significance include the Zwartkop and Waterkloof Military Airports, Centurion CBD, Sunderland Ridge Industrial Area, N1 Corridor (commercial development), Louwlandia Commercial and Industrial area and Samrand. The Gautrain Station will add impetus to the development in and around the area.

Apart from infrastructure requirements and development trends, the low densities are also influenced by the underlying dolomite in the area. Vacant areas within the suburban environment have recently developed extensively with densities varying from 60 units per hectare. There still exists an opportunity to extend residential developments in the westerly direction (Monavoni and surrounds). Though well serviced, the provision of bulk services is lagging behind the rapid population growth. Existing infrastructure requires upgrading and maintenance.

The new Peachtree Ext 28 township development is located towards the western sections of Region 4 and is envisaged for extension of residential developments as per CoT Metropolitan Spatial Development Framework.

## B11. 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 m<sup>2</sup> 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 m<sup>2</sup> 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

If YES, explain:

Graves have been found to occur and identified and a buffer zone of 30 m had been delineated by the specialist. This buffer had been incorporated into the designs.

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:

**Main findings of Phase 1 Archaeological Impact Assessment** (Coetzee, T, May 2021):

Graves have been found to occur and identified and a buffer zone of 30 m had been delineated by the specialist. The following is stated by the specialist: "Site B07, a cemetery that is no longer in use, might be impacted by the proposed township development.

Therefore, the following recommendations were made: A fenced-off conservation buffer of 30 m, a plaque indicating the presence of the cemetery, as well as monitoring by the Environmental Control Officer (ECO) during the construction phase. Alternatively, the graves may be relocated by a professional graves relocation unit."

Other remarks as per Heritage Assessment:

- Demolished sites B01, B03 and B05 are located on Portions 814 and 816 and might be associated with subsurface culturally significant material. Care should be exercised during the construction phase of the project when developing within the demarcated boundaries of these sites.
- Site B02, a disused mine/quarry, was identified on historical topographical maps and recorded via photographic record. The site is not regarded as significant from a cultural perspective.
- Two of the buildings located at the main residence (Site B04) might exceed 60 years of age. However, these buildings have significantly been altered in more recent times. The cultural significance of these buildings are therefore considered to be low.

Site B08, a windpump with associated cement structure, as well the remaining contemporary buildings associated with the study area are of recent origin and are not significant from a cultural perspective.

Will any building or structure older than 60 years be affected in any way?

YES

Is it necessary to apply for a permit in terms of the National Heritage Resources Act, 1999 (Act 25 of 1999)?

NO

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

**SAHRA will be provided with copies of all the documents at the beginning of the PPP Commenting period. If any comment is received it will be included in the FBAR or alternatively (if sent afterwards) it will be sent directly to GDARD to take into consideration during the decision.**

## SECTION C: PUBLIC PARTICIPATION (SECTION 41)

### C1. THE ENVIRONMENTAL ASSESSMENT PRACTITIONER MUST CONDUCT PUBLIC PARTICIPATION PROCESS IN ACCORDANCE WITH THE REQUIREMENT OF THE EIA REGULATIONS, 2014.

“The following policy applies to the processing of personal information required and acquired during the Public Participation Processes required by the Specific Environmental management Acts (SEMA's) defined in the National Environmental Management Act (act 107 of 1998, as amended- NEMA).

ELEMENTAL respects the privacy of your information and is committed to the protection of personal information in compliance with the laws of South Africa.

In fulfilling our obligations under the relevant SEMA's and other legal duties and rights, ELEMENTAL collects personal information from registered interested and affected parties as well as making such information publicly available and submission to the relevant competent authorities.

By registering as an interested and affected party you consent to the collection and processing of your personal information (as defined below) Personal information collected from registered interested and affected parties includes names; contact details; views, opinions, comments, responses and/or objections; and any submissions, communications or correspondence submitted to or received from ELEMENTAL. A registered interested and affected party is defined in Regulation 42 of the NEMA EIA Regulations and includes: all persons who, as a consequence of the public participation process conducted in respect of that application, have submitted written comments or attended meetings with the proponent, applicant or EAP; and all persons who have requested the proponent or applicant, in writing, for their names to be placed on the register.

By accepting this notice you also confirm that the information contained as part of registration will only be used for the purposes of fulfilling your obligations and rights defined in the NEMA or other specific law.

Personal information collected is stored and disposed of in accordance with the requirements of the POPIA.”

As part of the PPP an I&AP database has and will be developed for the project. Lists of I&APs and contact details will not be released into the public domain.

### C2. LOCAL AUTHORITY PARTICIPATION

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

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

YES

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

NO

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

The Public Participation starts on the 11 November 2021 for a 30-day period of comment and ending 10 December 2021. This Draft BA Report is currently out for a 30-day review period and thus no comments from the local authority have been received to date.

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

The Public Participation starts on 11 November 2021 for a 30-day period of comment and ending 10 December 2021. This Draft BA Report is currently out for a 30-day review period and thus no comments from the local authority have been received to date.

### C3. CONSULTATION WITH OTHER STAKEHOLDERS

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

Has any comment been received from stakeholders?

**NO**

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

N/A – Comments received during the Consultation Phase will be included in the Final BAR to be submitted for decision by the Competent Authority (CA - GDARD).

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

The Public Participation starts 11 November 2021 for a 30-day period of comment and ending 10 December 2021. This Draft BA Report is currently out for a 30-day review period and thus no comments from the local authority have been received to date.

#### C4. 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.

#### C5. 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:

<b>Appendix E1</b>	Proof of site notice– <b>To be updated once PPP is completed</b>
<b>Appendix E2</b>	Written notices issued as required in terms of the regulations
<b>Appendix E3</b>	Proof of newspaper advertisements
<b>Appendix E4</b>	Communications to and from interested and affected parties – <b>To be updated once PPP is completed</b>
<b>Appendix E5</b>	Minutes of any public and/or stakeholder meetings – <b>To be updated once PPP is completed</b>
<b>Appendix E6</b>	Comments and Responses Report – <b>To be updated once PPP is completed</b>
<b>Appendix E7</b>	Comments from I&APs on Basic Assessment (BA) Report – <b>To be updated once PPP is completed</b>
<b>Appendix E8</b>	Comments from I&APs on amendments to the BA Report – <b>To be updated once PPP is completed</b>
<b>Appendix E9</b>	Copy of the register of I&APs – <b>To be updated once PPP is completed</b>

Only the Public Participation documents that are pertinent to this stage of the process (i.e., Draft BAR phase) will be included in this version of the report. All PPP documentation and proofs will thus be included in the Final BA Report to be submitted to GDARD for decision making.

## 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
- 2) Each alternative needs to be clearly indicated in the box below
- 3) Attach the above documents in a chronological order

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

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

### D1. WASTE, EFFLUENT, AND EMISSION MANAGEMENT

#### Solid waste management

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

YES

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

75 m<sup>3</sup>

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

Anticipated construction solid waste to be produced includes building rubble, packaging material, soil/rock material and general litter from construction staff. It is recommended that construction waste/rubble will be collected and stored temporarily in designated containers for the different waste types, and thereafter disposed of at the nearest appropriate licensed waste disposal site.

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

Waste will be disposed of at an appropriate licensed landfill site, possibly at the nearest landfill site to dispose of building rubble. All waste will be removed from site and no waste will be kept, treated, incinerated or burned on site.

No Waste Management License is applied for or applicable for the proposed activities.

Will the activity produce solid waste during its operational phase?

YES

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

Domestic and household waste from households to be removed by either contractors or municipal services

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

Solid waste generated during the operational phase will be stored in suitable bins and transported to the nearest licenced disposal site. This will either be a municipal service or if this is unavailable, the developer should ensure local waste removal services are provided to the area.

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

NO

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

All waste generated, will always be disposed of at a registered disposal site.

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

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

NO

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

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

NO

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

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

Recyclable waste such as plastic, glass, paper etc will be taken to the nearest recycling warehouse. Building rubble and other construction waste will be responsibly disposed or re-utilised during the building process where possible.

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

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

NO

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

N/A m<sup>3</sup>

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

NO

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

NO

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

.

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

Only black and grey water will be generated, which will be catered for by the current sewer reticulation system and treatment facility proposed.

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?

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:



A WUL needs to be applied for, but all the specifics are still in negotiation with CoT at present, especially since Kilo Sands still needs to apply for closure, but it is expected that all sewerage and waste water should be handled by the municipality once the planned Metropolitan Schurveberg WWTW has been constructed. The treatment facility and sewage pump facility applied for will only be implemented if required.

#### Liquid effluent (domestic sewage)

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

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

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

YES	NO
	4443.60 kl/d calculated by Engineers
	NO – That is why 2 interim options are provided within this report until the Schurveberg WWTW has been constructed

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

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

YES	
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A Water use license application should be submitted for water uses, which will include the assessment of the stormwater management plan/sewerage systems, potable water that should be available and the sewerage handling practices (if these is not all handled by municipal services).

Alternative A and Alternative B which could be implemented for the bulk sewerage services of the Proposed Development until such time that the Schurveberg WWTW has been constructed.

#### Interim Option A:

For the interim the Proposed Development will be accommodated in the existing Sunderland Ridge WWTW (Rietspruit) drainage area.

The design capacity of the Sunderland Ridge WWTW has been exceeded by the Average Flow a few times in the last decade but available capacity has since been provided.

#### Interim Option B:

The Engineers propose that a 4 500kf/d on-site Sewerage Treatment Facility (STF) be constructed for the Proposed Development.

Sewerage from the Proposed Development will be treated at 4 500kf/d on-site STF to be located on the eastern bank of the Swartbooispruit and on the inside of the northern boundary of the Proposed Development.

The treated effluent will be utilized discharged into the Swartbooispruit and utilised for irrigation purposes.

The removal of waste sludge from the STF should be arranged through a registered waste disposal contractor and disposed of at an approved Metro disposal point {not into a sewer manhole) or in such a manner as approved by the Department of Water and Sanitation in consultation with the Metro Health Authority.

Sewerage from the western portion of the Proposed Development will drain to the northern boundary of Erf 2 of the Proposed Development where a new 2 300kf/d sewage pump station will be constructed. From here sewage will be pumped via a sewer rising main up to the proposed 4 500kf/d on-site STF where it will discharge.

A Water Use Licence (WULA) will be required for the Proposed Development.

### Emissions into the atmosphere

Will the activity release emissions into the atmosphere?

NO

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

N/A

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:

No significant emissions are expected from a residential development after establishment. Dust may be generated during construction of the houses, but will be limited and not exceed any limits.

## D2. WATER USE

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

					<b>Municipal: Rand Water</b>
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The Knopjeslaagte Reservoir Zone is currently supplied from the Mnandi Reservoir which doesn't have any spare capacity.

The 12Ml Knopjeslaagte Reservoir will have to be constructed for the water supply of the Proposed Development which will be located in the north eastern corner of the intersection between Road R114 and West Road.

Rand Water is installing a new pipeline (H35) past the Mnandi Reservoir and past the existing (400mm 0 steel) feeder main to the proposed Knopjeslaagte Reservoir, east of the Proposed Development. The existing (400mm 0 steel) feeder main will be disconnected from the Mnandi Reservoir and be provided with a direct connection to the proposed H35 Rand Water Pipeline.

Rand Water will have to confirm if sufficient capacity exists to for the AADD of the Proposed Development.

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:

None

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

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

NO

If yes, list the permits required

**N/A – A WUL needs to be applied for, but refer to earlier comments. Application will be for other water uses, not abstraction**

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

NO

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

NO

## D3. POWER SUPPLY

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

The Proposed Development will be supplied with electricity from the City of Tshwane (CoT) Power Supply Network. The external and internal network designs will adhere to CoT's standards and requirements. Other standards to which the electrical design will adhere to include the relevant SABS safety and equipment standards, as well as the NRS 048 Quality of Supply Standard.

The Proposed Development could be supplied by building a new Switching Substation on the border of the Proposed Development. The Switching Substation could be supplied by installing 4 x 150mm<sup>2</sup> 3-core, 11 kV PILC insulated copper cables from the Mnandi Substation towards the north-east of the Proposed Development.

The Proposed Development could then be supplied from the Mnandi Substation with 6 x 70mm<sup>2</sup>, 3-core, 11 kV PILC insulated copper cables.

An enquiry application for the required electrical capacity was sent to CoT on 14 July 2021. CoT will do their investigation and provide feedback in this regard.

The viability of this proposal depends on the availability of enough spare capacity on the existing CoT network as well as capacity at the nearest substation.

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

N/A

#### **D4. ENERGY EFFICIENCY**

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

The development will make use of installations such as energy efficient light bulbs for lighting and water savings taps and technologies.

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

None.

## SECTION E: IMPACT ASSESSMENT

The assessment of impacts must adhere to the minimum requirements in the EIA Regulations, 2014, and should take applicable official guidelines into account. The issues raised by interested and affected parties should also be addressed in the assessment of impacts as well as the impacts of not implementing the activity (Section 24(4)(b)(i)).

### E1. ISSUES RAISED BY INTERESTED AND AFFECTED PARTIES

Summarise the issues raised by interested and affected parties.

A response on issues raised by interested and affected parties will be provided following the 30-day review period of the Draft BAR. These comments and Responses will be included in the Final BAR to be submitted to GDARD for decision-making.

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):

A response from the EAP on issues raised by interested and affected parties will be provided following the 30-day review period of the Draft BAR.

### E2. IMPACTS THAT MAY RESULT FROM THE CONSTRUCTION AND OPERATIONAL PHASE

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

#### METHODOLOGY OF IMPACT ASSESSMENT:

The criteria for the description and assessment of environmental impacts were drawn from the EIA Guidelines, National Environmental Management Act (Act No. 107 of 1998): EIA Regulations (2014) [as amended].

The level of detail as depicted in the EIA Guidelines was refined by assigning specific values to each impact. In order to establish a coherent framework within which all impacts could be objectively assessed, it was necessary to establish a rating system, which was applied consistently to all the criteria. For such purposes, each aspect was assigned a value, ranging from one (1) to five (5), depending on its definition. This assessment is a relative evaluation within the context of all the activities and the other impacts within the framework of the project.

An explanation of the impact assessment criteria is defined below.

**Table 6: Impact Assessment Criteria**

EXTENT	
Classification of the physical and spatial scale of the impact	
Footprint	The impacted area extends only as far as the activity, such as footprint occurring within the total site area.
Site	The impact could affect the whole, or a significant portion of the site.
Regional	The impact could affect the area including the neighbouring farms, the transport routes and the adjoining towns.
National	The impact could have an effect that expands throughout the country (South Africa).
International	Where the impact has international ramifications that extend beyond the boundaries of South Africa.
DURATION	
The lifetime of the impact that is measured in relation to the lifetime of the proposed development.	
Short term	The impact will either disappear with mitigation or will be mitigated through a natural process in a period shorter than that of the construction phase.
Short to Medium term	The impact will be relevant through to the end of a construction phase (1.5 years).
Medium term	The impact will last up to the end of the development phases, where after it will be entirely negated.



<b>Long term</b>	The impact will continue or last for the entire operational lifetime i.e. exceed 30 years of the development, but will be mitigated by direct human action or by natural processes thereafter.	
<b>Permanent</b>	This is the only class of impact, which will be non-transitory. Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient.	
<b>INTENSITY</b>		
The intensity of the impact is considered by examining whether the impact is destructive or benign, whether it destroys the impacted environment, alters its functioning, or slightly alters the environment itself. The intensity is rated as		
<b>Low</b>	The impact alters the affected environment in such a way that the natural processes or functions are not affected.	
<b>Medium</b>	The affected environment is altered, but functions and processes continue, albeit in a modified way.	
<b>High</b>	Function or process of the affected environment is disturbed to the extent where it temporarily or permanently ceases.	
<b>PROBABILITY</b>		
This describes the likelihood of the impacts actually occurring. The impact may occur for any length of time during the life cycle of the activity, and not at any given time. The classes are rated as follows:		
<b>Improbable</b>	The possibility of the impact occurring is none, due either to the circumstances, design or experience. The chance of this impact occurring is zero (0 %).	
<b>Possible</b>	The possibility of the impact occurring is very low, due either to the circumstances, design or experience. The chances of this impact occurring is defined as 25 %.	
<b>Likely</b>	There is a possibility that the impact will occur to the extent that provisions must therefore be made. The chances of this impact occurring is defined as 50 %.	
<b>Highly Likely</b>	It is most likely that the impacts will occur at some stage of the development. Plans must be drawn up before carrying out the activity. The chances of this impact occurring is defined as 75 %.	
<b>Definite</b>	The impact will take place regardless of any prevention plans, and only mitigation actions or contingency plans to contain the effect can be relied on. The chance of this impact occurring is defined as 100 %.	
<p>The status of the impacts and degree of confidence with respect to the assessment of the significance must be stated as follows:</p> <ul style="list-style-type: none"> <li>• <b>Status of the impact:</b> A description as to whether the impact would be positive (a benefit), negative (a cost), or neutral.</li> <li>• <b>Degree of confidence in predictions:</b> The degree of confidence in the predictions, based on the availability of information and specialist knowledge.</li> </ul> <p>Other aspects to take into consideration in the specialist studies are:</p> <ul style="list-style-type: none"> <li>• Impacts should be described both before and after the proposed mitigation and management measures have been implemented.</li> <li>• All impacts should be evaluated for the full-lifecycle of the proposed development, including construction, operation and decommissioning.</li> <li>• The impact evaluation should take into consideration the cumulative effects associated with this and other facilities which are either developed or in the process of being developed in the region.</li> <li>• The specialist studies must attempt to quantify the magnitude of potential impacts (direct and cumulative effects) and outline the rationale used. Where appropriate, national standards are to be used as a measure of the level of impact.</li> </ul> <p><b>Mitigation</b></p> <p>The impacts that are generated by the development can be minimised if measures are implemented in order to reduce the impacts. The mitigation measures ensure that the development considers the environment and the predicted impacts in order to minimise impacts and achieve sustainable development.</p> <p><b>Determination of Significance-Without Mitigation</b></p> <p>Significance is determined through a synthesis of impact characteristics as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible characteristics. The significance of the impact</p>		

“without mitigation” is the prime determinant of the nature and degree of mitigation required. Where the impact is positive, significance is noted as “positive”. Significance is rated on the following scale:

**Table 7: Significance-Without Mitigation**

<b>NO SIGNIFICANCE</b>	The impact is not substantial and does not require any mitigation action.
<b>LOW</b>	The impact is of little importance, but may require limited mitigation.
<b>MEDIUM</b>	The impact is of importance and is therefore considered to have a negative impact. Mitigation is required to reduce the negative impacts to acceptable levels.
<b>HIGH</b>	The impact is of major importance. Failure to mitigate, with the objective of reducing the impact to acceptable levels, could render the entire development option or entire project proposal unacceptable. Mitigation is therefore essential.

#### **Determination of Significance- With Mitigation**

Determination of significance refers to the foreseeable significance of the impact after the successful implementation of the necessary mitigation measures. Significance with mitigation is rated on the following scale:

**Table 8: Significance- With Mitigation**

<b>NO SIGNIFICANCE</b>	The impact will be mitigated to the point where it is regarded as insubstantial.
<b>LOW</b>	The impact will be mitigated to the point where it is of limited importance.
<b>LOW TO MEDIUM</b>	The impact is of importance, however, through the implementation of the correct mitigation measures some potential impacts can be reduced to acceptable levels.
<b>MEDIUM</b>	Notwithstanding the successful implementation of the mitigation measures, to reduce the negative impact to acceptable levels, the negative impact will remain of significance. However, taken within the overall context of the project, the persistent impact does not constitute a fatal flaw.
<b>MEDIUM TO HIGH</b>	The impact is of major importance but through the implementation of the correct mitigation measures, negative impacts will be reduced to acceptable levels.
<b>HIGH</b>	The impact is of major importance. Mitigation of the impact is not possible on a cost-effective basis. The impact is regarded as high importance and taken within the overall context of the project, is regarded as a fatal flaw. An impact regarded as high significance, after mitigation could render the entire development option or entire project proposal unacceptable.

#### **Assessment Weighting**

Each aspect within an impact description was assigned a series of quantitative criteria. Such criteria are likely to differ during the different stages of the project's life cycle. In order to establish a defined base upon which it becomes feasible to make an informed decision, it was necessary to weigh and rank all the criteria.

#### **Ranking, Weighting and Scaling**

For each impact under scrutiny, a scaled weighting factor is attached to each respective impact (table below). The purpose of assigning weights serves to highlight those aspects considered the most critical to the various stakeholders and ensure that each specialist's element of bias is taken into account. The weighting factor also provides a means whereby the impact assessor can successfully deal with the complexities that exist between the different impacts and associated aspect criteria.

Simply, such a weighting factor is indicative of the importance of the impact in terms of the potential effect that it could have on the surrounding environment. Therefore, the aspects considered to have a relatively high value will score a relatively higher weighting than that which is of lower importance.

**Table 9: Description of assessment parameters with its respective weighting**

EXTENT		DURATION		INTENSITY		PROBABILITY		WEIGHTING FACTOR (WF)		SIGNIFICANCE RATING (SR)	
Footprint	1	Short term	1	Low	1	Improbable	1	Low	1	Low	0-19
Site	2	Short to Medium	2			Possible	2	Low to Medium	2	Low to Medium	20-39
Regional	3	Medium term	3	Medium	3	Likely	3	Medium	3	Medium	40-59
National	4	Long term	4			Highly Likely	4	Medium to High	4	Medium to High	60-79
International	5	Permanent	5	High	5	Definite	5	High	5	High	80-100
MITIGATION EFFICIENCY (ME)						SIGNIFICANCE FOLLOWING MITIGATION (SFM)					
High			0.2			Low			0 - 19		
Medium to High			0.4			Low to Medium			20 - 39		
Medium			0.6			Medium			40 - 59		
Low to Medium			0.8			Medium to High			60 - 79		
Low			1.0			High			80 - 100		

**Identifying the Potential Impacts Without Mitigation Measures (WOM)**

Following the assignment of the necessary weights to the respective aspects, criteria are summed and multiplied by their assigned weightings, resulting in a value for each impact (prior to the implementation of mitigation measures).

**Equation 1:**

Significance Rating (WOM) = (Extent + Intensity + Duration + Probability) x Weighting Factor

**Identifying the Potential Impacts With Mitigation Measures (WM)**

In order to gain a comprehensive understanding of the overall significance of the impact, after implementation of the mitigation measures, it was necessary to re-evaluate the impact.

**Mitigation Efficiency (ME)**

The most effective means of deriving a quantitative value of mitigated impacts is to assign each significance rating value (WOM) a mitigation efficiency (ME) rating. The allocation of such a rating is a measure of the efficiency and effectiveness, as identified through professional experience and empirical evidence of how effectively the proposed mitigation measures will manage the impact.

Thus, the lower the assigned value the greater the effectiveness of the proposed mitigation measures and subsequently, the lower the impacts with mitigation.

**Equation 2:**

Significance Rating (WM) = Significance Rating (WOM) x Mitigation Efficiency  
or WM = WOM x ME

**Significance Following Mitigation (SFM)**

The significance of the impact after the mitigation measures are taken into consideration. The efficiency of the mitigation measure determines the significance of the impact. The level of impact is therefore seen in its entirety with all considerations taken into account.

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

Feasible alternatives (i.e. location, activity and property alternatives) for the proposed project has been refined during the town planning process and the most feasible alternative has been included within this report. The proposed area of development has been informed and recommended by the specialist studies conducted as part of this Basic Assessment. The No-Go alternative will be considered.

**Table 10: Construction related impacts associated with the development of Peachtree Ext 28 Township Development**

Aspects Affected	Potential Impact	Extend	Duration	Intensity	Probability	Irreplaceability (Extent + Duration + Intensity + Probability)					Weighting Factor	Significance without mitigation		Mitigation Efficiently	Significance with mitigation		Management and Mitigation Measures		
No-Go Option																			
Socio-Economic	Reduced period of development and upliftment of the surrounding communities and infrastructure based on mining development within the region.	Regional	4	Long term	4	High	4	Likely	3	15	Medium	3	Medium	45	N/A	1	Medium	45	N/A
Socio-Economic	Reduced period of development of the economic environment, by job provision and sourcing supplies for and from local residents and businesses.	Regional	4	Long term	4	High	4	Likely	3	15	Medium	3	Medium	45	N/A	1	Medium	45	N/A
Socio-Economic	Positive: No additional negative impacts on I&APs or surrounding land users	Regional	4	Long term	4	High	4	Likely	3	15	Medium	3	POSITIVE Medium	45	N/A	1	POSITIVE Medium	45	N/A
Natural Environment	Positive: No additional negative impacts on the environment	Regional	4	Long term	4	High	4	Likely	3	15	Medium	3	POSITIVE Medium	45	N/A	1	POSITIVE Medium	45	N/A
Natural Environment	Positive: No additional negative impacts on the environment	Regional	4	Long term	4	High	4	Likely	3	15	Medium	3	POSITIVE Medium	45	N/A	1	POSITIVE Medium	45	N/A
Construction Phase																			
Soils	Contamination of soil from leaks/spillages of hydrocarbons from machinery used during construction phase.	Site	2	Long term	4	High	4	Likely	3	13	High	5	Medium	65	Medium	0,6	Low-to-Medium	39	<ul style="list-style-type: none"><li>• Monitor general condition of surface. rehabilitate if any surface impact occurs.</li><li>•A stormwater management plan must be approved by COT and be implemented as per approved layout and confirmed whether municipal services will be available or alternatively it should be included in the WUL Application to be launched.</li></ul>



																			<ul style="list-style-type: none"><li>Contaminated soil to be removed and transported to a facility for remediation.</li><li>Drip trays to be used for vehicles that stand overnight during construction of erven/buildings.</li><li>Topsoil to be adequately stockpiled on site and protected from contamination and protected from the wind. Ensure erosion is prevented and immediately repaired, specifically areas associated with the Swartbooispruit.</li></ul>
Groundwater	Contamination/Pollution of groundwater from leaks/spillages of either hydrocarbons, waste or wastewater as a result of construction activities.	Site	2	Long term	4	High	4	Likely	3	13	Medium	3	Medium	39	Medium	0,6	Low-to-Medium	23,4	<ul style="list-style-type: none"><li>All vehicles and machinery will be regularly serviced to ensure they are in proper working condition and to reduce risk of leaks.</li><li>All leaks will be cleaned up immediately using an absorbent material and spill kits, in the prescribed manner.</li></ul>
Surface water	Contamination/Pollution of surface water from leaks/spillages of either hydrocarbons, waste or waste water as a result of construction activities	Local	3	Long term	4	Low	2	Likely	3	12	Medium	3	Medium	36	Medium	0,6	Low-to-Medium	21,6	<ul style="list-style-type: none"><li>The approved Integrated Water and Waste Management Plan to be implemented (when the WUL has been authorised). <u>Hydrocarbons and hazardous waste:</u></li><li>All hazardous waste generated shall be kept separate and shall not be mixed with general waste.</li><li>All hazardous waste shall be stored within a sealed drum on an impermeable surfaced area within the central waste storage and transition area.</li><li>Ensure that any rubbish generated during construction as well as from employees (litter) is regularly</li></ul>

																			cleared from the site, in particular from streams (Swartbooispruit) and wetlands.
																			<ul style="list-style-type: none"> <li>• Cement batching boards should be used and cement-based products/wash not to be disposed of into the natural environment.</li> <li>• Sanitation – portable toilets (1 toilet per 30 users is the norm) to be provided where construction is occurring. Workers need to be encouraged to use these facilities and not the natural environment. Waste from chemical toilets should be disposed of regularly and in a responsible manner by a registered waste contractor.</li> </ul>
Surface water	Increased flooding and runoff due to soil compaction and impacts on surface water or riparian areas	Regional	5	Long term	5	Medium	3	Likely	3	16	Medium	3	Medium	48	Low	0,8	Low-to-Medium	38,4	<ul style="list-style-type: none"> <li>• Ensure the effective operation of the stormwater management system through continuous maintenance.</li> <li>• Construction and maintenance of permeable surfaces to permit infiltration into groundwater, reducing runoff volume and velocity.</li> <li>• Implement erosion prevention measures and structures. The soil around the stormwater outlets should be vegetated with grass to reduce erosion.</li> <li>• Ensure proper disposal of domestic waste and continuous clearing of litter across the development area.</li> <li>• Ensure sanitation infrastructure is properly maintained and malfunctions</li> </ul>



																			recommended after 6 months from completion of the works and final sign-off of rehabilitation works should take place after one year.
																			<ul style="list-style-type: none"> <li>• Bridges and culverts should be regularly inspected to ensure that no blockages occur.</li> </ul>
Surface water	Siltation/Sedimentation in storm water pipelines	Local	3	Long term	5	Medium	3	Highly Likely	4	15	Medium	3	Medium	45	Low	0,8	Low-to-Medium	36	<ul style="list-style-type: none"> <li>• Reduce the disturbance generated by construction vehicles on site, reducing dust emissions.</li> <li>• Adequate levelling and compaction during construction activities so to reduce the wind blow pollution.</li> <li>• Adequate stockpiling of topsoil removed during excavations, away from prevalent winds and high gradient slopes.</li> <li>• Sedimentation control devices, such as berms, must be temporarily installed in order to prevent sedimentation.</li> </ul>
Wetlands	Impacts to wetlands - Channelled Valley Bottom associated with Swartbooispruit	Local	3	Long term	4	High	4	Highly Likely	4	15	High	4	Medium-High	60	Medium	0,6	Low-to-Medium	36	<ul style="list-style-type: none"> <li>• Any activities that take place within 500 meters of a wetland will require a Water Use Licence in terms of the National Water Act (Act 36 of 1998), however as far as possible, site clearance should take place outside of the exclusion buffer zone. Public open space and Low impact activities, including birding and hiking, can be allowed within the buffer.</li> <li>• Demarcate the wetland areas and buffer zones to limit disturbance, clearly</li> </ul>









																		disturbances to amphibian species and nocturnal mammals.	
Soils and surface water	Soil Erosion and sedimentation of water resources as a result of construction activities	Site	2	Long term	3	High	4	Likely	3	12	High	4	Medium	48	Medium	0,6	Low-to-Medium	28,8	<ul style="list-style-type: none"><li>• Do not develop in the delineated floodline</li><li>• Adhere to WUL issued and approved IWWMP</li><li>• In accordance with Government Notice 704 (GN 704), the onsite management should:<ul style="list-style-type: none"><li>• Keep clean and dirty water separated;</li><li>• Contain any dirty water within a system; and</li><li>• Prevent the contamination of clean water.</li></ul></li><li>• All temporary storm water infrastructure (if any) on-site shall be maintained and kept clean throughout the construction period;</li><li>• Any contaminated material is disposed of in an appropriate manner and the potential risks associated with such spills are limited;</li><li>• All hazardous substances should be stored on impervious surfaces that allow for the containment of spills and leakages (e.g. bunded areas). Should spills occur, these should be reported to the Site Manager.</li><li>• Adequate levelling and compaction during construction activities.</li></ul>
Noise	Increased noise generation from construction activities.	Local	3	Long term	4	Low	2	Likely	3	12	Low	2	Low-to-Medium	24	High	0,8	Low	19,2	<ul style="list-style-type: none"><li>• Limit the amount of construction vehicles on site.</li><li>• Maintain construction vehicles and machinery in</li></ul>



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																			good working order to reduce the noise on site.  • Equipment should be fitted with noise reduction devices.
Air Quality	Increased air emissions/dust from construction activities.	Site	2	Long term	4	Medium	3	Likely	3	12	Definite	5	Medium	60	Medium	0,6	Low-to-Medium	36	<ul style="list-style-type: none"><li>• No clearance of indigenous vegetation in the buffer zone will be allowed or within the riparian and wetlands buffers delineated.</li><li>• The unnecessary clearance of indigenous vegetation should be avoided as far as possible.</li><li>• Construction activities should be restricted to the immediate area of development.</li><li>• Control the amount of construction vehicles on site.</li><li>• Exposed soil must be dampened and or covered to prevent wind action from causing dust plumes.</li><li>• Machinery and vehicles must be in good working conditions so as to emit minimal air pollution.</li></ul>
Vegetation	Loss of vegetation as a result of site clearance	Site	2	Long term	4	Medium	3	Likely	3	12	High	4	Medium	48	Medium	0,6	Low-to-Medium	28,8	<ul style="list-style-type: none"><li>• An appointed Environmental Control Officer (ECO) must always be available to ensure implementation of the recommended mitigation/management measures during the construction of the project.</li><li>- The ECO is to be on site twice a month – once for a site visit or project progress meeting and once for auditing. These visits</li></ul>



																		authorisations must be obtained, in terms of NEMBA (ToPS List), the TNCO and the National Forests Act, 1998 (Act No. 84 of 1998).	
Fauna		Site	2	Long term	4	Medium	3	Likely	3	12	High	4	Medium	48	Medium	0,6	Low-to-Medium	28,8	<ul style="list-style-type: none"><li>• Where rare fauna (vertebrate and invertebrate) stands to be lost, every effort should be made to minimise the impact.</li><li>• Prohibit / control access to portions of the property that is to remain undeveloped; and ensure that animals are not impacted on (e.g., illegal poaching).</li><li>• Clear the site in a logical sequence and manner that allows mobile species to escape.</li><li>• Maintain any habitat corridors effectively.</li><li>• No SCC or protected species were identified as occurring or likely to occur on the project footprint. However, should SCC or protected species be found to occur on the development footprint relevant authorisations must be obtained, in terms of NEMBA (ToPS List), the TNCO and the National Forests Act, 1998 (Act No. 84 of 1998).</li><li>• Since many birds have been flagged as a possible occurrence in the area and the area falls within an Important Birding Area, the electrical infrastructure which normally forms part of a residential development, should investigate the use of</li></ul>

																			insulators to be placed on conductors to prevent the bird from touching the conductor while landing or taking off and thus reducing the risk of an electric shock. The length of the isolators is adapted to the size of large birds of prey. Popular mitigation measures (Dixon, 2017) include: - Methods for mitigation: Insulation - Methods for mitigation: Perch deterrents and deflectors. - Methods for mitigation: Reconfiguration (Preferred) - Prevention: Ensure all new power infrastructure is bird safe (Preferred) - Refer to Ecological Report on details on these methods.
Heritage	Impacts on Heritage sites identified	Site	2	Long term	4	Medium	3	Likely	3	12	High	4	Medium	48	Medium	0,6	Low-to-Medium	28,8	<ul style="list-style-type: none"><li>• Site B07, a cemetery that is no longer in use, might be impacted by the proposed township development. Therefore, the following recommendations are made: A fenced-off conservation buffer of 30 m, a plaque indicating the presence of the cemetery, as well as monitoring by the Environmental Control Officer (ECO) during the construction phase.</li><li>• Alternatively, the graves may be relocated by a professional graves relocation unit.</li><li>• Should skeletal remains be exposed during development and construction phases, all activities must be suspended, and the relevant</li></ul>



																		heritage resources authority contacted (See National Heritage and Resources Act, 25 of 1999 section 36 (6)).  • Also, should culturally significant material be discovered during the course of the said development, all activities must be suspended pending further investigation by a qualified Archaeologist.	
Visual aspects	Potential visual impact on the viewpoints	Local	3	Long term	4	Medium	3	Likely	3	13	High	4	Medium	52	Medium	0,6	Low-to-Medium	31,2	• The area will be rehabilitated after construction is concluded and thus the visual impact will be mitigated. In addition, the following measures are recommended:  • Planting of some indigenous trees to create a barrier between the neighbours and roads  • Prevent visible dust clouds during construction and ensure dust is kept to a minimum.
Waste	Generation and disposal of general waste, litter and hazardous material during the construction and operational phase	Local	2	Long term	4	Medium	3	Likely	3	12	High	4	Medium	48	Medium	0,6	Low-to-Medium	28,8	• Ensure enough bins are provided during the construction phase and enough bins are permanently made available during operation throughout the township development area.  • Restrict access to the riverine and wetland system to prevent waste being dumped into the surface water environment.  • Waste should be collected and disposed off at a licensed waste facility.

																		<ul style="list-style-type: none"><li>• Identify disposal sites for the various categories of waste likely to be generated on site.</li><li>• Make sure general cleanliness on site.</li><li>• Reduce, recycling and reuse of waste must occur whenever possible.</li><li>• Recycling bins must be separate and clearly marked according to material.</li><li>• Waste must be stored safely away from employees' and residents' exposure.</li><li>• Construction debris is not to be buried on site.</li><li>• No burning of waste will occur on site, unless to remove alien seeds from storage sites.</li></ul>	
Services	Need for services e.g. water, electricity and sewerage systems, causing additional strain on natural resources and service infrastructure.	Regional	3	Long term	4	Low	3	Likely	3	13	Medium	3	Medium	39	Low	0,8	Low-to-Medium	31,2	<ul style="list-style-type: none"><li>• Energy savings measures to be implemented, e.g.: no lights to be switched on unnecessarily. Only security lights to be switched on at night.</li><li>• Energy saving bulbs to be installed where installations is required by the applicant.</li><li>• Sewerage system should be managed in accordance with WUL and services regularly by a suitably qualified Contractor (if not municipal managed and serviced).</li><li>• Water saving taps could be installed in the houses and outside houses (in gardens) if possible by the applicant.</li></ul>

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Traffic	The change in the traffic patterns as a result of increased traffic entering and exiting the specific area (Knopjeslaagte)	Regional	3	Long term	4	Low	2	Possible	2	11	High	4	Medium	44	Medium	0,6	Low-to-Medium	26,4	<ul style="list-style-type: none"> <li>• Heavy vehicles should adhere to the speed limit of the road.</li> <li>• Ensure roads can handle the amount of traffic expected. It is known that the density of the township had already been decreased based on the findings of the traffic assessment conducted by the town planners.</li> </ul>
Traffic	Nuisance, health and safety risks caused by increased traffic on an adjacent to the study area including cars and heavy vehicles.	Regional	3	Long term	4	Low	2	Possible	2	11	High	4	Medium	44	Medium	0,6	Low-to-Medium	26,4	<ul style="list-style-type: none"> <li>• Drivers will be enforced to keep to set speed limits.</li> <li>• Roads and intersections will be signposted clearly.</li> <li>• Vehicles should adhere to the speed limit of the road.</li> <li>• All traffic accommodation measures are to conform to the latest edition of the South African Road Signs Manual.</li> </ul>
Socio-economic	Increased job opportunities	Site	2	Long term	4	Medium	3	Possible	2	11	High	4	Medium	44	Medium	0,6	Low-to-Medium	26,4	<ul style="list-style-type: none"> <li>• Meet the requirements of the government policies for procurement and employment, as are applicable to local government, to take care of and avoid potential conflict between people in the immediate surroundings seeking employment and those from elsewhere.</li> </ul>

Table 11: Operational related impacts associated with the development of Peachtree Ext 28 Township Development

Aspects Affected	Potential Impact	Extend	Duration	Intensity	Probability	Irreplaceability (Extent + Duration + Intensity + Probability)	Weighting Factor	Significance without mitigation	Mitigation Efficiently	Significance with mitigation	Management and MITIGATION MEASURES								
Operational Phase																			
Soils	Erosion and loss of soil	Site	2	Long term	4	Low	2	Likely	3	11	Low to Medium	2	Low-to- Medium	22	Medium	0,6	Low	13,2	Monitor general condition of surface.

																			rehabilitate if any surface impact occurs. The approved stormwater management plan must be implemented (could be municipal managed or should otherwise be included in the WUL issued); • Contaminated soil to be removed and transported to a facility for remediation. • Ensure erosion is prevented and immediately repaired, specifically areas associated with the Swartbooispruit.
Groundwater	Contamination/Pollution of groundwater from leaks/spillages of either hydrocarbons, waste or wastewater.	Site	2	Long term	4	High	4	Likely	3	13	Low to Medium	2	Low-to-Medium	26	Medium	0,6	Low	15,6	• The approved Integrated Water and Waste Management Plan to be implemented (when the WUL has been authorised).
Surface water	Contamination/Pollution of surface water from leaks/spillages of either hydrocarbons, waste or wastewater.	Local	3	Long term	4	Low	2	Likely	3	12	Medium	3	Low-to-Medium	36	Medium	0,6	Low-to-Medium	21,6	• The approved Integrated Water and Waste Management Plan to be implemented (when the WUL has been authorised).
Surface water	Increased flooding and runoff due to soil compaction and impacts on surface water or riparian areas	Regional	5	Long term	5	Medium	3	Likely	3	16	Medium	3	Medium	48	Low	0,8	Low-to-Medium	38,4	• Ensure the effective operation of the stormwater management system through continuous maintenance.  • Implement erosion prevention measures and structures. The soil around the stormwater outlets should be vegetated with grass to reduce





																			<ul style="list-style-type: none"> <li>• Concurrent rehabilitation to be implemented, specifically revegetation of areas disturbed. All bare and exposed soils noted during a two-year maintenance period, including areas where alien vegetation is periodically removed, must be reseeded using the specified indigenous species recommended.</li> <li>• Bridges and culverts should be regularly inspected to ensure that no blockages occur.</li> </ul>
Wetlands	Impacts to wetlands - Channelled Valley Bottom associated with Swartbooispruit	Local	3	Long term	4	High	4	Highly Likely	4	15	High	4	Medium	60	Medium	0,6	Low-to-Medium	36	<ul style="list-style-type: none"> <li>• Any activities that take place within 500 meters of a wetland will require a Water Use Licence in terms of the National Water Act (Act 36 of 1998), however as far as possible, site clearance should take place outside of the exclusion buffer zone. Public open space and Low impact activities, including birding and hiking, can be allowed within the buffer.</li> <li>• Demarcate the wetland areas and buffer zones to limit disturbance, clearly mark these areas as no-go areas.</li> </ul>



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																			collected and stored adequately. It is recommended that all waste be removed from site on a weekly basis to prevent rodents and pests entering the site.  • No hunting, trapping or killing of fauna are allowed.
Soils and surface water	Soil Erosion and sedimentation of water resources as a result of construction activities	Site	2	Long term	3	High	4	Likely	3	12	High	4	Medium	48	Medium	0,6	Low-to-Medium	28,8	• Do not develop in the delineated floodline  • Adhere to WUL issued and approved IWWMP In accordance with Government Notice 704 (GN 704), the onsite management should: • Keep clean and dirty water separated; • Contain any dirty water within a system; and • Prevent the contamination of clean water.
Noise	Increased noise generation from construction activities.	Local	3	Long term	4	Low	2	Likely	3	12	Low	2	Low-to-Medium	24	High	0,8	Low	19,2	Ensure noise are kept at acceptable levels
Air Quality	Increased air emissions/dust from construction activities.	Site	2	Long term	4	Medium	3	Likely	3	12	Low	2	Low-to-Medium	24	Medium	0,6	Low	14,4	Ensure air quality levels and dust emissions are kept in acceptable levels
Vegetation	Loss of vegetation as a result of site clearance	Site	2	Long term	4	Medium	3	Likely	3	12	Medium	3	Medium	36	Medium	0,6	Low-to-Medium	21,6	No SCC or protected species were identified as occurring or likely to occur on the project footprint. However, should SCC or protected species be found to occur on the development footprint relevant

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																			authorisations must be obtained, in terms of NEMBA (ToPS List), the TNCO and the National Forests Act, 1998 (Act No. 84 of 1998).
Fauna		Site	2	Long term	4	Medium	3	Likely	3	12	Medium	3	Medium	36	Medium	0,6	Low-to-Medium	21,6	<ul style="list-style-type: none"><li>• Prohibit / control access to portions of the property that is to remain undeveloped; and ensure that animals are not impacted on (e.g., illegal hunting/harvesting)</li><li>• Maintain any habitat corridors effectively.</li><li>• No SCC or protected species were identified as occurring or likely to occur on the project footprint. However, should SCC or protected species be found to occur on the development footprint relevant authorisations must be obtained, in terms of NEMBA (ToPS List), the TNCO and the National Forests Act, 1998 (Act No. 84 of 1998).</li></ul>
Heritage	Impacts on Heritage sites identified	Site	2	Long term	4	Medium	3	Likely	3	12	Medium	3	Medium	36	Medium-to-High	0,4	Low	14,4	<ul style="list-style-type: none"><li>• Site B07, a cemetery that is no longer in use: Maintain a fenced-off conservation buffer of 30 m, a plaque indicating the presence of the cemetery. Alternatively, the graves may be relocated by a</li></ul>

																			professional graves relocation unit.  • Should skeletal remains be exposed, all activities must be suspended, and the relevant heritage resources authority contacted (See National Heritage and Resources Act, 25 of 1999 section 36 (6)). Also, should culturally significant material be discovered during the course of the said development, all activities must be suspended pending further investigation by a qualified Archaeologist.
Visual aspects	Potential visual impact on the viewpoints	Local	3	Long term	4	Medium	3	Likely	3	13	Low	2	Low-to-Medium	26	Medium-to-High	0,4	Low	10,4	• Maintain planted indigenous trees  • Maintain buildings and township structures, including gardens and open spaces by means of a landscape maintenance plan
Waste	Generation and disposal of general waste, litter and hazardous material during the construction and operational phase	Local	2	Long term	4	Medium	3	Likely	3	12	High	4	Medium	48	Medium	0,6	Low-to-Medium	28,8	• Ensure enough bins are permanently made available.  • Restrict access to the riverine and wetland system to prevent waste being dumped into the surface water environment.  • Waste should be collected and disposed of at a licensed waste facility.



																			<ul style="list-style-type: none"><li>• Identify disposal sites for the various categories of waste likely to be generated on site.</li><li>• Make sure general cleanliness on site is maintained in accordance with landscape management plan.</li><li>• Reduce, recycling and reuse of waste must occur whenever possible.</li><li>• Recycling bins must be separate and clearly marked according to material.</li><li>• Waste must be stored safely away from employees' and residents' exposure.</li><li>• Construction debris is not to be buried on site.</li><li>• No burning of waste to occur on site, unless to remove alien seeds from storage sites.</li></ul>
Services	Need for services e.g. water, electricity and sewerage systems, causing additional strain on natural resources and service infrastructure.	Regional	3	Long term	4	Low	3	Likely	3	13	Medium	3	Low-to-Medium	39	Low	0,8	Low-to-Medium	31,2	<ul style="list-style-type: none"><li>• Energy savings measures to be implemented, e.g.: No lights to be switched on unnecessarily. Only security lights to be switched on at night.</li><li>• Energy saving bulbs to be installed; and</li><li>• Sewerage system should be managed in accordance with WUL</li></ul>

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																			and services regularly by a suitably qualified Contractor.  • Water saving taps could be installed in the houses and outside houses if possible by applicant (in gardens).  • Make use of indigenous planting for Landscaping purposes to conserve and reduce water requirements
Traffic	The change in the traffic patterns as a result of increased traffic entering and exiting the specific area (Knopjeslaagte)	Regional	3	Long term	4	Low	2	Possible	2	11	Medium	3	Low-to-Medium	33	Medium	0,6	Low-to-Medium	19,8	• Ensure speed limits are shown and implemented on the roads.
Socio-economic	Increased job opportunities	Site	2	Long term	4	Medium	3	Possible	2	11	High	4	Medium	44	Medium	0,6	Low-to-Medium	26,4	• Appoint local service providers if any maintenance or upgrades are proposed.  • Meet the requirements of the government policies for procurement and employment, as are applicable to local government, to take care of and avoid potential conflict between people in the immediate surroundings seeking employment and those from elsewhere.

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

- Terrestrial Biodiversity Assessment – Red Kite Environmental Solutions (Pty) Ltd – 2021
- Surface water Assessment and Aquatic Ecology – Red Kite Environmental Solutions (Pty) Ltd - 2021
- Wetland Delineation and Functional Assessment Report, Elemental Sustainability (Pty) Ltd - 2021
- Archaeological Impact Assessment, Mr Tobias Coetzee – 2021
- Palaeontological Letter of Exemption – Ms Marion Bamford – 2021
- Received from Townplanner:
  - Traffic Impact Assessment
  - Engineering Services Report
  - Geotechnical Report
  - Motivational Memorandum

**Refer to Appendix G**

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

Uncertainties form part of any proposed development with regards to the actual degree of impact that the development will have on the immediate environment.

Limitations as given within the specialist reports:

The following assumptions and limitations are applicable to the Wetland Delineation and Functional Assessment Report:

- The fieldwork component of the assessment comprised of one assessment only, during the wet season in March. No temporal trends for the respective seasons have been assessed.
- The determination of the wetland boundaries and the assessment thereof, is confined to the study area (properties) of the identified wetland feature. The wetland features located within 500 m of the site, were delineated in fulfilment of Regulation GN509 of the NWA using various desktop methods including use of topographic maps, historical and current digital satellite imagery and aerial photographs. The general surroundings were, however, considered in the desktop assessment of the study area.
- The delineations as presented in this report are thus regarded as a best estimate of the temporary boundaries based on the site conditions present at the time of assessment.
- The assessment was conducted on the portion of the study site as originally defined by the client, any changes in the project boundary subsequent to this may negatively impact the robustness of this report.
- Deriving a 100% factual report based on field collecting and observations can only be done over several years and seasons to account for fluctuating environmental conditions and migrations. Since environmental impact studies deal with dynamic natural systems additional information may come to light at a later stage.
- Due to the scale of the remote imagery used (Google Earth Imagery), as well as the accuracy of the handheld GPS unit used to delineate wetlands in the field, the delineated boundaries cannot be guaranteed beyond an accuracy of about 15 m on the ground. Should greater accuracy of the boundary mapping be required, the boundaries will need to be pegged in the field and mapped using conventional survey techniques.
- Description of the depth of the regional water table and geohydrological and hydropedological processes falls outside the scope of the current assessment.
- Buffer zone calculations does not consider climate change or future changes to wetlands and watercourses resulting from increasing catchment transformation.

The following assumptions and limitations are applicable to the Ecological Assessment Report:

- The desktop study was conducted with up-to-date resources. It might however be possible that additional information become available in time, because environmental impact assessments deal with dynamic natural ecosystems. It is therefore important that the report be viewed and acted upon with these limitations in mind.
- The results, typical flora, herpetofauna, avifauna and mammalian communities found within the study should/can therefore only be used as a general guideline.

- In order to obtain a comprehensive understanding of the dynamics of the ecology of the study area, surveys should ideally have been replicated over several seasons and over a number of years. However, due to project time constraints such long-term studies are not feasible, and this fauna and flora survey was conducted in one season.
- Species flowering only during specific times of the year could be confused with a very similar species of the same genus and some plant species that emerge and bloom during another time of the year or under very specific circumstances may have been missed entirely.
- Vegetation Unit 1 consists of grassland used for intensive livestock grazing and few identifying characteristics were visible for the grass species. Therefore, it is assumed that significantly more species occur in this area than were identified at the time of the site survey.
- No scientific data was collected or analysed for the calculation of ecological veld condition. Any comments or observations made in this regard are based on observations, the expert knowledge and relevant professional experience of the specialist investigator.
- The site verification was undertaken during Autumn (April). Climatic and site conditions were suitable for the terrestrial ecology site survey to be undertaken. The general condition and species composition of the site could be established.
- Limitations should always be kept in mind and therefore management should focus on pro-active measures and the implementation of the precautionary principle.
- The specialist responsible for this study reserves the right to amend this report, recommendations and/or conclusions at any stage should any additional or otherwise significant information come to light.

The following assumptions and limitations are applicable to the Heritage Assessment Report:

- During the survey (April 2021), the southern area along the river was characterised by relatively dense vegetation cover, while the remaining areas consisted of relatively short grass cover. Visibility at this time was therefore considered good. No other access constraints were encountered.

The following assumptions and limitations are applicable to the Surface Water Assessment Report:

- Use was made of aerial photographs, digital satellite imagery as well as provincial and national databases to identify areas of interest before the field survey.
- Although all possible measures were undertaken to ensure all drainage lines were identified and assessed, some smaller ephemeral drainage lines may have been overlooked.
- The obtained buffer zones as calculated using the WRC Report No. TT 610/14 Tool was done on the practitioners own discretion and based on desktop and field assessments.
- Aquatic and riparian ecosystems are dynamic and complex. Some aspects of the ecology of these systems, some of which may be important may have been overlooked. The findings of this study were largely based on a single site visit. A more reliable assessment would have required that seasonal assessments take place.
- The site survey for the surface water and aquatic ecology assessment was undertaken during the end of the wet season (April 2021). Site conditions were found to be suitable for the assessment.
- The findings, results, observations, conclusions and recommendations given in this report are based on the author's best scientific and professional knowledge as well as available information. The report is based on survey and assessment techniques which are limited by time and budgetary constraints relevant to the type and level of investigation undertaken and Red Kite Environmental Solutions and its staff reserve the right to modify aspects of the report including the recommendations when new information may become available from on-going research or further work in this field or pertaining to this investigation.

### **E3. IMPACTS THAT MAY RESULT FROM THE DECOMMISSIONING AND CLOSURE PHASE**

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

Decommissioning and/or closure phase is not expected to occur for the proposed township. Should there be plans to close down and decommission the township development in this area; a closure plan will be submitted to the competent authority for approval and it will comply with the relevant legislation at the time of closure.

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

- Terrestrial Biodiversity Assessment – Red Kite Environmental Solutions (Pty) Ltd – 2021
- Surface water Assessment and Aquatic Ecology – Red Kite Environmental Solutions (Pty) Ltd - 2021
- Wetland Delineation and Functional Assessment Report, Elemental Sustainability (Pty) Ltd - 2021
- Archaeological Impact Assessment, Mr Tobias Coetzee – 2021
- Palaeontological Letter of Exemption – Ms Marion Bamford – 2021
- Received from Townplanner:
  - Traffic Impact Assessment
  - Engineering Services Report
  - Geotechnical Report
  - Motivational Memorandum

**Refer to Appendix G**

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

N/A

#### **E4. 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:

Vehicles transporting material to and from the site will potentially increase traffic load along the internal access road and potentially add to the noise and dust level to the nearby residents. Potential exists for additional traffic during the construction phase, this is however of a temporal duration and impact.

Waste management (including wastewater) and impacts as a result of the proposed development and other similar or different activities in the area. Wastewater management should be properly planned, designed, and installed to ensure that the waste is effectively removed from the housing units. Waste management methods must be in accordance with the relevant legislation and stipulated guidelines. Long term impacts on the Swartbooiriver and wetlands as a result of improper waste management could result if not managed correctly.

The proposed development has the potential to impact the socio-economic status of the local area through job creation, skills development and increased pork production and fuel supply to the local market. This impact will not be mitigated as mitigation will not improve the local socio-economic situation.

#### **E5. 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 development, along with associated infrastructure will exert an impact on the environment; but based on the findings of the specialist studies and recommendations (Appendix G), and the locality of the site, the impacts associated with this proposed development can be mitigated to an acceptable level (Low).

The creation of temporary and permanent job opportunities and housing available in the area will have a positive impact on the surrounding community. With the implementation of the mitigation measures suggested in this report and based on the information available to date, the site visit undertaken, it is the EAP's opinion that there are no fatal flaws to the project, provided the mitigation set out is adhered to and that the developer shows commitment to the sustainable development.

**Alternative 1**

N/A

**Alternative 2**

N/A

**No-go (compulsory)**

The no-go option would mean that the status quo would remain. Environmental impacts would not be impacted on any further than the current situation. The vegetation on site would retain its current status and no further development would occur on the site. The no-go option will not promote a positive impact in terms of economic benefits nor the benefit of local development by means of the establishment of a housing township area and the accompanying stimulation of services that will result (like service delivery, spazas, local shops etc.).

Another factor to take into account as part of the No-go alternative, it that the area is currently mined and if the township does not get approved as the final land use, another land use plan as part of the closure planning of the mine and feasibility exercise will be required by the applicants.

The environmental impacts associated with the proposed development can be mitigated and can be effectively managed with the implementation of effective measures as discussed in the EMP.

**E6. IMPACT SUMMARY OF THE PROPOSAL OR PREFERRED ALTERNATIVE**

For proposal:

For proposal:

- Impact on soil (erosion and dust)
- Loss of vegetation and faunal habitat
- Introduction and increase in alien vegetation
- Noise generation
- Air quality impact
- Potential for pollution of water sources and wetlands
- Waste generation
- Impact of traffic
- Employment opportunities created

**Table 12: Impact Summary for the Proposed Development**

Aspects Affected	Potential Impact	Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Construction Phase							
Soils	Contamination of soil from leaks/spillages of hydrocarbons from	Medium	65	Medium	0,6	Low-to-Medium	39

Aspects Affected	Potential Impact	Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Construction Phase							
	machinery used during construction phase.						
Groundwater	Contamination/Pollution of groundwater from leaks/spillages of either hydrocarbons, waste or wastewater as a result of construction activities.	Medium	39	Medium	0,6	Low-to-Medium	23,4
Surface water	Contamination/Pollution of surface water from leaks/spillages of either hydrocarbons, waste or waste water as a result of construction activities	Medium	36	Medium	0,6	Low-to-Medium	21,6
Surface water	Increased flooding and runoff due to soil compaction and impacts on surface water or riparian areas	Medium	48	Low	0,8	Low-to-Medium	38,4
Surface water	Siltation/Sedimentation in storm water pipelines	Medium	45	Low	0,8	Low-to-Medium	36
Wetlands	Impacts to wetlands - Channelled Valley Bottom associated with Swartbooispruit	Medium-High	60	Medium	0,6	Low-to-Medium	36
Soils and surface water	Soil Erosion and sedimentation of water resources as a result of construction activities	Medium	48	Medium	0,6	Low-to-Medium	28,8
Noise	Increased noise generation from construction activities.	Low-to-Medium	24	High	0,8	Low	19,2
Air Quality	Increased air emissions/dust from construction activities.	Medium	60	Medium	0,6	Low-to-Medium	36
Vegetation	Loss of vegetation as a result of site clearance	Medium	48	Medium	0,6	Low-to-Medium	28,8
Fauna	Impact on Faunal species	Medium	48	Medium	0,6	Low-to-Medium	28,8
Heritage	Impacts on Heritage sites identified	Medium	48	Medium	0,6	Low-to-Medium	28,8
Visual aspects	Potential visual impact on the viewpoints	Medium	52	Medium	0,6	Low-to-Medium	31,2
Waste	Generation and disposal of general waste, litter and hazardous material during the construction and operational phase	Medium	48	Medium	0,6	Low-to-Medium	28,8
Services	Need for services e.g. water, electricity and sewerage systems, causing additional strain on natural resources and service infrastructure.	Medium	39	Low	0,8	Low-to-Medium	31,2
Traffic	The change in the traffic patterns as a result of increased traffic entering and exiting the specific area (Knopjeslaagte)	Medium	44	Medium	0,6	Low-to-Medium	26,4
Traffic	Nuisance, health and safety risks caused by increased traffic on an adjacent to the study area including cars and heavy vehicles.	Medium	44	Medium	0,6	Low-to-Medium	26,4
Socio-economic	Increased job oppurtunities	Medium	44	Medium	0,6	Low-to-Medium	26,4
Operational Phase							
Soils	Erosion and loss of soil	Low-to-Medium	22	Medium	0,6	Low	13,2
Groundwater	Contamination/Pollution of groundwater from leaks/spillages of either hydrocarbons, waste or wastewater.	Low-to-Medium	26	Medium	0,6	Low	15,6
Surface water	Contamination/Pollution of surface water from leaks/spillages of either hydrocarbons, waste or wastewater.	Low-to-Medium	36	Medium	0,6	Low-to-Medium	21,6
Surface water	Increased flooding and runoff due to soil compaction and impacts on surface water or riparian areas	Medium	48	Low	0,8	Low-to-Medium	38,4

Aspects Affected	Potential Impact	Significance without mitigation		Mitigation Efficiently		Significance with mitigation	
Construction Phase							
Wetlands	Impacts to wetlands - Channelled Valley Bottom associated with Swartbooispruit	Medium	60	Medium	0,6	Low-to-Medium	36
Soils and surface water	Soil Erosion and sedimentation of water resources as a result of construction activities	Medium	48	Medium	0,6	Low-to-Medium	28,8
Noise	Increased noise generation from construction activities.	Low-to-Medium	24	High	0,8	Low	19,2
Air Quality	Increased air emissions/dust from construction activities.	Low-to-Medium	24	Medium	0,6	Low	14,4
Vegetation	Loss of vegetation as a result of site clearance	Medium	36	Medium	0,6	Low-to-Medium	21,6
Fauna	Impacts on Faunal Species	Medium	36	Medium	0,6	Low-to-Medium	21,6
Heritage	Impacts on Heritage sites identified	Medium	36	Medium-to-High	0,4	Low	14,4
Visual aspects	Potential visual impact on the viewpoints	Low-to-Medium	26	Medium-to-High	0,4	Low	10,4
Waste	Generation and disposal of general waste, litter and hazardous material during the construction and operational phase	Medium	48	Medium	0,6	Low-to-Medium	28,8
Services	Need for services e.g. water, electricity and sewerage systems, causing additional strain on natural resources and service infrastructure.	Low-to-Medium	39	Low	0,8	Low-to-Medium	31,2
Traffic	The change in the traffic patterns as a result of increased traffic entering and exiting the specific area (Knopjeslaagte)	Low-to-Medium	33	Medium	0,6	Low-to-Medium	19,8
Socio-economic	Increased job opportunities	Medium	44	Medium	0,6	Low-to-Medium	26,4

For alternative:

N/A

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

Refer to details provided under Alternatives above.

## E7. SPATIAL DEVELOPMENT TOOLS

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

### **1) GAUTENG TRANSFORMATION, MODERNISATION AND RE-INDUSTRIALISATION STRATEGY (TMR) 2014**

The Gauteng Transformation, Modernisation and Re-industrialisation Strategy (TMR) is a strategic roadmap towards an integrated city-region characterised by social cohesion and economic inclusion. The strategy identifies the apartheid space economy and human settlements patterns as key structural challenges.

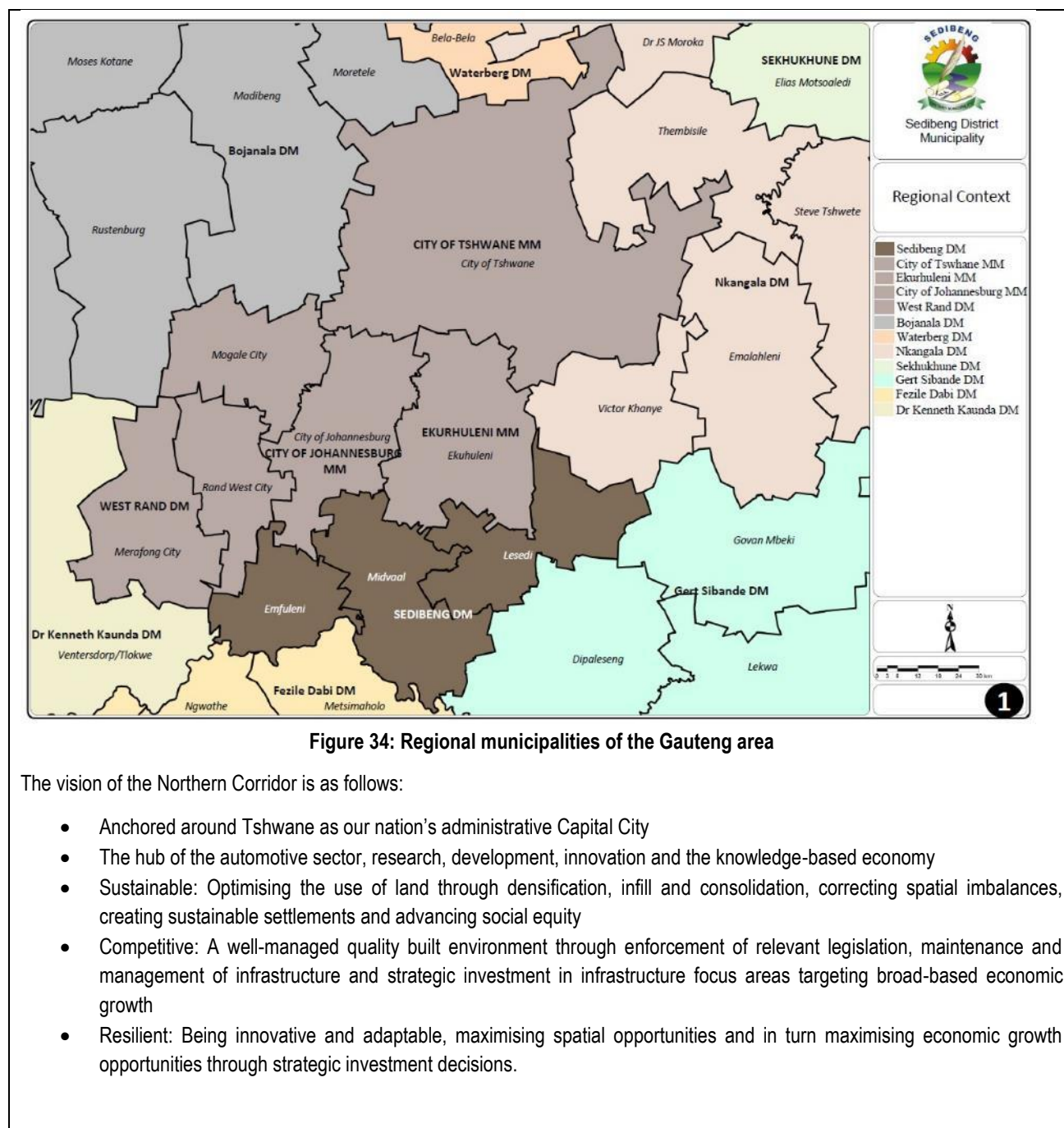
The TMR strategy proposes ten pillars which will ensure integrated, socially cohesive and economically inclusive development. The ten pillars are:

1. Radical economic transformation. Revitalize and mainstream the township economy through the key economic sectors of finance, automotive industry, manufacturing, information and communication technology (ICT), tourism, pharmaceuticals, creative industries, construction and real estate.

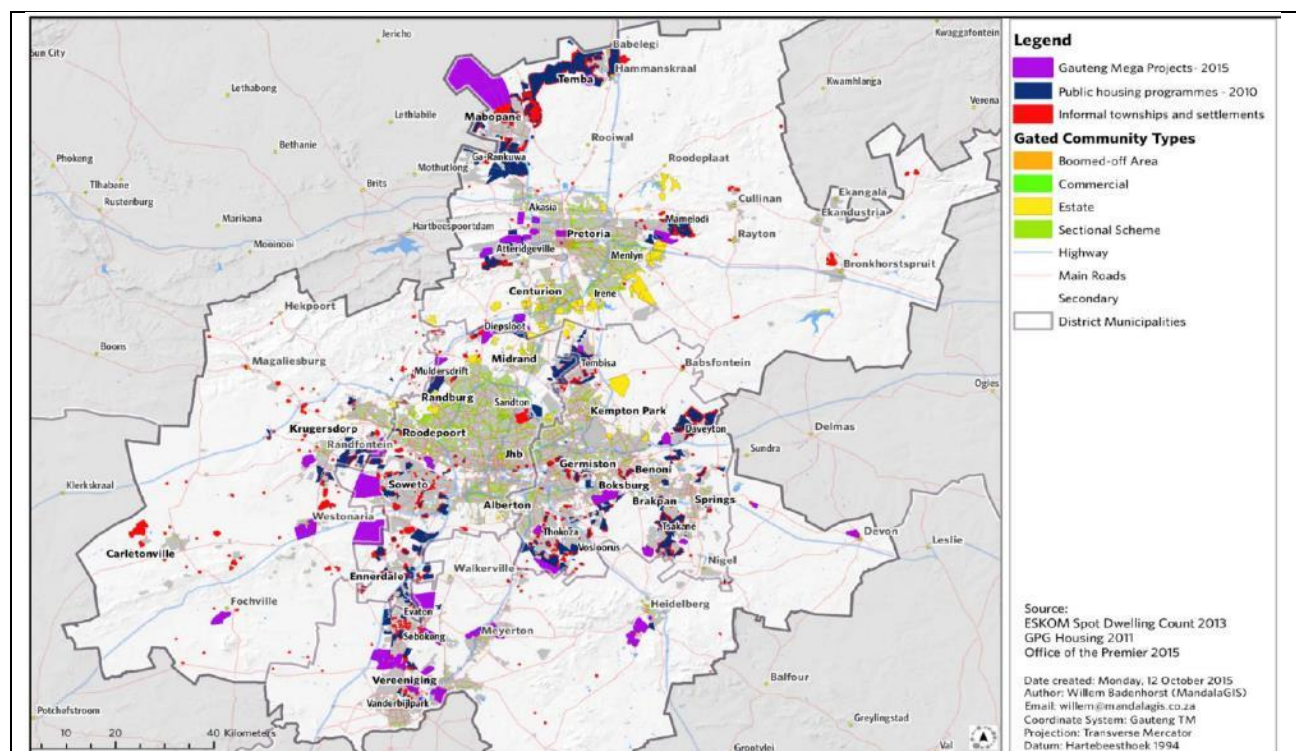
2. Decisive spatial transformation. Planned and integrated urban development which will enable more integrated and sustainable human settlements and communities that are inclusive and diverse.
3. Modernise the public service. Radically change the way government works to put people at the centre.
4. Accelerate social transformation. Raise the living standards and achieve quality of life for all people - improve education and health care, provide social protection for the vulnerable, eradicate poverty and build social cohesion and solidarity.
5. Re-industrialise Gauteng as our country's economic hub. Infrastructure development, specifically the massive rollout of transport infrastructure, will be used to revitalize and modernize old industries.
6. Modernise the economy. Create decent jobs and achieve economic inclusion by bringing township entrepreneurs and SMMEs into the mainstream economy, and promote the finance, automotive industry, manufacturing, ICT, tourism, pharmaceutical, creative industry, construction and real estate sectors.
7. Modernise public transport and other infrastructure. Public transport will be used to make Gauteng look different through the development of the Aerotropolis and OR Tambo Special Economic Zone. Particular attention will be given to the West Rand and Sedibeng regions respectively in order to revitalize their economies and connect them to the economic centres of the Gauteng city-region.
8. Modernise human settlements and urban development. New post-apartheid cities will be a combination of modern public transport modes, integrated and sustainable human settlements that are socially and economically inclusive and promote urban green development. Particular attention will be given in this regard to the West Rand and Sedibeng Regions. The renewal of old towns and inner-city regeneration will be a key focal point. In existing human settlements, the focus will be to invest in the renewal of townships, especially the twenty-five old townships and old informal settlements that have been neglected – in this regard Evaton was identified.
9. Taking a lead in Africa's new industrial revolution. Gauteng holds the key to strengthening economic trade and partnerships with African and Brics countries, being the fourth biggest economy in the continent.
10. Transform the state and governance. Specific attention will be given to eradicating corruption.

The TMR sets the goal to reconfigure the Gauteng City Region's space and economy along five development corridors that have distinct industries and different comparative advantages:

- The **Central Development Corridor** - anchored around the City of Joburg as the hub of finance, services, ICT and pharmaceutical industries;
- The **Eastern Development Corridor**- anchored around the economy of the Ekurhuleni Metro as the hub of manufacturing, logistics and transport industries;
- The **Northern Development Corridor** - anchored around Tshwane as our nation's administrative Capital City and the hub of the automotive sector, research, development, innovation and the knowledge-based economy;
- The **Western Corridor** encompassing the economy of the current West Rand district and the creation of new industries, new economic nodes and new cities;
- The **Southern Corridor** encompassing the economy of the Sedibeng district and the creation of new industries, and sustainable human settlements, promotion of agriculture and tourism.







**Figure 35: Human Settlements Profile of the Gauteng area**

The site is located in close proximity of the Gauteng Mega Projects 2015, Informal townships and settlements and Public housing programmes.

Provincial government intends making three macro interventions jointly with municipalities and the private sector to change the space and structure of the economy of Gauteng and to address unemployment, poverty and inequality. Each of these macro interventions will be supported by specific projects, with the projects relevant to the City of Tshwane (Northern Corridor):

Strategic projects in this area relevant to this specific development include:

- Water security;
- Mega Human Settlements - 143 000 housing units in Mega Human Settlements
- Township Economy Revitalisation (Game Changer Projects)
- New Cities, such as the African Gateway City which is close (towards the East) of the proposed Knopjeslaagte.

## **2) GAUTENG SPATIAL DEVELOPMENT FRAMEWORK 2030**

The Gauteng Spatial Development Framework (SDF) envisages Gauteng in 2030 is an integrated, connected space that provides for the needs of all who are born in or drawn to the province.

Gauteng is home to two-fifths (40.1%) of all households living in informal settlements in South Africa (Stats SA, 2011). The demand for housing remains high, and the GCR's housing backlog is estimated to increase by over 50 000 units a year (OECD, 2011). Data from the Gauteng Department of Human Settlements (GDHS) suggests that the number of households living in informal settlements has increased, but the total number of people living in informal settlements has declined. The current housing demand figure for the province is 687 015 units, which may be an understatement, as the housing demand database is unreliable and excludes those who do not qualify for housing subsidy but are still in need of housing (GDHS, 2014).

The Spatial Development Guidelines are provided:

These strategic spatial development guidelines, which support the four provincial spatial development strategies, are meant for use by all three spheres of government, but are primarily intended for use by municipalities when undertaking their mandated spatial

planning activities and when making decisions on land development applications, infrastructure investments and development spending. The guidelines are presented in tabular format.

- Guidelines for Capitalising on Proximity
- Focus densification and intensification actions in areas that are close to and/ or well connected to primary and secondary municipal nodes in the province.
- Prioritise densification along existing BRT routes rather than planned future BRT routes, as construction often takes longer than anticipated.
- Develop future Gautrain stations as integrated, mixed-use, high-density and accessible urban nodes.
- Enable strategic emerging nodal developments in townships, to build the polycentric provincial network.
- Enable higher density land developments and housing typologies in nodes, with the aim of creating integrated, accessible, permeable, mixed-use and high-intensity environments.
- Discourage new low-density residential developments in and around core economic areas, as well as the spatial fragmentation resulting from private estate development.
- Redirect housing subsidies towards the development of affordable housing close to employment and public transport.
- Develop public/private sector-led new cities close to areas with economic development potential and good connections to public transport networks.
- New cities must not be exclusive, introverted estates but should be integrated with and add value to the surrounding areas.
- Prioritise the provision and maintenance of bulk infrastructure in areas where it enhances economic redevelopment and transformation of the Apartheid space economy.
- Leverage strategic land assets and land banking to achieve decisive spatial transformation.

### **3) GAUTENG PROVINCIAL ENVIRONMENTAL MANAGEMENT FRAMEWORK 2014**

The Gauteng Provincial Environmental Management Framework (EMF) is a legal instrument in terms of the Environmental Management Framework Regulations, 2010. The purpose of the regulations is to assist environmental impact management including Environmental Impact Assessment (EIA) processes, spatial planning and sustainable development with the main objectives being as follow:

- To make it efficient for urban development (including associated service infrastructure) to occur in defined selected areas with lower environmental concerns and high development demand to help facilitate the implementation GMP, 2014;
- To facilitate the optimal use of current industrial, mining land and other suitable derelict land for the development of non-polluting industrial and large commercial developments;
- To protect Critical Biodiversity Areas (CBAs) within urban and rural environments;
- To ensure the proper integration Ecological Support Areas (ESAs) into rural land use change and development;
- To use ESAs as defined in municipal bioregional plans in spatial planning of urban open space corridors and links within urban areas; and
- To focus on the sustainability of development through the implementation of initiatives such as:
  - energy efficiency programmes, plans and designs;
  - waste minimisation, re-use and recycling;
  - green infrastructure in urban areas; and
  - Sustainable Drainage Systems (SuDS).

Figure 36 depicts the main proposals of the Gauteng EMF, including Agri-Hubs.

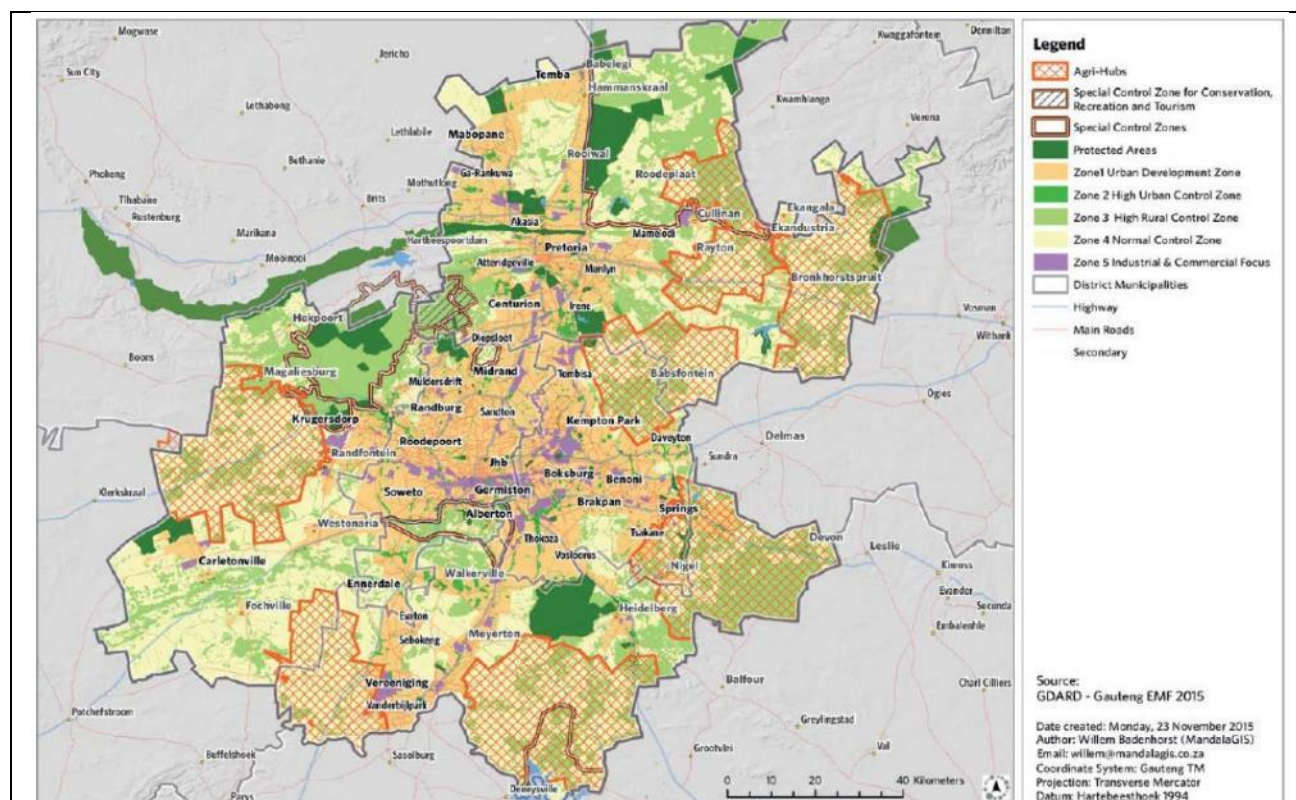


Figure 36: Gauteng Environmental Management Framework

#### 4) CITY OF TSHWANE METROPOLITAN SPATIAL DEVELOPMENT FRAMEWORK

The development falls into Region 4: This region is one of the more affluent regions of the municipality. Its strategic location along the border of Johannesburg has meant that it has progressively developed further towards the south as the growing attraction to the convenience and economic sense of its location has grabbed the attention of many investors. The Highveld Technopark is one such development that is testament to this. Other predominant land uses of strategic significance include the Zwartkop and Waterkloof Military Airports, Centurion CBD, Sunderland Ridge Industrial Area, N1 Corridor (commercial development), Louwlandia Commercial and Industrial area and Samrand. The Gautrain Station will add impetus to the development in and around the area.

Apart from infrastructure requirements and development trends, the low densities are also influenced by the underlying dolomite in the area. Vacant areas within the suburban environment have recently developed extensively with densities varying from 60 units per hectare. There still exists an opportunity to extend residential developments in the westerly direction (Monavoni and surrounds).

Though well serviced, the provision of bulk services is lagging behind the rapid population growth. Existing infrastructure requires upgrading and maintenance.

#### E8. 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

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

N/A

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:

Please see the Environmental Management Programme (EMPr) attached as Appendix H for further detail on mitigation measures.

This BAR addresses a detailed analysis of the potential impacts associated with the proposed development of the Project. All specialist studies suggested that the proposed development can go ahead as no major impacts are expected to occur on site.

This proposed development (Map in Appendix A) will have an impact of low significance, provided that the mitigation measures proposed in this report and the EMPr are effectively implemented.

It is the opinion of the EAP that with effective implementation of the mitigation measures suggested in this BAR, the impacts can be managed and reduced to reasonable levels. It is therefore cautiously recommended by the EAP that the proposed development receive Environmental Authorisation, subject to the following conditions and mitigation measures:

- The EMPr of this proposed development must form part of the contractual agreement and be adhered to by both the contractors and the applicant.
- The recommendations of the specialists must be implemented.
- The applicant to ascertain that there is representation of the applicant on site, at all times of the project phases, ensuring compliance with the conditions of the EMPr and Environmental Authorisation thereof.
- A Water Use Licence must be obtained for the water usage associated with proximity of the wetlands and riverine system and assessment of any other water uses that could possibly be triggered.

## **E9. THE NEEDS AND DESIRABILITY OF THE PROPOSED DEVELOPMENT**

The Department of Environmental Affairs (DEA) published a Guideline on Need and Desirability (2017) in terms of the Environmental Impact Assessment (EIA) Regulations, 2014 (as amended). The key components are listed and discussed below:

- Securing ecological sustainable development and use of natural resources; and
- Promoting justifiable economic and social development.

### **Ecological sustainable developments and use of natural resources:**

The section proposed has been ecologically assessed and found to be degraded with limited natural vegetation present on the area. The project footprint falls within the Egoli Granite Grassland, which is listed as Endangered in the “National List of Ecosystems that are Threatened and need of protection”, and as Critically Endangered by the 2018 National Biodiversity Assessment. During the field assessment, the majority of the proposed project footprint is located on natural veld used for intensive livestock grazing. The Swartbooispruit River flows through the project centre site from south to north, with two farm dams in the river course. Four settling dams can be found to the north-west of the project area. These dams are utilised by the current sand mining operation. Three of the settling dams are no longer in use and have been somewhat rehabilitated and revegetated. Seventy-two (72) plant species were identified as occurring on the study area during the site survey. Of this number seven (7) have medicinal uses and twenty (20) are exotic, ten (10) of which are categorised as AIP in terms NEMBA. No protected plant species or SCC identified on the study area. Thirty-eight (38) fauna species were encountered during the field assessment of which seventeen (17) species have a provincial status as game (mostly water birds sighted and all reptiles enjoy protection). No species that have been found to occur has a national SCC status.

### **Promoting justifiable economic and social development:**

Community/society priorities are officially expressed through public documents including the provincial growth and development strategy and spatial development framework documents. The proposed project will benefit society and the surrounding communities both directly and indirectly by providing job security at the proposed operation within the area proposed. Direct economic benefits will be derived from wages, taxes and profits. Indirect economic benefits will be derived from the procurement of goods and services and the spending power of employees. A township development will not only lead to the stimulation of local economy and businesses, but also to development of services and residential housing in this area where it is known that housing is a need.



According to DEA (2017), Guideline on Need and Desirability, Department of Environmental Affairs, to describe the need for a development, it must be determined whether it is the right time for locating the type of land use and/or activity being proposed. To describe the desirability for a development, it must be determined, whether it is the right place for locating the type of land use and/or activity being proposed. Need and desirability can be equated to the concept of wise use of land which can be determined through asking the question: “what is the most sustainable use of land?” Considering the above, the need and desirability of an application must be addressed separately and in detail answering inter alia the questions listed in Table 12 overleaf.

The following is specifically applicable to the operations:

**Need and Desirability:**

Direct economic benefits will be derived from wages, taxes and profits. Indirect economic benefits will be derived from the procurement of goods and services and the spending power of employees and residents. A township development will not only lead to the stimulation of local economy and businesses, but also to development of services and residential housing in this area where it is known that housing is a need. It is stated in the Municipal frameworks that housing developments are a strategic development in City of Tshwane and in Gauteng based on the amount of housing required for the current population growth and lack of facilities and houses.

**Table 13: Need and Desirability of the proposed development in terms of the Department of Environmental Affairs (DEA) Guideline on Need and Desirability (2017)**

Questions		Answer
<b>Securing ecological sustainable development and use of natural resources:</b>		
1.	<p>How will this development (and its separate elements/aspects) impact on the ecological integrity of the area?</p> <p>How were the following ecological integrity considerations taken into account?</p> <p>1.1.1 Threatened Ecosystems,</p> <p>1.1.2 Sensitive, vulnerable, highly dynamic or stressed ecosystems, such as coastal shores, estuaries, wetlands, and similar systems require specific attention in management and planning procedures, especially where they are subject to significant human resource usage and development pressure,</p>	<p>The DEA website has an EIA Screening Tool, and the Gauteng Conservation Plan (C-Plan) was used show the corresponding sensitivity within its available GIS layers for the development The project footprint falls within the Egoli Granite Grassland, which is listed as Endangered in the “National List of Ecosystems that are Threatened and need of protection”, and as Critically Endangered by the 2018 National Biodiversity Assessment.</p>
1.1	<p>1.1.3 Critical Biodiversity Areas (“CBAs”) and Ecological Support Areas (“ESAs”),</p> <p>1.1.4 Conservation targets,</p> <p>1.1.5 Ecological drivers of the ecosystem,</p> <p>1.1.6 Environmental Management Framework,</p> <p>1.1.7 Spatial Development Framework, and</p> <p>1.1.8 Global and international responsibilities relating to the environment (e.g. RAMSAR sites, Climate Change, etc.).</p>	<p>An ecological survey/screening was also done by a specialist and the site visit conducted confirmed that the site does not support any significant indigenous vegetation and neither significant sections of the vegetation type nor the ecosystem was present on site.</p> <p>Refer to the Terrestrial Biodiversity Report attached to this application.</p>
1.2	<p>How will this development disturb or enhance ecosystems and/or result in the loss or protection of biological diversity? What measures were explored to firstly avoid these negative impacts, and where these negative impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</p>	<p>Impacts predicted for the development are Moderate to low. Wetlands occur within 500m and have been the subject of a specialist investigation. General impacts, such as dust, noise, etc. have been covered within the Environmental Management Programme (EMPr – Appendix H) proposed for the activities. Several mitigation measures and monitoring features have been included in the EMPr to ensure minimal and managed operation of the footprint area and a suitable buffer for the wetlands had been calculated and prescribed. The management and removal of alien vegetation may have positive benefits on the current state of the environment as it has been severely degraded by anthropogenic activities.</p>
1.3	<p>How will this development pollute and/or degrade the biophysical environment? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?</p>	<p>Mitigation and management measures prescribed in the EMPr will aid to avoid and lower any possible impacts that may result from the development.</p>



Questions		Answer
1.4	What waste will be generated by this development? What measures were explored to firstly avoid waste, and where waste could not be avoided altogether, what measures were explored to minimise, reuse and/or recycle the waste? What measures have been explored to safely treat and/or dispose of unavoidable waste?	<p>All waste generated will be disposed of to a licensed landfill facility, either by contractor or municipal service. Other wastes that may cause soil contamination are associated with hydrocarbon spills. Regulations for prevention and management have been prescribed in the EMPr (<b>Appendix H</b>).</p> <p>Municipal water and sanitation will be utilised to prevent other waste from entering the natural environment.</p>
1.5	How will this development disturb or enhance landscapes and/or sites that constitute the nation's cultural heritage? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	<p>A specialist heritage study was conducted for the project and a cemetery (no longer in use) had been found to occur and a bufferzone had been prescribed for this Heritage feature. Recommendations have been included in the EMPr (<b>Appendix H</b>).and stated in the Heritage Impact Assessment Report.</p>
1.6	How will this development use and/or impact on non-renewable natural resources? What measures were explored to ensure responsible and equitable use of the resources? How have the consequences of the depletion of the non-renewable natural resources been considered? What measures were explored to firstly avoid these impacts, and where impacts could not be avoided altogether, what measures were explored to minimise and remedy (including offsetting) the impacts? What measures were explored to enhance positive impacts?	<p>The construction of the township development and building of houses by means of machinery utilised on-site will make use of hydrocarbon products such as petrol, oil, or diesel. The utilisation of the national supplies cannot be reversed; however, the products will be bought, and economic growth will result.</p> <p>Through implementing good practice environmental management measures and mitigation measures, it will ensure that both human and environment are not negatively affected by the development.</p> <p>Water Use license will need to be applied for based on the water uses (Section 21(c) and (i) water uses) and they have been subjected to a Risk Assessment as prescribed by DHSWS. The impact is considered to be Moderate, but no wetland will be lost as a result of activities.</p>
1.7	<p>How will this development use and/or impact on renewable natural resources and the ecosystem of which they are part? Will the use of the resources and/or impact on the ecosystem jeopardise the integrity of the resource and/or system taking into account carrying capacity restrictions, limits of acceptable change, and thresholds? What measures were explored to firstly avoid the use of resources, or if avoidance is not possible, to minimise the use of resources? What measures were taken to ensure responsible and equitable use of the resources? What measures were explored to enhance positive impacts?</p> <p>1.7.1. Does the proposed development exacerbate the increased dependency on increased use of resources to maintain economic growth or does it reduce resource dependency (i.e. de-materialised growth)? (note: sustainability requires that settlements reduce their ecological footprint by using less material and energy demands and reduce the amount of waste they generate, without compromising their quest to improve their quality of life).</p>	<p>No renewable natural resources are relevant to this development.</p>

Questions		Answer
	<p>1.7.2. Does the proposed use of natural resources constitute the best use thereof? Is the use justifiable when considering intra- and intergenerational equity, and are there more important priorities for which the resources should be used (i.e. what are the opportunity costs of using these resources and the proposed development alternative?)</p> <p>1.7.3. Do the proposed location, type and scale of development promote a reduced dependency on resources?</p>	
1.8	<p>How were a risk-averse and cautious approach applied in terms of ecological impacts?</p> <p>1.8.1 What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?</p> <p>1.8.2 What is the level of risk associated with the limits of current knowledge?</p> <p>1.8.3 Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?</p>	<p>The environmental risk assessment for all environmental features has been included within Section E.</p> <p>A Terrestrial Ecological, Surface Water and Aquatic Ecology, Wetland and Heritage specialist study was completed for the project to ensure the impacts of these aspects have been properly assessed and will be catered for within the Environmental Management Programme (EMPr – <b>Appendix H</b>).</p> <p>Additional studies included studies handled by the Townplanner, which consist of a Town Planning Memorandum and Traffic Impact Assessment and Services Report</p>
1.9	<p>How will the ecological impacts resulting from this development impact on people's environmental right in terms following.</p> <p>1.9.1 Negative impacts: e.g. access to resources, opportunity costs, loss of amenity (e.g. open space), air and water quality impacts, nuisance (noise, odour, etc.), health impacts, visual impacts, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</p> <p>1.9.2 Positive impacts: e.g. improved access to resources, improved amenity, improved air or water quality, etc. What measures were taken to enhance positive impacts?</p>	<p><u>Possible negative features:</u> Noise, dust and visual pollution can slightly increase if managed incorrectly. Possibly water pollution, if impacts are not managed effectively, but with the proper mitigation and good practice environmental management measures, it will result in minimal impacts. These impacts will be assessed, and detailed prevention and mitigation measures will be recommended within the EMPr (<b>Appendix H</b>).</p> <p><u>Possible positive features:</u> The development will improve access to services, provide much needed housing and residential opportunities in the area and provide employment opportunities.</p>
1.10	<p>Describe the linkages and dependencies between human wellbeing, livelihoods and ecosystem services applicable to the area in question and how the development's ecological impacts will result in socio-economic impacts (e.g. on livelihoods, loss of heritage site, opportunity costs, etc.)?</p>	<p>Ecological aspects and specialist impact assessments have been included in the document and risk assessments utilised to guide the Environmental Management Programme.</p>
1.11	<p>Based on all of the above, how will this development positively or negatively impact on ecological integrity objectives/targets/considerations of the area?</p>	<p>The Environmental risk assessment for all environmental features has been included within Section E. As mentioned, the natural environment and features associated with the area has been degraded and natural functioning lost.</p>

Questions		Answer
1.12	Considering the need to secure ecological integrity and a healthy biophysical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the “best practicable environmental option” in terms of ecological considerations?	A Terrestrial Ecological, Surface Water and Aquatic Ecology, Wetland and Heritage specialist study was completed for the project to ensure the impacts of these aspects have been properly assessed and will be catered for within the Environmental Management Programme (EMPr – <b>Appendix H</b> ).
1.13	Describe the positive and negative cumulative ecological/biophysical impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and existing and other planned developments in the area?	Cumulative impacts may be the accumulation of all the existing, historic and proposed activities which may result in negative impacts, however, since the site is already impacted, cumulative negative impacts as a result of the township development, will be low.
<b>Promoting justifiable economic and social development:</b>		
2.1	<p>What is the socio-economic context of the area, based on, amongst other considerations, the following considerations?</p> <p>2.1.1 The IDP (and its sector plans' vision, objectives, strategies, indicators and targets) and any other strategic plans, frameworks of policies applicable to the area,</p> <p>2.1.2 Spatial priorities and desired spatial patterns (e.g. need for integrated of segregated communities, need to upgrade informal settlements, need for densification, etc.),</p> <p>2.1.3 Spatial characteristics (e.g. existing land uses, planned land uses, cultural landscapes, etc.), and</p> <p>2.1.4 Municipal Economic Development Strategy (“LED Strategy”).</p>	<p>In 2015, Gauteng's population was 13 200 300 people, or almost a quarter (24%) of the South African population (Stats SA, 2015). Based on an average household size of 3.1 (the lowest in the country), this translates into 4 257 161 households, compared to 3 908 770 households in 2011 (Stats SA, 2011).</p> <p>Every year, Gauteng receives a large number of migrants from across South Africa as well as from outside the country. Compared to other provinces, Gauteng has the highest percentage (14%) of people from outside the province. This is a clear indication that migration strongly affects the increase in population. Based on the 2011 census, Stats SA estimates Gauteng's net in-migration for 2011–2016 to be 543 109 people, of which 343 308 are people from outside the country's borders – almost half (47.3%) of all migrants from outside the country. Overall information provided in the SDF indicates that potential opportunities for SMME's using agriculture and agro-processing are high, considering that the Municipality and District is faced with a high unemployment rate. This would provide some form of relief to households that are at risk of hunger and marginalization.</p> <p>Gauteng is home to two-fifths (40.1%) of all households living in informal settlements in South Africa (Stats SA, 2011). The demand for housing remains high, and the GCR's housing backlog is estimated to increase by over 50 000 units a year (OECD, 2011). Data from the Gauteng Department of Human Settlements (GDHS) suggests that the number of households living in informal settlements has increased, but the total number of people living in informal settlements has declined. The current housing demand figure for the province is 687 015 units (Table 5), which may be an understatement, as the housing demand database is unreliable and excludes those who do not qualify for housing subsidy but are still in need of housing (GDHS, 2014).</p> <p><u>Spatial Development Guidelines:</u> These strategic spatial development guidelines, which support the four provincial spatial development strategies, are meant for use by all three spheres of government, but are primarily intended for use by municipalities when undertaking their mandated spatial planning activities and when making decisions</p>

Questions	Answer
	<p>on land development applications, infrastructure investments and development spending. The guidelines are presented below:</p> <p>Guidelines for Capitalising on Proximity</p> <ul style="list-style-type: none"> <li>• Focus densification and intensification actions in areas that are close to and/ or well connected to primary and secondary municipal nodes in the province.</li> <li>• Prioritise densification along existing BRT routes rather than planned future BRT routes, as construction often takes longer than anticipated.</li> <li>• Develop future Gautrain stations as integrated, mixed-use, high-density and accessible urban nodes.</li> <li>• Enable strategic emerging nodal developments in townships, to build the polycentric provincial network.</li> <li>• Enable higher density land developments and housing typologies in nodes, with the aim of creating integrated, accessible, permeable, mixed-use and high-intensity environments.</li> <li>• Discourage new low-density residential developments in and around core economic areas, as well as the spatial fragmentation resulting from private estate development.</li> <li>• Redirect housing subsidies towards the development of affordable housing close to employment and public transport.</li> </ul>
<p>2.2 Considering the socio-economic context, what will the socio-economic impacts be of the development (and its separate elements/aspects), and specifically also on the socio-economic objectives of the area?</p> <p>2.2.1. Will the development complement the local socio-economic initiatives (such as local economic development (LED) initiatives), or skills development programs?</p>	<p>Also refer to the comments made above.</p> <p>The proposed project will benefit society and the surrounding communities both directly and indirectly by providing job security at the proposed operation. Direct economic benefits will be derived from wages, taxes and profits. Indirect economic benefits will be derived from the procurement of goods and services and the spending power of employees.</p> <p>The project will make use of local workers and service providers and this must be kept record of to ensure the local economic development (as prescribed in the EMPPr).</p>
<p>2.3 How will this development address the specific physical, psychological, developmental, cultural and social needs and interests of the relevant communities?</p>	<p>Refer to comments made above. All aspects and comments received from I&amp;APs during the process will be reasonably addressed and incorporated into the final BAR submitted to GDARD. Local economic growth and work opportunities will be the main benefits from the project if approved and may address some of the physical, psychological, development, cultural and social needs.</p>
<p>2.4 Will the development result in equitable (intra- and inter-generational) impact distribution, in the short- and long-term? Will the impact be socially and economically sustainable in the short- and long-term?</p>	<p>The main benefits of the proposed project are:</p> <ul style="list-style-type: none"> <li>• Direct economic benefits will be derived from wages, taxes and profits. Indirect economic benefits will be derived from the procurement of goods and services and the spending power of employees;</li> <li>• Extending services into a previously disadvantaged area where facilities are limited;</li> <li>• Housing for a number of employees and their families;</li> <li>• It contributes to the upliftment of living standards and the health and safety of the local community.</li> </ul>

Questions	Answer
	<p>The project is aligned with the national objectives such as:</p> <ul style="list-style-type: none"> <li>• To promote economic growth in the Republic</li> <li>• To promote Basic services such as housing, water and sanitation</li> <li>• To promote employment and advance the social and economic welfare which will specifically benefit the surrounding community found within the area.</li> </ul>
<p>2.5</p> <p>In terms of location, describe how the placement of the proposed development will;</p> <p>2.5.1. result in the creation of residential and employment opportunities in close proximity to or integrated with each other,</p> <p>2.5.2. reduce the need for transport of people and goods,</p> <p>2.5.3. result in access to public transport or enable non-motorised and pedestrian transport (e.g. will the development result in densification and the achievement of thresholds in terms public transport),</p> <p>2.5.4. compliment other uses in the area,</p> <p>2.5.5. be in line with the planning for the area,</p> <p>2.5.6. for urban related development, make use of underutilised land available with the urban edge,</p> <p>2.5.7. optimise the use of existing resources and infrastructure,</p> <p>2.5.8. opportunity costs in terms of bulk infrastructure expansions in non-priority areas (e.g., not aligned with the bulk infrastructure planning for the settlement that reflects the spatial reconstruction priorities of the settlement),</p> <p>2.5.9. discourage "urban sprawl" and contribute to compaction/densification,</p> <p>2.5.10. contribute to the correction of the historically distorted spatial patterns of settlements and to the optimum use of existing infrastructure in excess of current needs,</p> <p>2.5.11. encourage environmentally sustainable land development practices and processes</p> <p>2.5.12. take into account special locational factors that might favour the specific location (e.g. the location of a strategic mineral resource, access to the port, access to rail, etc.),</p> <p>2.5.13. the investment in the settlement or area in question will generate the highest socio-economic returns (i.e. an area with high economic potential),</p>	<p>Alternatives have been assessed during the process and the proposed site falls within an rural area which will benefit the surrounding housing by means of closer services, provision of services; make use of land as the area have been found to be degraded by current mining activities that needs to be rehabilitated and a suitable landform chosen as a township development (if approved).</p> <p>The final alternative is reflected in this report and applied for.</p>



Questions		Answer
	<p>2.5.14. impact on the sense of history, sense of place and heritage of the area and the socio-cultural and cultural-historic characteristics and sensitivities of the area, and</p> <p>2.5.15. in terms of the nature, scale and location of the development promote or act as a catalyst to create a more integrated settlement?</p>	
2.6	<p>How were a risk-averse and cautious approach applied in terms of socio-economic impacts?</p> <p>2.6.1. What are the limits of current knowledge (note: the gaps, uncertainties and assumptions must be clearly stated)?</p> <p>2.6.2. What is the level of risk (note: related to inequality, social fabric, livelihoods, vulnerable communities, critical resources, economic vulnerability, and sustainability) associated with the limits of current knowledge?</p> <p>2.6.3. Based on the limits of knowledge and the level of risk, how and to what extent was a risk-averse and cautious approach applied to the development?</p>	Gaps and limits in knowledge have been given within the document.
2.7	<p>How will the socio-economic impacts resulting from this development impact on people's environmental right in terms following:</p> <p>2.7.1. Negative impacts: e.g. health (e.g. HIV-Aids), safety, social ills, etc. What measures were taken to firstly avoid negative impacts, but if avoidance is not possible, to minimise, manage and remedy negative impacts?</p> <p>2.7.2. Positive impacts. What measures were taken to enhance positive impacts?</p>	Refer to all other aspects regarding the Socio-Economic environment, benefits and disadvantages. All of the relevant aspects have also been addressed within the BAR and may be viewed within the Impact Assessment, Management and Mitigation tables as contained within this document.
2.8	<p>Considering the linkages and dependencies between human wellbeing, livelihoods and ecosystem services, describe the linkages and dependencies applicable to the area in question and how the development's socio-economic impacts will result in ecological impacts (e.g. over utilisation of natural resources, etc.)?</p>	<p>These areas in question have been transformed as mentioned by anthropogenic aspects resulting in the current environmental situation where little indigenous vegetation is remaining and the site is covered with NEMBA Invasive species that needs to be controlled and/or removed.</p> <p>The development of this section will not affect livelihoods and ecosystem services related to the footprint area.</p> <p>Other impacts such as air quality impacts and noise may affect neighbouring properties, and these will be mitigated to a Low impact as per mitigation and monitoring measures described within the EMPr.</p>
2.9	<p>What measures were taken to pursue the selection of the "best practicable environmental option" in terms of socio-economic considerations?</p>	No other socio-economic considerations are relevant, except for work creation of local communities and development of housing projects of which this development forms part of.

Questions		Answer
2.10	What measures were taken to pursue environmental justice so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons (who are the beneficiaries and is the development located appropriately)? Considering the need for social equity and justice, do the alternatives identified, allow the “best practicable environmental option” to be selected, or is there a need for other alternatives to be considered?	Refer to comments made above. All alternative scenarios have been discussed within Section A3 and Section B.
2.11	What measures were taken to pursue equitable access to environmental resources, benefits and services to meet basic human needs and ensure human wellbeing, and what special measures were taken to ensure access thereto by categories of persons disadvantaged by unfair discrimination?	<p>The main benefits of the proposed development are:</p> <ul style="list-style-type: none"> <li>• Direct economic benefits will be derived from wages, taxes and profits. Indirect economic benefits will be derived from the procurement of goods and services and the spending power of employees;</li> <li>• Extending the availability of items available from the convenience store to an area where such items were not readily available without going into town;</li> <li>• It contributes to the economic welfare of the surrounding community by creating working opportunities;</li> <li>• It contributes to the upliftment of living standards and the health and safety of the local community.</li> </ul> <p>The project is aligned with the National objectives:</p> <ul style="list-style-type: none"> <li>• To promote economic growth in the Republic;</li> <li>• To promote basic services delivery and establishment</li> <li>• To promote employment and advance the social and economic welfare of all South Africans.</li> </ul>
2.12	What measures were taken to ensure that the responsibility for the environmental health and safety consequences of the development has been addressed throughout the development's life cycle?	All impacts have been assessed according to a Risk Matrix and included within this report. Mitigation and Management measures are prescribed for every possible impact which may result from the proposed development being granted.
2.13	<p>What measures were taken to:</p> <p>2.13.1. ensure the participation of all interested and affected parties,</p> <p>2.13.2. provide all people with an opportunity to develop the understanding, skills and capacity necessary for achieving equitable and effective participation,</p> <p>2.13.3. ensure participation by vulnerable and disadvantaged persons,</p> <p>2.13.4. promote community wellbeing and empowerment through environmental education, the raising of environmental awareness, the sharing of knowledge and experience and other appropriate means,</p>	<p>Refer to Section C of the report. Public Participation will be conducted in accordance with the guidelines and regulations, starting in November 2021. All comments received during this timeframe will be incorporated into the BAR.</p> <p>Refer to Appendix E for all information regarding the PPP until the drafting of this report.</p>

Questions		Answer
	<p>2.13.5. ensure openness and transparency, and access to information in terms of the process,</p> <p>2.13.6. ensure that the interests, needs and values of all interested and affected parties were taken into account, and that adequate recognition were given to all forms of knowledge, including traditional and ordinary knowledge, and</p> <p>2.13.7. ensure that the vital role of women and youth in environmental management and development were recognised and their full participation therein will be promoted?</p>	
2.14	<p>Considering the interests, needs and values of all the interested and affected parties, describe how the development will allow for opportunities for all the segments of the community (e.g. a mixture of low-, middle-, and high-income housing opportunities) that is consistent with the priority needs of the local area (or that is proportional to the needs of an area)?</p>	Refer to comments made above.
2.15	<p>What measures have been taken to ensure that current and/or future workers will be informed of work that potentially might be harmful to human health or the environment or of dangers associated with the work, and what measures have been taken to ensure that the right of workers to refuse such work will be respected and protected?</p>	All workers and contractors will need to abide to the policies, framework and the EMP as specified.
2.16	<p>Describe how the development will impact on job creation in terms of, amongst other aspects:</p> <p>2.16.1. the number of temporary versus permanent jobs that will be created,</p> <p>2.16.2. whether the labour available in the area will be able to take up the job opportunities (i.e. do the required skills match the skills available in the area),</p> <p>2.16.3. the distance from where labourers will have to travel,</p> <p>2.16.4. the location of jobs opportunities versus the location of impacts (i.e. equitable distribution of costs and benefits), and</p> <p>2.16.5. the opportunity costs in terms of job creation (e.g. a mine might create 100 jobs, but impact on 1000 agricultural jobs, etc.).</p>	<p>Refer to comments made above. Since the development is for the development of housing closure of this activity is not foreseen in the long run. The applicant will likely continue with the activity by means of re-applying for authorisation by the end of its authorisation.</p> <p>The land is currently used for small-scale agriculture (pasture and grazing) and a sand mining operation (Kilo Sands); therefore, it may be argued that the development will be a beneficial long-term land use, specifically as it is envisaged as the final landform of the sand mine (as rehabilitated landscape towards township development). Also, the area in question is currently a largely rural area and development in general might increase in the area within the future. Within the current situation, the development will be an ideal and strategic point between and adjacent development clusters.</p>
2.17	<p>What measures were taken to ensure:</p>	<p>The applicant is in application for the following aspects across different legislation requirements:</p> <ul style="list-style-type: none"> <li>EA (GDARD)</li> <li>All legislation which has been incorporated within these processes were discussed within Section A2:</li> </ul>

Questions		Answer
	<p>2.17.1. that there were intergovernmental coordination and harmonisation of policies, legislation and actions relating to the environment, and</p> <p>2.17.2. that actual or potential conflicts of interest between organs of state were resolved through conflict resolution procedures?</p>	<p>Applicable Legislation, Policies and/or Guidelines above.</p> <p>A WULA (DWS Gauteng) application should be applied for before the onset of the activities and this has been included as a recommended requirement/condition for the awarding of the authorisation.</p>
2.18	What measures were taken to ensure that the environment will be held in public trust for the people, that the beneficial use of environmental resources will serve the public interest, and that the environment will be protected as the people's common heritage?	Refer to comment above as these aspects have already been addressed within previous discussions.
2.19	Are the mitigation measures proposed realistic and what long-term environmental legacy and managed burden will be left?	Yes, all impacts have been addressed optimally.
2.20	What measures were taken to ensure that the costs of remedying pollution, environmental degradation and consequent adverse health effects and of preventing, controlling or minimising further pollution, environmental damage or adverse health effects will be paid for by those responsible for harming the environment?	Mitigation and management measures have been described for all environmental aspects identified and is incorporated into the EMPr ( <b>Appendix H</b> ).
2.21	Considering the need to secure ecological integrity and a healthy bio-physical environment, describe how the alternatives identified (in terms of all the different elements of the development and all the different impacts being proposed), resulted in the selection of the best practicable environmental option in terms of socio-economic considerations?	Alternatives and analysis have already been addressed above, refer to comments made.
2.22	Describe the positive and negative cumulative socio-economic impacts bearing in mind the size, scale, scope and nature of the project in relation to its location and other planned developments in the area?	Refer to comments made above regarding positive and negative socio-economic impacts. Cumulative impacts have been discussed where relevant and are not easily accurately quantifiable.

#### E10. 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 minimum of 25 years.

#### E11. ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPR)

(must include post construction monitoring requirements and when these will be concluded.)

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

**YES – Refer to  
Appendix H**

## SECTION F: REFERENCES

- CivilConsult Consulting Engineers (Pty) Ltd. (2021). *City of Tshwane: Township Establishment of Portions 814, 815 and 816 of the farm Knopjeslaagte 385 JR.*
- Coetzee, T. (May 2021). *Phase 1 Archaeological Impact Assessment for the proposed Township development on Portions 814, 815 and 816 of the farm Knopjeslaagte 385 JR, Gauteng.*
- EDL Consulting Engineers (Pty) Ltd. (September 2021). *Traffic Impact Assessment Report for the proposed development: Portions 814, 815 and 816 (Portion of Portion 9) Knopjeslaagte 385 JR, near Ceturion, Gauteng.*
- Elemental Sustainability (Pty) Ltd. (2021). *Wetland Delineation and Impact Assessment, Final Report.*
- Red Kite Environmental Solutions (Pty) Ltd. (2021). *Surface water Assessment for the proposed Knopjeslaagte Township Development.*
- Red Kite Environmental Solutions (Pty) Ltd. (2021). *Terrestrial Ecology Assessment- Knopjeslaagte.*

## SECTION G: APPENDIXES

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

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

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

**Appendix B:** Photographs

**Appendix C:** Facility illustration(s)

**Appendix D:** Route position information

**Appendix E:** Public participation information

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

**Appendix G:** Specialist reports

**Appendix H:** EMPr

**Appendix I:** Other information

## CHECKLIST

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

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



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

## **APPENDIX B: PHOTOGRAPHS**

## **APPENDIX C: FACILITY ILLUSTRATION(S) AND POSITIONS**

## **APPENDIX D: ROUTE POSITION INFORMATION**

## **APPENDIX E: PUBLIC PARTICIPATION INFORMATION**

## **APPENDIX E-1: PROOF OF SITE NOTICE**



**APPENDIX E-2: WRITTEN NOTICES ISSUED AS REQUIRED IN TERMS OF THE  
REGULATIONS**

## **APPENDIX E-3: PROOF OF NEWSPAPER ADVERTISEMENTS**

**APPENDIX E-4: COMMUNICATIONS TO AND FROM INTERESTED AND  
AFFECTED PARTIES**

## **APPENDIX E-5: MINUTES OF ANY PUBLIC AND/OR STAKEHOLDER MEETINGS**

## **APPENDIX E-6: COMMENTS AND RESPONSES REPORT**

**APPENDIX E-7: COMMENTS FROM I&APS ON BASIC ASSESSMENT (BA) REPORT**



**APPENDIX E-8: COMMENTS FROM I&APS ON AMENDMENTS TO THE BA REPORT**

**APPENDIX E-9: COPY OF THE REGISTER OF I&APS**

**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**



## **APPENDIX I-1: EAP CURRICULUM VITAE**

## **APPENDIX I-2: DEA SCREENING TOOL REPORT**